

REQUEST TO WAIVE RESTRICTION ON TESTING OF POST-INCENTIVE AUCTION CHANNELS

The University of Utah (the “University”), licensee of non-commercial educational television station KUED, Salt Lake City, Utah (the “Station”), hereby requests — in coordination with the seven other television stations co-located with the Station (together, the “Utah Stations”) — to modify the Utah Stations’ transition schedule to allow the Utah Stations to begin the testing of their post-Incentive Auction channels earlier than is contemplated in the Commission’s current Phase 1 schedule, on a rolling basis. The Utah Stations require additional time and flexibility to test their post-Auction channels given the severe geographic, climate, and other limitations of their shared transmitter site. Each of the Utah Stations that has been reassigned in the post-Auction repacking concurrently is filing a parallel waiver request.

In addition, the University and the other repacked Utah Stations have determined they are unable to construct the post-Auction facilities assigned in the *Closing and Reassignment PN*.¹ Accordingly, the repacked Utah Stations in parallel are requesting waivers of the initial construction permit application deadline for reassigned stations so that they may apply for alternate facilities in the first priority window.²

Grant of these waivers will serve the public interest by allowing the Utah Stations to efficiently construct post-Auction facilities while maintaining service to their communities. Moreover, the waivers requested in this filing and the parallel filings by other Utah Stations, and the alternate facilities for which the Utah Stations intend to apply, will not impede or delay any other station’s post-Auction transition or cause additional interference to any station. The Commission therefore should grant these waivers expeditiously.

Background

KUED is a member of DTV Utah, LC (“DTV Utah”), which is made up of eight full power television stations in the Utah market (five commercial and three non-commercial) who came together in 1998 in a collective effort to more effectively implement the DTV transition in the Utah market.³ As part of this effort and in coordination with the Commission, the eight Utah Stations entered into an operating agreement to fund the design and construction of, and to co-locate their digital operations to, a single tower located on Farnsworth Peak. Since that time, the Utah Stations have continued to share facilities, thereby significantly reducing the respective operational costs and overhead of providing television broadcast services in Utah. Currently, the

¹ See *Incentive Auction Closing and Channel Reassignment Public Notice*, Docket No. 12-268 et al., Public Notice, DA 17-314 (MB & WTB April 13, 2017) (“*Closing and Reassignment PN*”).

² See *Closing and Reassignment PN* ¶ 70.

³ The licensees of these eight stations are: KUTV Licensee, LLC (licensee of Station KUTV); Utah State Board of Regents (licensee of NCE station KUEN); Bonneville International Corporation (licensee of Station KSL-TV); Nexstar Broadcasting, Inc. (licensee of Stations KTVX and KUCW); University of Utah (licensee of NCE Station KUED); Brigham Young University (licensee of NCE Station KBYU-TV); and KJZZ Licensee, LLC (licensee of Station KJZZ-TV).

stations share two combiners and two antennas, with each station maintaining its own transmitter.

The Utah Stations Require Greater Flexibility in Their Transition Schedule

The Utah Stations require more time and flexibility to test their post-Auction channels than is contemplated in the scheduled Phase 1 testing period. Specifically, given the severe geographic, climate, and other limitations of the shared Farnsworth Peak site, it would not be possible for the stations to test all of their post-Auction facilities in the two-and-a-half month testing period scheduled for Phase 1. The Utah Stations accordingly request that the Commission waive its prohibition on stations testing their post-Auction facilities prior to the scheduled start of the Phase 1 testing period.⁴

Construction at the Farnsworth Peak site presents significant challenges. The site is located about 17 miles southwest of Salt Lake City, in the Oquirrh mountain range, on a small mesa at an altitude of 9,050 feet. Vehicles typically can access the site only from June until the first heavy snow, usually in October; access to the site is restricted to snow-cat or helicopter the rest of the year. This means the Utah Stations have only two June-October construction windows prior to the Phase 1 completion deadline of November 30, 2018, with the 2017 window already underway and likely to be mostly over before the Utah Stations have received approved post-Auction facilities and reimbursement allocations. Even during the windows when construction is possible, travel up the mountainside for large vehicles requires a slow trip up a single-lane dirt road, as well as careful coordination among the site's more than 25 tenants for the use of the site's limited parking and storage space.

Given these myriad challenges, completing construction of the Utah Stations' shared post-Auction facilities by the Phase 1 deadline — with most of the work having to occur in the 2018 construction window — will be extremely difficult under the best of circumstances, and may be possible only because of the Utah Stations' close coordination in designing the alternate post-Auction facilities the stations intend to request in the first priority window.

At a minimum, however, the Utah Stations must be permitted to test their new transmitters on a rolling basis as soon as each transmitter is installed. Power at the site, which must be trenched up from Tooele County on the west side of the mountain range, is limited, and the site already is operating near its power capacity. The site accordingly cannot support the testing of all six new transmitters, along with the continued operation of the Utah Stations' existing transmitters, during the scheduled Phase 1 testing window. Instead, each of the Utah Stations should be permitted to begin testing its post-Auction transmitter once it is installed, and to cease operating on its pre-Auction channel once its testing is complete (subject to satisfying the applicable notification requirements to viewers and MVPDs).

⁴ See *Incentive Auction Task Force and Media Bureau Adopt Post-Incentive Auction Transition Scheduling Plan*, Public Notice, 32 FCC Rcd 890, 910-11 ¶ 44 (MB 2017) (“*Transition Scheduling PN*”).

The *Transition Scheduling PN* states that the prohibition on stations beginning their tests before the scheduled testing period is intended to “minimize interference, incentivize the distribution of resources across the phases, and encourage stations within a phase to switch to their post-auction channels at roughly the same time, which will minimize confusion to television viewers.”⁵ In this case, however, these considerations either do not apply or are outweighed by other factors. First, the Utah Stations’ proposed post-Auction facilities are not part of any linked-station set and will not cause more than *de minimis* interference to each other (on either their pre-Auction or post-Auction channels) or to any other station. Second, because the Utah Stations are assigned to Phase 1, permitting them to begin testing early cannot draw resources away from any other phase. Finally, although it would be ideal for the Utah Stations to switch to their post-Auction channels at roughly the same time, maintaining each station’s pre-Auction service until all of the stations have completed their testing is not feasible given the power limitations of the Farnsworth Peak site. Nonetheless, each station will complete the required notifications to viewers and MVPDs,⁶ thus ensuring that all stakeholders are fully informed and prepared for each station’s transition.

The Utah Stations Cannot Construct the Assigned Post-Auction Facilities

Six of the eight Utah Stations, including KUED, have been reassigned to new channels in the post-Auction repacking, and all six of these repacked stations have been assigned to transition in Phase 1.⁷ However, the Utah Stations have determined that it is not possible to construct their assigned post-Auction facilities at the Farnsworth Peak site.

Specifically, an engineering analysis by William Meintel of Meintel, Sgrignoli & Wallace (“MSW”) determined that the new shared antennas required for the Utah Stations to continue operating at the site would not allow any of the repacked Utah Stations to duplicate its pre-Auction contour on its new channel without expanding its contour by more than one percent in any direction.⁸ MSW’s report, including contour maps comparing each Utah Station’s allotted contour with the contour produced by the new antennas, is attached hereto as Attachment A.

In addition, the Utah Stations’ antenna manufacturer, Kathrein, has determined that it will be far more difficult to design a new antenna system that can accommodate all eight Utah Stations if KUED is required to construct its post-Auction facility on Channel 15, as it is currently assigned.⁹ The Utah Stations’ antenna system is protected from the site’s harsh environment by a hardened GRP cylinder, which the Utah Stations intend to reuse for the new antenna system. However, relocating KUED to Channel 15, while retaining the existing

⁵ *Id.*

⁶ See *Incentive Auction Task Force and Media Bureau Announce Procedures for the Post-Incentive Auction Broadcast Transition*, Public Notice, 32 FCC Rcd 858, 874 ¶¶ 50-51 (MB 2017) (“*Procedures PN*”).

⁷ The Commission did not reassign KUTV or KUEN.

⁸ See 47 C.F.R. § 73.3700(b)(1)(ii)(B).

⁹ Kathrein’s report and recommendation is attached hereto as Attachment B.

cylinder, would result in KUED’s wavelength increasing by 39 percent; designing measures to mitigate the effect of this increase on the antenna patterns of KUED and the other Utah Stations would require significant effort. Instead, KUED intends to apply in the first priority window for authority to construct its post-Auction facility on Channel 27, which Kathrein has determined can be accommodated with far less effort.

Because KUED and the other repacked Utah Stations cannot “construct facilities that meet the technical parameters specified in the *Closing and Reassignment Public Notice* within the permissible contour coverage variance,” these stations qualify for “unable to construct” waivers of the initial construction permit application deadline.¹⁰ Moreover, there is good cause for granting the requested waivers.¹¹ A waiver is appropriate “where the particular facts make strict compliance inconsistent with the public interest” and a deviation from the general rule would relieve hardship or produce a “more effective implementation of overall policy on an individual basis.”¹² In this case, it would not be consistent with the public interest to require KUED and the other Utah Stations to apply for post-Auction facilities that their engineering analysis shows cannot be constructed in compliance with the Commission’s contour-expansion restrictions. Nor would it be in the public interest to require KUED to construct its post-Auction facility on a channel that, due to antenna-design challenges, would risk causing additional delay in a construction schedule that — as described above — already will be extremely challenging.

To the contrary, the Utah Stations’ experience during and after the DTV transition demonstrates that the Commission’s overall policy goals — maintaining broadcast television service to the public, supporting the provision of non-commercial television service, and providing for an efficient and cost-effective post-Auction transition — are far better served by allowing the repacked Utah Stations to apply for alternate post-Auction facilities that would allow these stations to continue sharing combiners and antennas at their existing site. Given KUED’s limited resources as a non-commercial educational station owned by a public university, it is especially critical for KUED to maintain its ability to share equipment and operational costs with the other DTV Utah stations, which supports the continued viability of KUED’s non-commercial service.

The Commission has recognized that “alternative transition solutions” proposed by repacked stations “may reduce reimbursement costs or implement a market-wide transition plan that could allow stations to more efficiently utilize limited resources, facilitate coordination, or reduce the impact of the transition on television viewers.”¹³ Such is the case with the Utah Stations’ requested waivers, which will facilitate the stations’ ability to construct coordinated, cost-effective post-Auction facilities. In addition, the alternate facilities the Utah Stations intend to apply for would not impact any other stations. The Utah Stations’ proposal would not create

¹⁰ See *Procedures PN*, 32 FCC Rcd at 865 ¶ 24.

¹¹ See *id.* at 865 ¶ 24 n.36 (citing 47 C.F.R. § 1.3).

¹² *Id.* (citing *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) and *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969)).

¹³ See *Transition Scheduling PN*, 32 FCC Rcd at 913 ¶ 50.

any new linked-station sets, cause new interference (beyond the Commission's 0.5 percent *de minimis* standard) to any other station, or otherwise delay or disrupt any station's transition.

Accordingly, the Commission should waive the initial construction permit application deadline for KUED and the other repacked Utah Stations.

* * *

For the reasons set forth herein, public interest would be best served by (1) waiving the initial construction permit deadline for KUED and the other repacked Utah Stations, and (2) permitting the Utah Stations to test and transition to their post-Auction facilities on a rolling basis as soon as their new facilities are ready..

Attachment A

**Report to
DTV Utah**

**Regarding Assessment of the Impact on Other Post
Incentive Auction Stations if DTV Utah Stations Utilize
Kathrein Antenna Model 75010043**

DTV Utah STATIONS

KUED Salt Lake City, UT - KBYU Provo, UT

KJZZ Salt Lake City, UT - KSL Salt Lake City, UT

KTVX Salt Lake City, UT – KUTV Salt Lake City, UT

KUCW Ogden, UT - KUEN Ogden, UT

Prepared by:



**Meintel, Sgrignoli, & Wallace, LLC
1282 Smallwood Drive
Suite 372
Waldorf, Maryland 20603
(202) 251-7589**

BACKGROUND

The stations that comprise DTV Utah: KUED Salt Lake City, UT; KBYU Provo, UT; KJZZ Salt Lake City, UT; KSL Salt Lake City, UT; KTVX Salt Lake City, UT; KUTV Salt Lake City, UT; KUCW Ogden, UT and KUEN Ogden, UT share the same site and antenna system. As a result of the FCC's Incentive Auction, six of the eight stations are being repacked to new channels making use of the common antenna system problematic. In view of this, a new antenna (Kathrein 75010043) model has been proposed. Because the azimuth patterns for the individual stations vary slightly from allotted patterns there is the potential of new interference to other stations as well as contour excursions that could exceed the FCC's limit of 1% for initial construction permit applications.

ANALYSES

MSW has analyzed each of the eight DTV Utah stations utilizing the FCC's TVStudy software to determine if the predicted contours exceed the FCC's 1% limit and further to assess if new non-deminimis interference is predicted to other stations as the result of utilizing the proposed Kathrein Model 75010043 antenna. For these studies, the parameters for each station remained the same as those allotted with only the antenna azimuth pattern being changed.

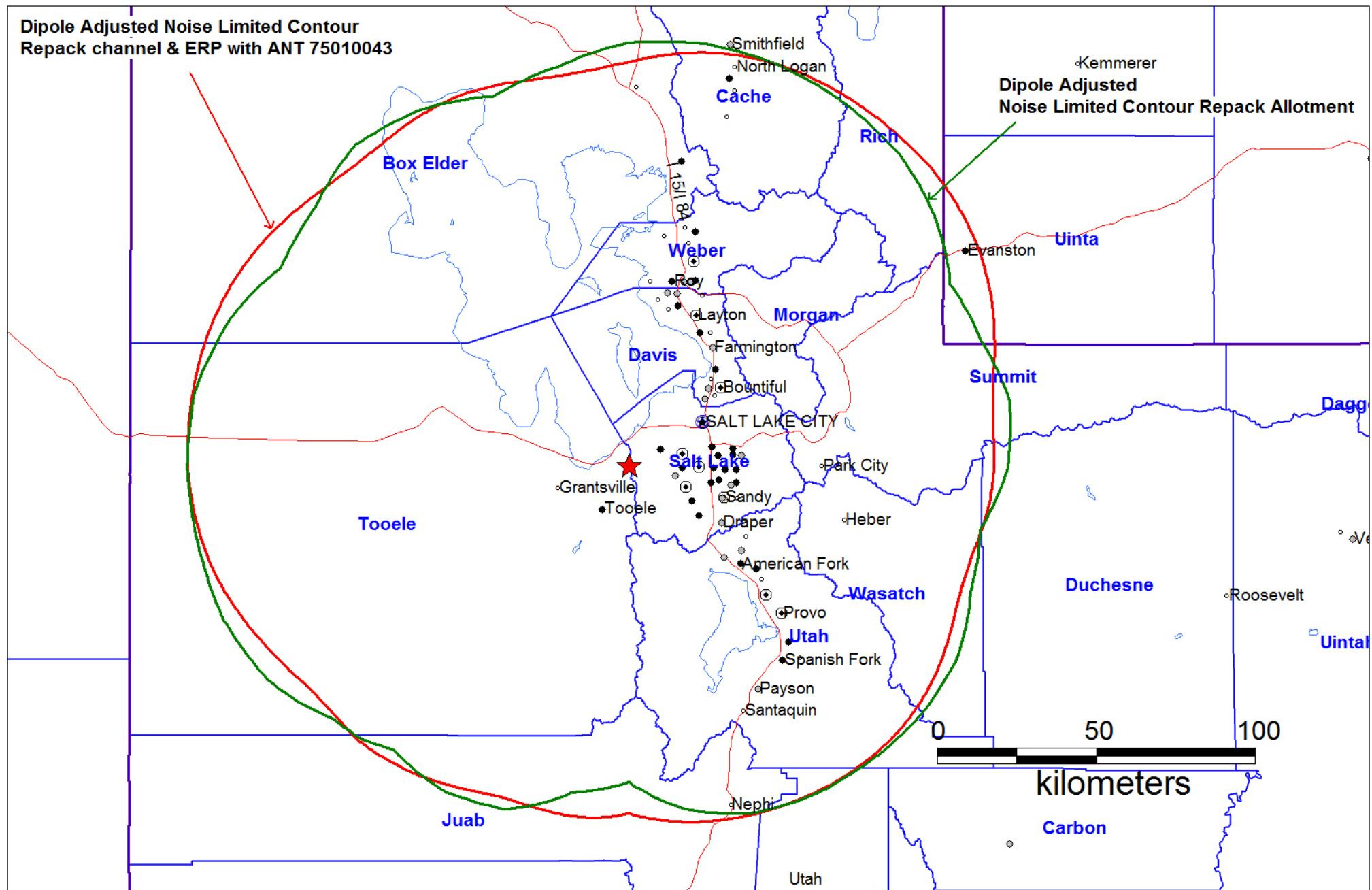
The study shows that each of the eight stations predicted contour will exceed the FCC's 1% limit on some azimuths; however, on others the contour does not reach the contour predicted for the allotted facility. Maps have been prepared for each station showing the comparison of the predicted allotment facility contour to that predicted using the new antenna pattern. In addition, a tabulation of the azimuths where the 1% limit was exceeded has been extracted from the TVStudy output files. Both the maps and the 1% excursion azimuth tabulations are provided as attachments to this report.

As discussed above, the analyses indicated that none of the eight stations would meet the 1% contour excursion limit utilizing the new antenna; however, on the other hand no new interference exceeding the deminimis limit was predicted to be caused to other stations. Attached to this report are the TVStudy result file (tvixstudy.txt) for each station verifying that no non-deminimis interference is predicted and for comparison the TVStudy result file for the analysis of each of the allotment facilities is also attached. In addition, the new antenna azimuth pattern tabulations for each of the stations used to perform the analyses are provided as well.

It is further noted, the difference in the antenna patterns causes an insignificant difference in the predicted interference free population of the eight stations. Five of the stations show a slight population gain (0.11% or less) while three are predicted to have a slight loss (less than 0.06%) of interference free service. See the attached tabulation of the predicted service gains and losses of the individual stations.

CONCLUSION

Due to the fact that the Salt Lake City market is largely isolated from other television markets the differences caused by the proposed new antenna pattern have a negligible effect on other post Incentive Auction allotments. In addition, the new pattern also has an insignificant impact of the predicted service of the individual stations.



KUED Salt Lake City, UT
Comparison of Repack Allotment (CH 15) vs. Antenna 75010043

KUED (Points where contour exceeds 1% limit)

Azimuth	Distance	Latitude	Longitude	HAAT	ERP (dBk)	Fails
26.00	132.80	41.7308	111.5010	1367.14	21.19	1
26.19	132.79	41.7291	111.4963	1366.95	21.20	1
26.47	132.79	41.7264	111.4893	1366.67	21.20	1
26.90	132.79	41.7223	111.4786	1366.23	21.20	1
27.00	132.79	41.7213	111.4761	1366.13	21.20	1
27.43	132.78	41.7171	111.4655	1365.70	21.20	1
27.73	132.77	41.7140	111.4581	1365.39	21.20	1
27.95	132.76	41.7118	111.4528	1365.17	21.20	1
28.00	132.76	41.7113	111.4516	1365.12	21.20	1
28.66	132.72	41.7044	111.4358	1364.46	21.20	1
29.00	132.70	41.7007	111.4275	1364.12	21.19	1
29.23	132.68	41.6983	111.4221	1363.88	21.19	1
29.39	132.67	41.6965	111.4183	1363.72	21.19	1
30.00	132.62	41.6897	111.4039	1363.11	21.18	1
30.35	132.60	41.6858	111.3956	1362.76	21.17	1
30.45	132.59	41.6847	111.3933	1362.66	21.17	1
30.59	132.59	41.6832	111.3900	1362.52	21.17	1
30.81	132.58	41.6807	111.3848	1362.29	21.17	1
31.00	132.56	41.6785	111.3803	1362.10	21.17	1
31.35	132.54	41.6745	111.3722	1361.75	21.16	1
31.60	132.52	41.6716	111.3664	1361.49	21.16	1
31.77	132.50	41.6695	111.3624	1361.32	21.16	1
31.88	132.49	41.6683	111.3599	1361.21	21.15	1
31.96	132.49	41.6673	111.3582	1361.13	21.15	1
32.00	132.48	41.6669	111.3572	1361.09	21.15	1
32.15	132.47	41.6651	111.3538	1360.94	21.15	1
32.37	132.45	41.6625	111.3488	1360.72	21.14	1
32.70	132.43	41.6585	111.3412	1360.38	21.14	1
33.00	132.40	41.6549	111.3344	1360.08	21.13	1
33.23	132.38	41.6521	111.3293	1359.85	21.13	1
33.39	132.36	41.6501	111.3257	1359.69	21.12	1
34.00	132.30	41.6425	111.3121	1359.08	21.11	1
34.05	132.29	41.6418	111.3109	1359.02	21.11	1
34.10	132.29	41.6412	111.3098	1358.97	21.11	1
34.15	132.28	41.6406	111.3087	1358.92	21.10	1
34.22	132.28	41.6397	111.3072	1358.85	21.10	1
34.32	132.27	41.6385	111.3051	1358.76	21.10	1
34.46	132.26	41.6368	111.3020	1358.62	21.10	1
34.67	132.24	41.6341	111.2973	1358.40	21.10	1
34.97	132.22	41.6304	111.2907	1358.10	21.09	1
35.00	132.21	41.6299	111.2899	1358.07	21.09	1
36.00	132.13	41.6171	111.2681	1357.06	21.07	1
37.00	132.05	41.6040	111.2466	1356.05	21.05	1

37.15	132.04	41.6020	111.2434	1355.90	21.05	1
37.37	132.02	41.5992	111.2388	1355.68	21.05	1
37.70	131.99	41.5946	111.2316	1355.34	21.04	1
38.00	131.97	41.5906	111.2254	1355.05	21.04	1
38.35	131.93	41.5859	111.2181	1354.69	21.03	1
38.60	131.91	41.5824	111.2129	1354.44	21.02	1
38.77	131.89	41.5800	111.2094	1354.27	21.02	1
38.89	131.87	41.5783	111.2069	1354.14	21.01	1
38.97	131.87	41.5772	111.2053	1354.07	21.01	1
39.00	131.86	41.5768	111.2047	1354.04	21.01	1
40.00	131.75	41.5627	111.1844	1353.03	20.98	1
41.00	131.65	41.5484	111.1645	1352.02	20.96	1
41.25	131.62	41.5447	111.1595	1351.77	20.95	1
41.42	131.60	41.5422	111.1561	1351.59	20.94	1
41.54	131.59	41.5405	111.1538	1351.47	20.94	1
42.00	131.54	41.5338	111.1449	1351.01	20.93	1
42.43	131.50	41.5275	111.1365	1350.58	20.92	1
42.55	131.49	41.5258	111.1342	1350.46	20.92	1
42.72	131.48	41.5232	111.1308	1350.29	20.92	1
42.97	131.46	41.5195	111.1260	1350.03	20.91	1
43.00	131.46	41.5191	111.1255	1350.01	20.91	1
44.00	131.35	41.5040	111.1066	1349.00	20.88	1
45.00	131.19	41.4884	111.0886	1347.99	20.84	1
45.27	131.13	41.4840	111.0839	1347.31	20.82	1
45.44	131.09	41.4813	111.0811	1346.90	20.81	1
45.57	131.06	41.4792	111.0789	1346.57	20.81	1
46.00	130.95	41.4721	111.0716	1345.49	20.78	1
46.12	130.93	41.4701	111.0696	1345.19	20.78	1
46.30	130.88	41.4671	111.0666	1344.73	20.77	1
46.57	130.82	41.4626	111.0621	1344.06	20.75	1
46.96	130.73	41.4562	111.0558	1343.10	20.73	1
47.00	130.72	41.4555	111.0551	1342.99	20.73	1
47.23	130.66	41.4517	111.0514	1342.42	20.71	1
47.39	130.62	41.4490	111.0489	1342.02	20.70	1
48.00	130.46	41.4387	111.0392	1340.49	20.66	1
48.53	130.33	41.4297	111.0309	1339.16	20.63	1
48.68	130.29	41.4272	111.0286	1338.79	20.63	1
48.89	130.24	41.4236	111.0253	1338.26	20.61	1
49.00	130.22	41.4218	111.0236	1337.99	20.61	1
50.00	129.95	41.4045	111.0087	1335.49	20.54	1
51.00	129.66	41.3870	110.9944	1332.99	20.47	1
51.39	129.53	41.3801	110.9891	1332.02	20.43	1
51.65	129.45	41.3753	110.9856	1331.36	20.41	1
51.82	129.39	41.3723	110.9833	1330.94	20.40	1
51.94	129.35	41.3702	110.9818	1330.64	20.39	1
52.00	129.33	41.3691	110.9809	1330.48	20.38	1

53.00	129.01	41.3511	110.9679	1327.98	20.29	1
53.07	128.98	41.3498	110.9670	1327.80	20.29	1
53.13	128.96	41.3488	110.9663	1327.67	20.28	1
53.18	128.95	41.3479	110.9657	1327.54	20.28	1
53.25	128.92	41.3466	110.9647	1327.36	20.27	1
53.35	128.89	41.3447	110.9634	1327.11	20.26	1
53.50	128.84	41.3420	110.9616	1326.74	20.25	1
53.71	128.77	41.3381	110.9589	1326.20	20.23	1
54.00	128.68	41.3329	110.9554	1325.48	20.21	1
54.43	128.52	41.3250	110.9503	1324.41	20.16	1
54.77	128.39	41.3187	110.9465	1323.57	20.12	1
54.98	128.30	41.3148	110.9442	1323.04	20.10	1
55.00	128.29	41.3143	110.9439	1322.98	20.10	1
55.23	128.20	41.3101	110.9414	1322.41	20.07	1
55.39	128.13	41.3071	110.9397	1322.01	20.05	1
56.00	127.88	41.2955	110.9332	1320.48	19.98	1
56.59	127.65	41.2845	110.9269	1319.01	19.91	1
56.75	127.59	41.2815	110.9253	1318.61	19.90	1
56.97	127.50	41.2773	110.9230	1318.04	19.87	1
57.00	127.49	41.2768	110.9227	1317.98	19.87	1
58.00	127.07	41.2578	110.9130	1315.48	19.74	1
59.00	126.62	41.2386	110.9041	1312.98	19.61	1
59.39	126.44	41.2311	110.9009	1312.01	19.55	1
59.94	126.18	41.2204	110.8965	1310.63	19.47	1
60.00	126.15	41.2192	110.8960	1310.48	19.46	1
60.20	126.04	41.2154	110.8946	1309.99	19.43	1
61.00	125.61	41.1996	110.8891	1307.98	19.29	1
61.81	125.22	41.1838	110.8833	1305.95	19.17	1
62.00	125.13	41.1801	110.8821	1305.48	19.14	1
62.43	124.90	41.1717	110.8794	1304.40	19.06	1
62.73	124.73	41.1657	110.8777	1303.64	19.00	1
62.93	124.62	41.1618	110.8766	1303.16	18.97	1
63.00	124.58	41.1604	110.8762	1302.98	18.96	1
64.00	124.00	41.1406	110.8712	1300.48	18.76	1
64.39	123.77	41.1328	110.8696	1299.51	18.68	1
64.65	123.60	41.1276	110.8685	1298.85	18.63	1
64.84	123.49	41.1239	110.8678	1298.38	18.59	1
64.97	123.41	41.1212	110.8673	1298.05	18.56	1
65.00	123.39	41.1206	110.8671	1297.97	18.55	1
65.11	123.32	41.1184	110.8667	1297.70	18.53	1
65.27	123.22	41.1151	110.8661	1297.29	18.49	1
65.53	123.06	41.1101	110.8652	1296.66	18.44	1
65.91	122.82	41.1024	110.8639	1295.70	18.36	1
66.00	122.77	41.1007	110.8637	1295.47	18.34	1
66.31	122.57	41.0944	110.8627	1294.69	18.26	1
66.81	122.24	41.0844	110.8615	1293.44	18.15	1

67.00	122.11	41.0806	110.8611	1292.97	18.10	1
67.18	121.98	41.0770	110.8608	1292.53	18.06	1
68.00	121.38	41.0604	110.8599	1290.47	17.84	1
69.00	120.73	41.0406	110.8582	1287.97	17.60	1
69.28	120.55	41.0350	110.8578	1287.27	17.54	1
69.36	120.50	41.0335	110.8577	1287.07	17.52	1
69.48	120.43	41.0311	110.8575	1286.77	17.49	1
69.64	120.33	41.0279	110.8573	1286.36	17.46	1
69.88	120.18	41.0233	110.8570	1285.78	17.40	1
70.00	120.11	41.0209	110.8568	1285.47	17.38	1
71.00	119.47	41.0013	110.8560	1282.97	17.14	1
71.10	119.41	40.9993	110.8560	1282.72	17.12	1
71.23	119.32	40.9967	110.8559	1282.39	17.09	1
71.45	119.19	40.9924	110.8558	1281.84	17.03	1
71.77	118.98	40.9861	110.8558	1281.03	16.96	1
72.00	118.83	40.9817	110.8558	1280.47	16.90	1
162.31	114.59	39.6762	111.7958	790.65	21.18	1
162.53	114.53	39.6755	111.8008	789.27	21.18	1
162.68	114.49	39.6751	111.8042	788.33	21.18	1
162.78	114.47	39.6748	111.8066	787.68	21.18	1
162.85	114.45	39.6746	111.8082	787.23	21.18	1
162.91	114.43	39.6744	111.8096	786.86	21.18	1
162.97	114.42	39.6742	111.8110	786.47	21.18	1
163.00	114.41	39.6741	111.8117	786.26	21.18	1
163.31	114.33	39.6732	111.8190	784.26	21.18	1
163.40	114.31	39.6729	111.8210	783.72	21.18	1
163.52	114.28	39.6726	111.8238	782.93	21.18	1
163.71	114.23	39.6720	111.8281	781.74	21.18	1
163.97	114.17	39.6713	111.8343	780.06	21.18	1
164.00	114.16	39.6712	111.8349	779.87	21.18	1
164.43	114.05	39.6701	111.8449	777.12	21.17	1
164.70	113.97	39.6695	111.8513	775.38	21.17	1
164.90	113.92	39.6691	111.8558	774.13	21.17	1
165.00	113.89	39.6688	111.8582	773.48	21.17	1
165.19	113.84	39.6684	111.8625	772.30	21.17	1
165.44	113.77	39.6679	111.8685	770.66	21.16	1
165.81	113.68	39.6671	111.8770	768.32	21.16	1
166.00	113.62	39.6668	111.8815	767.09	21.16	1
166.39	113.51	39.6661	111.8905	764.61	21.15	1
166.65	113.43	39.6657	111.8966	762.93	21.15	1
166.82	113.38	39.6655	111.9005	761.86	21.15	1
166.94	113.35	39.6653	111.9033	761.10	21.14	1
167.00	113.33	39.6652	111.9048	760.70	21.14	1
168.00	113.04	39.6640	111.9281	754.31	21.12	1
168.06	113.02	39.6639	111.9294	753.94	21.12	1
168.12	113.01	39.6639	111.9308	753.55	21.12	1

168.19	112.99	39.6638	111.9325	753.10	21.12	1
168.30	112.95	39.6637	111.9350	752.40	21.12	1
168.46	112.91	39.6635	111.9387	751.37	21.12	1
168.69	112.84	39.6633	111.9441	749.89	21.11	1
169.00	112.75	39.6631	111.9513	747.92	21.11	1
169.48	112.59	39.6629	111.9624	744.86	21.09	1
169.79	112.49	39.6629	111.9696	742.89	21.08	1
170.00	112.42	39.6629	111.9746	741.53	21.07	1
171.00	112.07	39.6631	111.9978	735.14	21.03	1
171.43	111.91	39.6634	112.0078	732.38	21.00	1
171.73	111.79	39.6636	112.0149	730.45	20.99	1
171.93	111.72	39.6638	112.0194	729.21	20.98	1
172.00	111.69	39.6638	112.0211	728.74	20.97	1
172.19	111.63	39.6640	112.0253	727.56	20.96	1
172.47	111.52	39.6643	112.0319	725.74	20.95	1
172.86	111.38	39.6647	112.0409	723.27	20.93	1
173.00	111.32	39.6649	112.0442	722.35	20.92	1
173.43	111.15	39.6655	112.0541	719.60	20.89	1
173.70	111.05	39.6660	112.0604	717.86	20.88	1
173.90	110.97	39.6663	112.0649	716.62	20.86	1
174.00	110.93	39.6665	112.0672	715.96	20.86	1
174.06	110.90	39.6666	112.0685	715.59	20.85	1
174.12	110.88	39.6667	112.0699	715.20	20.85	1
174.19	110.85	39.6668	112.0716	714.75	20.84	1
174.29	110.82	39.6670	112.0738	714.12	20.84	1
174.43	110.76	39.6673	112.0772	713.19	20.83	1
174.65	110.67	39.6677	112.0822	711.79	20.82	1
174.97	110.55	39.6683	112.0893	709.79	20.80	1
175.00	110.53	39.6684	112.0901	709.57	20.79	1
176.00	110.10	39.6710	112.1130	703.18	20.71	1
176.25	109.98	39.6717	112.1187	701.56	20.68	1
176.42	109.90	39.6723	112.1226	700.47	20.67	1
176.53	109.84	39.6726	112.1250	699.79	20.66	1
177.00	109.62	39.6742	112.1357	696.79	20.61	1
177.48	109.40	39.6758	112.1465	693.73	20.56	1
177.61	109.34	39.6762	112.1494	692.89	20.55	1
177.80	109.26	39.6769	112.1536	691.70	20.53	1
178.00	109.16	39.6776	112.1582	690.40	20.51	1
178.48	108.93	39.6795	112.1689	687.34	20.46	1
178.82	108.75	39.6809	112.1766	685.16	20.42	1
179.00	108.66	39.6817	112.1806	684.01	20.40	1
179.10	108.60	39.6821	112.1828	683.38	20.39	1
179.61	108.27	39.6851	112.1941	680.11	20.32	1
179.72	108.21	39.6856	112.1966	679.40	20.31	1
179.87	108.15	39.6861	112.1998	678.46	20.29	1
180.00	108.14	39.6862	112.2027	677.62	20.27	1

180.20	108.16	39.6860	112.2072	680.86	20.25	1
180.33	108.20	39.6857	112.2101	682.95	20.23	1
180.88	108.45	39.6835	112.2223	691.75	20.15	1
180.99	108.49	39.6832	112.2246	693.42	20.13	1
181.00	108.49	39.6832	112.2249	693.61	20.13	1
181.06	108.52	39.6830	112.2263	694.64	20.12	1
181.15	108.55	39.6827	112.2281	695.97	20.11	1
181.28	108.59	39.6824	112.2310	698.02	20.09	1
181.46	108.66	39.6818	112.2351	700.96	20.06	1
181.75	108.76	39.6810	112.2415	705.55	20.02	1
182.00	108.86	39.6803	112.2471	709.60	19.99	1
182.15	108.91	39.6800	112.2505	712.00	19.97	1
182.37	108.99	39.6794	112.2553	715.46	19.94	1
182.67	109.09	39.6787	112.2621	720.31	19.89	1
183.00	109.20	39.6780	112.2695	725.59	19.85	1
183.15	109.25	39.6777	112.2729	727.99	19.82	1
183.37	109.32	39.6772	112.2778	731.45	19.79	1
183.67	109.42	39.6767	112.2846	736.30	19.74	1
184.00	109.51	39.6762	112.2920	741.59	19.69	1
184.35	109.60	39.6758	112.2999	747.16	19.63	1
184.88	109.73	39.6754	112.3117	755.60	19.54	1
185.00	109.76	39.6754	112.3145	757.58	19.51	1
185.23	109.80	39.6753	112.3197	761.24	19.47	1
185.39	109.83	39.6753	112.3233	763.78	19.44	1
186.00	109.93	39.6754	112.3370	773.57	19.31	1
186.66	110.06	39.6755	112.3518	784.06	19.19	1
186.84	110.10	39.6755	112.3560	786.98	19.15	1
187.00	110.13	39.6756	112.3596	789.56	19.12	1
187.25	110.17	39.6758	112.3653	793.63	19.07	1
187.65	110.23	39.6761	112.3743	799.96	18.99	1
188.00	110.27	39.6765	112.3821	805.55	18.92	1
189.00	110.36	39.6782	112.4045	821.55	18.70	1
189.17	110.38	39.6786	112.4083	824.21	18.67	1
189.43	110.39	39.6791	112.4141	828.39	18.61	1
189.80	110.42	39.6800	112.4225	834.39	18.53	1
190.00	110.42	39.6805	112.4269	837.54	18.48	1
190.10	110.43	39.6808	112.4291	839.11	18.46	1
190.25	110.43	39.6812	112.4324	841.52	18.42	1
190.46	110.44	39.6818	112.4371	844.91	18.38	1
190.78	110.45	39.6827	112.4442	850.00	18.30	1
191.00	110.45	39.6834	112.4491	853.53	18.25	1
191.66	110.44	39.6857	112.4636	864.02	18.10	1
192.00	110.44	39.6869	112.4711	869.52	18.02	1
192.19	110.43	39.6877	112.4754	872.63	17.97	1
193.00	110.36	39.6913	112.4930	885.51	17.76	1
193.53	110.34	39.6936	112.5046	894.01	17.64	1

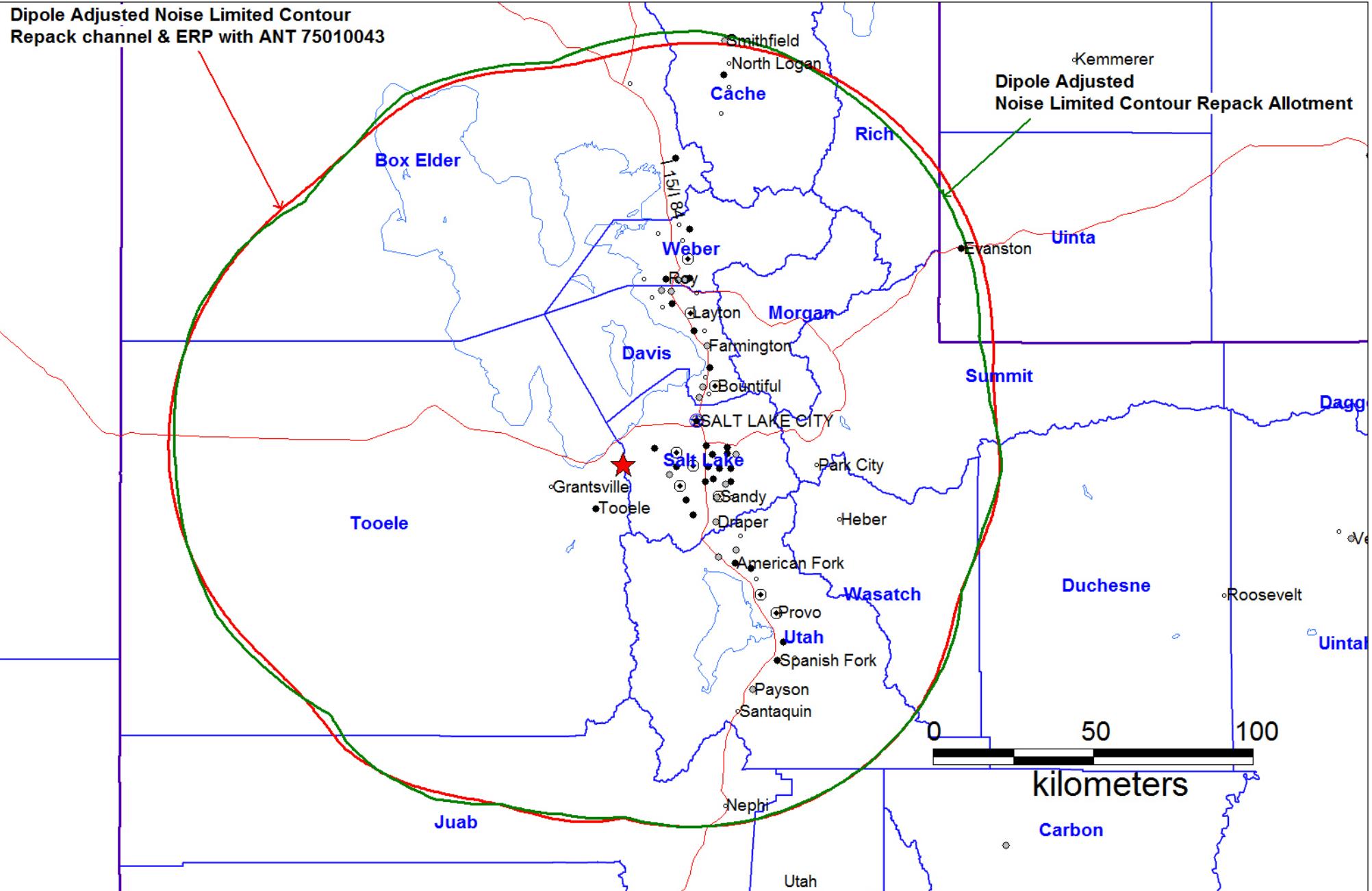
193.68	110.34	39.6942	112.5078	896.36	17.61	1
193.89	110.33	39.6951	112.5124	899.74	17.56	1
194.00	110.33	39.6956	112.5148	901.50	17.54	1
194.35	110.31	39.6972	112.5224	907.08	17.46	1
194.58	110.30	39.6982	112.5273	910.71	17.41	1
194.74	110.30	39.6990	112.5309	913.34	17.38	1
194.85	110.29	39.6995	112.5333	915.13	17.35	1
194.92	110.29	39.6999	112.5348	916.26	17.34	1
194.99	110.29	39.7001	112.5362	917.26	17.32	1
195.00	110.29	39.7002	112.5365	917.50	17.32	1
195.25	110.28	39.7014	112.5420	921.56	17.27	1
195.42	110.27	39.7023	112.5457	924.29	17.23	1
215.73	117.08	39.8012	113.0034	1249.02	16.52	1
215.80	117.11	39.8018	113.0049	1250.11	16.52	1
215.86	117.13	39.8022	113.0062	1251.02	16.52	1
216.00	117.19	39.8033	113.0094	1253.32	16.52	1
217.00	117.58	39.8113	113.0315	1269.32	16.51	1
217.06	117.61	39.8117	113.0328	1270.25	16.51	1
217.14	117.64	39.8124	113.0346	1271.58	16.50	1
217.27	117.69	39.8135	113.0375	1273.64	16.50	1
217.46	117.76	39.8150	113.0415	1276.61	16.49	1
217.72	117.85	39.8173	113.0472	1280.77	16.49	1
218.00	117.95	39.8197	113.0533	1285.31	16.48	1
218.91	118.22	39.8282	113.0727	1299.91	16.42	1
219.00	118.25	39.8290	113.0745	1301.30	16.42	1
219.16	118.31	39.8304	113.0780	1303.88	16.41	1
220.00	118.67	39.8378	113.0965	1317.29	16.40	1
221.00	119.06	39.8471	113.1180	1333.28	16.37	1
221.06	119.08	39.8476	113.1192	1334.21	16.37	1
221.13	119.10	39.8483	113.1207	1335.29	16.37	1
221.23	119.14	39.8493	113.1229	1336.99	16.36	1
221.39	119.20	39.8509	113.1263	1339.52	16.35	1
221.63	119.28	39.8532	113.1313	1343.30	16.34	1
221.96	119.40	39.8566	113.1384	1348.68	16.33	1
222.00	119.41	39.8569	113.1391	1349.28	16.33	1
222.59	119.58	39.8632	113.1513	1358.72	16.28	1
223.00	119.69	39.8676	113.1595	1365.27	16.25	1
223.97	119.92	39.8785	113.1788	1380.76	16.16	1
224.00	119.93	39.8788	113.1794	1381.26	16.16	1
224.12	119.97	39.8801	113.1819	1383.18	16.15	1
224.63	120.23	39.8851	113.1931	1391.38	16.14	1
224.74	120.27	39.8862	113.1953	1393.04	16.13	1
281.90	137.28	40.9029	113.8017	1523.22	21.22	1
281.95	137.27	40.9039	113.8014	1523.19	21.22	1
282.00	137.27	40.9049	113.8012	1523.17	21.22	1
283.00	137.24	40.9259	113.7951	1522.69	21.21	1

283.12	137.23	40.9285	113.7943	1522.63	21.21	1
283.30	137.23	40.9323	113.7932	1522.54	21.21	1
283.57	137.22	40.9380	113.7914	1522.41	21.21	1
283.96	137.20	40.9460	113.7888	1522.22	21.20	1
284.00	137.20	40.9469	113.7885	1522.20	21.20	1
284.28	137.19	40.9528	113.7865	1522.06	21.20	1
284.46	137.17	40.9566	113.7851	1521.98	21.19	1
284.60	137.16	40.9594	113.7841	1521.91	21.19	1
284.69	137.15	40.9613	113.7834	1521.86	21.19	1
284.75	137.14	40.9625	113.7829	1521.84	21.18	1
285.00	137.12	40.9677	113.7810	1521.72	21.18	1
285.05	137.12	40.9688	113.7806	1521.69	21.18	1
285.12	137.11	40.9702	113.7800	1521.66	21.17	1
285.22	137.11	40.9722	113.7793	1521.61	21.17	1
285.36	137.10	40.9752	113.7781	1521.54	21.17	1
285.58	137.08	40.9798	113.7763	1521.43	21.16	1
285.89	137.05	40.9860	113.7739	1521.28	21.15	1
286.00	137.04	40.9884	113.7729	1521.23	21.15	1
286.28	137.01	40.9941	113.7705	1521.09	21.14	1
286.49	136.99	40.9983	113.7686	1520.99	21.13	1
286.62	136.97	41.0010	113.7674	1520.93	21.12	1
286.71	136.95	41.0029	113.7665	1520.88	21.12	1
286.78	136.95	41.0043	113.7659	1520.85	21.12	1
287.00	136.92	41.0088	113.7639	1520.74	21.11	1
287.17	136.90	41.0122	113.7623	1520.66	21.10	1
287.40	136.87	41.0170	113.7601	1520.55	21.09	1
287.76	136.82	41.0241	113.7567	1520.38	21.07	1
288.00	136.79	41.0291	113.7543	1520.26	21.06	1
288.39	136.73	41.0369	113.7504	1520.07	21.04	1
288.65	136.69	41.0421	113.7477	1519.94	21.03	1
288.84	136.66	41.0459	113.7458	1519.85	21.02	1
288.96	136.64	41.0482	113.7445	1519.80	21.01	1
289.00	136.64	41.0491	113.7441	1519.77	21.01	1
289.05	136.63	41.0502	113.7435	1519.75	21.01	1
289.10	136.62	41.0512	113.7430	1519.72	21.00	1
289.17	136.61	41.0524	113.7423	1519.69	21.00	1
289.26	136.60	41.0543	113.7413	1519.65	21.00	1
289.40	136.58	41.0570	113.7399	1519.58	20.99	1
289.61	136.55	41.0612	113.7376	1519.48	20.98	1
289.93	136.50	41.0675	113.7341	1519.32	20.96	1
290.00	136.49	41.0690	113.7333	1519.29	20.96	1
290.43	136.41	41.0775	113.7284	1519.08	20.92	1
290.73	136.34	41.0834	113.7248	1518.93	20.90	1
290.93	136.30	41.0872	113.7225	1518.84	20.89	1
291.00	136.29	41.0886	113.7216	1518.80	20.88	1
292.00	136.06	41.1079	113.7091	1518.32	20.80	1

292.39	135.97	41.1153	113.7041	1518.13	20.77	1
292.65	135.90	41.1203	113.7006	1518.00	20.74	1
292.84	135.85	41.1239	113.6981	1517.91	20.73	1
292.97	135.82	41.1264	113.6963	1517.85	20.71	1
293.00	135.81	41.1269	113.6959	1517.83	20.71	1
294.00	135.55	41.1457	113.6823	1517.35	20.62	1
294.05	135.54	41.1467	113.6816	1517.32	20.61	1
294.10	135.53	41.1477	113.6809	1517.30	20.61	1
294.15	135.52	41.1486	113.6801	1517.27	20.60	1
294.23	135.50	41.1500	113.6791	1517.24	20.60	1
294.34	135.47	41.1522	113.6775	1517.18	20.59	1
294.51	135.43	41.1553	113.6752	1517.10	20.57	1
294.77	135.36	41.1601	113.6715	1516.97	20.55	1
295.00	135.30	41.1643	113.6682	1516.86	20.52	1
295.31	135.20	41.1701	113.6636	1516.71	20.49	1
295.51	135.14	41.1736	113.6606	1516.61	20.47	1
295.65	135.10	41.1761	113.6585	1516.55	20.45	1
295.75	135.07	41.1779	113.6570	1516.50	20.44	1
295.81	135.05	41.1791	113.6560	1516.47	20.43	1
295.86	135.03	41.1799	113.6553	1516.44	20.43	1
295.91	135.02	41.1808	113.6545	1516.42	20.42	1
296.00	134.99	41.1825	113.6531	1516.38	20.41	1
296.15	134.94	41.1852	113.6508	1516.30	20.39	1
296.37	134.87	41.1890	113.6475	1516.20	20.37	1
296.70	134.77	41.1951	113.6423	1516.03	20.33	1
297.00	134.67	41.2003	113.6376	1515.89	20.29	1
297.39	134.54	41.2072	113.6314	1515.70	20.25	1
297.68	134.44	41.2123	113.6266	1515.56	20.21	1
297.87	134.38	41.2156	113.6235	1515.47	20.18	1
298.00	134.33	41.2178	113.6214	1515.40	20.17	1
298.05	134.31	41.2188	113.6205	1515.38	20.16	1
298.10	134.29	41.2196	113.6197	1515.35	20.15	1
298.15	134.28	41.2205	113.6188	1515.33	20.15	1
298.23	134.25	41.2218	113.6176	1515.29	20.14	1
298.33	134.22	41.2236	113.6159	1515.24	20.12	1
298.49	134.16	41.2263	113.6134	1515.17	20.11	1
298.71	134.09	41.2301	113.6097	1515.06	20.08	1
299.00	133.98	41.2351	113.6047	1514.92	20.04	1
299.48	133.79	41.2431	113.5964	1514.69	19.97	1
299.79	133.66	41.2482	113.5909	1514.54	19.92	1
300.00	133.57	41.2518	113.5871	1514.43	19.89	1
300.21	133.49	41.2551	113.5833	1514.33	19.85	1
301.00	133.13	41.2680	113.5687	1513.95	19.72	1
301.81	132.82	41.2811	113.5540	1513.55	19.61	1
302.00	132.74	41.2842	113.5505	1513.46	19.58	1
302.39	132.58	41.2903	113.5433	1513.27	19.52	1

302.65	132.46	41.2944	113.5383	1513.15	19.47	1
302.84	132.38	41.2973	113.5347	1513.06	19.44	1
302.97	132.32	41.2994	113.5322	1512.99	19.42	1
303.00	132.31	41.2999	113.5316	1512.98	19.42	1
303.05	132.29	41.3007	113.5306	1512.95	19.41	1
303.10	132.27	41.3014	113.5297	1512.93	19.40	1
303.15	132.24	41.3023	113.5287	1512.90	19.39	1
303.22	132.22	41.3033	113.5274	1512.87	19.38	1
303.33	132.17	41.3049	113.5254	1512.82	19.37	1
303.48	132.10	41.3073	113.5224	1512.74	19.34	1
303.70	132.01	41.3107	113.5181	1512.64	19.30	1
304.00	131.87	41.3152	113.5123	1512.49	19.26	1
304.48	131.64	41.3223	113.5027	1512.26	19.17	1
304.79	131.48	41.3268	113.4965	1512.11	19.11	1
305.00	131.37	41.3299	113.4921	1512.01	19.07	1
305.21	131.26	41.3329	113.4878	1511.91	19.03	1
306.00	130.83	41.3441	113.4711	1511.52	18.87	1
306.81	130.43	41.3555	113.4543	1511.13	18.72	1
307.00	130.33	41.3581	113.4504	1511.04	18.68	1
307.48	130.11	41.3648	113.4405	1510.80	18.60	1
307.61	130.05	41.3666	113.4377	1510.74	18.57	1
307.80	129.96	41.3692	113.4338	1510.65	18.54	1
308.00	129.86	41.3720	113.4296	1510.55	18.50	1
308.25	129.73	41.3754	113.4241	1510.43	18.46	1
308.42	129.64	41.3776	113.4205	1510.34	18.42	1
308.53	129.59	41.3791	113.4182	1510.29	18.40	1
309.00	129.34	41.3852	113.4081	1510.06	18.31	1
309.21	129.24	41.3879	113.4037	1509.96	18.27	1
309.26	129.21	41.3887	113.4024	1509.94	18.26	1
309.34	129.17	41.3897	113.4007	1509.90	18.25	1
309.47	129.11	41.3913	113.3981	1509.84	18.23	1
309.65	129.02	41.3938	113.3941	1509.75	18.19	1
309.91	128.90	41.3970	113.3886	1509.62	18.15	1
310.00	128.85	41.3983	113.3866	1509.58	18.13	1
311.00	128.35	41.4109	113.3647	1509.09	17.94	1
335.24	126.20	41.6884	112.8395	1455.96	17.71	1
335.41	126.18	41.6897	112.8353	1455.53	17.71	1
335.52	126.16	41.6904	112.8326	1455.26	17.71	1
336.00	126.07	41.6937	112.8205	1454.04	17.69	1
336.59	125.98	41.6976	112.8058	1452.55	17.67	1
337.00	125.90	41.7002	112.7954	1451.51	17.66	1
337.66	125.74	41.7040	112.7787	1449.85	17.61	1
338.00	125.65	41.7059	112.7699	1448.98	17.59	1
338.16	125.60	41.7067	112.7657	1448.57	17.57	1
339.00	125.33	41.7105	112.7440	1446.45	17.50	1
339.21	125.28	41.7116	112.7387	1445.93	17.49	1

340.00	125.11	41.7157	112.7184	1443.92	17.44	1
340.66	124.99	41.7191	112.7017	1442.26	17.42	1
340.84	124.96	41.7200	112.6971	1441.80	17.41	1
341.00	124.93	41.7208	112.6930	1441.40	17.40	1
341.15	124.90	41.7215	112.6891	1441.02	17.39	1
341.37	124.86	41.7226	112.6836	1440.47	17.38	1
341.67	124.79	41.7239	112.6758	1439.70	17.37	1
342.00	124.71	41.7253	112.6673	1438.87	17.35	1
342.52	124.56	41.7271	112.6536	1437.54	17.30	1
342.91	124.42	41.7283	112.6435	1436.57	17.26	1



KBYU (Points where contour exceeds 1% limit)

