Federal Aviation Administration

« OE/AAA

Interim Cases for OR

Records 1 to 13 of 13 Page 1 of 1

Case Number	City	State	Latitude	Longitude	Site Elevation	Structure Height	Total Height
2017-ANM-5386-OE	North Bend	OR	43° 25' 48.88" N	124° 16' 00.87" W	23	219	242
2017-ANM-5387-OE	North Bend	OR	43° 25' 53.61" N	124° 16' 01.16" W	23	219	242
2017-ANM-5388-OE	North Bend	OR	43° 25' 59.24" N	124° 16' 00.87" W	42	131	173
2017-ANM-5389-OE	North Bend	OR	43° 26' 01.57" N	124° 16' 03.43" W	42	126	168
2017-ANM-5418-OE	North Bend	OR	43° 25' 40.52" N	124° 15' 57.06" W	10	199	209
2018-ANM-4-OE	North Bend	OR	43° 23' 49.37" N	124° 16' 56.55" W	12	199	211
2018-ANM-5-OE	North Bend	OR	43° 24' 07.84" N	124° 16' 41.25" W	12	199	211
2018-ANM-6-OE	North Bend	OR	43° 24' 32.44" N	124° 16' 38.26" W	12	199	211
2018-ANM-7-OE	North Bend	OR	43° 24' 55.79" N	124° 16' 29.14" W	12	199	211
2018-ANM-8-OE	North Bend	OR	43° 25' 07.71" N	124° 16' 17.62" W	12	199	211
2018-ANM-718-OE	North Bend	OR	43° 23' 36.85" N	124° 17' 04.51" W	12	199	211
2018-ANM-719-OE	North Bend	OR	43° 25' 20.59" N	124° 15' 48.27" W	12	199	211
2018-ANM-720-OE	North Bend	OR	43° 25' 13.85" N	124° 16' 09.31" W	12	199	211

Rows per Page: 20 ▼

Records 1 to 13 of 13 **Page:** 1 Page 1 of 1

JOHN CLARKE
1192 TWIN OAKS LN.
WINSTON OR. 97496
541-679-3526

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ANM-720-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Carrier Vessel - Stack, Transit Point 6
Location:	North Bend, OR
Latitude:	43-25-13.85N NAD 83
Longitude:	124-16-09.31W
Heights:	12 feet site elevation (SE)
	199 feet above ground level (AGL)
	211 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 155 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

Any height exceeding 155 feet above ground level (167 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ANM-720-OE.

Signature Control No: 357210193-364494235 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2018-ANM-720-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 199-foot AGL (211-foot AMSL) liquid natural gas carrier vessel (ship stack) shipping channel transit point location associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surfaces:

Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 44 feet.

Additionally, the proposed structure would exceed the OTH VFR traffic pattern airspace in the Part 77 VFR Horizontal Surface feet as defined in FAA JO 7400.2L, 6-3-8, Evaluating Effect on VFR Operations.

This proposed structure would exceed the OTH VFR Traffic Pattern Horizontal Surface by 44 feet. The not-to-exceed height of 155 feet AGL (167 AMSL) will avoid penetrating the Horizontal Surface.

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

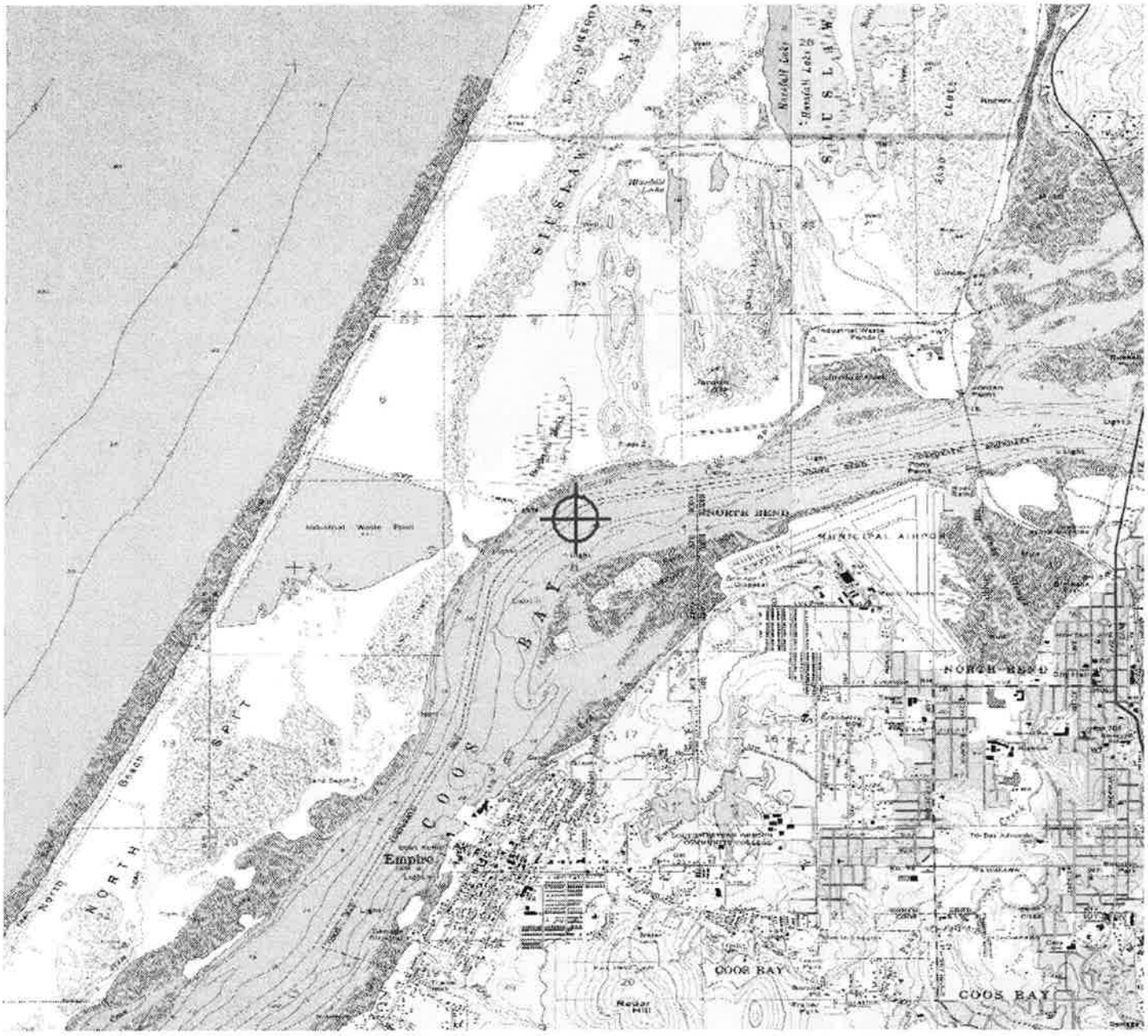
Your options and conditions for this proposal are as follows:

