

FOR  
FCC  
USE  
ONLY

**FCC 302-AM**  
**APPLICATION FOR AM**  
**BROADCAST STATION LICENSE**

(Please read instructions before filling out form.)

FOR COMMISSION USE ONLY

FILE NO. *B7 ML-20100526AFH*

**SECTION I- APPLICANT FEE INFORMATION**

1. PAYOR NAME (Last, First, Middle Initial)

SINCLAIR TELECABLE, INC.

MAILING ADDRESS (Line 1) (Maximum 35 characters)

500 Dominion Tower

MAILING ADDRESS (Line 2) (Maximum 35 characters)

999 Waterside Drive

CITY

Norfolk

STATE OR COUNTRY (if foreign address)

VA

ZIP CODE

23510

TELEPHONE NUMBER (include area code)

757-640-8500

CALL LETTERS

WTAR

OTHER FCC IDENTIFIER (If applicable)

60472

2. A. Is a fee submitted with this application?



Yes



No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section



Governmental Entity



Noncommercial educational licensee



Other (Please explain):

C. If Yes, provide the following information:

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

(A)

FEE TYPE CODE		
M	M	R

(B)

FEE MULTIPLE			
0	0	0	1

(C)

FEE DUE FOR FEE TYPE CODE IN COLUMN (A)
\$ 615.00

FOR FCC USE ONLY

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To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)

M	O	R
---	---	---

(B)

0	0	0	1
---	---	---	---

(C)

\$ 705.00
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FOR FCC USE ONLY

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ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.

TOTAL AMOUNT REMITTED WITH THIS APPLICATION

\$ 1,320.00

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SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT SINCLAIR TELECABLE, INC.		
MAILING ADDRESS 500 Dominion Tower, 999 Waterside Drive		
CITY Norfolk	STATE VA	ZIP CODE 23510

2. This application is for:

☒ Commercial
 ☐ Noncommercial  
☒ AM Directional
 ☐ AM Non-Directional

Call letters WTAR	Community of License Norfolk, VA	Construction Permit File No. N/A	Modification of Construction Permit File No(s). N/A	Expiration Date of Last Construction Permit N/A
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3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

☐ Yes ☐ No

NOT APPLICABLE

If No, explain in an Exhibit.

Exhibit No.

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

☐ Yes ☐ No

NOT APPLICABLE

If No, state exceptions in an Exhibit.

Exhibit No.

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

☐ Yes ☐ No

NOT APPLICABLE

If Yes, explain in an Exhibit.

Exhibit No.

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

☐ Yes ☐ No

☒ Does not apply

If No, explain in an Exhibit.

Exhibit No.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

☐ Yes ☒ No

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

Exhibit No.  
N/A

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

☐ Yes ☒ No

If Yes, provide particulars as an Exhibit.

Exhibit No.

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

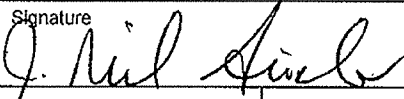
The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

#### CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

☒ Yes ☐ No

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name J. DAVID SINCLAIR	Signature 	
Title PRESIDENT	Date 5/26/10	Telephone Number (317) 745-0851

**WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT  
(U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR  
CONSTRUCTION**

#### FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

### SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

Sinclair Telecable, Inc.

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☒ Station License

☐ Direct Measurement of Power

1. Facilities authorized in construction permit					
Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
WTAR		850	U	Night 25.0	Day 50.0
2. Station location					
State			City or Town		
Virginia			Norfolk		
3. Transmitter location					
State	County	City or Town	Street address (or other identification)		
VA	Isle of Wright	Rushmere	1.3 km West of Rt. 10		
4. Main studio location					
State	County	City or Town	Street address (or other identification)		
VA	Norfolk	Norfolk	500 Dominion Tower		
5. Remote control point location (specify only if authorized directional antenna)					
State	County	City or Town	Street address (or other identification)		
VA	Norfolk	Norfolk	500 Dominion Tower		

6. Has type-approved stereo generating equipment been installed?

☐ Yes ☒ No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68?

☒ Yes ☐ No

☐ Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

Exhibit No.  
Tech Stmt

8. Operating constants:						
RF common point or antenna current (in amperes) without modulation for night system			RF common point or antenna current (in amperes) without modulation for day system			
22.95			32.45			
Measured antenna or common point resistance (in ohms) at operating frequency			Measured antenna or common point reactance (in ohms) at operating frequency			
Night			Night			
Day			Day			
50			50			
			+/- J0			
			+/- J0			
Antenna indications for directional operation						
Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
#1 NW	0.486		120.8			
#2 N Central	1.000	0.825	0.0	-32.0		
#3 NE	0.603	0.715	-115.3	173.6		
#4 SW	0.571	1.000	93.9	0.0		
#5 S Central	0.877	0.575	-23.3	-150.2		
#6 SE	0.478		-135.7			
Manufacturer and type of antenna monitor: Potomac Instruments 1901-6						

SECTION III - Page 2

9. Description of antenna system (If directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
Uniform cross section guyed steel towers	Towers #1-6 82.3	#1 83.7 #4 84.0 #2 83.7 #5 83.9 #3 83.9 #6 83.4	#1 83.7 #4 84.0 #2 85.1 #5 85.9 #3 83.9 #6 83.4	Exhibit No.

Excitation



Series



Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	37 °	03 '	36 "	West Longitude	76 °	41 '	26 "
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If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits.

Exhibit No.

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system.

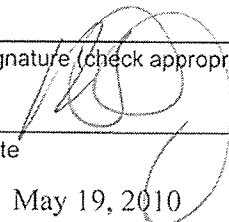
Exhibit No.

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

11. Give reasons for the change in antenna or common point resistance.

Computer Modeled Proof 73.151(c)

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type)	Signature (check appropriate box below)
R. Stuart Graham	
Address (include ZIP Code)	Date
Graham Brock, Inc.	May 19, 2010
P. O. Box 24466	Telephone No. (Include Area Code)
St. Simons Island, GA 31522-7466	912-638-8028

☐ Technical Director

☐ Registered Professional Engineer

☐ Chief Operator

☒ Technical Consultant

☐ Other (specify)

APPLICATION FOR STATION LICENSE  
SINCLAIR TELECABLE, INC.  
WTAR AM RADIO STATION  
850 kHz - 25.0/50.0 kW DA2  
NORFOLK, VIRGINIA  
May 2010

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<u>Exhibit</u>	<u>Description</u>
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1)	Analysis of Tower Impedance Measurements to Verify Method of Moments Model
2)	Derivation of Operating Parameters for Directional Antenna
3)	Method of Moments Model Details for Towers Driven Individually
4)	Method of Moments Model Details for Directional Antenna
5)	Direct Measurement of Power
6)	Sampling System and Measurements
7)	Reference Field Strength Measurements
8)	Antenna Monitor Calibration

APPLICATION FOR STATION LICENSE  
SINCLAIR TELECABLE, INC.  
WTAR AM RADIO STATION  
850 kHz - 25.0/50.0 kW DA2  
NORFOLK, VIRGINIA  
May 2010

This Technical Statement was prepared on behalf of Sinclair Telecable, Inc. ("STI"), licensee of radio station WTAR, 850 kHz, Norfolk, Virginia. STI holds a valid license for the directional antenna system of WTAR (BZ-20070724AEK) that authorizes WTAR to operate with a four tower directional antenna system at 50.0 kilowatts during daytime hours and a six tower directional antenna system at 25.0 kilowatts during nighttime hours. This application seeks to modify the WTAR authorization to reflect a computer analyzed directional operation under the provisions of Section 73.151(c). The calculations shown herein are for the daytime power of 50.0 kilowatts and the nighttime power of 25.0 kilowatts.

The daytime and nighttime operating parameters are different, with the daytime pattern utilizing four of the six towers used for nighttime operation. The towers are identified using the nighttime numbering sequence: Tower #1 (NW), Tower #2 (N Center), Tower #3 (NE), Tower #4 (SW), Tower #5 (S Center), and Tower #6 (SE). Daytime towers are Tower #1 {nighttime Tower #4 (SW)}, Tower #2 {nighttime Tower #2 (N Center)}, Tower #3 {nighttime Tower #5 (S Center)}, and Tower #4 {nighttime Tower #3 (NE)}.

The towers and ground system were constructed in accordance with the terms of the original WTAR construction permit and specifications that were provided in the application for

construction permit. Since this is a license application filed for an existing station, no post construction survey of the antenna system is required.<sup>1</sup>

Information is provided herein to demonstrate the directional antenna parameters for the daytime and nighttime authorized patterns have been determined to be in accordance with the requirements of Section 73.151(c) of the Commission's rules. The system has been adjusted to produce antenna monitor parameters within +/- 5 percent in ratio and +/- 3 degrees in phase of the modeled values, as required by the rules.

There are two special operating conditions and/or restrictions listed on the outstanding station license that will continue to be met. Condition #1 states:

*"The permittee/licensee must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines."*

The applicant recognizes their responsibility in this matter and will continue to comply with this condition.

Condition #2 states:

*"Ground system consists of 120-88.4 m equally spaced, buried, copper radials about the base of each tower except where terminated by property boundaries or where intersecting radials are shortened and bonded."*

The applicant verifies the ground system is as described and accepts this condition.

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1) See Media Bureau Clarifies Procedures for AM Directional Antenna Performance Verification Using Moment Method Modeling, Public Notice, DA 09-2340 (2009).



Field measurements were conducted along the licensed monitor point radials along with measurements in the station's main power lobe, which are detailed in Exhibit #7.

We have tried to be as accurate as possible in the preparation of this application. All information contained in this application was extracted from the CDBS database. We assume no liability for omissions or errors in this source. Should there be any questions concerning the information contained herein, we welcome the opportunity to discuss the matter by phone at 912-638-8028 or by email at [rsg@grahambrock.com](mailto:rsg@grahambrock.com).

APPLICATION FOR STATION LICENSE  
SINCLAIR TELECABLE, INC.  
WTAR AM RADIO STATION  
850 kHz - 25.0/50.0 kW DA2  
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EXHIBIT #1

Analysis of Tower Impedance Measurements to Verify Method of Moments Model

Tower base impedance measurements were made at the final J-plugs within the Antenna Tuning Units ("ATU's") using an Array Solutions, POWER AIM 120, Vector Impedance Analyzer in a calibrated measurement system. The other towers were all open circuited at the same points where impedance measurements were made ("reference points") for each of the measurements, in compliance with Section 73.151(c)(1).

The reference point in each ATU is followed by the feed-line that exits the ATU enclosure and is connected to the tower above the base insulator. Circuit calculations were performed to relate the Method of Moments modeled impedances of the tower feed points to the ATU output measurement (reference) points, as shown on the following pages. The XL shown for each tower, which was calculated for the assumed stray inductance, was less than 10 uH, in compliance with Section 73.151(c)(1)(vii).

The modeled and measured base impedances at the ATU output jacks, with the other towers open circuited at their ATU output jacks agree within +/- 2 ohms and +/- 4 percent for resistance, as required by Section 73.151(c)(2) of the FCC Rules.

