ENGINEERING STATEMENT
SUPPORTING REQUEST FOR WAIVER
CLASS A TELEVISION STATION KOXO-CD
(FACILITY ID NO. 71080)
PORTLAND, OREGON
CHANNEL 15

Background

This statement was prepared on behalf of WatchTV, Inc., licensee of KOXO-CD, Portland, Oregon, in support of a request for waiver of the FCC's Phase Assignment, Testing Period, and Phase Completion Date for television station KOXO-CD in the Portland, OR DMA[*]. KOXO-CD is licensed for operation on RF Channel 41 with a non-directional effective radiated power (ERP) of 15 kW and an antenna height above mean sea level of 525.3 m.[†]

As a result of the FCC's Incentive Auction repack process, the KOXO-CD facility was reassigned to RF Channel 15. KOXO-CD holds a construction permit for operation on Channel 15 with a non-directional ERP of 8.53 kW and an antenna height above mean sea level of 525.3 m.[‡] An FCC engineering database summary sheet for the KOXO-CD construction permit facility is attached hereto for reference.

In coordination with the wireless carrier, T-Mobile, KOXO-CD seeks a waiver of the FCC's Phase Assignment, Testing Period, and Phase Completion Date to allow KOXO-CD to make the transition to Channel 15 earlier than its given phase transition date. This will facilitate the early deployment of new 600 MHz band wireless broadband services.

This statement demonstrates that KOXO-CD can transition to Channel 15 before its assigned phase date without any disruption to the FCC's transition plans. Specifically, it is demonstrated that the operation of KOXO-CD on Channel 15 as authorized in its construction permit will have no adverse interference consequences, either caused or received, under the current allocation environment.

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[*] Nielsen Designated Market Area abbreviated as DMA.
[†] See FCC File No. 0000001178.
[‡] See FCC File No. 0000027193.

Assigned Phase

KOXO-CD was assigned to transition Phase 2, with a testing begin date of December 1, 2018. This is based on the latest FCC Phase Assignment spreadsheet dated October 30, 2017.

Linked Station Sets and Linked Station Neighbor Stations

An inspection of the latest FCC Linked Station Set (LSS) and Linked Station Neighbor (LSN) spreadsheet databases indicates that the KOXO-CD facility is not part of any LSSs or LSNs. These are based on the latest LSS and LSN spreadsheets available from the FCC, both dated October 30, 2017.

Interference Caused Analysis Under Current Allocation Environment

An interference analysis was conducted for the KOXO-CD Channel 15 construction permit facility utilizing the latest version[§] of the FCC's *TVStudy* coverage and interference analysis prediction software. The report of the results is attached hereto entitled 'Interference Caused Analysis for KOXO-CD Channel 15 Facility Under Current Allocation Environment.'

The results of the analysis indicate that there are no cases of outgoing (caused) interference exceeding the normal 0.5% rounding tolerance level to any other protected full-power or Class A television stations now operating.

Interference Received Analysis Under Current Allocation Environment

An interference analysis specifically for the 'received case' of interference was conducted for the KOXO-CD Channel 15 construction permit facility utilizing the FCC's *TVStudy* prediction software. The report of the results is attached hereto entitled 'Interference Received Analysis for KOXO-CD Channel 15 Facility Under Current Allocation Environment.' The purpose of this study is to evaluate all current environment records in the received interference analysis.

[§] TVStudy Version 2.2.4

The results of the analysis indicate that there are no cases of incoming (received) interference exceeding 0.5% to the KOXO-CD Channel 15 construction permit facility.

Effects on Linked Station Sets

Based on these results, the transition of the KOXO-CD facility to Channel 15 in advance of its phase transition date will not create any pairwise interference cases or new linked station sets.

Conclusion

It is concluded that the early transition of the KOXO-CD facility on Channel 15 will not result in any interference cases, either caused or received, that would result in the creation or alteration of any linked station sets established in the Incentive Auction repack process.