1. You must resolve the 44 foot VFR Traffic Pattern Airspace penetration by lowering the structure height, with all appurtenances, to a maximum height at 155 feet AGL (167 AMSL). If you agree to limit the structure height to 155 feet AGL (167 AMSL), the FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

2. You can terminate the proposal at this location.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

Close Print


NORTH BEND
MUNICIPAL AIRPORT
NORTH BEND
COOS BAY
Empire
COOS BAY
COOS BAY
NORTH SPIT
North Beach
Industrial Waste Pond

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ANM-719-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Carrier Vessel - Stack, Transit East Point
Location:	North Bend, OR
Latitude:	43-25-20.59N NAD 83
Longitude:	124-15-48.27W
Heights:	12 feet site elevation (SE)
	199 feet above ground level (AGL)
	211 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 155 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

Any height exceeding 155 feet above ground level (167 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

See Attachment for Additional information.

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IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ANM-719-OE.

Signature Control No: 357209466-364496207 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2018-ANM-719-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 199-foot AGL (211-foot AMSL) liquid natural gas carrier vessel (ship stack) shipping channel transit point location associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surface:

Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 44 feet.

Additionally, the proposed structure would exceed the OTH VFR traffic pattern airspace in the Part 77 VFR Horizontal Surface feet as defined in FAA JO 7400.2L, 6-3-8, Evaluating Effect on VFR Operations.

This proposed structure would exceed the OTH VFR Traffic Pattern Horizontal Surface by 44 feet. The not-to-exceed height of 155 feet AGL (167 AMSL) will avoid penetrating the Horizontal Surface.

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

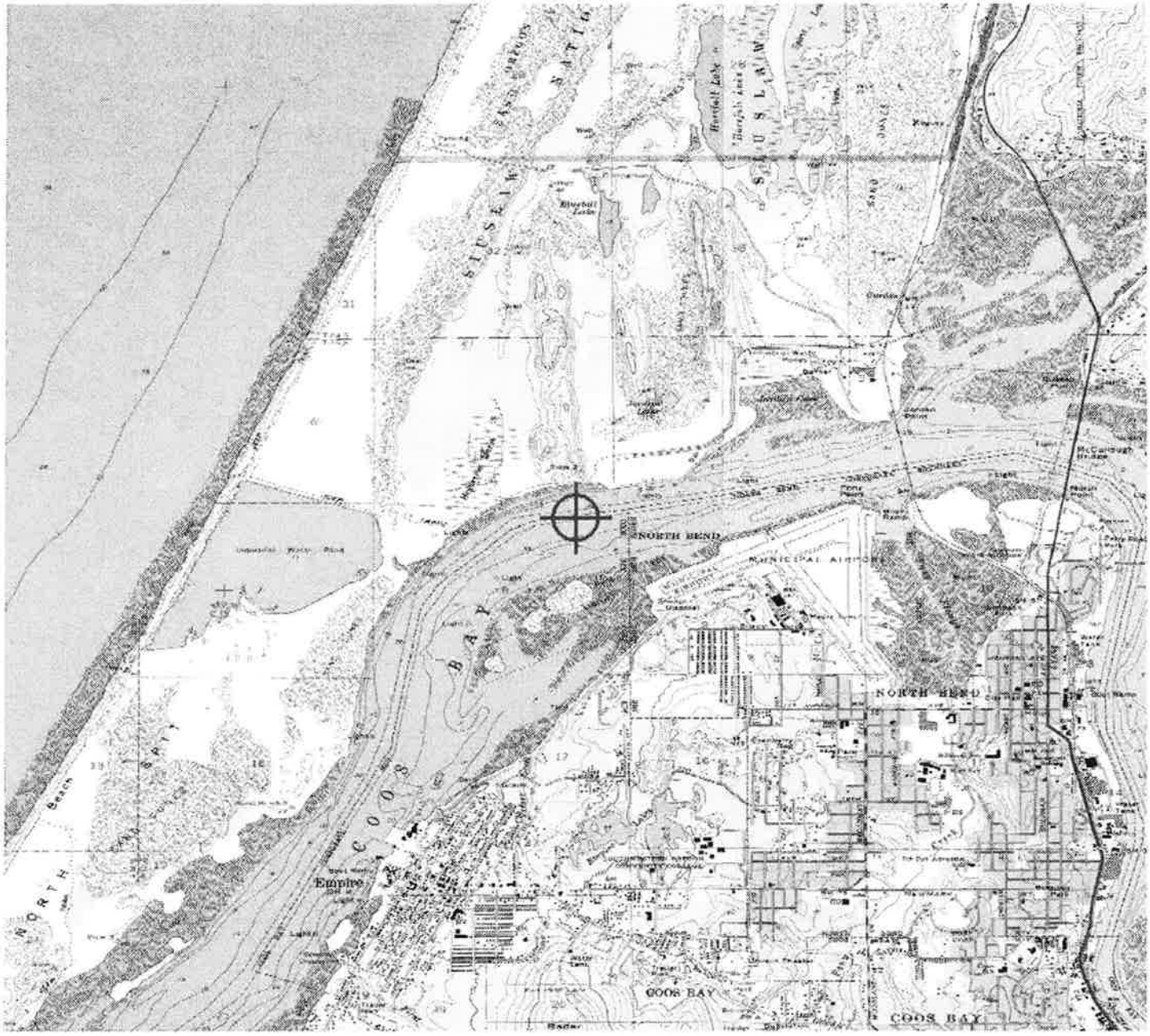
Your options and conditions for this proposal are as follows:

1. You must resolve the 44 foot VFR Traffic Pattern Airspace penetration by lowering the structure height, with all appurtenances, to a maximum height at 155 feet AGL (167 AMSL). If you agree to limit the structure height to 155 feet AGL (167 AMSL), the FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued. Further FAA study for any height greater than 155 AGL / 167 AMSL is not an option.

