

## **ENGINEERING EXHIBIT**

### **Digital Low Power Television Station Application for Minor Modification of Licensed Facility**

prepared for

#### **Ventura Media Communications, LLC**

KKIF-LD Twin Falls, ID

Facility ID 130618

Ch. 23 15 kW Directional

*Ventura Media Communications, LLC* (“*Ventura*”) is the licensee of digital Low Power Television station KKIF-LD, Channel 23, Facility ID 130618, Twin Falls ID. KKIF-LD is licensed to operate at 15 kW effective radiated power (“ERP”) with a directional antenna (file# 0000177726). KKIF-LD, currently silent, is licensed to operate in ATSC 3.0 (Next Gen TV) mode. *Ventura* herein seeks a minor modification Construction Permit (“CP”) to relocate KKIF-LD to an adjacent tower structure and to utilize a different directional antenna pattern. When operations resume, KKIF-LD will revert to ATSC 1.0 mode.

The proposed facility will employ a new antenna to be side-mounted on the tower structure associated with FCC Antenna Structure Registration number 1041029, located 0.1 km from the licensed site. No change to the overall structure height is proposed.

The proposed antenna is a PSI model PSILPD16AW-23/26 having horizontal polarization. The antenna will be shared with *Ventura*’s station KTKV-LD (Ch. 26, Facility ID 129811). The proposed KKIF-LD ERP is 15 kW using a “full service” out of channel emission mask. A plot of the directional antenna’s azimuthal pattern is supplied in Figure 1. Figure 2 depicts the coverage contour of the proposed facility as well as that of the licensed facility, demonstrating compliance with §73.3572 for a minor change.

Interference study per OET Bulletin 69<sup>1</sup> shows that the proposal complies with the FCC’s interference protection requirements toward all digital television, television translator, LPTV, and

---

<sup>1</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating*

Class A stations. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility.

### **Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

The proposed facility was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10) and 10 percent antenna relative field in downward elevations, the calculated power density attributable to the proposed facility at locations near the transmitter site at a height of two meters above ground level is  $11.5 \mu\text{W}/\text{cm}^2$ , which is 3.3 percent of the general population / uncontrolled maximum permissible exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. This exhibit is limited to the evaluation of exposure to RF electromagnetic field. No increase in structure height is proposed.