**APPLICATION FOR STATION LICENSE**  
**SINCLAIR TELECABLE, INC.**  
**WTAR AM RADIO STATION**  
**850 kHz - 25.0/50.0 kW DA2**  
**NORFOLK, VIRGINIA**  
**May 2010**

**EXHIBIT #1A**

TOWER	L(uH) - series	X(L)	Z(tower-modeled)		Z(ATU-measured)		Z(tower-measured)	
1 (nw)	5.61	+j 29.9	38.0	+j 10.06	38.0	+j 40.00	41.9	+j 10.06
2 (n center)	4.77	+j 25.5	38.0	+j 12.56	38.0	+j 38.05	45.5	+j 12.56
3 (ne)	5.69	+j 30.4	38.0	+j 7.89	38.0	+j 38.27	45.5	+j 7.89
4 (sw)	4.97	+j 26.5	39.1	+j 13.76	39.1	+j 40.29	45.5	+j 13.76
5 (s center)	0.14	+j 0.8	45.5	+j 37.87	45.5	+j 38.64	34.4	+j 37.87
6 (se)	4.34	+j 23.2	37.1	+j 7.33	37.1	+j 30.50	39.2	+j 7.33

From Moment Method Calculated Values

Tower Impedance Tolerance      Resistance & Reactance      +/- 2 Ohms and +/- 4%

Tower	Resistance	(+/- ohms)	High	Low
1 (nw)	37.97	3.52	41.5	34.5
2 (n center)	37.96	3.52	41.5	34.4
3 (ne)	38.03	3.52	41.6	34.5
4 (sw)	39.11	3.56	42.7	35.5
5 (s center)	45.46	3.82	49.3	41.6
6 (se)	37.11	3.48	40.6	33.6

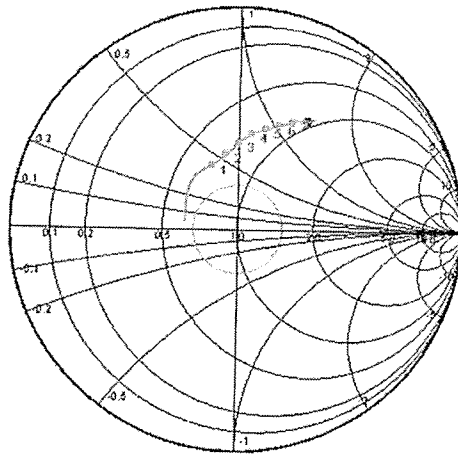
  

	Reactance	(+/- ohms)	High	Low
1 (nw)	10.06	2.40	12.5	7.7
2 (n center)	12.56	2.50	15.1	10.1
3 (ne)	7.89	2.32	10.2	5.6
4 (sw)	13.76	2.55	16.3	11.2
5 (s center)	37.87	3.51	41.4	34.4
6 (se)	7.33	2.29	9.6	5.0

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EXHIBIT #1B

Tower #1 Impedance Measurements

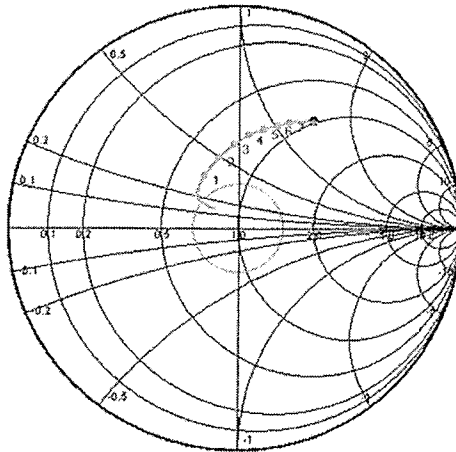


Marker	Freq	Rs	Xs
[ 1]	0.820000	33.825	21.502
[ 2]	0.830000	36.034	27.341
[ 3]	0.840000	36.858	33.855
[ 4]	0.850000	38.014	40.004
[ 5]	0.860000	40.219	45.927
[ 6]	0.870000	42.419	52.396
[ 7]	0.880000	43.711	59.296

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EXHIBIT #1C

Tower #2 Impedance Measurements

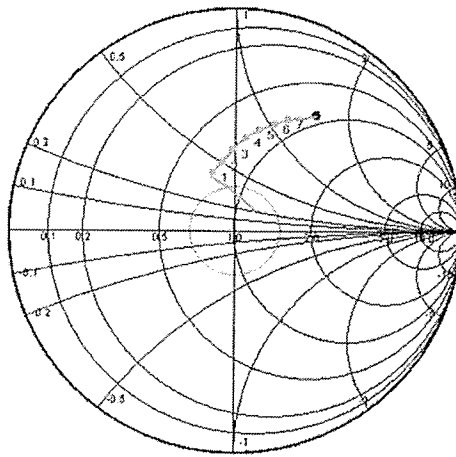


Marker	Freq	Rs	Xs
[ 1]	0.820000	33.575	17.261
[ 2]	0.830000	34.831	24.697
[ 3]	0.840000	36.183	31.723
[ 4]	0.850000	37.956	38.051
[ 5]	0.860000	40.126	44.260
[ 6]	0.870000	42.262	50.818
[ 7]	0.880000	44.244	57.463

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EXHIBIT #1D

Tower #3 Impedance Measurements

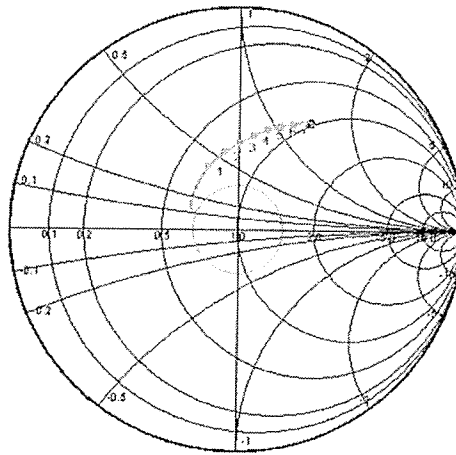


Marker	Freq	Rz	Xz
[ 1]	0.820000	36.201	20.636
[ 2]	0.830000	37.211	25.475
[ 3]	0.840000	37.678	31.786
[ 4]	0.850000	38.025	38.269
[ 5]	0.860000	39.039	44.901
[ 6]	0.870000	40.425	51.948
[ 7]	0.880000	41.756	58.887

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EXHIBIT #1E

Tower #4 Impedance Measurements

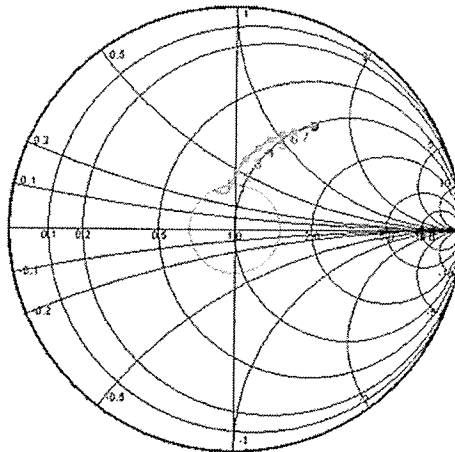


Marker	Freq	Rs	Xs
[ 1]	0.820000	33.293	20.663
[ 2]	0.830000	35.117	27.771
[ 3]	0.840000	37.204	34.165
[ 4]	0.850000	39.111	40.289
[ 5]	0.860000	40.922	46.374
[ 6]	0.870000	42.961	52.543
[ 7]	0.880000	44.999	59.090

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EXHIBIT #1F

Tower #5 Impedance Measurements



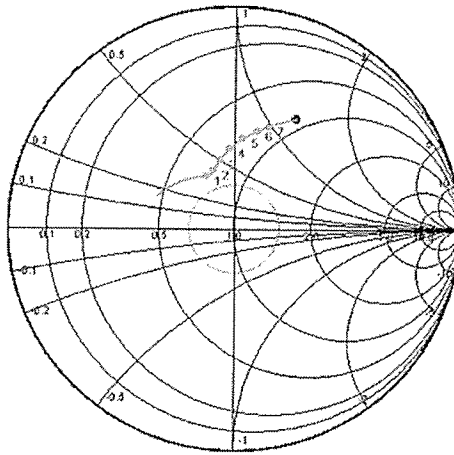
Marker	Freq	Rs	Xs
[ 1]	0.820000	44.491	18.886
[ 2]	0.830000	44.330	24.512
[ 3]	0.840000	44.753	31.303
[ 4]	0.850000	45.464	38.643
[ 5]	0.860000	46.435	45.701
[ 6]	0.870000	47.982	52.179
[ 7]	0.880000	49.974	58.742



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EXHIBIT #1G

Tower #6 Impedance Measurements



Marker	Freq	Rs	Xs
[ 1]	0.820000	35.303	17.884
[ 2]	0.830000	36.844	20.656
[ 3]	0.840000	36.912	24.926
[ 4]	0.850000	37.110	30.501
[ 5]	0.860000	38.120	36.862
[ 6]	0.870000	39.660	43.255
[ 7]	0.880000	41.079	48.938

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EXHIBIT #2

Derivation of Operating Parameters for Directional Antenna

The Method of Moments model of the array, following verification with the measured individual open circuited base impedances, was utilized for directional antenna calculations. Calculations were made to determine the complex voltage values for sources located at ground level under each tower of the array to produce current moment sums for the towers that, when normalized, equated to the theoretical field parameters of the authorized directional antenna pattern. With these voltage sources, the tower currents were calculated. Eight segments were used for each tower, so that the modeled current pulse at the base of the tower would correspond to the toroid pick-up at the output of the ATU. As the tower structures, sampling pickups, and sampling lines are identical, the antenna monitor ratios and phases corresponding to the theoretical parameters were calculated directly from the modeled tower currents.

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EXHIBIT #2A

Daytime Operating Parameters

Tower	Current Magnitude (amperes)	Current Phase (degrees)	Moment Method Calculations of Antenna Monitor Values		Moment Method Tower 4 Reference		Antenna Monitor As Adjusted Antenna Monitor Values	
			Ratio	Phase	Ratio	Phase	Ratio	Phase
1 (nw)	-	-	-	-	-	-	-	-
2 (n center)	24.8	-32.01	1.000	0.0	0.825	-32.0	0.825	-32.2
3 (ne)	21.48	173.62	0.866	-154.4	0.715	173.6	0.723	173.4
4 (sw)	30.05	0.00	1.212	32.0	1.000	0.0	1.000	0.0
5 (s center)	17.29	-150.23	0.697	-118.2	0.575	-150.2	0.579	-150.0
6 (se)	-	-	-	-	-	-	-	-

Operating Parameter Tolerances

Tower	Ratio (5%)		Phase (3°)	
	(+)	(-)	(+)	(-)
1 (nw)	-	-	-	-
2 (n center)	0.867	0.784	-29.0	-35.0
3 (ne)	0.751	0.679	176.6	170.6
4 (sw)	1.000	1.000	0.0	0.0
5 (s center)	0.604	0.547	-147.2	-153.2
6 (se)	-	-	-	-

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EXHIBIT #2B

Nighttime Operating Parameters

Tower	Current Magnitude (amperes)	Current Phase (degrees)	Moment Method Calculations of Antenna Monitor Values		Moment Method Twr 2 Reference		Antenna Monitor As Adjusted Antenna Monitor Values	
			Ratio	Phase	Ratio	Phase	Ratio	Phase
1 (nw)	8.45	0.00	1.000	0.0	0.486	120.8	0.493	120.3
2 (n center)	17.4	-120.80	2.059	-120.8	1.000	0.0	1.000	0.0
3 (ne)	10.49	123.89	1.241	123.9	0.603	-115.3	0.602	-115.5
4 (sw)	9.93	-26.88	1.175	-26.9	0.571	93.9	0.573	94.1
5 (s center)	15.26	-144.08	1.806	-144.1	0.877	-23.3	0.877	-22.9
6 (se)	8.31	103.51	0.983	103.5	0.478	-135.7	0.473	-135.7

Operating Parameter Tolerances

Tower	Ratio (5%)		Phase (3°)	
	(+)	(-)	(+)	(-)
1 (nw)	0.510	0.461	123.8	117.8
2 (n center)	1.000	1.000	0.0	0.0
3 (ne)	0.633	0.573	-112.3	-118.3
4 (sw)	0.599	0.542	96.9	90.9
5 (s center)	0.921	0.833	-20.3	-26.3
6 (se)	0.501	0.454	-132.7	-138.7

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EXHIBIT #3

Method of Moments Model Details for Towers Driven Individually

The array of towers was modeled using Westberg Engineering PhasorPro 2.1.1.12. One wire was used to represent each tower. The electrical length of each tower was specified using degrees at the operating frequency of 850 kHz (0.85 MHz), as taken from the theoretical directional antenna specifications. Each tower was modeled using nine segments. As the towers are 84.0 degrees in electrical height, the segment length is 9.33 electrical degrees, in compliance with Section 73.151(c)(1)(iii).