2. You can terminate the proposal at this location.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

Close Print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SLOUGH
NORTH BEND
MUNICIPAL AIRPORT
NORTH BEND
COOS BAY
NORTH BAY
Empire
COOS BAY
COOS BAY

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ANM-718-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Carrier Vessel - Stack, Transit West Point
Location:	North Bend, OR
Latitude:	43-23-36.85N NAD 83
Longitude:	124-17-04.51W
Heights:	12 feet site elevation (SE)
	199 feet above ground level (AGL)
	211 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 155 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

To pursue a favorable determination at the originally submitted height, further study would be necessary. Further study entails distribution to the public for comment, and may extend the study period up to 120 days. The outcome cannot be predicted prior to public circularization.

If you would like the FAA to conduct further study, you must make the request within 60 days from the date of issuance of this letter.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

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If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ANM-718-OE.

Signature Control No: 357209465-364496843 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

Additional information for ASN 2018-ANM-718-OE

ASN 2018-ANM-718-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 199-foot AGL (211-foot AMSL) liquid natural gas carrier vessel (ship stack) shipping channel transit point location associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surface:

Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 44 feet.

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

Your options for this proposal are as follows:

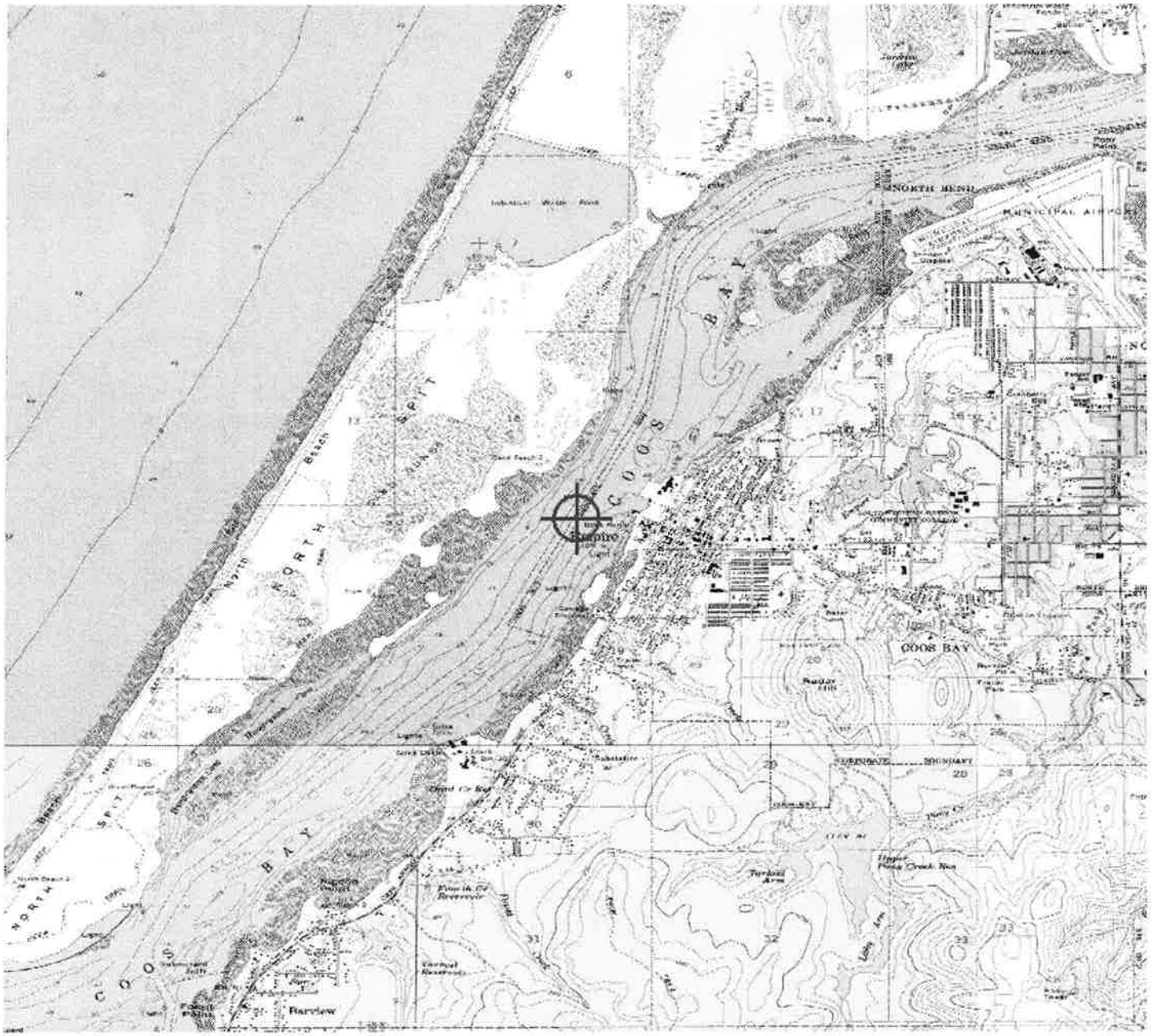
1. If you agree to limit the structure height to 155 feet AGL (167 AMSL), the FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

2. You can terminate the proposal at this location.

3. You can request further FAA study of the structure at the originally requested height. Further study will include a public notice circularization and 37-day comment period where the outcome cannot be predicted.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

Close Print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SPIT
NORTH
Beach
Empire
COOS BAY
Barview

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ANM-8-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Carrier Vessel - Stack, Transit Point 5
Location:	North Bend, OR
Latitude:	43-25-07.71N NAD 83
Longitude:	124-16-17.62W
Heights:	12 feet site elevation (SE)
	199 feet above ground level (AGL)
	211 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

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If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ANM-8-OE.