#### List of Attachments

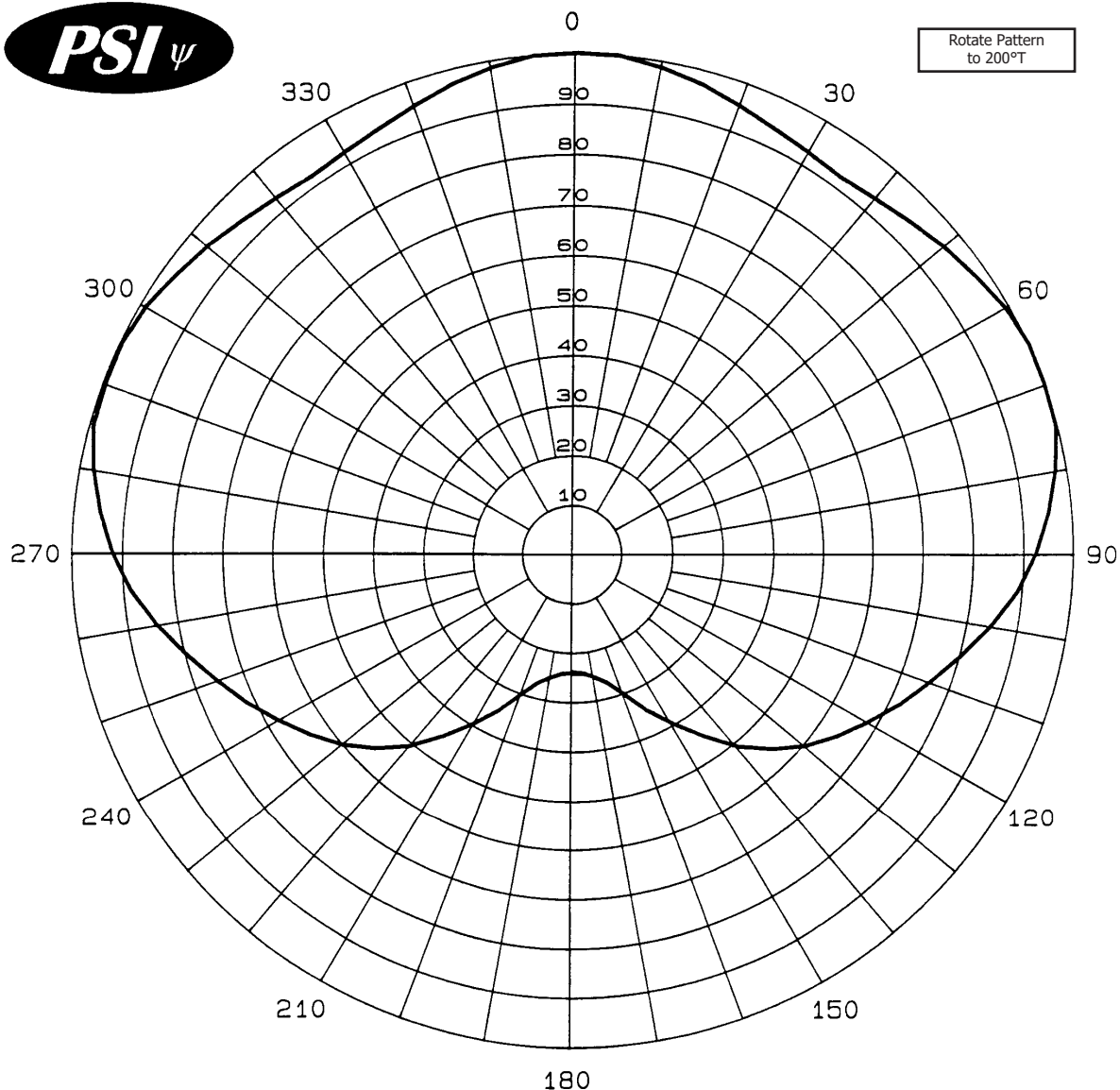
Figure 1	Antenna Azimuthal Pattern
Figure 2	Coverage Contour Comparison
Table 1	TVStudy Analysis of Proposal
Form 2100	Saved Version of Engineering Sections of FCC Form at Time of Upload

### **Chesapeake RF Consultants, LLC**

Joseph M. Davis, P.E.	April 8, 2024	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600

---

*TV Coverage and Interference*, February 6, 2004 ("OET-69"). This analysis employed the FCC's current "TVStudy" software with the default application processing template settings, 1 km cell size, and 1 km terrain increment. Comparisons of various results of this computer program (run on a Mac processor) to the FCC's implementation of TVStudy show excellent correlation.



Calculated Relative Field  
Azimuth Plane Pattern  
Low Power UHF Slot  
Antenna Type: PSILP  
Pattern Type: AW  
Directivity: 1.56 (1.93 dB)  
Date: 7/1/97  
Rev. 0

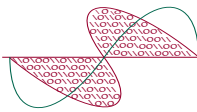
**PROPAGATION SYSTEMS, INC.**  
**PO BOX 113**  
**EBENSBURG, PA. 15931**

**Figure 1**  
**Antenna Azimuthal Pattern**  
**KKIF-LD Twin Falls, ID**  
**Facility ID 130618**  
**Ch. 23 15 kW Directional**

