

**MINOR MODIFICATION  
FACILITY ID # 1144136 – K252FC**

This application proposes a minor change from channel 252 to adjacent channel 249. The translator will continue to rebroadcast station KNRJ at Cordes Lakes, AZ (facility ID #55425).

**Allocation discussion:**

All exhibits were developed utilizing the FCC 30 second terrain database.

Allocation exhibits are provided as follows:

- E1 Channel study
- E2 60 dBu contours
- E3 TOWERAIR
- E4 CLFM elevation pattern

A channel study is included as E1 demonstrating compliance with 74.1204. A plot of the proposed 60 dBu and the primary station 60 dBu is provided as E2. Clearly the 60 dBu overlaps the licensed facility since it is at the same site and technical parameters.

**RF Exposure Calculation:**

The RF contribution of the proposed translator was calculated using a worst case F factor of 0.618 at 45 degrees depression angle for the Scala CLFM horizontally polarized antenna mounted at 6 meters AGL and the formula provided below to be 4.8  $\mu\text{Watts/cm}^2$  or 2.4% of the maximum permissible 200  $\mu\text{Watts/cm}^2$  exposure for general population/uncontrolled exposure. This is less than the 5% required for consideration.

$$S \text{ (RF in } \mu\text{Watts/cm}^2\text{)} = \frac{33.4 (F^2 - \text{Vert Factor}) \times (\text{H ERP} + \text{V ERP in Watts})}{R^2 \text{ (distance to radiation center in meters - 2 m)}}$$

# Anderson Associates

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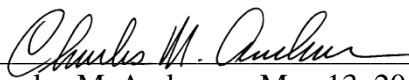
## HAAT and 60 dBu tabulation:

N. Lat. = 33-54-32    W. Lng. = 111-24-53

HAAT and Distance to Contour,  
FCC, FM 2-10 Mi, 51 pts Method - FCC 30 SEC

Azi.	AV EL	HAAT	dBk	60-F5
000	1385.7	801.3	-56.64	0.33
030	1110.6	1076.4	-29.19	7.02
060	991.9	1195.1	-22.78	13.76
090	897.1	1289.9	-23.81	12.60
120	840.2	1346.8	-33.53	4.32
150	1415.6	771.4	-61.39	0.19
180	1403.9	783.1	-62.22	0.17
210	983.0	1204.0	-51.82	0.57
240	1185.8	1001.2	-50.18	0.69
270	1232.3	954.7	-50.18	0.69
300	1460.1	726.9	-53.95	0.44
330	1645.2	541.8	-62.22	0.17

Ave El= 1212.61 M    HAAT= 974.39 M    AMSL= 2187.0

  
Charles M. Anderson, May 13, 2013

## E1 CHANNEL STUDY

REFERENCE  
33 54 32.0 N.  
111 24 53.0 W.

CH# 249D - 97.7 MHz, Pwr= 0.006 kW DA, HAAT= 969.5 M, COR= 2187 M  
Average Protected F(50-50)= 13.66 km  
Standard Directional