Signature Control No: 352163129-364497466 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2018-ANM-8-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 199-foot AGL (211-foot AMSL) liquid natural gas carrier vessel (ship stack) shipping channel transit point location associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surface:

Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 44 feet.

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The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

Your options and conditions for this proposal are as follows:

1. You must resolve the 44 foot VFR Traffic Pattern Airspace penetration by lowering the structure height, with all appurtenances, to a maximum height at 155 feet AGL (167 AMSL). If you agree to limit the structure height to 155 feet AGL (167 AMSL), the FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued. Further FAA study for any height greater than 155 AGL / 167 AMSL is not an option.

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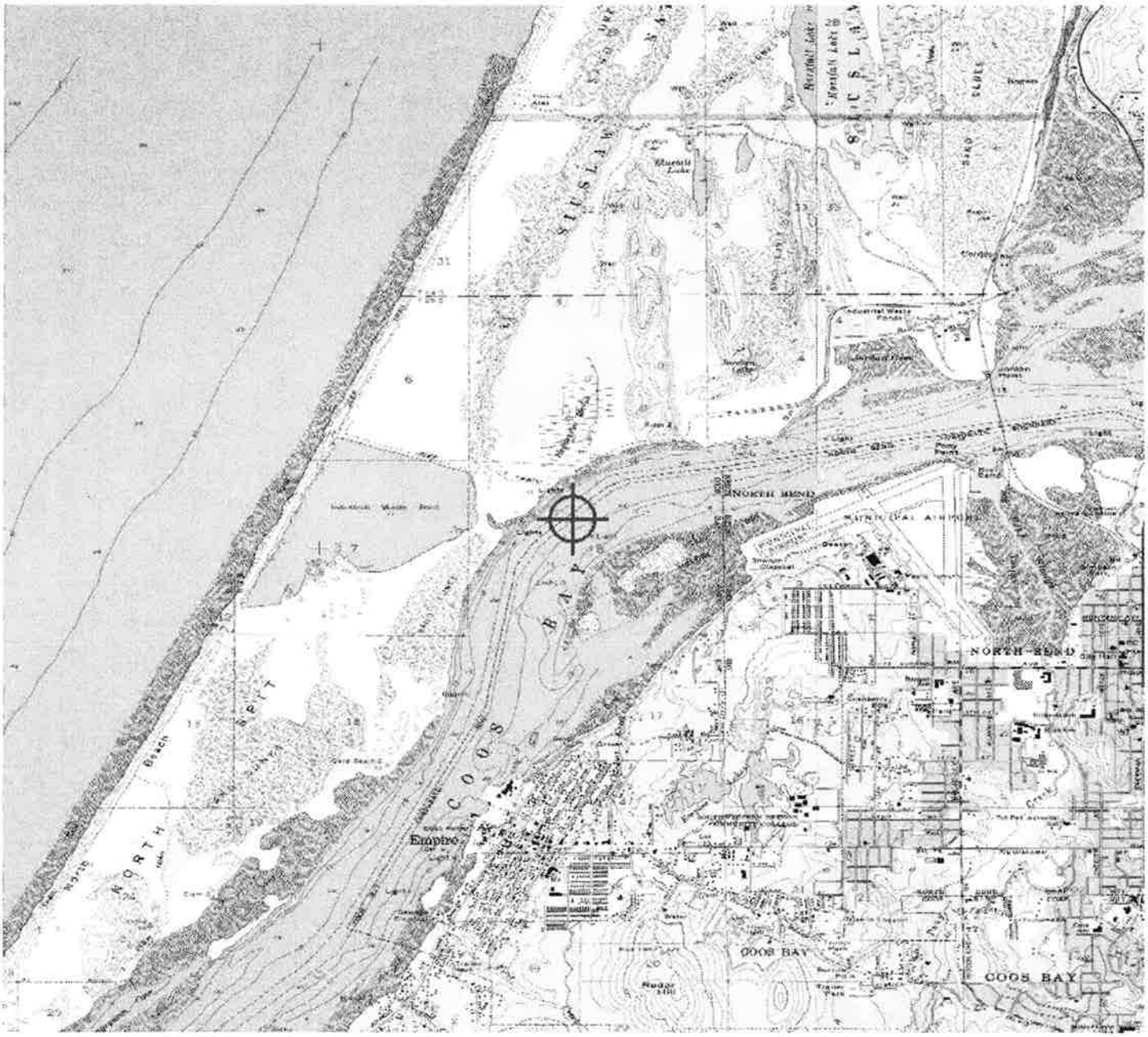
Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

Close Print



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Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ANM-7-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Carrier Vessel - Stack, Transit Point 4
Location:	North Bend, OR
Latitude:	43-24-55.79N NAD 83
Longitude:	124-16-29.14W
Heights:	12 feet site elevation (SE)
	199 feet above ground level (AGL)
	211 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

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Signature Control No: 352163128-364497902 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2018-ANM-7-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
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2. You can terminate the proposal at this location.