prepared for  
**Ventura Media Communications, LLC**

April, 2024



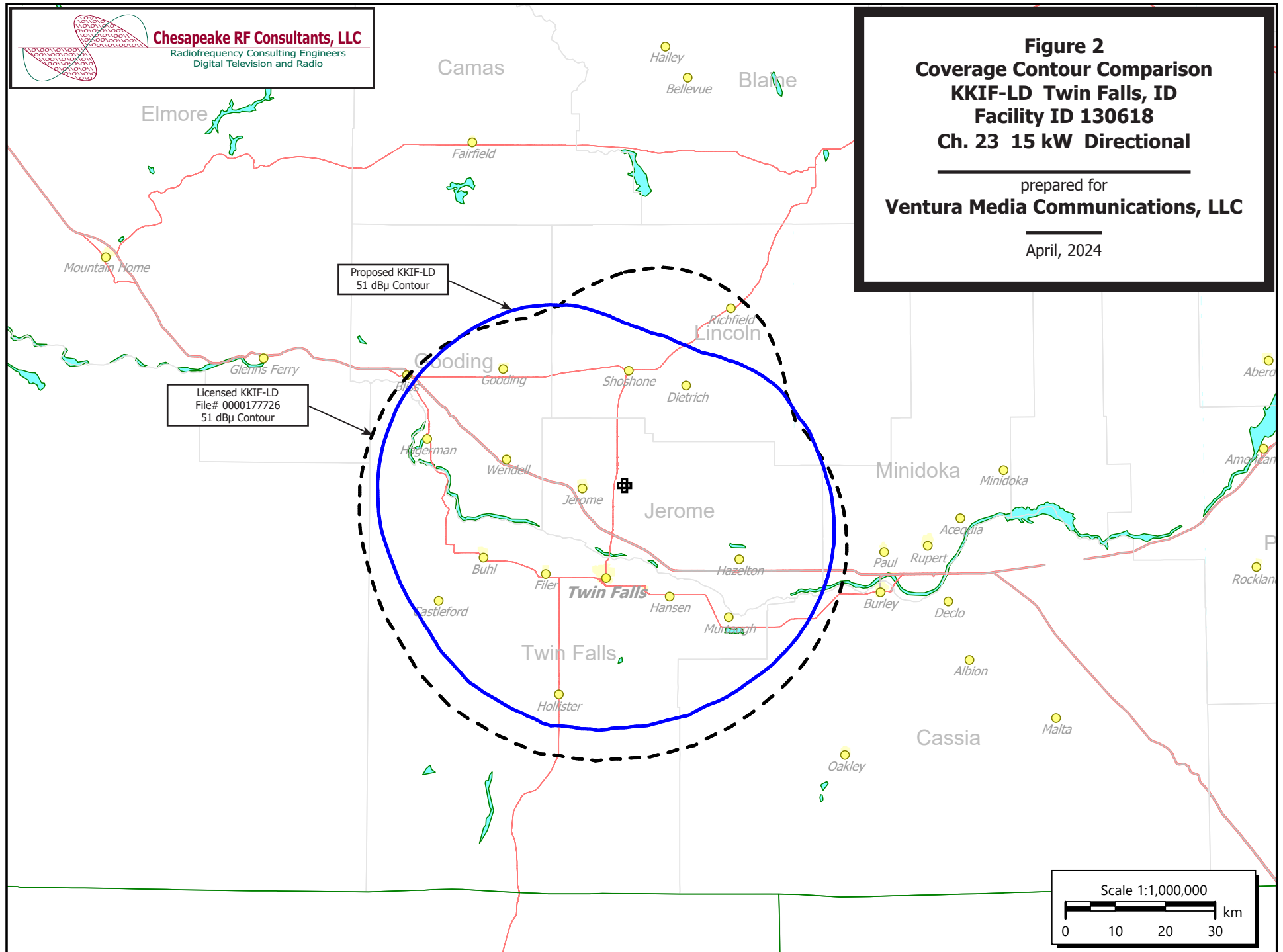


**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 2**  
**Coverage Contour Comparison**  
**KKIF-LD Twin Falls, ID**  
**Facility ID 130618**  
**Ch. 23 15 kW Directional**

prepared for  
**Ventura Media Communications, LLC**

April, 2024



**Table 1 KKIF-LD TVStudy Analysis of Proposal**  
(page 1 of 3)



tvstudy v2.2.5 (4uoc83)  
Database: localhost, Study: KKIF-LD 1041029 prop, Model: Longley-Rice  
Start: 2024.04.08 09:48:23

Study created: 2024.04.08 09:48:23

Study build station data: LMS TV 2024-04-07

Proposal: KKIF-LD D23 LD APP TWIN FALLS, ID  
File number: KKIF-LD 1041029  
Facility ID: 130618  
Station data: User record  
Record ID: 351  
Country: U.S.