The individual tower characteristics were adjusted to provide a match of their modeled impedances, when presented to a circuit model, that included branches representing the stray feed-line hookup inductances at the tower bases, with the base impedances that were measured at the output jacks of the ATU's, while the other towers of the array were open circuited. The Method of Moments model assumed loads at ground level having the reactance that was calculated for them using the base circuit models for the open circuited towers of the array.

Each tower's modeled height, relative to its physical height, falls within the required range of 75% to 125%, in compliance with Section 73.151(c)(1)(v). Each tower's modeled

radius falls within the range of 80% to 150% of the radius of a circle having a circumference equal to the sum of the widths of the tower sides, which is in compliance with Section 73.151(c)(1)(i). The array consists of identical, uniform cross section towers having a face of 18 inches.

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EXHIBIT #3A

Tower	Physical Height (degrees)	Velocity Factor Adjustment	Modeled Height (degrees)	Modeled Percent of Height	Physical Equivalent Radius (inches)	Modeled Radius (inches)	Percent of Equivalent Radius
1 (nw)	84	0.95150	88.28	105.1%	8.314	8.314	100.0%
2 (n center)	84	0.94565	88.83	105.7%	8.314	8.314	100.0%
3 (ne)	84	0.95545	87.92	104.7%	8.314	8.314	100.0%
4 (sw)	84	0.94440	88.95	105.9%	8.314	8.314	100.0%
5 (s center)	84	0.89930	93.41	111.2%	8.314	12.009	144.4%
6 (se)	84	0.95825	87.66	104.4%	11.085	11.085	100.0%

Tower	Tower Height Tolerance >75% <125%			Tower Radius Tolerance >80% <150%		
	Height	Minimum	Maximum	Actual	Minimum	Maximum
1 (nw)	84	63.0	105.0	8.314	6.651	12.471
2 (n center)	84	63.0	105.0	8.314	6.651	12.471
3 (ne)	84	63.0	105.0	8.314	6.651	12.471
4 (sw)	84	63.0	105.0	8.314	6.651	12.471
5 (s center)	84	63.0	105.0	8.314	6.651	12.471
6 (se)	84	63.0	105.0	11.085	8.868	16.628

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EXHIBIT# 4

Method of Moments Model Details for Directional Antenna

The array of towers was modeled using Westberg Engineering PhasorPro 2.1.1.12 with the individual tower characteristics that were verified by the individual tower impedance measurements. Calculations were made to determine the complex voltage values for sources located at ground level under each tower of the array to produce current moment sums for the tower that, when normalized, equated to the theoretical field parameters of the authorized directional antenna pattern. The following pages contain details of the method of moments model of the directional antenna pattern.



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EXHIBIT #4A

STATION INFORMATION		
Call Letters	No. Towers	Frequency
WTAR	6	0.8500

TOWER INFORMATION						
	Tower Height (")	Spacing (")	Orientation	Face Width (in.)	Radius (in.)	Velocity Factor
Tower 1	84.0000	0.0000	0.0000	18.0000 / 18.0000	8.3138 / 8.3138	0.951503
Tower 2	84.0000	90.0000	109.0000	18.0000 / 18.0000	8.3138 / 8.3138	0.945650
Tower 3	84.0000	180.0000	109.0000	18.0000 / 18.0000	8.3138 / 8.3138	0.955450
Tower 4	84.0000	200.0000	188.0000	18.0000 / 18.0000	8.3138 / 8.3138	0.944400
Tower 5	84.0000	234.5000	165.9000	26.0000 / 26.0000	12.0089 / 12.0089	0.899300
Tower 6	84.0000	293.5000	151.0000	24.0000 / 24.0000	11.0851 / 11.0851	0.958250

MATRIX INFORMATION		
	Impedance (other towers open)	Impedance (other towers shorted)
Tower 1	37.97 + j10.06	45.23 + j25.20
Tower 2	37.96 + j12.56	16.45 + j65.26
Tower 3	38.03 + j7.89	49.50 + j21.65
Tower 4	39.11 + j13.76	56.75 + j17.51
Tower 5	45.46 + j37.87	22.64 + j104.23
Tower 6	37.11 + j7.33	51.07 + j13.19

DETUNED TOWER CURRENTS
Tower 1
0.000000 > 0.000000 - 84.00° above ground
0.263607 > -124.407349 - 74.67° above ground
0.404493 > -125.037307 - 65.33° above ground
0.454373 > -125.745125 - 56.00° above ground
0.411193 > -126.620025 - 46.67° above ground
0.271869 > -128.100638 - 37.33° above ground
0.034644 > -146.238416 - 28.00° above ground
0.311667 > 55.510241 - 18.67° above ground
0.771805 > 53.748303 - 9.33° above ground
1.508929 > 52.854790 - -0.00° above ground
Tower 2
0.000000 > 0.000000 - 84.00° above ground
0.265994 > -124.137074 - 74.67° above ground
0.408347 > -124.791332 - 65.33° above ground
0.458863 > -125.534282 - 56.00° above ground
0.415395 > -126.461074 - 46.67° above ground
0.274775 > -128.039690 - 37.33° above ground
0.035419 > -147.227965 - 28.00° above ground
0.314761 > 55.813170 - 18.67° above ground
0.779613 > 53.922022 - 9.33° above ground
1.523734 > 52.958001 - -0.00° above ground
Tower 3
0.000000 > 0.000000 - 84.00° above ground
0.180456 > 150.781667 - 74.67° above ground
0.274340 > 151.359060 - 65.33° above ground
0.305075 > 151.952686 - 56.00° above ground
0.272686 > 152.654431 - 46.67° above ground
0.176498 > 153.844857 - 37.33° above ground
0.016556 > 174.148416 - 28.00° above ground
0.212860 > -29.000606 - 18.67° above ground
0.514589 > -27.679494 - 9.33° above ground
0.993781 > -26.994531 - -0.00° above ground

DETUNED TOWER CURRENTS
Tower 4
0.000000 > 0.000000 - 84.00° above ground
0.171920 > 132.454052 - 74.67° above ground
0.261078 > 133.067928 - 65.33° above ground
0.289915 > 133.683666 - 56.00° above ground
0.258644 > 134.393185 - 46.67° above ground
0.166817 > 135.575342 - 37.33° above ground
0.014720 > 156.989454 - 28.00° above ground
0.202959 > -47.232521 - 18.67° above ground
0.488563 > -45.960427 - 9.33° above ground
0.940625 > -45.311364 - -0.00° above ground
Tower 5
0.000000 > 0.000000 - 84.00° above ground
0.184021 > 99.726283 - 74.67° above ground
0.276877 > 100.464048 - 65.33° above ground
0.305943 > 101.209300 - 56.00° above ground
0.271698 > 102.079029 - 46.67° above ground
0.174098 > 103.551625 - 37.33° above ground
0.014591 > 132.436125 - 28.00° above ground
0.214521 > -79.931804 - 18.67° above ground
0.512307 > -78.364336 - 9.33° above ground
0.996400 > -77.537041 - -0.00° above ground
Tower 6
0.000000 > 0.000000 - 84.00° above ground
0.135916 > 44.503255 - 74.67° above ground
0.203454 > 45.171623 - 65.33° above ground
0.223787 > 45.856787 - 56.00° above ground
0.197882 > 46.669614 - 46.67° above ground
0.126085 > 48.069815 - 37.33° above ground
0.009613 > 78.663230 - 28.00° above ground
0.157247 > -135.225074 - 18.67° above ground
0.374214 > -133.741573 - 9.33° above ground
0.727388 > -132.947925 - -0.00° above ground

ZMatrix					
37.97 + j10.06	19.88 - j17.38	-8.93 - j15.72	-11.05 - j9.85	-14.20 - j0.81	-6.37 + j9.47
19.88 - j17.38	37.96 + j12.56	20.17 - j17.30	-11.66 - j8.22	-12.65 - j8.93	-12.80 - j0.83
-8.93 - j15.72	20.17 - j17.30	38.03 + j7.89	-12.63 + j1.04	-12.77 - j8.69	-10.84 - j9.52
-11.05 - j9.85	-11.66 - j8.22	-12.63 + j1.04	39.11 + j13.76	22.05 - j19.48	-9.51 - j15.82
-14.20 - j0.81	-12.65 - j8.93	-12.77 - j8.69	22.05 - j19.48	45.46 + j37.87	21.13 - j19.15
-6.37 + j9.47	-12.80 - j0.83	-10.84 - j9.52	-9.51 - j15.82	21.13 - j19.15	37.11 + j7.33

YMatrix					
0.016872 - j0.009399	0.001258 + j0.016199	0.000409 - j0.001272	0.004530 + j0.004030	-0.000318 + j0.001519	0.000120 + j0.001344
0.001258 + j0.016199	0.003633 - j0.014408	0.000310 + j0.016619	0.000315 + j0.005355	-0.000176 + j0.002471	-0.001087 + j0.002725
0.000409 - j0.001272	0.000310 + j0.016619	0.016958 - j0.007418	0.000462 + j0.003027	-0.000011 + j0.003442	0.004522 + j0.005716
0.004530 + j0.004030	0.000315 + j0.005355	0.000462 + j0.003027	0.016089 - j0.004965	0.001824 + j0.010973	0.001172 + j0.002440
-0.000318 + j0.001519	-0.000176 + j0.002471	-0.000011 + j0.003442	0.001824 + j0.010973	0.001990 - j0.009162	0.001050 + j0.011817
0.000120 + j0.001344	-0.001087 + j0.002725	0.004522 + j0.005716	0.001172 + j0.002441	0.001050 + j0.011817	0.018358 - j0.004741

HMatrix - [I] = [H] X [F]					
0.017329 + j0.001090	0.000400 + j0.000605	0.000442 - j0.000191	0.000334 - j0.000297	0.000109 - j0.000377	-0.000208 - j0.000253
0.000404 + j0.000612	0.017139 + j0.001101	0.000404 + j0.000612	0.000318 - j0.000312	0.000334 - j0.000299	0.000113 - j0.000383
0.000439 - j0.000190	0.000398 + j0.000601	0.017456 + j0.001083	0.000061 - j0.000377	0.000310 - j0.000307	0.000332 - j0.000295
0.000338 - j0.000301	0.000319 - j0.000313	0.000062 - j0.000385	0.017099 + j0.001103	0.000401 + j0.000610	0.000448 - j0.000193
0.000133 - j0.000461	0.000402 - j0.000361	0.000380 - j0.000377	0.000477 + j0.000733	0.015499 + j0.001313	0.000479 + j0.000733
-0.000222 - j0.000271	0.000119 - j0.000405	0.000357 - j0.000317	0.000472 - j0.000203	0.000425 + j0.000642	0.017462 + j0.001165