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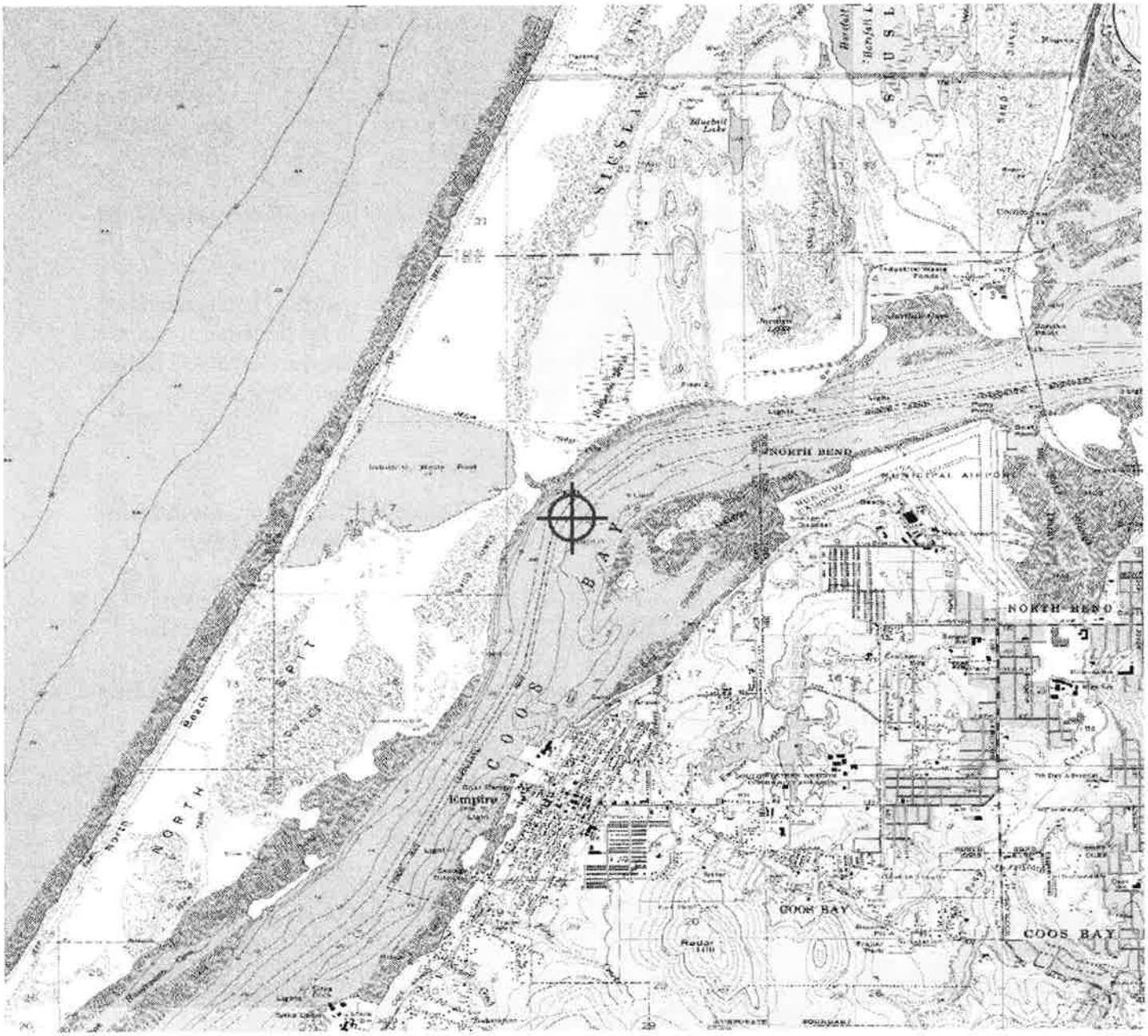
Close Print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Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ANM-6-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

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Structure:	LNG Carrier Vessel - Stack, Transit Point 3
Location:	North Bend, OR
Latitude:	43-24-32.44N NAD 83
Longitude:	124-16-38.26W
Heights:	12 feet site elevation (SE)
	199 feet above ground level (AGL)
	211 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 125 feet above ground level (137 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

Any height exceeding 125 feet above ground level (137 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ANM-6-OE.

Signature Control No: 352163127-364500875 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2018-ANM-6-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 199-foot AGL (211-foot AMSL) liquid natural gas carrier vessel (ship stack) shipping channel transit point location associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surfaces:

a. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude. The high point on the LNG carrier vessel (stack) would have the following effects on IFR operations at OTH:

Obstacle penetrates OTH RWY 22 40:1 departure surface in the Initial Climb Area (ICA) 73 feet, increases climb gradient from standard and 200 feet per NM to 300-1 or standard with 423 feet per NM to 400 then as published. The height at or below that avoids this effect: 138 AMSL (126 AGL).

OTH RWY 4 ILS or LOC: ILS or LOC RWY 4, S-ILS 4* not authorized (NA). Obstacle penetrates Vertical Guidance Surface (VGS) 23 feet. The height at or below that avoids this effect: 188 AMSL (176 AGL).
At 188 AMSL, increase S-ILS 4* DA from 216 AMSL to 473 AMSL. The height at or below that avoids this effect: 153 AMSL (141 AGL).
OTH RWY 4 ILS or LOC RWY, S-ILS NA. Obstacle penetrates Vertical Guidance Surface (VGS) 23 feet. The height at or below that avoids this effect: 188 AMSL (176 AGL).
At 188 AMSL, increase S-ILS 4 DA from 278 AMSL to 473 AMSL. The height at or below that avoids this effect: 153 AMSL (141 AGL).
Increases S-LOC 4 MDA from 400 AMSL to 520 AMSL. The height at or below that avoids this effect: 139 AMSL (127 AGL).
Penetrates 34:1 Visual Area Surface 56 feet, increase visibility from 1/2 to 3/4 mile. The height at or below that avoids this effect: 155 AMSL (143 AGL)

OTH RWY 4 COPTER ILS or LOC NA, obstacle penetrates Vertical Guidance Surface (VGS) 23 feet. The height at or below that avoids this effect: 188 AMSL (176 AGL).
At 188 AMSL, increase H-ILS 4 DA from 216 AMSL to 473 AMSL. The height at or below that avoids this effect: 153 AMSL (141 AGL).
Increases H-LOC 4 MDA from 400 AMSL to 520 AMSL. The height at or below that avoids this effect: 139 AMSL (127 AGL).