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

Search options:  
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KKIC-LD	N16-	TX	LIC	BOISE, ID	BLTTL20060419AAE	179.1 km
No	KRID-LD	D22	LD	LIC	BOISE, ID	BLANK0000001109	177.6
No	K22NQ-D	D22	LD	LIC	HOLBROOK, ID	BLANK0000074792	159.5
No	KIPT	D22	DD	APP	TWIN FALLS, ID	BLANK0000243106	0.1
No	KIPT	D22	DD	LIC	TWIN FALLS, ID	BLEDT20120808ABN	0.1
No	K22GW-D	D22	LD	LIC	WELLS, NV	BLANK0000220450	175.8
No	K23NB-D	D23	LD	LIC	BOISE, ID	BLANK0000181649	179.0
No	K23KY-D	D23	LD	LIC	COUNCIL, ID	BLDTT20110516AEJ	269.6
No	K23JH-D	D23	LD	LIC	LEADORE, ID	BLDTT20101116BIO	231.8
Yes	K23DO-D	D23	LD	LIC	MALTA, ID	BLDTT20100915AAZ	88.6
No	K23BV-D	D23	LD	LIC	MONTPELIER, ID	BLDTT20111115AGZ	251.0
Yes	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDT20060706AEF	170.1
No	K23GR-D	D23	LD	LIC	PRESTON, ID	BLDTT20111116AID	226.8
No	KTMF	D23	DT	LIC	MISSOULA, MT	BLCDT20090612AEQ	477.9
No	K23FC-D	D23	LD	LIC	ELKO, NV	BLANK0000220473	257.0
No	K23FR-D	D23	LD	LIC	WINNEMUCCA, NV	BLANK0000145193	336.7
No	K23IC-D	D23	LD	LIC	HUNTSVILLE, ETC., UT	BLDTT20081215AAC	264.4
No	KSL-TV	D23	DT	LIC	SALT LAKE CITY, UT	BLANK0000064344	294.4
No	K23NV-D	D23	LD	LIC	SUMMIT COUNTY, UT	BLANK0000093359	320.3
No	K23DS-D	D23	LD	LIC	EVANSTON, WY	BLDTT20060711AAO	327.8
No	K24HU-D	D24	LD	LIC	BURLEY, ETC., ID	BLDTT20111104ALE	72.6
No	KIVI-TV	D24	DT	LIC	NAMPA, ID	BLCDT20140506ADA	177.7
No	K24GE-D	D24	LD	LIC	WELLS, NV	BLANK0000220445	175.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D23  
Mask: Full Service  
Latitude: 42 43 44.00 N (NAD83)  
Longitude: 114 24 59.00 W  
Height AMSL: 1324.9 m  
HAAT: 0.0 m  
Peak ERP: 15.0 kW  
Antenna: PSI AW 200.0 deg  
Elev Pattn: Generic  
Elec Tilt: 1.00

49.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.37 kW	121.9 m	34.2 km
45.0	1.83	118.1	35.5
90.0	8.62	107.6	42.4
135.0	14.8	142.7	47.7
180.0	13.6	183.2	49.9
225.0	13.2	203.6	50.9

**Table 1 KKIF-LD TVStudy Analysis of Proposal**  
(page 2 of 3)



270.0      14.9      192.3      50.9  
315.0      7.75      156.9      45.4

Database HAAT does not agree with computed HAAT  
Database HAAT: 0 m      Computed HAAT: 153 m

Distance to Canadian border: 697.2 km

Distance to Mexican border: 1112.9 km

Conditions at FCC monitoring station: Livermore CA  
Bearing: 230.7 degrees      Distance: 834.3 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 107.5 degrees      Distance: 814.9 km

Study cell size: 1.00 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 BLDTT20100915AAZ LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance		
Desired:	K23DO-D	D23	LD	LIC	MALTA, ID	BLDTT20100915AAZ			
Undesireds:	KKIF-LD	D23	LD	APP	TWIN FALLS, ID	KKIF-LD 1041029	88.6 km		
	KIPT	D22	DD	APP	TWIN FALLS, ID	BLANK0000243106	88.6		
	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDDT20060706AEF	109.9		
	KSL-TV	D23	DT	LIC	SALT LAKE CITY, UT	BLANK0000064344	216.0		
	K24HU-D	D24	LD	LIC	BURLEY, ETC., ID	BLDTT20111104ALE	16.1		
Service area		Terrain-limited			IX-free, before		IX-free, after	Percent New IX	
1544.9      3,970		1422.0		3,310	1222.7      1,735	1173.1      1,735	4.06	0.00	
Undesired				Total IX		Unique IX, before		Unique IX, after	
KKIF-LD D23 LD APP		87.1		830		49.7		0	
KPVI-DT D23 DT LIC		186.1		1,430		126.4		176	
KSL-TV D23 DT LIC		10.1		0		4.0		0	
K24HU-D D24 LD LIC		57.7		1,399		8.1		145	