HMatrix-inverse - [F] = [H] <sup>-1</sup> X [I]					
57.447535 - j3.579186	-1.572883 - j1.864426	-1.468387 + j0.859427	-0.913391 + j1.056274	-0.056528 + j1.346856	0.909953 + j0.594524
-1.588258 - j1.884288	58.012641 - j3.617590	-1.579939 - j1.912690	-0.767383 + j1.124916	-0.833513 + j1.220255	-0.060434 + j1.228451
-1.457634 + j0.853050	-1.554321 - j1.878774	57.026472 - j3.559051	0.115301 + j1.188832	-0.796642 + j1.208430	-0.876007 + j1.027924
-0.925034 + j1.070373	-0.768850 + j1.127035	0.118152 + j1.213532	58.197859 - j3.735498	-1.800574 - j2.095032	-1.495891 + j0.926535
-0.066600 + j1.644351	-1.004006 + j1.473601	-0.977185 + j1.487086	-2.149210 - j2.520662	63.935519 - j5.226568	-2.108127 - j2.415016
0.971096 + j0.634868	-0.064723 + j1.296643	-0.942643 + j1.105321	-1.577098 + j0.975669	-1.866517 - j2.115157	56.983464 - j3.734492

TOWER CURRENTS
Mode 1
Tower 1
0.000000 > 0.000000 - 84.00° above ground
0.160544 > -137.338550 - 74.67° above ground
0.244848 > -138.305951 - 65.33° above ground
0.273278 > -139.389751 - 56.00° above ground
0.245445 > -140.737628 - 46.67° above ground
0.160328 > -143.058347 - 37.33° above ground
0.019369 > -174.470928 - 28.00° above ground
0.189593 > 42.509466 - 18.67° above ground
0.462205 > 39.840410 - 9.33° above ground
0.896832 > 38.455455 - -0.00° above ground
Tower 2
0.000000 > 0.000000 - 84.00° above ground
5.340373 > -33.493269 - 74.67° above ground
9.721593 > -33.369025 - 65.33° above ground
13.650957 > -33.240651 - 56.00° above ground
17.090454 > -33.104310 - 46.67° above ground
19.978272 > -32.956524 - 37.33° above ground
22.249677 > -32.792273 - 28.00° above ground
23.847460 > -32.603265 - 18.67° above ground
24.725294 > -32.374698 - 9.33° above ground
24.795471 > -32.011306 - -0.00° above ground
Tower 3
0.000000 > 0.000000 - 84.00° above ground
4.803360 > 167.093735 - 74.67° above ground
8.714171 > 167.563472 - 65.33° above ground
12.194911 > 168.063327 - 56.00° above ground
15.213159 > 168.612926 - 46.67° above ground
17.715359 > 169.231477 - 37.33° above ground
19.645547 > 169.945791 - 28.00° above ground
20.954397 > 170.798949 - 18.67° above ground
21.601634 > 171.866999 - 9.33° above ground
21.476591 > 173.625171 - -0.00° above ground

TOWER CURRENTS
Mode 1
Tower 4
0.000000 > 0.000000 - 84.00° above ground
6.492024 > -3.354515 - 74.67° above ground
11.814378 > -3.085934 - 65.33° above ground
16.583802 > -2.806451 - 56.00° above ground
20.754509 > -2.506563 - 46.67° above ground
24.252073 > -2.177491 - 37.33° above ground
26.998756 > -1.806956 - 28.00° above ground
28.926101 > -1.375144 - 18.67° above ground
29.978994 > -0.847113 - 9.33° above ground
30.050486 > 0.000000 - -0.00° above ground
Tower 5
0.000000 > 0.000000 - 84.00° above ground
4.543054 > -155.308633 - 74.67° above ground
8.137805 > -155.010128 - 65.33° above ground
11.272784 > -154.684252 - 56.00° above ground
13.906578 > -154.313732 - 46.67° above ground
15.981375 > -153.880327 - 37.33° above ground
17.437458 > -153.357627 - 28.00° above ground
18.219791 > -152.701567 - 18.67° above ground
18.276886 > -151.832523 - 9.33° above ground
17.285505 > -150.228931 - -0.00° above ground
Tower 6
0.000000 > 0.000000 - 84.00° above ground
0.253537 > 97.040480 - 74.67° above ground
0.383335 > 96.969535 - 65.33° above ground
0.425960 > 96.866043 - 56.00° above ground
0.381141 > 96.723242 - 46.67° above ground
0.247661 > 96.470115 - 37.33° above ground
0.023812 > 92.402140 - 28.00° above ground
0.294534 > -82.937415 - 18.67° above ground
0.716545 > -83.223296 - 9.33° above ground
1.408589 > -83.373407 - -0.00° above ground

Mode 2
Tower 1
0.000000 > 0.000000 - 84.00° above ground
1.731822 > -1.292957 - 74.67° above ground
3.164546 > -1.110742 - 65.33° above ground
4.461710 > -0.940798 - 56.00° above ground
5.610628 > -0.780566 - 46.67° above ground
6.590830 > -0.629024 - 37.33° above ground
7.380897 > -0.484310 - 28.00° above ground
7.962178 > -0.342165 - 18.67° above ground
8.320564 > -0.197388 - 9.33° above ground
8.449507 > 0.000000 - -0.00° above ground
Tower 2
0.000000 > 0.000000 - 84.00° above ground
3.753685 > -124.578554 - 74.67° above ground
6.830874 > -124.286631 - 65.33° above ground
9.588699 > -123.979890 - 56.00° above ground
12.000928 > -123.647633 - 46.67° above ground
14.024718 > -123.279787 - 37.33° above ground
15.615270 > -122.862251 - 28.00° above ground
16.733176 > -122.372301 - 18.67° above ground
17.346863 > -121.769905 - 9.33° above ground
17.396739 > -120.799631 - -0.00° above ground
Tower 3
0.000000 > 0.000000 - 84.00° above ground
2.507608 > 115.343131 - 74.67° above ground
4.525893 > 115.892600 - 65.33° above ground
6.299500 > 116.490598 - 56.00° above ground
7.812681 > 117.163838 - 46.67° above ground
9.038822 > 117.940164 - 37.33° above ground
9.950158 > 118.858995 - 28.00° above ground
10.522059 > 119.984260 - 18.67° above ground
10.733452 > 121.430399 - 9.33° above ground
10.494143 > 123.889786 - -0.00° above ground

Tower 4
0.000000 > 0.000000 - 84.00° above ground
2.056839 > -28.325609 - 74.67° above ground
3.756364 > -28.150195 - 65.33° above ground
5.292089 > -27.983167 - 56.00° above ground
6.648781 > -27.820956 - 46.67° above ground
7.802073 > -27.661246 - 37.33° above ground
8.726558 > -27.500614 - 28.00° above ground
9.400083 > -27.333289 - 18.67° above ground
9.805636 > -27.148981 - 9.33° above ground
9.929360 > -26.880193 - -0.00° above ground
Tower 5
0.000000 > 0.000000 - 84.00° above ground
3.590925 > -149.121018 - 74.67° above ground
6.474566 > -148.771320 - 65.33° above ground
9.033796 > -148.398465 - 56.00° above ground
11.236808 > -147.987034 - 46.67° above ground
13.038646 > -147.522109 - 37.33° above ground
14.392788 > -146.982291 - 28.00° above ground
15.257548 > -146.332168 - 18.67° above ground
15.597185 > -145.509621 - 9.33° above ground
15.260112 > -144.083899 - -0.00° above ground
Tower 6
0.000000 > 0.000000 - 84.00° above ground
2.057017 > 92.289007 - 74.67° above ground
3.681168 > 93.000247 - 65.33° above ground
5.100633 > 93.772435 - 56.00° above ground
6.303466 > 94.641637 - 46.67° above ground
7.269721 > 95.644409 - 37.33° above ground
7.978209 > 96.833123 - 28.00° above ground
8.410137 > 98.294172 - 18.67° above ground
8.550057 > 100.179677 - 9.33° above ground
8.312039 > 103.510719 - -0.00° above ground



FIELD INFORMATION - DAY		
	Field Ratio	Field Phase
Tower 2	0.8230	-31.0000
Tower 3	0.7190	171.8000
Tower 4	1.0000	0.0000
Tower 5	0.6760	-151.5000

FIELD INFORMATION - NIGHT		
	Field Ratio	Field Phase
Tower 1	1.0000	0.0000
Tower 2	2.1280	-122.3000
Tower 3	1.3410	119.5000
Tower 4	1.1910	-27.0000
Tower 5	2.0590	-146.4000
Tower 6	1.0730	97.5000

TOWER DRIVE INFORMATION - DAY					
	Field Ratios	Field Phase	Drive Imped. ( $\Omega$ )	Current	Power (W)
Tower 1	0.0000	0.0000	-18.56 - j605.70	0.90 $\angle$ 38.46	-14.9308
Tower 2	0.8230	-31.0000	8.06 + j14.29	24.80 $\angle$ -32.01	4953.2935
Tower 3	0.7190	171.8000	39.80 + j24.97	21.48 $\angle$ 173.62	18358.2110
Tower 4	1.0000	0.0000	18.81 + j14.73	30.05 $\angle$ 0.00	16988.9727
Tower 5	0.6760	-151.5000	32.53 + j78.13	17.29 $\angle$ -150.23	9718.1799
Tower 6	0.0000	0.0000	-1.88 - j561.99	1.41 $\angle$ -83.37	-3.7264

TOWER DRIVE INFORMATION - NIGHT					
	Field Ratios	Field Phase	Drive Imped. ( $\Omega$ )	Current	Power (W)
Tower 1	1.0000	0.0000	4.17 - j1.59	8.45 $\angle$ 0.00	297.3745
Tower 2	2.1280	-122.3000	21.58 + j14.07	17.40 $\angle$ -120.80	6532.2612
Tower 3	1.3410	119.5000	56.68 + j46.21	10.49 $\angle$ 123.89	6242.0068
Tower 4	1.1910	-27.0000	5.78 + j1.99	9.93 $\angle$ -26.88	569.8179
Tower 5	2.0590	-146.4000	27.89 + j39.45	15.26 $\angle$ -144.08	6493.8323
Tower 6	1.0730	97.5000	70.41 + j48.03	8.31 $\angle$ 103.51	4864.7074

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EXHIBIT #5

Direct Measurement of Power

WTAR will operate with a daytime common point impedance of  $50 -j 0.1$  ohms and a nighttime common point impedance of  $50 +j 0.2$  ohms. Due to the directional antenna operation, the common point input powers are adjusted with reference to the transmitted power, in accordance with Section 73.51(b)(2)<sup>1</sup>. Adjusting the input power by 1.053 results in the following:

Daytime

50,000 Watts X 1.053 = 52,650 Watts

Common Point Resistance = 50 Ohms

Manipulating  $I^2R = P$

Where I = Common Point Current    R = Common Point Resistance    P = Power in Watts

$I = (52,650/50)^{.5} = 32.45$  Amps at Common Point

Nighttime

25,000 Watts X 1.053 = 26,325 Watts

Common Point Resistance = 50 Ohms

Manipulating  $I^2R = P$

Where I = Common Point Current    R = Common Point Resistance    P = Power in Watts