Penetrates 34:1 Visual Area Surface 56 feet, increase visibility from 1/2 to 3/4 mile. The height at or below that avoids this effect: 155 AMSL (133 AGL).

OTH RWY 4 RNAV (GPS) Y, LPV DA NA, obstacle penetrates Vertical Guidance Surface (VGS) 23 feet. The height at or below that avoids this effect: 188 AMSL (176 AGL).
At 188 AMSL, increases LPV DA from 319 AMSL to 513 AMSL. The height at or below that avoids this effect: 154 AMSL (142 AGL).
Penetrates 34:1 Visual Area Surface 56 feet, increase visibility from 1/2 to 3/4 mile. The height at or below that avoids this effect: 155 AMSL (143 AGL).
LNAV/VNAV NA, obstacle penetrates the VGS 24 feet. The height at or below that avoids this effect: 187 AMSL (175 AGL).
At 187 AMSL, no IFR effect.
LNAV, penetrates 34:1 Visual Area Surface 56 feet, increase visibility from 1/2 to 3/4 mile. The height at or below that avoids this effect: 155 AMSL (143 AGL) .

OTH RWY 4 RNAV (RNP) Z, RNP 0.11 DA* NA, obstacle penetrates the VGS 27 feet. The height at or below that avoids this effect: 184 AMSL (172 AGL).
At 184 AMSL, increases RNP 0.11 DA* from 309 to 444. The height at or below that avoids this effect: 137 AMSL (125 AGL).
Penetrates 34:1 Visual Area Surface 56 feet, increase visibility from 1/2 to 3/4 mile, The height at or below that avoids this effect: 155 AMSL (133 AGL).
RNP 0.30 DA# NA, obstacle penetrates the VGS 27 feet. The height at or below that avoids this effect: 184 AMSL (172 AGL).
At 184 AMSL, increases RNP 0.30 DA# from 477 AMSL to 489 AMSL. The height at or below that avoids this effect: 168 AMSL (156 AGL).

RNP 0.30 NA, obstacle penetrates the VGS 27 feet. The height at or below that avoids this effect: 184 AMSL (172 AGL).

The MDA/DA is the minimum altitudes to which an aircraft may descend while on the instrument approach to the airport during periods when reduced visibility and/or low cloud ceiling conditions exist. If the pilot cannot achieve visual reference to the ground upon reaching the MDA/DA, the approach must be abandoned. This results in the aircraft having to proceed to an alternate airport or waiting in a holding pattern for improved weather conditions. Any increase in the MDA/DA would have a significant adverse effect on the benefits derived from the instrument procedures.

b. Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 44 feet.

c. Section 77.19(d) -- Approach Surface - an area designated to protect aircraft during the final approach phase of flight at an airport: The proposed structure would exceed the existing OTH Approach Surface by 102 feet and would exceed the OTH Approach Surface plan on file by 122 feet.

Additionally, the proposed structure would exceed the OTH VFR traffic pattern airspace in the Part 77 VFR Horizontal Surface and the Approach Surface (plan on file) as defined in FAA JO 7400.2L, 6-3-8, Evaluating Effect on VFR Operations.

This proposed structure would exceed the OTH VFR Traffic Pattern Horizontal Surface by 44 feet. The not-to-exceed height of 157 feet AGL (167 AMSL) will avoid penetrating the Horizontal Surface. This proposed

structure would exceed the OTH VFR Traffic Pattern Approach Surface (plan on file) by 11 feet. The not-to-exceed height of 188 feet AGL (200 AMSL) will avoid penetrating the Approach Surface (plan on file).

The FAA Technical Operations Branch found the proposal has a physical and/or an electromagnetic radiation effect upon the Visual Approach Slope Indicator (VASI) serving OTH RWY 04 as it penetrates the surface given in the siting standard, Order 6850.2. The proposal will affect the quality and/or availability of the VASI visual guidance signal (service). The effect can be eliminated by lowering the proposal to 145 ft AMSL (132 AGL).

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

Your options and conditions for this proposal are as follows:

1. You must resolve the 74 foot OTH RWY 4 RNAV (RNP) Z, RNP 0.11 DA* penetration by lowering the structure height, with all appurtenances, to a maximum height at 125 AGL (137 AMSL). This would also resolve our objection to the 44 foot VFR Traffic Pattern Airspace penetration which requires lowering the structure height, with all appurtenances, to a maximum height at 167 feet AGL (179 AMSL). If you agree to lower the maximum height to 125 AGL, the FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