Azimuth	Distance	Latitude	Longitude	HAAT	ERP (dBk)	Fails
27.96	135.59	41.7341	111.4362	1355.76	22.53	1
28.00	135.59	41.7337	111.4353	1355.72	22.53	1
28.19	135.60	41.7318	111.4306	1355.54	22.53	1
28.47	135.60	41.7290	111.4235	1355.25	22.54	1
28.90	135.61	41.7246	111.4128	1354.82	22.55	1
29.00	135.61	41.7235	111.4102	1354.72	22.55	1
29.35	135.61	41.7198	111.4016	1354.36	22.55	1
29.58	135.60	41.7173	111.3961	1354.14	22.55	1
29.74	135.59	41.7155	111.3921	1353.97	22.55	1
29.85	135.59	41.7143	111.3893	1353.86	22.55	1
29.92	135.58	41.7135	111.3876	1353.79	22.55	1
29.97	135.58	41.7129	111.3864	1353.73	22.55	1
30.00	135.58	41.7126	111.3857	1353.71	22.55	1
30.35	135.56	41.7087	111.3773	1353.36	22.55	1
30.58	135.55	41.7061	111.3718	1353.13	22.54	1
30.74	135.54	41.7042	111.3679	1352.96	22.54	1
30.84	135.53	41.7031	111.3655	1352.86	22.54	1
30.92	135.53	41.7022	111.3637	1352.78	22.54	1
30.97	135.53	41.7016	111.3625	1352.73	22.54	1
31.00	135.52	41.7012	111.3617	1352.70	22.54	1
32.00	135.47	41.6895	111.3379	1351.69	22.53	1
32.17	135.46	41.6875	111.3339	1351.52	22.53	1
32.43	135.44	41.6844	111.3278	1351.26	22.53	1
32.80	135.42	41.6799	111.3190	1350.88	22.52	1
33.00	135.41	41.6775	111.3144	1350.68	22.52	1
34.00	135.33	41.6649	111.2914	1349.68	22.50	1
34.28	135.30	41.6613	111.2850	1349.39	22.49	1
34.46	135.27	41.6589	111.2809	1349.21	22.49	1
34.60	135.25	41.6571	111.2779	1349.07	22.48	1
34.69	135.24	41.6558	111.2759	1348.98	22.48	1
34.75	135.23	41.6551	111.2746	1348.92	22.48	1
35.00	135.20	41.6517	111.2691	1348.67	22.47	1
35.14	135.18	41.6499	111.2661	1348.53	22.46	1
35.33	135.15	41.6473	111.2617	1348.33	22.46	1
35.62	135.11	41.6434	111.2554	1348.04	22.45	1
36.00	135.06	41.6383	111.2471	1347.66	22.43	1
37.00	134.90	41.6243	111.2256	1346.65	22.39	1
37.23	134.86	41.6211	111.2208	1346.42	22.37	1
37.39	134.83	41.6188	111.2175	1346.26	22.37	1
38.00	134.72	41.6099	111.2047	1345.65	22.33	1
38.59	134.62	41.6014	111.1925	1345.05	22.31	1
38.75	134.60	41.5991	111.1892	1344.89	22.30	1
39.00	134.56	41.5955	111.1840	1344.64	22.29	1

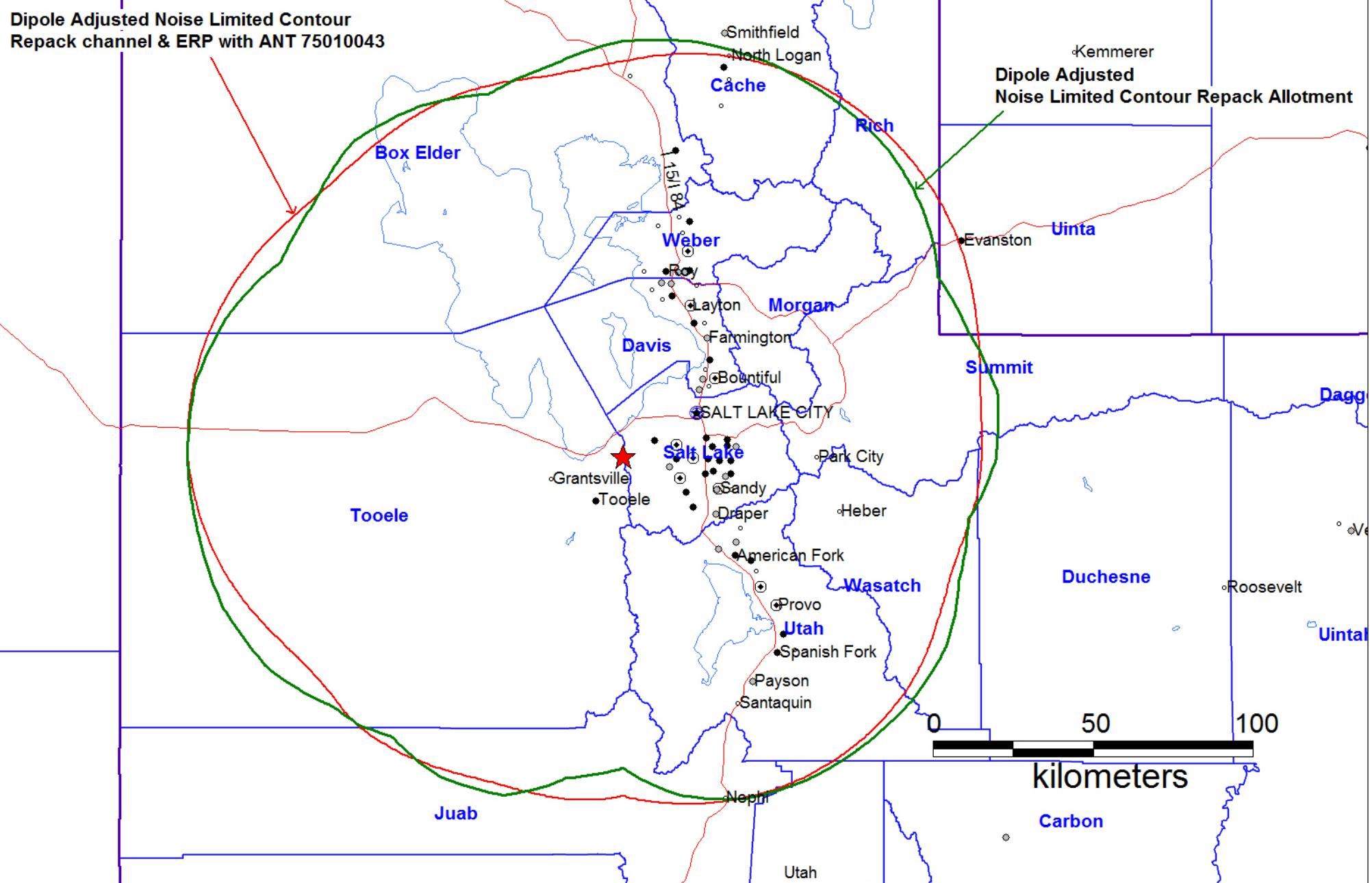
39.39	134.48	41.5897	111.1762	1344.25	22.26	1
39.68	134.41	41.5852	111.1704	1343.95	22.24	1
39.87	134.37	41.5824	111.1667	1343.76	22.23	1
40.00	134.34	41.5804	111.1641	1343.63	22.22	1
40.23	134.29	41.5769	111.1597	1343.40	22.21	1
40.41	134.24	41.5741	111.1563	1343.22	22.19	1
41.00	134.10	41.5649	111.1449	1342.62	22.15	1
41.19	134.06	41.5620	111.1413	1342.43	22.14	1
41.24	134.05	41.5612	111.1403	1342.38	22.13	1
41.31	134.03	41.5600	111.1389	1342.31	22.13	1
41.43	134.01	41.5582	111.1367	1342.19	22.12	1
41.59	133.97	41.5557	111.1336	1342.03	22.11	1
41.83	133.92	41.5519	111.1290	1341.78	22.09	1
42.00	133.88	41.5493	111.1258	1341.61	22.08	1
43.00	133.66	41.5335	111.1071	1340.61	22.02	1
43.11	133.64	41.5317	111.1051	1340.50	22.01	1
43.27	133.60	41.5291	111.1021	1340.33	22.00	1
43.50	133.56	41.5254	111.0979	1340.10	21.98	1
43.87	133.48	41.5196	111.0913	1339.73	21.96	1
44.00	133.44	41.5174	111.0889	1339.60	21.95	1
44.19	133.40	41.5144	111.0856	1339.41	21.94	1
44.44	133.34	41.5102	111.0810	1339.15	21.92	1
44.85	133.24	41.5035	111.0739	1338.74	21.89	1
45.00	133.20	41.5010	111.0713	1338.59	21.87	1
45.27	133.11	41.4964	111.0667	1337.91	21.85	1
45.46	133.05	41.4932	111.0637	1337.45	21.83	1
45.58	133.01	41.4911	111.0617	1337.14	21.82	1
45.66	132.98	41.4897	111.0604	1336.94	21.82	1
46.00	132.87	41.4839	111.0549	1336.09	21.79	1
47.00	132.54	41.4666	111.0389	1333.59	21.70	1
48.00	132.21	41.4491	111.0234	1331.09	21.61	1
48.11	132.17	41.4471	111.0217	1330.81	21.60	1
48.27	132.12	41.4442	111.0192	1330.40	21.59	1
48.50	132.04	41.4402	111.0158	1329.83	21.57	1
48.87	131.92	41.4338	111.0104	1328.92	21.53	1
49.00	131.87	41.4314	111.0084	1328.59	21.52	1
49.23	131.79	41.4273	111.0051	1328.02	21.50	1
49.41	131.73	41.4241	111.0026	1327.57	21.48	1
50.00	131.51	41.4134	110.9942	1326.09	21.42	1
50.59	131.31	41.4028	110.9858	1324.61	21.37	1
50.75	131.26	41.3999	110.9836	1324.21	21.35	1
50.97	131.18	41.3958	110.9805	1323.65	21.33	1
51.00	131.17	41.3954	110.9802	1323.59	21.33	1
51.28	131.06	41.3902	110.9764	1322.88	21.30	1
51.49	130.98	41.3864	110.9738	1322.37	21.28	1
51.63	130.92	41.3837	110.9719	1322.01	21.26	1

51.72	130.88	41.3820	110.9707	1321.77	21.25	1
51.79	130.85	41.3808	110.9699	1321.62	21.24	1
51.84	130.83	41.3798	110.9692	1321.48	21.23	1
52.00	130.77	41.3769	110.9672	1321.08	21.22	1
53.00	130.36	41.3582	110.9548	1318.58	21.10	1
53.09	130.32	41.3566	110.9538	1318.36	21.09	1
53.23	130.27	41.3540	110.9521	1318.02	21.08	1
53.42	130.19	41.3503	110.9497	1317.53	21.05	1
53.70	130.07	41.3452	110.9465	1316.84	21.02	1
54.00	129.95	41.3395	110.9430	1316.08	20.99	1
54.39	129.78	41.3321	110.9386	1315.11	20.94	1
54.94	129.53	41.3216	110.9326	1313.74	20.87	1
55.00	129.50	41.3204	110.9319	1313.58	20.86	1
55.23	129.39	41.3161	110.9296	1313.02	20.82	1
55.38	129.30	41.3130	110.9281	1312.62	20.80	1
56.00	128.98	41.3010	110.9221	1311.08	20.71	1
56.53	128.72	41.2907	110.9169	1309.75	20.63	1
56.68	128.65	41.2878	110.9155	1309.38	20.61	1
56.89	128.55	41.2838	110.9135	1308.86	20.58	1
57.00	128.49	41.2816	110.9125	1308.58	20.56	1
58.00	127.97	41.2620	110.9038	1306.08	20.40	1
58.23	127.84	41.2575	110.9020	1305.51	20.36	1
58.39	127.75	41.2543	110.9007	1305.11	20.34	1
59.00	127.41	41.2422	110.8960	1303.58	20.23	1
59.59	127.10	41.2305	110.8914	1302.10	20.13	1
59.75	127.02	41.2274	110.8902	1301.71	20.11	1
60.00	126.88	41.2225	110.8883	1301.08	20.07	1
60.39	126.67	41.2148	110.8856	1300.11	20.00	1
60.94	126.35	41.2038	110.8820	1298.73	19.90	1
61.00	126.32	41.2026	110.8816	1298.58	19.89	1
61.18	126.21	41.1990	110.8806	1298.13	19.85	1
62.00	125.68	41.1824	110.8761	1296.08	19.68	1
63.00	125.14	41.1626	110.8702	1293.58	19.51	1
63.43	124.89	41.1540	110.8680	1292.50	19.42	1
63.73	124.70	41.1480	110.8666	1291.74	19.36	1
63.93	124.58	41.1440	110.8658	1291.26	19.32	1
64.00	124.53	41.1426	110.8655	1291.08	19.30	1
65.00	123.88	41.1224	110.8617	1288.57	19.08	1
65.90	123.36	41.1045	110.8582	1286.32	18.90	1
66.00	123.30	41.1025	110.8578	1286.07	18.88	1
67.00	122.67	41.0825	110.8549	1283.57	18.66	1
67.23	122.52	41.0779	110.8544	1283.00	18.60	1
67.39	122.41	41.0747	110.8541	1282.60	18.57	1
68.00	122.00	41.0624	110.8530	1281.07	18.42	1
69.00	121.35	41.0425	110.8512	1278.57	18.19	1
70.00	120.77	41.0229	110.8493	1276.07	17.98	1

70.66	120.42	41.0101	110.8480	1274.43	17.85	1
70.84	120.32	41.0065	110.8477	1273.97	17.81	1
71.00	120.22	41.0034	110.8475	1273.57	17.78	1
71.35	120.02	40.9965	110.8471	1272.70	17.71	1
71.60	119.87	40.9916	110.8469	1272.07	17.65	1
71.76	119.78	40.9886	110.8468	1271.68	17.62	1
71.87	119.71	40.9863	110.8468	1271.39	17.59	1
71.95	119.66	40.9848	110.8467	1271.20	17.58	1
72.00	119.63	40.9838	110.8467	1271.07	17.56	1
73.00	119.03	40.9643	110.8465	1268.57	17.34	1
73.25	118.87	40.9593	110.8466	1267.93	17.28	1
73.42	118.77	40.9560	110.8466	1267.51	17.24	1
73.53	118.70	40.9539	110.8467	1267.24	17.22	1
74.00	118.41	40.9449	110.8469	1266.07	17.11	1
74.81	117.93	40.9292	110.8474	1264.04	16.93	1
75.00	117.83	40.9256	110.8474	1263.57	16.89	1
75.23	117.72	40.9212	110.8473	1262.99	16.86	1
76.00	117.40	40.9067	110.8466	1261.07	16.74	1
76.81	117.07	40.8915	110.8461	1259.04	16.63	1
77.00	117.01	40.8880	110.8459	1258.57	16.60	1
78.00	116.73	40.8695	110.8442	1256.06	16.51	1
79.00	116.46	40.8511	110.8429	1253.56	16.42	1
80.00	116.27	40.8328	110.8411	1251.06	16.37	1
96.82	115.39	40.5279	110.8465	1185.11	16.71	1
97.00	115.34	40.5247	110.8477	1184.02	16.70	1
97.34	115.24	40.5187	110.8501	1181.96	16.67	1
97.60	115.14	40.5143	110.8520	1180.43	16.65	1
97.77	115.08	40.5113	110.8534	1179.39	16.64	1
97.89	115.03	40.5091	110.8543	1178.66	16.63	1
97.97	115.00	40.5078	110.8550	1178.18	16.62	1
98.00	114.99	40.5073	110.8552	1178.01	16.62	1
98.19	114.92	40.5041	110.8568	1176.89	16.59	1
99.00	114.56	40.4901	110.8641	1172.00	16.49	1
99.48	114.38	40.4820	110.8682	1169.13	16.45	1
99.61	114.33	40.4797	110.8693	1168.34	16.44	1
99.80	114.27	40.4765	110.8709	1167.22	16.42	1
100.00	114.21	40.4730	110.8725	1166.00	16.40	1
100.93	113.99	40.4570	110.8793	1160.40	16.37	1
101.00	113.98	40.4559	110.8798	1159.99	16.37	1
185.00	110.77	39.6663	112.3156	748.18	20.38	1
185.39	110.85	39.6662	112.3244	754.37	20.30	1
185.94	110.94	39.6663	112.3369	763.19	20.19	1
186.00	110.95	39.6663	112.3383	764.17	20.17	1
186.23	110.98	39.6664	112.3435	767.83	20.12	1
186.39	111.00	39.6665	112.3471	770.37	20.09	1
187.00	111.08	39.6671	112.3609	780.16	19.95	1

187.73	111.20	39.6676	112.3775	791.82	19.80	1
187.93	111.23	39.6679	112.3820	794.98	19.76	1
188.00	111.23	39.6679	112.3837	796.15	19.74	1
189.00	111.33	39.6696	112.4063	812.15	19.52	1
189.25	111.35	39.6702	112.4120	816.21	19.46	1
189.42	111.36	39.6706	112.4159	818.94	19.42	1
189.54	111.37	39.6708	112.4185	820.83	19.39	1
190.00	111.39	39.6719	112.4288	828.14	19.29	1
190.73	111.47	39.6735	112.4453	839.79	19.14	1
190.93	111.48	39.6741	112.4497	842.95	19.10	1
191.00	111.48	39.6743	112.4514	844.13	19.08	1
192.00	111.47	39.6778	112.4736	860.12	18.84	1
192.18	111.47	39.6785	112.4777	863.08	18.79	1
223.00	122.63	39.8481	113.1827	1355.87	17.75	1
223.19	122.66	39.8503	113.1865	1358.86	17.73	1
224.00	122.81	39.8600	113.2026	1371.86	17.63	1
224.11	122.84	39.8613	113.2048	1373.65	17.62	1
224.70	123.05	39.8677	113.2172	1382.99	17.57	1
224.84	123.09	39.8694	113.2201	1385.31	17.56	1
225.00	123.10	39.8715	113.2231	1387.85	17.55	1
225.27	123.09	39.8752	113.2278	1388.63	17.53	1
225.45	123.07	39.8778	113.2310	1389.18	17.51	1
225.58	123.05	39.8796	113.2331	1389.54	17.50	1
225.67	123.04	39.8809	113.2345	1389.80	17.50	1
226.00	122.99	39.8858	113.2400	1390.78	17.47	1
226.25	122.95	39.8895	113.2441	1391.51	17.44	1
226.42	122.91	39.8921	113.2469	1392.02	17.42	1
226.54	122.89	39.8939	113.2487	1392.36	17.41	1
227.00	122.79	39.9009	113.2559	1393.71	17.36	1
228.00	122.59	39.9161	113.2714	1396.63	17.24	1
228.93	122.40	39.9306	113.2854	1399.37	17.14	1
229.00	122.39	39.9316	113.2865	1399.56	17.13	1
229.59	122.33	39.9405	113.2957	1401.29	17.09	1
229.75	122.32	39.9428	113.2982	1401.75	17.08	1
229.97	122.31	39.9462	113.3019	1402.42	17.06	1
230.00	122.31	39.9465	113.3023	1402.49	17.06	1
230.35	122.31	39.9516	113.3080	1403.51	17.05	1
230.88	122.31	39.9594	113.3165	1405.05	17.03	1
231.00	122.31	39.9612	113.3185	1405.42	17.03	1
232.00	122.32	39.9760	113.3344	1408.34	16.99	1
232.19	122.32	39.9788	113.3373	1408.89	16.99	1
266.23	139.18	40.5651	113.8476	1508.56	22.30	1
266.37	139.22	40.5682	113.8484	1508.97	22.31	1
267.00	139.39	40.5817	113.8517	1510.81	22.36	1
267.81	139.64	40.5993	113.8562	1513.19	22.43	1
268.00	139.69	40.6034	113.8571	1513.74	22.45	1

269.00	139.94	40.6253	113.8614	1516.67	22.52	1
269.31	140.02	40.6321	113.8626	1517.59	22.54	1
269.40	140.04	40.6340	113.8629	1517.83	22.54	1
269.52	140.07	40.6367	113.8634	1518.20	22.55	1
269.71	140.10	40.6408	113.8640	1518.74	22.56	1
269.97	140.15	40.6466	113.8646	1519.51	22.57	1
270.00	140.15	40.6472	113.8647	1519.60	22.57	1
270.28	140.18	40.6534	113.8651	1519.46	22.58	1
270.49	140.19	40.6579	113.8654	1519.36	22.59	1
270.62	140.20	40.6607	113.8655	1519.30	22.60	1
270.70	140.21	40.6627	113.8656	1519.26	22.60	1
270.76	140.21	40.6640	113.8657	1519.23	22.60	1
270.81	140.22	40.6651	113.8657	1519.20	22.60	1
271.00	140.23	40.6692	113.8659	1519.11	22.61	1
271.35	140.26	40.6769	113.8662	1518.94	22.62	1
271.58	140.28	40.6819	113.8664	1518.83	22.63	1
271.74	140.29	40.6855	113.8665	1518.75	22.64	1
271.84	140.30	40.6877	113.8666	1518.70	22.64	1
271.92	140.30	40.6894	113.8666	1518.67	22.64	1
271.97	140.31	40.6905	113.8667	1518.64	22.64	1
272.00	140.31	40.6912	113.8667	1518.63	22.65	1
272.66	140.38	40.7057	113.8671	1518.31	22.67	1
272.84	140.40	40.7097	113.8672	1518.22	22.68	1
273.00	140.42	40.7133	113.8672	1518.14	22.69	1
274.00	140.47	40.7353	113.8666	1517.66	22.72	1
274.31	140.49	40.7423	113.8663	1517.50	22.72	1
274.76	140.50	40.7522	113.8657	1517.28	22.73	1
275.00	140.51	40.7574	113.8653	1517.17	22.73	1
275.43	140.51	40.7668	113.8645	1516.96	22.74	1
276.00	140.52	40.7794	113.8632	1516.68	22.74	1
307.00	131.16	41.3625	113.4583	1501.64	19.31	1
307.53	130.92	41.3700	113.4474	1501.38	19.22	1
307.66	130.86	41.3719	113.4446	1501.31	19.20	1
307.86	130.77	41.3746	113.4405	1501.22	19.17	1
308.00	130.70	41.3765	113.4376	1501.15	19.15	1
309.00	130.20	41.3900	113.4162	1500.66	18.96	1
310.00	129.76	41.4034	113.3950	1500.18	18.80	1
310.48	129.56	41.4098	113.3849	1499.95	18.72	1
310.79	129.44	41.4139	113.3784	1499.80	18.68	1
311.00	129.35	41.4167	113.3739	1499.69	18.65	1
311.39	129.20	41.4218	113.3657	1499.51	18.59	1
311.65	129.10	41.4253	113.3602	1499.38	18.55	1
311.84	129.03	41.4277	113.3563	1499.29	18.53	1
311.97	128.98	41.4295	113.3535	1499.22	18.51	1
312.00	128.97	41.4299	113.3528	1499.21	18.50	1



KJZZ Salt Lake City, UT
Comparison of Repack Allotment (CH 19) vs. Antenna 75010043

KJZZ (Points where contour exceeds 1% limit)

Azimuth	Distance	Latitude	Longitude	HAAT	ERP (dBk)	Fails
27.85	129.40	41.6862	111.4746	1364.28	20.43	1
28.00	129.40	41.6847	111.4709	1364.12	20.43	1
28.31	129.39	41.6816	111.4635	1363.81	20.43	1
28.55	129.38	41.6792	111.4578	1363.57	20.43	1
28.71	129.38	41.6776	111.4542	1363.41	20.43	1
28.81	129.37	41.6766	111.4518	1363.31	20.43	1
28.88	129.37	41.6758	111.4501	1363.23	20.43	1
28.94	129.37	41.6752	111.4487	1363.18	20.43	1
28.99	129.36	41.6747	111.4475	1363.12	20.43	1
29.00	129.36	41.6746	111.4473	1363.12	20.43	1
29.66	129.33	41.6677	111.4321	1362.45	20.42	1
30.00	129.31	41.6640	111.4241	1362.11	20.42	1
30.23	129.29	41.6615	111.4189	1361.88	20.42	1
30.39	129.28	41.6597	111.4153	1361.72	20.41	1
31.00	129.22	41.6529	111.4014	1361.10	20.40	1
31.05	129.22	41.6523	111.4002	1361.05	20.40	1
31.11	129.22	41.6517	111.3989	1360.99	20.40	1
31.17	129.21	41.6510	111.3975	1360.93	20.40	1
31.26	129.21	41.6500	111.3954	1360.84	20.40	1
31.40	129.20	41.6485	111.3923	1360.70	20.40	1
31.61	129.19	41.6461	111.3875	1360.49	20.40	1
31.89	129.17	41.6429	111.3811	1360.20	20.39	1
32.00	129.17	41.6417	111.3787	1360.09	20.39	1
32.05	129.16	41.6411	111.3775	1360.04	20.39	1
32.11	129.16	41.6405	111.3763	1359.98	20.39	1
32.16	129.16	41.6399	111.3751	1359.93	20.39	1
32.23	129.15	41.6391	111.3734	1359.86	20.39	1
32.35	129.15	41.6378	111.3709	1359.74	20.39	1
32.51	129.14	41.6359	111.3672	1359.57	20.39	1
32.77	129.13	41.6329	111.3614	1359.31	20.39	1
33.00	129.11	41.6302	111.3563	1359.08	20.38	1
33.22	129.09	41.6276	111.3516	1358.87	20.38	1
33.36	129.07	41.6259	111.3485	1358.72	20.37	1
34.00	128.98	41.6179	111.3348	1358.08	20.35	1
34.53	128.92	41.6113	111.3233	1357.54	20.33	1
34.68	128.91	41.6095	111.3202	1357.39	20.33	1
34.89	128.88	41.6069	111.3157	1357.18	20.33	1
35.00	128.87	41.6055	111.3134	1357.07	20.32	1
35.39	128.82	41.6005	111.3052	1356.68	20.31	1
35.65	128.77	41.5970	111.2998	1356.41	20.29	1
35.82	128.75	41.5948	111.2964	1356.24	20.29	1
35.94	128.73	41.5933	111.2939	1356.12	20.28	1
36.00	128.71	41.5924	111.2926	1356.06	20.28	1

36.23	128.67	41.5894	111.2880	1355.83	20.27	1
36.39	128.65	41.5872	111.2847	1355.67	20.26	1
37.00	128.53	41.5789	111.2724	1355.05	20.22	1
37.48	128.46	41.5725	111.2628	1354.57	20.20	1
37.61	128.44	41.5707	111.2601	1354.44	20.20	1
37.80	128.41	41.5682	111.2564	1354.25	20.19	1
38.00	128.38	41.5654	111.2524	1354.05	20.18	1
38.39	128.31	41.5600	111.2447	1353.65	20.16	1
38.62	128.26	41.5567	111.2401	1353.42	20.14	1
38.80	128.23	41.5542	111.2366	1353.23	20.13	1
38.92	128.21	41.5525	111.2344	1353.12	20.13	1
39.00	128.19	41.5514	111.2329	1353.04	20.12	1
39.14	128.17	41.5495	111.2303	1352.90	20.12	1
39.33	128.13	41.5467	111.2265	1352.70	20.11	1
39.62	128.08	41.5426	111.2210	1352.41	20.09	1
40.00	128.01	41.5372	111.2137	1352.03	20.07	1
40.39	127.93	41.5315	111.2065	1351.64	20.04	1
40.65	127.87	41.5277	111.2016	1351.37	20.03	1
40.82	127.84	41.5252	111.1985	1351.21	20.02	1
40.94	127.81	41.5235	111.1963	1351.08	20.01	1
41.00	127.80	41.5225	111.1952	1351.02	20.00	1
41.10	127.78	41.5211	111.1934	1350.92	20.00	1
41.25	127.75	41.5189	111.1906	1350.77	19.99	1
41.46	127.71	41.5157	111.1868	1350.56	19.97	1
41.78	127.64	41.5110	111.1810	1350.24	19.95	1
42.00	127.59	41.5077	111.1770	1350.01	19.94	1
42.39	127.50	41.5018	111.1702	1349.62	19.91	1
42.62	127.45	41.4982	111.1660	1349.38	19.89	1
42.80	127.40	41.4954	111.1629	1349.20	19.88	1
42.92	127.37	41.4937	111.1609	1349.09	19.87	1
43.00	127.36	41.4924	111.1595	1349.01	19.86	1
43.25	127.29	41.4885	111.1551	1348.75	19.84	1
43.42	127.25	41.4859	111.1522	1348.58	19.83	1
43.54	127.22	41.4840	111.1502	1348.46	19.82	1
44.00	127.12	41.4770	111.1424	1348.00	19.79	1
44.66	126.98	41.4669	111.1312	1347.34	19.74	1
44.84	126.94	41.4640	111.1281	1347.15	19.73	1
45.00	126.91	41.4615	111.1254	1346.99	19.72	1
45.31	126.82	41.4565	111.1203	1346.21	19.70	1
45.53	126.76	41.4530	111.1169	1345.67	19.68	1
45.68	126.72	41.4506	111.1146	1345.30	19.67	1
45.78	126.69	41.4489	111.1130	1345.04	19.66	1
45.86	126.66	41.4477	111.1118	1344.85	19.66	1
45.91	126.65	41.4468	111.1109	1344.71	19.65	1
45.96	126.63	41.4459	111.1101	1344.58	19.65	1
46.00	126.62	41.4453	111.1095	1344.49	19.64	1

46.23	126.55	41.4416	111.1060	1343.92	19.62	1
46.39	126.50	41.4390	111.1036	1343.52	19.61	1
47.00	126.30	41.4288	111.0943	1341.99	19.56	1
47.59	126.13	41.4191	111.0854	1340.51	19.51	1
47.75	126.09	41.4165	111.0830	1340.12	19.50	1
48.00	126.02	41.4123	111.0793	1339.49	19.48	1
48.35	125.91	41.4065	111.0742	1338.62	19.45	1
48.60	125.83	41.4022	111.0706	1337.98	19.42	1
48.77	125.77	41.3993	111.0682	1337.56	19.41	1
48.89	125.73	41.3973	111.0665	1337.25	19.40	1
48.97	125.71	41.3960	111.0654	1337.06	19.39	1
49.00	125.70	41.3955	111.0650	1336.99	19.39	1
49.11	125.67	41.3936	111.0634	1336.71	19.38	1
49.27	125.61	41.3909	111.0611	1336.30	19.36	1
49.53	125.53	41.3866	111.0576	1335.67	19.34	1
49.87	125.42	41.3807	111.0528	1334.81	19.31	1
50.00	125.38	41.3785	111.0511	1334.49	19.30	1
50.31	125.28	41.3731	111.0469	1333.70	19.27	1
50.76	125.12	41.3654	111.0409	1332.58	19.22	1
51.00	125.04	41.3612	111.0379	1331.99	19.20	1
51.23	124.95	41.3572	111.0351	1331.41	19.17	1
51.39	124.89	41.3544	111.0331	1331.02	19.15	1
52.00	124.64	41.3435	111.0257	1329.48	19.08	1
52.39	124.49	41.3367	111.0211	1328.52	19.03	1
52.49	124.45	41.3349	111.0198	1328.26	19.02	1
52.65	124.39	41.3321	111.0179	1327.86	19.00	1
52.88	124.31	41.3280	111.0152	1327.29	18.97	1
53.00	124.26	41.3259	111.0138	1326.98	18.96	1
53.17	124.20	41.3229	111.0118	1326.57	18.94	1
53.40	124.11	41.3187	111.0091	1325.98	18.91	1
53.76	123.98	41.3124	111.0050	1325.10	18.87	1
54.00	123.89	41.3081	111.0023	1324.48	18.85	1
54.25	123.79	41.3035	110.9995	1323.85	18.81	1
54.61	123.65	41.2971	110.9956	1322.96	18.77	1
55.00	123.48	41.2900	110.9915	1321.98	18.72	1
55.43	123.29	41.2821	110.9873	1320.91	18.65	1
55.70	123.16	41.2771	110.9847	1320.22	18.61	1
55.90	123.07	41.2735	110.9828	1319.74	18.58	1
56.00	123.02	41.2716	110.9819	1319.48	18.57	1
57.00	122.53	41.2530	110.9730	1316.98	18.40	1
58.00	122.11	41.2347	110.9638	1314.48	18.26	1
59.00	121.67	41.2162	110.9554	1311.98	18.12	1
60.00	121.19	41.1975	110.9478	1309.48	17.95	1
61.00	120.68	41.1786	110.9411	1306.98	17.78	1
62.00	120.13	41.1596	110.9352	1304.48	17.58	1
63.00	119.67	41.1409	110.9289	1301.98	17.42	1

63.28	119.52	41.1356	110.9274	1301.27	17.37	1
63.49	119.42	41.1317	110.9263	1300.76	17.33	1
63.62	119.35	41.1293	110.9257	1300.44	17.30	1
63.71	119.29	41.1274	110.9252	1300.19	17.29	1
63.78	119.26	41.1262	110.9249	1300.03	17.27	1
63.84	119.23	41.1251	110.9246	1299.89	17.26	1
64.00	119.14	41.1220	110.9238	1299.48	17.23	1
64.25	119.00	41.1171	110.9226	1298.84	17.18	1
64.44	118.90	41.1135	110.9218	1298.37	17.15	1
64.57	118.83	41.1111	110.9212	1298.05	17.12	1
64.66	118.78	41.1094	110.9208	1297.83	17.10	1
65.00	118.60	41.1030	110.9193	1296.97	17.04	1
65.31	118.44	41.0971	110.9179	1296.19	16.98	1
65.40	118.40	41.0955	110.9175	1295.98	16.97	1
65.52	118.34	41.0931	110.9170	1295.67	16.94	1
65.71	118.24	41.0897	110.9162	1295.21	16.91	1
65.97	118.11	41.0847	110.9151	1294.55	16.86	1
66.00	118.09	41.0841	110.9150	1294.47	16.85	1
66.19	118.00	41.0806	110.9142	1294.01	16.82	1
66.24	117.97	41.0795	110.9140	1293.86	16.81	1
66.32	117.93	41.0781	110.9137	1293.68	16.79	1
66.43	117.87	41.0760	110.9133	1293.39	16.77	1
66.59	117.79	41.0730	110.9126	1292.99	16.74	1
66.83	117.66	41.0684	110.9118	1292.39	16.70	1
67.00	117.57	41.0653	110.9112	1291.97	16.67	1
67.17	117.48	41.0620	110.9107	1291.54	16.63	1
68.00	116.98	41.0462	110.9088	1289.47	16.44	1
69.00	116.48	41.0274	110.9058	1286.97	16.26	1
70.00	116.01	41.0088	110.9030	1284.47	16.09	1
70.90	115.64	40.9923	110.9002	1282.22	15.96	1
71.00	115.60	40.9904	110.8999	1281.97	15.94	1
71.22	115.50	40.9864	110.8994	1281.43	15.90	1
71.36	115.43	40.9837	110.8992	1281.07	15.88	1
165.00	110.58	39.6976	111.8681	772.48	20.06	1
165.15	110.54	39.6974	111.8715	771.52	20.06	1
165.37	110.47	39.6970	111.8764	770.14	20.05	1
165.70	110.37	39.6964	111.8840	767.99	20.04	1
166.00	110.28	39.6960	111.8908	766.09	20.03	1
166.43	110.14	39.6954	111.9006	763.34	20.02	1
167.00	109.95	39.6949	111.9135	759.70	19.99	1
167.23	109.87	39.6947	111.9187	758.24	19.98	1
167.39	109.81	39.6946	111.9224	757.22	19.97	1
167.50	109.77	39.6946	111.9250	756.50	19.97	1
168.00	109.59	39.6944	111.9363	753.31	19.94	1
169.00	109.24	39.6941	111.9590	746.92	19.89	1
169.53	109.07	39.6939	111.9710	743.52	19.87	1

169.68	109.02	39.6939	111.9743	742.58	19.87	1
169.89	108.95	39.6939	111.9791	741.23	19.86	1
170.00	108.91	39.6939	111.9816	740.53	19.85	1
170.31	108.80	39.6940	111.9887	738.52	19.84	1
170.51	108.73	39.6941	111.9931	737.28	19.83	1
170.65	108.68	39.6942	111.9962	736.39	19.82	1
170.75	108.64	39.6943	111.9985	735.76	19.81	1
170.81	108.61	39.6943	111.9999	735.34	19.81	1
170.87	108.59	39.6943	112.0013	734.96	19.80	1
170.93	108.57	39.6944	112.0027	734.57	19.80	1
170.99	108.54	39.6944	112.0040	734.18	19.80	1
171.00	108.54	39.6944	112.0042	734.14	19.80	1
171.28	108.44	39.6946	112.0106	732.33	19.78	1
171.49	108.36	39.6948	112.0151	731.04	19.77	1
171.63	108.31	39.6949	112.0184	730.11	19.76	1
171.72	108.27	39.6950	112.0205	729.51	19.76	1
171.79	108.25	39.6951	112.0219	729.10	19.75	1
171.85	108.23	39.6951	112.0233	728.72	19.75	1
172.00	108.17	39.6953	112.0267	727.74	19.74	1
172.43	108.02	39.6956	112.0364	724.99	19.72	1
172.55	107.98	39.6957	112.0390	724.24	19.71	1
172.72	107.92	39.6959	112.0429	723.12	19.71	1
172.97	107.83	39.6962	112.0485	721.53	19.69	1
173.00	107.82	39.6962	112.0491	721.35	19.69	1
173.39	107.67	39.6967	112.0577	718.88	19.67	1
173.65	107.57	39.6971	112.0636	717.19	19.65	1
173.84	107.50	39.6974	112.0678	716.01	19.64	1
173.97	107.45	39.6976	112.0707	715.16	19.64	1
174.00	107.44	39.6977	112.0714	714.96	19.63	1
174.14	107.39	39.6979	112.0744	714.10	19.63	1
174.33	107.32	39.6982	112.0788	712.84	19.62	1
174.62	107.21	39.6987	112.0852	711.00	19.60	1
175.00	107.07	39.6995	112.0936	708.57	19.58	1
175.35	106.93	39.7002	112.1013	706.34	19.55	1
175.88	106.72	39.7014	112.1130	702.97	19.52	1
176.00	106.67	39.7017	112.1157	702.18	19.51	1
176.23	106.57	39.7023	112.1208	700.72	19.49	1
176.39	106.50	39.7028	112.1243	699.70	19.47	1
177.00	106.23	39.7047	112.1377	695.79	19.42	1
177.53	106.01	39.7062	112.1493	692.39	19.38	1
177.66	105.95	39.7066	112.1522	691.55	19.37	1
177.86	105.87	39.7073	112.1565	690.28	19.35	1
178.00	105.81	39.7077	112.1595	689.40	19.34	1
179.00	105.35	39.7114	112.1812	683.01	19.24	1
179.11	105.29	39.7119	112.1836	682.31	19.23	1
179.63	104.96	39.7148	112.1947	679.00	19.16	1

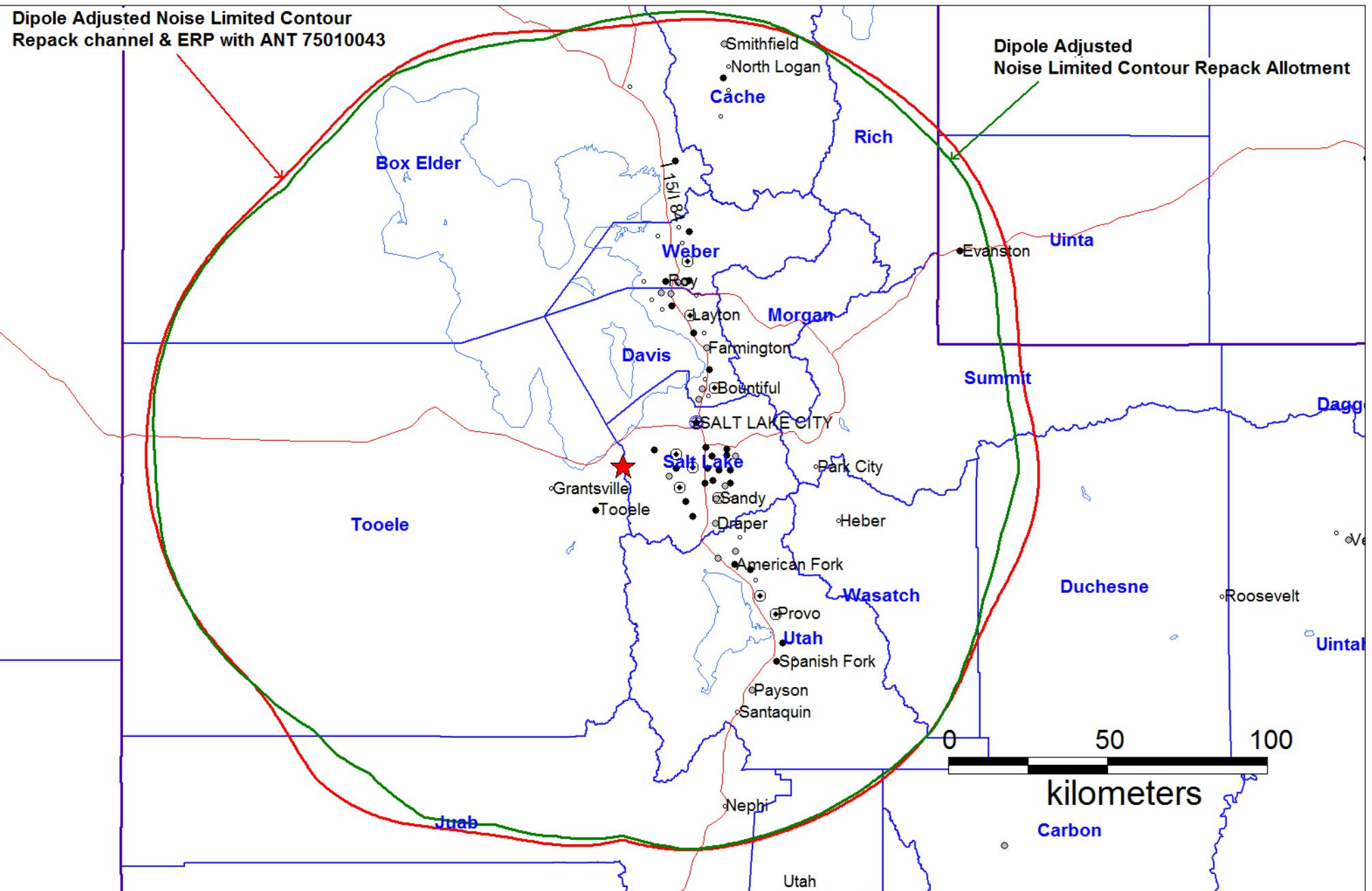
179.73	104.91	39.7153	112.1970	678.33	19.15	1
179.87	104.86	39.7157	112.2000	677.42	19.13	1
180.00	104.84	39.7159	112.2027	676.62	19.12	1
180.19	104.87	39.7156	112.2068	679.69	19.09	1
180.32	104.91	39.7153	112.2095	681.66	19.08	1
180.41	104.95	39.7149	112.2115	683.19	19.07	1
180.94	105.20	39.7128	112.2229	691.67	19.00	1
181.00	105.22	39.7126	112.2242	692.61	18.99	1
181.23	105.30	39.7120	112.2291	696.27	18.96	1
181.37	105.35	39.7116	112.2322	698.55	18.94	1
182.00	105.55	39.7101	112.2458	708.60	18.85	1
182.81	105.84	39.7080	112.2634	721.56	18.74	1
183.00	105.90	39.7076	112.2675	724.59	18.72	1
184.00	106.19	39.7060	112.2893	740.59	18.57	1
184.09	106.22	39.7059	112.2913	742.00	18.55	1
184.23	106.25	39.7057	112.2943	744.19	18.53	1
184.42	106.31	39.7055	112.2986	747.34	18.50	1
184.70	106.37	39.7052	112.3046	751.76	18.45	1
185.00	106.44	39.7050	112.3112	756.58	18.40	1
185.28	106.50	39.7050	112.3174	761.09	18.35	1
185.46	106.53	39.7050	112.3214	764.01	18.31	1
185.59	106.55	39.7050	112.3240	765.97	18.29	1
185.67	106.57	39.7050	112.3259	767.33	18.27	1
186.00	106.63	39.7050	112.3331	772.57	18.21	1
187.00	106.81	39.7052	112.3549	788.56	18.02	1
188.00	106.99	39.7058	112.3768	804.55	17.85	1
188.39	107.07	39.7060	112.3854	810.75	17.78	1
188.49	107.09	39.7061	112.3876	812.38	17.77	1
188.65	107.12	39.7062	112.3911	814.94	17.74	1
188.88	107.16	39.7064	112.3961	818.62	17.70	1
189.00	107.18	39.7065	112.3988	820.55	17.68	1
189.90	107.30	39.7079	112.4185	834.94	17.51	1
190.00	107.31	39.7081	112.4206	836.54	17.50	1
190.06	107.32	39.7082	112.4220	837.57	17.48	1
190.13	107.33	39.7083	112.4235	838.64	17.47	1
190.19	107.34	39.7085	112.4249	839.64	17.46	1
190.28	107.35	39.7086	112.4268	841.05	17.44	1
190.40	107.36	39.7089	112.4294	842.97	17.42	1
190.59	107.38	39.7092	112.4335	845.97	17.39	1
190.86	107.41	39.7098	112.4394	850.27	17.33	1
191.00	107.42	39.7102	112.4424	852.53	17.31	1
191.06	107.42	39.7104	112.4438	853.56	17.29	1
191.13	107.43	39.7105	112.4453	854.64	17.28	1
191.19	107.43	39.7107	112.4466	855.63	17.27	1
191.28	107.44	39.7109	112.4485	857.04	17.25	1
191.42	107.44	39.7113	112.4514	859.17	17.22	1

191.62	107.46	39.7119	112.4558	862.43	17.18	1
191.93	107.47	39.7128	112.4625	867.36	17.12	1
192.00	107.47	39.7131	112.4640	868.52	17.10	1
192.23	107.46	39.7139	112.4689	872.18	17.05	1
192.39	107.46	39.7145	112.4723	874.72	17.02	1
193.00	107.45	39.7168	112.4854	884.51	16.88	1
193.18	107.46	39.7175	112.4894	887.45	16.85	1
194.00	107.52	39.7201	112.5070	900.50	16.71	1
194.21	107.54	39.7208	112.5114	903.80	16.67	1
195.00	107.60	39.7236	112.5285	916.50	16.54	1
216.65	114.40	39.8306	113.0028	1262.78	15.64	1
217.00	114.54	39.8333	113.0103	1268.32	15.64	1
217.48	114.73	39.8371	113.0206	1275.97	15.63	1
217.82	114.85	39.8399	113.0279	1281.44	15.63	1
218.00	114.92	39.8414	113.0317	1284.31	15.63	1
218.06	114.94	39.8419	113.0330	1285.24	15.62	1
218.14	114.97	39.8426	113.0347	1286.57	15.62	1
218.26	115.01	39.8436	113.0372	1288.43	15.62	1
218.43	115.07	39.8450	113.0408	1291.14	15.61	1
218.67	115.16	39.8472	113.0460	1295.08	15.60	1
219.00	115.26	39.8501	113.0528	1300.30	15.59	1
219.87	115.50	39.8583	113.0706	1314.28	15.54	1
220.00	115.54	39.8595	113.0732	1316.29	15.53	1
220.15	115.60	39.8609	113.0763	1318.70	15.53	1
220.94	115.95	39.8676	113.0933	1331.32	15.53	1
221.00	115.97	39.8682	113.0946	1332.28	15.53	1
222.00	116.30	39.8779	113.1150	1348.28	15.49	1
222.31	116.39	39.8811	113.1213	1353.29	15.46	1
222.76	116.50	39.8859	113.1302	1360.49	15.43	1
223.00	116.55	39.8884	113.1347	1364.27	15.41	1
223.17	116.58	39.8904	113.1380	1367.01	15.39	1
283.00	133.93	40.9198	113.7566	1521.69	20.38	1
284.00	133.76	40.9400	113.7486	1521.20	20.31	1
284.39	133.68	40.9477	113.7452	1521.01	20.29	1
284.65	133.63	40.9530	113.7429	1520.88	20.27	1
284.84	133.59	40.9567	113.7412	1520.79	20.25	1
284.97	133.57	40.9593	113.7400	1520.73	20.24	1
285.00	133.56	40.9599	113.7398	1520.72	20.24	1
286.00	133.36	40.9798	113.7305	1520.23	20.17	1
286.21	133.32	40.9838	113.7285	1520.13	20.15	1
286.26	133.31	40.9850	113.7280	1520.10	20.15	1
286.34	133.29	40.9866	113.7272	1520.06	20.14	1
286.47	133.27	40.9890	113.7261	1520.00	20.14	1
286.65	133.23	40.9926	113.7242	1519.91	20.12	1
286.93	133.17	40.9982	113.7214	1519.78	20.10	1
287.00	133.15	40.9995	113.7207	1519.74	20.10	1

287.23	133.09	41.0040	113.7183	1519.63	20.07	1
287.39	133.05	41.0071	113.7165	1519.55	20.06	1
288.00	132.88	41.0188	113.7097	1519.26	19.99	1
288.05	132.86	41.0198	113.7091	1519.23	19.99	1
288.10	132.85	41.0207	113.7086	1519.21	19.99	1
288.15	132.84	41.0217	113.7080	1519.18	19.98	1
288.21	132.82	41.0229	113.7073	1519.15	19.97	1
288.31	132.80	41.0247	113.7063	1519.11	19.97	1
288.45	132.76	41.0275	113.7047	1519.04	19.95	1
288.66	132.71	41.0315	113.7023	1518.94	19.93	1
288.97	132.63	41.0373	113.6989	1518.79	19.90	1
289.00	132.62	41.0380	113.6985	1518.77	19.90	1
289.05	132.61	41.0389	113.6979	1518.75	19.90	1
289.10	132.60	41.0399	113.6973	1518.72	19.89	1
289.15	132.58	41.0409	113.6967	1518.70	19.89	1
289.23	132.56	41.0423	113.6959	1518.66	19.88	1
289.33	132.54	41.0443	113.6947	1518.61	19.87	1
289.49	132.50	41.0472	113.6929	1518.54	19.86	1
289.71	132.44	41.0514	113.6903	1518.43	19.83	1
290.00	132.36	41.0569	113.6868	1518.29	19.81	1
290.43	132.23	41.0650	113.6814	1518.08	19.76	1
290.73	132.14	41.0706	113.6776	1517.93	19.72	1
290.95	132.07	41.0746	113.6747	1517.83	19.70	1
291.00	132.05	41.0756	113.6741	1517.80	19.69	1
291.25	131.97	41.0802	113.6707	1517.68	19.66	1
291.42	131.91	41.0834	113.6684	1517.60	19.64	1
291.54	131.87	41.0855	113.6668	1517.54	19.62	1
292.00	131.71	41.0939	113.6606	1517.32	19.57	1
292.08	131.68	41.0953	113.6596	1517.28	19.56	1
292.13	131.67	41.0963	113.6588	1517.25	19.55	1
292.18	131.65	41.0972	113.6581	1517.23	19.54	1
292.26	131.63	41.0985	113.6572	1517.19	19.54	1
292.36	131.59	41.1004	113.6558	1517.14	19.52	1
292.50	131.55	41.1030	113.6538	1517.07	19.51	1
292.72	131.48	41.1069	113.6509	1516.97	19.48	1
293.00	131.39	41.1120	113.6470	1516.83	19.45	1
293.05	131.37	41.1130	113.6463	1516.81	19.44	1
293.10	131.36	41.1139	113.6456	1516.78	19.44	1
293.15	131.34	41.1148	113.6449	1516.76	19.43	1
293.22	131.32	41.1160	113.6439	1516.72	19.42	1
293.33	131.29	41.1179	113.6425	1516.67	19.41	1
293.48	131.24	41.1207	113.6403	1516.60	19.39	1
293.70	131.17	41.1247	113.6372	1516.49	19.36	1
294.00	131.07	41.1299	113.6329	1516.35	19.33	1
294.31	130.95	41.1355	113.6283	1516.19	19.29	1
294.51	130.88	41.1388	113.6254	1516.10	19.26	1

294.65	130.82	41.1413	113.6233	1516.03	19.24	1
294.75	130.78	41.1430	113.6217	1515.98	19.22	1
294.81	130.76	41.1441	113.6207	1515.95	19.21	1
294.86	130.74	41.1450	113.6199	1515.93	19.21	1
294.92	130.72	41.1460	113.6191	1515.90	19.20	1
294.99	130.69	41.1473	113.6180	1515.86	19.19	1
295.00	130.68	41.1474	113.6178	1515.86	19.19	1
295.05	130.66	41.1483	113.6170	1515.84	19.18	1
295.10	130.64	41.1492	113.6163	1515.81	19.17	1
295.15	130.62	41.1501	113.6155	1515.79	19.17	1
295.22	130.60	41.1512	113.6145	1515.75	19.16	1
295.33	130.56	41.1530	113.6128	1515.70	19.14	1
295.48	130.50	41.1557	113.6105	1515.63	19.12	1
295.70	130.41	41.1595	113.6070	1515.52	19.09	1
296.00	130.30	41.1646	113.6023	1515.38	19.04	1
296.18	130.22	41.1677	113.5993	1515.29	19.01	1
297.00	129.85	41.1813	113.5858	1514.89	18.88	1
298.00	129.47	41.1980	113.5696	1514.40	18.74	1
298.12	129.43	41.2000	113.5677	1514.35	18.72	1
298.30	129.36	41.2029	113.5647	1514.26	18.70	1
298.57	129.26	41.2074	113.5603	1514.13	18.66	1
298.96	129.11	41.2137	113.5538	1513.94	18.60	1
299.00	129.09	41.2144	113.5531	1513.92	18.60	1
299.39	128.94	41.2206	113.5465	1513.73	18.54	1
299.94	128.71	41.2294	113.5370	1513.46	18.45	1
300.00	128.68	41.2303	113.5359	1513.43	18.44	1
301.00	128.20	41.2457	113.5176	1512.95	18.26	1
301.17	128.11	41.2482	113.5145	1512.87	18.23	1
302.00	127.65	41.2605	113.4984	1512.46	18.06	1
303.00	127.21	41.2754	113.4799	1511.98	17.89	1
303.39	127.03	41.2811	113.4726	1511.79	17.83	1
303.65	126.90	41.2849	113.4675	1511.66	17.78	1
303.84	126.81	41.2876	113.4639	1511.57	17.74	1
303.96	126.75	41.2893	113.4616	1511.51	17.72	1
304.00	126.73	41.2899	113.4608	1511.49	17.72	1
305.00	126.24	41.3040	113.4412	1511.01	17.53	1
306.00	125.74	41.3177	113.4213	1510.52	17.35	1
306.90	125.35	41.3300	113.4037	1510.08	17.20	1
307.00	125.30	41.3314	113.4017	1510.04	17.18	1
307.25	125.19	41.3348	113.3967	1509.91	17.14	1
307.42	125.11	41.3371	113.3933	1509.83	17.11	1
307.54	125.06	41.3386	113.3909	1509.77	17.09	1
308.00	124.85	41.3447	113.3817	1509.55	17.01	1
309.00	124.43	41.3578	113.3618	1509.06	16.85	1
337.00	122.39	41.6713	112.7787	1450.51	16.73	1
337.25	122.35	41.6728	112.7725	1449.87	16.72	1