$I = (26,325/50)^{.5} = 22.95$  Amps at Common Point

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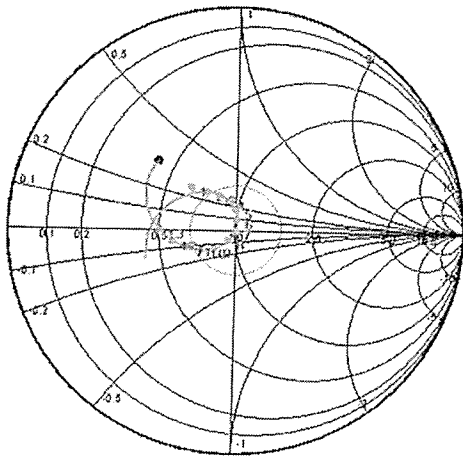
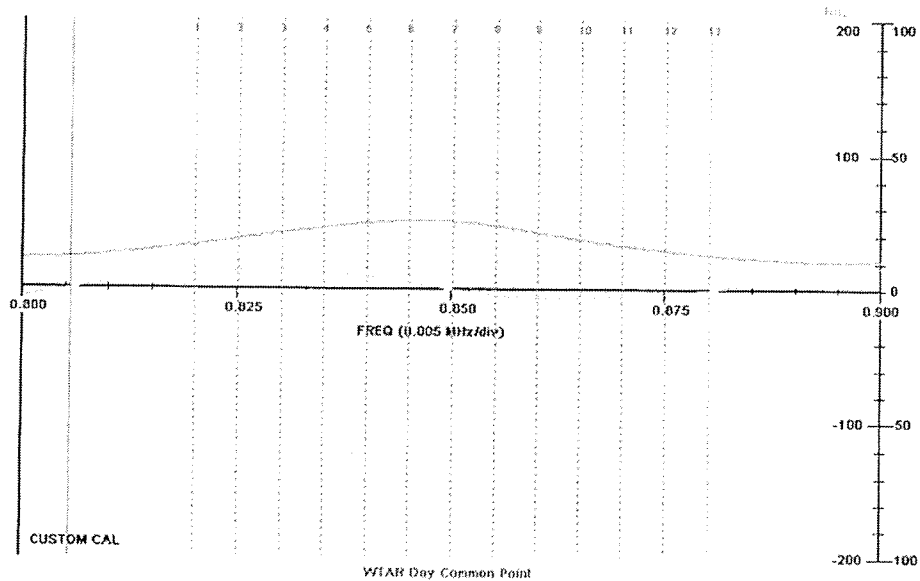
1) Section 73.51 Determining operating power. (b) The authorized antenna input power for each station shall be equal to the nominal power for such station, with the following exceptions (2) For stations with nominal powers in excess of 5 kilowatts, the authorized antenna input power to directional antennas shall exceed the nominal power by 5.3 percent

Common point impedance was measured utilizing an Array Solutions, POWER AIM 120, Vector Impedance Analyzer in a calibrated measurement system.

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EXHIBIT #5A

Daytime Common Point Measurements / Impedance

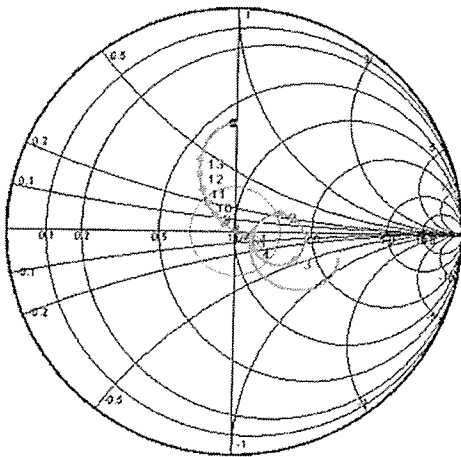
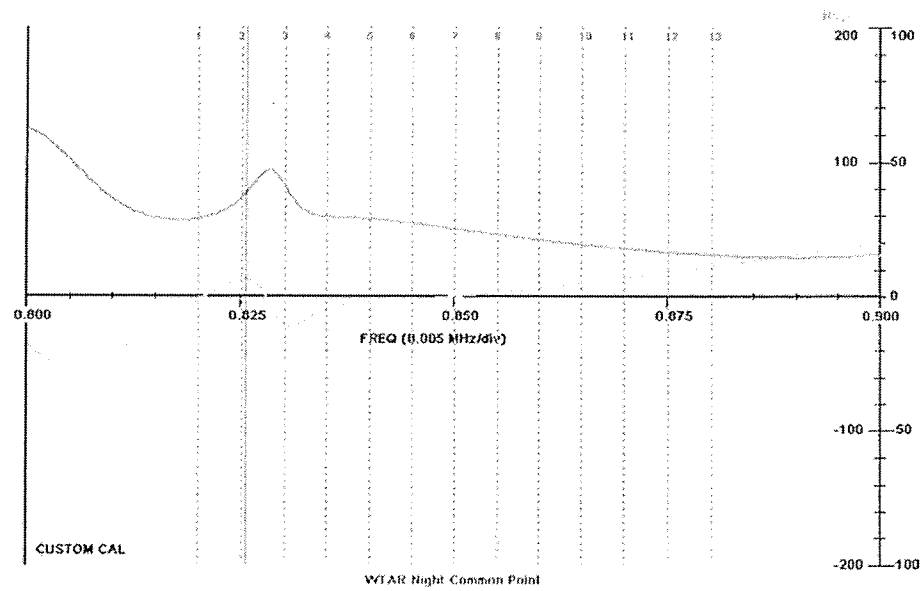


Marker	Freq	Rs	Xs
[ 1]	0.820000	31.687	12.943
[ 2]	0.825000	37.041	13.124
[ 3]	0.830000	41.330	13.220
[ 4]	0.835000	45.403	11.993
[ 5]	0.840000	49.130	9.271
[ 6]	0.845000	50.499	4.806
[ 7]	0.850000	49.954	-0.102
[ 8]	0.855000	46.660	-4.378
[ 9]	0.860000	41.651	-6.731
[10]	0.865000	35.787	-5.628
[11]	0.870000	32.486	-5.369
[12]	0.875000	28.548	-3.036
[13]	0.880000	25.310	-0.141

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EXHIBIT #5B

Nighttime Common Point Measurements / Impedance



Marker	Freq	Rs	Xs
[ 1]	0.820000	58.252	-1.018
[ 2]	0.825000	73.800	12.438
[ 3]	0.830000	82.171	-22.078
[ 4]	0.835000	58.713	-9.744
[ 5]	0.840000	57.205	-3.637
[ 6]	0.845000	54.003	-2.157
[ 7]	0.850000	49.781	0.210
[ 8]	0.855000	45.690	2.671
[ 9]	0.860000	41.667	6.138
[10]	0.865000	38.208	9.681
[11]	0.870000	35.223	13.674
[12]	0.875000	32.475	17.715
[13]	0.880000	30.388	22.091

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EXHIBIT #6

Sampling System And Measurements

The sample system for WTAR consists of electrical equal lengths of Andrew LDF2-50 phase stabilized coaxial transmission lines terminated into Delta TCT-1 toroid sample transformers. The impedance at the input to the sample lines, terminated by the toroid sample transformers, was measured and tabulated in Exhibits #6A through #6G.

Impedance measurements of the antenna monitor sampling lines were made using an Array Solutions, POWER AIM 120, Vector Impedance Analyzer in a calibrated measurement system. The measurements were made looking into the antenna monitor ends of the sampling lines without the sampling lines connected to the toroid samples under open-circuited conditions.

Exhibits #6H through #6M detail the sample transmission line measurements with frequencies above and below carrier frequency where resonance (zero reactance corresponding with low resistance) was found. As the length of a distortionless transmission line is 180 electrical degrees at the difference frequency between adjacent frequencies of resonance and frequencies of resonance occurring at odd multiples of 90 degrees electrical length, the sampling line length at the resonant frequency below carrier frequency, which is the closest one to the

carrier frequency, was found to be between 233.1 and 233.3 electrical degrees, within the 1.0 degree variance, as specified by Section 73.151(c)(2)(i). The electrical length at carrier frequency appearing in Exhibit #6A was calculated by ratio of the frequencies.

In order to determine the characteristic impedance values of the sampling lines, open-circuit measurements were made with frequencies offset to produce +/- 45 degrees of electrical length from resonance. The characteristic impedance was calculated using the following formula where  $R_1 + jX_1$  and  $R_2 + jX_2$  are the measured impedances at the +45 and -45 degree offset frequencies, respectively:

$$Z_0 = ((R_1^2 + X_1^2)^{1/2} * (R_2^2 + X_2^2)^{1/2})^{1/2}$$

Toroid Current Transformer calibration was checked by placing each transformer in line at the transmitter output connected to the station's 50 ohm dummy load along with a reference toroid. The transformers were connected to the station's antenna monitor with short equal length transmission line jumpers. The relative ratio and phase of all transformers was found to compare within +/-0.0025 of ratio and 0.05 degree, within the manufacturer's specifications.

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**EXHIBIT #6A**

**Sample Line and Sample Transformer Combined Impedance at 850 kHz**

Tower Sample System	Sample Transformer Make / Type / Serial #	Resistance (ohms)	Reactance (ohms)	Supporting Exhibit
1 (nw)	Delta / TCT-1 / 15322	51.1	-1.1	6B
2 (n center)	Delta / TCT-1 / 15358	51.1	-1.0	6C
3 (ne)	Delta / TCT-1 / 15331	51.2	-0.9	6D
4 (sw)	Delta / TCT-1 / 15308	51.5	-1.4	6E
5 (s center)	Delta / TCT-1 / 15312	51.1	-1.3	6F
6 (se)	Delta / TCT-1 / 15321	51.0	-1.0	6G

**Sample Line Length and Impedance Calculations**

Tower Sample Line	Open Circuit Resonance	Calculated Electrical Length at 850 kHz (degrees)	Measured Characteristic Impedance	Supporting Exhibit
	(kHz)			
1 (nw)	984.2	233.2	48.9	6H
2 (n center)	984.2	233.2	49.1	6I
3 (ne)	983.9	233.3	49.0	6J
4 (sw)	983.9	233.3	49.0	6K
5 (s center)	984.4	233.1	49.1	6L
6 (se)	984.4	233.1	49.0	6M

Sample Line Lengths - +/- 0.1 Degrees

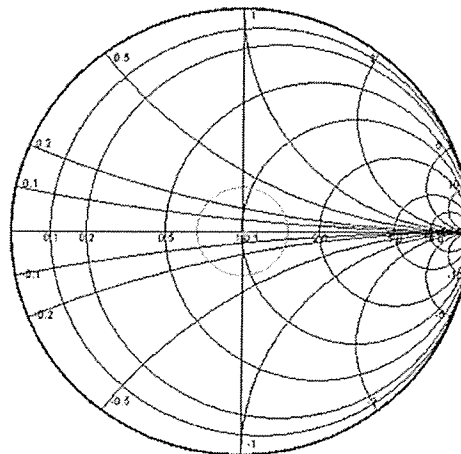
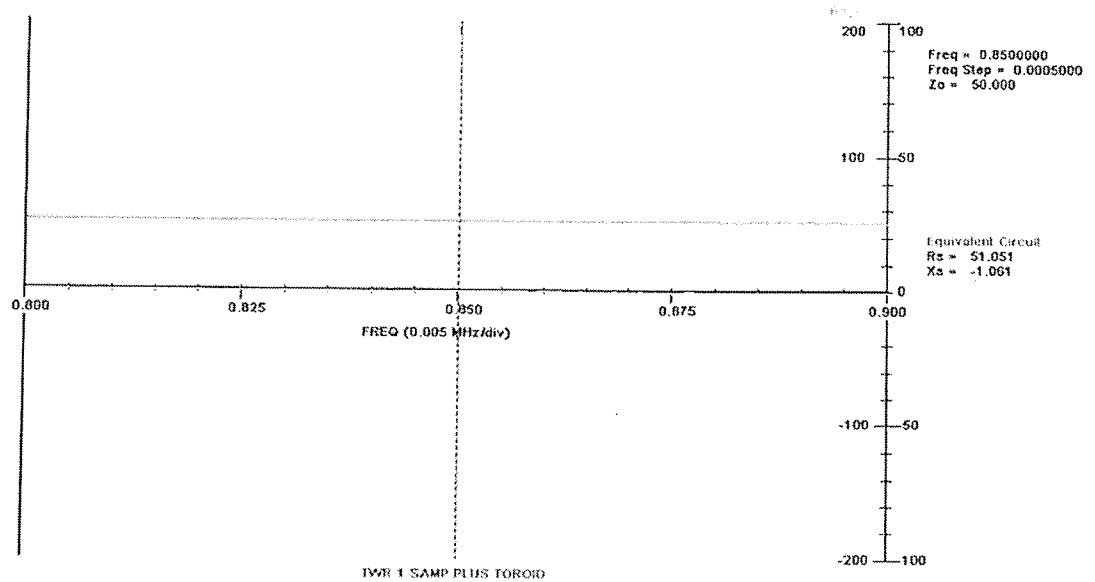
Characteristic Impedance - +/- 0.1 Ohms