-----  
Interference to BLCDDT20060706AEF LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance				
Desired:	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDDT20060706AEF					
Undesireds:	KKIF-LD	D23	LD	APP	TWIN FALLS, ID	KKIF-LD 1041029	170.1 km				
	KIPT	D22	DD	APP	TWIN FALLS, ID	BLANK0000243106	170.0				
	KSL-TV	D23	DT	LIC	SALT LAKE CITY, UT	BLANK0000064344	251.6				
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX				
26541.2	271,492	21429.5		264,083	21242.8	264,005	20620.0	263,967	2.93	0.01	
Undesired				Total IX	Unique IX, before		Unique IX, after				
KKIF-LD	D23	LD	APP	650.1	38		622.9	38			
KSL-TV	D23	DT	LIC	186.7	78	186.7	78	159.5	78		

-----  
Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KKIF-LD	D23	LD	APP	TWIN FALLS, ID	KKIF-LD 1041029	
Undesireds:	KIPT	D22	DD	APP	TWIN FALLS, ID	BLANK0000243106	0.1 km
	K23DO-D	D23	LD	LIC	MALTA, ID	BLDTT20100915AAZ	88.6
	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDDT20060706AEF	170.1

**Table 1 KKIF-LD TVStudy Analysis of Proposal**  
(page 3 of 3)



Service area		Terrain-limited		IX-free		Percent IX	
6378.9	118,894	6312.4	118,652	6092.3	117,549	3.49	0.93
Undesired		Total IX		Unique IX		Prcnt Unique IX	
KIPT D22 DD APP		33.2	121	31.2	121	0.49	0.10
K23DO-D D23 LD LIC		44.4	74	19.2	30	0.30	0.03
KPVI-DT D23 DT LIC		169.8	952	142.5	908	2.26	0.77

-----  
Interference to proposal scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KKIF-LD	D23	LD	APP	TWIN FALLS, ID	KKIF-LD 1041029	
Undesireds:	KIPT	D22	DD	LIC	TWIN FALLS, ID	BLEDT20120808ABN	0.1 km
	K23DO-D	D23	LD	LIC	MALTA, ID	BLD TT20100915AAZ	88.6
	KPVI-DT	D23	DT	LIC	POCATELLO, ID	BLCDT20060706AEF	170.1

Service area		Terrain-limited		IX-free		Percent IX	
6378.9	118,894	6312.4	118,652	6092.3	117,549	3.49	0.93
Undesired		Total IX		Unique IX		Prcnt Unique IX	
KIPT D22 DD LIC		33.2	121	31.2	121	0.49	0.10
K23DO-D D23 LD LIC		44.4	74	19.2	30	0.30	0.03
KPVI-DT D23 DT LIC		169.8	952	142.5	908	2.26	0.77

**Channel and  
Facility  
Information**

Section	Question	Response
Proposed Community of License	Facility ID	130618
	State	Idaho
	City	TWIN FALLS
	LPD Channel	23
	Designated Market Area	Twin Falls



Antenna Location  
Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1041029
Coordinates (NAD83)	Latitude	42° 43' 44.0" N+
	Longitude	114° 24' 59.0" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	46.6 meters
	Support Structure Height	46.6 meters
	Ground Elevation (AMSL)	1302.0 meters
Antenna Data	Height of Radiation Center Above Ground Level	22.9 meters
	Height of Radiation Center Above Mean Sea Level	1324.9 meters
	Effective Radiated Power	15 kW

**Antenna  
Technical Data**

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	No
	Antenna ID	
Antenna Manufacturer and Model	Manufacturer:	PSI
	Model	PSILPD16AW-23/26
	Rotation	200 degrees
	Electrical Beam Tilt	1
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Horizontal
Elevation Radiation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	
	Out-of-Channel Emission Mask:	Full Service

**Directional Antenna Relative Field Values (Pre-rotated Pattern)**

Degree	Value	Degree	Value	Degree	Value	Degree	Value
0	1	90	0.922	180	0.241	270	0.922
10	0.985	100	0.845	190	0.253	280	0.975
20	0.951	110	0.758	200	0.302	290	0.997
30	0.925	120	0.680	210	0.397	300	0.990
40	0.929	130	0.605	220	0.510	310	0.959
50	0.959	140	0.510	230	0.605	320	0.929
60	0.990	150	0.397	240	0.680	330	0.925
70	0.997	160	0.302	250	0.758	340	0.951
80	0.975	170	0.253	260	0.845	350	0.985

**Additional Azimuths**

Degree	V <sub>A</sub>
--------	----------------