337.33	122.33	41.6733	112.7707	1449.68	16.72	1
337.43	122.32	41.6739	112.7682	1449.43	16.72	1
337.59	122.29	41.6749	112.7642	1449.02	16.71	1
337.83	122.24	41.6763	112.7583	1448.41	16.70	1
338.00	122.21	41.6773	112.7542	1447.98	16.69	1
339.00	121.96	41.6823	112.7292	1445.45	16.62	1
339.16	121.91	41.6830	112.7253	1445.06	16.61	1
339.91	121.63	41.6857	112.7061	1443.16	16.52	1
340.00	121.60	41.6861	112.7038	1442.92	16.51	1
341.00	121.42	41.6910	112.6790	1440.40	16.47	1
341.43	121.35	41.6931	112.6683	1439.31	16.45	1
341.55	121.33	41.6936	112.6654	1439.01	16.45	1
341.72	121.30	41.6944	112.6610	1438.57	16.44	1
342.00	121.24	41.6956	112.6541	1437.87	16.43	1



KSL Salt Lake City, UT
Comparison of Repack Allotment (CH 23) vs. Antenna 75010043

KSL (Points where contour exceeds 1% limit)

Azimuth	Distance	Latitude	Longitude	HAAT	ERP (dBk)	Fails
28.00	143.32	41.7948	111.3908	1365.72	25.76	1
29.00	143.26	41.7834	111.3648	1364.72	25.75	1
29.21	143.25	41.7810	111.3594	1364.51	25.75	1
29.51	143.24	41.7775	111.3515	1364.20	25.75	1
29.95	143.21	41.7723	111.3402	1363.76	25.74	1
30.00	143.21	41.7717	111.3390	1363.71	25.74	1
30.23	143.19	41.7690	111.3331	1363.48	25.74	1
30.39	143.18	41.7670	111.3291	1363.32	25.74	1
31.00	143.13	41.7595	111.3137	1362.70	25.73	1
31.05	143.13	41.7589	111.3125	1362.65	25.72	1
31.11	143.12	41.7582	111.3109	1362.59	25.72	1
31.20	143.12	41.7571	111.3087	1362.50	25.72	1
31.33	143.11	41.7555	111.3053	1362.37	25.72	1
31.52	143.10	41.7531	111.3006	1362.18	25.72	1
31.80	143.09	41.7496	111.2934	1361.89	25.72	1
32.00	143.08	41.7472	111.2885	1361.69	25.72	1
33.00	143.02	41.7345	111.2636	1360.68	25.71	1
34.00	142.97	41.7215	111.2391	1359.68	25.70	1
34.23	142.95	41.7185	111.2335	1359.45	25.70	1
34.39	142.95	41.7164	111.2297	1359.29	25.69	1
35.00	142.91	41.7082	111.2149	1358.67	25.69	1
35.11	142.91	41.7067	111.2122	1358.56	25.69	1
35.16	142.91	41.7061	111.2111	1358.51	25.69	1
35.21	142.91	41.7054	111.2099	1358.46	25.69	1
35.28	142.90	41.7044	111.2080	1358.38	25.69	1
35.39	142.90	41.7030	111.2054	1358.27	25.69	1
35.55	142.90	41.7009	111.2017	1358.12	25.69	1
35.79	142.89	41.6976	111.1959	1357.88	25.69	1
36.00	142.89	41.6947	111.1908	1357.66	25.69	1
36.35	142.87	41.6899	111.1826	1357.31	25.69	1
36.58	142.86	41.6868	111.1772	1357.08	25.68	1
36.74	142.85	41.6845	111.1734	1356.91	25.68	1
36.85	142.84	41.6829	111.1707	1356.80	25.68	1
36.92	142.84	41.6819	111.1691	1356.73	25.68	1
36.97	142.83	41.6812	111.1679	1356.68	25.68	1
37.00	142.83	41.6808	111.1673	1356.65	25.68	1
37.19	142.82	41.6782	111.1630	1356.47	25.68	1
37.47	142.81	41.6742	111.1564	1356.18	25.68	1
37.90	142.78	41.6680	111.1464	1355.75	25.67	1
38.00	142.78	41.6665	111.1441	1355.65	25.67	1
38.23	142.76	41.6632	111.1389	1355.41	25.67	1
38.39	142.75	41.6609	111.1353	1355.25	25.66	1
39.00	142.70	41.6518	111.1215	1354.64	25.65	1

39.05	142.69	41.6511	111.1204	1354.59	25.65	1
39.10	142.69	41.6503	111.1192	1354.53	25.65	1
39.18	142.68	41.6491	111.1174	1354.45	25.65	1
39.30	142.68	41.6473	111.1146	1354.33	25.65	1
39.48	142.67	41.6447	111.1106	1354.15	25.65	1
39.73	142.66	41.6410	111.1050	1353.90	25.65	1
40.00	142.64	41.6370	111.0990	1353.63	25.64	1
40.06	142.64	41.6361	111.0977	1353.57	25.64	1
40.14	142.63	41.6349	111.0958	1353.49	25.64	1
40.27	142.63	41.6329	111.0930	1353.36	25.64	1
40.46	142.62	41.6301	111.0889	1353.17	25.64	1
40.75	142.60	41.6258	111.0825	1352.88	25.64	1
41.00	142.59	41.6219	111.0769	1352.62	25.64	1
41.28	142.56	41.6175	111.0708	1352.34	25.63	1
41.46	142.54	41.6146	111.0669	1352.15	25.62	1
41.59	142.53	41.6127	111.0643	1352.03	25.62	1
41.68	142.52	41.6112	111.0623	1351.93	25.62	1
42.00	142.48	41.6061	111.0556	1351.61	25.61	1
43.00	142.37	41.5901	111.0347	1350.61	25.58	1
43.15	142.36	41.5876	111.0316	1350.45	25.58	1
43.37	142.33	41.5841	111.0272	1350.24	25.57	1
43.70	142.30	41.5787	111.0203	1349.90	25.56	1
44.00	142.27	41.5738	111.0142	1349.60	25.55	1
44.35	142.22	41.5680	111.0072	1349.25	25.54	1
44.88	142.15	41.5592	110.9968	1348.72	25.52	1
45.00	142.13	41.5571	110.9944	1348.59	25.52	1
45.66	142.01	41.5457	110.9819	1346.95	25.49	1
46.00	141.93	41.5397	110.9756	1346.09	25.47	1
46.43	141.81	41.5320	110.9678	1345.01	25.44	1
46.70	141.73	41.5270	110.9631	1344.33	25.42	1
46.90	141.67	41.5234	110.9597	1343.84	25.40	1
47.00	141.64	41.5216	110.9579	1343.59	25.40	1
47.23	141.57	41.5173	110.9541	1343.02	25.38	1
47.39	141.51	41.5144	110.9514	1342.62	25.36	1
48.00	141.30	41.5029	110.9413	1341.09	25.30	1
48.81	141.04	41.4878	110.9280	1339.06	25.23	1
49.00	140.98	41.4842	110.9249	1338.59	25.22	1
49.59	140.81	41.4732	110.9153	1337.11	25.17	1
49.75	140.76	41.4703	110.9128	1336.71	25.16	1
50.00	140.69	41.4655	110.9088	1336.09	25.14	1
50.39	140.56	41.4582	110.9028	1335.12	25.10	1
50.94	140.36	41.4475	110.8946	1333.74	25.05	1
51.00	140.33	41.4463	110.8937	1333.59	25.04	1
51.18	140.26	41.4428	110.8912	1333.13	25.02	1
52.00	139.86	41.4263	110.8803	1331.08	24.91	1
53.00	139.47	41.4066	110.8666	1328.58	24.80	1

54.00	139.05	41.3866	110.8537	1326.08	24.68	1
54.39	138.88	41.3788	110.8490	1325.11	24.63	1
54.65	138.75	41.3735	110.8458	1324.45	24.59	1
54.84	138.67	41.3697	110.8437	1323.99	24.57	1
54.96	138.61	41.3673	110.8423	1323.69	24.55	1
55.00	138.59	41.3664	110.8417	1323.58	24.55	1
55.06	138.57	41.3652	110.8411	1323.44	24.54	1
55.11	138.54	41.3642	110.8405	1323.31	24.53	1
55.15	138.52	41.3632	110.8399	1323.20	24.53	1
55.21	138.49	41.3620	110.8392	1323.05	24.52	1
55.30	138.46	41.3602	110.8382	1322.83	24.51	1
55.43	138.40	41.3576	110.8367	1322.51	24.49	1
55.63	138.31	41.3536	110.8345	1322.01	24.46	1
55.93	138.16	41.3474	110.8311	1321.26	24.42	1
56.00	138.13	41.3460	110.8304	1321.08	24.41	1
56.48	137.88	41.3360	110.8254	1319.89	24.34	1
56.79	137.71	41.3296	110.8223	1319.12	24.29	1
57.00	137.60	41.3251	110.8202	1318.58	24.25	1
57.97	137.04	41.3047	110.8113	1316.15	24.09	1
58.00	137.02	41.3041	110.8110	1316.08	24.08	1
59.00	136.54	41.2834	110.8015	1313.58	23.94	1
59.10	136.49	41.2813	110.8006	1313.33	23.93	1
59.25	136.41	41.2782	110.7993	1312.96	23.90	1
59.46	136.30	41.2737	110.7974	1312.43	23.87	1
59.78	136.13	41.2671	110.7947	1311.63	23.82	1
60.00	136.01	41.2624	110.7929	1311.08	23.78	1
60.23	135.87	41.2574	110.7912	1310.49	23.74	1
60.39	135.77	41.2540	110.7901	1310.10	23.71	1
61.00	135.38	41.2410	110.7860	1308.58	23.59	1
62.00	134.76	41.2196	110.7795	1306.08	23.41	1
62.21	134.64	41.2152	110.7782	1305.56	23.37	1
62.26	134.61	41.2140	110.7778	1305.42	23.36	1
62.34	134.56	41.2123	110.7773	1305.22	23.35	1
62.47	134.49	41.2097	110.7765	1304.91	23.32	1
62.65	134.38	41.2058	110.7754	1304.45	23.29	1
62.91	134.23	41.2004	110.7738	1303.81	23.25	1
63.00	134.17	41.1984	110.7733	1303.58	23.23	1
63.10	134.11	41.1963	110.7727	1303.33	23.21	1
63.15	134.08	41.1951	110.7724	1303.20	23.20	1
63.21	134.05	41.1940	110.7720	1303.06	23.19	1
63.28	134.00	41.1923	110.7716	1302.87	23.18	1
63.40	133.93	41.1898	110.7709	1302.57	23.16	1
63.57	133.83	41.1862	110.7699	1302.15	23.13	1
63.82	133.68	41.1808	110.7686	1301.51	23.08	1
64.00	133.57	41.1771	110.7677	1301.08	23.05	1
64.48	133.25	41.1668	110.7656	1299.88	22.95	1

64.79	133.04	41.1601	110.7644	1299.11	22.88	1
65.00	132.89	41.1555	110.7636	1298.57	22.84	1
65.39	132.60	41.1471	110.7623	1297.61	22.75	1
65.68	132.39	41.1407	110.7615	1296.87	22.68	1
65.87	132.25	41.1366	110.7609	1296.40	22.64	1
66.00	132.15	41.1338	110.7606	1296.07	22.61	1
67.00	131.39	41.1120	110.7584	1293.57	22.38	1
67.93	130.79	41.0922	110.7558	1291.25	22.19	1
68.00	130.74	41.0907	110.7556	1291.07	22.18	1
68.16	130.62	41.0873	110.7554	1290.68	22.14	1
68.91	130.01	41.0711	110.7551	1288.80	21.95	1
69.00	129.95	41.0691	110.7549	1288.57	21.93	1
69.25	129.78	41.0637	110.7545	1287.94	21.88	1
69.42	129.68	41.0601	110.7541	1287.51	21.85	1
69.54	129.61	41.0576	110.7538	1287.21	21.83	1
70.00	129.34	41.0481	110.7527	1286.07	21.75	1
70.90	128.86	41.0294	110.7504	1283.82	21.61	1
71.00	128.81	41.0273	110.7502	1283.57	21.59	1
71.14	128.72	41.0243	110.7500	1283.21	21.56	1
71.98	128.19	41.0067	110.7493	1281.11	21.40	1
72.00	128.18	41.0064	110.7492	1281.07	21.40	1
72.23	128.07	41.0017	110.7488	1280.50	21.37	1
73.00	127.72	40.9860	110.7469	1278.57	21.27	1
73.81	127.38	40.9695	110.7451	1276.54	21.17	1
74.00	127.30	40.9657	110.7446	1276.07	21.15	1
74.23	127.22	40.9611	110.7440	1275.50	21.13	1
74.39	127.17	40.9579	110.7436	1275.10	21.11	1
75.00	126.97	40.9456	110.7418	1273.57	21.06	1
75.82	126.71	40.9291	110.7398	1271.51	20.99	1
76.00	126.68	40.9256	110.7391	1271.07	20.98	1
76.48	126.62	40.9162	110.7369	1269.87	20.98	1
76.61	126.61	40.9136	110.7363	1269.54	20.98	1
76.80	126.60	40.9100	110.7354	1269.07	20.98	1
77.00	126.59	40.9060	110.7343	1268.57	20.98	1
78.00	126.59	40.8866	110.7291	1266.06	21.01	1
78.17	126.59	40.8832	110.7283	1265.63	21.01	1
78.92	126.51	40.8685	110.7256	1263.77	21.01	1
79.00	126.51	40.8669	110.7252	1263.56	21.01	1
79.21	126.51	40.8629	110.7243	1263.05	21.02	1
79.35	126.51	40.8600	110.7236	1262.68	21.03	1
80.00	126.55	40.8474	110.7204	1261.06	21.06	1
80.23	126.58	40.8429	110.7192	1260.49	21.08	1
80.37	126.60	40.8401	110.7183	1260.13	21.09	1
81.00	126.75	40.8280	110.7141	1258.56	21.16	1
82.00	127.04	40.8085	110.7073	1256.06	21.30	1
82.11	127.07	40.8064	110.7066	1255.79	21.31	1

82.16	127.08	40.8054	110.7063	1255.66	21.32	1
82.22	127.10	40.8043	110.7059	1255.52	21.33	1
82.29	127.12	40.8028	110.7054	1255.33	21.34	1
82.41	127.16	40.8005	110.7046	1255.03	21.35	1
82.58	127.20	40.7973	110.7036	1254.62	21.37	1
82.83	127.27	40.7924	110.7020	1253.99	21.41	1
83.00	127.32	40.7890	110.7010	1253.56	21.43	1
84.00	127.56	40.7693	110.6956	1251.06	21.55	1
84.23	127.60	40.7648	110.6946	1250.49	21.57	1
84.37	127.63	40.7619	110.6939	1250.13	21.58	1
85.00	127.75	40.7494	110.6912	1248.56	21.65	1
85.73	127.91	40.7349	110.6881	1246.74	21.73	1
85.93	127.96	40.7310	110.6872	1246.24	21.75	1
86.00	127.98	40.7295	110.6869	1246.06	21.76	1
86.14	128.03	40.7267	110.6861	1245.70	21.78	1
86.90	128.31	40.7115	110.6819	1243.80	21.90	1
87.00	128.34	40.7096	110.6815	1243.56	21.92	1
87.10	128.36	40.7076	110.6811	1243.31	21.93	1
87.25	128.41	40.7046	110.6805	1242.94	21.94	1
87.46	128.46	40.7003	110.6797	1242.40	21.97	1
87.78	128.53	40.6939	110.6787	1241.61	22.00	1
88.00	128.57	40.6895	110.6781	1241.06	22.03	1
88.23	128.59	40.6849	110.6777	1240.49	22.04	1
88.37	128.61	40.6820	110.6775	1240.13	22.05	1
89.00	128.67	40.6693	110.6766	1238.56	22.10	1
89.90	128.81	40.6511	110.6752	1236.31	22.17	1
90.00	128.82	40.6490	110.6751	1236.06	22.18	1
90.64	128.93	40.6361	110.6742	1232.23	22.25	1
90.81	128.95	40.6326	110.6741	1231.19	22.27	1
91.00	128.96	40.6288	110.6742	1230.05	22.30	1
91.43	128.95	40.6201	110.6747	1227.46	22.33	1
91.73	128.94	40.6140	110.6751	1225.65	22.35	1
91.95	128.94	40.6096	110.6755	1224.35	22.36	1
92.00	128.94	40.6086	110.6756	1224.04	22.36	1
92.43	128.91	40.5999	110.6765	1221.46	22.39	1
92.70	128.90	40.5944	110.6771	1219.82	22.40	1
92.90	128.88	40.5905	110.6777	1218.65	22.41	1
93.00	128.87	40.5884	110.6779	1218.04	22.42	1
93.53	128.82	40.5777	110.6796	1214.85	22.44	1
93.91	128.78	40.5701	110.6809	1212.57	22.45	1
94.00	128.77	40.5683	110.6812	1212.03	22.46	1
95.00	128.63	40.5483	110.6854	1206.03	22.48	1
95.27	128.58	40.5430	110.6868	1204.43	22.48	1
95.43	128.54	40.5397	110.6877	1203.42	22.48	1
95.55	128.52	40.5374	110.6884	1202.72	22.48	1
96.00	128.42	40.5285	110.6910	1200.02	22.48	1

96.25	128.36	40.5235	110.6924	1198.49	22.48	1
96.32	128.35	40.5221	110.6928	1198.10	22.48	1
96.42	128.33	40.5201	110.6934	1197.48	22.48	1
96.57	128.30	40.5172	110.6943	1196.60	22.48	1
96.80	128.25	40.5127	110.6957	1195.23	22.48	1
97.00	128.20	40.5088	110.6970	1194.02	22.48	1
98.00	127.91	40.4893	110.7043	1188.01	22.46	1
98.73	127.63	40.4752	110.7106	1183.63	22.41	1
99.00	127.51	40.4701	110.7132	1182.00	22.39	1
99.15	127.44	40.4672	110.7147	1181.10	22.37	1
99.94	127.04	40.4524	110.7232	1176.37	22.29	1
100.00	127.01	40.4512	110.7238	1176.00	22.28	1
101.00	126.67	40.4323	110.7330	1169.99	22.23	1
101.09	126.64	40.4307	110.7338	1169.46	22.23	1
101.23	126.59	40.4281	110.7351	1168.64	22.22	1
101.42	126.52	40.4244	110.7370	1167.46	22.21	1
101.70	126.43	40.4192	110.7396	1165.80	22.19	1
102.00	126.32	40.4136	110.7426	1163.99	22.18	1
102.14	126.27	40.4111	110.7440	1163.18	22.17	1
102.33	126.20	40.4074	110.7459	1161.99	22.15	1
102.62	126.10	40.4021	110.7489	1160.26	22.13	1
103.00	125.95	40.3951	110.7529	1157.98	22.11	1
103.35	125.80	40.3888	110.7568	1155.89	22.08	1
103.58	125.70	40.3846	110.7594	1154.52	22.05	1
103.74	125.63	40.3817	110.7614	1153.54	22.04	1
103.85	125.58	40.3797	110.7627	1152.87	22.03	1
103.92	125.54	40.3784	110.7635	1152.44	22.02	1
103.98	125.52	40.3774	110.7642	1152.10	22.02	1
104.00	125.51	40.3770	110.7644	1151.98	22.01	1
104.35	125.35	40.3707	110.7686	1149.88	21.97	1
104.60	125.23	40.3662	110.7717	1148.37	21.95	1
104.77	125.15	40.3632	110.7738	1147.34	21.93	1
104.89	125.09	40.3610	110.7753	1146.61	21.91	1
104.97	125.05	40.3597	110.7763	1146.14	21.91	1
105.00	125.04	40.3592	110.7766	1145.97	21.90	1
106.00	124.57	40.3415	110.7892	1139.96	21.79	1
107.00	124.22	40.3239	110.8009	1133.96	21.72	1
107.21	124.14	40.3203	110.8033	1132.72	21.70	1
108.00	123.86	40.3064	110.8129	1127.95	21.65	1
108.73	123.63	40.2937	110.8216	1123.58	21.61	1
108.93	123.57	40.2903	110.8240	1122.39	21.59	1
109.00	123.55	40.2890	110.8249	1121.95	21.59	1
109.21	123.48	40.2855	110.8274	1120.71	21.58	1
110.00	123.23	40.2718	110.8372	1115.94	21.53	1
110.81	123.00	40.2580	110.8473	1111.08	21.50	1
111.00	122.96	40.2548	110.8495	1109.94	21.49	1

111.35	122.90	40.2487	110.8534	1107.84	21.49	1
111.88	122.83	40.2395	110.8592	1104.67	21.50	1
112.00	122.82	40.2374	110.8606	1103.93	21.50	1
112.73	122.76	40.2247	110.8685	1099.55	21.54	1
112.93	122.75	40.2212	110.8706	1098.37	21.54	1
113.00	122.75	40.2199	110.8713	1097.93	21.55	1
114.00	122.75	40.2024	110.8817	1091.92	21.62	1
115.00	122.78	40.1848	110.8922	1085.91	21.71	1
115.21	122.80	40.1811	110.8943	1084.66	21.73	1
115.36	122.82	40.1785	110.8958	1083.78	21.75	1
116.00	122.91	40.1670	110.9020	1079.91	21.83	1
178.00	117.01	39.6070	112.1550	691.00	25.04	1
178.25	116.88	39.6081	112.1611	689.38	25.02	1
178.44	116.77	39.6089	112.1657	688.16	24.99	1
178.57	116.70	39.6095	112.1687	687.35	24.98	1
178.66	116.65	39.6099	112.1709	686.79	24.97	1
179.00	116.46	39.6115	112.1790	684.61	24.93	1
179.10	116.40	39.6120	112.1813	683.98	24.92	1
179.61	116.04	39.6152	112.1934	680.73	24.86	1
179.72	115.98	39.6157	112.1961	680.02	24.84	1
179.87	115.92	39.6162	112.1996	679.06	24.82	1
180.00	115.90	39.6164	112.2027	678.22	24.81	1
180.19	115.93	39.6161	112.2073	681.29	24.78	1
180.33	115.97	39.6157	112.2105	683.45	24.76	1
180.43	116.02	39.6153	112.2129	685.14	24.74	1
181.00	116.30	39.6129	112.2264	694.21	24.66	1
181.66	116.59	39.6106	112.2421	704.70	24.57	1
181.84	116.67	39.6100	112.2464	707.63	24.55	1
182.00	116.73	39.6095	112.2503	710.20	24.53	1
182.25	116.84	39.6087	112.2564	714.27	24.49	1
182.42	116.91	39.6082	112.2605	717.00	24.47	1
182.53	116.95	39.6079	112.2630	718.70	24.45	1
183.00	117.15	39.6066	112.2743	726.19	24.39	1
183.73	117.47	39.6044	112.2919	737.85	24.31	1
183.93	117.56	39.6039	112.2967	741.01	24.28	1
184.00	117.58	39.6038	112.2985	742.19	24.28	1
185.00	117.93	39.6021	112.3227	758.18	24.13	1
186.00	118.20	39.6015	112.3470	774.17	23.95	1
186.25	118.25	39.6014	112.3531	778.23	23.90	1
186.41	118.29	39.6015	112.3569	780.69	23.87	1
186.52	118.31	39.6015	112.3595	782.45	23.85	1
187.00	118.41	39.6016	112.3712	790.16	23.76	1
188.00	118.64	39.6019	112.3955	806.15	23.59	1
188.66	118.81	39.6021	112.4115	816.65	23.49	1
188.84	118.86	39.6022	112.4160	819.57	23.47	1
189.00	118.90	39.6024	112.4199	822.15	23.44	1

189.73	119.05	39.6032	112.4376	833.80	23.32	1
190.00	119.10	39.6036	112.4442	838.14	23.28	1
190.23	119.14	39.6040	112.4498	841.80	23.24	1
190.41	119.17	39.6043	112.4540	844.62	23.21	1
191.00	119.27	39.6055	112.4685	854.13	23.11	1
191.66	119.40	39.6067	112.4844	864.62	23.01	1
191.84	119.44	39.6071	112.4888	867.54	22.99	1
192.00	119.47	39.6074	112.4928	870.12	22.96	1
192.48	119.56	39.6085	112.5044	877.77	22.89	1
192.61	119.58	39.6088	112.5076	879.89	22.87	1
192.80	119.61	39.6093	112.5121	882.87	22.84	1
193.00	119.64	39.6099	112.5170	886.11	22.81	1
193.19	119.65	39.6106	112.5214	889.08	22.78	1
194.00	119.70	39.6137	112.5409	902.10	22.62	1
194.20	119.72	39.6144	112.5456	905.26	22.60	1
195.00	119.90	39.6166	112.5651	918.10	22.51	1
195.81	120.08	39.6190	112.5848	931.05	22.42	1
196.00	120.12	39.6196	112.5894	934.09	22.40	1
197.00	120.37	39.6228	112.6138	950.08	22.31	1
198.00	120.70	39.6255	112.6384	966.07	22.26	1
199.00	121.03	39.6287	112.6630	982.06	22.20	1
199.08	121.05	39.6289	112.6649	983.34	22.20	1
199.19	121.09	39.6293	112.6677	985.13	22.20	1
199.36	121.16	39.6298	112.6718	987.79	22.19	1
199.61	121.25	39.6305	112.6780	991.77	22.19	1
200.00	121.41	39.6316	112.6878	998.06	22.18	1
200.39	121.58	39.6327	112.6975	1004.25	22.18	1
200.68	121.73	39.6334	112.7049	1008.94	22.19	1
200.87	121.82	39.6339	112.7097	1011.95	22.19	1
201.00	121.89	39.6342	112.7130	1014.05	22.19	1
202.00	122.46	39.6363	112.7386	1030.04	22.24	1
202.23	122.59	39.6369	112.7445	1033.70	22.25	1
202.37	122.67	39.6373	112.7481	1035.98	22.26	1
203.00	123.01	39.6390	112.7642	1046.03	22.28	1
203.90	123.53	39.6415	112.7874	1060.42	22.33	1
204.00	123.59	39.6418	112.7900	1062.02	22.34	1
204.66	124.02	39.6435	112.8072	1072.51	22.39	1
205.00	124.25	39.6444	112.8162	1078.01	22.42	1
205.21	124.39	39.6449	112.8217	1081.31	22.44	1
205.26	124.43	39.6450	112.8232	1082.22	22.44	1
205.35	124.50	39.6452	112.8255	1083.65	22.45	1
205.49	124.59	39.6455	112.8291	1085.78	22.47	1
205.69	124.74	39.6460	112.8344	1088.97	22.49	1
206.00	124.98	39.6467	112.8429	1094.01	22.52	1
206.14	125.10	39.6469	112.8466	1096.19	22.54	1
206.91	125.79	39.6480	112.8680	1108.62	22.66	1

207.00	125.87	39.6482	112.8704	1110.00	22.67	1
207.27	126.08	39.6488	112.8777	1114.31	22.70	1
207.46	126.23	39.6493	112.8827	1117.28	22.72	1
207.58	126.32	39.6497	112.8861	1119.27	22.73	1
207.67	126.39	39.6500	112.8884	1120.65	22.74	1
208.00	126.65	39.6510	112.8975	1125.99	22.78	1
209.00	127.42	39.6542	112.9246	1141.98	22.86	1
209.59	127.91	39.6561	112.9408	1151.42	22.92	1
209.77	128.06	39.6566	112.9457	1154.24	22.94	1
210.00	128.27	39.6573	112.9522	1157.97	22.96	1
210.14	128.40	39.6576	112.9561	1160.19	22.98	1
210.95	129.23	39.6593	112.9794	1173.13	23.10	1
211.00	129.28	39.6595	112.9808	1173.97	23.11	1
211.66	129.87	39.6618	112.9993	1184.46	23.17	1
212.00	130.16	39.6632	113.0088	1189.96	23.21	1
212.35	130.45	39.6647	113.0185	1195.53	23.23	1
212.58	130.63	39.6658	113.0247	1199.16	23.25	1
212.72	130.74	39.6666	113.0288	1201.53	23.26	1
212.83	130.83	39.6671	113.0317	1203.24	23.27	1
212.90	130.88	39.6675	113.0337	1204.41	23.27	1
212.95	130.92	39.6677	113.0351	1205.23	23.27	1
213.00	130.96	39.6679	113.0363	1205.95	23.28	1
213.05	131.00	39.6682	113.0378	1206.79	23.28	1
213.10	131.04	39.6685	113.0392	1207.58	23.28	1
213.15	131.08	39.6687	113.0406	1208.41	23.29	1
213.22	131.14	39.6691	113.0424	1209.49	23.29	1
213.33	131.22	39.6696	113.0453	1211.17	23.30	1
213.48	131.34	39.6704	113.0496	1213.64	23.31	1
213.70	131.52	39.6716	113.0557	1217.21	23.33	1
214.00	131.74	39.6733	113.0638	1221.94	23.35	1
214.53	132.12	39.6766	113.0781	1230.44	23.37	1
214.87	132.35	39.6788	113.0873	1235.90	23.39	1
215.00	132.44	39.6797	113.0907	1237.93	23.40	1
215.39	132.69	39.6823	113.1010	1244.13	23.41	1
215.65	132.86	39.6842	113.1080	1248.35	23.42	1
215.84	132.98	39.6856	113.1129	1251.31	23.42	1
215.97	133.07	39.6865	113.1164	1253.43	23.43	1
216.00	133.09	39.6868	113.1173	1253.92	23.43	1
216.39	133.34	39.6896	113.1276	1260.12	23.44	1
216.49	133.41	39.6904	113.1303	1261.75	23.45	1
216.63	133.51	39.6915	113.1341	1264.06	23.45	1
216.85	133.64	39.6932	113.1398	1267.52	23.46	1
217.00	133.73	39.6944	113.1437	1269.92	23.47	1
218.00	134.27	39.7031	113.1693	1285.91	23.47	1
219.00	134.73	39.7128	113.1943	1301.90	23.44	1
219.11	134.77	39.7140	113.1970	1303.65	23.44	1

219.27	134.84	39.7157	113.2011	1306.29	23.43	1
219.53	134.94	39.7183	113.2072	1310.33	23.42	1
219.87	135.07	39.7220	113.2155	1315.84	23.40	1
220.00	135.11	39.7234	113.2186	1317.89	23.40	1
220.20	135.17	39.7257	113.2233	1321.08	23.38	1
221.00	135.38	39.7352	113.2418	1333.88	23.31	1
221.85	135.68	39.7450	113.2619	1347.48	23.26	1
222.00	135.72	39.7468	113.2653	1349.88	23.25	1
223.00	135.90	39.7598	113.2875	1365.87	23.15	1
223.05	135.91	39.7605	113.2886	1366.70	23.14	1
223.10	135.92	39.7611	113.2897	1367.50	23.13	1
223.17	135.93	39.7621	113.2912	1368.64	23.12	1
223.27	135.94	39.7635	113.2934	1370.25	23.11	1
223.42	135.96	39.7655	113.2966	1372.64	23.09	1
223.65	135.99	39.7686	113.3013	1376.21	23.06	1
223.96	136.01	39.7730	113.3080	1381.29	23.02	1
224.00	136.01	39.7736	113.3087	1381.86	23.01	1
224.23	136.02	39.7769	113.3134	1385.52	22.97	1
224.56	136.03	39.7817	113.3201	1390.83	22.92	1
225.00	136.04	39.7882	113.3290	1397.85	22.85	1
225.22	136.01	39.7915	113.3331	1398.48	22.82	1
225.37	135.97	39.7941	113.3358	1398.93	22.80	1
225.97	135.75	39.8045	113.3457	1400.68	22.72	1
226.00	135.74	39.8051	113.3462	1400.78	22.71	1
226.07	135.72	39.8063	113.3475	1400.99	22.70	1
226.18	135.68	39.8082	113.3494	1401.32	22.69	1
226.35	135.63	39.8111	113.3522	1401.81	22.66	1
226.60	135.56	39.8154	113.3564	1402.55	22.63	1
226.96	135.45	39.8216	113.3624	1403.59	22.58	1
227.00	135.44	39.8223	113.3630	1403.71	22.57	1
227.39	135.31	39.8290	113.3693	1404.84	22.51	1
227.94	135.11	39.8388	113.3781	1406.45	22.43	1
228.00	135.09	39.8399	113.3790	1406.63	22.42	1
229.00	134.66	39.8581	113.3939	1409.56	22.23	1
229.19	134.57	39.8616	113.3965	1410.12	22.19	1
230.00	134.15	39.8770	113.4075	1412.49	22.01	1
230.66	133.84	39.8893	113.4164	1414.41	21.89	1
230.82	133.77	39.8924	113.4187	1414.89	21.85	1
231.00	133.70	39.8956	113.4212	1415.42	21.82	1
232.00	133.40	39.9136	113.4358	1418.34	21.68	1
233.00	133.10	39.9317	113.4499	1421.27	21.53	1
233.31	133.02	39.9373	113.4544	1422.19	21.50	1
233.40	133.00	39.9388	113.4556	1422.44	21.49	1
233.52	132.97	39.9411	113.4573	1422.80	21.47	1
233.71	132.92	39.9444	113.4600	1423.34	21.45	1
233.97	132.87	39.9491	113.4638	1424.11	21.42	1

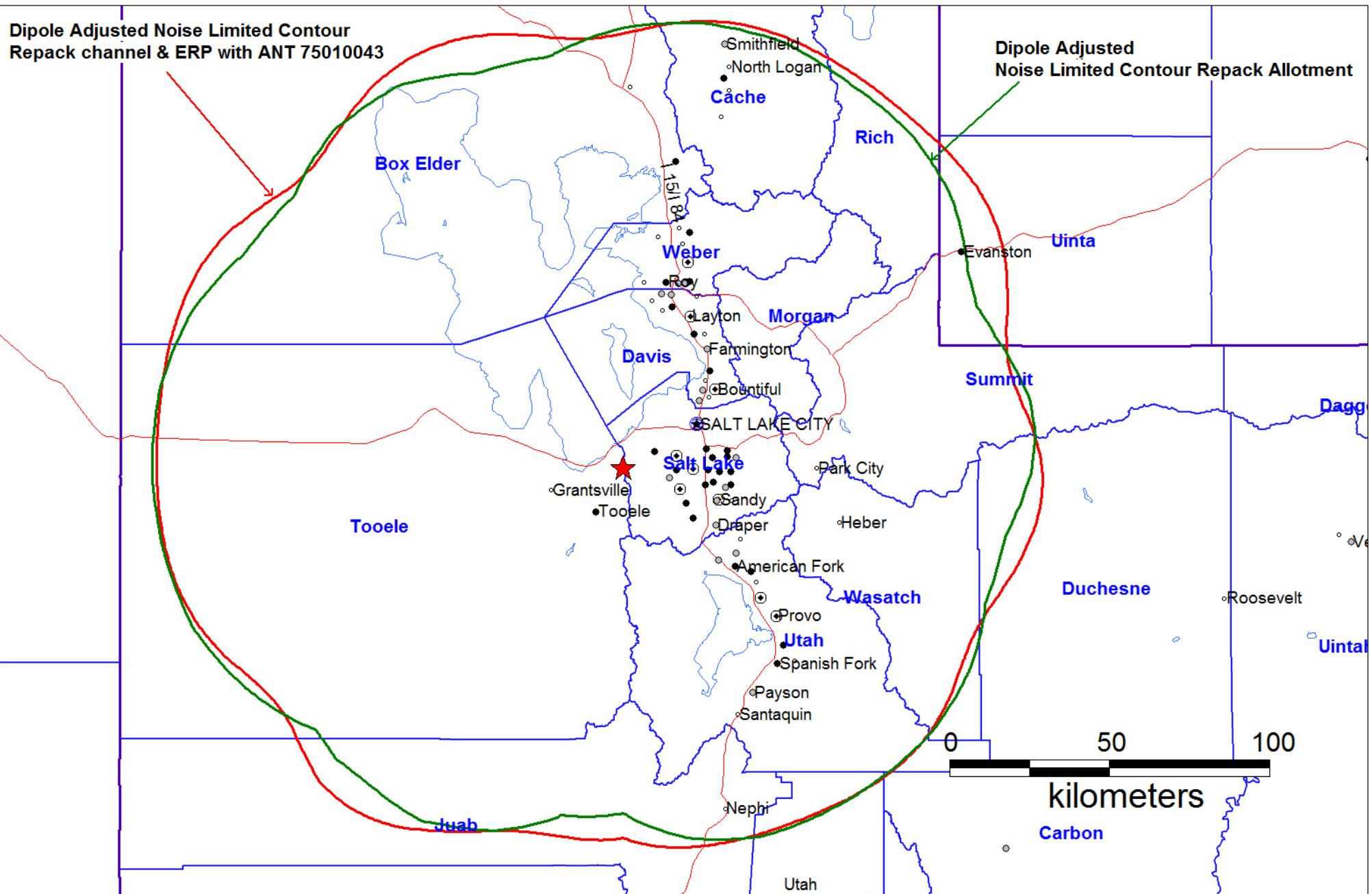
234.00	132.87	39.9496	113.4642	1424.20	21.42	1
234.25	132.82	39.9541	113.4679	1424.94	21.39	1
234.42	132.79	39.9571	113.4704	1425.44	21.38	1
234.54	132.78	39.9592	113.4722	1425.79	21.37	1
235.00	132.71	39.9672	113.4789	1427.13	21.33	1
235.80	132.60	39.9814	113.4905	1429.48	21.27	1
236.00	132.60	39.9848	113.4935	1430.06	21.25	1
236.23	132.60	39.9886	113.4971	1430.72	21.25	1
236.37	132.61	39.9910	113.4994	1431.14	21.25	1
263.81	146.33	40.5044	113.9242	1511.48	25.60	1
264.00	146.39	40.5086	113.9256	1512.03	25.62	1
265.00	146.65	40.5312	113.9322	1514.96	25.69	1
266.00	146.87	40.5539	113.9377	1517.89	25.74	1
266.43	146.96	40.5638	113.9398	1519.15	25.76	1
266.70	147.01	40.5700	113.9411	1519.94	25.77	1
266.90	147.04	40.5745	113.9420	1520.52	25.78	1
267.00	147.06	40.5768	113.9424	1520.81	25.79	1
267.10	147.08	40.5791	113.9429	1521.10	25.79	1
267.25	147.11	40.5825	113.9435	1521.54	25.80	1
267.46	147.15	40.5874	113.9444	1522.16	25.81	1
267.78	147.21	40.5947	113.9458	1523.10	25.82	1
268.00	147.25	40.5998	113.9466	1523.74	25.83	1
268.35	147.31	40.6078	113.9478	1524.76	25.84	1
268.60	147.35	40.6136	113.9487	1525.50	25.85	1
268.77	147.38	40.6176	113.9492	1526.00	25.86	1
268.88	147.40	40.6201	113.9496	1526.32	25.86	1
268.96	147.41	40.6219	113.9498	1526.55	25.87	1
269.00	147.42	40.6228	113.9499	1526.67	25.87	1
269.59	147.53	40.6364	113.9518	1528.40	25.89	1
269.75	147.55	40.6401	113.9523	1528.86	25.89	1
269.97	147.58	40.6453	113.9528	1529.52	25.90	1
270.00	147.58	40.6459	113.9528	1529.60	25.90	1
270.73	147.64	40.6628	113.9538	1529.24	25.92	1
271.00	147.65	40.6691	113.9540	1529.11	25.93	1
271.31	147.67	40.6763	113.9542	1528.96	25.93	1
271.76	147.69	40.6868	113.9543	1528.74	25.94	1
272.00	147.70	40.6923	113.9543	1528.63	25.95	1
272.35	147.70	40.7003	113.9542	1528.46	25.95	1
272.60	147.70	40.7062	113.9540	1528.33	25.95	1
272.76	147.71	40.7098	113.9539	1528.26	25.95	1
272.87	147.71	40.7125	113.9538	1528.20	25.95	1
272.95	147.71	40.7142	113.9538	1528.17	25.95	1
273.00	147.71	40.7154	113.9537	1528.14	25.96	1
273.73	147.74	40.7323	113.9532	1527.79	25.97	1
273.93	147.75	40.7369	113.9531	1527.69	25.97	1
274.00	147.75	40.7386	113.9530	1527.66	25.97	1

274.05	147.76	40.7397	113.9529	1527.63	25.97	1
274.09	147.76	40.7408	113.9529	1527.61	25.97	1
274.16	147.76	40.7423	113.9528	1527.58	25.98	1
274.25	147.76	40.7444	113.9527	1527.53	25.98	1
274.39	147.77	40.7476	113.9526	1527.47	25.98	1
274.60	147.78	40.7526	113.9523	1527.36	25.98	1
274.89	147.79	40.7593	113.9519	1527.22	25.99	1
275.00	147.80	40.7618	113.9517	1527.17	25.99	1
275.31	147.80	40.7691	113.9511	1527.02	25.99	1
275.76	147.81	40.7795	113.9501	1526.80	26.00	1
276.00	147.81	40.7850	113.9495	1526.68	26.00	1
276.43	147.81	40.7949	113.9483	1526.48	26.00	1
276.73	147.80	40.8019	113.9474	1526.33	26.00	1
276.95	147.80	40.8069	113.9467	1526.22	26.00	1
277.00	147.80	40.8081	113.9466	1526.20	26.00	1
305.90	139.23	41.3858	113.5552	1512.17	22.90	1
306.00	139.19	41.3874	113.5531	1512.12	22.89	1
307.00	138.75	41.4028	113.5319	1511.64	22.73	1
308.00	138.37	41.4182	113.5109	1511.15	22.58	1
308.53	138.18	41.4264	113.4998	1510.89	22.52	1
308.87	138.06	41.4315	113.4926	1510.73	22.47	1
309.00	138.02	41.4335	113.4899	1510.66	22.46	1
310.00	137.70	41.4486	113.4688	1510.18	22.34	1
310.35	137.60	41.4538	113.4616	1510.01	22.30	1
310.45	137.58	41.4553	113.4595	1509.96	22.30	1
310.59	137.54	41.4575	113.4566	1509.89	22.28	1
310.78	137.49	41.4604	113.4525	1509.80	22.26	1
311.00	137.44	41.4637	113.4481	1509.69	22.24	1
311.66	137.31	41.4737	113.4346	1509.37	22.20	1
311.82	137.28	41.4762	113.4312	1509.29	22.19	1
312.00	137.25	41.4790	113.4276	1509.21	22.18	1
312.25	137.23	41.4829	113.4225	1509.08	22.17	1
312.44	137.21	41.4859	113.4188	1508.99	22.16	1
312.57	137.20	41.4879	113.4162	1508.93	22.16	1
312.66	137.19	41.4892	113.4145	1508.89	22.16	1
313.00	137.17	41.4946	113.4077	1508.72	22.15	1
314.00	137.12	41.5101	113.3878	1508.24	22.14	1
314.21	137.13	41.5133	113.3838	1508.14	22.14	1
315.00	137.18	41.5260	113.3684	1507.75	22.16	1
316.00	137.30	41.5420	113.3491	1505.22	22.23	1
317.00	137.44	41.5580	113.3297	1502.69	22.31	1
318.00	137.66	41.5742	113.3105	1500.16	22.42	1
318.21	137.70	41.5775	113.3064	1499.64	22.43	1
319.00	137.84	41.5900	113.2905	1497.64	22.51	1
319.25	137.89	41.5940	113.2854	1496.99	22.54	1
319.44	137.94	41.5970	113.2817	1496.51	22.56	1

319.56	137.96	41.5988	113.2794	1496.22	22.57	1
319.64	137.98	41.6001	113.2778	1496.02	22.58	1
320.00	138.08	41.6059	113.2706	1495.11	22.62	1
320.66	138.27	41.6164	113.2576	1493.45	22.72	1
321.00	138.39	41.6220	113.2508	1492.58	22.76	1
321.89	138.75	41.6368	113.2334	1490.32	22.92	1
322.00	138.79	41.6385	113.2313	1490.05	22.94	1
322.12	138.83	41.6405	113.2289	1489.74	22.96	1
322.30	138.90	41.6434	113.2252	1489.28	22.98	1
322.57	138.99	41.6477	113.2197	1488.60	23.02	1
322.96	139.11	41.6537	113.2117	1487.63	23.08	1
323.00	139.12	41.6543	113.2108	1487.52	23.08	1
323.19	139.16	41.6572	113.2067	1487.04	23.11	1
324.00	139.34	41.6692	113.1892	1484.99	23.19	1
324.28	139.43	41.6735	113.1831	1484.28	23.24	1
324.49	139.50	41.6766	113.1788	1483.76	23.27	1
324.63	139.55	41.6789	113.1757	1483.39	23.29	1
324.73	139.59	41.6805	113.1735	1483.13	23.31	1
324.81	139.62	41.6817	113.1720	1482.94	23.32	1
324.86	139.64	41.6824	113.1709	1482.82	23.33	1
324.91	139.66	41.6832	113.1699	1482.69	23.33	1
325.00	139.69	41.6846	113.1680	1482.46	23.35	1
325.12	139.75	41.6866	113.1654	1482.16	23.37	1
325.82	140.09	41.6979	113.1511	1480.39	23.51	1
326.00	140.16	41.7007	113.1471	1479.93	23.55	1
326.26	140.24	41.7045	113.1414	1479.28	23.58	1
326.43	140.29	41.7070	113.1376	1478.85	23.60	1
326.55	140.32	41.7087	113.1349	1478.55	23.61	1
327.00	140.44	41.7151	113.1246	1477.40	23.67	1
327.25	140.51	41.7188	113.1188	1476.76	23.70	1
327.33	140.53	41.7198	113.1171	1476.57	23.71	1
327.43	140.56	41.7212	113.1148	1476.32	23.73	1
327.59	140.60	41.7235	113.1111	1475.91	23.75	1
327.83	140.67	41.7269	113.1055	1475.30	23.78	1
328.00	140.71	41.7292	113.1016	1474.87	23.80	1
330.93	141.29	41.7671	113.0308	1467.47	24.08	1
331.00	141.30	41.7680	113.0290	1467.29	24.08	1
331.59	141.37	41.7750	113.0141	1465.79	24.12	1
331.96	141.41	41.7792	113.0047	1464.86	24.14	1
332.00	141.41	41.7797	113.0036	1464.76	24.15	1
332.05	141.42	41.7802	113.0024	1464.64	24.15	1
332.10	141.42	41.7808	113.0012	1464.51	24.15	1
332.14	141.42	41.7813	112.9999	1464.39	24.15	1
332.21	141.43	41.7820	112.9984	1464.24	24.16	1
332.29	141.44	41.7830	112.9961	1464.02	24.16	1
332.42	141.45	41.7845	112.9928	1463.69	24.17	1

332.62	141.47	41.7867	112.9876	1463.18	24.18	1
332.93	141.49	41.7900	112.9797	1462.41	24.20	1
333.00	141.49	41.7908	112.9778	1462.23	24.20	1
333.21	141.50	41.7930	112.9724	1461.71	24.21	1
333.51	141.51	41.7962	112.9643	1460.93	24.22	1
333.95	141.52	41.8006	112.9527	1459.82	24.23	1
334.00	141.52	41.8011	112.9514	1459.70	24.23	1
334.27	141.51	41.8037	112.9441	1459.01	24.23	1
334.46	141.50	41.8054	112.9391	1458.54	24.23	1
334.60	141.49	41.8067	112.9353	1458.19	24.23	1
334.69	141.48	41.8075	112.9328	1457.96	24.23	1
334.75	141.48	41.8081	112.9310	1457.80	24.23	1
335.00	141.46	41.8103	112.9243	1457.17	24.23	1
335.23	141.44	41.8123	112.9180	1456.59	24.23	1
335.39	141.42	41.8137	112.9137	1456.19	24.23	1
336.00	141.37	41.8189	112.8968	1454.64	24.22	1
336.53	141.33	41.8235	112.8822	1453.30	24.22	1
336.68	141.33	41.8248	112.8782	1452.92	24.22	1
336.89	141.31	41.8265	112.8724	1452.39	24.22	1
337.00	141.30	41.8274	112.8693	1452.11	24.22	1
337.31	141.27	41.8299	112.8606	1451.33	24.21	1
337.53	141.24	41.8315	112.8546	1450.78	24.21	1
337.69	141.21	41.8327	112.8499	1450.36	24.20	1
337.80	141.19	41.8334	112.8469	1450.09	24.20	1
337.87	141.18	41.8339	112.8449	1449.91	24.19	1
337.92	141.17	41.8343	112.8434	1449.78	24.19	1
337.97	141.16	41.8346	112.8421	1449.67	24.19	1
338.00	141.15	41.8348	112.8412	1449.58	24.19	1
339.00	140.94	41.8413	112.8127	1447.05	24.14	1
339.25	140.88	41.8428	112.8054	1446.42	24.11	1
339.42	140.82	41.8437	112.8005	1445.99	24.10	1
339.54	140.79	41.8443	112.7970	1445.69	24.09	1
340.00	140.64	41.8467	112.7836	1444.52	24.05	1
341.00	140.34	41.8516	112.7545	1442.00	23.96	1
341.81	140.14	41.8558	112.7311	1439.95	23.91	1
342.00	140.09	41.8566	112.7256	1439.47	23.90	1
342.43	139.96	41.8584	112.7132	1438.39	23.85	1
342.70	139.86	41.8594	112.7051	1437.70	23.83	1
342.90	139.79	41.8601	112.6993	1437.20	23.81	1
343.00	139.75	41.8604	112.6963	1436.94	23.80	1
344.00	139.34	41.8633	112.6667	1434.41	23.67	1
344.19	139.25	41.8636	112.6610	1433.93	23.64	1
345.00	138.83	41.8648	112.6368	1431.88	23.51	1
346.00	138.41	41.8667	112.6072	1429.35	23.38	1
346.25	138.30	41.8671	112.5997	1428.71	23.35	1
346.44	138.22	41.8674	112.5941	1428.23	23.33	1

346.57	138.17	41.8675	112.5904	1427.91	23.31	1
346.65	138.13	41.8676	112.5880	1427.70	23.30	1
347.00	137.98	41.8681	112.5777	1426.82	23.25	1
347.31	137.86	41.8685	112.5685	1426.03	23.22	1
347.40	137.82	41.8686	112.5660	1425.82	23.21	1
347.52	137.77	41.8688	112.5624	1425.50	23.19	1
347.71	137.70	41.8690	112.5569	1425.03	23.17	1
347.97	137.59	41.8693	112.5492	1424.37	23.14	1
348.00	137.58	41.8694	112.5483	1424.29	23.13	1
349.00	137.18	41.8702	112.5189	1421.76	23.01	1
350.00	136.76	41.8705	112.4896	1419.23	22.89	1
350.97	136.36	41.8704	112.4614	1416.79	22.77	1
351.00	136.34	41.8704	112.4604	1416.70	22.76	1



KTVX Salt Lake City, UT
Comparison of Repack Allotment (CH 30) vs. Antenna 75010043

KTVX (Points where contour exceeds 1% limit)

Azimuth	Distance	Latitude	Longitude	HAAT	ERP (dBk)	Fails
12.66	140.92	41.8955	111.8296	1370.89	25.53	1
12.84	140.98	41.8951	111.8241	1370.70	25.55	1
13.00	141.03	41.8948	111.8193	1370.54	25.57	1
13.43	141.14	41.8935	111.8065	1370.11	25.61	1
13.70	141.21	41.8927	111.7985	1369.83	25.64	1
13.90	141.25	41.8920	111.7927	1369.64	25.66	1
14.00	141.28	41.8917	111.7897	1369.53	25.67	1
14.31	141.35	41.8906	111.7804	1369.22	25.70	1
14.41	141.38	41.8903	111.7776	1369.12	25.71	1
14.54	141.41	41.8898	111.7736	1368.99	25.72	1
14.74	141.45	41.8891	111.7678	1368.79	25.74	1
15.00	141.50	41.8880	111.7602	1368.53	25.76	1
15.43	141.56	41.8859	111.7476	1368.09	25.78	1
15.73	141.59	41.8844	111.7388	1367.79	25.80	1
15.93	141.61	41.8833	111.7331	1367.59	25.81	1
16.00	141.62	41.8829	111.7310	1367.52	25.81	1
16.05	141.63	41.8827	111.7295	1367.46	25.81	1
16.13	141.63	41.8823	111.7273	1367.39	25.82	1
16.23	141.65	41.8817	111.7242	1367.28	25.82	1
16.39	141.66	41.8808	111.7197	1367.12	25.83	1
16.63	141.69	41.8795	111.7128	1366.88	25.84	1
16.96	141.71	41.8776	111.7032	1366.55	25.85	1
17.00	141.72	41.8773	111.7021	1366.51	25.86	1
17.05	141.72	41.8770	111.7007	1366.46	25.86	1
17.10	141.72	41.8767	111.6993	1366.41	25.86	1
17.17	141.73	41.8763	111.6972	1366.34	25.86	1
17.27	141.73	41.8757	111.6943	1366.24	25.86	1
17.42	141.74	41.8747	111.6900	1366.09	25.87	1
17.64	141.75	41.8733	111.6836	1365.86	25.87	1
17.96	141.76	41.8712	111.6745	1365.54	25.88	1
18.00	141.76	41.8709	111.6735	1365.50	25.88	1
18.81	141.76	41.8651	111.6506	1364.69	25.89	1
19.00	141.76	41.8637	111.6452	1364.49	25.89	1
20.00	141.75	41.8561	111.6171	1363.49	25.90	1
20.35	141.74	41.8533	111.6074	1363.13	25.90	1
20.58	141.73	41.8513	111.6011	1362.91	25.89	1
20.72	141.72	41.8501	111.5971	1362.76	25.89	1
20.83	141.71	41.8492	111.5941	1362.65	25.89	1
20.90	141.71	41.8485	111.5921	1362.58	25.89	1
20.95	141.70	41.8481	111.5907	1362.52	25.89	1
21.00	141.70	41.8477	111.5895	1362.48	25.89	1
21.35	141.67	41.8446	111.5799	1362.13	25.88	1
21.60	141.64	41.8423	111.5730	1361.87	25.88	1

21.77	141.62	41.8407	111.5684	1361.70	25.87	1
21.88	141.61	41.8396	111.5654	1361.59	25.87	1
21.96	141.60	41.8389	111.5633	1361.51	25.87	1
22.00	141.60	41.8385	111.5622	1361.47	25.86	1
22.39	141.55	41.8348	111.5518	1361.08	25.85	1
22.65	141.51	41.8322	111.5447	1360.81	25.84	1
22.82	141.49	41.8306	111.5402	1360.65	25.84	1
22.94	141.48	41.8294	111.5370	1360.53	25.83	1
23.00	141.47	41.8288	111.5354	1360.46	25.83	1
24.00	141.34	41.8187	111.5088	1359.45	25.79	1
24.28	141.30	41.8158	111.5013	1359.17	25.78	1
24.46	141.28	41.8139	111.4965	1358.99	25.78	1
24.59	141.26	41.8126	111.4933	1358.86	25.77	1
24.67	141.25	41.8117	111.4910	1358.78	25.77	1
25.00	141.21	41.8083	111.4824	1358.45	25.76	1
25.39	141.17	41.8043	111.4723	1358.06	25.75	1
25.49	141.16	41.8032	111.4696	1357.95	25.75	1
25.65	141.14	41.8015	111.4654	1357.79	25.74	1
25.88	141.12	41.7990	111.4594	1357.56	25.74	1
26.00	141.11	41.7978	111.4563	1357.44	25.73	1
27.00	140.97	41.7867	111.4305	1356.43	25.70	1
27.23	140.94	41.7840	111.4247	1356.20	25.69	1
27.41	140.91	41.7820	111.4202	1356.02	25.68	1
28.00	140.82	41.7750	111.4052	1355.42	25.65	1
28.43	140.76	41.7700	111.3944	1354.99	25.64	1
28.55	140.75	41.7686	111.3914	1354.87	25.63	1
28.72	140.72	41.7666	111.3870	1354.69	25.63	1
28.97	140.69	41.7636	111.3808	1354.44	25.62	1
29.00	140.69	41.7633	111.3801	1354.42	25.62	1
29.39	140.63	41.7586	111.3705	1354.03	25.60	1
29.65	140.58	41.7553	111.3640	1353.76	25.59	1
29.82	140.56	41.7532	111.3599	1353.59	25.58	1
29.94	140.54	41.7518	111.3570	1353.47	25.57	1
30.00	140.53	41.7510	111.3554	1353.41	25.57	1
30.14	140.51	41.7493	111.3521	1353.27	25.57	1
30.33	140.48	41.7468	111.3473	1353.07	25.56	1
30.62	140.43	41.7432	111.3403	1352.78	25.54	1
31.00	140.37	41.7384	111.3311	1352.40	25.53	1
31.23	140.33	41.7354	111.3256	1352.17	25.51	1
31.41	140.30	41.7331	111.3214	1351.99	25.50	1
32.00	140.18	41.7253	111.3073	1351.39	25.47	1
32.48	140.10	41.7189	111.2959	1350.91	25.45	1
32.82	140.05	41.7144	111.2879	1350.57	25.43	1
33.00	140.02	41.7120	111.2836	1350.38	25.43	1
33.11	140.01	41.7106	111.2811	1350.27	25.42	1
33.16	140.00	41.7099	111.2798	1350.22	25.42	1