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EXHIBIT #6B

Tower #1 Sample and Toroid

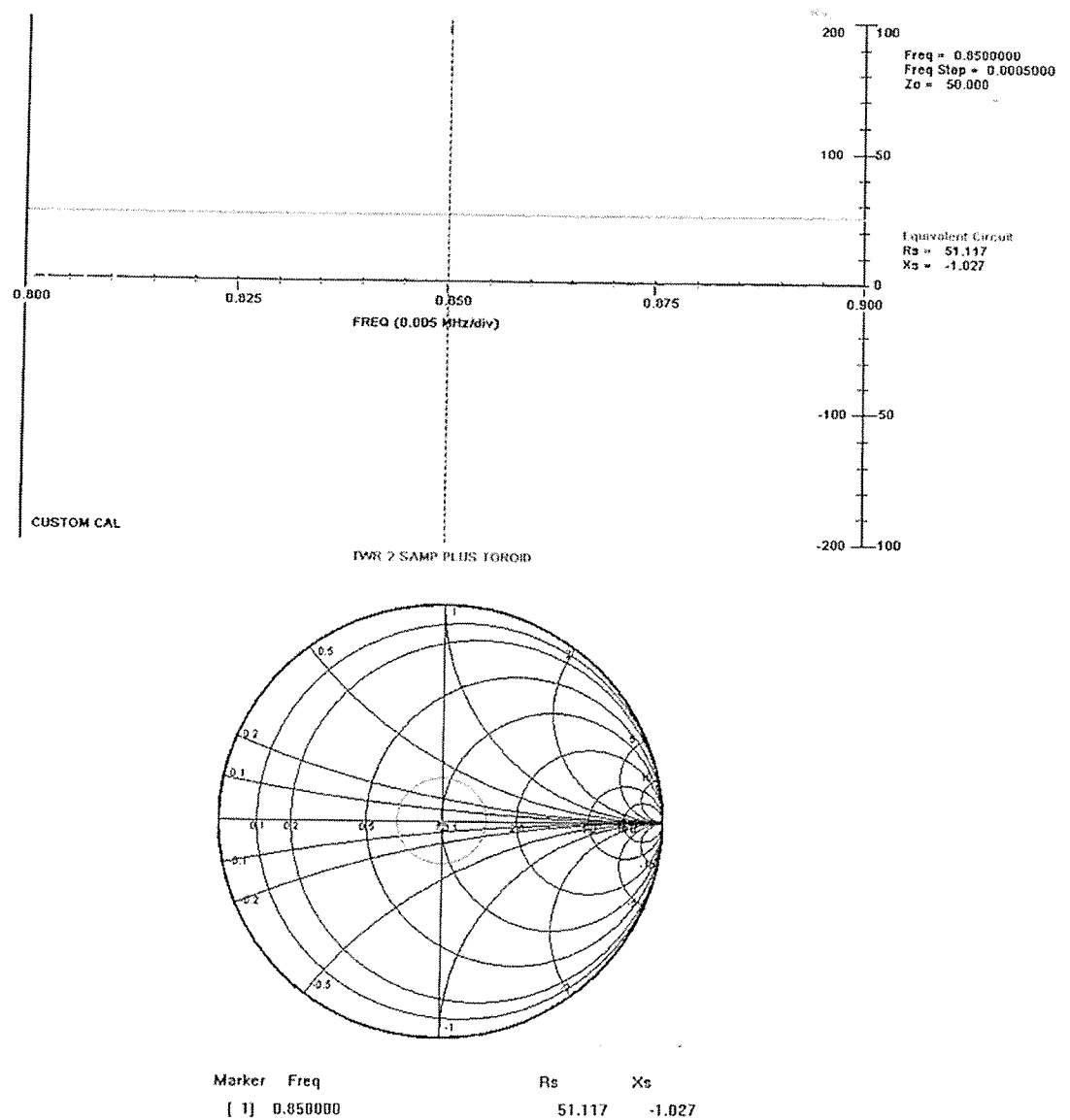


Marker	Freq	Rs	Xs
[ 1 ]	0.850000	51.051	-1.061

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EXHIBIT #6C

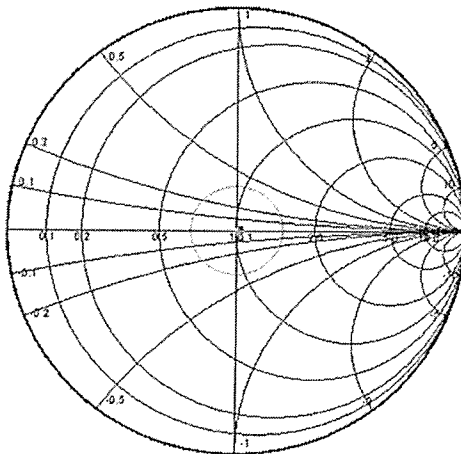
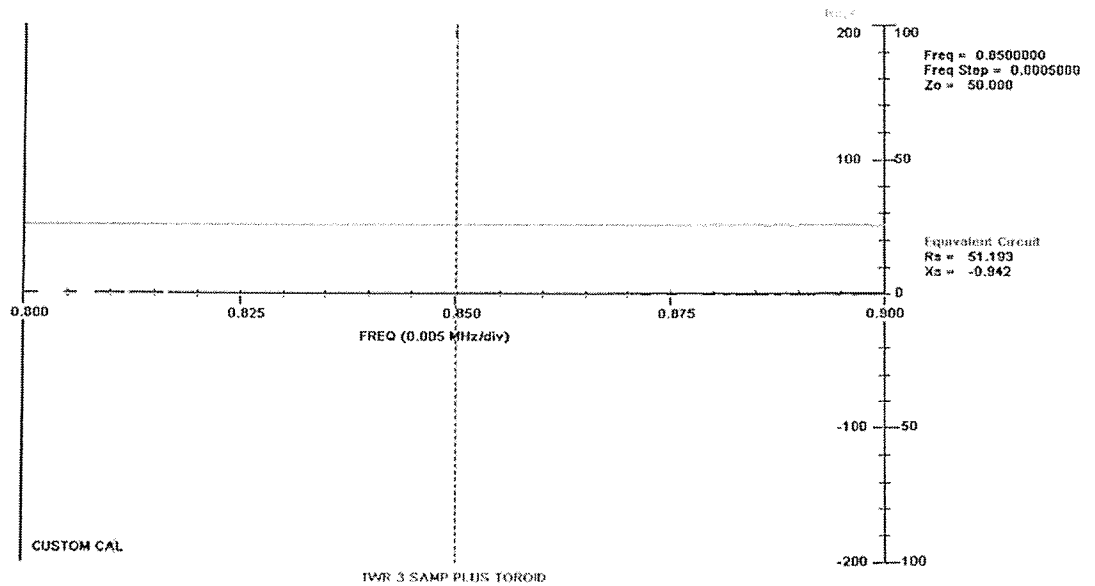
Tower #2 Sample and Toroid



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EXHIBIT #6D

Tower #3 Sample and Toroid

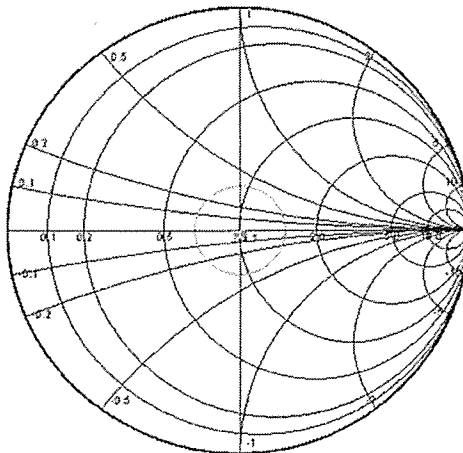
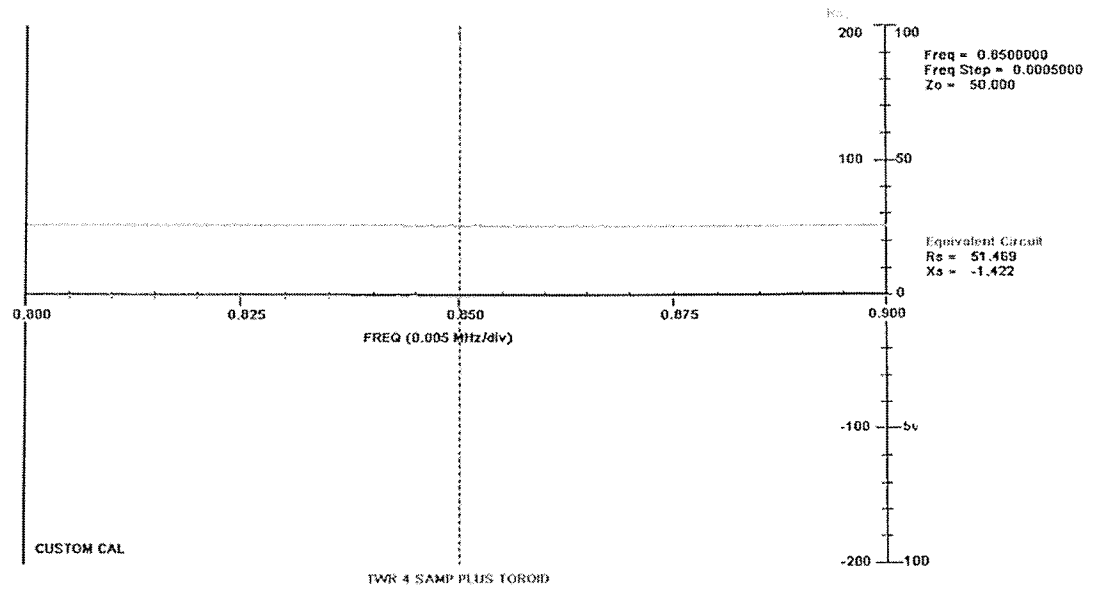