Louis R. du Treil, Jr., P.E.

du Treil, Lundin & Rackley, Inc.
3135 Southgate Circle
Sarasota, Florida 34239

December 11, 2017

TV Inquiry

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida

Callsign: KOXO-CD **Service:** DC **Status:** CP **App. Status:** GRANT **Border Code:** **Rec. Type:** C

Channel: 15 **Offset:** **Zone:** **Docket Number:** **DTV Type:** POSTTRAN

Fac. ID: 71080 **Assoc. ID:** **Application File No.:** BLANK-0000027193 **DT Emission Mask:** F

City: PORTLAND **State:** OR **Country:** US **CP Expiration Date:**

Party Name: WATCHTV, INC. **Last Change Date:** 7/19/2017

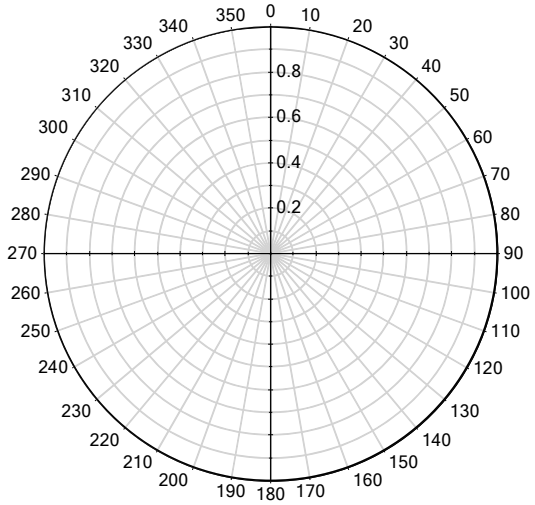
RCAMSL (m): 525.3
Site Elevation AMSL (m): 342.3
HAAT (m):
Maximum HAAT (m):

Height AGL (m): 183
Overall Height AGL (m): 282.2
ERP (kW): 8.53
Maximum ERP (kW):
Maximum ERP (dBk): 9.3
Maximum ERP at any Angle (kW):

Polarization: H
Electrical Tilt (°):
Mechanical Tilt (°):
Mechanical Tilt Azimuth (°):
Degrees True (°):
Antenna Make:
Antenna Model:

Antenna Type: N **Antenna ID:** 108477 **Rotation (°):**

0°	1.000	**90°**	1.000	**180°**	1.000	**270°**	1.000
10°	1.000	**100°**	1.000	**190°**	1.000	**280°**	1.000
20°	1.000	**110°**	1.000	**200°**	1.000	**290°**	1.000
30°	1.000	**120°**	1.000	**210°**	1.000	**300°**	1.000
40°	1.000	**130°**	1.000	**220°**	1.000	**310°**	1.000
50°	1.000	**140°**	1.000	**230°**	1.000	**320°**	1.000
60°	1.000	**150°**	1.000	**240°**	1.000	**330°**	1.000
70°	1.000	**160°**	1.000	**250°**	1.000	**340°**	1.000
80°	1.000	**170°**	1.000	**260°**	1.000	**350°**	1.000



Standard Pattern:
Antenna Make: COE
Antenna Model: CO-24U/8
Last Change Date:

Note: Rotation or tilt is not applied to the pattern shown

Type: TOWER **ASRN:** 1204059 **FAA Study No.:** 99-ANM-0608-OE **Structure Height (m):** 250.2

Latitude (NAD 27): 045-31-21.1 **Date Received:** 09/29/2017 **Structure Height (ft):** 820.9
Longitude (NAD 27): 122-44-45.1 **Date Entered:** 09/29/2017 **Ground Elevation (m):** 342.3
Latitude (NAD 83): 45-31-20.5 **Date Issued:** 09/29/2017 **Ground Elevation (ft):** 1123.0
Longitude (NAD 83): 122-44-49.5 **Date Constructed:** 02/14/2000 **Overall Height AGL (m):** 282.2
Date Dismantled: **Overall Height AGL (ft):** 925.9