33.22	139.99	41.7092	111.2786	1350.17	25.42	1
33.29	139.98	41.7082	111.2767	1350.09	25.42	1
33.41	139.97	41.7066	111.2740	1349.97	25.41	1
33.58	139.94	41.7044	111.2701	1349.80	25.41	1
33.83	139.91	41.7010	111.2642	1349.55	25.40	1
34.00	139.89	41.6987	111.2602	1349.38	25.39	1
34.25	139.85	41.6953	111.2543	1349.12	25.38	1
34.42	139.83	41.6929	111.2503	1348.95	25.37	1
34.54	139.81	41.6913	111.2476	1348.83	25.37	1
35.00	139.75	41.6851	111.2371	1348.37	25.35	1
35.10	139.74	41.6837	111.2348	1348.27	25.35	1
35.15	139.74	41.6831	111.2337	1348.22	25.35	1
35.20	139.73	41.6824	111.2326	1348.17	25.35	1
35.27	139.72	41.6814	111.2309	1348.10	25.35	1
35.38	139.71	41.6799	111.2284	1347.99	25.34	1
35.54	139.69	41.6778	111.2248	1347.83	25.34	1
35.78	139.67	41.6744	111.2191	1347.58	25.33	1
36.00	139.64	41.6713	111.2141	1347.36	25.33	1
36.25	139.61	41.6678	111.2084	1347.10	25.32	1
36.42	139.60	41.6654	111.2045	1346.93	25.31	1
36.54	139.58	41.6637	111.2018	1346.81	25.31	1
37.00	139.53	41.6573	111.1916	1346.35	25.30	1
37.05	139.53	41.6566	111.1904	1346.30	25.30	1
37.10	139.52	41.6559	111.1893	1346.25	25.30	1
37.15	139.52	41.6552	111.1882	1346.20	25.29	1
37.21	139.51	41.6544	111.1868	1346.14	25.29	1
37.30	139.51	41.6531	111.1849	1346.05	25.29	1
37.43	139.50	41.6513	111.1820	1345.92	25.29	1
37.63	139.48	41.6485	111.1775	1345.72	25.29	1
37.90	139.46	41.6446	111.1714	1345.45	25.28	1
38.00	139.45	41.6432	111.1691	1345.35	25.28	1
39.00	139.37	41.6288	111.1471	1344.34	25.26	1
39.19	139.36	41.6261	111.1430	1344.15	25.26	1
39.24	139.36	41.6254	111.1418	1344.10	25.26	1
39.31	139.35	41.6243	111.1401	1344.02	25.26	1
39.43	139.35	41.6227	111.1376	1343.91	25.26	1
39.59	139.35	41.6204	111.1340	1343.74	25.26	1
39.83	139.34	41.6169	111.1287	1343.50	25.26	1
40.00	139.34	41.6144	111.1250	1343.33	25.26	1
40.21	139.33	41.6114	111.1205	1343.12	25.26	1
41.00	139.31	41.5998	111.1032	1342.32	25.26	1
42.00	139.30	41.5851	111.0816	1341.31	25.27	1
43.00	139.30	41.5701	111.0603	1340.31	25.28	1
43.19	139.29	41.5673	111.0564	1340.12	25.28	1
44.00	139.27	41.5546	111.0396	1339.30	25.28	1
44.89	139.31	41.5410	111.0208	1338.40	25.30	1

45.00	139.32	41.5394	111.0186	1338.29	25.31	1
45.31	139.31	41.5344	111.0123	1337.51	25.31	1
45.53	139.31	41.5310	111.0080	1336.97	25.32	1
45.68	139.30	41.5286	111.0051	1336.60	25.32	1
45.77	139.30	41.5272	111.0032	1336.37	25.32	1
45.83	139.30	41.5261	111.0019	1336.21	25.32	1
45.89	139.30	41.5253	111.0009	1336.08	25.32	1
45.93	139.29	41.5245	110.9999	1335.95	25.32	1
45.98	139.29	41.5237	110.9990	1335.83	25.32	1
46.00	139.29	41.5234	110.9986	1335.79	25.33	1
46.31	139.29	41.5184	110.9925	1335.00	25.33	1
46.76	139.28	41.5111	110.9836	1333.88	25.34	1
47.00	139.27	41.5072	110.9790	1333.29	25.34	1
48.00	139.22	41.4906	110.9601	1330.79	25.35	1
48.19	139.20	41.4873	110.9566	1330.31	25.35	1
49.00	139.09	41.4733	110.9423	1328.29	25.33	1
49.73	139.03	41.4607	110.9292	1326.46	25.33	1
49.93	139.02	41.4573	110.9257	1325.97	25.33	1
50.00	139.01	41.4560	110.9244	1325.79	25.33	1
51.00	138.88	41.4383	110.9074	1323.29	25.32	1
51.29	138.82	41.4330	110.9029	1322.57	25.30	1
51.47	138.77	41.4296	110.9001	1322.12	25.29	1
51.60	138.73	41.4271	110.8981	1321.78	25.28	1
51.69	138.71	41.4253	110.8967	1321.55	25.27	1
51.76	138.69	41.4242	110.8958	1321.39	25.27	1
52.00	138.62	41.4195	110.8922	1320.78	25.25	1
52.23	138.55	41.4152	110.8889	1320.21	25.23	1
52.39	138.49	41.4121	110.8866	1319.82	25.22	1
53.00	138.29	41.4004	110.8780	1318.28	25.17	1
53.66	138.10	41.3878	110.8688	1316.64	25.12	1
53.84	138.05	41.3843	110.8662	1316.19	25.10	1
54.00	138.00	41.3812	110.8641	1315.78	25.09	1
55.00	137.61	41.3614	110.8515	1313.28	24.98	1
55.22	137.51	41.3569	110.8489	1312.73	24.95	1
55.38	137.42	41.3536	110.8472	1312.33	24.92	1
56.00	137.09	41.3408	110.8408	1310.78	24.83	1
56.66	136.76	41.3274	110.8339	1309.14	24.73	1
56.84	136.67	41.3236	110.8321	1308.68	24.70	1
57.00	136.58	41.3203	110.8305	1308.28	24.68	1
57.23	136.44	41.3154	110.8285	1307.71	24.63	1
57.41	136.32	41.3117	110.8270	1307.27	24.60	1
57.53	136.24	41.3091	110.8260	1306.96	24.57	1
58.00	135.92	41.2989	110.8224	1305.78	24.48	1
59.00	135.24	41.2775	110.8149	1303.28	24.27	1
59.21	135.10	41.2731	110.8135	1302.76	24.23	1
59.26	135.06	41.2719	110.8131	1302.62	24.21	1

59.34	135.01	41.2701	110.8125	1302.42	24.20	1
59.47	134.92	41.2675	110.8117	1302.12	24.17	1
59.65	134.80	41.2635	110.8104	1301.65	24.13	1
59.93	134.60	41.2575	110.8086	1300.94	24.07	1
60.00	134.55	41.2560	110.8082	1300.78	24.06	1
60.37	134.26	41.2480	110.8062	1299.86	23.97	1
60.61	134.07	41.2426	110.8050	1299.25	23.90	1
60.78	133.93	41.2389	110.8042	1298.83	23.86	1
60.90	133.83	41.2363	110.8037	1298.54	23.83	1
60.98	133.76	41.2345	110.8033	1298.33	23.81	1
61.00	133.75	41.2341	110.8032	1298.28	23.81	1
61.39	133.42	41.2255	110.8016	1297.31	23.70	1
62.00	132.89	41.2120	110.7994	1295.78	23.54	1
62.35	132.57	41.2042	110.7985	1294.91	23.43	1
62.58	132.35	41.1991	110.7980	1294.34	23.36	1
62.74	132.19	41.1954	110.7977	1293.93	23.32	1
62.85	132.08	41.1929	110.7975	1293.65	23.28	1
62.92	132.02	41.1913	110.7973	1293.47	23.26	1
62.97	131.97	41.1901	110.7972	1293.34	23.25	1
63.00	131.94	41.1895	110.7972	1293.28	23.24	1
63.39	131.56	41.1808	110.7966	1292.31	23.12	1
63.62	131.33	41.1755	110.7963	1291.71	23.04	1
63.80	131.15	41.1715	110.7961	1291.26	22.99	1
63.92	131.04	41.1689	110.7960	1290.98	22.95	1
64.00	130.96	41.1671	110.7959	1290.78	22.92	1
65.00	129.99	41.1448	110.7952	1288.27	22.61	1
65.11	129.88	41.1424	110.7951	1288.00	22.58	1
65.27	129.72	41.1388	110.7951	1287.59	22.53	1
65.53	129.48	41.1332	110.7950	1286.96	22.45	1
65.87	129.14	41.1255	110.7950	1286.09	22.34	1
66.00	129.02	41.1227	110.7950	1285.77	22.30	1
67.00	128.02	41.1006	110.7957	1283.27	21.98	1
67.88	127.24	41.0817	110.7957	1281.07	21.73	1
68.00	127.13	41.0791	110.7958	1280.77	21.69	1
68.16	126.97	41.0756	110.7961	1280.37	21.63	1
68.91	126.17	41.0592	110.7981	1278.51	21.37	1
69.00	126.08	41.0571	110.7983	1278.27	21.33	1
69.48	125.61	41.0468	110.7993	1277.08	21.18	1
69.60	125.50	41.0443	110.7995	1276.78	21.14	1
69.77	125.35	41.0406	110.7997	1276.34	21.09	1
70.00	125.17	41.0358	110.7998	1275.77	21.02	1
70.23	125.01	41.0311	110.7997	1275.21	20.97	1
71.00	124.53	41.0154	110.7987	1273.27	20.80	1
71.81	124.03	40.9990	110.7981	1271.24	20.63	1
87.00	128.35	40.7096	110.6814	1233.26	22.71	1
87.70	128.77	40.6955	110.6759	1231.50	22.87	1

87.86	128.85	40.6923	110.6748	1231.11	22.91	1
88.00	128.91	40.6895	110.6741	1230.76	22.94	1
88.23	128.98	40.6848	110.6731	1230.17	22.97	1
88.41	129.03	40.6812	110.6725	1229.73	22.99	1
89.00	129.17	40.6693	110.6707	1228.26	23.06	1
89.25	129.24	40.6641	110.6699	1227.62	23.09	1
89.32	129.26	40.6628	110.6697	1227.45	23.10	1
89.42	129.28	40.6607	110.6694	1227.20	23.11	1
89.57	129.32	40.6577	110.6690	1226.83	23.13	1
89.80	129.38	40.6531	110.6683	1226.26	23.15	1
90.00	129.43	40.6489	110.6679	1225.76	23.18	1
90.39	129.52	40.6411	110.6670	1223.43	23.23	1
90.49	129.54	40.6390	110.6668	1222.81	23.25	1
90.65	129.58	40.6357	110.6665	1221.85	23.27	1
90.88	129.62	40.6310	110.6662	1220.47	23.30	1
91.00	129.63	40.6286	110.6662	1219.75	23.32	1
91.07	129.63	40.6271	110.6662	1219.32	23.33	1
91.17	129.64	40.6250	110.6662	1218.71	23.34	1
91.33	129.66	40.6219	110.6662	1217.79	23.35	1
91.56	129.67	40.6171	110.6663	1216.38	23.37	1
91.88	129.68	40.6106	110.6666	1214.46	23.40	1
92.00	129.69	40.6082	110.6667	1213.74	23.41	1
92.59	129.68	40.5962	110.6677	1210.20	23.45	1
93.00	129.67	40.5879	110.6685	1207.74	23.48	1
93.32	129.66	40.5815	110.6693	1205.83	23.50	1
93.53	129.64	40.5771	110.6700	1204.55	23.51	1
93.68	129.62	40.5742	110.6705	1203.66	23.51	1
93.79	129.61	40.5719	110.6709	1202.99	23.52	1
93.86	129.60	40.5704	110.6711	1202.55	23.52	1
93.92	129.60	40.5694	110.6713	1202.23	23.52	1
93.97	129.59	40.5682	110.6715	1201.90	23.53	1
94.00	129.59	40.5677	110.6716	1201.73	23.53	1
94.43	129.53	40.5590	110.6733	1199.15	23.54	1
94.73	129.48	40.5529	110.6747	1197.33	23.54	1
94.95	129.44	40.5486	110.6757	1196.03	23.55	1
95.00	129.43	40.5476	110.6760	1195.73	23.55	1
96.00	129.21	40.5276	110.6816	1189.72	23.55	1
96.36	129.10	40.5204	110.6841	1187.53	23.54	1
96.61	129.02	40.5155	110.6859	1186.05	23.53	1
96.78	128.97	40.5122	110.6872	1185.05	23.52	1
96.90	128.92	40.5099	110.6881	1184.34	23.52	1
96.97	128.90	40.5084	110.6887	1183.88	23.52	1
97.00	128.89	40.5079	110.6889	1183.72	23.52	1
97.39	128.74	40.5003	110.6920	1181.39	23.49	1
97.65	128.64	40.4952	110.6943	1179.81	23.48	1
97.84	128.57	40.4916	110.6959	1178.69	23.47	1

97.97	128.51	40.4890	110.6971	1177.90	23.46	1
98.00	128.50	40.4884	110.6973	1177.71	23.46	1
98.10	128.46	40.4865	110.6982	1177.12	23.45	1
98.25	128.40	40.4836	110.6995	1176.22	23.44	1
98.46	128.32	40.4795	110.7015	1174.94	23.43	1
98.78	128.18	40.4734	110.7044	1173.03	23.40	1
99.00	128.08	40.4692	110.7066	1171.70	23.39	1
99.90	127.63	40.4521	110.7161	1166.30	23.29	1
100.00	127.58	40.4503	110.7172	1165.70	23.28	1
100.17	127.48	40.4470	110.7193	1164.65	23.26	1
101.00	126.98	40.4317	110.7294	1159.69	23.14	1
102.00	126.49	40.4133	110.7407	1153.69	23.03	1
102.21	126.39	40.4095	110.7431	1152.45	23.01	1
102.51	126.23	40.4039	110.7467	1150.60	22.97	1
102.95	126.00	40.3959	110.7520	1147.97	22.92	1
103.00	125.97	40.3951	110.7526	1147.68	22.91	1
104.00	125.40	40.3772	110.7657	1141.68	22.76	1
104.53	125.07	40.3679	110.7730	1138.48	22.67	1
105.00	124.77	40.3598	110.7797	1135.67	22.59	1
105.17	124.65	40.3569	110.7823	1134.65	22.55	1
106.00	124.05	40.3429	110.7951	1129.66	22.37	1
106.15	123.95	40.3404	110.7974	1128.76	22.34	1
106.37	123.81	40.3367	110.8005	1127.47	22.31	1
106.67	123.63	40.3316	110.8048	1125.65	22.25	1
107.00	123.45	40.3260	110.8094	1123.66	22.20	1
107.83	123.08	40.3119	110.8203	1118.69	22.10	1
108.00	122.99	40.3089	110.8226	1117.65	22.08	1
108.21	122.87	40.3054	110.8258	1116.37	22.04	1
109.00	122.37	40.2926	110.8380	1111.65	21.89	1
109.90	121.83	40.2781	110.8518	1106.24	21.72	1
110.00	121.77	40.2765	110.8533	1105.64	21.71	1
110.31	121.61	40.2715	110.8579	1103.76	21.66	1
110.40	121.56	40.2701	110.8592	1103.26	21.65	1
110.52	121.50	40.2681	110.8610	1102.51	21.63	1
110.71	121.41	40.2651	110.8637	1101.40	21.60	1
164.97	120.05	39.6154	111.8392	763.97	25.62	1
165.00	120.04	39.6153	111.8399	763.78	25.63	1
165.90	119.90	39.6124	111.8616	758.03	25.67	1
166.00	119.88	39.6121	111.8641	757.39	25.67	1
166.31	119.82	39.6113	111.8717	755.38	25.68	1
166.51	119.77	39.6108	111.8764	754.14	25.68	1
166.65	119.74	39.6105	111.8798	753.26	25.69	1
166.75	119.72	39.6102	111.8822	752.62	25.69	1
166.81	119.71	39.6101	111.8838	752.21	25.69	1
166.87	119.70	39.6099	111.8852	751.83	25.69	1
166.93	119.68	39.6098	111.8866	751.47	25.70	1

167.00	119.67	39.6096	111.8884	751.00	25.70	1
167.19	119.63	39.6092	111.8929	749.81	25.70	1
167.47	119.57	39.6086	111.8998	748.00	25.71	1
167.86	119.49	39.6078	111.9092	745.53	25.72	1
168.00	119.46	39.6075	111.9127	744.61	25.72	1
168.25	119.40	39.6071	111.9189	742.98	25.73	1
168.44	119.35	39.6068	111.9235	741.77	25.73	1
168.57	119.32	39.6066	111.9266	740.96	25.73	1
169.00	119.22	39.6059	111.9371	738.22	25.74	1
169.48	119.11	39.6052	111.9487	735.16	25.75	1
169.61	119.08	39.6050	111.9520	734.31	25.76	1
169.82	119.04	39.6047	111.9570	732.99	25.76	1
170.00	119.00	39.6045	111.9614	731.83	25.77	1
170.48	118.87	39.6041	111.9731	728.77	25.77	1
170.79	118.79	39.6039	111.9806	726.80	25.78	1
171.00	118.73	39.6038	111.9858	725.44	25.78	1
171.17	118.69	39.6038	111.9899	724.37	25.78	1
171.43	118.61	39.6037	111.9963	722.70	25.78	1
171.80	118.51	39.6037	112.0054	720.30	25.78	1
172.00	118.45	39.6037	112.0102	719.04	25.78	1
172.48	118.28	39.6039	112.0219	715.99	25.76	1
172.79	118.17	39.6042	112.0295	714.02	25.76	1
173.00	118.10	39.6044	112.0347	712.65	25.75	1
173.31	117.98	39.6048	112.0423	710.65	25.74	1
173.53	117.89	39.6051	112.0476	709.27	25.73	1
173.68	117.83	39.6053	112.0512	708.33	25.72	1
173.78	117.79	39.6055	112.0537	707.68	25.72	1
173.85	117.76	39.6056	112.0554	707.24	25.71	1
173.91	117.74	39.6057	112.0568	706.86	25.71	1
173.96	117.72	39.6058	112.0581	706.51	25.71	1
174.00	117.70	39.6059	112.0591	706.26	25.71	1
174.39	117.56	39.6065	112.0685	703.79	25.69	1
174.49	117.52	39.6066	112.0710	703.13	25.68	1
174.65	117.46	39.6069	112.0748	702.11	25.68	1
174.88	117.36	39.6074	112.0804	700.64	25.67	1
175.00	117.31	39.6076	112.0833	699.87	25.66	1
175.30	117.17	39.6084	112.0907	697.94	25.63	1
175.52	117.06	39.6091	112.0960	696.54	25.62	1
175.69	116.98	39.6096	112.1000	695.48	25.60	1
175.80	116.92	39.6100	112.1026	694.78	25.59	1
175.87	116.89	39.6102	112.1044	694.33	25.58	1
175.92	116.86	39.6104	112.1057	693.96	25.58	1
175.98	116.83	39.6106	112.1071	693.61	25.57	1
176.00	116.82	39.6106	112.1076	693.48	25.57	1
176.81	116.39	39.6136	112.1271	688.31	25.48	1
177.00	116.28	39.6143	112.1317	687.09	25.46	1

177.35	116.08	39.6159	112.1400	684.86	25.41	1
177.58	115.94	39.6169	112.1454	683.41	25.38	1
177.74	115.84	39.6177	112.1494	682.36	25.36	1
177.85	115.78	39.6182	112.1520	681.65	25.35	1
177.93	115.73	39.6186	112.1539	681.14	25.33	1
177.99	115.69	39.6189	112.1553	680.78	25.33	1
178.00	115.69	39.6189	112.1556	680.70	25.33	1
179.00	115.07	39.6240	112.1793	674.31	25.18	1
179.10	115.00	39.6246	112.1816	673.67	25.16	1
179.57	114.62	39.6279	112.1928	670.63	25.08	1
179.66	114.56	39.6285	112.1948	670.08	25.07	1
179.78	114.49	39.6291	112.1976	669.32	25.05	1
179.94	114.44	39.6295	112.2013	668.30	25.02	1
180.00	114.44	39.6296	112.2027	667.92	25.01	1
180.18	114.45	39.6294	112.2069	670.78	24.98	1
180.31	114.48	39.6291	112.2098	672.80	24.95	1
180.90	114.69	39.6274	112.2237	682.27	24.83	1
181.00	114.72	39.6272	112.2261	683.91	24.81	1
181.28	114.78	39.6267	112.2327	688.43	24.74	1
181.49	114.83	39.6264	112.2375	691.67	24.70	1
181.62	114.85	39.6262	112.2406	693.76	24.67	1
181.70	114.87	39.6261	112.2426	695.17	24.65	1
181.76	114.88	39.6260	112.2440	696.14	24.63	1
182.00	114.93	39.6257	112.2496	699.90	24.58	1
182.59	115.07	39.6249	112.2635	709.35	24.45	1
182.75	115.11	39.6247	112.2672	711.88	24.41	1
183.00	115.15	39.6245	112.2731	715.89	24.35	1
183.31	115.19	39.6244	112.2805	720.91	24.27	1
183.51	115.21	39.6245	112.2851	724.01	24.22	1
183.65	115.23	39.6245	112.2883	726.24	24.18	1
183.75	115.24	39.6245	112.2907	727.83	24.16	1
183.81	115.25	39.6245	112.2922	728.86	24.14	1
183.87	115.25	39.6245	112.2936	729.81	24.12	1
183.93	115.26	39.6245	112.2950	730.80	24.11	1
184.00	115.27	39.6245	112.2966	731.89	24.09	1
184.06	115.28	39.6246	112.2980	732.82	24.08	1
184.14	115.28	39.6246	112.3000	734.15	24.05	1
184.26	115.30	39.6246	112.3027	736.01	24.02	1
184.43	115.32	39.6247	112.3067	738.72	23.98	1
184.67	115.34	39.6248	112.3125	742.66	23.92	1
185.00	115.38	39.6250	112.3202	747.88	23.83	1
185.59	115.42	39.6255	112.3341	757.32	23.67	1
185.96	115.45	39.6260	112.3427	763.21	23.57	1
186.00	115.45	39.6260	112.3437	763.87	23.56	1
186.48	115.49	39.6266	112.3549	771.52	23.43	1
186.61	115.50	39.6268	112.3580	773.64	23.40	1

186.80	115.51	39.6271	112.3624	776.62	23.35	1
187.00	115.51	39.6275	112.3672	779.86	23.30	1
187.22	115.51	39.6280	112.3723	783.41	23.23	1
187.38	115.50	39.6285	112.3761	785.97	23.18	1
188.00	115.46	39.6303	112.3904	795.85	22.99	1
189.00	115.41	39.6334	112.4136	811.85	22.69	1
189.21	115.41	39.6339	112.4184	815.14	22.64	1
190.00	115.46	39.6359	112.4369	827.84	22.45	1
191.00	115.56	39.6382	112.4603	843.83	22.24	1
192.00	115.69	39.6407	112.4837	859.82	22.05	1
193.00	115.90	39.6427	112.5073	875.81	21.91	1
194.00	116.11	39.6450	112.5309	891.80	21.79	1
194.06	116.13	39.6452	112.5323	892.73	21.78	1
194.14	116.15	39.6453	112.5343	894.07	21.78	1
194.27	116.18	39.6456	112.5373	896.13	21.77	1
194.46	116.23	39.6460	112.5417	899.09	21.75	1
194.75	116.31	39.6466	112.5486	903.72	21.73	1
195.00	116.39	39.6471	112.5547	907.80	21.71	1
195.21	116.46	39.6475	112.5598	911.20	21.70	1
195.37	116.53	39.6477	112.5637	913.79	21.70	1
196.00	116.80	39.6484	112.5789	923.79	21.69	1
204.81	123.63	39.6479	112.8088	1064.68	22.98	1
205.00	123.80	39.6480	112.8140	1067.71	23.02	1
205.59	124.35	39.6484	112.8303	1077.16	23.14	1
206.00	124.74	39.6487	112.8416	1083.71	23.21	1
207.00	125.69	39.6496	112.8695	1099.70	23.40	1
207.79	126.55	39.6498	112.8923	1112.41	23.57	1
207.96	126.73	39.6500	112.8970	1115.07	23.61	1
208.00	126.77	39.6500	112.8981	1115.69	23.62	1
208.26	127.02	39.6504	112.9054	1119.84	23.66	1
208.43	127.18	39.6507	112.9102	1122.55	23.68	1
209.00	127.70	39.6520	112.9261	1131.68	23.76	1
210.00	128.65	39.6543	112.9544	1147.67	23.90	1
210.88	129.60	39.6558	112.9801	1161.82	24.04	1
211.00	129.72	39.6561	112.9834	1163.67	24.06	1
211.23	129.96	39.6566	112.9901	1167.32	24.09	1
211.29	130.02	39.6567	112.9919	1168.31	24.10	1
211.38	130.11	39.6570	112.9944	1169.69	24.11	1
211.50	130.25	39.6573	112.9981	1171.74	24.13	1
211.70	130.44	39.6578	113.0036	1174.81	24.15	1
211.94	130.68	39.6586	113.0107	1178.74	24.19	1
212.00	130.73	39.6588	113.0123	1179.66	24.20	1
212.31	130.99	39.6601	113.0209	1184.56	24.22	1
212.50	131.15	39.6610	113.0263	1187.69	24.23	1
212.64	131.26	39.6617	113.0302	1189.94	24.24	1
212.73	131.34	39.6622	113.0327	1191.39	24.25	1

212.80	131.39	39.6625	113.0345	1192.47	24.26	1
212.85	131.43	39.6628	113.0359	1193.28	24.26	1
212.90	131.47	39.6630	113.0374	1194.11	24.26	1
213.00	131.54	39.6635	113.0400	1195.65	24.27	1
213.05	131.58	39.6638	113.0413	1196.40	24.27	1
213.12	131.64	39.6641	113.0432	1197.50	24.28	1
213.21	131.71	39.6646	113.0459	1199.04	24.28	1
213.36	131.83	39.6654	113.0499	1201.38	24.29	1
213.58	132.00	39.6666	113.0560	1204.96	24.31	1
213.89	132.23	39.6683	113.0644	1209.83	24.33	1
214.00	132.31	39.6690	113.0674	1211.64	24.33	1
214.29	132.51	39.6709	113.0754	1216.35	24.34	1
214.47	132.63	39.6721	113.0802	1219.22	24.35	1
214.59	132.70	39.6729	113.0834	1221.14	24.35	1
214.69	132.76	39.6736	113.0858	1222.63	24.35	1
214.74	132.80	39.6740	113.0874	1223.55	24.36	1
215.00	132.96	39.6758	113.0942	1227.63	24.36	1
215.48	133.28	39.6791	113.1070	1235.28	24.38	1
215.61	133.37	39.6800	113.1105	1237.40	24.38	1
215.80	133.48	39.6814	113.1154	1240.38	24.39	1
216.00	133.61	39.6830	113.1208	1243.62	24.40	1
216.53	133.89	39.6874	113.1345	1252.12	24.39	1
216.91	134.08	39.6908	113.1442	1258.19	24.39	1
217.00	134.12	39.6916	113.1464	1259.62	24.39	1
217.05	134.15	39.6920	113.1477	1260.45	24.38	1
217.10	134.17	39.6925	113.1490	1261.25	24.38	1
217.17	134.20	39.6931	113.1508	1262.39	24.38	1
217.27	134.25	39.6940	113.1534	1264.00	24.38	1
217.42	134.32	39.6954	113.1571	1266.39	24.37	1
217.65	134.42	39.6975	113.1627	1269.96	24.36	1
217.96	134.55	39.7006	113.1706	1275.04	24.36	1
218.00	134.57	39.7010	113.1715	1275.61	24.35	1
218.35	134.69	39.7046	113.1799	1281.18	24.33	1
218.60	134.77	39.7073	113.1860	1285.22	24.31	1
218.77	134.82	39.7092	113.1901	1287.97	24.30	1
218.89	134.86	39.7105	113.1930	1289.90	24.29	1
218.97	134.88	39.7114	113.1948	1291.14	24.28	1
219.00	134.89	39.7117	113.1955	1291.60	24.28	1
219.59	135.08	39.7182	113.2096	1301.04	24.23	1
219.75	135.12	39.7200	113.2133	1303.58	24.22	1
219.97	135.16	39.7227	113.2184	1307.19	24.20	1
220.00	135.17	39.7231	113.2190	1307.59	24.20	1
221.00	135.25	39.7361	113.2408	1323.58	24.05	1
221.23	135.26	39.7391	113.2457	1327.24	24.01	1
221.39	135.27	39.7413	113.2491	1329.78	23.98	1
222.00	135.30	39.7496	113.2621	1339.58	23.88	1

222.84	135.38	39.7610	113.2802	1353.06	23.76	1
223.00	135.39	39.7632	113.2834	1355.57	23.74	1
223.39	135.38	39.7688	113.2912	1361.76	23.67	1
223.68	135.36	39.7732	113.2970	1366.45	23.61	1
223.87	135.35	39.7760	113.3008	1369.47	23.58	1
224.00	135.34	39.7779	113.3033	1371.56	23.55	1
224.43	135.28	39.7847	113.3114	1378.45	23.44	1
224.70	135.21	39.7891	113.3163	1382.81	23.37	1
224.90	135.15	39.7924	113.3197	1385.92	23.32	1
225.00	135.11	39.7941	113.3214	1387.55	23.30	1
225.19	135.03	39.7974	113.3244	1388.10	23.24	1
225.32	134.94	39.7999	113.3263	1388.48	23.21	1
225.42	134.87	39.8019	113.3277	1388.78	23.18	1
225.94	134.45	39.8124	113.3343	1390.31	23.03	1
226.00	134.41	39.8135	113.3351	1390.48	23.01	1
226.05	134.38	39.8144	113.3358	1390.62	23.00	1
226.12	134.33	39.8158	113.3367	1390.82	22.98	1
226.21	134.27	39.8176	113.3381	1391.10	22.96	1
226.36	134.17	39.8204	113.3401	1391.53	22.92	1
226.56	134.04	39.8242	113.3429	1392.12	22.87	1
226.85	133.87	39.8297	113.3469	1392.96	22.79	1
227.00	133.78	39.8326	113.3490	1393.41	22.75	1
228.00	133.24	39.8512	113.3631	1396.33	22.52	1
229.00	132.61	39.8704	113.3759	1399.26	22.26	1
229.18	132.49	39.8739	113.3780	1399.78	22.21	1
230.00	131.89	39.8903	113.3874	1402.19	21.97	1
230.31	131.68	39.8964	113.3911	1403.11	21.89	1
230.53	131.55	39.9006	113.3936	1403.74	21.83	1
230.68	131.45	39.9035	113.3954	1404.17	21.79	1
230.77	131.40	39.9053	113.3964	1404.44	21.77	1
230.83	131.36	39.9065	113.3972	1404.63	21.75	1
230.89	131.33	39.9075	113.3978	1404.78	21.74	1
230.93	131.30	39.9085	113.3984	1404.93	21.72	1
230.99	131.27	39.9095	113.3990	1405.08	21.71	1
231.00	131.26	39.9097	113.3992	1405.12	21.71	1
231.73	130.83	39.9238	113.4077	1407.25	21.53	1
231.93	130.72	39.9275	113.4101	1407.83	21.48	1
232.00	130.69	39.9289	113.4110	1408.04	21.46	1
232.53	130.45	39.9388	113.4176	1409.60	21.36	1
233.00	130.26	39.9473	113.4236	1410.97	21.27	1
285.00	144.63	40.9840	113.8678	1512.02	25.63	1
285.35	144.66	40.9917	113.8656	1511.85	25.64	1
285.45	144.67	40.9939	113.8649	1511.80	25.65	1
285.59	144.68	40.9970	113.8640	1511.73	25.65	1
285.78	144.69	41.0014	113.8626	1511.63	25.66	1
286.00	144.69	41.0061	113.8610	1511.53	25.66	1

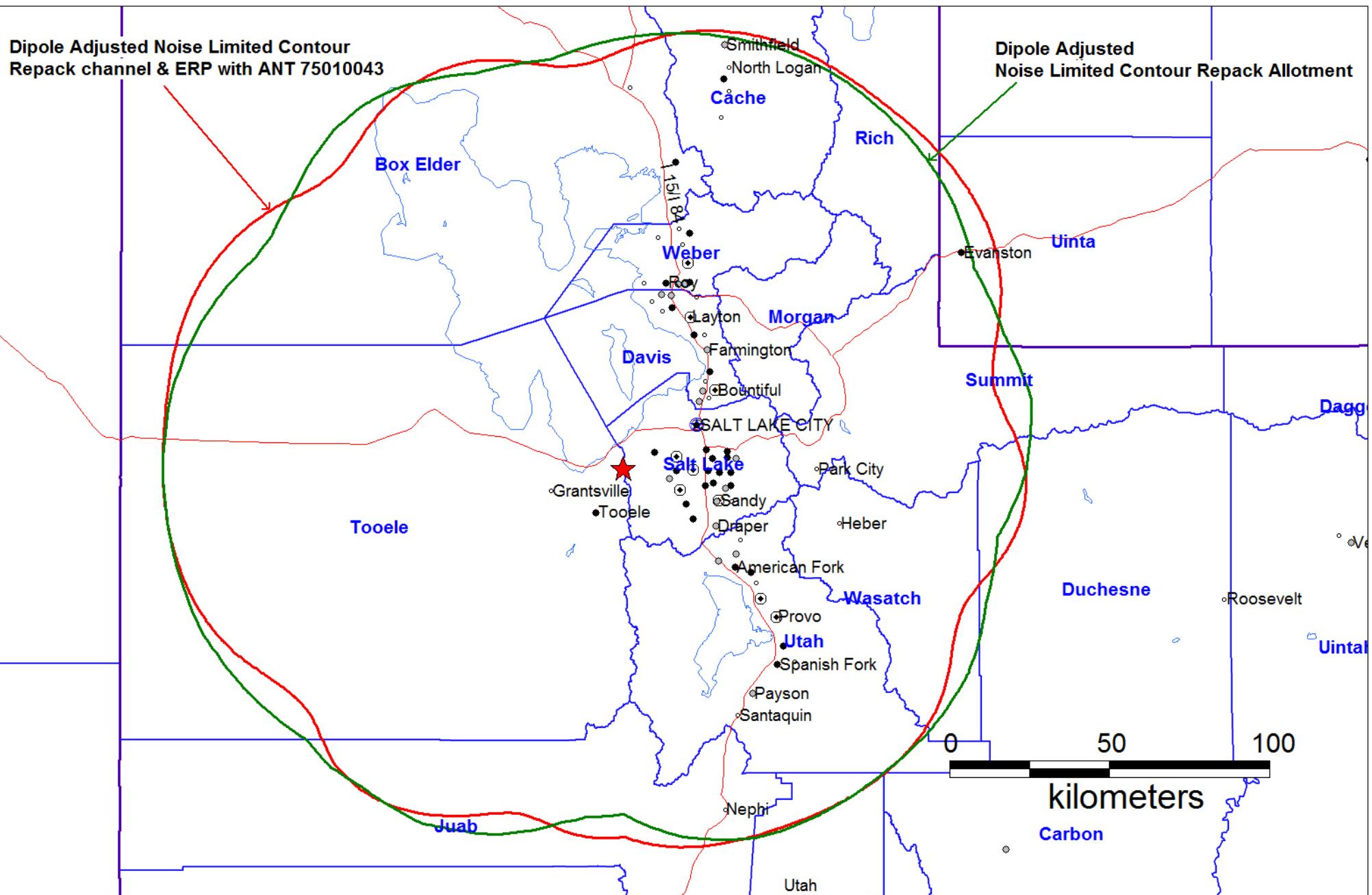
286.59	144.70	41.0191	113.8565	1511.24	25.67	1
286.96	144.71	41.0271	113.8535	1511.06	25.67	1
287.00	144.71	41.0280	113.8532	1511.04	25.67	1
287.10	144.71	41.0302	113.8524	1511.00	25.67	1
287.25	144.71	41.0335	113.8512	1510.92	25.67	1
287.46	144.72	41.0381	113.8494	1510.82	25.67	1
287.78	144.72	41.0451	113.8467	1510.67	25.68	1
288.00	144.72	41.0499	113.8448	1510.56	25.68	1
288.43	144.72	41.0592	113.8410	1510.35	25.68	1
288.73	144.72	41.0658	113.8382	1510.20	25.68	1
288.95	144.71	41.0704	113.8362	1510.10	25.68	1
289.00	144.71	41.0715	113.8357	1510.07	25.68	1
289.53	144.71	41.0830	113.8306	1509.82	25.68	1
290.00	144.70	41.0931	113.8261	1509.59	25.68	1
290.17	144.69	41.0968	113.8243	1509.50	25.67	1
291.00	144.62	41.1142	113.8151	1509.10	25.65	1
291.00	144.62	41.1142	113.8151	1509.10	25.65	1
291.09	144.62	41.1161	113.8142	1509.06	25.65	1
291.23	144.62	41.1190	113.8128	1508.99	25.65	1
291.42	144.62	41.1232	113.8107	1508.90	25.65	1
291.70	144.62	41.1291	113.8077	1508.76	25.65	1
292.00	144.61	41.1355	113.8045	1508.62	25.65	1
292.25	144.60	41.1408	113.8015	1508.49	25.64	1
292.43	144.58	41.1444	113.7994	1508.41	25.63	1
292.53	144.56	41.1466	113.7981	1508.36	25.63	1
293.00	144.49	41.1562	113.7920	1508.13	25.61	1
293.66	144.39	41.1696	113.7835	1507.81	25.57	1
294.00	144.33	41.1766	113.7789	1507.65	25.55	1
294.90	144.16	41.1947	113.7661	1507.21	25.49	1
295.00	144.13	41.1967	113.7647	1507.16	25.48	1
295.15	144.10	41.1996	113.7625	1507.09	25.47	1
295.39	144.05	41.2044	113.7589	1506.97	25.45	1
295.75	143.96	41.2115	113.7534	1506.80	25.41	1
296.00	143.88	41.2163	113.7495	1506.68	25.39	1
296.25	143.80	41.2211	113.7454	1506.55	25.35	1
296.42	143.73	41.2243	113.7424	1506.47	25.33	1
296.55	143.67	41.2268	113.7401	1506.41	25.31	1
296.64	143.64	41.2284	113.7387	1506.37	25.30	1
297.00	143.48	41.2351	113.7323	1506.19	25.24	1
297.43	143.30	41.2431	113.7246	1505.98	25.17	1
297.73	143.17	41.2486	113.7191	1505.83	25.12	1
297.93	143.08	41.2522	113.7156	1505.74	25.09	1
298.00	143.05	41.2535	113.7143	1505.70	25.08	1
298.05	143.03	41.2544	113.7134	1505.68	25.07	1
298.10	143.01	41.2553	113.7125	1505.66	25.06	1
298.17	142.98	41.2566	113.7112	1505.62	25.05	1

298.27	142.93	41.2584	113.7094	1505.57	25.04	1
298.42	142.87	41.2612	113.7066	1505.50	25.01	1
298.64	142.77	41.2652	113.7025	1505.39	24.97	1
298.96	142.63	41.2709	113.6965	1505.24	24.92	1
299.00	142.61	41.2716	113.6958	1505.22	24.92	1
299.31	142.46	41.2771	113.6898	1505.07	24.86	1
299.76	142.24	41.2850	113.6811	1504.85	24.77	1
300.00	142.11	41.2891	113.6763	1504.73	24.73	1
300.57	141.77	41.2987	113.6645	1504.46	24.60	1
300.96	141.52	41.3050	113.6562	1504.27	24.51	1
301.00	141.49	41.3057	113.6553	1504.25	24.50	1
302.00	140.77	41.3215	113.6328	1503.76	24.23	1
302.24	140.57	41.3252	113.6271	1503.64	24.15	1
302.42	140.42	41.3277	113.6229	1503.56	24.09	1
302.54	140.32	41.3295	113.6200	1503.50	24.06	1
303.00	139.91	41.3362	113.6087	1503.28	23.91	1
303.21	139.73	41.3392	113.6037	1503.18	23.84	1
304.00	139.05	41.3505	113.5843	1502.79	23.58	1
304.90	138.32	41.3632	113.5627	1502.35	23.31	1
305.00	138.24	41.3646	113.5602	1502.31	23.28	1
305.19	138.10	41.3672	113.5558	1502.22	23.23	1
305.24	138.06	41.3679	113.5545	1502.19	23.21	1
305.31	138.00	41.3690	113.5527	1502.15	23.19	1
305.43	137.91	41.3705	113.5499	1502.10	23.16	1
305.59	137.78	41.3728	113.5460	1502.02	23.11	1
305.83	137.58	41.3761	113.5401	1501.90	23.04	1
306.00	137.45	41.3783	113.5360	1501.82	22.99	1
306.19	137.28	41.3808	113.5313	1501.73	22.92	1
307.00	136.59	41.3913	113.5109	1501.34	22.66	1
307.81	135.95	41.4018	113.4910	1500.94	22.43	1
308.00	135.80	41.4042	113.4863	1500.85	22.37	1
308.15	135.66	41.4061	113.4824	1500.78	22.32	1
308.87	134.98	41.4145	113.4634	1500.43	22.07	1
309.00	134.87	41.4160	113.4602	1500.36	22.02	1
309.53	134.48	41.4226	113.4472	1500.11	21.88	1
309.87	134.25	41.4269	113.4390	1499.94	21.79	1
310.00	134.17	41.4285	113.4360	1499.88	21.76	1
310.28	133.99	41.4321	113.4293	1499.74	21.70	1
310.36	133.95	41.4331	113.4275	1499.70	21.68	1
310.47	133.88	41.4345	113.4250	1499.65	21.66	1
310.62	133.79	41.4364	113.4215	1499.58	21.63	1
310.84	133.67	41.4393	113.4163	1499.47	21.58	1
311.00	133.60	41.4414	113.4128	1499.39	21.55	1
311.17	133.52	41.4436	113.4091	1499.31	21.52	1
311.22	133.50	41.4443	113.4080	1499.29	21.52	1
311.28	133.47	41.4452	113.4065	1499.26	21.51	1

323.43	138.01	41.6521	113.1928	1476.13	23.44	1
323.55	138.08	41.6542	113.1906	1475.84	23.47	1
324.00	138.35	41.6620	113.1820	1474.69	23.58	1
325.00	138.94	41.6792	113.1627	1472.16	23.83	1
325.86	139.54	41.6944	113.1464	1470.00	24.07	1
326.00	139.64	41.6969	113.1436	1469.63	24.11	1
326.31	139.84	41.7022	113.1373	1468.84	24.19	1
326.76	140.10	41.7097	113.1281	1467.70	24.30	1
327.00	140.23	41.7136	113.1232	1467.10	24.35	1
327.53	140.49	41.7219	113.1118	1465.76	24.46	1
327.91	140.65	41.7278	113.1034	1464.80	24.53	1
328.00	140.69	41.7291	113.1015	1464.57	24.55	1
328.23	140.79	41.7326	113.0964	1463.99	24.59	1
328.56	140.93	41.7375	113.0889	1463.16	24.64	1
329.00	141.09	41.7439	113.0789	1462.04	24.72	1
329.28	141.19	41.7479	113.0723	1461.33	24.76	1
329.49	141.25	41.7507	113.0676	1460.82	24.79	1
329.62	141.29	41.7525	113.0645	1460.49	24.80	1
329.70	141.31	41.7537	113.0624	1460.26	24.82	1
329.76	141.33	41.7545	113.0610	1460.11	24.83	1
329.81	141.35	41.7552	113.0598	1459.99	24.83	1
330.00	141.40	41.7578	113.0554	1459.52	24.86	1
330.12	141.44	41.7594	113.0525	1459.21	24.87	1
330.17	141.46	41.7601	113.0514	1459.09	24.88	1
330.22	141.47	41.7608	113.0501	1458.96	24.89	1
330.30	141.50	41.7618	113.0483	1458.76	24.90	1
330.42	141.54	41.7634	113.0455	1458.47	24.91	1
330.58	141.59	41.7657	113.0416	1458.05	24.94	1
330.83	141.66	41.7690	113.0356	1457.42	24.97	1
331.00	141.71	41.7713	113.0315	1456.99	24.99	1
331.05	141.72	41.7719	113.0303	1456.87	25.00	1
331.10	141.74	41.7726	113.0291	1456.74	25.01	1
331.15	141.75	41.7732	113.0278	1456.61	25.01	1
331.22	141.77	41.7742	113.0260	1456.42	25.02	1
331.34	141.81	41.7757	113.0231	1456.12	25.03	1
331.51	141.85	41.7779	113.0190	1455.70	25.05	1
331.74	141.91	41.7809	113.0132	1455.11	25.08	1
332.00	141.96	41.7841	113.0068	1454.46	25.11	1
332.28	142.01	41.7874	112.9997	1453.74	25.13	1
332.71	142.07	41.7924	112.9888	1452.67	25.16	1
333.00	142.11	41.7957	112.9812	1451.93	25.18	1
333.15	142.12	41.7973	112.9773	1451.55	25.19	1
333.37	142.14	41.7997	112.9717	1451.00	25.20	1
333.67	142.16	41.8029	112.9637	1450.24	25.22	1
334.00	142.17	41.8063	112.9549	1449.40	25.23	1
334.43	142.18	41.8107	112.9434	1448.31	25.24	1

335.00	142.19	41.8162	112.9281	1446.87	25.26	1
335.26	142.18	41.8187	112.9209	1446.21	25.25	1
335.45	142.15	41.8203	112.9157	1445.73	25.25	1
335.58	142.14	41.8213	112.9122	1445.41	25.25	1
335.66	142.12	41.8220	112.9098	1445.19	25.25	1
336.00	142.07	41.8247	112.9004	1444.34	25.24	1
336.21	142.04	41.8264	112.8945	1443.82	25.23	1
337.00	141.88	41.8322	112.8721	1441.81	25.19	1
337.81	141.77	41.8384	112.8493	1439.76	25.17	1
338.00	141.74	41.8397	112.8439	1439.28	25.17	1
338.29	141.68	41.8417	112.8355	1438.54	25.14	1
338.49	141.62	41.8429	112.8297	1438.04	25.13	1
338.62	141.58	41.8436	112.8260	1437.71	25.12	1
338.71	141.56	41.8441	112.8235	1437.49	25.11	1
338.77	141.54	41.8445	112.8217	1437.34	25.11	1
339.00	141.47	41.8458	112.8150	1436.75	25.09	1
339.43	141.34	41.8481	112.8024	1435.66	25.05	1
340.00	141.14	41.8509	112.7857	1434.22	24.99	1
340.30	141.02	41.8522	112.7768	1433.46	24.95	1
340.50	140.93	41.8529	112.7709	1432.96	24.93	1
340.64	140.87	41.8535	112.7667	1432.60	24.91	1
340.73	140.83	41.8538	112.7640	1432.37	24.89	1
340.79	140.80	41.8540	112.7622	1432.22	24.89	1
340.84	140.78	41.8542	112.7608	1432.10	24.88	1
341.00	140.70	41.8547	112.7560	1431.70	24.86	1
341.25	140.58	41.8556	112.7484	1431.05	24.82	1
341.42	140.50	41.8561	112.7433	1430.62	24.80	1
341.56	140.44	41.8565	112.7394	1430.29	24.78	1
342.00	140.23	41.8578	112.7261	1429.17	24.71	1
342.66	139.94	41.8598	112.7066	1427.51	24.62	1
342.84	139.85	41.8603	112.7012	1427.04	24.59	1
343.00	139.77	41.8606	112.6963	1426.64	24.57	1
343.31	139.60	41.8611	112.6871	1425.86	24.51	1
343.52	139.47	41.8614	112.6805	1425.31	24.47	1
343.67	139.37	41.8615	112.6760	1424.93	24.44	1
343.79	139.30	41.8616	112.6725	1424.65	24.42	1
343.86	139.25	41.8617	112.6703	1424.46	24.40	1
343.91	139.22	41.8617	112.6688	1424.34	24.39	1
343.96	139.19	41.8617	112.6674	1424.21	24.38	1
344.00	139.17	41.8617	112.6661	1424.11	24.37	1
344.53	138.81	41.8619	112.6499	1422.76	24.26	1
344.87	138.58	41.8618	112.6395	1421.90	24.18	1
345.00	138.49	41.8618	112.6357	1421.58	24.15	1
345.21	138.34	41.8617	112.6294	1421.06	24.11	1
345.35	138.23	41.8616	112.6249	1420.69	24.07	1
346.00	137.76	41.8610	112.6053	1419.05	23.92	1

346.21	137.62	41.8609	112.5991	1418.53	23.87	1
347.00	137.08	41.8602	112.5752	1416.52	23.70	1
347.73	136.61	41.8596	112.5534	1414.68	23.55	1
347.93	136.49	41.8594	112.5476	1414.18	23.51	1
348.00	136.44	41.8593	112.5454	1413.99	23.49	1
348.05	136.41	41.8593	112.5440	1413.87	23.48	1
348.10	136.38	41.8592	112.5425	1413.75	23.47	1
348.14	136.35	41.8592	112.5411	1413.63	23.46	1
348.21	136.31	41.8591	112.5391	1413.45	23.45	1
348.32	136.24	41.8590	112.5359	1413.19	23.43	1
348.47	136.14	41.8588	112.5313	1412.79	23.39	1
348.70	135.99	41.8585	112.5246	1412.22	23.35	1
349.00	135.79	41.8579	112.5157	1411.46	23.28	1
349.24	135.62	41.8574	112.5085	1410.85	23.23	1
349.41	135.49	41.8570	112.5034	1410.41	23.19	1
349.53	135.40	41.8567	112.4998	1410.11	23.16	1
350.00	135.06	41.8554	112.4860	1408.93	23.05	1
350.90	134.41	41.8528	112.4595	1406.66	22.84	1
351.00	134.34	41.8526	112.4565	1406.40	22.81	1
351.48	134.06	41.8516	112.4426	1405.19	22.73	1
352.00	133.78	41.8508	112.4276	1403.88	22.64	1
352.90	133.39	41.8499	112.4018	1401.60	22.52	1
353.00	133.35	41.8498	112.3990	1401.35	22.51	1
353.05	133.34	41.8497	112.3975	1401.21	22.51	1
353.10	133.32	41.8497	112.3961	1401.09	22.50	1
353.15	133.30	41.8497	112.3946	1400.96	22.50	1
353.22	133.27	41.8496	112.3927	1400.79	22.49	1
353.32	133.24	41.8496	112.3900	1400.55	22.48	1
353.46	133.19	41.8495	112.3860	1400.19	22.47	1
353.67	133.12	41.8494	112.3801	1399.66	22.45	1



KUTV Salt Lake City, UT
Comparison of Repack Allotment (CH 34) vs. Antenna 75010043

KUTV (Points where contour exceeds 1% limit)

Azimuth	Distance	Latitude	Longitude	HAAT	ERP (dBk)	Fails
344.00	131.06	41.7918	112.6386	1434.41	22.48	1
343.88	131.15	41.7918	112.6422	1434.72	22.51	1
343.35	131.54	41.7920	112.6575	1436.06	22.64	1
343.00	131.78	41.7920	112.6676	1436.94	22.72	1
342.96	131.81	41.7920	112.6689	1437.04	22.73	1
342.57	132.07	41.7918	112.6800	1438.02	22.81	1
342.30	132.25	41.7916	112.6878	1438.70	22.87	1
342.12	132.36	41.7914	112.6930	1439.16	22.91	1
342.00	132.44	41.7913	112.6966	1439.47	22.94	1
341.67	132.67	41.7910	112.7062	1440.31	23.01	1
341.58	132.73	41.7910	112.7088	1440.53	23.03	1
341.46	132.81	41.7908	112.7124	1440.84	23.06	1
341.27	132.93	41.7906	112.7178	1441.31	23.10	1
341.00	133.10	41.7901	112.7256	1442.00	23.15	1
340.90	133.15	41.7900	112.7284	1442.25	23.17	1
340.00	133.63	41.7876	112.7542	1444.52	23.33	1
339.00	134.06	41.7837	112.7824	1447.05	23.46	1
338.95	134.08	41.7835	112.7837	1447.17	23.46	1
338.90	134.10	41.7833	112.7851	1447.30	23.47	1
338.85	134.12	41.7831	112.7866	1447.44	23.47	1
338.78	134.15	41.7827	112.7886	1447.61	23.48	1
338.68	134.19	41.7823	112.7914	1447.87	23.49	1
338.53	134.25	41.7816	112.7956	1448.25	23.51	1
338.31	134.33	41.7806	112.8016	1448.79	23.53	1
338.00	134.42	41.7789	112.8102	1449.58	23.57	1
337.97	134.43	41.7787	112.8110	1449.65	23.57	1
337.72	134.49	41.7772	112.8178	1450.28	23.58	1
337.55	134.53	41.7761	112.8225	1450.73	23.59	1
337.43	134.56	41.7754	112.8257	1451.02	23.60	1
337.00	134.65	41.7725	112.8374	1452.11	23.62	1
336.53	134.77	41.7695	112.8501	1453.30	23.65	1
336.41	134.80	41.7687	112.8534	1453.60	23.66	1
336.23	134.84	41.7675	112.8581	1454.05	23.67	1
336.00	134.88	41.7658	112.8644	1454.64	23.68	1
335.67	134.94	41.7634	112.8733	1455.48	23.69	1
335.58	134.95	41.7627	112.8756	1455.70	23.69	1
335.46	134.97	41.7618	112.8788	1456.01	23.70	1
335.27	134.99	41.7603	112.8837	1456.47	23.70	1
335.00	135.01	41.7579	112.8908	1457.17	23.71	1
334.65	135.01	41.7547	112.8997	1458.05	23.69	1
334.39	135.00	41.7522	112.9063	1458.71	23.69	1
334.21	134.99	41.7505	112.9109	1459.16	23.68	1
308.42	132.63	41.3940	113.4489	1510.94	22.28	1