Marker	Freq	Rs	Xs
[ 1 ]	0.850000	51.193	-0.942

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EXHIBIT #6E

Tower #4 Sample and Toroid



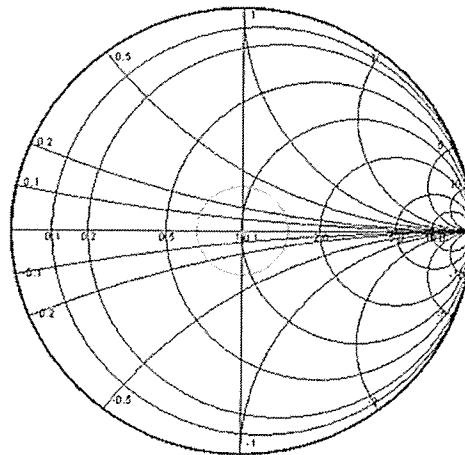
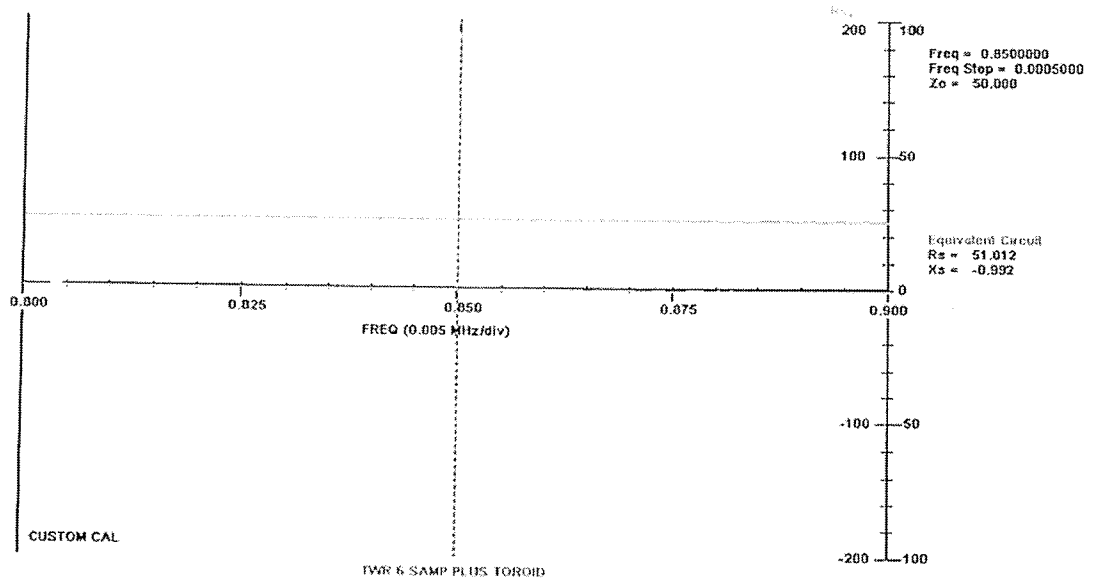
Marker	Freq	Rs	Xs
[ 1 ]	0.850000	51.469	-1.422

Marker	Freq	Rs	Xs
[ 1]	0.050000	51.090	-1.312

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EXHIBIT #6G

Tower #6 Sample and Toroid

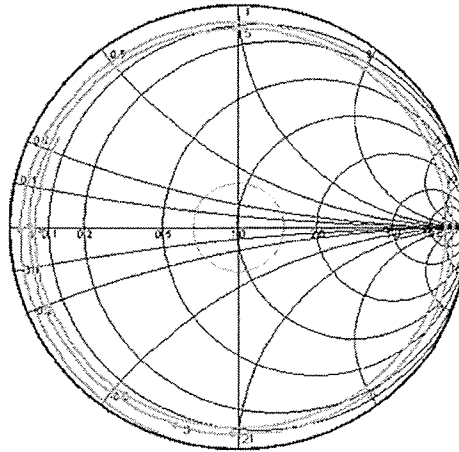


Marker	Freq	Rs	Xs
[ 1 ]	0.850000	51.012	-0.992

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EXHIBIT #6H

WTAR Sample Line - Tower #1



Marker	Freq	Rs	Xs
[ 1]	0.326300	1.461	0.006
[ 2]	0.820170	3.810	-48.783
[ 3]	0.850000	2.920	-36.611
[ 4]	0.984238	2.430	-0.000
[ 5]	1.148230	5.575	48.525

Station Freq (MHz)	Resonant Freq (MHz)	Resonant Freq (MHz)
0.85	0.3263	0.9842

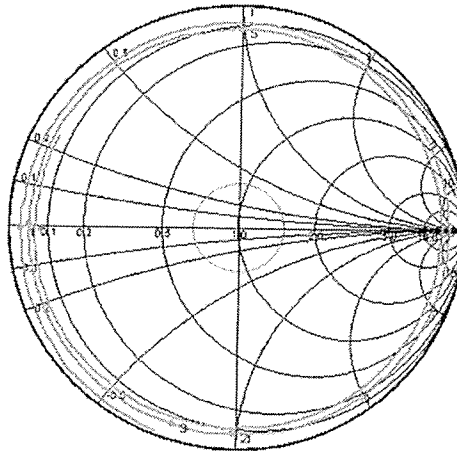
Closest To Station Freq	Line Velocity Factor From Mfg. (%)
0.9842	88
Length of Line ° @ Station Freq	Calculated Physical Length
233.2	659.9 feet

-45° Offset (MHz)	Resistance	Reactance	Line Characteristic Impedance (Ohms)
0.82017	3.810	-48.783	
+45° Offset (MHz)			48.9
1.14823	5.575	48.525	

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EXHIBIT #6I

WTAR Sample Line - Tower #2



Marker	Freq	Rs	Xs
[ 1]	0.326100	1.572	0.012
[ 2]	0.820170	3.893	-48.814
[ 3]	0.850000	3.044	-36.668
[ 4]	0.984200	2.466	0.012
[ 5]	1.148230	5.648	48.897

Station Freq (MHz)	Resonant Freq (MHz)	Resonant Freq (MHz)
0.85	0.3261	0.9842

Closest To Station Freq	Line Velocity Factor From Mfg. (%)
0.9842	88
Length of Line * @ Station Freq	Calculated Physical Length
233.2	659.9 feet

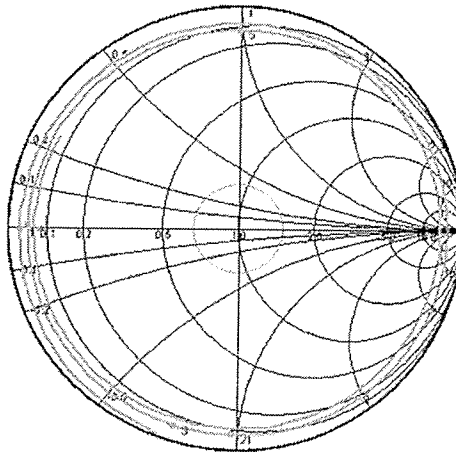
-45° Offset (MHz)	Resistance	Reactance	Line Characteristic Impedance (Ohms)
0.82017	3.893	-48.814	
+45° Offset (MHz)			49.1
1.14823	5.648	48.897	



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EXHIBIT #6J

WTAR Sample Line - Tower #3



Marker	Freq	Rs	Xs
[ 1]	0.325000	1.559	-0.011
[ 2]	0.819920	3.912	-48.788
[ 3]	0.850000	2.933	-36.577
[ 4]	0.983900	2.520	-0.001
[ 5]	1.147880	5.641	48.710

Station Freq (MHz)	Resonant Freq (MHz)	Resonant Freq (MHz)
0.85	0.3258	0.9839

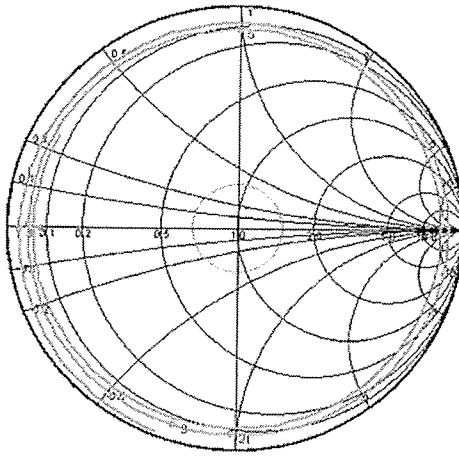
Closest To Station Freq	Line Velocity Factor From Mfg. (%)
0.9839	88
Length of Line * @ Station Freq	Calculated Physical Length
233.3	660.1 feet

-45° Offset (MHz)	Resistance	Reactance	Line Characteristic Impedance (Ohms)
0.81992	3.912	-48.788	
+45° Offset (MHz)			49.0
1.14788	5.641	48.710	

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EXHIBIT #6K

WTAR Sample Line - Tower #4



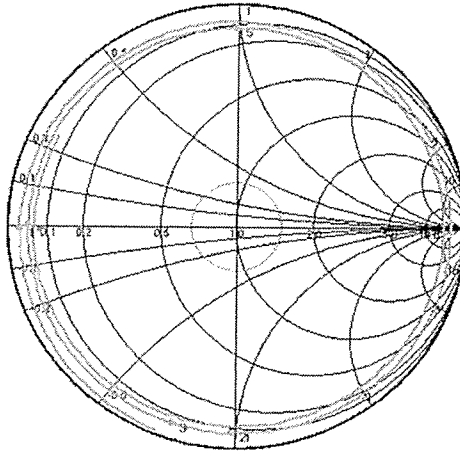
Marker	Freq	Rs	Xs
[ 1]	0.326000	1.604	0.003
[ 2]	0.819920	4.019	-48.906
[ 3]	0.850000	3.184	-36.754
[ 4]	0.983900	2.600	0.001
[ 5]	1.147880	5.631	48.654

Station Freq (MHz)	Resonant Freq (MHz)	Resonant Freq (MHz)	
0.85	0.326	0.9839	
Closest To Station Freq		Line Velocity Factor From Mfg. (%)	
0.9839		88	
Length of Line * @ Station Freq		Calculated Physical Length	
233.3		660.1	feet
		Impedance at Offset Freq	
-45° Offset (MHz)	Resistance	Reactance	Line Characteristic Impedance (Ohms)
0.81992	4.019	-48.906	
+45° Offset (MHz)			49.0
1.14788	5.631	48.654	

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EXHIBIT #6L

WTAR Sample Line - Tower #5



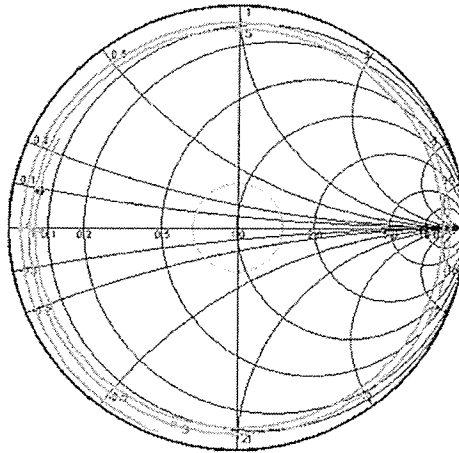
Marker	Freq	Rs	Xs
[ 1]	0.326000	1.619	0.011
[ 2]	0.820330	3.895	-48.862
[ 3]	0.850000	3.029	-36.695
[ 4]	0.984400	2.542	-0.008
[ 5]	1.148470	5.602	48.783

Station Freq (MHz)	0.85	Resonant Freq (MHz)	0.326	Resonant Freq (MHz)	0.9844
Closest To Station Freq	0.9844	Line Velocity Factor From Mfg. (%)	88		
Length of Line * @ Station Freq	233.1	Calculated Physical Length	659.7	feet	
-45° Offset (MHz)	0.82033	Resistance	3.895	Reactance	-48.862
+45° Offset (MHz)	1.14847	Resistance	5.602	Reactance	48.783
				Line Characteristic Impedance (Ohms)	49.1

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EXHIBIT #6M

WTAR Sample Line - Tower #6



Marker	Freq	Rs	Xs
[ 1]	0.325600	1.500	0.007
[ 2]	0.820330	3.961	-48.890
[ 3]	0.850000	3.093	-36.831
[ 4]	0.984400	2.547	-0.007
[ 5]	1.148470	5.607	48.670

Station Freq (MHz)	Resonant Freq (MHz)	Resonant Freq (MHz)
0.85	0.3256	0.9844

Closest To Station Freq	Line Velocity Factor From Mfg. (%)
0.9844	88
Length of Line ° @ Station Freq	Calculated Physical Length
233.1	659.7 feet

-45° Offset (MHz)	Resistance	Reactance	Line Characteristic Impedance (Ohms)
0.82033	3.961	-48.890	
+45° Offset (MHz)			
1.14847	5.607	48.670	49.0

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EXHIBIT #7

Reference Field Strength Measurements

Reference field strength measurements were made using a Potomac Instruments field strength meter of known calibration at three locations along radials on the station monitor point azimuths and on the major lobe radial(s) for the directional pattern. The tabulated measured field strengths and descriptions and GPS coordinates for the reference measurement points during daytime operation are attached as Exhibit #7A. The tabulated measured field strengths and descriptions and GPS coordinates for the reference measurement points during nighttime operation are attached as Exhibit #7B.