DISPLAY DATES  
DATA 05-11-13  
SEARCH 05-13-13

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
249C1 McNary	AU9412879	VAC	___ AZ	82.2 263.1	145.36 RM11424	34 04 30.0 109 51 15.0	100.000 299	183.8 2522	80.8 William S. Konopnicki	-52.7*	3.2
249C1 McNary	1236524	RSV-A	___ AZ	82.2 263.1	145.36	34 04 30.0 109 51 15.0	100.000 299	183.8 2522	80.8 William Konopnicki	-52.7*	3.2
249C1 McNary	1235791	APP	_CX AZ	82.2 263.1	145.36 BNPH20080225ABD	34 04 30.0 109 51 15.0	100.000 299	183.7 2521	80.7 William Konopnicki	-52.6*	3.3
250C Tempe	KUPD	LIC	_CY AZ	223.4 43.0	87.86 BLH19940314KA	33 19 58.0 112 03 53.0	100.000 494	126.0 856	84.7 Tempe Radio, Inc.	-38.8*	1.7
248C Dewey-humboldt	KMVA	LIC	NCX AZ	292.7 112.2	95.06 BLH20050413ABX	34 14 05.0 112 22 02.0	42.000 849	131.8 2382	89.0 Trumper Communications Iii	-36.6*	5.2
252D Payson	K252FC	LIC	DH_ AZ	0.0 0.0	0.00 BLFT20130328AES	33 54 32.0 111 24 53.0	0.006	0.0 2187	0.3 Rocket Radio Corporation	-0.3*	-0.3*
252C Mayer	KKFR	LIC	NCX AZ	292.7 112.1	95.01 BLH20060831AAC	34 14 03.0 112 22 01.0	41.000 852	11.1 2385	89.0 Riviera Broadcasting, LLC	83.3	6.2
251D Diamond Point	636413	APP	_C_ AZ	25.9 206.0	46.80 BNPFT20030313AAE	34 17 17.0 111 11 32.0	0.010 285	0.2 1937	12.9 David Cason	35.8	33.3
247C2 Claypool	KIKO-FM	LIC	NCX AZ	141.6 322.0	87.65 BLH20100928ADE	33 17 20.0 110 49 45.0	0.670 1013	1.8 2352	47.5 ltv.com, Inc.	78.4	38.7

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference zone= West Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside protected contour.  
Reference station has protected zone issue:

**K252FC**

BLFT20130328AES

Latitude: 33-54-32 N

Longitude: 111-24-53 W

ERP: 0.006 kW

Channel: 249

Frequency: 97.7 MHz

AMSL Height: 2187.0 m

Elevation: 2181.0 m

Horiz. Pattern: Directional

**EXHIBIT E2**

Payson

KNRJ 60 DBU

PROPOSED K252FC CH 249 60 DBU

K252FC

Cave Creek

Fountain Hills

Paradise Valley

Scottsdale

ANDERSON ASSOCIATES

Scale 1:500,000

0 7 14 21 km

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## E3 TOWAIR Determination Results

### \*\*\* NOTICE \*\*\*

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

#### DETERMINATION Results

**Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.**

#### Your Specifications

##### NAD83 Coordinates

Latitude	33-54-32.2 north
Longitude	111-24-55.5 west

##### Measurements (Meters)

Overall Structure Height (AGL)	27
Support Structure Height (AGL)	0
Site Elevation (AMSL)	2181

##### Structure Type

B - Building

#### Tower Construction Notifications

Notify Tribes and Historic Preservation Officers of your plans to build a tower.<http://wireless2.fcc.gov/UlsApp/AsrSearch/towair>