308.31	132.74	41.3927	113.4519	1511.00	22.33	1
308.22	132.83	41.3918	113.4542	1511.04	22.36	1
308.17	132.88	41.3911	113.4556	1511.07	22.38	1
308.12	132.92	41.3906	113.4568	1511.09	22.40	1
308.00	133.04	41.3893	113.4600	1511.15	22.44	1
307.91	133.13	41.3882	113.4624	1511.19	22.48	1
307.86	133.18	41.3877	113.4637	1511.22	22.49	1
307.81	133.23	41.3871	113.4649	1511.24	22.51	1
307.75	133.29	41.3864	113.4666	1511.27	22.53	1
307.65	133.39	41.3853	113.4693	1511.32	22.57	1
307.51	133.53	41.3837	113.4729	1511.39	22.62	1
307.31	133.72	41.3814	113.4780	1511.48	22.69	1
307.00	134.03	41.3777	113.4861	1511.64	22.81	1
306.86	134.16	41.3761	113.4896	1511.70	22.86	1
306.60	134.39	41.3729	113.4962	1511.83	22.95	1
306.42	134.56	41.3707	113.5008	1511.92	23.01	1
306.31	134.66	41.3692	113.5037	1511.97	23.05	1
306.22	134.74	41.3681	113.5058	1512.01	23.08	1
306.17	134.79	41.3675	113.5072	1512.04	23.10	1
306.12	134.83	41.3669	113.5083	1512.06	23.11	1
306.00	134.94	41.3654	113.5114	1512.12	23.15	1
305.91	135.02	41.3642	113.5137	1512.17	23.18	1
305.86	135.07	41.3636	113.5150	1512.19	23.20	1
305.81	135.11	41.3630	113.5162	1512.21	23.22	1
305.75	135.17	41.3622	113.5178	1512.24	23.24	1
305.65	135.26	41.3609	113.5203	1512.29	23.27	1
305.51	135.39	41.3591	113.5238	1512.36	23.32	1
305.31	135.57	41.3566	113.5287	1512.45	23.39	1
305.00	135.85	41.3525	113.5365	1512.61	23.49	1
304.65	136.15	41.3478	113.5450	1512.78	23.60	1
304.25	136.48	41.3424	113.5546	1512.97	23.73	1
304.00	136.69	41.3389	113.5607	1513.09	23.81	1
303.95	136.74	41.3382	113.5619	1513.12	23.83	1
303.87	136.80	41.3371	113.5637	1513.15	23.85	1
303.76	136.90	41.3355	113.5665	1513.21	23.89	1
303.60	137.02	41.3333	113.5702	1513.29	23.93	1
303.35	137.23	41.3297	113.5762	1513.41	24.01	1
303.00	137.51	41.3247	113.5843	1513.58	24.12	1
302.59	137.82	41.3187	113.5937	1513.78	24.23	1
302.00	138.24	41.3097	113.6069	1514.06	24.39	1
301.62	138.48	41.3038	113.6151	1514.25	24.48	1
301.33	138.66	41.2992	113.6211	1514.39	24.55	1
301.14	138.78	41.2960	113.6252	1514.48	24.59	1
301.00	138.86	41.2938	113.6281	1514.55	24.62	1
300.00	139.44	41.2774	113.6485	1515.03	24.84	1
299.95	139.47	41.2766	113.6494	1515.06	24.85	1

299.51	139.71	41.2692	113.6581	1515.27	24.94	1
299.21	139.87	41.2640	113.6641	1515.42	25.00	1
299.00	139.98	41.2605	113.6681	1515.52	25.04	1
298.97	140.00	41.2599	113.6687	1515.53	25.05	1
298.92	140.03	41.2591	113.6696	1515.56	25.06	1
298.87	140.05	41.2582	113.6706	1515.58	25.07	1
298.80	140.09	41.2570	113.6720	1515.62	25.08	1
298.69	140.15	41.2552	113.6740	1515.67	25.10	1
298.53	140.24	41.2524	113.6772	1515.75	25.14	1
298.31	140.35	41.2486	113.6813	1515.85	25.18	1
298.00	140.51	41.2431	113.6872	1516.00	25.24	1
297.96	140.53	41.2425	113.6879	1516.02	25.25	1
297.64	140.68	41.2368	113.6938	1516.18	25.30	1
297.42	140.79	41.2328	113.6978	1516.29	25.34	1
297.27	140.86	41.2301	113.7005	1516.36	25.37	1
297.17	140.90	41.2283	113.7023	1516.41	25.39	1
297.10	140.93	41.2270	113.7036	1516.44	25.40	1
297.05	140.96	41.2261	113.7045	1516.47	25.41	1
297.00	140.98	41.2252	113.7054	1516.49	25.42	1
296.51	141.22	41.2164	113.7142	1516.73	25.50	1
296.40	141.27	41.2144	113.7161	1516.78	25.52	1
296.24	141.34	41.2115	113.7189	1516.86	25.54	1
296.00	141.44	41.2070	113.7230	1516.98	25.59	1
295.97	141.45	41.2065	113.7234	1516.99	25.59	1
295.72	141.53	41.2018	113.7274	1517.11	25.62	1
295.55	141.58	41.1984	113.7301	1517.19	25.64	1
295.43	141.62	41.1962	113.7320	1517.25	25.65	1
295.00	141.74	41.1879	113.7385	1517.46	25.70	1
294.97	141.75	41.1874	113.7389	1517.47	25.70	1
294.92	141.76	41.1864	113.7397	1517.50	25.71	1
294.88	141.78	41.1855	113.7404	1517.52	25.71	1
294.83	141.79	41.1846	113.7412	1517.55	25.72	1
294.76	141.81	41.1832	113.7422	1517.58	25.72	1
294.66	141.84	41.1814	113.7437	1517.62	25.74	1
294.53	141.88	41.1788	113.7457	1517.69	25.75	1
294.31	141.95	41.1747	113.7490	1517.79	25.77	1
294.00	142.04	41.1685	113.7536	1517.95	25.81	1
293.00	142.29	41.1488	113.7677	1518.43	25.90	1
292.90	142.31	41.1468	113.7690	1518.48	25.91	1
292.00	142.48	41.1286	113.7807	1518.92	25.97	1
291.73	142.53	41.1231	113.7841	1519.05	25.99	1
291.00	142.63	41.1081	113.7928	1519.40	26.03	1
290.87	142.65	41.1055	113.7943	1519.46	26.03	1
290.53	142.69	41.0984	113.7981	1519.63	26.04	1
290.00	142.74	41.0873	113.8039	1519.89	26.06	1
289.96	142.74	41.0865	113.8043	1519.91	26.06	1

289.60	142.76	41.0790	113.8079	1520.08	26.07	1
289.35	142.77	41.0737	113.8104	1520.20	26.07	1
289.18	142.78	41.0701	113.8121	1520.28	26.08	1
289.07	142.79	41.0677	113.8132	1520.34	26.08	1
289.00	142.79	41.0662	113.8139	1520.37	26.08	1
288.67	142.81	41.0592	113.8171	1520.53	26.08	1
288.58	142.82	41.0574	113.8180	1520.58	26.09	1
288.46	142.83	41.0548	113.8192	1520.63	26.09	1
288.28	142.84	41.0509	113.8209	1520.72	26.09	1
288.00	142.85	41.0450	113.8234	1520.86	26.10	1
287.81	142.85	41.0409	113.8251	1520.95	26.10	1
287.00	142.86	41.0235	113.8320	1521.34	26.10	1
286.97	142.86	41.0228	113.8322	1521.36	26.10	1
286.71	142.85	41.0171	113.8343	1521.49	26.09	1
286.52	142.84	41.0131	113.8357	1521.58	26.09	1
286.40	142.84	41.0104	113.8366	1521.64	26.09	1
286.31	142.83	41.0086	113.8372	1521.68	26.08	1
286.00	142.82	41.0018	113.8394	1521.83	26.08	1
285.82	142.81	40.9979	113.8407	1521.92	26.08	1
285.48	142.80	40.9904	113.8432	1522.08	26.07	1
285.00	142.78	40.9800	113.8464	1522.32	26.06	1
284.73	142.77	40.9740	113.8482	1522.45	26.05	1
284.00	142.72	40.9580	113.8526	1522.80	26.03	1
283.00	142.64	40.9360	113.8580	1523.29	26.00	1
282.78	142.62	40.9311	113.8591	1523.39	25.99	1
282.46	142.58	40.9241	113.8606	1523.55	25.97	1
282.25	142.56	40.9194	113.8615	1523.65	25.97	1
282.10	142.54	40.9160	113.8622	1523.72	25.96	1
282.00	142.53	40.9139	113.8626	1523.77	25.95	1
281.88	142.52	40.9111	113.8631	1523.83	25.95	1
281.64	142.49	40.9059	113.8641	1523.95	25.94	1
281.48	142.47	40.9023	113.8648	1524.02	25.93	1
281.36	142.46	40.8997	113.8653	1524.08	25.93	1
281.28	142.45	40.8979	113.8656	1524.12	25.92	1
281.00	142.42	40.8917	113.8667	1524.26	25.91	1
190.16	113.06	39.6576	112.4358	840.70	21.92	1
190.00	113.14	39.6564	112.4323	838.14	22.00	1
189.95	113.16	39.6561	112.4312	837.33	22.02	1
189.74	113.26	39.6545	112.4265	833.91	22.12	1
189.44	113.40	39.6525	112.4200	829.12	22.25	1
189.00	113.57	39.6497	112.4103	822.15	22.44	1
188.00	113.87	39.6444	112.3879	806.15	22.84	1
187.59	113.97	39.6426	112.3786	799.60	22.99	1
187.00	114.09	39.6402	112.3652	790.16	23.20	1
186.00	114.22	39.6370	112.3422	774.17	23.54	1
185.95	114.23	39.6368	112.3410	773.30	23.56	1

185.88	114.24	39.6367	112.3395	772.32	23.58	1
185.82	114.24	39.6365	112.3381	771.32	23.60	1
185.75	114.25	39.6363	112.3365	770.20	23.62	1
185.65	114.26	39.6360	112.3342	768.64	23.65	1
185.52	114.28	39.6357	112.3311	766.46	23.70	1
185.30	114.30	39.6351	112.3260	762.94	23.77	1
185.00	114.31	39.6345	112.3191	758.18	23.87	1
184.95	114.32	39.6344	112.3179	757.37	23.88	1
184.73	114.32	39.6340	112.3129	753.91	23.95	1
184.43	114.33	39.6335	112.3059	749.07	24.04	1
184.00	114.34	39.6329	112.2959	742.19	24.17	1
183.78	114.34	39.6327	112.2908	738.66	24.23	1
183.46	114.32	39.6324	112.2833	733.57	24.32	1
183.25	114.31	39.6323	112.2784	730.17	24.38	1
183.10	114.30	39.6322	112.2749	727.77	24.43	1
183.00	114.30	39.6322	112.2726	726.19	24.45	1
182.81	114.28	39.6321	112.2681	723.10	24.50	1
182.59	114.25	39.6322	112.2630	719.59	24.55	1
182.45	114.23	39.6323	112.2597	717.34	24.59	1
182.35	114.22	39.6324	112.2574	715.78	24.61	1
182.00	114.16	39.6327	112.2493	710.20	24.70	1
181.00	113.97	39.6339	112.2260	694.21	24.92	1
180.91	113.95	39.6341	112.2238	692.73	24.94	1
180.31	113.74	39.6358	112.2098	683.12	25.06	1
180.18	113.71	39.6361	112.2069	681.09	25.08	1
180.00	113.70	39.6362	112.2027	678.22	25.11	1
179.98	113.70	39.6362	112.2023	678.34	25.12	1
179.80	113.74	39.6358	112.1981	679.48	25.15	1
179.68	113.81	39.6352	112.1952	680.28	25.17	1
179.58	113.87	39.6346	112.1930	680.89	25.19	1
179.10	114.27	39.6312	112.1818	683.96	25.27	1
179.00	114.34	39.6305	112.1794	684.61	25.29	1
178.99	114.35	39.6305	112.1791	684.70	25.29	1
178.93	114.39	39.6301	112.1777	685.08	25.30	1
178.87	114.43	39.6298	112.1764	685.44	25.31	1
178.80	114.47	39.6295	112.1747	685.89	25.32	1
178.69	114.54	39.6289	112.1722	686.57	25.34	1
178.53	114.65	39.6280	112.1683	687.62	25.37	1
178.31	114.79	39.6268	112.1633	688.99	25.41	1
178.00	114.99	39.6252	112.1559	691.00	25.46	1
177.43	115.33	39.6225	112.1423	694.64	25.55	1
177.00	115.59	39.6206	112.1321	697.39	25.61	1
176.75	115.74	39.6195	112.1260	699.00	25.65	1
176.68	115.78	39.6192	112.1245	699.42	25.66	1
176.59	115.84	39.6188	112.1222	700.02	25.67	1
176.45	115.92	39.6182	112.1188	700.92	25.69	1

176.26	116.03	39.6174	112.1143	702.13	25.72	1
176.00	116.17	39.6164	112.1081	703.78	25.75	1
175.97	116.19	39.6163	112.1074	703.96	25.76	1
175.72	116.31	39.6155	112.1014	705.55	25.78	1
175.55	116.39	39.6150	112.0972	706.67	25.80	1
175.43	116.45	39.6147	112.0944	707.42	25.81	1
175.00	116.65	39.6136	112.0840	710.17	25.85	1
174.97	116.66	39.6135	112.0832	710.37	25.85	1
174.84	116.73	39.6131	112.0800	711.22	25.86	1
174.65	116.82	39.6126	112.0756	712.40	25.88	1
174.39	116.94	39.6119	112.0692	714.09	25.90	1
174.00	117.13	39.6110	112.0598	716.56	25.94	1
173.95	117.15	39.6109	112.0585	716.90	25.94	1
173.87	117.19	39.6107	112.0566	717.38	25.95	1
173.76	117.24	39.6105	112.0538	718.12	25.96	1
173.60	117.31	39.6101	112.0500	719.11	25.97	1
173.35	117.43	39.6096	112.0439	720.73	25.99	1
173.00	117.58	39.6090	112.0354	722.95	26.02	1
172.00	117.98	39.6079	112.0110	729.34	26.07	1
171.00	118.33	39.6074	111.9866	735.74	26.11	1
170.53	118.47	39.6075	111.9751	738.73	26.11	1
170.00	118.63	39.6077	111.9622	742.13	26.12	1
169.70	118.72	39.6079	111.9549	744.02	26.13	1
169.37	118.81	39.6082	111.9467	746.18	26.13	1
169.15	118.88	39.6084	111.9414	747.56	26.13	1
169.00	118.92	39.6086	111.9378	748.52	26.13	1
168.99	118.92	39.6086	111.9376	748.56	26.13	1
168.94	118.94	39.6086	111.9362	748.93	26.13	1
168.88	118.95	39.6087	111.9347	749.31	26.13	1
168.82	118.97	39.6088	111.9333	749.67	26.13	1
168.76	118.99	39.6088	111.9318	750.07	26.13	1
168.66	119.01	39.6089	111.9295	750.68	26.14	1
168.53	119.05	39.6091	111.9263	751.53	26.14	1
168.31	119.11	39.6093	111.9210	752.90	26.14	1
168.00	119.20	39.6098	111.9133	754.91	26.14	1
167.93	119.22	39.6099	111.9116	755.37	26.14	1
167.73	119.27	39.6102	111.9068	756.61	26.14	1
167.43	119.34	39.6108	111.8994	758.55	26.14	1
167.00	119.44	39.6117	111.8890	761.30	26.13	1
166.89	119.46	39.6120	111.8863	762.00	26.13	1
166.68	119.49	39.6125	111.8812	763.35	26.12	1
166.53	119.52	39.6129	111.8776	764.29	26.12	1
166.00	119.61	39.6145	111.8648	767.69	26.10	1
165.65	119.67	39.6155	111.8563	769.92	26.09	1
165.57	119.69	39.6157	111.8544	770.43	26.09	1
165.44	119.71	39.6161	111.8513	771.24	26.08	1

165.25	119.75	39.6167	111.8468	772.46	26.08	1
165.00	119.80	39.6175	111.8406	774.08	26.07	1
103.39	119.82	40.4013	110.8255	1155.66	21.28	1
103.00	120.14	40.4077	110.8195	1157.98	21.40	1
102.89	120.23	40.4095	110.8179	1158.65	21.43	1
102.68	120.40	40.4130	110.8147	1159.91	21.48	1
102.53	120.51	40.4155	110.8126	1160.80	21.52	1
102.00	120.93	40.4245	110.8048	1163.99	21.67	1
101.36	121.46	40.4354	110.7951	1167.85	21.84	1
101.21	121.57	40.4379	110.7930	1168.73	21.88	1
101.00	121.74	40.4415	110.7900	1169.99	21.94	1
100.00	122.40	40.4591	110.7773	1176.00	22.15	1
99.80	122.52	40.4626	110.7750	1177.17	22.19	1
99.52	122.68	40.4677	110.7718	1178.87	22.23	1
99.33	122.79	40.4711	110.7697	1180.00	22.26	1
99.20	122.86	40.4735	110.7683	1180.80	22.29	1
99.11	122.91	40.4751	110.7673	1181.32	22.30	1
99.05	122.94	40.4762	110.7667	1181.69	22.31	1
99.00	122.97	40.4771	110.7661	1182.00	22.32	1
98.66	123.16	40.4833	110.7624	1184.06	22.37	1
98.57	123.21	40.4850	110.7615	1184.59	22.38	1
98.44	123.28	40.4873	110.7601	1185.36	22.40	1
98.25	123.38	40.4908	110.7581	1186.50	22.43	1
98.00	123.51	40.4954	110.7557	1188.01	22.47	1
97.00	123.91	40.5141	110.7472	1194.02	22.56	1
96.00	124.22	40.5331	110.7403	1200.02	22.61	1
95.77	124.29	40.5375	110.7388	1201.42	22.62	1
95.71	124.30	40.5387	110.7384	1201.79	22.62	1
95.62	124.33	40.5403	110.7379	1202.31	22.62	1
95.49	124.36	40.5428	110.7371	1203.09	22.63	1
95.29	124.41	40.5467	110.7359	1204.30	22.63	1
95.00	124.46	40.5522	110.7345	1206.03	22.64	1
94.59	124.52	40.5601	110.7328	1208.49	22.63	1
94.00	124.57	40.5716	110.7308	1212.03	22.61	1
93.95	124.58	40.5726	110.7306	1212.35	22.61	1
93.87	124.58	40.5741	110.7304	1212.80	22.61	1
93.76	124.59	40.5763	110.7301	1213.50	22.60	1
93.60	124.60	40.5793	110.7296	1214.43	22.59	1
93.35	124.61	40.5843	110.7290	1215.94	22.58	1
93.00	124.62	40.5911	110.7283	1218.04	22.56	1
92.75	124.61	40.5959	110.7279	1219.54	22.54	1
92.52	124.60	40.6004	110.7277	1220.92	22.52	1
92.36	124.58	40.6036	110.7276	1221.90	22.50	1
92.24	124.58	40.6058	110.7275	1222.58	22.49	1
92.17	124.57	40.6073	110.7275	1223.02	22.48	1
92.11	124.56	40.6084	110.7275	1223.37	22.48	1

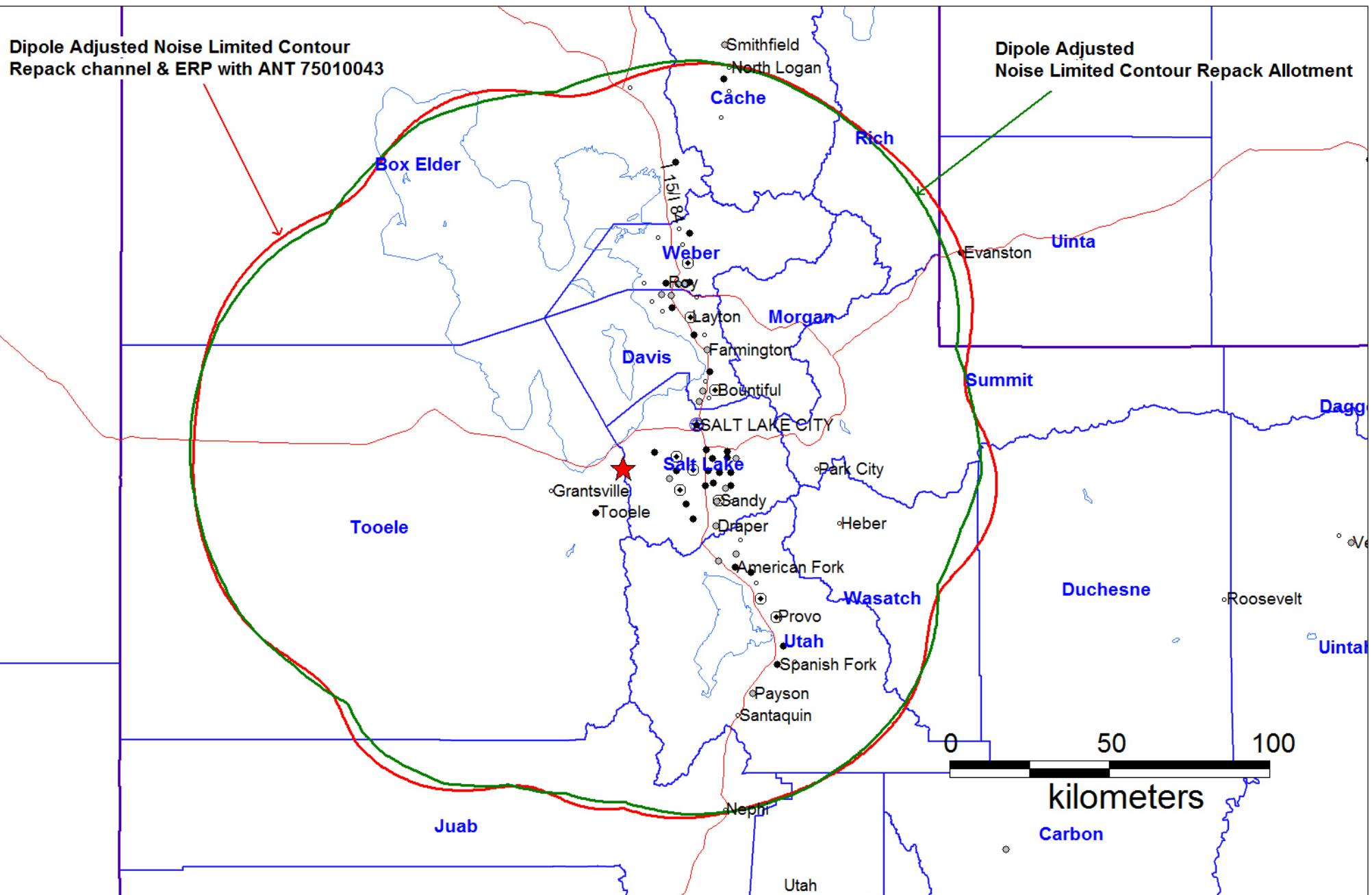
92.06	124.56	40.6095	110.7274	1223.69	22.47	1
92.00	124.55	40.6106	110.7274	1224.04	22.47	1
91.94	124.55	40.6118	110.7274	1224.41	22.46	1
66.00	126.64	41.1143	110.8211	1296.07	22.41	1
65.19	127.62	41.1327	110.8189	1298.10	22.75	1
65.00	127.85	41.1370	110.8185	1298.57	22.82	1
64.78	128.10	41.1420	110.8182	1299.13	22.90	1
64.46	128.45	41.1491	110.8180	1299.93	23.02	1
64.00	128.92	41.1593	110.8180	1301.08	23.18	1
63.67	129.24	41.1666	110.8184	1301.90	23.27	1
63.42	129.47	41.1721	110.8188	1302.53	23.35	1
63.25	129.62	41.1759	110.8192	1302.96	23.40	1
63.13	129.73	41.1784	110.8195	1303.26	23.43	1
63.05	129.79	41.1801	110.8196	1303.45	23.45	1
63.00	129.84	41.1812	110.8198	1303.58	23.47	1
62.00	130.69	41.2030	110.8228	1306.08	23.74	1
61.00	131.49	41.2245	110.8270	1308.58	23.99	1
60.96	131.52	41.2254	110.8272	1308.68	24.00	1
60.88	131.59	41.2271	110.8276	1308.88	24.02	1
60.77	131.67	41.2295	110.8282	1309.16	24.05	1
60.59	131.81	41.2333	110.8290	1309.60	24.09	1
60.33	132.00	41.2389	110.8304	1310.25	24.15	1
60.00	132.24	41.2459	110.8324	1311.08	24.23	1
59.81	132.36	41.2499	110.8336	1311.55	24.26	1
59.00	132.88	41.2668	110.8394	1313.58	24.42	1
58.21	133.43	41.2836	110.8449	1315.56	24.59	1
58.00	133.56	41.2880	110.8465	1316.08	24.63	1
57.78	133.68	41.2924	110.8484	1316.62	24.67	1
57.54	133.81	41.2974	110.8507	1317.24	24.71	1
57.38	133.89	41.3006	110.8521	1317.63	24.73	1
57.27	133.95	41.3029	110.8532	1317.90	24.75	1
57.20	133.98	41.3043	110.8539	1318.08	24.76	1
57.15	134.01	41.3053	110.8544	1318.20	24.77	1
57.10	134.03	41.3063	110.8549	1318.33	24.77	1
57.00	134.08	41.3083	110.8559	1318.58	24.79	1
56.79	134.19	41.3127	110.8580	1319.12	24.82	1
56.48	134.34	41.3189	110.8611	1319.89	24.86	1
56.00	134.57	41.3285	110.8661	1321.08	24.93	1
55.95	134.59	41.3295	110.8666	1321.21	24.94	1
55.73	134.69	41.3338	110.8690	1321.75	24.97	1
55.43	134.82	41.3398	110.8724	1322.51	25.00	1
55.00	134.99	41.3482	110.8775	1323.58	25.05	1
54.81	135.06	41.3519	110.8798	1324.06	25.07	1
54.00	135.32	41.3673	110.8903	1326.08	25.14	1
53.19	135.64	41.3829	110.9005	1328.10	25.23	1
53.00	135.71	41.3866	110.9031	1328.58	25.25	1

52.94	135.73	41.3878	110.9039	1328.74	25.26	1
52.39	135.91	41.3982	110.9114	1330.12	25.30	1
52.00	136.03	41.4055	110.9169	1331.08	25.34	1
51.99	136.03	41.4056	110.9170	1331.10	25.34	1
51.94	136.05	41.4065	110.9177	1331.22	25.34	1
51.89	136.06	41.4075	110.9184	1331.35	25.35	1
51.85	136.08	41.4084	110.9191	1331.47	25.35	1
51.78	136.10	41.4097	110.9201	1331.65	25.36	1
51.67	136.13	41.4116	110.9216	1331.90	25.36	1
51.52	136.18	41.4144	110.9238	1332.28	25.38	1
51.31	136.24	41.4185	110.9269	1332.82	25.39	1
51.00	136.33	41.4241	110.9315	1333.59	25.42	1
50.84	136.36	41.4270	110.9340	1333.99	25.42	1
50.66	136.40	41.4303	110.9369	1334.45	25.43	1
50.00	136.54	41.4420	110.9474	1336.09	25.46	1
49.65	136.62	41.4482	110.9530	1336.96	25.48	1
49.57	136.64	41.4496	110.9543	1337.16	25.49	1
49.44	136.67	41.4519	110.9563	1337.48	25.49	1
49.25	136.71	41.4553	110.9594	1337.95	25.51	1
49.00	136.77	41.4598	110.9635	1338.59	25.52	1
48.92	136.79	41.4613	110.9648	1338.79	25.52	1
48.80	136.82	41.4633	110.9667	1339.08	25.53	1
48.62	136.86	41.4665	110.9697	1339.53	25.54	1
48.39	136.92	41.4707	110.9736	1340.12	25.55	1
48.00	137.01	41.4775	110.9801	1341.09	25.58	1
47.97	137.02	41.4781	110.9806	1341.17	25.58	1
47.84	137.04	41.4804	110.9828	1341.50	25.58	1
47.65	137.09	41.4836	110.9860	1341.96	25.59	1
47.39	137.14	41.4882	110.9905	1342.62	25.61	1
47.00	137.22	41.4948	110.9973	1343.59	25.62	1
46.66	137.27	41.5006	111.0035	1344.45	25.63	1
46.00	137.37	41.5116	111.0155	1346.09	25.65	1
45.95	137.38	41.5124	111.0164	1346.22	25.65	1
45.73	137.40	41.5160	111.0205	1346.76	25.66	1
45.43	137.44	41.5210	111.0261	1347.51	25.66	1
45.00	137.49	41.5280	111.0343	1348.59	25.67	1
44.80	137.51	41.5312	111.0383	1348.79	25.67	1
44.61	137.53	41.5342	111.0419	1348.98	25.68	1
44.48	137.54	41.5363	111.0445	1349.12	25.68	1
44.00	137.58	41.5438	111.0539	1349.60	25.69	1
43.38	137.65	41.5537	111.0661	1350.22	25.71	1
43.22	137.66	41.5562	111.0693	1350.38	25.71	1
43.00	137.68	41.5596	111.0737	1350.61	25.72	1
42.00	137.74	41.5748	111.0943	1351.61	25.73	1
41.73	137.75	41.5788	111.1000	1351.89	25.73	1
41.52	137.75	41.5818	111.1044	1352.09	25.73	1

41.38	137.76	41.5839	111.1074	1352.24	25.73	1
41.28	137.76	41.5853	111.1094	1352.33	25.73	1
41.22	137.76	41.5863	111.1109	1352.40	25.73	1
41.17	137.76	41.5871	111.1119	1352.45	25.73	1
41.00	137.77	41.5895	111.1155	1352.62	25.73	1
40.37	137.80	41.5987	111.1288	1353.25	25.73	1
40.23	137.81	41.6008	111.1319	1353.40	25.73	1
40.00	137.82	41.6041	111.1368	1353.63	25.74	1
39.61	137.84	41.6097	111.1453	1354.02	25.74	1
39.25	137.85	41.6147	111.1531	1354.38	25.74	1
39.00	137.85	41.6183	111.1587	1354.64	25.74	1
38.00	137.88	41.6322	111.1809	1355.65	25.74	1
37.97	137.88	41.6326	111.1817	1355.68	25.74	1
37.68	137.89	41.6366	111.1882	1355.97	25.74	1
37.47	137.89	41.6394	111.1928	1356.18	25.74	1
37.34	137.90	41.6412	111.1959	1356.31	25.74	1
37.24	137.90	41.6425	111.1980	1356.41	25.74	1
37.19	137.90	41.6432	111.1993	1356.47	25.74	1
37.14	137.90	41.6439	111.2004	1356.52	25.74	1
37.00	137.91	41.6457	111.2035	1356.65	25.74	1
36.00	137.99	41.6594	111.2260	1357.66	25.75	1
35.84	138.00	41.6616	111.2297	1357.82	25.76	1
35.66	138.02	41.6640	111.2339	1358.01	25.76	1
35.00	138.07	41.6728	111.2489	1358.67	25.77	1
34.00	138.20	41.6862	111.2717	1359.68	25.81	1
33.97	138.21	41.6866	111.2723	1359.70	25.81	1
33.72	138.24	41.6899	111.2781	1359.96	25.82	1
33.55	138.25	41.6921	111.2822	1360.13	25.82	1
33.43	138.27	41.6937	111.2850	1360.25	25.82	1
33.00	138.31	41.6992	111.2951	1360.68	25.84	1
32.82	138.33	41.7015	111.2993	1360.87	25.84	1
32.66	138.35	41.7036	111.3031	1361.03	25.85	1
32.00	138.44	41.7121	111.3186	1361.69	25.87	1
31.00	138.63	41.7250	111.3421	1362.70	25.93	1
30.97	138.63	41.7254	111.3428	1362.73	25.93	1
30.72	138.67	41.7285	111.3487	1362.98	25.94	1
30.55	138.70	41.7307	111.3529	1363.16	25.95	1
30.43	138.72	41.7321	111.3557	1363.27	25.95	1
30.00	138.78	41.7374	111.3661	1363.71	25.97	1
29.41	138.89	41.7448	111.3805	1364.31	26.00	1
29.23	138.92	41.7470	111.3847	1364.48	26.01	1
29.00	138.96	41.7498	111.3903	1364.72	26.03	1
28.62	139.02	41.7543	111.3997	1365.10	26.04	1
28.33	139.07	41.7577	111.4067	1365.39	26.06	1
28.14	139.10	41.7600	111.4117	1365.59	26.06	1
28.00	139.12	41.7616	111.4150	1365.72	26.07	1

27.00	139.27	41.7731	111.4400	1366.73	26.11	1
26.94	139.28	41.7738	111.4416	1366.79	26.12	1
26.82	139.30	41.7751	111.4446	1366.91	26.12	1
26.65	139.33	41.7770	111.4488	1367.08	26.13	1
26.39	139.37	41.7800	111.4555	1367.35	26.14	1
26.00	139.43	41.7842	111.4653	1367.74	26.16	1
25.00	139.55	41.7949	111.4910	1368.75	26.19	1
24.75	139.58	41.7974	111.4975	1369.00	26.20	1
24.39	139.62	41.8011	111.5069	1369.36	26.21	1
24.15	139.64	41.8034	111.5132	1369.60	26.22	1
24.00	139.66	41.8049	111.5172	1369.75	26.22	1
23.98	139.66	41.8051	111.5177	1369.77	26.22	1
23.90	139.67	41.8059	111.5198	1369.86	26.22	1
23.79	139.68	41.8071	111.5228	1369.97	26.23	1
23.62	139.69	41.8086	111.5270	1370.13	26.23	1
23.39	139.72	41.8110	111.5333	1370.37	26.24	1
23.00	139.76	41.8147	111.5436	1370.76	26.25	1
22.98	139.76	41.8148	111.5440	1370.78	26.25	1
22.93	139.76	41.8153	111.5453	1370.83	26.25	1
22.88	139.77	41.8158	111.5467	1370.88	26.25	1
22.81	139.77	41.8165	111.5486	1370.95	26.25	1
22.71	139.78	41.8174	111.5513	1371.06	26.25	1
22.55	139.80	41.8189	111.5555	1371.21	26.25	1
22.31	139.82	41.8211	111.5619	1371.45	26.26	1
22.00	139.83	41.8239	111.5703	1371.77	26.26	1
21.90	139.84	41.8247	111.5731	1371.87	26.26	1
21.70	139.85	41.8264	111.5784	1372.07	26.26	1
21.43	139.85	41.8287	111.5858	1372.34	26.26	1
21.00	139.86	41.8323	111.5976	1372.78	26.26	1
20.56	139.86	41.8357	111.6096	1373.22	26.26	1
20.23	139.85	41.8382	111.6188	1373.56	26.25	1
20.00	139.84	41.8399	111.6252	1373.79	26.25	1
19.81	139.83	41.8413	111.6304	1373.97	26.24	1
19.54	139.81	41.8432	111.6379	1374.24	26.23	1
19.37	139.80	41.8444	111.6429	1374.43	26.22	1
19.24	139.79	41.8452	111.6465	1374.55	26.22	1
19.16	139.78	41.8458	111.6488	1374.64	26.22	1
19.10	139.78	41.8461	111.6505	1374.70	26.21	1
19.05	139.77	41.8465	111.6519	1374.75	26.21	1
19.00	139.77	41.8468	111.6532	1374.79	26.21	1
18.00	139.67	41.8531	111.6814	1375.80	26.17	1
17.48	139.60	41.8560	111.6963	1376.33	26.14	1
17.00	139.52	41.8585	111.7100	1376.81	26.11	1
16.73	139.48	41.8598	111.7178	1377.08	26.08	1
16.00	139.32	41.8631	111.7388	1377.82	26.03	1
15.80	139.28	41.8639	111.7445	1378.02	26.01	1

15.43	139.19	41.8654	111.7554	1378.39	25.97	1
15.17	139.12	41.8663	111.7630	1378.66	25.94	1
15.00	139.07	41.8669	111.7679	1378.83	25.93	1
14.59	138.96	41.8683	111.7798	1379.24	25.88	1
14.00	138.79	41.8700	111.7971	1379.83	25.82	1
13.00	138.45	41.8722	111.8264	1380.84	25.69	1
12.56	138.29	41.8729	111.8394	1381.28	25.62	1
12.23	138.15	41.8733	111.8492	1381.62	25.57	1
12.00	138.06	41.8736	111.8559	1381.85	25.54	1
11.97	138.05	41.8736	111.8567	1381.88	25.53	1
11.92	138.03	41.8736	111.8582	1381.93	25.53	1
11.85	138.00	41.8737	111.8603	1382.00	25.52	1
11.74	137.95	41.8738	111.8637	1382.11	25.50	1
11.57	137.88	41.8739	111.8685	1382.28	25.47	1
11.34	137.79	41.8741	111.8753	1382.51	25.43	1



KUCW Ogden, UT
Comparison of Repack Allotment (CH 35) vs. Antenna 75010043

KUCW (Points where contour exceeds 1% limit)

Azimuth	Distance	Latitude	Longitude	HAAT	ERP (dBk)	Fails
37.52	127.39	41.5644	111.2698	1346.13	21.43	1
37.71	127.39	41.5621	111.2659	1345.94	21.43	1
37.97	127.38	41.5588	111.2604	1345.67	21.43	1
38.00	127.38	41.5584	111.2598	1345.65	21.43	1
39.00	127.35	41.5455	111.2394	1344.64	21.43	1
39.21	127.34	41.5428	111.2352	1344.43	21.43	1
39.51	127.33	41.5388	111.2290	1344.12	21.43	1
39.95	127.32	41.5331	111.2202	1343.68	21.43	1
40.00	127.31	41.5324	111.2192	1343.63	21.43	1
40.23	127.30	41.5293	111.2147	1343.40	21.43	1
40.37	127.29	41.5274	111.2119	1343.25	21.43	1
41.00	127.25	41.5189	111.1996	1342.62	21.42	1
41.28	127.24	41.5150	111.1940	1342.34	21.42	1
41.36	127.24	41.5140	111.1925	1342.26	21.42	1
41.48	127.24	41.5124	111.1902	1342.14	21.42	1
41.66	127.23	41.5099	111.1866	1341.96	21.42	1
41.91	127.22	41.5065	111.1818	1341.71	21.42	1
42.00	127.22	41.5052	111.1801	1341.61	21.42	1
43.00	127.16	41.4912	111.1611	1340.61	21.41	1
43.23	127.14	41.4879	111.1569	1340.38	21.41	1
43.37	127.13	41.4858	111.1543	1340.23	21.40	1
44.00	127.05	41.4766	111.1429	1339.60	21.38	1
44.53	127.01	41.4688	111.1332	1339.06	21.37	1
44.68	127.00	41.4667	111.1306	1338.91	21.37	1
44.89	126.98	41.4635	111.1268	1338.70	21.37	1
45.00	126.97	41.4619	111.1248	1338.59	21.37	1
45.39	126.93	41.4561	111.1181	1337.62	21.36	1
45.62	126.89	41.4524	111.1140	1337.03	21.35	1
45.80	126.87	41.4497	111.1109	1336.58	21.35	1
45.92	126.85	41.4479	111.1090	1336.29	21.35	1
46.00	126.84	41.4467	111.1076	1336.09	21.35	1
46.59	126.75	41.4375	111.0977	1334.61	21.33	1
47.00	126.68	41.4311	111.0909	1333.59	21.32	1
47.39	126.61	41.4249	111.0847	1332.62	21.30	1
47.65	126.55	41.4207	111.0806	1331.96	21.29	1
47.84	126.51	41.4177	111.0777	1331.50	21.28	1
47.97	126.48	41.4156	111.0756	1331.17	21.27	1
48.00	126.48	41.4151	111.0752	1331.09	21.27	1
48.35	126.40	41.4094	111.0698	1330.22	21.25	1
48.60	126.34	41.4052	111.0660	1329.58	21.24	1
48.77	126.30	41.4024	111.0634	1329.16	21.23	1
48.88	126.27	41.4006	111.0618	1328.88	21.22	1
48.96	126.25	41.3993	111.0606	1328.69	21.22	1

49.00	126.24	41.3987	111.0600	1328.59	21.22	1
49.28	126.18	41.3940	111.0558	1327.88	21.20	1
49.46	126.13	41.3910	111.0531	1327.42	21.19	1
49.59	126.10	41.3889	111.0513	1327.12	21.18	1
49.67	126.08	41.3875	111.0501	1326.91	21.18	1
50.00	126.01	41.3821	111.0453	1326.09	21.16	1
50.66	125.88	41.3712	111.0356	1324.45	21.13	1
50.84	125.84	41.3682	111.0330	1323.99	21.12	1
51.00	125.80	41.3655	111.0307	1323.59	21.11	1
51.31	125.72	41.3602	111.0264	1322.80	21.09	1
51.53	125.66	41.3565	111.0235	1322.26	21.07	1
51.66	125.62	41.3542	111.0218	1321.93	21.06	1
51.76	125.59	41.3525	111.0205	1321.69	21.05	1
51.83	125.57	41.3513	111.0196	1321.52	21.05	1
51.88	125.55	41.3504	111.0189	1321.38	21.04	1
51.94	125.54	41.3494	111.0182	1321.24	21.04	1
52.00	125.52	41.3483	111.0173	1321.08	21.03	1
52.28	125.43	41.3434	111.0137	1320.38	21.01	1
52.71	125.30	41.3360	111.0083	1319.32	20.97	1
53.00	125.21	41.3309	111.0046	1318.58	20.95	1
53.20	125.14	41.3273	111.0022	1318.08	20.92	1
54.00	124.85	41.3130	110.9929	1316.08	20.84	1
54.81	124.60	41.2987	110.9833	1314.06	20.77	1
55.00	124.53	41.2954	110.9811	1313.58	20.75	1
55.48	124.36	41.2867	110.9759	1312.39	20.69	1
55.79	124.23	41.2811	110.9728	1311.62	20.65	1
56.00	124.14	41.2772	110.9706	1311.08	20.63	1
56.43	123.96	41.2692	110.9664	1310.01	20.57	1
56.73	123.82	41.2636	110.9636	1309.25	20.52	1
56.95	123.72	41.2596	110.9616	1308.71	20.49	1
57.00	123.70	41.2586	110.9611	1308.58	20.49	1
57.14	123.64	41.2561	110.9599	1308.24	20.46	1
57.19	123.61	41.2551	110.9594	1308.10	20.46	1
57.26	123.58	41.2539	110.9588	1307.94	20.45	1
57.35	123.54	41.2522	110.9580	1307.72	20.43	1
57.48	123.48	41.2497	110.9568	1307.38	20.41	1
57.68	123.39	41.2459	110.9550	1306.88	20.38	1
58.00	123.23	41.2399	110.9524	1306.08	20.33	1
58.20	123.11	41.2360	110.9509	1305.57	20.29	1
59.00	122.62	41.2205	110.9456	1303.58	20.12	1
59.81	122.16	41.2050	110.9400	1301.55	19.96	1
60.00	122.05	41.2013	110.9388	1301.08	19.92	1
60.35	121.83	41.1945	110.9368	1300.21	19.84	1
60.58	121.68	41.1900	110.9356	1299.64	19.79	1
60.74	121.57	41.1868	110.9347	1299.23	19.75	1
60.85	121.50	41.1846	110.9342	1298.95	19.72	1

60.93	121.44	41.1831	110.9338	1298.75	19.71	1
60.99	121.41	41.1820	110.9335	1298.61	19.69	1
61.00	121.40	41.1817	110.9335	1298.58	19.69	1
62.00	120.71	41.1620	110.9291	1296.08	19.44	1
63.00	119.97	41.1421	110.9256	1293.58	19.17	1
63.05	119.93	41.1411	110.9255	1293.45	19.15	1
63.11	119.89	41.1400	110.9253	1293.31	19.13	1
63.18	119.84	41.1386	110.9251	1293.13	19.11	1
63.29	119.76	41.1364	110.9248	1292.85	19.08	1
63.45	119.63	41.1331	110.9243	1292.45	19.03	1
63.69	119.45	41.1284	110.9238	1291.86	18.96	1
64.00	119.20	41.1222	110.9232	1291.08	18.87	1
64.56	118.70	41.1108	110.9227	1289.67	18.67	1
65.00	118.28	41.1018	110.9228	1288.57	18.52	1
65.20	118.08	41.0977	110.9230	1288.08	18.44	1
66.00	117.24	41.0811	110.9243	1286.07	18.11	1
66.81	116.45	41.0646	110.9254	1284.05	17.80	1
67.00	116.26	41.0608	110.9258	1283.57	17.72	1
67.08	116.18	41.0592	110.9259	1283.37	17.69	1
67.20	116.06	41.0567	110.9261	1283.06	17.64	1
67.39	115.88	41.0530	110.9264	1282.61	17.57	1
67.65	115.62	41.0477	110.9270	1281.95	17.47	1
68.00	115.28	41.0406	110.9277	1281.07	17.33	1
69.00	114.26	41.0205	110.9307	1278.57	16.92	1
69.39	113.85	41.0128	110.9322	1277.60	16.76	1
69.68	113.53	41.0069	110.9334	1276.87	16.63	1
69.87	113.33	41.0031	110.9342	1276.40	16.55	1
70.00	113.19	41.0005	110.9347	1276.07	16.49	1
71.00	112.11	40.9806	110.9394	1273.57	16.06	1
71.23	111.88	40.9762	110.9403	1273.00	15.97	1
72.00	111.15	40.9613	110.9432	1271.07	15.67	1
72.73	110.48	40.9474	110.9460	1269.25	15.41	1
72.91	110.33	40.9441	110.9466	1268.80	15.34	1
82.86	111.00	40.7758	110.8942	1243.90	15.89	1
82.94	111.06	40.7745	110.8933	1243.70	15.92	1
83.00	111.10	40.7735	110.8926	1243.56	15.94	1
83.90	111.83	40.7584	110.8819	1241.30	16.28	1
84.00	111.90	40.7568	110.8809	1241.06	16.31	1
85.00	112.59	40.7398	110.8708	1238.56	16.64	1
85.31	112.79	40.7343	110.8680	1237.77	16.73	1
85.53	112.91	40.7306	110.8662	1237.24	16.79	1
85.68	113.00	40.7280	110.8649	1236.87	16.83	1
85.78	113.06	40.7263	110.8641	1236.61	16.86	1
85.84	113.10	40.7252	110.8636	1236.46	16.88	1
85.90	113.13	40.7241	110.8631	1236.30	16.90	1
85.96	113.16	40.7231	110.8626	1236.16	16.91	1

86.00	113.19	40.7224	110.8623	1236.06	16.92	1
86.12	113.26	40.7203	110.8613	1235.75	16.96	1
86.30	113.36	40.7171	110.8598	1235.30	17.01	1
86.57	113.52	40.7124	110.8577	1234.63	17.08	1
86.96	113.74	40.7056	110.8547	1233.66	17.19	1
87.00	113.76	40.7048	110.8544	1233.56	17.20	1
88.00	114.28	40.6871	110.8476	1231.06	17.45	1
88.19	114.37	40.6838	110.8465	1230.59	17.49	1
88.47	114.50	40.6787	110.8448	1229.88	17.56	1
88.86	114.68	40.6717	110.8426	1228.92	17.65	1
89.00	114.74	40.6691	110.8418	1228.56	17.68	1
89.21	114.83	40.6654	110.8408	1228.04	17.72	1
89.26	114.86	40.6644	110.8405	1227.90	17.73	1
89.35	114.89	40.6628	110.8401	1227.67	17.75	1
89.49	114.95	40.6604	110.8394	1227.34	17.78	1
89.67	115.02	40.6571	110.8386	1226.89	17.81	1
89.94	115.11	40.6522	110.8376	1226.21	17.86	1
90.00	115.13	40.6511	110.8374	1226.06	17.88	1
90.81	115.33	40.6364	110.8355	1221.19	18.01	1
91.00	115.36	40.6329	110.8353	1220.05	18.04	1
91.43	115.42	40.6251	110.8349	1217.46	18.09	1
92.00	115.49	40.6148	110.8348	1214.04	18.16	1
92.12	115.50	40.6126	110.8348	1213.31	18.18	1
92.18	115.50	40.6115	110.8348	1212.97	18.18	1
92.24	115.51	40.6105	110.8348	1212.62	18.19	1
92.32	115.51	40.6090	110.8348	1212.12	18.19	1
92.45	115.53	40.6067	110.8349	1211.36	18.21	1
92.64	115.54	40.6032	110.8350	1210.20	18.22	1
92.93	115.55	40.5979	110.8353	1208.45	18.25	1
93.00	115.55	40.5966	110.8354	1208.04	18.26	1
93.39	115.54	40.5896	110.8361	1205.71	18.28	1
93.65	115.54	40.5849	110.8367	1204.13	18.29	1
93.84	115.53	40.5815	110.8372	1203.01	18.30	1
93.97	115.52	40.5791	110.8375	1202.22	18.31	1
94.00	115.52	40.5786	110.8376	1202.03	18.31	1
94.53	115.48	40.5690	110.8392	1198.84	18.32	1
94.87	115.45	40.5629	110.8404	1196.79	18.33	1
95.00	115.43	40.5606	110.8409	1196.03	18.34	1
95.27	115.39	40.5558	110.8421	1194.40	18.33	1
95.48	115.34	40.5521	110.8431	1193.16	18.32	1
95.61	115.31	40.5497	110.8438	1192.37	18.32	1
95.70	115.29	40.5481	110.8443	1191.83	18.32	1
95.76	115.28	40.5470	110.8447	1191.46	18.32	1
96.00	115.22	40.5428	110.8460	1190.02	18.31	1
97.00	114.95	40.5252	110.8523	1184.02	18.26	1
98.00	114.59	40.5078	110.8600	1178.01	18.16	1

98.26	114.47	40.5033	110.8623	1176.43	18.12	1
98.45	114.38	40.5002	110.8641	1175.31	18.10	1
98.59	114.31	40.4978	110.8654	1174.47	18.08	1
98.68	114.26	40.4962	110.8664	1173.90	18.06	1
98.75	114.23	40.4951	110.8670	1173.51	18.05	1
99.00	114.10	40.4909	110.8695	1172.00	18.01	1
99.08	114.06	40.4895	110.8703	1171.53	18.00	1
99.19	114.00	40.4876	110.8714	1170.85	17.98	1
99.36	113.92	40.4848	110.8731	1169.85	17.96	1
99.61	113.79	40.4807	110.8756	1168.36	17.91	1
100.00	113.57	40.4741	110.8799	1166.00	17.85	1
101.00	112.94	40.4578	110.8918	1159.99	17.64	1
101.21	112.79	40.4544	110.8946	1158.73	17.58	1
101.37	112.66	40.4519	110.8968	1157.75	17.53	1
102.00	112.16	40.4420	110.9057	1153.99	17.36	1
102.43	111.83	40.4353	110.9118	1151.40	17.25	1
102.55	111.75	40.4335	110.9134	1150.70	17.21	1
102.72	111.61	40.4308	110.9159	1149.65	17.17	1
102.97	111.42	40.4270	110.9195	1148.15	17.10	1
103.00	111.40	40.4265	110.9199	1147.98	17.09	1
103.39	111.09	40.4207	110.9256	1145.66	16.98	1
103.68	110.84	40.4163	110.9300	1143.90	16.89	1
103.87	110.69	40.4134	110.9329	1142.76	16.84	1
104.00	110.58	40.4115	110.9349	1141.98	16.80	1
104.06	110.53	40.4106	110.9358	1141.63	16.78	1
104.11	110.49	40.4098	110.9366	1141.30	16.76	1
104.17	110.44	40.4090	110.9375	1140.95	16.75	1
104.24	110.38	40.4079	110.9386	1140.51	16.72	1
104.36	110.28	40.4062	110.9404	1139.83	16.69	1
104.52	110.15	40.4038	110.9429	1138.85	16.64	1
104.78	109.93	40.4001	110.9469	1137.32	16.56	1
105.00	109.74	40.3968	110.9505	1135.97	16.49	1
105.48	109.30	40.3900	110.9584	1133.10	16.33	1
105.86	108.94	40.3847	110.9650	1130.81	16.19	1
106.00	108.80	40.3827	110.9674	1129.96	16.14	1
106.13	108.67	40.3809	110.9698	1129.16	16.09	1
106.91	107.87	40.3704	110.9839	1124.49	15.80	1
107.00	107.79	40.3692	110.9854	1123.96	15.76	1
107.39	107.47	40.3638	110.9917	1121.63	15.65	1
107.60	107.30	40.3609	110.9951	1120.35	15.59	1
107.74	107.19	40.3590	110.9973	1119.51	15.55	1
107.84	107.12	40.3576	110.9988	1118.91	15.52	1
107.91	107.07	40.3566	110.9999	1118.50	15.50	1
107.97	107.02	40.3558	111.0008	1118.14	15.48	1
108.00	107.00	40.3554	111.0013	1117.95	15.47	1
108.21	106.85	40.3526	111.0044	1116.72	15.42	1

109.00	106.31	40.3416	111.0162	1111.95	15.23	1
109.78	105.78	40.3311	111.0279	1107.28	15.05	1
109.96	105.68	40.3286	111.0304	1106.20	15.01	1
110.00	105.65	40.3281	111.0310	1105.94	15.00	1
110.48	105.40	40.3215	111.0375	1103.07	14.94	1
110.60	105.34	40.3198	111.0391	1102.35	14.92	1
130.65	114.83	39.9816	111.1798	981.92	20.53	1
130.91	114.89	39.9777	111.1832	980.39	20.58	1
131.00	114.91	39.9763	111.1845	979.82	20.60	1
131.39	114.99	39.9707	111.1900	977.50	20.66	1
131.65	115.03	39.9669	111.1937	975.91	20.70	1
131.84	115.06	39.9642	111.1964	974.80	20.72	1
131.96	115.08	39.9625	111.1982	974.08	20.74	1
132.00	115.09	39.9619	111.1988	973.82	20.75	1
132.12	115.11	39.9602	111.2006	973.09	20.77	1
132.30	115.13	39.9576	111.2032	972.00	20.79	1
132.57	115.18	39.9538	111.2072	970.38	20.83	1
132.96	115.23	39.9484	111.2130	968.07	20.88	1
133.00	115.23	39.9478	111.2137	967.81	20.89	1
133.35	115.27	39.9430	111.2191	965.72	20.93	1
133.58	115.29	39.9399	111.2226	964.35	20.96	1
133.74	115.31	39.9377	111.2252	963.37	20.97	1
133.84	115.32	39.9364	111.2268	962.76	20.99	1
133.92	115.32	39.9353	111.2280	962.31	21.00	1
133.98	115.33	39.9345	111.2290	961.94	21.00	1
134.00	115.33	39.9342	111.2293	961.81	21.01	1
134.39	115.37	39.9290	111.2354	959.48	21.05	1
134.49	115.38	39.9276	111.2370	958.87	21.06	1
134.63	115.40	39.9257	111.2393	958.00	21.08	1
134.85	115.42	39.9228	111.2428	956.70	21.10	1
135.00	115.43	39.9208	111.2453	955.80	21.12	1
136.00	115.46	39.9080	111.2620	949.41	21.22	1
136.25	115.47	39.9048	111.2663	947.79	21.24	1
136.61	115.48	39.9004	111.2724	945.51	21.27	1
137.00	115.48	39.8956	111.2792	943.02	21.30	1
137.39	115.47	39.8909	111.2860	940.54	21.33	1
137.65	115.46	39.8878	111.2907	938.86	21.34	1
137.82	115.46	39.8858	111.2937	937.79	21.35	1
137.94	115.45	39.8844	111.2959	937.03	21.36	1
138.00	115.45	39.8837	111.2970	936.63	21.37	1
168.51	109.93	39.6896	111.9467	741.66	21.83	1
168.65	109.89	39.6895	111.9498	740.77	21.83	1
168.75	109.87	39.6894	111.9521	740.14	21.83	1
168.81	109.85	39.6893	111.9535	739.73	21.83	1
168.87	109.83	39.6893	111.9549	739.35	21.83	1
168.93	109.82	39.6892	111.9563	738.95	21.83	1