WTAR 850 Norfolk VA Daytime Field Measurements

Radial (°T)	Point #	N. Latitude	W. Longitude	Dist (mi)	Dist (km)	mv/m	Time (24 hr)	Date	Description
Major Lobe Radial									
110.0	1	37-02-02.7	76-36-27.1	4.92	7.92	345.00	1617	5/10/2010	Route 673 Morgarts Beach Rd @ Morgarts Beach Ln Guard Rail By River Route 673
110.0	2	37-01-43.7	76-36-05.0	5.29	8.51	265.00	1629	5/10/2010	Morgarts Beach Rd @ Days Point Rd & farm rd Mailbox 18493
110.0	3	37-01-43.7	76-35-26.7	5.92	9.53	325.00	1637	5/10/2010	End of farm road @ gate 0.6 mi E of Route 673 (Days Point Rd)

Monitor Point Radial Specified on Station License

166.5	1	37-02-08.5	76-40-59.6	1.73	2.78	73.00	1133	5/10/2010	Route 673 (Purvis Ln) 1.05 mi wnw of Route 677 (Wrenn's Mill Rd) E of the Colonial Pipeline
166.5	2	37-01-17.6	76-40-44.2	2.73	4.39	24.00	1110	5/10/2010	Route 678 (Bethany Church Rd) 0.425 mi W of Route 677 & 0.1 mi E of the Colonial Pipeline
166.5	3	36-59-57.8	76-40-20.5	4.31	6.94	15.50	1148	5/10/2010	Route 626 (Mill Swamp Rd) 0.1 mi W of Route 677 (Wrenn's Mill Rd)

Monitor Point Radial Specified on Station License

228.5	1	37-02-11.0	76-43-26.2	2.46	3.96	30.00	1201	5/10/2010	Route 627 (Moonlight Rd) 0.2 mi NNW of Route 621 ( Burwells Bay Rd)
228.5	2	37-01-54.9	76-43-49.2	2.93	4.72	26.50	1323	5/10/2010	Route 621 (Burwells Bay Rd) 0.45 mi W of Route 627 (Moonlight Rd)
228.5	3	37-00-08.7	76-46-19.2	6.01	9.67	4.30	1224	5/10/2010	Route 621 (Mill Swamp Rd) Just N of Route 680 (Stallings Creek Dr)

EXHIBIT #7A  
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WTAR 850 Norfolk VA Daytime Field Measurements

Radial (°T)	Point #	N. Latitude	W. Longitude	Dist (mi)	Dist (km)	mv/m	Time (24 hr)	Date	Description
Monitor Point Radial Specified on Station License									
250.0	1	37-02-54.4	76-43-48.9	2.33	3.75	35.50	1209	5/10/2010	Route 627 (Moonlight Rd) 1.1 mi NNW of Route 621 (Burwells Bay Rd) near Mailbox 3058
250.0	2	37-02-05.0	76-46-38.5	5.10	8.21	6.80	1250	5/10/2010	Route 617 (White Marsh Rd) 1.5 mi NW of Route 621 (Burwells Bay Rd)
250.0	3	37-01-40.0	76-48-04.3	6.50	10.46	2.90	1237	5/10/2010	just N of forest rd with steel gate Route 625 (Bellevue Rd) 0.75 mi S of Route 617 (White Marsh Rd) 780 Bellevue (Windswept Alpaca Farm)
Monitor Point Radial Specified on Station License									
355.0	1	37-05-21.5	76-41-37.5	2.04	3.28	65.00	1341	5/10/2010	Route 627 (Mantura Rd) 0.1 mi WSW of Route 628 (Burnt Mill Rd) & 1.1 mi NE of Route 10 (Colonial Trail E)
355.0	2	37-05-45.6	76-41-40.3	2.50	4.02	53.00	1355	5/10/2010	Archer's Walk (pvt rd) 0.195 mi E of Route 628 (Burnt Mill Rd)
355.0	3	37-09-10.5	76-42-02.8	6.45	10.38	7.30	1417	5/10/2010	Route 650 (Hog Island Rd) across from Chippokes Estates entrance

Geographic Coordinates Datum: NAD '27 CONUS  
Latitude and Longitude format : DD-MM-SS.s

GPS : Garmin eTREX : WAAAS Enabled

FIM : Potomac : FIM-41 : S/N 842 : Calibrated 7/23/2009

Field Measurements: David A Morgan, CE WTAR

WTAR 850 Norfolk VA Nighttime Field Measurements

Radial (°T)	Point #	N. Latitude	W. Longitude	Dist (mi)	Dist (km)	mv/m	Time (24 hr)	Date	Description
Monitor Point Radial Specified on Station License									
7.0	1	37-05-07.8	76-41-11.9	1.78	2.86	25.00	1542	5/12/2010	Route 628 (Lawnes Dr) just E Ennisdale Rd (pvt rd)
7.0	2	37-08-25.6	76-40-41.6	5.61	9.03	8.70	1623	5/12/2010	Route 780 (Landing Dr) 1.2 mi ESE of Route 650 (Hog Island Rd) 500 ft from boat ramp
7.0	3	37-15-33.5	76-39-35.5	13.89	22.35	1.30	1030	5/14/2010	Route 641 (Penniman Rd) @ Busch Industrial Park entrance (Alexander Lee Pkwy)
7.0	4	37-17-55.2	76-39-14.3	16.63	26.76	0.56	1052	5/14/2010	Route 716 (W Queens Rd) @ Mailbox 231
Monitor Point Radial Specified on Station License									
41.5	1	37-04-23.3	76-40-33.6	1.21	1.95	96.00	1605	5/12/2010	Route 675 (Holly Point Way) 0.25 mi E of Route 10 n(Old Stage Hwy)
41.5	2	37-04-49.3	76-40-04.7	1.88	3.03	44.00	1504	5/12/2010	Route 702 (Bradby's Ln) 0.9 mi ENE of Route 675 (Fort Huger Dr)
41.5	3	37-04-58.1	76-39-54.9	2.11	3.40	37.50	1517	5/12/2010	End of route 686 (Tylers Beach Rd) between shoreline and marina
41.5	4	37-13-32.9	76-30-23.9	15.31	24.64	1.05	1126	5/14/2010	Route 704 (Cook Rd) @ battlefield historical marker driveway

EXHIBIT #7B  
APPLICATION FOR STATION LICENSE  
SINCLAIR TELECABLE, INC.  
WTAR AM RADIO STATION  
850 kHz - 25.0/50.0 kW DA2  
NORFOLK, VIRGINIA  
May 2010



WTAR 850 Norfolk VA Nighttime Field Measurements

Radial (°T)	Point #	N. Latitude	W. Longitude	Dist (mi)	Dist (km)	mv/m	Time (24 hr)	Date	Description
Major Lobe Radial									
110.0	1	37-02-02.7	76-36-27.1	4.92	7.92	280.00	1330	5/12/2010	Route 673 Morgarts Beach Rd @ Morgarts Beach Ln
110.0	2	37-01-43.7	76-36-05.0	5.29	8.51	208.00	1338	5/12/2010	Guard Rail By River Route 673
110.0	3	37-01-43.7	76-35-26.7	5.92	9.53	257.00	1344	5/12/2010	Morgarts Beach Rd @ Days Point Rd & farm rd Mailbox 18493 End of farm road @ gate 0.6 mi E of Route 673 (Days Point Rd)

Monitor Point Radial Specified on Station License

173.5	1	37-02-06.2	76-41-13.0	1.74	2.80	15.00	1430	5/12/2010	Route 673 (Purvis Ln) 1.25 mi WNW of Route 677 (Wrenns Mill Rd), 0.15 mi W of Colonial Pipeline & 1.2 mi ESE of Routes 621 (Burwells Bay Rd)
173.5	2	37-01-07.4	76-41-04.8	2.87	4.62	10.00	1418	5/12/2010	Route 678 (Bethany Church Rd) across from church parking lot
173.5	3	37-00-10.4	76-40-56.6	3.98	6.41	7.30	1407	5/12/2010	Route 626 (Mill Swamp Rd) 0.7 mi WNW of Route 677 (Wrenns Mill Rd) & 1.1 mi ESE of Route 678 (Bethany Church Rd)

Geographic Coordinates Datum: NAD '27 CONUS  
Latitude and Longitude format : DD-MM-SS.s

GPS : Garmin eTREX : WAAS Enabled

FIM : Potomac : FIM-41 : S/N 842 : Calibrated 7/23/2009

Field Measurements: David A Morgan, CE WTAR

APPLICATION FOR STATION LICENSE  
SINCLAIR TELECABLE, INC.  
WTAR AM RADIO STATION  
850 kHz - 25.0/50.0 kW DA2  
NORFOLK, VIRGINIA  
May 2010

EXHIBIT #8

Antenna Monitor Calibration

The antenna monitor was calibrated on site according to the manufacturer's specifications.

**AFFIDAVIT AND QUALIFICATIONS OF CONSULTANT**

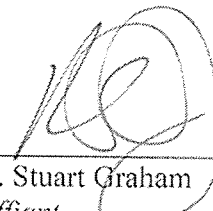
*State of Georgia    )*  
*St. Simons Island    ) ss:*  
*County of Glynn    )*

**R. Stuart Graham**, being duly sworn, deposes and says that he is an officer of Graham Brock, Inc. Graham Brock has been engaged by Sinclair Telecable, Inc., to prepare the attached Technical Exhibit.

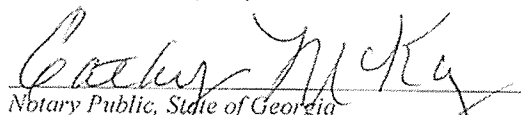
His qualifications are a matter of record before the Federal Communications Commission. He has been active in Broadcast Engineering since 1979.

The attached report was either prepared by him or under his direction and all material and exhibits attached hereto are believed to be true and correct.

*This the 19th day of May 2010.*

  
\_\_\_\_\_  
R. Stuart Graham  
*Affiant*

*Sworn to and subscribed before me  
this the 19th day of May 2010*

  
\_\_\_\_\_  
*Notary Public, State of Georgia*  
*My Commission Expires: March 18, 2011*