2. You can terminate the proposal at this location.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

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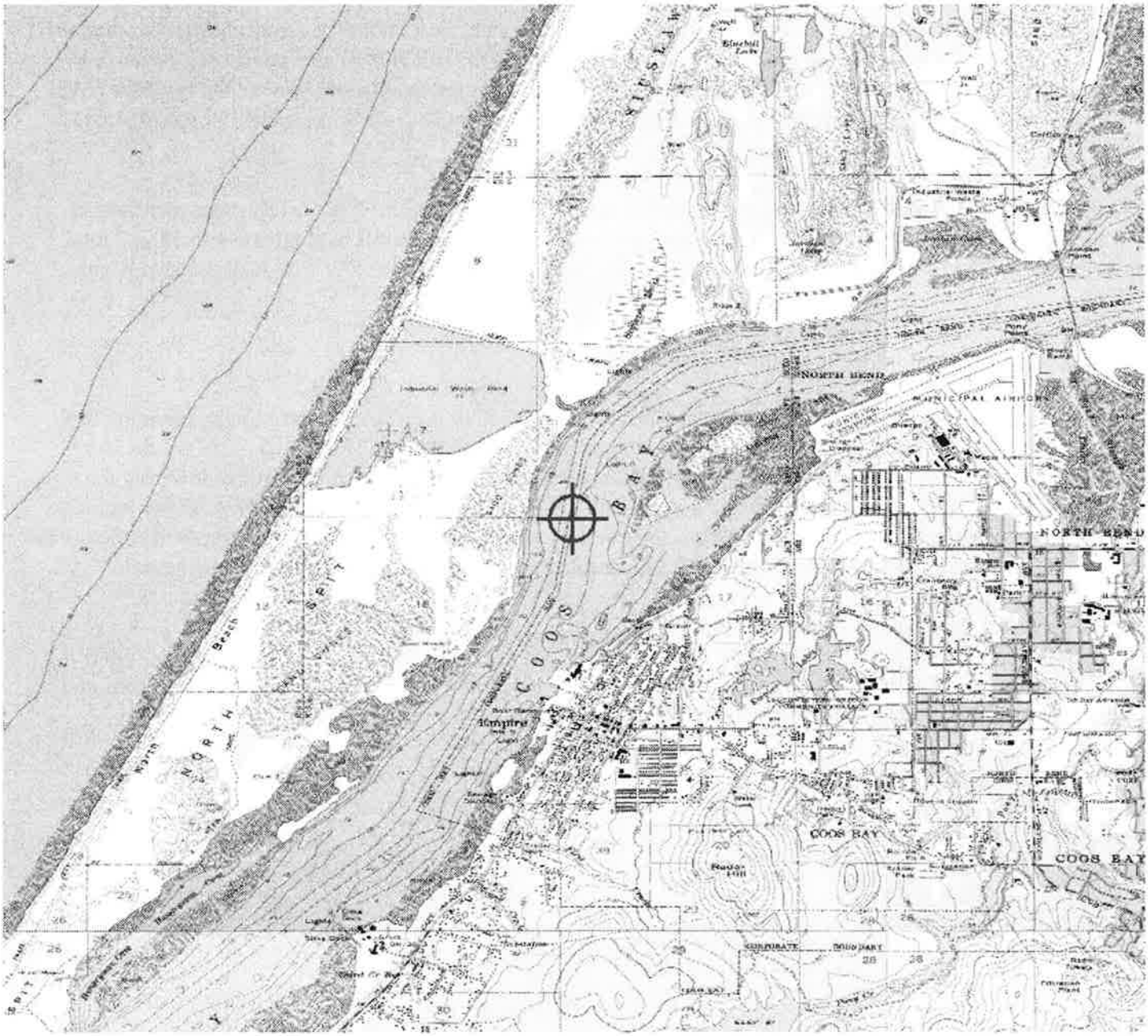


Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ANM-5-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Carrier Vessel - Stack, Transit Point 2
Location:	North Bend, OR
Latitude:	43-24-07.84N NAD 83
Longitude:	124-16-41.25W
Heights:	12 feet site elevation (SE)
	199 feet above ground level (AGL)
	211 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 124 feet above ground level (136 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

Any height exceeding 124 feet above ground level (136 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ANM-5-OE.

Signature Control No: 352163126-364502142 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2018-ANM-5-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 199-foot AGL (211-foot AMSL) liquid natural gas carrier vessel (ship stack) shipping channel transit point location associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surfaces:

a. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude. The LNG carrier vessel stack high point would have the following effects on IFR operations at OTH:

Obstacle penetrates OTH RWY 22 40:1 departure surface in the Initial Climb Area (ICA) 38 feet, increases climb gradient from standard and 200 feet per NM to 200-1- 1/4 or standard with 324 feet per NM to 400 then as published. The height at or below that avoids this effect: 173 AMSL (161 AGL).

OTH RWY 4 ILS or LOC: increases S-LOC 4 MDA from 400 AMSL to 480 AMSL. The height at or below that avoids this effect: 188 AMSL (176 AGL).

OTH RWY 4 RNAV (RNP) Z: increases RNP 0.30 DA# from 477 AMSL to 526 AMSL. The height at or below that avoids this effect: 136 AMSL (124 AGL).

OTH RWY 4 COPTER ILS or LOC: increases H-LOC 4 MDA from 400 AMSL to 480 AMSL. The height at or below that avoids this effect: 188 AMSL (176 AGL)

The MDA/DA is the minimum altitudes to which an aircraft may descend while on the instrument approach to the airport during periods when reduced visibility and/or low cloud ceiling conditions exist. If the pilot cannot achieve visual reference to the ground upon reaching the MDA/DA, the approach must be abandoned. This results in the aircraft having to proceed to an alternate airport or waiting in a holding pattern for improved weather conditions. Any increase in the MDA/DA would have a significant adverse effect on the benefits derived from the instrument procedures.

b. Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 44 feet.

Additionally, this proposed structure would exceed the OTH VFR traffic pattern airspace in the Part 77 Conical Surface as defined in FAA JO 7400.2L, 6-3-8, Evaluating Effect on VFR Operations. The VFR Conical

Surface is defined in Part 77 Section 77.19(b) as a surface extending outward and upward from the periphery of the VFR Part 77 Horizontal Surface at a slope of 20:1 for a horizontal distance of 4,000 feet .

This proposed structure would exceed the OTH VFR Traffic Pattern Conical Surface by 25 feet. The not-to-exceed height of 186 feet AGL (198 AMSL) will avoid penetrating the Conical Surface.

The FAA Technical Operations Branch found that while the proposal is laterally beyond the standard ? 10? visual slope approach indicator (VASI) obstacle clearance surface (OCS), however, it is within ? 15? of the extended runway centerline and above the VASI OCS. The proposal may be within the lateral limits of the visible light beam of the VASI serving OTH RWY 04. The height at or below that avoids this effect is 187 AMSL