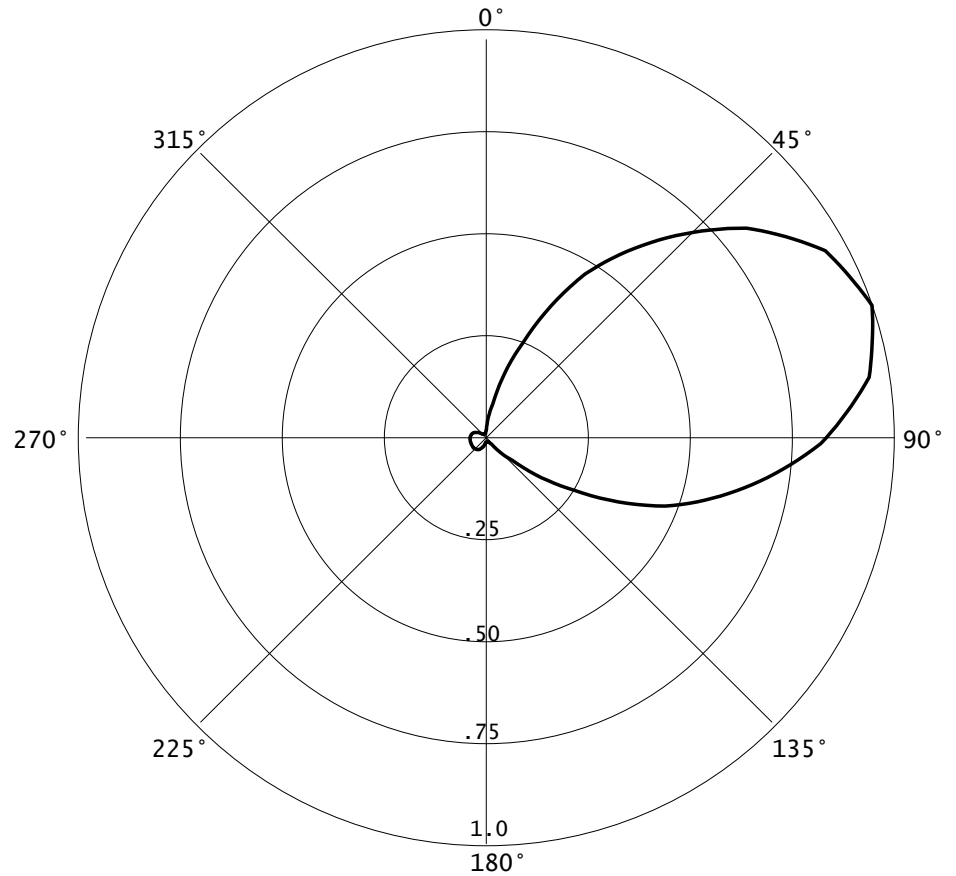
CLOSE WINDOW

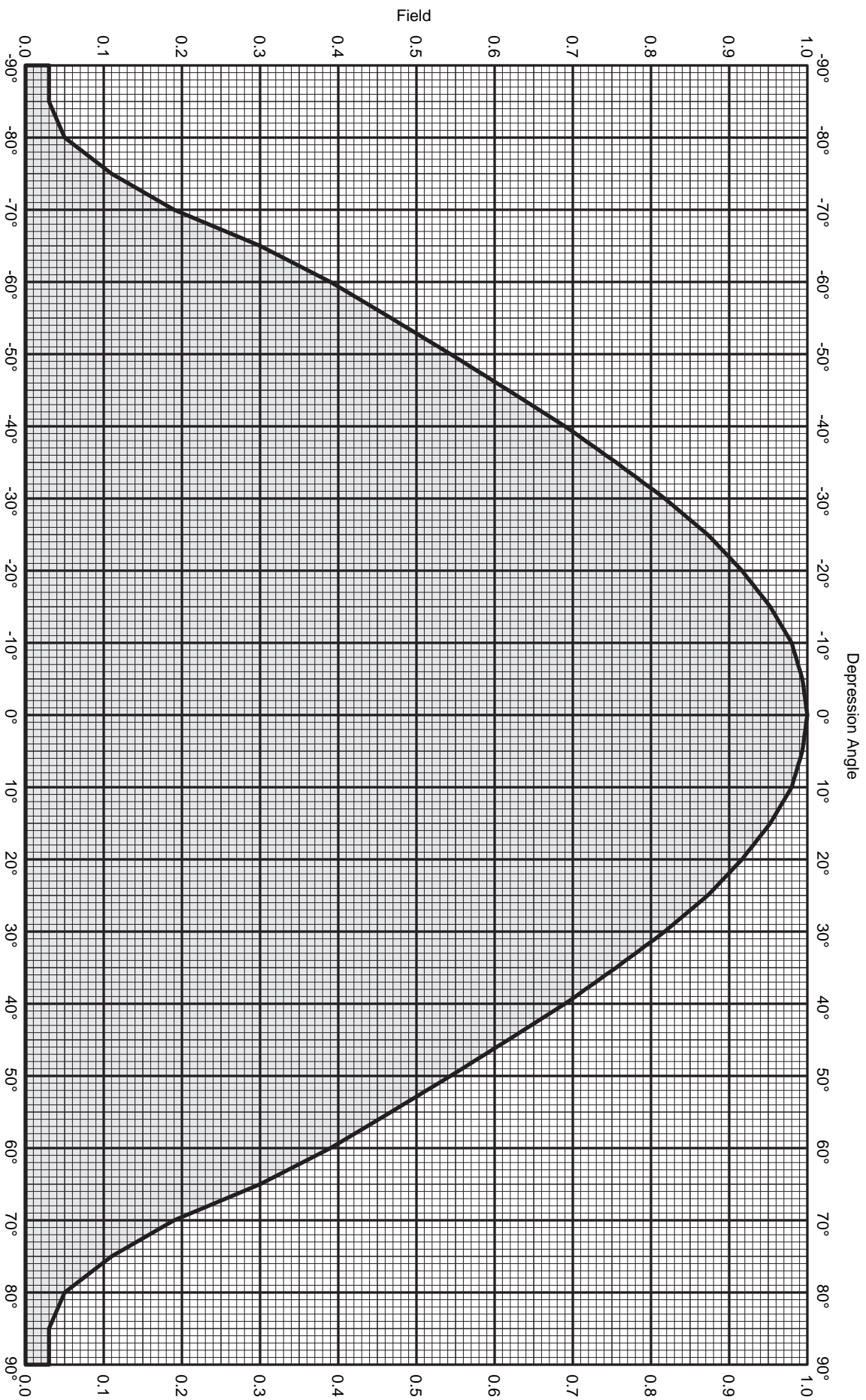
## E4 K252FC CLFM-HORIZONTAL ROTATED 71 DEGREES