168.99	109.80	39.6892	111.9576	738.56	21.83	1
169.00	109.80	39.6892	111.9578	738.52	21.83	1
169.17	109.75	39.6890	111.9616	737.45	21.83	1
169.40	109.69	39.6888	111.9669	735.95	21.82	1
169.76	109.59	39.6886	111.9748	733.69	21.82	1
170.00	109.53	39.6885	111.9804	732.13	21.82	1
170.43	109.40	39.6883	111.9901	729.37	21.81	1
171.00	109.23	39.6883	112.0030	725.74	21.80	1
172.00	108.90	39.6887	112.0255	719.34	21.77	1
172.90	108.57	39.6897	112.0458	713.59	21.72	1
173.00	108.53	39.6898	112.0481	712.95	21.71	1
173.35	108.39	39.6904	112.0559	710.73	21.68	1
173.60	108.28	39.6909	112.0616	709.11	21.66	1
173.76	108.22	39.6912	112.0651	708.12	21.65	1
173.87	108.16	39.6915	112.0677	707.38	21.64	1
173.95	108.13	39.6916	112.0694	706.90	21.64	1
174.00	108.11	39.6917	112.0706	706.56	21.63	1
174.43	107.92	39.6927	112.0803	703.81	21.59	1
174.70	107.80	39.6934	112.0864	702.07	21.57	1
174.90	107.71	39.6939	112.0907	700.83	21.55	1
175.00	107.66	39.6941	112.0930	700.17	21.54	1
175.43	107.47	39.6952	112.1026	697.42	21.50	1
175.55	107.42	39.6955	112.1052	696.67	21.49	1
175.72	107.34	39.6960	112.1091	695.55	21.47	1
176.00	107.21	39.6968	112.1153	693.78	21.45	1
176.27	107.07	39.6978	112.1212	692.07	21.41	1
176.47	106.96	39.6986	112.1258	690.75	21.38	1
176.61	106.89	39.6991	112.1288	689.89	21.36	1
176.70	106.84	39.6995	112.1308	689.32	21.35	1
176.76	106.80	39.6997	112.1321	688.92	21.34	1
177.00	106.67	39.7007	112.1374	687.39	21.31	1
177.39	106.45	39.7024	112.1460	684.91	21.25	1
177.94	106.13	39.7049	112.1581	681.39	21.17	1
178.00	106.10	39.7051	112.1594	681.00	21.16	1
178.31	105.91	39.7067	112.1663	678.99	21.10	1
178.55	105.76	39.7079	112.1715	677.47	21.06	1
178.71	105.66	39.7087	112.1749	676.47	21.04	1
178.81	105.60	39.7092	112.1771	675.82	21.02	1
178.88	105.56	39.7096	112.1787	675.35	21.01	1
178.95	105.52	39.7099	112.1800	674.96	21.00	1
179.00	105.48	39.7102	112.1812	674.61	20.99	1
179.09	105.42	39.7108	112.1832	674.01	20.97	1
179.58	105.04	39.7141	112.1936	670.93	20.88	1
179.66	104.98	39.7146	112.1955	670.37	20.87	1
179.78	104.92	39.7152	112.1980	669.62	20.85	1
179.94	104.87	39.7156	112.2014	668.60	20.82	1

180.00	104.87	39.7156	112.2027	668.22	20.81	1
180.19	104.88	39.7155	112.2067	671.22	20.77	1
180.31	104.91	39.7153	112.2093	673.15	20.75	1
180.94	105.10	39.7137	112.2229	683.27	20.63	1
181.00	105.11	39.7136	112.2242	684.21	20.62	1
182.00	105.28	39.7125	112.2457	700.20	20.39	1
182.39	105.34	39.7122	112.2540	706.40	20.30	1
182.49	105.35	39.7122	112.2562	708.03	20.27	1
182.65	105.37	39.7121	112.2597	710.59	20.24	1
182.88	105.39	39.7121	112.2646	714.27	20.18	1
183.00	105.40	39.7121	112.2672	716.19	20.15	1
183.25	105.41	39.7123	112.2727	720.26	20.08	1
183.65	105.42	39.7126	112.2812	726.60	19.97	1
184.00	105.42	39.7129	112.2887	732.19	19.87	1
184.35	105.41	39.7134	112.2962	737.76	19.76	1
184.58	105.40	39.7138	112.3011	741.39	19.69	1
184.74	105.40	39.7141	112.3046	744.02	19.64	1
184.85	105.39	39.7143	112.3070	745.81	19.61	1
184.93	105.38	39.7144	112.3087	747.07	19.58	1
184.99	105.38	39.7146	112.3100	748.07	19.57	1
185.00	105.38	39.7146	112.3101	748.18	19.56	1
185.31	105.36	39.7152	112.3168	753.20	19.46	1
185.53	105.33	39.7158	112.3214	756.64	19.39	1
185.68	105.32	39.7162	112.3246	759.00	19.34	1
185.78	105.30	39.7165	112.3267	760.62	19.31	1
185.86	105.29	39.7167	112.3284	761.86	19.28	1
185.92	105.29	39.7168	112.3297	762.85	19.26	1
185.98	105.28	39.7170	112.3311	763.92	19.24	1
186.00	105.28	39.7171	112.3314	764.17	19.24	1
187.00	105.13	39.7202	112.3526	780.16	18.90	1
187.59	105.00	39.7226	112.3650	789.60	18.68	1
188.00	104.90	39.7244	112.3735	796.15	18.53	1
189.00	104.59	39.7295	112.3941	812.15	18.14	1
189.45	104.42	39.7323	112.4032	819.28	17.94	1
189.74	104.28	39.7342	112.4091	823.98	17.81	1
189.95	104.18	39.7357	112.4133	827.35	17.72	1
190.00	104.16	39.7360	112.4143	828.14	17.69	1
190.16	104.08	39.7372	112.4175	830.73	17.62	1
191.00	103.62	39.7437	112.4341	844.13	17.21	1
191.23	103.52	39.7454	112.4386	847.79	17.12	1
191.39	103.45	39.7464	112.4417	850.33	17.05	1
203.95	108.29	39.7675	112.7171	1051.14	16.80	1
204.00	108.35	39.7674	112.7185	1052.02	16.81	1
204.29	108.66	39.7669	112.7258	1056.63	16.89	1
204.49	108.86	39.7666	112.7309	1059.85	16.95	1
204.62	108.99	39.7664	112.7342	1061.92	16.99	1

204.71	109.08	39.7663	112.7363	1063.32	17.01	1
204.77	109.14	39.7662	112.7379	1064.28	17.03	1
205.00	109.38	39.7660	112.7438	1068.01	17.09	1
205.17	109.55	39.7658	112.7480	1070.68	17.14	1
205.43	109.82	39.7655	112.7546	1074.86	17.21	1
205.80	110.20	39.7652	112.7641	1080.86	17.31	1
206.00	110.39	39.7650	112.7691	1084.01	17.36	1
206.43	110.81	39.7649	112.7800	1090.89	17.47	1
206.70	111.07	39.7649	112.7869	1095.25	17.54	1
206.90	111.26	39.7649	112.7918	1098.36	17.58	1
207.00	111.36	39.7649	112.7944	1100.00	17.61	1
207.15	111.50	39.7649	112.7982	1102.40	17.64	1
207.37	111.71	39.7650	112.8037	1105.85	17.70	1
207.67	112.00	39.7651	112.8114	1110.70	17.77	1
208.00	112.31	39.7653	112.8198	1115.99	17.85	1
208.06	112.36	39.7654	112.8213	1116.92	17.86	1
208.14	112.44	39.7654	112.8234	1118.25	17.88	1
208.26	112.55	39.7655	112.8264	1120.11	17.91	1
208.43	112.70	39.7657	112.8307	1122.83	17.94	1
208.67	112.93	39.7660	112.8369	1126.77	18.00	1
209.00	113.21	39.7665	112.8451	1131.98	18.07	1
209.23	113.41	39.7669	112.8509	1135.69	18.11	1
209.39	113.53	39.7673	112.8548	1138.22	18.14	1
210.00	114.01	39.7688	112.8700	1147.97	18.24	1
210.66	114.56	39.7704	112.8864	1158.47	18.37	1
210.84	114.71	39.7710	112.8910	1161.39	18.40	1
211.00	114.83	39.7715	112.8950	1163.97	18.43	1
211.33	115.07	39.7727	112.9031	1169.27	18.47	1
211.54	115.22	39.7735	112.9082	1172.62	18.50	1
211.69	115.31	39.7741	112.9117	1174.92	18.52	1
211.77	115.37	39.7745	112.9139	1176.35	18.53	1
211.84	115.42	39.7747	112.9154	1177.37	18.54	1
211.89	115.46	39.7750	112.9168	1178.27	18.54	1
211.95	115.49	39.7752	112.9182	1179.17	18.55	1
212.00	115.53	39.7754	112.9194	1179.96	18.56	1
212.35	115.77	39.7769	112.9278	1185.53	18.60	1
212.45	115.84	39.7773	112.9302	1187.10	18.61	1
212.59	115.93	39.7780	112.9336	1189.35	18.63	1
212.78	116.06	39.7789	112.9384	1192.50	18.65	1
213.00	116.19	39.7800	112.9435	1195.95	18.67	1
213.28	116.35	39.7816	112.9502	1200.45	18.69	1
213.48	116.45	39.7828	112.9549	1203.70	18.70	1
213.62	116.52	39.7836	112.9579	1205.79	18.70	1
213.70	116.56	39.7842	112.9600	1207.20	18.71	1
213.76	116.60	39.7846	112.9614	1208.18	18.71	1
214.00	116.71	39.7860	112.9668	1211.94	18.72	1

214.06	116.74	39.7864	112.9682	1212.87	18.73	1
214.11	116.77	39.7868	112.9694	1213.75	18.73	1
214.17	116.80	39.7871	112.9708	1214.66	18.73	1
214.25	116.84	39.7876	112.9727	1215.97	18.73	1
214.38	116.91	39.7884	112.9756	1217.96	18.74	1
214.55	117.00	39.7896	112.9796	1220.78	18.74	1
214.82	117.13	39.7913	112.9857	1225.00	18.75	1
215.00	117.21	39.7926	112.9899	1227.93	18.76	1
215.66	117.50	39.7974	113.0047	1238.42	18.76	1
216.00	117.63	39.8001	113.0124	1243.92	18.76	1
216.35	117.76	39.8029	113.0201	1249.50	18.75	1
216.60	117.84	39.8050	113.0256	1253.54	18.74	1
216.77	117.90	39.8065	113.0293	1256.28	18.73	1
216.88	117.94	39.8074	113.0317	1258.02	18.73	1
216.96	117.96	39.8081	113.0333	1259.26	18.72	1
217.00	117.97	39.8084	113.0342	1259.92	18.72	1
217.21	118.04	39.8102	113.0387	1263.21	18.71	1
217.26	118.06	39.8107	113.0399	1264.12	18.71	1
217.35	118.09	39.8115	113.0419	1265.55	18.71	1
217.49	118.14	39.8126	113.0448	1267.69	18.70	1
217.69	118.20	39.8144	113.0491	1270.87	18.69	1
217.97	118.28	39.8170	113.0551	1275.40	18.67	1
218.00	118.29	39.8173	113.0558	1275.91	18.67	1
219.00	118.53	39.8271	113.0765	1291.90	18.58	1
219.39	118.61	39.8310	113.0845	1298.10	18.54	1
219.49	118.63	39.8321	113.0866	1299.73	18.53	1
219.65	118.66	39.8337	113.0898	1302.29	18.51	1
219.88	118.69	39.8362	113.0943	1305.97	18.48	1
220.00	118.70	39.8376	113.0967	1307.89	18.47	1
220.10	118.71	39.8387	113.0986	1309.47	18.45	1
220.25	118.72	39.8404	113.1015	1311.87	18.43	1
220.46	118.73	39.8428	113.1055	1315.26	18.39	1
220.78	118.74	39.8466	113.1115	1320.35	18.33	1
221.00	118.75	39.8492	113.1156	1323.88	18.30	1
221.20	118.74	39.8517	113.1193	1327.11	18.25	1
221.99	118.65	39.8619	113.1330	1339.65	18.07	1
222.00	118.65	39.8621	113.1333	1339.88	18.07	1
222.73	118.62	39.8713	113.1462	1351.53	17.92	1
222.93	118.61	39.8738	113.1497	1354.69	17.88	1
223.00	118.61	39.8748	113.1510	1355.87	17.86	1
223.26	118.58	39.8783	113.1555	1360.10	17.80	1
223.43	118.56	39.8805	113.1584	1362.79	17.76	1
223.56	118.54	39.8823	113.1605	1364.87	17.73	1
223.64	118.53	39.8834	113.1619	1366.16	17.71	1
224.00	118.48	39.8883	113.1677	1371.86	17.62	1
224.43	118.42	39.8942	113.1749	1378.74	17.52	1

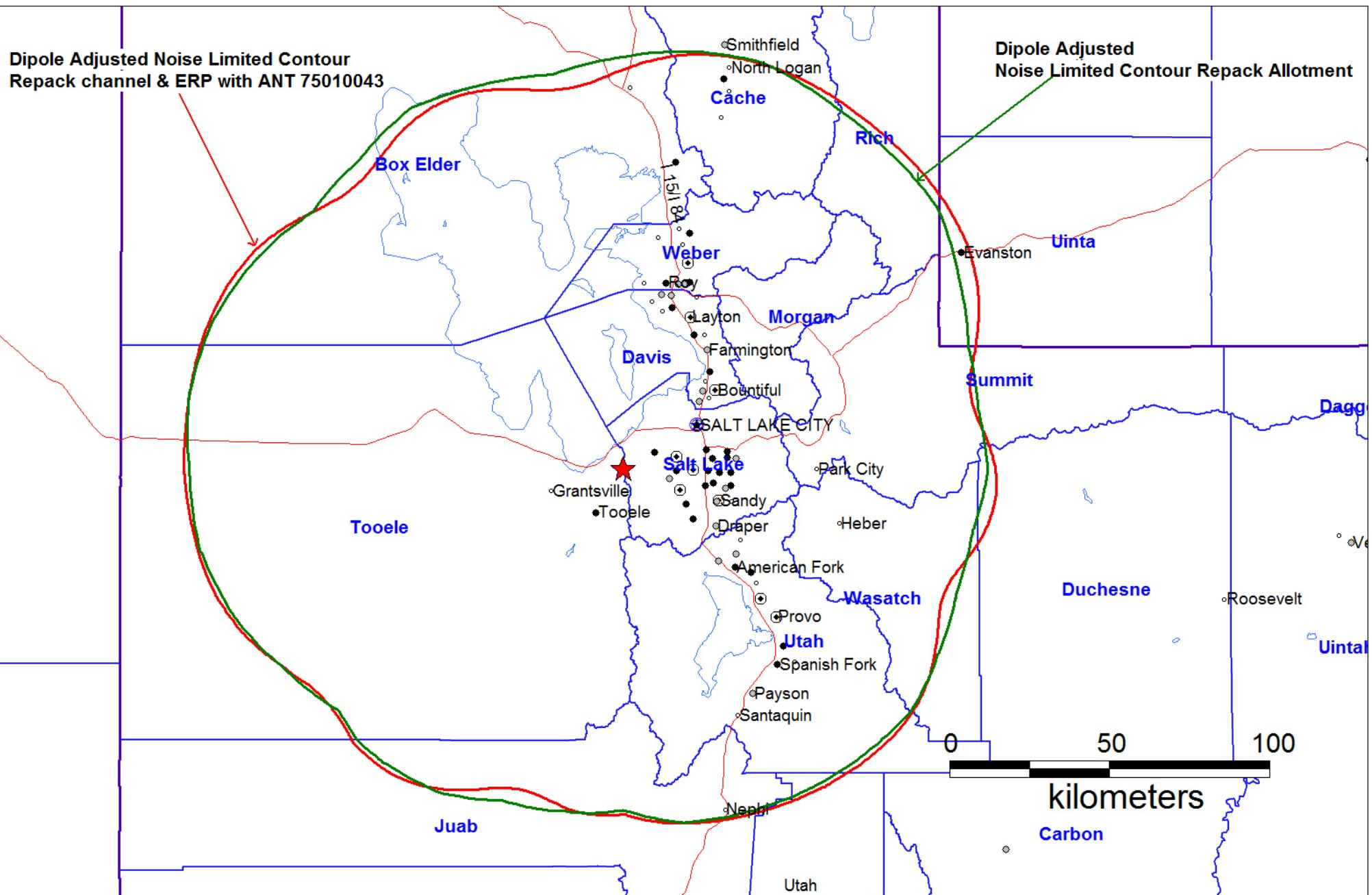
224.55	118.41	39.8958	113.1768	1380.62	17.49	1
224.72	118.38	39.8982	113.1796	1383.42	17.44	1
225.00	118.33	39.9021	113.1840	1387.85	17.38	1
225.18	118.26	39.9049	113.1866	1388.38	17.32	1
225.32	118.18	39.9072	113.1883	1388.79	17.28	1
225.43	118.11	39.9091	113.1896	1389.11	17.25	1
225.99	117.68	39.9193	113.1956	1390.76	17.08	1
226.00	117.67	39.9194	113.1957	1390.78	17.08	1
226.21	117.53	39.9230	113.1980	1391.38	17.01	1
227.00	116.99	39.9369	113.2066	1393.71	16.77	1
227.39	116.73	39.9437	113.2109	1394.84	16.65	1
227.50	116.66	39.9456	113.2121	1395.17	16.62	1
227.66	116.56	39.9483	113.2138	1395.63	16.58	1
227.88	116.42	39.9522	113.2163	1396.29	16.51	1
228.00	116.35	39.9542	113.2175	1396.63	16.48	1
228.81	115.89	39.9679	113.2265	1399.01	16.26	1
229.00	115.78	39.9712	113.2285	1399.56	16.21	1
229.17	115.67	39.9741	113.2302	1400.05	16.16	1
230.00	115.09	39.9889	113.2380	1402.49	15.90	1
230.39	114.85	39.9956	113.2418	1403.62	15.80	1
230.49	114.79	39.9974	113.2428	1403.92	15.77	1
230.63	114.71	39.9998	113.2442	1404.34	15.74	1
230.85	114.59	40.0035	113.2464	1404.98	15.68	1
231.00	114.51	40.0060	113.2480	1405.42	15.64	1
290.87	133.17	41.0765	113.6878	1509.46	21.73	1
291.00	133.15	41.0790	113.6864	1509.40	21.72	1
291.73	133.05	41.0929	113.6782	1509.05	21.68	1
292.00	133.00	41.0980	113.6750	1508.92	21.67	1
292.90	132.82	41.1149	113.6639	1508.48	21.60	1
293.00	132.80	41.1168	113.6626	1508.43	21.60	1
294.00	132.55	41.1352	113.6492	1507.95	21.50	1
294.31	132.46	41.1408	113.6448	1507.79	21.47	1
294.51	132.40	41.1443	113.6420	1507.70	21.45	1
294.65	132.35	41.1468	113.6400	1507.63	21.43	1
294.75	132.32	41.1486	113.6386	1507.58	21.42	1
294.81	132.30	41.1497	113.6376	1507.55	21.41	1
294.86	132.29	41.1507	113.6368	1507.53	21.41	1
294.92	132.27	41.1516	113.6361	1507.50	21.40	1
295.00	132.24	41.1531	113.6349	1507.46	21.39	1
295.48	132.10	41.1617	113.6279	1507.23	21.34	1
295.61	132.06	41.1640	113.6260	1507.16	21.33	1
295.82	132.00	41.1677	113.6229	1507.06	21.30	1
296.00	131.94	41.1708	113.6201	1506.98	21.28	1
296.25	131.84	41.1751	113.6161	1506.86	21.24	1
296.40	131.77	41.1777	113.6135	1506.78	21.21	1
296.51	131.71	41.1796	113.6116	1506.73	21.19	1

297.00	131.48	41.1877	113.6033	1506.49	21.11	1
297.05	131.45	41.1886	113.6024	1506.46	21.10	1
297.10	131.43	41.1894	113.6015	1506.44	21.09	1
297.17	131.40	41.1905	113.6004	1506.41	21.08	1
297.26	131.36	41.1920	113.5989	1506.36	21.07	1
297.40	131.30	41.1943	113.5965	1506.30	21.04	1
297.61	131.20	41.1978	113.5929	1506.20	21.01	1
297.93	131.05	41.2030	113.5873	1506.04	20.95	1
298.00	131.01	41.2042	113.5860	1506.00	20.94	1
298.31	130.85	41.2093	113.5804	1505.85	20.88	1
298.53	130.73	41.2128	113.5764	1505.75	20.83	1
298.68	130.65	41.2151	113.5737	1505.68	20.80	1
298.78	130.60	41.2167	113.5718	1505.63	20.78	1
298.85	130.56	41.2178	113.5705	1505.59	20.77	1
298.90	130.53	41.2187	113.5696	1505.57	20.76	1
298.95	130.50	41.2195	113.5686	1505.54	20.75	1
299.00	130.48	41.2202	113.5677	1505.52	20.74	1
299.19	130.38	41.2231	113.5643	1505.43	20.70	1
299.44	130.24	41.2272	113.5596	1505.30	20.65	1
299.85	130.02	41.2335	113.5519	1505.11	20.57	1
300.00	129.94	41.2358	113.5490	1505.03	20.54	1
301.00	129.36	41.2510	113.5296	1504.55	20.32	1
301.12	129.28	41.2528	113.5272	1504.49	20.29	1
301.30	129.17	41.2554	113.5236	1504.40	20.25	1
301.57	129.01	41.2594	113.5182	1504.27	20.19	1
302.00	128.73	41.2655	113.5094	1504.06	20.09	1
302.59	128.31	41.2737	113.4969	1503.78	19.92	1
303.00	128.01	41.2793	113.4880	1503.58	19.81	1
303.35	127.73	41.2839	113.4802	1503.41	19.71	1
303.58	127.55	41.2868	113.4751	1503.30	19.64	1
303.74	127.41	41.2889	113.4714	1503.22	19.59	1
303.85	127.32	41.2903	113.4688	1503.16	19.55	1
303.93	127.25	41.2913	113.4670	1503.13	19.53	1
303.98	127.21	41.2920	113.4659	1503.10	19.51	1
304.00	127.20	41.2922	113.4654	1503.09	19.51	1
304.23	127.01	41.2951	113.4602	1502.98	19.43	1
304.56	126.73	41.2992	113.4526	1502.82	19.33	1
305.00	126.36	41.3046	113.4424	1502.61	19.19	1
305.28	126.11	41.3079	113.4357	1502.47	19.09	1
305.49	125.93	41.3103	113.4309	1502.37	19.02	1
305.63	125.80	41.3120	113.4274	1502.30	18.97	1
305.73	125.70	41.3132	113.4249	1502.25	18.94	1
305.80	125.64	41.3140	113.4233	1502.22	18.92	1
305.85	125.59	41.3146	113.4221	1502.19	18.90	1
305.90	125.55	41.3151	113.4209	1502.17	18.88	1
306.00	125.46	41.3162	113.4186	1502.12	18.85	1

306.15	125.33	41.3180	113.4150	1502.05	18.80	1
306.20	125.28	41.3185	113.4138	1502.02	18.78	1
306.26	125.23	41.3192	113.4123	1501.99	18.76	1
306.35	125.15	41.3203	113.4101	1501.95	18.73	1
306.49	125.03	41.3218	113.4070	1501.88	18.68	1
306.69	124.85	41.3240	113.4022	1501.79	18.61	1
307.00	124.56	41.3274	113.3946	1501.64	18.51	1
307.28	124.29	41.3305	113.3876	1501.50	18.40	1
307.49	124.09	41.3326	113.3826	1501.40	18.33	1
307.63	123.95	41.3341	113.3789	1501.33	18.27	1
307.73	123.85	41.3351	113.3763	1501.28	18.23	1
307.80	123.78	41.3358	113.3746	1501.25	18.21	1
307.85	123.73	41.3363	113.3734	1501.22	18.19	1
307.90	123.68	41.3369	113.3721	1501.20	18.17	1
308.00	123.59	41.3378	113.3697	1501.15	18.14	1
308.15	123.44	41.3394	113.3660	1501.08	18.08	1
308.20	123.40	41.3399	113.3647	1501.05	18.06	1
308.26	123.34	41.3405	113.3632	1501.02	18.04	1
308.36	123.24	41.3415	113.3607	1500.97	18.00	1
308.51	123.10	41.3430	113.3571	1500.90	17.95	1
308.72	122.89	41.3450	113.3518	1500.80	17.87	1
309.00	122.61	41.3477	113.3447	1500.66	17.76	1
309.28	122.32	41.3504	113.3375	1500.53	17.65	1
309.49	122.11	41.3522	113.3322	1500.43	17.57	1
309.63	121.95	41.3535	113.3284	1500.36	17.51	1
309.73	121.84	41.3544	113.3257	1500.31	17.47	1
309.81	121.76	41.3551	113.3238	1500.27	17.44	1
309.86	121.71	41.3555	113.3225	1500.25	17.42	1
309.91	121.66	41.3559	113.3212	1500.22	17.40	1
310.00	121.56	41.3567	113.3188	1500.18	17.36	1
310.96	120.53	41.3649	113.2937	1499.71	16.97	1
311.00	120.49	41.3652	113.2928	1499.69	16.95	1
311.07	120.42	41.3658	113.2910	1499.66	16.93	1
311.17	120.32	41.3667	113.2885	1499.61	16.89	1
311.33	120.18	41.3681	113.2846	1499.53	16.84	1
328.44	124.13	41.6081	112.9844	1463.75	18.77	1
328.56	124.17	41.6096	112.9821	1463.46	18.79	1
329.00	124.32	41.6153	112.9732	1462.34	18.86	1
329.53	124.51	41.6221	112.9625	1461.00	18.95	1
329.68	124.56	41.6240	112.9595	1460.63	18.97	1
329.89	124.62	41.6266	112.9552	1460.09	19.00	1
330.00	124.65	41.6279	112.9529	1459.82	19.02	1
330.27	124.72	41.6311	112.9471	1459.13	19.05	1
330.44	124.75	41.6330	112.9435	1458.71	19.07	1
330.57	124.77	41.6345	112.9408	1458.38	19.08	1
331.00	124.86	41.6393	112.9314	1457.29	19.13	1

331.35	124.93	41.6433	112.9239	1456.40	19.17	1
331.45	124.95	41.6443	112.9217	1456.16	19.18	1
331.59	124.98	41.6459	112.9187	1455.80	19.19	1
331.78	125.02	41.6481	112.9144	1455.30	19.21	1
332.00	125.06	41.6504	112.9096	1454.76	19.24	1
332.09	125.07	41.6514	112.9077	1454.53	19.24	1
332.14	125.08	41.6519	112.9065	1454.40	19.25	1
332.20	125.09	41.6525	112.9052	1454.26	19.25	1
332.28	125.11	41.6534	112.9035	1454.06	19.26	1
332.38	125.12	41.6545	112.9011	1453.78	19.27	1
332.56	125.15	41.6563	112.8972	1453.34	19.28	1
332.79	125.18	41.6587	112.8919	1452.75	19.30	1
333.00	125.20	41.6607	112.8872	1452.23	19.32	1
333.81	125.24	41.6683	112.8684	1450.18	19.36	1
334.00	125.24	41.6700	112.8640	1449.70	19.37	1
334.35	125.25	41.6731	112.8558	1448.82	19.38	1
334.88	125.26	41.6777	112.8433	1447.48	19.40	1
335.00	125.26	41.6787	112.8403	1447.17	19.40	1
335.27	125.24	41.6808	112.8339	1446.49	19.40	1
335.44	125.22	41.6820	112.8298	1446.07	19.39	1
335.56	125.20	41.6829	112.8266	1445.74	19.39	1
335.65	125.18	41.6835	112.8246	1445.54	19.39	1
336.00	125.12	41.6859	112.8158	1444.64	19.38	1
336.24	125.07	41.6874	112.8097	1444.03	19.36	1
336.42	125.03	41.6885	112.8054	1443.59	19.35	1
336.54	125.00	41.6892	112.8023	1443.28	19.35	1
337.00	124.89	41.6919	112.7906	1442.11	19.32	1
337.43	124.80	41.6945	112.7798	1441.02	19.29	1
337.55	124.77	41.6951	112.7768	1440.73	19.29	1
337.72	124.73	41.6961	112.7724	1440.28	19.28	1
337.97	124.67	41.6975	112.7661	1439.65	19.26	1
338.00	124.66	41.6976	112.7654	1439.58	19.26	1
338.33	124.56	41.6992	112.7570	1438.76	19.23	1
338.54	124.48	41.7001	112.7515	1438.22	19.20	1
338.68	124.43	41.7007	112.7478	1437.86	19.19	1
338.78	124.39	41.7011	112.7452	1437.60	19.18	1
338.86	124.36	41.7014	112.7432	1437.41	19.17	1
338.91	124.34	41.7016	112.7418	1437.27	19.16	1
338.97	124.32	41.7018	112.7403	1437.13	19.16	1
339.00	124.30	41.7020	112.7395	1437.05	19.15	1
340.00	123.88	41.7054	112.7133	1434.52	19.02	1
341.00	123.36	41.7075	112.6867	1432.00	18.85	1
341.25	123.22	41.7079	112.6800	1431.36	18.79	1
341.44	123.10	41.7081	112.6748	1430.88	18.75	1
341.57	123.02	41.7082	112.6714	1430.55	18.73	1
341.66	122.96	41.7082	112.6690	1430.33	18.71	1

342.00	122.74	41.7084	112.6598	1429.47	18.63	1
342.11	122.67	41.7085	112.6569	1429.19	18.61	1
342.27	122.57	41.7086	112.6524	1428.77	18.57	1
342.53	122.41	41.7087	112.6456	1428.13	18.52	1
342.91	122.16	41.7089	112.6353	1427.16	18.44	1
343.00	122.10	41.7089	112.6329	1426.94	18.42	1
343.31	121.90	41.7088	112.6245	1426.14	18.34	1
343.81	121.55	41.7086	112.6110	1424.88	18.22	1
344.00	121.42	41.7085	112.6060	1424.41	18.18	1
345.00	120.65	41.7070	112.5790	1421.88	17.90	1



KUEN Ogden, UT
Comparison of Repack Allotment (CH 36) vs. Antenna 75010043

KUEN (Points where contour exceeds 1% limit)

Azimuth	Distance	Latitude	Longitude	HAAT	ERP (dBk)	Fails
24.96	131.86	41.7327	111.5318	1357.98	22.99	1
25.00	131.86	41.7324	111.5309	1357.95	22.99	1
25.19	131.84	41.7305	111.5263	1357.76	22.99	1
26.00	131.76	41.7225	111.5065	1356.94	22.97	1
26.66	131.72	41.7161	111.4905	1356.28	22.96	1
26.84	131.71	41.7142	111.4861	1356.09	22.96	1
27.00	131.70	41.7126	111.4822	1355.93	22.96	1
27.28	131.67	41.7097	111.4754	1355.65	22.95	1
27.46	131.65	41.7078	111.4710	1355.46	22.95	1
27.59	131.64	41.7065	111.4681	1355.34	22.94	1
27.67	131.63	41.7056	111.4661	1355.25	22.94	1
27.73	131.62	41.7049	111.4646	1355.19	22.94	1
28.00	131.59	41.7021	111.4583	1354.92	22.93	1
28.05	131.59	41.7015	111.4571	1354.87	22.93	1
28.11	131.58	41.7009	111.4558	1354.82	22.93	1
28.17	131.58	41.7003	111.4542	1354.75	22.93	1
28.26	131.57	41.6993	111.4521	1354.66	22.92	1
28.40	131.55	41.6978	111.4489	1354.52	22.92	1
28.61	131.53	41.6955	111.4439	1354.31	22.92	1
28.89	131.50	41.6924	111.4372	1354.02	22.91	1
29.00	131.49	41.6912	111.4347	1353.92	22.91	1
29.28	131.45	41.6880	111.4282	1353.63	22.89	1
29.49	131.42	41.6857	111.4235	1353.43	22.88	1
29.62	131.39	41.6842	111.4205	1353.29	22.88	1
29.70	131.38	41.6832	111.4185	1353.21	22.87	1
29.76	131.37	41.6825	111.4171	1353.14	22.87	1
30.00	131.33	41.6797	111.4117	1352.91	22.86	1
30.25	131.29	41.6767	111.4060	1352.65	22.85	1
30.44	131.26	41.6745	111.4017	1352.46	22.84	1
30.56	131.24	41.6731	111.3991	1352.35	22.84	1
31.00	131.18	41.6679	111.3891	1351.90	22.82	1
31.53	131.11	41.6616	111.3771	1351.36	22.80	1
31.68	131.09	41.6598	111.3737	1351.22	22.79	1
31.89	131.06	41.6573	111.3690	1351.00	22.79	1
32.00	131.04	41.6560	111.3666	1350.89	22.78	1
32.20	131.01	41.6535	111.3622	1350.69	22.77	1
33.00	130.86	41.6434	111.3447	1349.88	22.73	1
33.81	130.75	41.6333	111.3270	1349.07	22.70	1
34.00	130.73	41.6309	111.3228	1348.88	22.69	1
34.12	130.71	41.6293	111.3202	1348.75	22.69	1
34.30	130.69	41.6270	111.3163	1348.57	22.68	1
34.57	130.65	41.6236	111.3104	1348.30	22.67	1
34.96	130.60	41.6186	111.3022	1347.91	22.66	1

35.00	130.59	41.6181	111.3013	1347.87	22.66	1
36.00	130.43	41.6049	111.2803	1346.86	22.61	1
36.73	130.35	41.5953	111.2649	1346.13	22.59	1
36.93	130.33	41.5927	111.2608	1345.93	22.59	1
37.00	130.33	41.5917	111.2592	1345.85	22.58	1
37.43	130.29	41.5861	111.2502	1345.42	22.58	1
37.55	130.28	41.5845	111.2478	1345.30	22.57	1
37.72	130.27	41.5822	111.2441	1345.12	22.57	1
37.97	130.24	41.5789	111.2389	1344.87	22.57	1
38.00	130.24	41.5785	111.2384	1344.85	22.56	1
39.00	130.13	41.5648	111.2180	1343.84	22.54	1
40.00	130.00	41.5507	111.1982	1342.83	22.50	1
40.73	129.93	41.5405	111.1837	1342.09	22.49	1
40.93	129.92	41.5378	111.1798	1341.90	22.48	1
41.00	129.91	41.5367	111.1783	1341.82	22.48	1
41.14	129.90	41.5348	111.1757	1341.69	22.48	1
41.33	129.88	41.5320	111.1718	1341.49	22.48	1
41.62	129.86	41.5279	111.1662	1341.20	22.47	1
42.00	129.83	41.5225	111.1588	1340.81	22.46	1
42.35	129.79	41.5174	111.1522	1340.46	22.45	1
42.60	129.76	41.5137	111.1474	1340.21	22.45	1
42.76	129.74	41.5114	111.1445	1340.05	22.44	1
42.87	129.73	41.5097	111.1423	1339.93	22.44	1
42.95	129.72	41.5086	111.1409	1339.86	22.44	1
43.00	129.72	41.5078	111.1399	1339.81	22.44	1
43.19	129.70	41.5050	111.1364	1339.62	22.43	1
43.24	129.69	41.5043	111.1354	1339.57	22.43	1
43.31	129.68	41.5032	111.1340	1339.49	22.43	1
43.43	129.67	41.5015	111.1319	1339.38	22.42	1
43.59	129.65	41.4991	111.1289	1339.21	22.42	1
43.83	129.63	41.4954	111.1244	1338.97	22.41	1
44.00	129.60	41.4929	111.1214	1338.80	22.41	1
44.22	129.57	41.4895	111.1174	1338.58	22.40	1
44.36	129.54	41.4873	111.1149	1338.43	22.39	1
45.00	129.41	41.4772	111.1038	1337.79	22.35	1
45.59	129.32	41.4680	111.0936	1336.31	22.34	1
46.00	129.25	41.4616	111.0865	1335.29	22.32	1
46.66	129.17	41.4513	111.0751	1333.65	22.31	1
46.84	129.14	41.4484	111.0720	1333.19	22.31	1
47.00	129.12	41.4458	111.0693	1332.79	22.30	1
47.21	129.07	41.4424	111.0659	1332.25	22.29	1
47.36	129.03	41.4399	111.0636	1331.89	22.28	1
48.00	128.85	41.4291	111.0537	1330.29	22.24	1
49.00	128.61	41.4124	111.0384	1327.79	22.18	1
49.81	128.45	41.3990	111.0258	1325.76	22.15	1
50.00	128.42	41.3958	111.0229	1325.29	22.14	1

50.81	128.22	41.3820	111.0111	1323.26	22.10	1
51.00	128.17	41.3787	111.0084	1322.79	22.09	1
51.48	128.04	41.3704	111.0018	1321.59	22.05	1
52.00	127.87	41.3611	110.9949	1320.28	22.01	1
52.19	127.80	41.3578	110.9925	1319.82	21.99	1
53.00	127.47	41.3429	110.9828	1317.78	21.89	1
53.90	127.17	41.3267	110.9717	1315.53	21.81	1
54.00	127.14	41.3249	110.9705	1315.28	21.80	1
54.81	126.92	41.3106	110.9603	1313.26	21.74	1
55.00	126.87	41.3071	110.9580	1312.78	21.73	1
55.90	126.53	41.2906	110.9482	1310.53	21.63	1
56.00	126.48	41.2887	110.9472	1310.28	21.62	1
56.24	126.37	41.2842	110.9449	1309.69	21.58	1
56.41	126.28	41.2808	110.9433	1309.25	21.55	1
56.52	126.22	41.2787	110.9423	1308.98	21.53	1
57.00	125.96	41.2695	110.9382	1307.78	21.45	1
57.17	125.88	41.2663	110.9367	1307.36	21.43	1
57.40	125.75	41.2617	110.9347	1306.78	21.39	1
57.76	125.57	41.2549	110.9317	1305.89	21.33	1
58.00	125.44	41.2502	110.9297	1305.28	21.29	1
58.28	125.29	41.2447	110.9275	1304.57	21.24	1
58.36	125.25	41.2432	110.9268	1304.38	21.22	1
58.48	125.18	41.2409	110.9259	1304.08	21.20	1
58.64	125.09	41.2377	110.9247	1303.67	21.17	1
58.90	124.94	41.2327	110.9228	1303.02	21.12	1
59.00	124.88	41.2307	110.9221	1302.78	21.10	1
59.16	124.77	41.2275	110.9211	1302.37	21.06	1
59.85	124.25	41.2135	110.9177	1300.65	20.89	1
59.99	124.16	41.2108	110.9169	1300.32	20.86	1
60.00	124.15	41.2105	110.9169	1300.28	20.85	1
60.77	123.72	41.1956	110.9118	1298.36	20.71	1
60.92	123.63	41.1926	110.9109	1297.98	20.68	1
61.00	123.58	41.1910	110.9104	1297.78	20.66	1
61.27	123.40	41.1856	110.9090	1297.10	20.59	1
61.46	123.27	41.1819	110.9082	1296.64	20.54	1
61.59	123.17	41.1791	110.9077	1296.29	20.51	1
61.69	123.10	41.1772	110.9073	1296.06	20.49	1
61.75	123.06	41.1760	110.9071	1295.91	20.47	1
62.00	122.87	41.1708	110.9061	1295.28	20.41	1
62.35	122.61	41.1638	110.9048	1294.41	20.31	1
62.88	122.20	41.1531	110.9031	1293.09	20.17	1
63.00	122.11	41.1506	110.9028	1292.78	20.13	1
64.00	121.27	41.1301	110.9008	1290.28	19.82	1
65.00	120.36	41.1094	110.9002	1287.77	19.48	1
65.18	120.18	41.1056	110.9003	1287.32	19.41	1
66.00	119.35	41.0886	110.9012	1285.27	19.09	1

67.00	118.45	41.0682	110.9015	1282.77	18.75	1
67.35	118.12	41.0611	110.9019	1281.90	18.61	1
67.88	117.61	41.0504	110.9029	1280.58	18.41	1
68.00	117.49	41.0478	110.9032	1280.27	18.37	1
68.26	117.22	41.0425	110.9039	1279.62	18.26	1
68.45	117.02	41.0386	110.9045	1279.15	18.18	1
68.57	116.88	41.0360	110.9049	1278.84	18.12	1
68.66	116.79	41.0342	110.9052	1278.62	18.09	1
69.00	116.42	41.0272	110.9065	1277.77	17.94	1
69.28	116.12	41.0215	110.9076	1277.07	17.82	1
69.46	115.92	41.0177	110.9083	1276.61	17.74	1
69.59	115.79	41.0152	110.9088	1276.30	17.69	1
69.67	115.70	41.0135	110.9091	1276.09	17.65	1
70.00	115.35	41.0069	110.9104	1275.27	17.51	1
71.00	114.30	40.9868	110.9146	1272.77	17.09	1
85.66	113.07	40.7284	110.8641	1236.12	16.96	1
85.84	113.19	40.7253	110.8625	1235.66	17.01	1
86.00	113.28	40.7224	110.8612	1235.26	17.06	1
86.53	113.57	40.7131	110.8571	1233.93	17.19	1
86.91	113.76	40.7064	110.8545	1232.98	17.29	1
87.00	113.81	40.7049	110.8539	1232.76	17.31	1
87.39	113.99	40.6980	110.8513	1231.79	17.40	1
87.62	114.10	40.6938	110.8499	1231.20	17.46	1
87.79	114.18	40.6909	110.8489	1230.79	17.50	1
87.90	114.23	40.6889	110.8482	1230.51	17.52	1
87.98	114.27	40.6874	110.8477	1230.30	17.54	1
88.00	114.28	40.6871	110.8476	1230.26	17.54	1
88.48	114.50	40.6785	110.8448	1229.06	17.65	1
88.61	114.57	40.6761	110.8440	1228.73	17.68	1
88.80	114.65	40.6728	110.8430	1228.26	17.72	1
89.00	114.73	40.6691	110.8420	1227.76	17.77	1
89.31	114.84	40.6635	110.8406	1226.97	17.82	1
89.53	114.92	40.6596	110.8398	1226.43	17.86	1
89.68	114.96	40.6569	110.8393	1226.06	17.89	1
89.77	114.99	40.6553	110.8390	1225.84	17.90	1
89.83	115.01	40.6541	110.8388	1225.67	17.91	1
89.89	115.03	40.6530	110.8386	1225.53	17.92	1
89.95	115.05	40.6520	110.8384	1225.38	17.93	1
90.00	115.07	40.6511	110.8382	1225.26	17.94	1
90.59	115.27	40.6404	110.8361	1221.71	18.06	1
90.75	115.32	40.6375	110.8356	1220.76	18.09	1
90.97	115.37	40.6334	110.8351	1219.40	18.14	1
91.00	115.37	40.6329	110.8351	1219.25	18.14	1
92.00	115.50	40.6148	110.8346	1213.24	18.26	1
92.06	115.50	40.6137	110.8346	1212.89	18.27	1
92.12	115.51	40.6126	110.8347	1212.53	18.27	1

92.18	115.51	40.6115	110.8347	1212.15	18.28	1
92.27	115.52	40.6098	110.8347	1211.61	18.29	1
92.41	115.53	40.6074	110.8348	1210.80	18.30	1
92.61	115.54	40.6036	110.8349	1209.56	18.32	1
92.93	115.55	40.5980	110.8353	1207.68	18.35	1
93.00	115.55	40.5966	110.8354	1207.24	18.35	1
93.26	115.54	40.5920	110.8360	1205.68	18.36	1
93.43	115.52	40.5889	110.8365	1204.66	18.36	1
93.55	115.50	40.5868	110.8369	1203.96	18.36	1
93.63	115.49	40.5853	110.8372	1203.45	18.36	1
94.00	115.44	40.5786	110.8386	1201.23	18.37	1
95.00	115.25	40.5608	110.8430	1195.23	18.35	1
95.28	115.18	40.5558	110.8445	1193.55	18.34	1
95.48	115.12	40.5522	110.8457	1192.33	18.32	1
95.61	115.08	40.5499	110.8466	1191.54	18.32	1
95.70	115.06	40.5483	110.8471	1191.01	18.31	1
95.77	115.04	40.5471	110.8476	1190.60	18.31	1
96.00	114.97	40.5431	110.8490	1189.22	18.29	1
97.00	114.64	40.5256	110.8558	1183.22	18.22	1
97.19	114.58	40.5224	110.8572	1182.10	18.20	1
97.24	114.56	40.5213	110.8576	1181.75	18.20	1
97.33	114.54	40.5199	110.8582	1181.25	18.19	1
97.45	114.49	40.5177	110.8591	1180.51	18.18	1
97.62	114.43	40.5147	110.8604	1179.47	18.16	1
97.90	114.33	40.5100	110.8626	1177.82	18.14	1
98.00	114.29	40.5083	110.8634	1177.21	18.13	1
98.28	114.16	40.5035	110.8660	1175.55	18.08	1
98.48	114.05	40.5001	110.8680	1174.32	18.05	1
98.61	113.98	40.4979	110.8694	1173.53	18.02	1
98.71	113.92	40.4962	110.8704	1172.94	18.01	1
98.78	113.88	40.4951	110.8711	1172.54	18.00	1
98.83	113.85	40.4942	110.8717	1172.20	17.99	1
99.00	113.75	40.4914	110.8735	1171.20	17.96	1
99.43	113.50	40.4842	110.8783	1168.62	17.87	1
99.73	113.31	40.4792	110.8817	1166.80	17.81	1
99.95	113.17	40.4757	110.8843	1165.50	17.76	1
100.00	113.14	40.4749	110.8849	1165.20	17.75	1
101.00	112.48	40.4587	110.8972	1159.19	17.53	1
102.00	111.76	40.4429	110.9104	1153.20	17.28	1
102.00	111.76	40.4428	110.9104	1153.19	17.28	1
102.90	111.18	40.4287	110.9219	1147.78	17.08	1
103.00	111.11	40.4272	110.9232	1147.18	17.06	1
132.06	117.63	39.9456	111.1778	972.67	22.00	1
132.12	117.64	39.9448	111.1788	972.30	22.00	1
132.21	117.65	39.9435	111.1801	971.78	22.01	1
132.34	117.67	39.9416	111.1821	970.99	22.03	1

132.53	117.69	39.9389	111.1850	969.86	22.05	1
132.81	117.72	39.9350	111.1893	968.18	22.09	1
133.00	117.74	39.9323	111.1924	967.01	22.11	1
133.06	117.74	39.9314	111.1935	966.62	22.12	1
133.16	117.75	39.9301	111.1950	966.07	22.13	1
133.30	117.76	39.9282	111.1972	965.23	22.14	1
133.50	117.77	39.9255	111.2005	964.04	22.16	1
133.79	117.78	39.9214	111.2054	962.25	22.19	1
134.00	117.79	39.9187	111.2088	961.01	22.21	1
135.00	117.79	39.9056	111.2259	955.00	22.29	1
135.39	117.78	39.9007	111.2326	952.53	22.31	1
135.65	117.77	39.8974	111.2373	950.84	22.33	1
135.82	117.77	39.8953	111.2403	949.77	22.34	1
135.94	117.76	39.8938	111.2424	949.01	22.35	1
136.00	117.76	39.8930	111.2435	948.61	22.35	1
136.23	117.75	39.8902	111.2476	947.15	22.36	1
136.39	117.74	39.8883	111.2505	946.13	22.37	1
137.00	117.69	39.8809	111.2617	942.22	22.40	1
137.43	117.67	39.8757	111.2696	939.47	22.42	1
137.55	117.66	39.8743	111.2717	938.72	22.43	1
137.72	117.65	39.8722	111.2749	937.60	22.44	1
137.97	117.64	39.8692	111.2795	936.01	22.45	1
138.00	117.64	39.8689	111.2800	935.83	22.45	1
138.28	117.61	39.8656	111.2853	934.02	22.46	1
138.46	117.60	39.8635	111.2888	932.86	22.47	1
138.60	117.58	39.8620	111.2914	931.99	22.48	1
138.69	117.57	39.8609	111.2931	931.41	22.48	1
138.76	117.57	39.8602	111.2943	931.00	22.48	1
139.00	117.54	39.8575	111.2989	929.44	22.49	1
139.17	117.53	39.8556	111.3021	928.37	22.50	1
139.43	117.50	39.8526	111.3071	926.70	22.51	1
139.80	117.47	39.8484	111.3143	924.30	22.52	1
140.00	117.45	39.8463	111.3181	923.05	22.53	1
141.00	117.33	39.8355	111.3376	916.66	22.56	1
141.43	117.27	39.8310	111.3461	913.91	22.56	1
141.70	117.24	39.8282	111.3516	912.17	22.57	1
141.90	117.21	39.8262	111.3555	910.92	22.57	1
142.00	117.19	39.8252	111.3575	910.27	22.57	1
143.00	117.05	39.8151	111.3776	903.88	22.59	1
143.31	117.01	39.8120	111.3840	901.87	22.60	1
143.53	116.98	39.8099	111.3884	900.49	22.60	1
143.66	116.96	39.8086	111.3911	899.64	22.60	1
143.76	116.94	39.8077	111.3930	899.03	22.61	1
143.83	116.93	39.8070	111.3944	898.60	22.61	1
143.89	116.92	39.8065	111.3957	898.21	22.61	1
143.95	116.92	39.8059	111.3969	897.82	22.61	1

144.00	116.91	39.8054	111.3980	897.48	22.61	1
144.06	116.90	39.8048	111.3992	897.11	22.61	1
144.12	116.89	39.8042	111.4004	896.72	22.61	1
144.20	116.88	39.8035	111.4020	896.23	22.62	1
144.31	116.87	39.8024	111.4042	895.53	22.62	1
144.46	116.85	39.8009	111.4074	894.52	22.62	1
144.69	116.82	39.7987	111.4122	893.04	22.63	1
145.00	116.78	39.7958	111.4184	891.09	22.64	1
145.31	116.74	39.7929	111.4249	889.09	22.65	1
145.53	116.71	39.7909	111.4293	887.71	22.65	1
145.66	116.69	39.7896	111.4321	886.86	22.66	1
145.76	116.68	39.7888	111.4340	886.25	22.66	1
145.83	116.67	39.7881	111.4354	885.82	22.66	1
145.89	116.66	39.7876	111.4367	885.43	22.66	1
145.95	116.65	39.7870	111.4379	885.04	22.66	1
146.00	116.65	39.7865	111.4390	884.70	22.66	1
146.53	116.59	39.7816	111.4500	881.31	22.68	1
146.68	116.57	39.7803	111.4531	880.37	22.69	1
146.89	116.55	39.7784	111.4574	879.02	22.70	1
147.00	116.53	39.7774	111.4598	878.31	22.70	1
147.31	116.48	39.7747	111.4664	876.31	22.70	1
147.53	116.44	39.7729	111.4710	874.93	22.71	1
147.68	116.41	39.7717	111.4741	873.99	22.71	1
147.78	116.39	39.7709	111.4763	873.34	22.71	1
147.85	116.38	39.7703	111.4778	872.89	22.71	1
147.91	116.37	39.7699	111.4790	872.52	22.71	1
147.97	116.36	39.7694	111.4804	872.13	22.71	1
148.00	116.35	39.7691	111.4810	871.92	22.71	1
148.39	116.28	39.7660	111.4894	869.45	22.71	1
148.68	116.21	39.7637	111.4957	867.57	22.71	1
148.87	116.18	39.7623	111.4998	866.37	22.71	1
149.00	116.15	39.7613	111.5026	865.53	22.71	1
150.00	115.94	39.7538	111.5243	859.14	22.71	1
150.31	115.88	39.7515	111.5312	857.14	22.71	1
150.53	115.83	39.7499	111.5359	855.76	22.71	1
150.68	115.80	39.7489	111.5391	854.81	22.71	1
150.77	115.78	39.7482	111.5411	854.23	22.71	1
150.83	115.76	39.7478	111.5426	853.81	22.71	1
150.89	115.75	39.7473	111.5438	853.44	22.71	1
150.95	115.74	39.7469	111.5451	853.07	22.71	1
151.00	115.73	39.7466	111.5462	852.75	22.71	1
151.35	115.66	39.7441	111.5538	850.52	22.71	1
151.45	115.64	39.7434	111.5560	849.90	22.71	1
151.59	115.62	39.7424	111.5591	849.00	22.72	1
151.81	115.57	39.7409	111.5639	847.60	22.72	1
152.00	115.54	39.7396	111.5681	846.36	22.72	1

152.39	115.45	39.7370	111.5767	843.88	22.72	1
152.68	115.39	39.7351	111.5832	842.01	22.72	1
152.87	115.35	39.7339	111.5874	840.80	22.72	1
153.00	115.32	39.7331	111.5903	839.97	22.72	1
154.00	115.10	39.7269	111.6125	833.58	22.72	1
155.00	114.87	39.7211	111.6349	827.19	22.72	1
156.00	114.64	39.7156	111.6574	820.80	22.72	1
175.57	109.09	39.6806	112.1043	695.71	22.40	1
175.96	108.91	39.6816	112.1130	693.25	22.36	1
176.00	108.89	39.6818	112.1139	692.98	22.36	1
176.27	108.76	39.6827	112.1199	691.29	22.33	1
176.47	108.65	39.6835	112.1246	689.96	22.30	1
176.61	108.57	39.6840	112.1276	689.10	22.28	1
176.70	108.52	39.6843	112.1296	688.53	22.27	1
176.76	108.49	39.6846	112.1310	688.13	22.26	1
177.00	108.35	39.6856	112.1364	686.59	22.23	1
177.43	108.12	39.6874	112.1461	683.84	22.17	1
177.73	107.94	39.6887	112.1528	681.91	22.12	1
177.93	107.83	39.6896	112.1571	680.66	22.10	1
178.00	107.79	39.6899	112.1587	680.20	22.09	1
178.31	107.62	39.6913	112.1657	678.19	22.04	1
178.53	107.49	39.6923	112.1705	676.82	22.01	1
178.68	107.41	39.6930	112.1737	675.87	21.99	1
178.78	107.35	39.6935	112.1760	675.23	21.97	1
178.86	107.31	39.6938	112.1777	674.73	21.96	1
178.92	107.28	39.6941	112.1790	674.33	21.95	1
178.98	107.24	39.6944	112.1804	673.95	21.94	1
179.00	107.23	39.6945	112.1808	673.81	21.94	1
179.10	107.17	39.6950	112.1830	673.17	21.93	1
179.63	106.81	39.6982	112.1946	669.80	21.85	1
179.74	106.74	39.6988	112.1971	669.05	21.84	1
179.90	106.69	39.6992	112.2004	668.09	21.82	1
180.00	106.68	39.6993	112.2027	667.42	21.80	1
180.17	106.70	39.6992	112.2065	670.17	21.77	1
180.29	106.73	39.6989	112.2091	672.12	21.75	1
180.87	106.93	39.6972	112.2217	681.32	21.64	1
181.00	106.96	39.6969	112.2245	683.41	21.62	1
181.66	107.07	39.6962	112.2389	693.90	21.46	1
215.00	117.44	39.7909	112.9914	1227.13	18.96	1
216.00	117.90	39.7981	113.0142	1243.12	18.97	1
217.00	118.29	39.8061	113.0365	1259.12	18.96	1
217.07	118.32	39.8067	113.0380	1260.26	18.95	1
217.17	118.36	39.8076	113.0403	1261.89	18.95	1
217.33	118.41	39.8089	113.0436	1264.34	18.94	1
217.56	118.50	39.8109	113.0488	1268.09	18.93	1
217.88	118.60	39.8137	113.0557	1273.21	18.92	1