Struct. Address:
299 NW Skyline Drive
Portland OR

Overall Height AMSL (m): 624.5
Overall Height AMSL (ft): 2048.9

Entity Name: Sander Operating Co. III LLC

INTERFERENCE CAUSED ANALYSIS FOR KOXO-CD CHANNEL 15
FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT

```
tvstudy v2.2.4 (Z2Qqz3)
Database: localhost,  Study: koxo15c1,  Model: Longley-Rice

Study build station data: LMS TV 2017-12-08 (103)

    Proposal: KOXO15C1 D15 DC CP PORTLAND, OR
 File number: koxo15c1
 Facility ID: 71080
Station data: User record
   Record ID: 1982
     Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
All post-transition APP, CP, and baseline records excluded

Stations potentially affected by proposal:

IX   Call      Chan       Svc Status  City, State              File Number            Distance
No   KRHP-CD   D14        DC  LIC     THE DALLES, OR           BLDTA20090819AFR       125.6 km
No   KTBW-TV   D14        DT  LIC     TACOMA, WA               BLCDT20060615AAY       225.1
No   KAPP      D14        DT  LIC     YAKIMA, WA               BLCDT20130829AEQ       205.7
Yes  KORY-CD   D15        DC  LIC     EUGENE, OR               BLDTA20120222AAU       171.4
No   KVVK-CD   D15        DC  LIC     KENNEWICK, ETC., WA      BLDTA20100125ACB       282.7
No   KORS-CD   D16        DC  LIC     PORTLAND, OR             BLDTA20100517ABN         0.0
No   KNDO      D16        DT  LIC     YAKIMA, WA               BLCDT20090217ACI       206.1

No non-directional AM stations found within 0.8 km

Directional AM stations within 3.2 km:
KUFO 970 L DAN D PORTLAND, OR BL
KUFO 970 L DAN N PORTLAND, OR BL

Record parameters as studied:

    Channel: D15
       Mask: Full Service
   Latitude:  45 31 20.50 N (NAD83)
  Longitude: 122 44 49.50 W
Height AMSL: 525.3 m
       HAAT: 0.0 m
   Peak ERP: 8.53 kW
    Antenna: Omnidirectional
Elev Pattrn: Generic

48.8 dBu contour:
Azimuth      ERP       HAAT   Distance
  0.0 deg   8.53 kW   493.9 m   63.8 km
 45.0       8.53      498.5     63.9
 90.0       8.53      464.9     62.9
135.0       8.53      435.7     61.8
180.0       8.53      450.9     62.4
225.0       8.53      422.7     61.2
270.0       8.53      462.4     62.8
315.0       8.53      368.1     58.5

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m   Computed HAAT: 450 m

Distance to Canadian border: 306.3 km

Distance to Mexican border: 1507.2 km

Conditions at FCC monitoring station: Ferndale WA
Bearing: 2.1 degrees   Distance: 381.9 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 106.6 degrees   Distance: 1541.6 km
```

INTERFERENCE CAUSED ANALYSIS FOR KOXO-CD CHANNEL 15 FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT

No land mobile station failures found

Proposal is not within the Offshore Radio Service protected area

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 BLDTA20120222AAU LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KORY-CD	D15	DC	LIC	EUGENE, OR	BLDTA20120222AAU	
Undesireds:	KOXO15C1	D15	DC	CP	PORTLAND, OR	koxo15c1	171.4 km

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
9038.4	361,435	7308.4	338,669	7308.4	338,669	7288.4	338,441	0.27	0.07

Undesired				Total IX	Unique IX, before	Unique IX, after	
KOXO15C1	D15	DC	CP	19.9	228	19.9	228

INTERFERENCE RECEIVED ANALYSIS FOR KOXO-CD CHANNEL 15 FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT

```
tvstudy v2.2.4 (Z2Qqz3)

    Database: localhost
Station Data: LMS TV 2017-11-28 (95)
       Study: LMS17Nov28
       Model: Longley-Rice
    Scenario: koxo15c1r
```

Desired station / Undesired station	Service area		Terrain-limited		Interference-free	
	Total interference		Unique interference			
KOXO15C1 D15 DC CP PORTLAND, OR	12173.7	2,302,061	10526.0	2,216,432	10413.5	2,211,537
KORY-CD D15 DC LIC EUGENE, OR	112.5	4,895	112.5	4,895		(0.22%)
KORS-CD D16 DC LIC PORTLAND, OR	0.0	0	0.0	0		(0.00%)
KRHP-CD D14 DC LIC THE DALLES, OR	0.0	0	0.0	0		(0.00%)
KVVK-CD D15 DC LIC KENNEWICK, ETC., WA	0.0	0	0.0	0		(0.00%)