RMS(V)= .392

Graph is Relative Field

Azi	Field	dBk	kw
000	0.019	-56.643	0.000
010	0.079	-44.321	0.000
020	0.234	-34.853	0.000
030	0.448	-29.193	0.001
040	0.628	-26.266	0.002
050	0.803	-24.130	0.004
060	0.937	-22.784	0.005
070	0.995	-22.262	0.006
080	0.955	-22.618	0.005
090	0.833	-23.806	0.004
100	0.663	-25.795	0.003
110	0.488	-28.459	0.001
120	0.272	-33.527	0.000
130	0.102	-42.089	0.000
140	0.027	-53.754	0.000
150	0.011	-61.391	0.000
160	0.010	-62.218	0.000
170	0.010	-62.218	0.000
180	0.010	-62.218	0.000
190	0.015	-58.991	0.000
200	0.024	-54.614	0.000
210	0.033	-51.822	0.000
220	0.038	-50.715	0.000
230	0.040	-50.221	0.000
240	0.040	-50.177	0.000
250	0.040	-50.177	0.000
260	0.040	-50.177	0.000
270	0.040	-50.177	0.000
280	0.038	-50.577	0.000
290	0.034	-51.487	0.000
300	0.026	-53.952	0.000
310	0.016	-58.136	0.000
320	0.011	-61.795	0.000
330	0.010	-62.218	0.000
340	0.010	-62.218	0.000
350	0.010	-62.218	0.000





CL-FM Log-periodic

FM

7.0 dBd (9.15 dBi)

Horizontal polarization



**KATHREIN**  
**SCALA DIVISION**

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CL-FM Log-periodic  
FM

7.0 dBd (9.15 dBi )