218.00	118.64	39.8148	113.0582	1275.11	18.91	1
218.06	118.65	39.8154	113.0595	1276.04	18.91	1
218.11	118.67	39.8159	113.0606	1276.91	18.90	1
218.17	118.69	39.8164	113.0618	1277.83	18.90	1
218.24	118.71	39.8171	113.0634	1279.01	18.89	1
218.36	118.74	39.8182	113.0658	1280.82	18.88	1
218.52	118.78	39.8197	113.0693	1283.43	18.87	1
218.75	118.84	39.8220	113.0741	1287.10	18.85	1
219.00	118.89	39.8245	113.0792	1291.10	18.83	1
219.28	118.92	39.8276	113.0848	1295.62	18.79	1
219.46	118.95	39.8295	113.0884	1298.53	18.76	1
219.59	118.96	39.8309	113.0908	1300.49	18.75	1
219.67	118.97	39.8318	113.0925	1301.85	18.73	1
220.00	119.00	39.8355	113.0989	1307.09	18.69	1
220.66	119.09	39.8427	113.1119	1317.58	18.59	1
220.84	119.11	39.8448	113.1154	1320.51	18.57	1
221.00	119.11	39.8467	113.1184	1323.08	18.54	1
221.59	119.11	39.8539	113.1293	1332.53	18.43	1
222.00	119.11	39.8590	113.1368	1339.08	18.35	1
222.78	119.16	39.8684	113.1515	1351.59	18.22	1
222.94	119.17	39.8703	113.1544	1354.13	18.20	1
223.00	119.17	39.8710	113.1555	1355.07	18.19	1
223.43	119.17	39.8765	113.1631	1361.95	18.10	1
223.73	119.16	39.8804	113.1685	1366.79	18.04	1
223.93	119.15	39.8830	113.1719	1369.90	18.00	1
224.00	119.15	39.8839	113.1731	1371.06	17.99	1
225.00	119.07	39.8974	113.1901	1387.05	17.77	1
225.20	119.02	39.9004	113.1931	1387.64	17.72	1
225.35	118.95	39.9027	113.1950	1388.06	17.68	1
225.46	118.88	39.9046	113.1964	1388.39	17.65	1
226.00	118.51	39.9141	113.2027	1389.98	17.51	1
226.13	118.44	39.9163	113.2042	1390.35	17.48	1
229.66	117.01	39.9729	113.2497	1400.68	16.79	1
229.82	116.97	39.9754	113.2519	1401.16	16.77	1
230.00	116.94	39.9781	113.2545	1401.69	16.74	1
250.89	130.70	40.2650	113.6588	1462.85	21.38	1
251.00	130.76	40.2669	113.6606	1463.17	21.40	1
252.00	131.34	40.2846	113.6760	1466.10	21.59	1
252.07	131.38	40.2858	113.6771	1466.31	21.60	1
252.17	131.44	40.2877	113.6786	1466.61	21.62	1
252.33	131.52	40.2904	113.6809	1467.05	21.64	1
252.56	131.65	40.2947	113.6843	1467.74	21.68	1
252.88	131.81	40.3005	113.6888	1468.68	21.73	1
253.00	131.86	40.3027	113.6904	1469.03	21.75	1
253.27	131.98	40.3076	113.6939	1469.81	21.78	1
253.45	132.05	40.3111	113.6963	1470.35	21.80	1

253.58	132.10	40.3135	113.6978	1470.72	21.82	1
253.67	132.13	40.3151	113.6989	1470.97	21.83	1
254.00	132.26	40.3214	113.7031	1471.95	21.87	1
254.12	132.31	40.3237	113.7046	1472.31	21.88	1
254.17	132.33	40.3246	113.7052	1472.46	21.89	1
254.23	132.36	40.3257	113.7060	1472.63	21.90	1
254.32	132.39	40.3273	113.7070	1472.88	21.91	1
254.44	132.44	40.3297	113.7086	1473.25	21.92	1
254.64	132.52	40.3334	113.7110	1473.82	21.95	1
254.90	132.63	40.3384	113.7142	1474.59	21.98	1
255.00	132.66	40.3403	113.7153	1474.88	21.99	1
255.19	132.73	40.3439	113.7175	1475.42	22.01	1
255.47	132.83	40.3493	113.7207	1476.26	22.03	1
255.90	132.97	40.3576	113.7254	1477.51	22.08	1
256.00	133.00	40.3596	113.7265	1477.81	22.09	1
266.89	135.08	40.5821	113.8007	1509.69	22.54	1
267.00	135.10	40.5845	113.8011	1510.01	22.55	1
268.00	135.25	40.6056	113.8046	1512.94	22.57	1
268.43	135.31	40.6147	113.8059	1514.20	22.58	1
268.70	135.34	40.6204	113.8066	1515.00	22.59	1
268.90	135.36	40.6246	113.8071	1515.57	22.59	1
269.00	135.38	40.6267	113.8073	1515.87	22.59	1
269.66	135.47	40.6407	113.8090	1517.79	22.60	1
269.84	135.49	40.6445	113.8094	1518.33	22.61	1
270.00	135.50	40.6480	113.8095	1518.80	22.61	1
270.35	135.50	40.6554	113.8097	1518.63	22.61	1
270.60	135.51	40.6608	113.8098	1518.51	22.62	1
270.77	135.51	40.6644	113.8099	1518.42	22.62	1
270.89	135.51	40.6670	113.8099	1518.36	22.62	1
270.98	135.51	40.6688	113.8099	1518.32	22.62	1
271.00	135.51	40.6692	113.8099	1518.31	22.62	1
291.83	134.89	41.1008	113.6978	1508.20	22.48	1
292.00	134.86	41.1040	113.6957	1508.12	22.47	1
292.31	134.79	41.1100	113.6918	1507.96	22.45	1
292.53	134.74	41.1141	113.6890	1507.86	22.43	1
292.68	134.71	41.1169	113.6871	1507.79	22.42	1
292.78	134.68	41.1188	113.6858	1507.74	22.41	1
292.85	134.67	41.1201	113.6849	1507.71	22.40	1
292.90	134.65	41.1211	113.6842	1507.68	22.40	1
292.95	134.64	41.1221	113.6835	1507.65	22.39	1
293.00	134.63	41.1230	113.6829	1507.63	22.39	1
293.25	134.56	41.1277	113.6795	1507.51	22.37	1
293.42	134.52	41.1309	113.6771	1507.43	22.35	1
293.54	134.49	41.1331	113.6755	1507.37	22.34	1
294.00	134.37	41.1416	113.6693	1507.15	22.30	1
294.53	134.25	41.1514	113.6620	1506.89	22.25	1

294.68	134.21	41.1541	113.6600	1506.82	22.24	1
294.89	134.16	41.1580	113.6570	1506.71	22.22	1
295.00	134.13	41.1600	113.6555	1506.66	22.21	1
296.00	133.84	41.1781	113.6407	1506.18	22.10	1
297.00	133.47	41.1956	113.6247	1505.69	21.97	1
297.23	133.37	41.1995	113.6208	1505.58	21.93	1
297.39	133.30	41.2022	113.6180	1505.50	21.90	1
298.00	132.99	41.2124	113.6071	1505.20	21.79	1
298.21	132.90	41.2158	113.6035	1505.10	21.76	1
299.00	132.53	41.2289	113.5894	1504.72	21.62	1
299.81	132.20	41.2423	113.5752	1504.33	21.49	1
300.00	132.11	41.2454	113.5718	1504.23	21.46	1
300.81	131.69	41.2581	113.5564	1503.84	21.30	1
301.00	131.58	41.2610	113.5526	1503.75	21.27	1
301.26	131.42	41.2649	113.5474	1503.62	21.20	1
301.45	131.29	41.2676	113.5435	1503.53	21.15	1
301.57	131.21	41.2695	113.5408	1503.47	21.12	1
301.66	131.15	41.2708	113.5390	1503.43	21.10	1
302.00	130.91	41.2757	113.5318	1503.26	21.02	1
302.05	130.88	41.2764	113.5307	1503.24	21.00	1
302.11	130.84	41.2772	113.5296	1503.21	20.99	1
302.19	130.79	41.2784	113.5279	1503.17	20.97	1
302.31	130.71	41.2801	113.5253	1503.11	20.94	1
302.48	130.59	41.2827	113.5216	1503.03	20.89	1
302.73	130.42	41.2862	113.5164	1502.91	20.83	1
303.00	130.23	41.2899	113.5106	1502.78	20.76	1
303.14	130.14	41.2918	113.5076	1502.71	20.72	1
303.33	129.99	41.2945	113.5033	1502.62	20.67	1
303.62	129.78	41.2984	113.4969	1502.48	20.59	1
304.00	129.47	41.3034	113.4883	1502.29	20.48	1
304.17	129.32	41.3056	113.4842	1502.21	20.42	1
304.89	128.63	41.3143	113.4665	1501.86	20.16	1
305.00	128.53	41.3156	113.4639	1501.81	20.12	1

Interference Free Service Comparison for DTV Utah Stations
Proposed Antenna (Kathrein 75010043) Pattern versus Repacked Allotment Pattern

Call	Repacked Channel	Interference Free Service Population		Gain/Loss
		Proposed Antenna	Allotment	
KUED	15	2,201,123	2,198,811	0.11%
KBYU	17	2,202,457	2,202,834	-0.02%
KJZZ	19	2,188,980	2,190,154	-0.05%
KSL	23	2,207,464	2,206,911	0.03%
KTVX	30	2,199,193	2,199,157	0.00%
KUTV	34	2,192,009	2,192,425	-0.02%
KUCW	35	2,178,993	2,176,791	0.10%
KUEN	36	2,185,627	2,183,159	0.11%

KUED REPACK ALLOTMENT STUDY RESULTS

tvstudy v2.2.2

Database: localhost, Study: KUED_RP_15, Model: Longley-Rice
Start: 2017.06.06 11:49:31

Study created: 2017.06.06 11:49:18

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KUED D15 DT BL SALT LAKE CITY, UT
File number: DTVBL69396
Facility ID: 69396
Station data: LMS TV 2017-06-02 (23)
Record ID: DTVBL69396
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KULX-CD	D14	DC	LIC	OGDEN, UT	BLDTL20110323ABX	0.1 km
KFQX	D15	DT	LIC	GRAND JUNCTION, CO	BLCDT20061020ACO	343.9
KPIF	D15	DT	LIC	POCATELLO, ID	BLANK0000001051	246.5

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D15
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2841.5 m
HAAT: 1266.0 m
Peak ERP: 133 kW
Antenna: KAT-773 928 (ID 30673) 0.0 deg

38.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	108 kW	1393.4 m	131.2 km
45.0	73.3	1348.0	125.2
90.0	49.3	1235.5	117.7
135.0	120	965.3	119.2
180.0	35.7	677.7	98.5
225.0	37.1	1397.3	119.2
270.0	132	1529.0	137.4
315.0	63.2	1507.2	128.5

Database HAAT does not agree with computed HAAT

Database HAAT: 1266 m Computed HAAT: 1257 m

ERP exceeds maximum

ERP: 133 kW ERP maximum: 91.9 kW

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA

Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 93.2 degrees Distance: 590.7 km

No land mobile station failures found

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

Interference to BLDTL20110323ABX LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance		
	KULX-CD	D14	DC	LIC	OGDEN, UT	BLDTL20110323ABX			
Undesireds:	KUED	D15	DT	BL	SALT LAKE CITY, UT	DTVBL69396	0.1 km		
	KCSG	D14	DT	LIC	CEDAR CITY, UT	BLCDT20090617AAX	343.2		
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX		
16997.9	2,113,769	12447.5	2,011,195	12447.5	2,011,195	12235.7	2,010,448	1.70	0.04
Undesired		Total IX			Unique IX, before	Unique IX, after			
KUED D15 DT BL		211.9		747		211.9	747		

Interference to BLCDT20061020ACO LIC, scenario 1

Proposal causes no interference.

Interference to BLANK0000001051 LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance		
	KPIF	D15	DT	LIC	POCATELLO, ID	BLANK0000001051			
Undesireds:	KUED	D15	DT	BL	SALT LAKE CITY, UT	DTVBL69396	246.5 km		
	KKJB	D15	DT	BL	BOISE, ID	DTVBL35097	308.4		
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX		
21246.3	255,766	17330.8	250,517	17330.8	250,517	17254.6	250,331	0.44	0.07
Undesired		Total IX			Unique IX, before	Unique IX, after			
KUED D15 DT BL		76.2		186		76.2	186		

Interference to proposal, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KUED	D15	DT	BL	SALT LAKE CITY, UT	DTVBL69396	
Undesireds:	KULX-CD	D14	DC	LIC	OGDEN, UT	BLDTL20110323ABX	0.1 km
	KFQX	D15	DT	LIC	GRAND JUNCTION, CO	BLCDT20061020ACO	343.9
	KPIF	D15	DT	LIC	POCATELLO, ID	BLANK0000001051	246.5

Service area	Terrain-limited	IX-free	Percent IX
47273.7 2,362,224	32581.7 2,198,811	32581.7 2,198,811	0.00 0.00

**KUED PROPOSED NEW ANTENNA
(KATHREIN 75010043) STUDY RESULTS**

tvstudy v2.2.2

Database: localhost, Study: KUED_ANT_06062017, Model: Longley-Rice
Start: 2017.06.06 12:49:04

Study created: 2017.06.06 12:48:54

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KUED D15 DT BL SALT LAKE CITY, UT
File number: KUED_ANT_06062017
Facility ID: 69396
Station data: User record
Record ID: 72
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KULX-CD	D14	DC	LIC	OGDEN, UT	BLDTL20110323ABX	0.1 km
KFQX	D15	DT	LIC	GRAND JUNCTION, CO	BLCDT20061020ACO	343.9
KPIF	D15	DT	LIC	POCATELLO, ID	BLANK0000001051	246.5

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D15
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2841.4 m
HAAT: 1266.0 m
Peak ERP: 133 kW
Antenna: UTAH_CH15_06062017 0.0 deg

38.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	64.4 kW	1393.3 m	125.2 km
45.0	121	1348.0	131.2
90.0	31.8	1235.5	113.3
135.0	105	965.2	117.9
180.0	107	677.6	108.1
225.0	41.0	1397.3	120.3
270.0	130	1529.0	137.2
315.0	54.3	1507.2	126.8

Database HAAT does not agree with computed HAAT

Database HAAT: 1266 m Computed HAAT: 1257 m

ERP exceeds maximum

ERP: 133 kW ERP maximum: 92.0 kW

**Proposal service area extends beyond baseline plus 1.0%

Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA

Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 93.2 degrees Distance: 590.7 km

No land mobile station failures found

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLDTL20110323ABX LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KULX-CD	D14	DC	LIC	OGDEN, UT	BLDTL20110323ABX	
Undesireds:	KUED	D15	DT	BL	SALT LAKE CITY, UT	DTVBL69396	0.1 km
	KUED	D15	DT	BL	SALT LAKE CITY, UT	KUED_ANT_06062017	0.1
	KCSG	D14	DT	LIC	CEDAR CITY, UT	BLCDT20090617AAX	343.2
	Service area 16997.9	2,113,769	Terrain-limited 12447.5	2,011,195	IX-free, before 12235.7	IX-free, after 12243.8	Percent New IX -0.07
					2,010,448	2,010,449	-0.00
Undesired			Total IX KUED D15 DT BL	211.9	747	Unique IX, before 211.9	Unique IX, after 747
				203.7	746		203.7
						746	

Interference to BLCDT20061020ACO LIC, scenario 1

Proposal causes no interference.

Interference to BLANK0000001051 LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KPIF	D15	DT	LIC	POCATELLO, ID	BLANK0000001051	
Undesireds:	KUED	D15	DT	BL	SALT LAKE CITY, UT	DTVBL69396	246.5 km
	KUED	D15	DT	BL	SALT LAKE CITY, UT	KUED_ANT_06062017	246.5
	KKJB	D15	DT	BL	BOISE, ID	DTVBL35097	308.4
	Service area 21246.3	255,766	Terrain-limited 17330.8	250,517	IX-free, before 17254.6	IX-free, after 17262.5	Percent New IX -0.05
					250,331	250,331	0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
KUED D15 DT BL	76.2	76.2	186
KUED D15 DT BL	68.2	186	

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUED	D15	DT	BL	SALT LAKE CITY, UT	KUED_ANT_06062017	
Undesireds:	KULX-CD	D14	DC	LIC	OGDEN, UT	BLDTL20110323ABX	0.1 km
	KFQX	D15	DT	LIC	GRAND JUNCTION, CO	BLCDT20061020ACO	343.9
	KPIF	D15	DT	LIC	POCATELLO, ID	BLANK0000001051	246.5
Service area	47587.4	2,374,970	32619.8	Terrain-limited	32615.8	IX-free	Percent IX
				2,201,123	2,201,123	0.01	0.00
Undesired	KULX-CD	D14	DC	LIC	Total IX	Unique IX	Prcnt Unique IX
				4.0	0	4.0	0

KUED NEW ANTENNA PATTERN RELATIVE FIELD VALUES

AZIMUTH RELATIVE FIELD

0	0.696
1	0.713
2	0.734
3	0.752
4	0.769
5	0.787
6	0.804
7	0.822
8	0.841
9	0.856
10	0.872
11	0.887
12	0.903
13	0.915
14	0.927
15	0.939
16	0.948
17	0.957
18	0.967
19	0.973
20	0.979
21	0.984
22	0.988
23	0.992
24	0.995
25	0.996
26	0.995
27	0.996
28	0.996
29	0.995
30	0.993
31	0.992
32	0.99
33	0.988
34	0.985
35	0.983
36	0.981
37	0.979
38	0.977
39	0.974
40	0.971
41	0.968
42	0.965
43	0.963
44	0.96

45	0.955
46	0.949
47	0.943
48	0.936
49	0.93
50	0.923
51	0.915
52	0.906
53	0.897
54	0.888
55	0.877
56	0.865
57	0.854
58	0.842
59	0.829
60	0.815
61	0.799
62	0.785
63	0.769
64	0.752
65	0.734
66	0.716
67	0.697
68	0.676
69	0.658
70	0.641
71	0.624
72	0.607
73	0.589
74	0.57
75	0.553
76	0.539
77	0.527
78	0.518
79	0.509
80	0.503
81	0.497
82	0.493
83	0.49
84	0.487
85	0.486
86	0.487
87	0.488
88	0.487
89	0.486
90	0.489

91	0.492
92	0.493
93	0.493
94	0.492
95	0.494
96	0.493
97	0.491
98	0.487
99	0.483
100	0.482
101	0.479
102	0.477
103	0.473
104	0.469
105	0.47
106	0.473
107	0.475
108	0.479
109	0.484
110	0.491
111	0.5
112	0.51
113	0.522
114	0.536
115	0.552
116	0.568
117	0.586
118	0.606
119	0.623
120	0.639
121	0.658
122	0.677
123	0.699
124	0.719
125	0.736
126	0.754
127	0.772
128	0.788
129	0.804
130	0.82
131	0.835
132	0.851
133	0.865
134	0.877
135	0.887
136	0.898

137	0.911
138	0.919
139	0.927
140	0.935
141	0.941
142	0.947
143	0.954
144	0.959
145	0.963
146	0.966
147	0.97
148	0.974
149	0.977
150	0.978
151	0.981
152	0.983
153	0.985
154	0.987
155	0.987
156	0.988
157	0.99
158	0.992
159	0.993
160	0.994
161	0.995
162	0.994
163	0.993
164	0.993
165	0.992
166	0.991
167	0.989
168	0.987
169	0.985
170	0.981
171	0.976
172	0.97
173	0.964
174	0.957
175	0.95
176	0.941
177	0.93
178	0.92
179	0.908
180	0.895
181	0.88
182	0.866

183	0.852
184	0.837
185	0.82
186	0.801
187	0.784
188	0.766
189	0.747
190	0.728
191	0.709
192	0.69
193	0.67
194	0.653
195	0.637
196	0.622
197	0.608
198	0.595
199	0.582
200	0.572
201	0.565
202	0.56
203	0.555
204	0.554
205	0.556
206	0.557
207	0.559
208	0.561
209	0.563
210	0.565
211	0.571
212	0.574
213	0.576
214	0.577
215	0.581
216	0.581
217	0.58
218	0.578
219	0.574
220	0.573
221	0.571
222	0.568
223	0.563
224	0.557
225	0.555
226	0.553
227	0.55
228	0.546

229	0.542
230	0.542
231	0.543
232	0.545
233	0.549
234	0.552
235	0.558
236	0.565
237	0.577
238	0.591
239	0.603
240	0.615
241	0.628
242	0.641
243	0.658
244	0.675
245	0.691
246	0.709
247	0.727
248	0.743
249	0.759
250	0.776
251	0.793
252	0.811
253	0.829
254	0.844
255	0.859
256	0.873
257	0.889
258	0.901
259	0.912
260	0.922
261	0.931
262	0.94
263	0.95
264	0.957
265	0.963
266	0.969
267	0.975
268	0.981
269	0.985
270	0.988
271	0.99
272	0.992
273	0.995
274	0.997

275	0.998
276	0.999
277	1
278	1
279	0.999
280	0.999
281	0.999
282	0.998
283	0.997
284	0.996
285	0.993
286	0.99
287	0.985
288	0.98
289	0.974
290	0.968
291	0.96
292	0.951
293	0.941
294	0.931
295	0.921
296	0.909
297	0.897
298	0.884
299	0.871
300	0.856
301	0.84
302	0.826
303	0.811
304	0.796
305	0.779
306	0.761
307	0.745
308	0.73
309	0.714
310	0.699
311	0.684
312	0.671
313	0.656
314	0.645
315	0.639
316	0.633
317	0.627
318	0.624
319	0.621
320	0.62

321	0.62
322	0.622
323	0.625
324	0.629
325	0.635
326	0.642
327	0.646
328	0.65
329	0.653
330	0.657
331	0.661
332	0.664
333	0.665
334	0.665
335	0.667
336	0.665
337	0.662
338	0.657
339	0.65
340	0.646
341	0.643
342	0.639
343	0.632
344	0.622
345	0.616
346	0.611
347	0.608
348	0.605
349	0.603
350	0.604
351	0.605
352	0.609
353	0.615
354	0.621
355	0.63
356	0.641
357	0.652
358	0.667
359	0.682

KBYU REPACK ALLOTMENT STUDY RESULTS

tvstudy v2.2.2
Database: localhost, Study: KBYU_RP_17, Model: Longley-Rice
Start: 2017.06.06 12:06:02

Study created: 2017.06.06 12:05:53

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KBYU-TV D17 DT BL PROVO, UT
File number: DTVBL6823
Facility ID: 6823
Station data: LMS TV 2017-06-02 (23)
Record ID: DTVBL6823
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KISU-TV	D17	DD	LIC	POCATELLO, ID	BLANK0000017402	318.2 km

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D17
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2832.0 m
HAAT: 1257.0 m
Peak ERP: 188 kW
Antenna: KAT-K773928 (ID 32909) 0.0 deg

39.0 dBu contour:

Azimuth	ERP	HAAT	Distance
---------	-----	------	----------

0.0 deg	116 kW	1383.9 m	131.2 km
45.0	121	1338.6	130.3
90.0	49.7	1226.1	117.0
135.0	132	955.8	119.5
180.0	126	668.2	108.8
225.0	48.7	1387.9	121.4
270.0	152	1519.6	138.2
315.0	63.5	1497.8	127.7

Database HAAT does not agree with computed HAAT
Database HAAT: 1257 m Computed HAAT: 1247 m

ERP exceeds maximum
ERP: 188 kW ERP maximum: 93.1 kW

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

No land mobile station failures found

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLANK0000017402 LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance	
Desired:	KISU-TV	D17	DD	LIC	POCATELLO, ID	BLANK0000017402		
Undesireds:	KBYU-TV	D17	DT	BL	PROVO, UT	DTVBL6823	318.2 km	
	K17ED-D	D17	DC	LIC	PAYETTE, ID	BLDTA20141002AAE	346.3	
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX	
30873.6	311,827	27483.6	307,651	27483.6	307,651	27395.8	307,633	0.32 0.01
Undesired		Total IX		Unique IX, before	Unique IX, after			
KBYU-TV D17 DT BL		87.9	18		87.9	18		

Interference to proposal, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KBYU-TV	D17	DT	BL	PROVO, UT	DTVBL6823	
Undesireds:	KISU-TV	D17	DD	LIC	POCATELLO, ID	BLANK0000017402	318.2 km
Service area		Terrain-limited			IX-free	Percent IX	
49012.8	2,386,214	33707.9	2,202,834	33643.3	2,202,834	0.19	0.00
Undesired		Total IX		Unique IX	Prcnt Unique IX		
KISU-TV D17 DD LIC		64.6	0	64.6	0	0.19	0.00

**KBYU PROPOSED NEW ANTENNA
(KATHREIN 75010043) STUDY RESULTS**

tvstudy v2.2.2
Database: localhost, Study: KBYU_ANT_06062017, Model: Longley-Rice
Start: 2017.06.06 13:33:35

Study created: 2017.06.06 13:33:27

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KBYU-TV D17 DT BL PROVO, UT
File number: KBYU_ANT_06062017
Facility ID: 6823
Station data: User record
Record ID: 75
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KISU-TV	D17	DD	LIC	POCATELLO, ID	BLANK0000017402	318.2 km

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D17
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2832.0 m
HAAT: 1257.0 m
Peak ERP: 188 kW
Antenna: UTAH_CH17_06062017 0.0 deg

39.0 dBu contour:

Azimuth	ERP	HAAT	Distance
---------	-----	------	----------

0.0 deg	80.7 kW	1383.9 m	126.9 km
45.0	154	1338.6	133.2
90.0	46.3	1226.1	116.3
135.0	133	955.8	119.5
180.0	130	668.2	109.1
225.0	56.9	1387.9	123.1
270.0	181	1519.6	140.1
315.0	67.0	1497.8	128.3

Database HAAT does not agree with computed HAAT
Database HAAT: 1257 m Computed HAAT: 1247 m

ERP exceeds maximum
ERP: 188 kW ERP maximum: 93.1 kW

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

No land mobile station failures found

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLANK0000017402 LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance	
	KISU-TV	D17	DD	LIC	POCATELLO, ID	BLANK0000017402		
Undesireds:	KBYU-TV	D17	DT	BL	PROVO, UT	DTVBL6823	318.2 km	
	KBYU-TV	D17	DT	BL	PROVO, UT	KBYU_ANT_06062017	318.2	
	K17ED-D	D17	DC	LIC	PAYETTE, ID	BLDTA20141002AAE	346.3	
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX	
30873.6	311,827	27483.6	307,651	27395.8	307,633	27407.8	307,633	-0.04 0.00
Undesired		Total IX			Unique IX, before	Unique IX, after		
KBYU-TV D17 DT BL		87.9		18	87.9	18		
KBYU-TV D17 DT BL		75.9		18		75.9	18	

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KBYU-TV	D17	DT	BL	PROVO, UT	KBYU_ANT_06062017	
Undesireds:	KISU-TV	D17	DD	LIC	POCATELLO, ID	BLANK0000017402	318.2 km
Service area		Terrain-limited			IX-free	Percent IX	
48980.6	2,376,436	33691.4	2,202,494	33618.7	2,202,457	0.22	0.00
Undesired		Total IX			Unique IX	Prcnt Unique IX	
KISU-TV D17 DD LIC		72.7		37	72.7	37	0.22 0.00

**KBYU NEW ANTENNA PATTERN
RELATIVE FIELD VALUES**

AZIMUTH RELATIVE FIELD

0	0.655
1	0.671
2	0.69
3	0.71
4	0.726
5	0.742
6	0.759
7	0.776
8	0.793
9	0.809
10	0.823
11	0.836
12	0.851
13	0.866
14	0.878
15	0.889
16	0.9
17	0.911
18	0.922
19	0.93
20	0.937
21	0.944
22	0.951
23	0.957
24	0.963
25	0.967
26	0.97
27	0.973
28	0.976
29	0.978
30	0.978
31	0.977
32	0.976
33	0.975
34	0.973
35	0.969
36	0.965
37	0.96
38	0.954
39	0.949
40	0.942
41	0.934
42	0.927
43	0.92
44	0.913

45	0.905
46	0.896
47	0.887
48	0.878
49	0.869
50	0.859
51	0.85
52	0.839
53	0.828
54	0.817
55	0.805
56	0.791
57	0.778
58	0.764
59	0.749
60	0.735
61	0.72
62	0.703
63	0.689
64	0.673
65	0.656
66	0.641
67	0.625
68	0.608
69	0.592
70	0.578
71	0.565
72	0.551
73	0.537
74	0.523
75	0.51
76	0.501
77	0.493
78	0.488
79	0.483
80	0.48
81	0.477
82	0.475
83	0.475
84	0.475
85	0.476
86	0.483
87	0.487
88	0.491
89	0.494
90	0.496

91	0.501
92	0.503
93	0.504
94	0.505
95	0.503
96	0.501
97	0.499
98	0.494
99	0.487
100	0.482
101	0.48
102	0.475
103	0.469
104	0.462
105	0.46
106	0.459
107	0.458
108	0.458
109	0.458
110	0.461
111	0.467
112	0.475
113	0.485
114	0.497
115	0.512
116	0.527
117	0.544
118	0.56
119	0.579
120	0.599
121	0.618
122	0.638
123	0.659
124	0.678
125	0.695
126	0.712
127	0.73
128	0.748
129	0.764
130	0.779
131	0.792
132	0.807
133	0.821
134	0.832
135	0.842
136	0.852

137	0.862
138	0.873
139	0.881
140	0.888
141	0.896
142	0.904
143	0.912
144	0.917
145	0.921
146	0.925
147	0.929
148	0.935
149	0.941
150	0.946
151	0.948
152	0.952
153	0.956
154	0.958
155	0.959
156	0.96
157	0.961
158	0.961
159	0.961
160	0.96
161	0.958
162	0.955
163	0.951
164	0.947
165	0.943
166	0.938
167	0.933
168	0.928
169	0.923
170	0.917
171	0.911
172	0.903
173	0.896
174	0.889
175	0.881
176	0.873
177	0.864
178	0.854
179	0.844
180	0.832
181	0.818
182	0.807

183	0.794
184	0.779
185	0.762
186	0.744
187	0.725
188	0.708
189	0.69
190	0.672
191	0.656
192	0.638
193	0.619
194	0.603
195	0.59
196	0.578
197	0.566
198	0.556
199	0.545
200	0.538
201	0.533
202	0.53
203	0.53
204	0.53
205	0.533
206	0.538
207	0.542
208	0.546
209	0.549
210	0.553
211	0.561
212	0.566
213	0.571
214	0.574
215	0.577
216	0.579
217	0.58
218	0.58
219	0.578
220	0.573
221	0.572
222	0.569
223	0.563
224	0.555
225	0.55
226	0.545
227	0.538
228	0.531

229	0.524
230	0.52
231	0.518
232	0.516
233	0.515
234	0.515
235	0.518
236	0.523
237	0.53
238	0.539
239	0.55
240	0.563
241	0.575
242	0.589
243	0.606
244	0.624
245	0.639
246	0.656
247	0.675
248	0.694
249	0.711
250	0.728
251	0.745
252	0.763
253	0.781
254	0.798
255	0.813
256	0.828
257	0.843
258	0.86
259	0.872
260	0.884
261	0.896
262	0.908
263	0.921
264	0.931
265	0.941
266	0.949
267	0.957
268	0.967
269	0.975
270	0.981
271	0.985
272	0.989
273	0.994
274	0.997

275	0.999
276	1
277	1
278	0.998
279	0.996
280	0.992
281	0.988
282	0.982
283	0.976
284	0.969
285	0.96
286	0.95
287	0.941
288	0.93
289	0.919
290	0.908
291	0.897
292	0.884
293	0.872
294	0.86
295	0.847
296	0.834
297	0.82
298	0.806
299	0.792
300	0.777
301	0.761
302	0.747
303	0.733
304	0.718
305	0.704
306	0.688
307	0.674
308	0.661
309	0.647
310	0.635
311	0.624
312	0.614
313	0.605
314	0.599
315	0.597
316	0.596
317	0.596
318	0.597
319	0.597
320	0.599

321	0.605
322	0.609
323	0.615
324	0.62
325	0.627
326	0.635
327	0.641
328	0.647
329	0.651
330	0.656
331	0.66
332	0.661
333	0.662
334	0.66
335	0.657
336	0.657
337	0.653
338	0.648
339	0.64
340	0.631
341	0.626
342	0.619
343	0.609
344	0.598
345	0.59
346	0.583
347	0.577
348	0.571
349	0.566
350	0.564
351	0.564
352	0.565
353	0.568
354	0.576
355	0.587
356	0.597
357	0.609
358	0.625
359	0.64

KJZZ REPACK ALLOTMENT STUDY RESULTS

tvstudy v2.2.2

Database: localhost, Study: KJZZ_RP_19, Model: Longley-Rice
Start: 2017.06.06 12:10:41

Study created: 2017.06.06 12:10:30

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KJZZ-TV D19 DT BL SALT LAKE CITY, UT
File number: DTVBL36607
Facility ID: 36607
Station data: LMS TV 2017-06-02 (23)
Record ID: DTVBL36607
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KUES	D19	DT	LIC	RICHFIELD, UT	BLEDT20030429AAT	225.4 km
KTMW	D20	DT	LIC	SALT LAKE CITY, UT	BLCDT20140529AJC	0.6

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D19
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2840.5 m
HAAT: 1266.0 m
Peak ERP: 114 kW
Antenna: KAT-773 928 (ID 30114) 0.0 deg

39.3 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	92.1 kW	1392.4 m	128.2 km
45.0	62.9	1347.0	122.4
90.0	42.3	1234.5	115.1
135.0	103	964.3	116.8
180.0	30.6	676.7	96.2
225.0	31.8	1396.3	116.5
270.0	113	1528.0	134.5
315.0	54.2	1506.2	125.6

Database HAAT does not agree with computed HAAT
Database HAAT: 1266 m Computed HAAT: 1256 m

ERP exceeds maximum
ERP: 114 kW ERP maximum: 92.1 kW

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

No land mobile station failures found

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLEDT20030429AAT LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUES	D19	DT	LIC	RICHFIELD, UT	BLEDT20030429AAT	
Undesireds:	KJZZ-TV	D19	DT	BL	SALT LAKE CITY, UT	DTVBL36607	225.4 km
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX
8285.7	30,925	4690.5	25,978	4690.5	25,978	4662.5	25,962
Undesired		Total IX		Unique IX, before	Unique IX, after		
KJZZ-TV D19 DT BL		28.0	16	28.0	16		

Interference to BLCDT20140529AJC LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KTMW	D20	DT	LIC	SALT LAKE CITY, UT	BLCDT20140529AJC	
Undesireds:	KJZZ-TV	D19	DT	BL	SALT LAKE CITY, UT	DTVBL36607	0.6 km
	KEJT-CD	D21	DC	BL	SALT LAKE CITY, UT	DTVBL64974	0.8
Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX	
32317.5	2,261,671	20957.5	2,144,791	20889.1	2,144,511	20507.3	2,142,522
Undesired		Total IX		Unique IX, before	Unique IX, after		
KJZZ-TV D19 DT BL		450.2	2,269	381.8	1,989		
KEJT-CD D21 DC BL		68.4	280	68.4	280	0.0	0

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KJZZ-TV	D19	DT	BL	SALT LAKE CITY, UT	DTVBL36607	
Undesireds:	KUES	D19	DT	LIC	RICHFIELD, UT	BLEDT20030429AAT	225.4 km
	KTMW	D20	DT	LIC	SALT LAKE CITY, UT	BLCDT20140529AJC	0.6

Service area	Terrain-limited		IX-free		Percent IX	
45200.0 2,354,938	30755.0 2,190,154	30718.9	2,190,154	0.12	0.00	
Undesired	Total IX		Unique IX	Prcnt	Unique IX	
KTMW D20 DT LIC	36.0	0	36.0	0	0.12	0.00

**KJZZ PROPOSED NEW ANTENNA
(KATHREIN 75010043) STUDY RESULTS**

tvstudy v2.2.2

Database: localhost, Study: KJZZ_ANT_06062017, Model: Longley-Rice
Start: 2017.06.06 13:36:19

Study created: 2017.06.06 13:36:09

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KJZZ-TV D19 DT BL SALT LAKE CITY, UT
File number: KJZZ_ANT_06062017
Facility ID: 36607
Station data: User record
Record ID: 76
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KUES	D19	DT	LIC	RICHFIELD, UT	BLEDT20030429AAT	225.4 km
KTMW	D20	DT	LIC	SALT LAKE CITY, UT	BLCDT20140529AJC	0.6

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D19
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2840.4 m
HAAT: 1266.0 m
Peak ERP: 114 kW
Antenna: UTAH_CH19_06062017 0.0 deg

39.3 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	53.6 kW	1392.3 m	122.1 km
45.0	93.8	1347.0	126.9
90.0	27.5	1234.5	110.8
135.0	80.8	964.2	114.5
180.0	81.6	676.6	104.8
225.0	33.4	1396.3	117.0
270.0	110	1528.0	134.2
315.0	42.4	1506.2	122.8

Database HAAT does not agree with computed HAAT
Database HAAT: 1266 m Computed HAAT: 1256 m

ERP exceeds maximum
ERP: 114 kW ERP maximum: 92.1 kW

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

No land mobile station failures found

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

Interference to BLEDT20030429AAT LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUES	D19	DT	LIC	RICHFIELD, UT	BLEDT20030429AAT	
Undesireds:	KJZZ-TV	D19	DT	BL	SALT LAKE CITY, UT	DTVBL36607	225.4 km
	KJZZ-TV	D19	DT	BL	SALT LAKE CITY, UT	KJZZ_ANT_06062017	225.4
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
8285.7	30,925	4690.5	25,978	4662.5	25,962	4658.5	25,962
Undesired		Total	IX	Unique IX, before	Unique IX, after		
KJZZ-TV D19 DT BL		28.0	16	28.0	16		
KJZZ-TV D19 DT BL		32.0	16		32.0	16	

Interference to BLCDT20140529AJC LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KTMW	D20	DT	LIC	SALT LAKE CITY, UT	BLCDT20140529AJC	
Undesireds:	KJZZ-TV	D19	DT	BL	SALT LAKE CITY, UT	DTVBL36607	0.6 km
	KJZZ-TV	D19	DT	BL	SALT LAKE CITY, UT	KJZZ_ANT_06062017	0.6
	KEJT-CD	D21	DC	BL	SALT LAKE CITY, UT	DTVBL64974	0.8
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
32317.5	2,261,671	20957.5	2,144,791	20507.3	2,142,522	20507.3	2,142,522
Undesired		Total	IX	Unique IX, before	Unique IX, after		
KJZZ-TV D19 DT BL		450.2	2,269	381.8	1,989		
KJZZ-TV D19 DT BL		450.2	2,269		381.8	1,989	
KEJT-CD D21 DC BL		68.4	280	0.0	0	0.0	0

Interference to proposal, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KJZZ-TV	D19	DT	BL	SALT LAKE CITY, UT	KJZZ_ANT_06062017	
Undesireds:	KUES	D19	DT	LIC	RICHFIELD, UT	BLEDT20030429AAT	225.4 km
	KTMW	D20	DT	LIC	SALT LAKE CITY, UT	BLCDT20140529AJC	0.6
	Service area	Terrain-limited			IX-free	Percent IX	
44903.3	2,349,903	30357.6	2,188,980	30321.5	2,188,980	0.12	0.00
Undesired		Total	IX		Unique IX	Prcnt	Unique IX
KTMW D20 DT LIC		36.1	0	36.1	0	0.12	0.00

**KJZZ NEW ANTENNA PATTERN
RELATIVE FIELD VALUES**

AZIMUTH RELATIVE FIELD

0	0.686
1	0.699
2	0.713
3	0.73
4	0.746
5	0.762
6	0.777
7	0.791
8	0.807
9	0.822
10	0.836
11	0.849
12	0.863
13	0.878
14	0.889
15	0.901
16	0.912
17	0.922
18	0.933
19	0.942
20	0.949
21	0.955
22	0.961
23	0.968
24	0.973
25	0.977
26	0.98
27	0.982
28	0.984
29	0.984
30	0.983
31	0.981
32	0.98
33	0.979
34	0.975
35	0.972
36	0.967
37	0.961
38	0.956
39	0.95
40	0.944
41	0.937
42	0.93
43	0.922
44	0.914

45	0.907
46	0.899
47	0.89
48	0.882
49	0.873
50	0.864
51	0.854
52	0.842
53	0.831
54	0.82
55	0.808
56	0.794
57	0.779
58	0.767
59	0.754
60	0.74
61	0.725
62	0.709
63	0.696
64	0.681
65	0.666
66	0.652
67	0.638
68	0.622
69	0.609
70	0.597
71	0.587
72	0.575
73	0.564
74	0.553
75	0.543
76	0.531
77	0.521
78	0.514
79	0.507
80	0.502
81	0.499
82	0.496
83	0.494
84	0.491
85	0.49
86	0.49
87	0.49
88	0.491
89	0.491
90	0.491

91	0.493
92	0.493
93	0.494
94	0.493
95	0.491
96	0.492
97	0.491
98	0.487
99	0.483
100	0.481
101	0.481
102	0.479
103	0.478
104	0.476
105	0.473
106	0.476
107	0.48
108	0.483
109	0.486
110	0.492
111	0.502
112	0.513
113	0.524
114	0.535
115	0.547
116	0.56
117	0.574
118	0.59
119	0.608
120	0.626
121	0.642
122	0.658
123	0.675
124	0.693
125	0.709
126	0.724
127	0.74
128	0.756
129	0.769
130	0.783
131	0.795
132	0.807
133	0.819
134	0.831
135	0.842
136	0.85

137	0.859
138	0.87
139	0.879
140	0.886
141	0.892
142	0.899
143	0.908
144	0.913
145	0.918
146	0.923
147	0.928
148	0.933
149	0.938
150	0.942
151	0.944
152	0.948
153	0.951
154	0.954
155	0.956
156	0.956
157	0.957
158	0.957
159	0.956
160	0.955
161	0.953
162	0.951
163	0.949
164	0.946
165	0.943
166	0.94
167	0.936
168	0.93
169	0.925
170	0.921
171	0.915
172	0.909
173	0.904
174	0.898
175	0.892
176	0.885
177	0.876
178	0.868
179	0.858
180	0.846
181	0.834
182	0.82

183	0.808
184	0.794
185	0.779
186	0.762
187	0.746
188	0.731
189	0.717
190	0.702
191	0.687
192	0.671
193	0.654
194	0.641
195	0.629
196	0.619
197	0.608
198	0.598
199	0.588
200	0.58
201	0.573
202	0.565
203	0.561
204	0.557
205	0.556
206	0.556
207	0.556
208	0.556
209	0.557
210	0.558
211	0.56
212	0.562
213	0.564
214	0.564
215	0.564
216	0.566
217	0.567
218	0.566
219	0.564
220	0.56
221	0.56
222	0.557
223	0.552
224	0.545
225	0.541
226	0.538
227	0.537
228	0.533

229	0.526
230	0.521
231	0.518
232	0.517
233	0.517
234	0.519
235	0.521
236	0.526
237	0.532
238	0.539
239	0.55
240	0.564
241	0.576
242	0.589
243	0.606
244	0.623
245	0.639
246	0.656
247	0.675
248	0.695
249	0.712
250	0.73
251	0.746
252	0.763
253	0.781
254	0.801
255	0.816
256	0.829
257	0.845
258	0.862
259	0.874
260	0.886
261	0.898
262	0.911
263	0.923
264	0.932
265	0.942
266	0.95
267	0.958
268	0.967
269	0.975
270	0.981
271	0.986
272	0.991
273	0.995
274	0.998

275	1
276	1
277	1
278	0.999
279	0.997
280	0.994
281	0.989
282	0.984
283	0.978
284	0.971
285	0.963
286	0.955
287	0.947
288	0.936
289	0.926
290	0.916
291	0.904
292	0.891
293	0.879
294	0.867
295	0.853
296	0.839
297	0.823
298	0.81
299	0.797
300	0.783
301	0.767
302	0.749
303	0.735
304	0.72
305	0.705
306	0.69
307	0.677
308	0.664
309	0.652
310	0.642
311	0.632
312	0.624
313	0.616
314	0.612
315	0.61
316	0.611
317	0.61
318	0.61
319	0.611
320	0.614

321	0.617
322	0.619
323	0.622
324	0.625
325	0.629
326	0.633
327	0.636
328	0.639
329	0.641
330	0.643
331	0.646
332	0.647
333	0.648
334	0.647
335	0.645
336	0.646
337	0.643
338	0.64
339	0.635
340	0.627
341	0.624
342	0.621
343	0.615
344	0.608
345	0.603
346	0.6
347	0.598
348	0.596
349	0.594
350	0.594
351	0.598
352	0.604
353	0.61
354	0.617
355	0.626
356	0.635
357	0.645
358	0.659
359	0.674

KSL REPACK ALLOTMENT STUDY RESULTS

tvstudy v2.2.2
Database: localhost, Study: KSL_RP_23, Model: Longley-Rice
Start: 2017.06.06 12:14:37

Study created: 2017.06.06 12:14:26

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KSL-TV D23 DT BL SALT LAKE CITY, UT
File number: DTVBL6359
Facility ID: 6359
Station data: LMS TV 2017-06-02 (23)
Record ID: DTVBL6359
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDT20060706AEF	251.6 km
KPNZ	D24	DT	LIC	OGDEN, UT	BLCDT20090617ABF	0.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D23
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2842.0 m
HAAT: 1267.0 m
Peak ERP: 398 kW
Antenna: KAT-K773928 (ID 19903) 0.0 deg

39.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	243 kW	1393.9 m	138.8 km
45.0	265	1348.6	138.5
90.0	96.3	1236.1	122.6
135.0	284	965.8	125.9
180.0	265	678.2	114.7
225.0	83.7	1397.9	126.2
270.0	309	1529.6	144.8
315.0	142	1507.8	135.5

Database HAAT does not agree with computed HAAT
Database HAAT: 1267 m Computed HAAT: 1257 m

ERP exceeds maximum
ERP: 398 kW ERP maximum: 91.9 kW

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLCDT20060706AEF LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance		
	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDT20060706AEF			
Undesireds:	KSL-TV	D23	DT	BL	SALT LAKE CITY, UT	DTVBL6359	251.6 km		
	KIPT	D22	DD	LIC	TWIN FALLS, ID	BLEDT20120808ABN	170.0		
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX		
26523.0	271,379	21469.4	264,204	21469.4	264,204	21281.1	264,116	0.88	0.03
Undesired		Total	IX	Unique IX, before	Unique IX, after				
KSL-TV D23 DT BL		188.2	88		188.2	88			

Interference to BLCDT20090617ABF LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance		
	KPNZ	D24	DT	LIC	OGDEN, UT	BLCDT20090617ABF			
Undesireds:	KSL-TV	D23	DT	BL	SALT LAKE CITY, UT	DTVBL6359	0.0 km		
	KSVN-CD	D25	DC	LIC	OGDEN, UT	BLDTL20100119ADN	0.1		
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX		
56046.6	2,394,311	38326.8	2,208,707	38286.5	2,208,681	38266.4	2,208,681	0.05	0.00
Undesired		Total	IX	Unique IX, before	Unique IX, after				
KSL-TV D23 DT BL		32.2	7		20.1	0			
KSVN-CD D25 DC LIC		40.2	26	40.2	26	28.1	19		

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KSL-TV	D23	DT	BL	SALT LAKE CITY, UT	DTVBL6359	
Undesireds:	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDT20060706AEF	251.6 km
	KPNZ	D24	DT	LIC	OGDEN, UT	BLCDT20090617ABF	0.0

Service area	Terrain-limited		IX-free		Percent IX		
54481.8	2,390,852	37323.7	2,206,911	37271.5	2,206,911	0.14	0.00
Undesired		Total IX		Unique IX	Prcnt Unique IX		
KPVI-DT D23 DT LIC	52.2	0	52.2	0	0.14	0.00	

**KSL PROPOSED NEW ANTENNA
(KATHREIN 75010043) STUDY RESULTS**

tvstudy v2.2.2

Database: localhost, Study: KSL_ANT_06062017, Model: Longley-Rice
Start: 2017.06.06 13:39:02

Study created: 2017.06.06 13:38:52

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KSL-TV D23 DT BL SALT LAKE CITY, UT
File number: KSL_ANT_06062017
Facility ID: 6359
Station data: User record
Record ID: 77
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDT20060706AEF	251.6 km
KPNZ	D24	DT	LIC	OGDEN, UT	BLCDT20090617ABF	0.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D23
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2842.0 m
HAAT: 1267.0 m
Peak ERP: 398 kW
Antenna: UTAH_CH23_06062017 0.0 deg

39.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	198 kW	1393.9 m	136.2 km
45.0	356	1348.6	142.1
90.0	165	1236.1	128.8
135.0	304	965.8	126.6
180.0	303	678.2	115.9
225.0	193	1397.9	136.0
270.0	389	1529.6	147.6
315.0	165	1507.8	137.2

Database HAAT does not agree with computed HAAT
Database HAAT: 1267 m Computed HAAT: 1257 m

ERP exceeds maximum
ERP: 398 kW ERP maximum: 91.9 kW

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLCDT20060706AEF LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDT20060706AEF	
Undesireds:	KSL-TV	D23	DT	BL	SALT LAKE CITY, UT	DTVBL6359	251.6 km
	KSL-TV	D23	DT	BL	SALT LAKE CITY, UT	KSL_ANT_06062017	251.6
	KIPT	D22	DD	LIC	TWIN FALLS, ID	BLEDT20120808ABN	170.0
Service area							
26523.0	271,379	21469.4	264,204	21281.1	264,116	21293.1	264,132
Undesired				Total IX	IX-free, before	IX-free, after	Percent New IX
KSL-TV D23 DT BL		188.2		88	188.2	88	
KSL-TV D23 DT BL		176.3		72		176.3	72

Interference to BLCDT20090617ABF LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KPNZ	D24	DT	LIC	OGDEN, UT	BLCDT20090617ABF	
Undesireds:	KSL-TV	D23	DT	BL	SALT LAKE CITY, UT	DTVBL6359	0.0 km
	KSL-TV	D23	DT	BL	SALT LAKE CITY, UT	KSL_ANT_06062017	0.0
	KSVN-CD	D25	DC	LIC	OGDEN, UT	BLDTL20100119ADN	0.1
Service area							
56046.6	2,394,311	38326.8	2,208,707	38266.4	2,208,681	38258.4	2,208,681
Undesired				Total IX	IX-free, before	IX-free, after	Percent New IX
KSL-TV D23 DT BL		32.2		7	20.1	0	
KSL-TV D23 DT BL		48.3		7		28.1	0
KSVN-CD D25 DC LIC		40.2		26	28.1	19	20.1
19							

Interference to proposal, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KSL-TV	D23	DT	BL	SALT LAKE CITY, UT	KSL_ANT_06062017	
Undesireds:	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDT20060706AEF	251.6 km
	KPNZ	D24	DT	LIC	OGDEN, UT	BLCDT20090617ABF	0.0
Service area		Terrain-limited			IX-free	Percent IX	
56414.7	2,390,971	38752.5	2,207,464	38704.2	2,207,464	0.12	0.00
Undesired		Total IX			Unique IX	Prcnt	Unique IX
KPVI-DT D23 DT LIC	48.3	0	48.3	0	0.12	0.00	

**KSL NEW ANTENNA PATTERN
RELATIVE FIELD VALUES**

AZIMUTH RELATIVE FIELD

0	0.705
1	0.714
2	0.725
3	0.739
4	0.754
5	0.769
6	0.786
7	0.802
8	0.817
9	0.832
10	0.849
11	0.863
12	0.876
13	0.892
14	0.906
15	0.917
16	0.928
17	0.939
18	0.947
19	0.955
20	0.961
21	0.966
22	0.969
23	0.971
24	0.973
25	0.974
26	0.975
27	0.974
28	0.973
29	0.972
30	0.971
31	0.969
32	0.968
33	0.967
34	0.966
35	0.965
36	0.965
37	0.964
38	0.963
39	0.961
40	0.96
41	0.959
42	0.956
43	0.953
44	0.95

45	0.946
46	0.941
47	0.933
48	0.923
49	0.914
50	0.906
51	0.896
52	0.882
53	0.871
54	0.859
55	0.846
56	0.833
57	0.818
58	0.802
59	0.789
60	0.775
61	0.758
62	0.742
63	0.727
64	0.712
65	0.695
66	0.677
67	0.659
68	0.644
69	0.626
70	0.613
71	0.602
72	0.589
73	0.58
74	0.572
75	0.566
76	0.561
77	0.561
78	0.563
79	0.563
80	0.566
81	0.573
82	0.582
83	0.591
84	0.599
85	0.606
86	0.614
87	0.625
88	0.633
89	0.638
90	0.644

91	0.653
92	0.658
93	0.662
94	0.665
95	0.667
96	0.667
97	0.667
98	0.665
99	0.66
100	0.652
101	0.648
102	0.644
103	0.639
104	0.632
105	0.624
106	0.616
107	0.611
108	0.606
109	0.602
110	0.598
111	0.595
112	0.596
113	0.599
114	0.604
115	0.61
116	0.619
117	0.63
118	0.641
119	0.652
120	0.665
121	0.681
122	0.7
123	0.716
124	0.732
125	0.749
126	0.764
127	0.779
128	0.793
129	0.809
130	0.822
131	0.834
132	0.845
133	0.855
134	0.865
135	0.874
136	0.882

137	0.89
138	0.899
139	0.905
140	0.911
141	0.916
142	0.919
143	0.923
144	0.927
145	0.929
146	0.929
147	0.93
148	0.932
149	0.933
150	0.936
151	0.937
152	0.938
153	0.939
154	0.94
155	0.942
156	0.944
157	0.946
158	0.948
159	0.951
160	0.954
161	0.958
162	0.96
163	0.962
164	0.964
165	0.967
166	0.968
167	0.968
168	0.967
169	0.966
170	0.963
171	0.959
172	0.952
173	0.944
174	0.936
175	0.929
176	0.919
177	0.905
178	0.896
179	0.884
180	0.872
181	0.857
182	0.844

183	0.831
184	0.82
185	0.806
186	0.79
187	0.773
188	0.758
189	0.745
190	0.731
191	0.717
192	0.705
193	0.693
194	0.678
195	0.669
196	0.661
197	0.654
198	0.65
199	0.646
200	0.644
201	0.645
202	0.649
203	0.652
204	0.656
205	0.662
206	0.67
207	0.682
208	0.69
209	0.697
210	0.705
211	0.717
212	0.725
213	0.731
214	0.737
215	0.741
216	0.744
217	0.747
218	0.747
219	0.745
220	0.741
221	0.734
222	0.729
223	0.72
224	0.709
225	0.696
226	0.685
227	0.674
228	0.662

229	0.648
230	0.632
231	0.618
232	0.608
233	0.598
234	0.59
235	0.584
236	0.579
237	0.579
238	0.581
239	0.585
240	0.593
241	0.603
242	0.617
243	0.631
244	0.646
245	0.664
246	0.682
247	0.701
248	0.72
249	0.741
250	0.759
251	0.777
252	0.796
253	0.813
254	0.831
255	0.849
256	0.864
257	0.878
258	0.892
259	0.906
260	0.917
261	0.929
262	0.939
263	0.947
264	0.957
265	0.965
266	0.971
267	0.976
268	0.981
269	0.985
270	0.989
271	0.992
272	0.994
273	0.995
274	0.997

275	0.999
276	1
277	1
278	1
279	1
280	1
281	0.999
282	0.997
283	0.995
284	0.992
285	0.988
286	0.983
287	0.976
288	0.968
289	0.959
290	0.948
291	0.937
292	0.924
293	0.908
294	0.894
295	0.879
296	0.862
297	0.841
298	0.825
299	0.81
300	0.794
301	0.776
302	0.757
303	0.741
304	0.727
305	0.712
306	0.699
307	0.686
308	0.675
309	0.665
310	0.656
311	0.649
312	0.644
313	0.642
314	0.641
315	0.643
316	0.648
317	0.654
318	0.662
319	0.669
320	0.678

321	0.689
322	0.703
323	0.715
324	0.724
325	0.737
326	0.754
327	0.765
328	0.776
329	0.785
330	0.793
331	0.802
332	0.808
333	0.813
334	0.816
335	0.816
336	0.815
337	0.815
338	0.812
339	0.807
340	0.799
341	0.791
342	0.785
343	0.776
344	0.765
345	0.751
346	0.74
347	0.729
348	0.719
349	0.709
350	0.699
351	0.689
352	0.683
353	0.679
354	0.676
355	0.675
356	0.678
357	0.684
358	0.689
359	0.696

KTVX REPACK ALLOTMENT STUDY RESULTS

tvstudy v2.2.2

Database: localhost, Study: KTVX_RP_30, Model: Longley-Rice

Start: 2017.06.06 12:16:52

Study created: 2017.06.06 12:16:39

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KTVX D30 DT BL SALT LAKE CITY, UT

File number: DTVBL68889

Facility ID: 68889

Station data: LMS TV 2017-06-02 (23)

Record ID: DTVBL68889

Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP	0.6 km
KVUI	D31	DT	LIC	POCATELLO, ID	BLCDT20081121ALB	251.7

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D30

Latitude: 40 39 32.80 N (NAD83)

Longitude: 112 12 9.80 W

Height AMSL: 2831.7 m

HAAT: 1256.0 m

Peak ERP: 389 kW

Antenna: KAT-773 928 (ID 27794) 0.0 deg

40.3 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	225 kW	1383.6 m	135.6 km
45.0	212	1338.3	133.5
90.0	159	1225.8	126.1
135.0	327	955.5	125.4
180.0	136	667.9	106.8
225.0	104	1387.6	126.5
270.0	387	1519.3	145.4
315.0	152	1497.5	134.3

Database HAAT does not agree with computed HAAT
Database HAAT: 1256 m Computed HAAT: 1247 m

ERP exceeds maximum
ERP: 389 kW ERP maximum: 93.2 kW

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLCDT20020510AAP LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP	
Undesireds:	KTVX	D30	DT	BL	SALT LAKE CITY, UT	DTVBL68889	0.6 km
	KSTU	D28	DT	LIC	SALT LAKE CITY, UT	BLCDT20120305ABX	0.6
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
43596.3	2,374,672	27955.0	2,191,229	27733.9	2,189,607	27480.6	2,188,960
Undesired			Total IX		Unique IX, before	Unique IX, after	
KTVX D30 DT BL		470.3	2,269		253.3	647	
KSTU D28 DT LIC		221.1	1,622	221.1	1,622	4.1	0

Interference to BLCDT20081121ALB LIC, scenario 1

Proposal causes no interference.