Horizontal polarization

Vertical radiation pattern

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
-90	0.030	-30.46	-23.46	0.00	-45	0.618	-4.19	2.81	1.91
-89	0.030	-30.46	-23.46	0.00	-44	0.632	-3.99	3.01	2.00
-88	0.030	-30.46	-23.46	0.00	-43	0.646	-3.79	3.21	2.09
-87	0.030	-30.46	-23.46	0.00	-42	0.661	-3.60	3.40	2.19
-86	0.030	-30.46	-23.46	0.00	-41	0.675	-3.41	3.59	2.29
-85	0.030	-30.46	-23.46	0.00	-40	0.690	-3.22	3.78	2.39
-84	0.034	-29.37	-22.37	0.01	-39	0.704	-3.05	3.95	2.48
-83	0.038	-28.40	-21.40	0.01	-38	0.716	-2.90	4.10	2.57
-82	0.042	-27.54	-20.54	0.01	-37	0.729	-2.74	4.26	2.67
-81	0.046	-26.74	-19.74	0.01	-36	0.742	-2.59	4.41	2.76
-80	0.050	-26.02	-19.02	0.01	-35	0.756	-2.44	4.56	2.86
-79	0.062	-24.15	-17.15	0.02	-34	0.767	-2.30	4.70	2.95
-78	0.074	-22.62	-15.62	0.03	-33	0.781	-2.15	4.85	3.05
-77	0.086	-21.31	-14.31	0.04	-32	0.793	-2.02	4.98	3.15
-76	0.098	-20.18	-13.18	0.05	-31	0.806	-1.88	5.12	3.25
-75	0.110	-19.17	-12.17	0.06	-30	0.817	-1.75	5.25	3.35
-74	0.126	-17.99	-10.99	0.08	-29	0.829	-1.63	5.37	3.44
-73	0.142	-16.95	-9.95	0.10	-28	0.840	-1.52	5.48	3.53
-72	0.158	-16.03	-9.03	0.13	-27	0.851	-1.41	5.59	3.63
-71	0.174	-15.19	-8.19	0.15	-26	0.862	-1.29	5.71	3.72
-70	0.190	-14.42	-7.42	0.18	-25	0.873	-1.18	5.82	3.82
-69	0.212	-13.47	-6.47	0.23	-24	0.882	-1.10	5.90	3.89
-68	0.234	-12.62	-5.62	0.27	-23	0.890	-1.01	5.99	3.97
-67	0.256	-11.84	-4.84	0.33	-22	0.899	-0.92	6.08	4.05
-66	0.278	-11.12	-4.12	0.39	-21	0.908	-0.84	6.16	4.13
-65	0.300	-10.46	-3.46	0.45	-20	0.916	-0.76	6.24	4.21
-64	0.318	-9.95	-2.95	0.51	-19	0.923	-0.69	6.31	4.27
-63	0.336	-9.47	-2.47	0.57	-18	0.931	-0.62	6.38	4.34
-62	0.354	-9.02	-2.02	0.63	-17	0.938	-0.56	6.44	4.41
-61	0.372	-8.59	-1.59	0.69	-16	0.946	-0.49	6.51	4.48
-60	0.390	-8.18	-1.18	0.76	-15	0.952	-0.42	6.58	4.55
-59	0.405	-7.84	-0.84	0.82	-14	0.958	-0.37	6.63	4.60
-58	0.421	-7.51	-0.51	0.89	-13	0.964	-0.32	6.68	4.65
-57	0.436	-7.20	-0.20	0.95	-12	0.969	-0.27	6.73	4.71
-56	0.452	-6.90	0.10	1.02	-11	0.975	-0.22	6.78	4.76
-55	0.467	-6.60	0.40	1.10	-10	0.980	-0.18	6.82	4.81
-54	0.483	-6.33	0.67	1.17	-9	0.982	-0.15	6.85	4.84
-53	0.498	-6.06	0.94	1.24	-8	0.985	-0.13	6.87	4.87
-52	0.513	-5.80	1.20	1.32	-7	0.988	-0.10	6.90	4.89
-51	0.528	-5.54	1.46	1.40	-6	0.991	-0.08	6.92	4.92
-50	0.544	-5.30	1.70	1.48	-5	0.993	-0.06	6.94	4.95
-49	0.558	-5.06	1.94	1.56	-4	0.995	-0.04	6.96	4.96
-48	0.573	-4.84	2.16	1.65	-3	0.996	-0.03	6.97	4.97
-47	0.588	-4.61	2.39	1.73	-2	0.997	-0.02	6.98	4.99
-46	0.602	-4.40	2.60	1.82	-1	0.998	-0.01	6.99	5.00
					0	1.000	0.00	7.00	5.01





CL-FM Log-periodic  
FM

7.0 dBd (9.15 dBi )

Horizontal polarization

Vertical radiation pattern

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	1.000	0.00	7.00	5.01	45	0.618	-4.19	2.81	1.91
1	0.998	-0.01	6.99	5.00	46	0.602	-4.40	2.60	1.82
2	0.997	-0.02	6.98	4.99	47	0.588	-4.61	2.39	1.73
3	0.996	-0.03	6.97	4.97	48	0.573	-4.84	2.16	1.65
4	0.995	-0.04	6.96	4.96	49	0.558	-5.06	1.94	1.56
5	0.993	-0.06	6.94	4.95	50	0.544	-5.30	1.70	1.48
6	0.991	-0.08	6.92	4.92	51	0.528	-5.54	1.46	1.40
7	0.988	-0.10	6.90	4.89	52	0.513	-5.80	1.20	1.32
8	0.985	-0.13	6.87	4.87	53	0.498	-6.06	0.94	1.24
9	0.982	-0.15	6.85	4.84	54	0.483	-6.33	0.67	1.17
10	0.980	-0.18	6.82	4.81	55	0.467	-6.60	0.40	1.10
11	0.975	-0.22	6.78	4.76	56	0.452	-6.90	0.10	1.02
12	0.969	-0.27	6.73	4.71	57	0.436	-7.20	-0.20	0.95
13	0.964	-0.32	6.68	4.65	58	0.421	-7.51	-0.51	0.89
14	0.958	-0.37	6.63	4.60	59	0.405	-7.84	-0.84	0.82
15	0.952	-0.42	6.58	4.55	60	0.390	-8.18	-1.18	0.76
16	0.946	-0.49	6.51	4.48	61	0.372	-8.59	-1.59	0.69
17	0.938	-0.56	6.44	4.41	62	0.354	-9.02	-2.02	0.63
18	0.931	-0.62	6.38	4.34	63	0.336	-9.47	-2.47	0.57
19	0.923	-0.69	6.31	4.27	64	0.318	-9.95	-2.95	0.51
20	0.916	-0.76	6.24	4.21	65	0.300	-10.46	-3.46	0.45
21	0.908	-0.84	6.16	4.13	66	0.278	-11.12	-4.12	0.39
22	0.899	-0.92	6.08	4.05	67	0.256	-11.84	-4.84	0.33
23	0.890	-1.01	5.99	3.97	68	0.234	-12.62	-5.62	0.27
24	0.882	-1.10	5.90	3.89	69	0.212	-13.47	-6.47	0.23
25	0.873	-1.18	5.82	3.82	70	0.190	-14.42	-7.42	0.18
26	0.862	-1.29	5.71	3.72	71	0.174	-15.19	-8.19	0.15
27	0.851	-1.41	5.59	3.63	72	0.158	-16.03	-9.03	0.13
28	0.840	-1.52	5.48	3.53	73	0.142	-16.95	-9.95	0.10
29	0.829	-1.63	5.37	3.44	74	0.126	-17.99	-10.99	0.08
30	0.817	-1.75	5.25	3.35	75	0.110	-19.17	-12.17	0.06
31	0.806	-1.88	5.12	3.25	76	0.098	-20.18	-13.18	0.05
32	0.793	-2.02	4.98	3.15	77	0.086	-21.31	-14.31	0.04
33	0.781	-2.15	4.85	3.05	78	0.074	-22.62	-15.62	0.03
34	0.767	-2.30	4.70	2.95	79	0.062	-24.15	-17.15	0.02
35	0.756	-2.44	4.56	2.86	80	0.050	-26.02	-19.02	0.01
36	0.742	-2.59	4.41	2.76	81	0.046	-26.74	-19.74	0.01
37	0.729	-2.74	4.26	2.67	82	0.042	-27.54	-20.54	0.01
38	0.716	-2.90	4.10	2.57	83	0.038	-28.40	-21.40	0.01
39	0.704	-3.05	3.95	2.48	84	0.034	-29.37	-22.37	0.01
40	0.690	-3.22	3.78	2.39	85	0.030	-30.46	-23.46	0.00
41	0.675	-3.41	3.59	2.29	86	0.030	-30.46	-23.46	0.00
42	0.661	-3.60	3.40	2.19	87	0.030	-30.46	-23.46	0.00
43	0.646	-3.79	3.21	2.09	88	0.030	-30.46	-23.46	0.00
44	0.632	-3.99	3.01	2.00	89	0.030	-30.46	-23.46	0.00
					90	0.030	-30.46	-23.46	0.00