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KTVX	D30	DT	BL	SALT LAKE CITY, UT	DTVBL68889	
Undesireds:	KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP	0.6 km
	Service area		Terrain-limited		IX-free	Percent IX	
52810.2	2,387,093	35580.8	2,203,549	35528.6	2,199,157	0.15	0.20
Undesired			Total IX		Unique IX	Prcnt Unique IX	
KUPX-TV D29 DT LIC		52.2	4,392	52.2	4,392	0.15	0.20

**KTVX PROPOSED NEW ANTENNA
(KATHREIN 75010043) STUDY RESULTS**

tvstudy v2.2.2

Database: localhost, Study: KTVX_ANT_06062017, Model: Longley-Rice
Start: 2017.06.06 13:41:42

Study created: 2017.06.06 13:41:30

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KTVX D30 DT BL SALT LAKE CITY, UT
File number: KTVX_ANT_06062017
Facility ID: 68889
Station data: User record
Record ID: 78
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP	0.6 km
KVUI	D31	DT	LIC	POCATELLO, ID	BLCDT20081121ALB	251.7

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D30
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2831.7 m
HAAT: 1256.0 m
Peak ERP: 389 kW
Antenna: UTAH_CH30_06062017 0.0 deg

40.3 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	196 kW	1383.6 m	134.0 km
45.0	339	1338.3	139.3
90.0	208	1225.8	129.4
135.0	343	955.5	125.9
180.0	317	667.9	114.4
225.0	214	1387.6	135.1
270.0	344	1519.3	144.1
315.0	137	1497.5	133.0

Database HAAT does not agree with computed HAAT
Database HAAT: 1256 m Computed HAAT: 1247 m

ERP exceeds maximum
ERP: 389 kW ERP maximum: 93.2 kW

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLCDT20020510AAP LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance		
	KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP			
Undesireds:	KTVX	D30	DT	BL	SALT LAKE CITY, UT	DTVBL68889	0.6 km		
	KTVX	D30	DT	BL	SALT LAKE CITY, UT	KTVX_ANT_06062017	0.6		
	KSTU	D28	DT	LIC	SALT LAKE CITY, UT	BLCDT20120305ABX	0.6		
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX		
43596.3	2,374,672	27955.0	2,191,229	27480.6	2,188,960	27456.5	2,188,960	0.09	0.00
Undesired		Total IX			Unique IX, before	Unique IX, after			
KTVX D30 DT BL		470.3	2,269	253.3	647				
KTVX D30 DT BL		494.5	2,269		277.4	647			
KSTU D28 DT LIC		221.1	1,622	4.1	0	4.1	0		

Interference to BLCDT20081121ALB LIC, scenario 1

Proposal causes no interference.

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KTVX	D30	DT	BL	SALT LAKE CITY, UT	KTVX_ANT_06062017	
Undesireds:	KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP	0.6 km
Service area		Terrain-limited			IX-free	Percent IX	
55036.8	2,389,673	37200.1	2,203,585	37143.9	2,199,193	0.15	0.20
Undesired		Total IX			Unique IX	Prcnt Unique IX	
KUPX-TV D29 DT LIC		56.2	4,392	56.2	4,392	0.15	0.20

**KTVX NEW ANTENNA PATTERN
RELATIVE FIELD VALUES**

AZIMUTH RELATIVE FIELD

0	0.71
1	0.726
2	0.744
3	0.765
4	0.788
5	0.812
6	0.834
7	0.856
8	0.879
9	0.9
10	0.919
11	0.936
12	0.949
13	0.963
14	0.974
15	0.984
16	0.99
17	0.995
18	0.998
19	0.999
20	1
21	0.999
22	0.996
23	0.992
24	0.988
25	0.984
26	0.981
27	0.977
28	0.972
29	0.968
30	0.963
31	0.958
32	0.952
33	0.947
34	0.943
35	0.939
36	0.936
37	0.933
38	0.931
39	0.929
40	0.929
41	0.929
42	0.93
43	0.931
44	0.931

45	0.934
46	0.936
47	0.938
48	0.939
49	0.937
50	0.937
51	0.935
52	0.928
53	0.919
54	0.911
55	0.9
56	0.884
57	0.869
58	0.849
59	0.829
60	0.809
61	0.786
62	0.762
63	0.736
64	0.71
65	0.685
66	0.661
67	0.637
68	0.616
69	0.591
70	0.57
71	0.556
72	0.543
73	0.533
74	0.527
75	0.525
76	0.527
77	0.534
78	0.544
79	0.558
80	0.572
81	0.587
82	0.605
83	0.626
84	0.644
85	0.661
86	0.676
87	0.693
88	0.711
89	0.721
90	0.731

91	0.743
92	0.751
93	0.757
94	0.761
95	0.763
96	0.763
97	0.76
98	0.755
99	0.749
100	0.74
101	0.728
102	0.719
103	0.709
104	0.697
105	0.683
106	0.666
107	0.653
108	0.644
109	0.63
110	0.617
111	0.607
112	0.601
113	0.598
114	0.599
115	0.602
116	0.608
117	0.618
118	0.63
119	0.644
120	0.662
121	0.68
122	0.701
123	0.726
124	0.753
125	0.776
126	0.797
127	0.818
128	0.839
129	0.86
130	0.88
131	0.894
132	0.907
133	0.92
134	0.93
135	0.939
136	0.946

137	0.95
138	0.953
139	0.955
140	0.957
141	0.956
142	0.953
143	0.949
144	0.946
145	0.943
146	0.938
147	0.934
148	0.93
149	0.927
150	0.924
151	0.923
152	0.922
153	0.921
154	0.922
155	0.924
156	0.927
157	0.931
158	0.935
159	0.939
160	0.944
161	0.948
162	0.953
163	0.958
164	0.963
165	0.969
166	0.974
167	0.977
168	0.98
169	0.982
170	0.985
171	0.986
172	0.986
173	0.983
174	0.978
175	0.973
176	0.963
177	0.951
178	0.936
179	0.92
180	0.903
181	0.882
182	0.859

183	0.837
184	0.812
185	0.788
186	0.764
187	0.741
188	0.715
189	0.691
190	0.672
191	0.656
192	0.642
193	0.632
194	0.623
195	0.617
196	0.616
197	0.617
198	0.623
199	0.633
200	0.642
201	0.653
202	0.668
203	0.686
204	0.702
205	0.718
206	0.734
207	0.75
208	0.769
209	0.782
210	0.794
211	0.809
212	0.822
213	0.829
214	0.835
215	0.838
216	0.841
217	0.84
218	0.837
219	0.83
220	0.822
221	0.808
222	0.793
223	0.78
224	0.763
225	0.741
226	0.717
227	0.696
228	0.678

229	0.658
230	0.636
231	0.617
232	0.6
233	0.587
234	0.577
235	0.572
236	0.571
237	0.574
238	0.582
239	0.594
240	0.607
241	0.624
242	0.644
243	0.67
244	0.697
245	0.723
246	0.746
247	0.769
248	0.793
249	0.816
250	0.84
251	0.858
252	0.876
253	0.892
254	0.906
255	0.918
256	0.929
257	0.935
258	0.941
259	0.946
260	0.95
261	0.952
262	0.952
263	0.951
264	0.95
265	0.949
266	0.947
267	0.945
268	0.943
269	0.941
270	0.94
271	0.94
272	0.939
273	0.939
274	0.94

275	0.941
276	0.943
277	0.945
278	0.947
279	0.95
280	0.954
281	0.958
282	0.961
283	0.964
284	0.967
285	0.97
286	0.973
287	0.974
288	0.975
289	0.975
290	0.975
291	0.972
292	0.972
293	0.967
294	0.961
295	0.953
296	0.943
297	0.927
298	0.91
299	0.893
300	0.874
301	0.851
302	0.825
303	0.795
304	0.766
305	0.74
306	0.715
307	0.689
308	0.666
309	0.64
310	0.621
311	0.606
312	0.596
313	0.591
314	0.59
315	0.593
316	0.601
317	0.614
318	0.632
319	0.651
320	0.671

321	0.692
322	0.716
323	0.744
324	0.766
325	0.788
326	0.814
327	0.837
328	0.856
329	0.873
330	0.887
331	0.901
332	0.913
333	0.921
334	0.926
335	0.929
336	0.927
337	0.922
338	0.919
339	0.911
340	0.901
341	0.887
342	0.872
343	0.858
344	0.839
345	0.818
346	0.796
347	0.776
348	0.758
349	0.74
350	0.72
351	0.701
352	0.687
353	0.677
354	0.67
355	0.666
356	0.666
357	0.67
358	0.68
359	0.694

KUTV REPACK ALLOTMENT STUDY RESULTS

tvstudy v2.2.2

Database: localhost, Study: KUTV_RP_34, Model: Longley-Rice
Start: 2017.06.06 12:17:58

Study created: 2017.06.06 12:17:47

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KUTV D34 DT BL SALT LAKE CITY, UT
File number: DTVBL35823
Facility ID: 35823
Station data: LMS TV 2017-06-02 (23)
Record ID: DTVBL35823
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
K49ND-D	D34	DC	CP	FISH CREEK, ETC., ID	BLANK0000024534	239.9 km
K49ND-D	D34	DC	BL	FISH CREEK, ETC., ID	DTVBL66257	239.9
KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	294.1
KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D34
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2842.0 m
HAAT: 1267.0 m
Peak ERP: 423 kW
Antenna: KAT-K773928 (ID 39866) 0.0 deg

40.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	224 kW	1393.9 m	132.7 km
45.0	254	1348.6	132.9
90.0	170	1236.1	124.5
135.0	355	965.8	124.6
180.0	149	678.2	106.7
225.0	168	1397.9	129.4
270.0	378	1529.6	142.2
315.0	203	1507.8	134.6

Database HAAT does not agree with computed HAAT

Database HAAT: 1267 m Computed HAAT: 1257 m

ERP exceeds maximum

ERP: 423 kW ERP maximum: 91.9 kW

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA

Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

Interference to BLANK0000024534 CP, scenario 1
Proposal causes no interference.

Interference to DTVBL66257 BL, scenario 1
Proposal causes no interference.

Interference to BLCDT20110201ACB LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	
Undesireds:	KUTV	D34	DT	BL	SALT LAKE CITY, UT	DTVBL35823	294.1 km
	K49ND-D	D34	DC	CP	FISH CREEK, ETC., ID	BLANK0000024534	157.3
Service area							
8767.9	121,558	8580.1		121,383	8580.1	IX-free, before	IX-free, after
						8572.1	121,383
Undesired				Total IX	Unique IX, before	Unique IX, after	Percent New IX
KUTV D34 DT BL		8.0		0		8.0	0

Interference to BLCDT20110201ACB LIC, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	
Undesireds:	KUTV	D34	DT	BL	SALT LAKE CITY, UT	DTVBL35823	294.1 km
	K49ND-D	D34	DC	BL	FISH CREEK, ETC., ID	DTVBL66257	157.3
Service area							
8767.9	121,558	8580.1		121,383	8580.1	IX-free, before	IX-free, after
						8572.1	121,383
Undesired				Total IX	Unique IX, before	Unique IX, after	Percent New IX
KUTV D34 DT BL		8.0		0		8.0	0

Interference to DTVBL1136 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance	
	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136		
Undesireds:	KUTV	D34	DT	BL	SALT LAKE CITY, UT	DTVBL35823	0.0 km	
	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	0.0	
Service area			Terrain-limited		IX-free, before	IX-free, after	Percent New IX	
43867.2	2,351,680	28916.0	2,176,798	28912.0	2,176,798	28887.9	2,176,791	0.08 0.00
Undesired		Total	IX		Unique IX, before	Unique IX, after		
KUTV D34 DT BL		28.2		7		24.2	7	
KUEN D36 DT LIC		4.0		0	4.0	0.0	0	

Interference to DTVBL1136 BL, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance	
	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136		
Undesireds:	KUTV	D34	DT	BL	SALT LAKE CITY, UT	DTVBL35823	0.0 km	
	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	0.0	
Service area			Terrain-limited		IX-free, before	IX-free, after	Percent New IX	
43867.2	2,351,680	28916.0	2,176,798	28912.0	2,176,798	28887.9	2,176,791	0.08 0.00
Undesired		Total	IX		Unique IX, before	Unique IX, after		
KUTV D34 DT BL		28.2		7		24.2	7	
KUEN D36 DT LIC		4.0		0	4.0	0.0	0	

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUTV	D34	DT	BL	SALT LAKE CITY, UT	DTVBL35823	

Undesireds:	K49ND-D	D34	DC	CP	FISH CREEK, ETC., ID	BLANK0000024534	239.9 km
	KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	294.1
	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0

Service area		Terrain-limited		IX-free		Percent IX	
52265.0	2,388,211	34450.3	2,192,425	34446.2	2,192,425	0.01	0.00

Undesired				Total IX	Unique IX	Prcnt Unique IX	Unique IX		
K49ND-D	D34	DC	CP	4.0	0	4.0	0	0.01	0.00

Interference to proposal, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUTV	D34	DT	BL	SALT LAKE CITY, UT	DTVBL35823	

Undesireds:	K49ND-D	D34	DC	BL	FISH CREEK, ETC., ID	DTVBL66257	239.9 km
	KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	294.1
	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0

Service area		Terrain-limited		IX-free		Percent IX	
52265.0	2,388,211	34450.3	2,192,425	34446.2	2,192,425	0.01	0.00

Undesired				Total IX	Unique IX	Prcnt Unique IX	Unique IX		
K49ND-D	D34	DC	BL	4.0	0	4.0	0	0.01	0.00

**KUTV PROPOSED NEW ANTENNA
(KATHREIN 75010043) STUDY RESULTS**

tvstudy v2.2.2

Database: localhost, Study: KUTV_ANT_06062017, Model: Longley-Rice

Start: 2017.06.06 13:45:00

Study created: 2017.06.06 13:44:50

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KUTV D34 DT BL SALT LAKE CITY, UT

File number: KUTV_ANT_06062017

Facility ID: 35823

Station data: User record

Record ID: 79

Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
K49ND-D	D34	DC	CP	FISH CREEK, ETC., ID	BLANK0000024534	239.9 km
K49ND-D	D34	DC	BL	FISH CREEK, ETC., ID	DTVBL66257	239.9
KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	294.1
KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D34

Latitude: 40 39 32.80 N (NAD83)

Longitude: 112 12 9.80 W

Height AMSL: 2842.0 m

HAAT: 1267.0 m

Peak ERP: 423 kW

Antenna: UTAH_CH34_06062017 0.0 deg

40.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	166 kW	1393.9 m	129.1 km
45.0	369	1348.6	137.5
90.0	165	1236.1	124.2
135.0	349	965.8	124.4
180.0	325	678.2	113.7
225.0	147	1397.9	127.8
270.0	379	1529.6	142.2
315.0	107	1507.8	127.4

Database HAAT does not agree with computed HAAT

Database HAAT: 1267 m Computed HAAT: 1257 m

ERP exceeds maximum

ERP: 423 kW ERP maximum: 91.9 kW

**Proposal service area extends beyond baseline plus 1.0%

Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA

Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

Interference to BLANK0000024534 CP, scenario 1

Proposal causes no interference.

Interference to DTVBL66257 BL, scenario 1

Proposal causes no interference.

Interference to BLCDT20110201ACB LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	
Undesireds:	KUTV	D34	DT	BL	SALT LAKE CITY, UT	DTVBL35823	294.1 km
	KUTV	D34	DT	BL	SALT LAKE CITY, UT	KUTV_ANT_06062017	294.1
	K49ND-D	D34	DC	CP	FISH CREEK, ETC., ID	BLANK0000024534	157.3
	Service area						
8767.9	121,558	8580.1		121,383	8572.1	IX-free, before	IX-free, after
						8576.1	121,383
						Percent New IX	
						-0.05	0.00
Undesired				Total IX	Unique IX, before	Unique IX, after	
KUTV	D34	DT	BL	8.0	0	8.0	0
KUTV	D34	DT	BL	4.0	0	4.0	0

Interference to BLCDT20110201ACB LIC, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	
Undesireds:	KUTV	D34	DT	BL	SALT LAKE CITY, UT	DTVBL35823	294.1 km
	KUTV	D34	DT	BL	SALT LAKE CITY, UT	KUTV_ANT_06062017	294.1
	K49ND-D	D34	DC	BL	FISH CREEK, ETC., ID	DTVBL66257	157.3

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
8767.9	121,558	8580.1	121,383	8572.1	121,383	8576.1	121,383	-0.05 0.00
<hr/>								
Undesired		Total IX		Unique IX, before		Unique IX, after		
KUTV D34 DT BL		8.0	0	8.0	0			
KUTV D34 DT BL		4.0	0			4.0	0	

Interference to DTVBL1136 BL, scenario 1

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
43867.2	2,351,680	28916.0	2,176,798	28887.9	2,176,791	28883.9	2,176,791	0.01 0.00
<hr/>								
Undesired		Total IX		Unique IX, before		Unique IX, after		
KUTV D34 DT BL		28.2	7	24.2	7			
KUTV D34 DT BL		32.2	7			28.2	7	
KUEN D36 DT LIC		4.0	0	0.0	0	0.0	0	

Interference to DTVBL1136 BL, scenario 2

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
43867.2	2,351,680	28916.0	2,176,798	28887.9	2,176,791	28883.9	2,176,791	0.01 0.00
<hr/>								
Undesired		Total IX		Unique IX, before		Unique IX, after		
KUTV D34 DT BL		28.2	7	24.2	7			
KUTV D34 DT BL		32.2	7			28.2	7	
KUEN D36 DT LIC		4.0	0	0.0	0	0.0	0	

Undesired	Total IX	Unique IX, before	Unique IX, after
KUTV D34 DT BL	28.2	7	24.2
KUTV D34 DT BL	32.2	7	28.2
KUEN D36 DT LIC	4.0	0	0.0
		0	0.0
		0	0

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUTV	D34	DT	BL	SALT LAKE CITY, UT	KUTV_ANT_06062017	
Undesireds:	K49ND-D	D34	DC	CP	FISH CREEK, ETC., ID	BLANK0000024534	239.9 km
	KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	294.1
	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0
	Service area				Terrain-limited	IX-free	Percent IX
52027.0	2,388,607	34588.9	2,192,009	34584.8	2,192,009	0.01	0.00
Undesired					Total IX	Unique IX	Prcnt Unique IX
K49ND-D D34 DC CP		4.0		0	4.0	0	0.01 0.00

Interference to proposal, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUTV	D34	DT	BL	SALT LAKE CITY, UT	KUTV_ANT_06062017	
Undesireds:	K49ND-D	D34	DC	BL	FISH CREEK, ETC., ID	DTVBL66257	239.9 km
	KXTF	D34	DT	LIC	TWIN FALLS, ID	BLCDT20110201ACB	294.1
	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0
					Terrain-limited	IX-free	Percent IX
52027.0	2,388,607	34588.9	2,192,009	34584.8	2,192,009	0.01	0.00
Undesired					Total IX	Unique IX	Prcnt Unique IX
K49ND-D D34 DC BL		4.0		0	4.0	0	0.01 0.00

**KUTV NEW ANTENNA PATTERN
RELATIVE FIELD VALUES**

AZIMUTH RELATIVE FIELD

0	0.626
1	0.651
2	0.678
3	0.705
4	0.733
5	0.761
6	0.789
7	0.814
8	0.838
9	0.861
10	0.882
11	0.903
12	0.92
13	0.936
14	0.95
15	0.962
16	0.973
17	0.982
18	0.989
19	0.994
20	0.998
21	1
22	1
23	0.998
24	0.995
25	0.992
26	0.988
27	0.983
28	0.978
29	0.973
30	0.967
31	0.962
32	0.956
33	0.952
34	0.949
35	0.945
36	0.943
37	0.941
38	0.941
39	0.941
40	0.941
41	0.94
42	0.94
43	0.939
44	0.936

45	0.934
46	0.932
47	0.929
48	0.924
49	0.918
50	0.912
51	0.907
52	0.899
53	0.89
54	0.879
55	0.87
56	0.858
57	0.844
58	0.829
59	0.809
60	0.791
61	0.77
62	0.748
63	0.725
64	0.701
65	0.673
66	0.642
67	0.614
68	0.587
69	0.56
70	0.533
71	0.507
72	0.485
73	0.465
74	0.449
75	0.438
76	0.43
77	0.427
78	0.429
79	0.44
80	0.451
81	0.465
82	0.481
83	0.5
84	0.522
85	0.542
86	0.56
87	0.578
88	0.595
89	0.611
90	0.625

91	0.637
92	0.646
93	0.653
94	0.657
95	0.659
96	0.657
97	0.653
98	0.646
99	0.635
100	0.623
101	0.608
102	0.589
103	0.571
104	0.552
105	0.533
106	0.512
107	0.49
108	0.474
109	0.461
110	0.449
111	0.442
112	0.442
113	0.447
114	0.455
115	0.466
116	0.481
117	0.5
118	0.523
119	0.548
120	0.576
121	0.603
122	0.631
123	0.661
124	0.692
125	0.721
126	0.747
127	0.773
128	0.794
129	0.816
130	0.836
131	0.855
132	0.87
133	0.884
134	0.896
135	0.908
136	0.918

137	0.927
138	0.934
139	0.939
140	0.945
141	0.949
142	0.952
143	0.953
144	0.954
145	0.955
146	0.956
147	0.955
148	0.954
149	0.953
150	0.951
151	0.95
152	0.949
153	0.948
154	0.948
155	0.948
156	0.949
157	0.95
158	0.952
159	0.955
160	0.958
161	0.961
162	0.965
163	0.97
164	0.974
165	0.978
166	0.981
167	0.985
168	0.986
169	0.985
170	0.984
171	0.982
172	0.978
173	0.972
174	0.963
175	0.953
176	0.943
177	0.928
178	0.912
179	0.894
180	0.876
181	0.857
182	0.835

183	0.812
184	0.786
185	0.759
186	0.731
187	0.703
188	0.674
189	0.644
190	0.612
191	0.579
192	0.552
193	0.528
194	0.509
195	0.493
196	0.481
197	0.475
198	0.474
199	0.479
200	0.488
201	0.5
202	0.514
203	0.532
204	0.553
205	0.571
206	0.589
207	0.606
208	0.623
209	0.639
210	0.652
211	0.666
212	0.676
213	0.685
214	0.689
215	0.692
216	0.692
217	0.689
218	0.685
219	0.678
220	0.669
221	0.656
222	0.639
223	0.624
224	0.607
225	0.59
226	0.57
227	0.55
228	0.532

229	0.516
230	0.498
231	0.483
232	0.472
233	0.468
234	0.468
235	0.473
236	0.481
237	0.492
238	0.508
239	0.527
240	0.548
241	0.571
242	0.597
243	0.625
244	0.654
245	0.683
246	0.707
247	0.731
248	0.755
249	0.777
250	0.798
251	0.82
252	0.839
253	0.855
254	0.87
255	0.884
256	0.896
257	0.905
258	0.914
259	0.921
260	0.929
261	0.936
262	0.94
263	0.944
264	0.946
265	0.947
266	0.949
267	0.948
268	0.948
269	0.947
270	0.946
271	0.945
272	0.944
273	0.944
274	0.944

275	0.945
276	0.946
277	0.947
278	0.95
279	0.953
280	0.956
281	0.96
282	0.965
283	0.97
284	0.974
285	0.977
286	0.979
287	0.981
288	0.981
289	0.979
290	0.977
291	0.973
292	0.967
293	0.959
294	0.949
295	0.937
296	0.925
297	0.907
298	0.889
299	0.869
300	0.849
301	0.828
302	0.806
303	0.781
304	0.754
305	0.727
306	0.699
307	0.672
308	0.644
309	0.617
310	0.589
311	0.562
312	0.54
313	0.523
314	0.512
315	0.504
316	0.501
317	0.502
318	0.509
319	0.523
320	0.537

321	0.554
322	0.572
323	0.592
324	0.612
325	0.631
326	0.651
327	0.67
328	0.687
329	0.7
330	0.713
331	0.722
332	0.731
333	0.738
334	0.742
335	0.745
336	0.743
337	0.738
338	0.733
339	0.724
340	0.713
341	0.699
342	0.682
343	0.665
344	0.647
345	0.627
346	0.605
347	0.582
348	0.564
349	0.547
350	0.534
351	0.522
352	0.516
353	0.515
354	0.518
355	0.524
356	0.536
357	0.551
358	0.573
359	0.599

KUCW REPACK ALLOTMENT STUDY RESULTS

tvstudy v2.2.2

Database: localhost, Study: KUCW_RP_35, Model: Longley-Rice

Start: 2017.06.06 12:21:00

Study created: 2017.06.06 12:20:47

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KUCW D35 DT BL OGDEN, UT

File number: DTVBL1136

Facility ID: 1136

Station data: LMS TV 2017-06-02 (23)

Record ID: DTVBL1136

Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KUTV	D34	DT	LIC	SALT LAKE CITY, UT	BLCDT20020211AAD	0.0 km
KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	0.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D35

Latitude: 40 39 32.80 N (NAD83)

Longitude: 112 12 9.80 W

Height AMSL: 2832.0 m

HAAT: 1257.0 m

Peak ERP: 157 kW

Antenna: KAT-773 928 (ID 41318) 0.0 deg

40.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	81.4 kW	1383.9 m	122.5 km
45.0	105	1338.6	124.0
90.0	39.6	1226.1	110.8
135.0	113	955.8	114.1
180.0	96.5	668.2	102.9
225.0	39.0	1387.9	114.7
270.0	150	1519.6	133.5
315.0	46.9	1497.8	119.8

Database HAAT does not agree with computed HAAT
Database HAAT: 1257 m Computed HAAT: 1247 m

ERP exceeds maximum
ERP: 157 kW ERP maximum: 93.1 kW

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLCDT20020211AAD LIC, scenario 1

Proposal causes no interference.

Interference to BLCDT20020211AAD LIC, scenario 2

Proposal causes no interference.

Interference to BLEDT20030528ACQ LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	
Undesireds:	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0 km
	KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	317.8
	Service area	Terrain-limited			IX-free, before	IX-free, after	Percent New IX
46073.8	2,361,296	30194.6	2,182,988	30170.4	2,182,982	30166.3	2,182,982
Undesired		Total	IX		Unique IX, before	Unique IX, after	
KUCW D35 DT BL		4.0		0		4.0	0
KIDK D36 DT LIC		24.2		6	24.2	24.2	6

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	
Undesireds:	KUTV	D34	DT	LIC	SALT LAKE CITY, UT	BLCDT20020211AAD	0.0 km
	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	0.0
	Service area	Terrain-limited			IX-free	Percent IX	
43867.2	2,351,680	28916.0	2,176,798	28879.8	2,176,791	0.13	0.00
Undesired		Total	IX		Unique IX	Prcnt Unique IX	
KUTV D34 DT LIC		36.2		7	32.2	0.11	0.00
KUEN D36 DT LIC		4.0		0	0.0	0.00	0.00

Interference to proposal, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	

Undesireds:	KUTV	D34	DT	LIC	SALT LAKE CITY, UT	BLCDT20020211AAD	0.0 km
	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	0.0

Service area	Terrain-limited			IX-free	Percent IX	
43867.2 2,351,680	28916.0	2,176,798	28879.8	2,176,791	0.13	0.00

Undesired	Total	IX		Unique IX	Prcnt	Unique IX
KUTV D34 DT LIC	36.2	7		7	0.11	0.00
KUEN D36 DT LIC	4.0	0		0	0.00	0.00

**KUCW PROPOSED NEW ANTENNA
(KATHREIN 75010043) STUDY RESULTS**

tvstudy v2.2.2

Database: localhost, Study: KUCW_ANT_06062017, Model: Longley-Rice
Start: 2017.06.06 13:47:31

Study created: 2017.06.06 13:47:18

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KUCW D35 DT BL OGDEN, UT
File number: KUCW_ANT_06062017
Facility ID: 1136
Station data: User record
Record ID: 80
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KUTV	D34	DT	LIC	SALT LAKE CITY, UT	BLCDT20020211AAD	0.0 km
KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	0.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D35
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2832.0 m
HAAT: 1257.0 m
Peak ERP: 157 kW
Antenna: UTAH_CH35_06062017 0.0 deg

40.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	61.5 kW	1383.9 m	119.5 km
45.0	137	1338.6	127.0
90.0	61.3	1226.1	115.1
135.0	129	955.8	115.4
180.0	120	668.2	104.9
225.0	54.7	1387.9	118.3
270.0	141	1519.6	132.8
315.0	39.9	1497.8	118.0

Database HAAT does not agree with computed HAAT
Database HAAT: 1257 m Computed HAAT: 1247 m

ERP exceeds maximum
ERP: 157 kW ERP maximum: 93.1 kW

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLCDT20020211AAD LIC, scenario 1

Proposal causes no interference.

Interference to BLCDT20020211AAD LIC, scenario 2

Proposal causes no interference.

Interference to BLEDT20030528ACQ LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	
Undesireds:	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0 km
	KUCW	D35	DT	BL	OGDEN, UT	KUCW_ANT_06062017	0.0
	KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	317.8
Service area					Terrain-limited	IX-free, before	IX-free, after
46073.8	2,361,296	30194.6	2,182,988	30166.3	2,182,982	30166.3	2,182,982
Undesired				Total IX	Unique IX, before	Unique IX, after	Percent New IX
KUCW D35 DT BL		4.0		0	4.0	0	
KUCW D35 DT BL		4.0		0		4.0	0
KIDK D36 DT LIC		24.2		6	24.2	6	24.2

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUCW	D35	DT	BL	OGDEN, UT	KUCW_ANT_06062017	
Undesireds:	KUTV	D34	DT	LIC	SALT LAKE CITY, UT	BLCDT20020211AAD	0.0 km
	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	0.0
Service area				Terrain-limited	IX-free	Percent IX	
44743.8	2,356,945	29402.2	2,179,000	29365.9	2,178,993	0.12	0.00

Undesired	Total IX		Unique IX	Prcnt	Unique IX
KUTV D34 DT LIC	36.2	7	32.2	7	0.11 0.00
KUEN D36 DT LIC	4.0	0	0.0	0	0.00 0.00

Interference to proposal, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUCW	D35	DT	BL	OGDEN, UT	KUCW_ANT_06062017	
Undesireds:	KUTV	D34	DT	LIC	SALT LAKE CITY, UT	BLCDT20020211AAD	0.0 km
	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	0.0

Service area	Terrain-limited		IX-free		Percent IX
44743.8 2,356,945	29402.2	2,179,000	29365.9	2,178,993	0.12 0.00

Undesired	Total IX		Unique IX	Prcnt	Unique IX
KUTV D34 DT LIC	36.2	7	32.2	7	0.11 0.00
KUEN D36 DT LIC	4.0	0	0.0	0	0.00 0.00

KUCW NEW ANTENNA PATTERN

RELATIVE FIELD VALUES

AZIMUTH RELATIVE FIELD

0	0.626
1	0.651
2	0.678
3	0.705
4	0.733
5	0.761
6	0.789
7	0.814
8	0.838
9	0.861
10	0.882
11	0.903
12	0.92
13	0.936
14	0.95
15	0.962
16	0.973
17	0.982
18	0.989
19	0.994
20	0.998
21	1
22	1
23	0.998
24	0.995
25	0.992
26	0.988
27	0.983
28	0.978
29	0.973
30	0.967
31	0.962
32	0.956
33	0.952
34	0.949
35	0.945
36	0.943
37	0.941
38	0.941
39	0.941
40	0.941
41	0.94
42	0.94
43	0.939
44	0.936

45	0.934
46	0.932
47	0.929
48	0.924
49	0.918
50	0.912
51	0.907
52	0.899
53	0.89
54	0.879
55	0.87
56	0.858
57	0.844
58	0.829
59	0.809
60	0.791
61	0.77
62	0.748
63	0.725
64	0.701
65	0.673
66	0.642
67	0.614
68	0.587
69	0.56
70	0.533
71	0.507
72	0.485
73	0.465
74	0.449
75	0.438
76	0.43
77	0.427
78	0.429
79	0.44
80	0.451
81	0.465
82	0.481
83	0.5
84	0.522
85	0.542
86	0.56
87	0.578
88	0.595
89	0.611
90	0.625

91	0.637
92	0.646
93	0.653
94	0.657
95	0.659
96	0.657
97	0.653
98	0.646
99	0.635
100	0.623
101	0.608
102	0.589
103	0.571
104	0.552
105	0.533
106	0.512
107	0.49
108	0.474
109	0.461
110	0.449
111	0.442
112	0.442
113	0.447
114	0.455
115	0.466
116	0.481
117	0.5
118	0.523
119	0.548
120	0.576
121	0.603
122	0.631
123	0.661
124	0.692
125	0.721
126	0.747
127	0.773
128	0.794
129	0.816
130	0.836
131	0.855
132	0.87
133	0.884
134	0.896
135	0.908
136	0.918

137	0.927
138	0.934
139	0.939
140	0.945
141	0.949
142	0.952
143	0.953
144	0.954
145	0.955
146	0.956
147	0.955
148	0.954
149	0.953
150	0.951
151	0.95
152	0.949
153	0.948
154	0.948
155	0.948
156	0.949
157	0.95
158	0.952
159	0.955
160	0.958
161	0.961
162	0.965
163	0.97
164	0.974
165	0.978
166	0.981
167	0.985
168	0.986
169	0.985
170	0.984
171	0.982
172	0.978
173	0.972
174	0.963
175	0.953
176	0.943
177	0.928
178	0.912
179	0.894
180	0.876
181	0.857
182	0.835

183	0.812
184	0.786
185	0.759
186	0.731
187	0.703
188	0.674
189	0.644
190	0.612
191	0.579
192	0.552
193	0.528
194	0.509
195	0.493
196	0.481
197	0.475
198	0.474
199	0.479
200	0.488
201	0.5
202	0.514
203	0.532
204	0.553
205	0.571
206	0.589
207	0.606
208	0.623
209	0.639
210	0.652
211	0.666
212	0.676
213	0.685
214	0.689
215	0.692
216	0.692
217	0.689
218	0.685
219	0.678
220	0.669
221	0.656
222	0.639
223	0.624
224	0.607
225	0.59
226	0.57
227	0.55
228	0.532

229	0.516
230	0.498
231	0.483
232	0.472
233	0.468
234	0.468
235	0.473
236	0.481
237	0.492
238	0.508
239	0.527
240	0.548
241	0.571
242	0.597
243	0.625
244	0.654
245	0.683
246	0.707
247	0.731
248	0.755
249	0.777
250	0.798
251	0.82
252	0.839
253	0.855
254	0.87
255	0.884
256	0.896
257	0.905
258	0.914
259	0.921
260	0.929
261	0.936
262	0.94
263	0.944
264	0.946
265	0.947
266	0.949
267	0.948
268	0.948
269	0.947
270	0.946
271	0.945
272	0.944
273	0.944
274	0.944

275	0.945
276	0.946
277	0.947
278	0.95
279	0.953
280	0.956
281	0.96
282	0.965
283	0.97
284	0.974
285	0.977
286	0.979
287	0.981
288	0.981
289	0.979
290	0.977
291	0.973
292	0.967
293	0.959
294	0.949
295	0.937
296	0.925
297	0.907
298	0.889
299	0.869
300	0.849
301	0.828
302	0.806
303	0.781
304	0.754
305	0.727
306	0.699
307	0.672
308	0.644
309	0.617
310	0.589
311	0.562
312	0.54
313	0.523
314	0.512
315	0.504
316	0.501
317	0.502
318	0.509
319	0.523
320	0.537

321	0.554
322	0.572
323	0.592
324	0.612
325	0.631
326	0.651
327	0.67
328	0.687
329	0.7
330	0.713
331	0.722
332	0.731
333	0.738
334	0.742
335	0.745
336	0.743
337	0.738
338	0.733
339	0.724
340	0.713
341	0.699
342	0.682
343	0.665
344	0.647
345	0.627
346	0.605
347	0.582
348	0.564
349	0.547
350	0.534
351	0.522
352	0.516
353	0.515
354	0.518
355	0.524
356	0.536
357	0.551
358	0.573
359	0.599

KUEN REPACK ALLOTMENT STUDY RESULTS

tvstudy v2.2.2
Database: localhost, Study: KUEN_RP_36, Model: Longley-Rice
Start: 2017.06.06 12:23:33

Study created: 2017.06.06 12:23:23

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KUEN D36 DT BL OGDEN, UT
File number: DTVBL69582
Facility ID: 69582
Station data: LMS TV 2017-06-02 (23)
Record ID: DTVBL69582
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0 km
KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	317.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D36
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2831.2 m
HAAT: 1256.0 m
Peak ERP: 200 kW
Antenna: KAT-773 928 (ID 38687) 0.0 deg

40.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	123 kW	1383.1 m	126.9 km
45.0	134	1337.8	126.5
90.0	48.6	1225.3	112.6
135.0	143	955.0	116.2
180.0	133	667.4	105.5
225.0	52.1	1387.1	117.6
270.0	158	1518.8	133.9
315.0	73.2	1497.0	124.6

Database HAAT does not agree with computed HAAT
Database HAAT: 1256 m Computed HAAT: 1246 m

ERP exceeds maximum
ERP: 200 kW ERP maximum: 93.2 kW

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to DTVBL1136 BL, scenario 1

Proposal causes no interference.

Interference to DTVBL1136 BL, scenario 2

Proposal causes no interference.

Interference to BLANK0000001151 LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	
Undesireds:	KUEN	D36	DT	BL	OGDEN, UT	DTVBL69582	317.8 km
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX
25258.8	305,509	23048.2	302,535	23048.2	302,535	23040.2	302,524
Undesired		Total	IX		Unique IX, before	Unique IX, after	
KUEN	D36	DT	BL	8.0	11	8.0	11

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUEN	D36	DT	BL	OGDEN, UT	DTVBL69582	
Undesireds:	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0 km
	KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	317.8
Service area		Terrain-limited			IX-free	Percent IX	
46061.7	2,359,798	30214.7	2,183,165	30186.5	2,183,159	0.09	0.00
Undesired		Total	IX		Unique IX	Prcnt Unique IX	
KIDK	D36	DT	LIC	28.3	6	28.3	6

**KUEN PROPOSED NEW ANTENNA
(KATHREIN 75010043) STUDY RESULTS**

tvstudy v2.2.2
Database: localhost, Study: KUEN_ANT_06062017, Model: Longley-Rice
Start: 2017.06.06 13:50:10

Study created: 2017.06.06 13:50:00

Study build station data: LMS TV 2017-06-02 (23)

Proposal: KUEN D36 DT BL OGDEN, UT
File number: KUEN_ANT_06062017
Facility ID: 69582
Station data: User record
Record ID: 81
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0 km
KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	317.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D36
Latitude: 40 39 32.80 N (NAD83)
Longitude: 112 12 9.80 W
Height AMSL: 2831.2 m
HAAT: 1256.0 m
Peak ERP: 200 kW
Antenna: UTAH_CH36_06062017 0.0 deg

40.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	86.1 kW	1383.1 m	122.9 km
45.0	172	1337.8	129.4
90.0	62.3	1225.3	115.1
135.0	169	955.0	117.8
180.0	151	667.4	106.7
225.0	59.8	1387.1	119.1
270.0	182	1518.8	135.5
315.0	49.4	1497.0	120.1

Database HAAT does not agree with computed HAAT
Database HAAT: 1256 m Computed HAAT: 1246 m

ERP exceeds maximum
ERP: 200 kW ERP maximum: 93.2 kW

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 926.9 km

Distance to Mexican border: 910.5 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 251.4 degrees Distance: 884.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 93.2 degrees Distance: 590.7 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to DTVBL1136 BL, scenario 1

Proposal causes no interference.

Interference to DTVBL1136 BL, scenario 2

Proposal causes no interference.

Interference to BLANK0000001151 LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	
Undesireds:	KUEN	D36	DT	BL	OGDEN, UT	DTVBL69582	317.8 km
	KUEN	D36	DT	BL	OGDEN, UT	KUEN_ANT_06062017	317.8
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX
25258.8	305,509	23048.2	302,535	23040.2	302,524	23044.2	302,524
Undesired		Total	IX		Unique IX, before	Unique IX, after	
KUEN D36 DT BL		8.0		11	8.0	11	
KUEN D36 DT BL		4.0		11		4.0	11

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KUEN	D36	DT	BL	OGDEN, UT	KUEN_ANT_06062017	
Undesireds:	KUCW	D35	DT	BL	OGDEN, UT	DTVBL1136	0.0 km
	KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	317.8
Service area		Terrain-limited			IX-free	Percent IX	
46174.3	2,371,656	30341.8	2,185,627	30317.6	2,185,627	0.08	0.00
Undesired		Total	IX		Unique IX	Prcnt Unique IX	

KIDK D36 DT LIC

24.2

0 24.2

0 0.08 0.00

KUEN NEW ANTENNA PATTERN RELATIVE FIELD VALUES

AZIMUTH RELATIVE FIELD

0	0.656
1	0.683
2	0.709
3	0.735
4	0.76
5	0.785
6	0.812
7	0.835
8	0.857
9	0.875
10	0.892
11	0.909
12	0.923
13	0.938
14	0.949
15	0.959
16	0.968
17	0.975
18	0.981
19	0.987
20	0.991
21	0.995
22	0.998
23	1
24	0.999
25	0.998
26	0.995
27	0.994
28	0.991
29	0.988
30	0.983
31	0.978
32	0.974
33	0.968
34	0.964
35	0.96
36	0.955
37	0.952
38	0.95
39	0.947
40	0.943
41	0.941
42	0.939
43	0.936
44	0.933

45	0.927
46	0.924
47	0.922
48	0.915
49	0.909
50	0.905
51	0.899
52	0.891
53	0.879
54	0.87
55	0.863
56	0.852
57	0.836
58	0.82
59	0.803
60	0.78
61	0.763
62	0.741
63	0.718
64	0.693
65	0.666
66	0.637
67	0.612
68	0.586
69	0.558
70	0.531
71	0.506
72	0.484
73	0.461
74	0.441
75	0.428
76	0.416
77	0.41
78	0.408
79	0.409
80	0.416
81	0.426
82	0.437
83	0.452
84	0.471
85	0.487
86	0.504
87	0.519
88	0.533
89	0.547
90	0.558

91	0.571
92	0.579
93	0.585
94	0.586
95	0.585
96	0.581
97	0.576
98	0.57
99	0.559
100	0.546
101	0.532
102	0.517
103	0.504
104	0.488
105	0.471
106	0.456
107	0.444
108	0.434
109	0.428
110	0.426
111	0.428
112	0.433
113	0.444
114	0.46
115	0.478
116	0.5
117	0.525
118	0.552
119	0.578
120	0.604
121	0.634
122	0.663
123	0.694
124	0.723
125	0.748
126	0.775
127	0.799
128	0.818
129	0.837
130	0.856
131	0.874
132	0.889
133	0.902
134	0.912
135	0.92
136	0.927

137	0.932
138	0.938
139	0.942
140	0.946
141	0.949
142	0.951
143	0.953
144	0.955
145	0.958
146	0.961
147	0.965
148	0.966
149	0.966
150	0.966
151	0.966
152	0.967
153	0.967
154	0.967
155	0.967
156	0.967
157	0.967
158	0.968
159	0.969
160	0.971
161	0.972
162	0.973
163	0.975
164	0.975
165	0.974
166	0.975
167	0.975
168	0.974
169	0.972
170	0.967
171	0.963
172	0.961
173	0.954
174	0.944
175	0.937
176	0.928
177	0.914
178	0.899
179	0.884
180	0.87
181	0.852
182	0.829

183	0.805
184	0.78
185	0.751
186	0.726
187	0.7
188	0.671
189	0.642
190	0.61
191	0.577
192	0.552
193	0.527
194	0.503
195	0.485
196	0.47
197	0.459
198	0.452
199	0.45
200	0.45
201	0.455
202	0.464
203	0.476
204	0.49
205	0.507
206	0.524
207	0.539
208	0.555
209	0.57
210	0.582
211	0.597
212	0.608
213	0.618
214	0.624
215	0.627
216	0.628
217	0.627
218	0.624
219	0.618
220	0.608
221	0.598
222	0.585
223	0.574
224	0.561
225	0.547
226	0.531
227	0.514
228	0.504

229	0.494
230	0.486
231	0.482
232	0.481
233	0.481
234	0.486
235	0.495
236	0.507
237	0.523
238	0.544
239	0.562
240	0.58
241	0.604
242	0.628
243	0.655
244	0.681
245	0.704
246	0.731
247	0.753
248	0.774
249	0.792
250	0.811
251	0.831
252	0.849
253	0.865
254	0.877
255	0.889
256	0.899
257	0.906
258	0.913
259	0.919
260	0.925
261	0.93
262	0.934
263	0.937
264	0.939
265	0.941
266	0.944
267	0.948
268	0.951
269	0.953
270	0.955
271	0.956
272	0.958
273	0.959
274	0.96

275	0.959
276	0.96
277	0.962
278	0.962
279	0.962
280	0.963
281	0.963
282	0.965
283	0.967
284	0.968
285	0.968
286	0.968
287	0.966
288	0.962
289	0.959
290	0.952
291	0.946
292	0.94
293	0.931
294	0.921
295	0.912
296	0.901
297	0.887
298	0.869
299	0.852
300	0.837
301	0.818
302	0.795
303	0.772
304	0.747
305	0.717
306	0.692
307	0.666
308	0.639
309	0.611
310	0.585
311	0.559
312	0.54
313	0.524
314	0.509
315	0.497
316	0.492
317	0.49
318	0.492
319	0.499
320	0.509

321	0.519
322	0.532
323	0.547
324	0.564
325	0.58
326	0.599
327	0.615
328	0.631
329	0.642
330	0.653
331	0.663
332	0.672
333	0.678
334	0.68
335	0.68
336	0.679
337	0.674
338	0.666
339	0.657
340	0.645
341	0.632
342	0.616
343	0.602
344	0.587
345	0.572
346	0.558
347	0.543
348	0.534
349	0.525
350	0.52
351	0.518
352	0.52
353	0.524
354	0.532
355	0.544
356	0.563
357	0.584
358	0.608
359	0.633

Attachment B

KATHREIN-Werke KG · Postfach 10 04 44 · 83004 Rosenheim · Germany

To :
KUED-42
101 South Wasatch Drive
Salt Lake City, UT. 84112
Attention : Phil Titus

Rosenheim, 06-09-2017

New Kathrein antenna system DTV Utah, Salt Lake City

Dear Sir or Madam,

the new Kathrein antenna system for DTV Utah, Salt Lake City is a development for this site with its special GRP cylinder. Hereby, actual antenna concepts from Kathrein group are adapted and tailor-suited to meet customer needs.

The self-supporting GRP cylinder itself (it sustains the antenna system inside) exhibits a higher thickness as usual which guarantees prevention of deformation by dynamic pressure due to high wind speeds on site. Furthermore, it protects the antenna system inside of the harsh environmental conditions such as heavy ice attachment on radiators, UV radiation on cable jackets etc. With regular inspections and negligible maintenance, the lifecycle of this cylinder can take several decades. For shaping electrical parameters of the radiating elements, horizontal wire rings are mounted inside on the skin surface.

The antenna system will consist of two separate 8 bay sub-systems.

Hereby the top sub-system is actually assigned to the US channels:

30, 34, 35, 36.

Whereas the bottom sub-system is either excited with the US channels:

15, 17, 19, 23, or: 17, 19, 23, 27.

The actually installed system 773 928 was optimized for the US channels 34-48. The vertical separation of wire rings had been chosen accordingly. Although designed for higher channels, the same ring configuration can be re-used for the repack channels, thus also for lower channels such as CH 15 or CH 17. The radiating elements will be adapted in design accordingly. From a purely technical view, the new antenna system will be capable to radiate CH 15 or CH 17 at acceptable values of return loss.

Nevertheless, especially KUED was supposed to migrate from CH 42 to CH 15 at the same shape of pattern. For the service of KUED, this would have caused a wavelength which is approximately 39% larger than the original one. Due to fundamental physics the shape of pattern highly depends on the relation between antenna dimension and wavelength (aperture). With a change in wavelength, at constant antenna dimension, this relation changes and therefore the shape of pattern must change, too. High technical effort such as e.g. radial or tangential offsets would be required to reshape the pattern to its old shape. Besides that, this would possibly cause drawbacks for other channels and therefore operators such as e.g. azimuthal rotation of pattern in other

DR. ANDREAS KIRSCHNER
Head of Projects Kathrein
Business Unit Broadcast

KATHREIN-Werke KG
Anton-Kathrein-Straße 1-3
83022 Rosenheim
Germany
Phone: +49 8031 184-2984
Fax: +49 8031 184-495
andreas.kirschner@kathrein.de
www.kathrein.com

Your reference:

Your letter of:

Our reference: DTV Utah

VAT Reg. No.: DE 131 158 993
Tax ID No.: 156/117/30702
WEEE Reg. No.: DE 38438502
GLN: 40 21121 00000 3
Company Headquarters: Rosenheim
HRA 460 Traunstein

Bank details:

EUR accounts:
UniCredit Bank AG
IBAN: DE71 7112 0077 0003 8322 44
BIC: HYVEDEMM448

Deutsche Bank
IBAN: DE54 7007 0010 0833 7701 00
BIC: DEUTDEMMXXX

Commerzbank
IBAN: DE20 7114 0041 0610 0887 00
BIC: COBADEFXXX

USD account:
HSBC Trinkaus & Burkhardt
IBAN: DE52 3003 0880 4700 1240 08
BIC: TUBDDEDD

channels. Furthermore, the cylinder provides only limited space for mechanical countermeasures like antenna offsets. In addition, especially at tangential offsets, the antenna elements would be detached from the cylinder's central axis which would also affect the electrical parameters of system in turn. In this case, the antenna element design would have to be adapted accordingly. This is possible, but causes again efforts in R&D.

With a migration from CH 42 to CH 27, the increase of wavelength reduces to 16%. The difference in pattern is reduced significantly. The shaping of pattern is connected to lower efforts with reduced drawbacks for other channels and operators. Furthermore, the antenna provides a higher gain in CH 27 than in CH 15, which would lead to a higher ERP in CH 27 than in CH 15.

Summary:

With the new antenna concept, the cylinder itself can be fully reused. An operation in CH 15 is possible without the drawback of high values in VSWR. However, we would recommend to migrate to CH 27 instead of CH 15 leading to higher values in ERP. Furthermore, regarding the acceptance of pattern by federal authorities such FCC or others, we would highly recommend to migrate from CH 42 to CH 27 instead of CH 15. The tolerances or mismatch to actual accepted pattern is smaller, efforts in design become therefore smaller at lower influence to other channels.

Yours faithfully,



Dr. Andreas Kirschner
Head of Projects Kathrein, Business Unit Broadcast