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

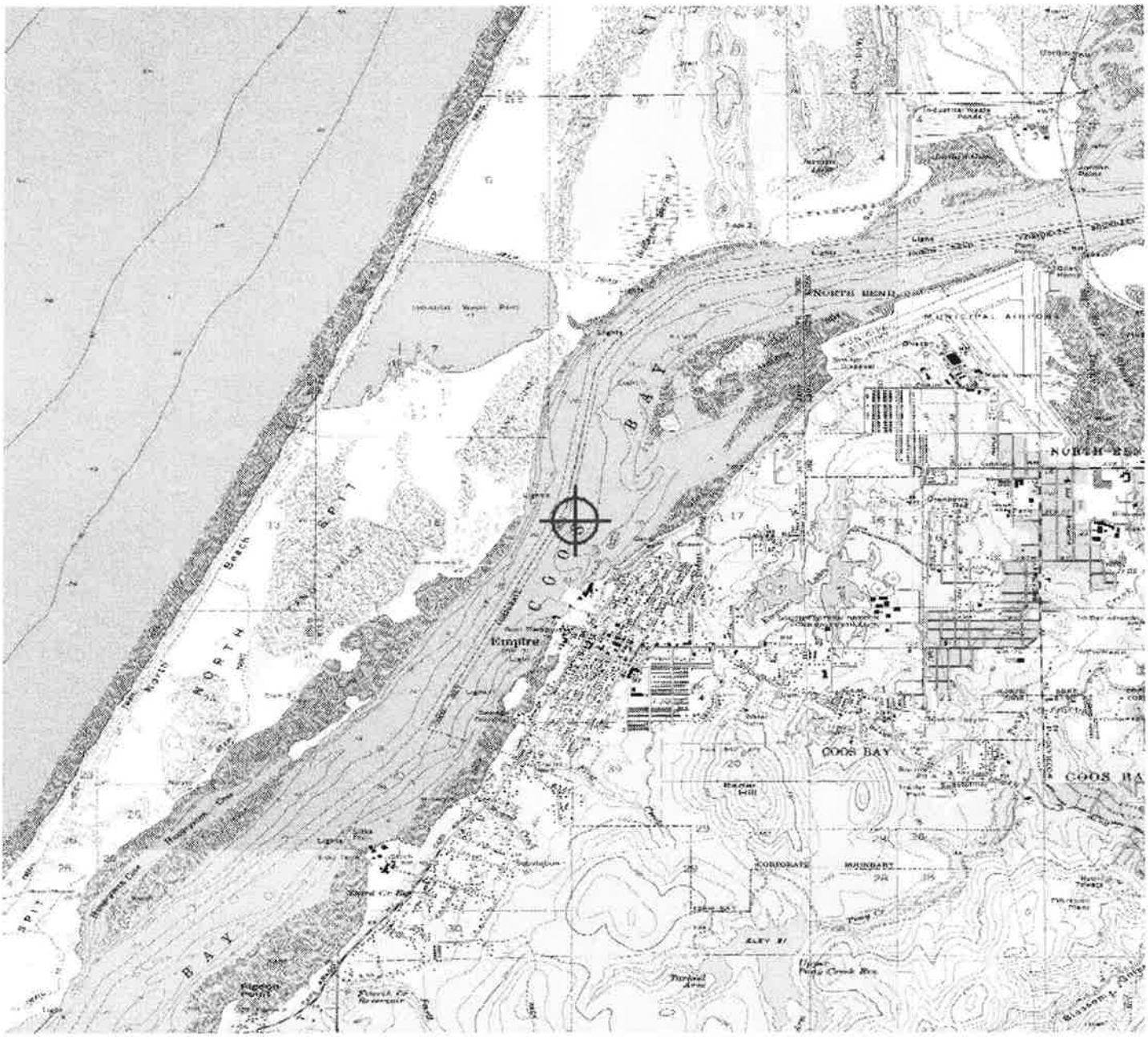
Your options and conditions for this proposal are as follows:

1. You must resolve the 75 foot OTH RWY 4 RNAV (RNP) Z DA penetration by lowering the structure height, with all appurtenances, to a maximum height at 124 AGL (136 AMSL). This would also resolve our objection to the 25 foot VFR Traffic Pattern Airspace penetration which requires lowering the structure height, with all appurtenances, to a maximum height at 174 feet AGL (186 AMSL). If you agree to limit the structure height to 124 feet AGL (136 feet AMSL), the FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued. Further FAA study for any height greater than 124 AGL/ 136 AMSL is not an option.

2. You can terminate the proposal at this location.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

Close Print



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ANM-4-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Carrier Vessel - Stack, Transit Point 1
Location:	North Bend, OR
Latitude:	43-23-49.37N NAD 83
Longitude:	124-16-56.55W
Heights:	12 feet site elevation (SE)
	199 feet above ground level (AGL)
	211 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 155 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

Any height exceeding 167 feet above ground level (179 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ANM-4-OE.

Signature Control No: 352163125-364503672 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2018-ANM-4-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 199-foot AGL (211-foot AMSL) liquid natural gas carrier vessel (ship stack) shipping channel transit point location associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surfaces:

a. Section 77.17(a)(3) -- A structure that causes less than the required obstacle clearance within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area resulting in increases to an IFR terminal minimum altitude. The LNG carrier vessel stack high point would have the following effects on IFR operations at OTH:

OTH RWY 4 RNAV (RNP) Z: increases RNP 0.30 DAs from 477 AMSL / 569 AMSL to 584 AMSL. The height at or below that avoids this effect is: 179 AMSL (167 AGL)

The MDA/DA is the minimum altitudes to which an aircraft may descend while on the instrument approach to the airport during periods when reduced visibility and/or low cloud ceiling conditions exist. If the pilot cannot achieve visual reference to the ground upon reaching the MDA/DA, the approach must be abandoned. This results in the aircraft having to proceed to an alternate airport or waiting in a holding pattern for improved weather conditions. Any increase in the MDA/DA would have a significant adverse effect on the benefits derived from the instrument procedures.

b. Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 44 feet.

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

Your options and conditions for this proposal are as follows:

1. You must resolve the 32 foot OTH RWY 4 RNAV (RNP) Z penetration by lowering the structure height, with all appurtenances, to a maximum height at 167 AGL (179 AMSL)

2. If you agree to limit the structure height to 155 feet AGL (167 AMSL), the FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

3. You can terminate the proposal at this location.

3. You can request further study for any height between 155 AGL and 167 AGL. Further study will include a public notice circularization and 37-day comment period where the outcome cannot be predicted. Further FAA study for any height greater than 167 AGL (179 AMSL) is not an option.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

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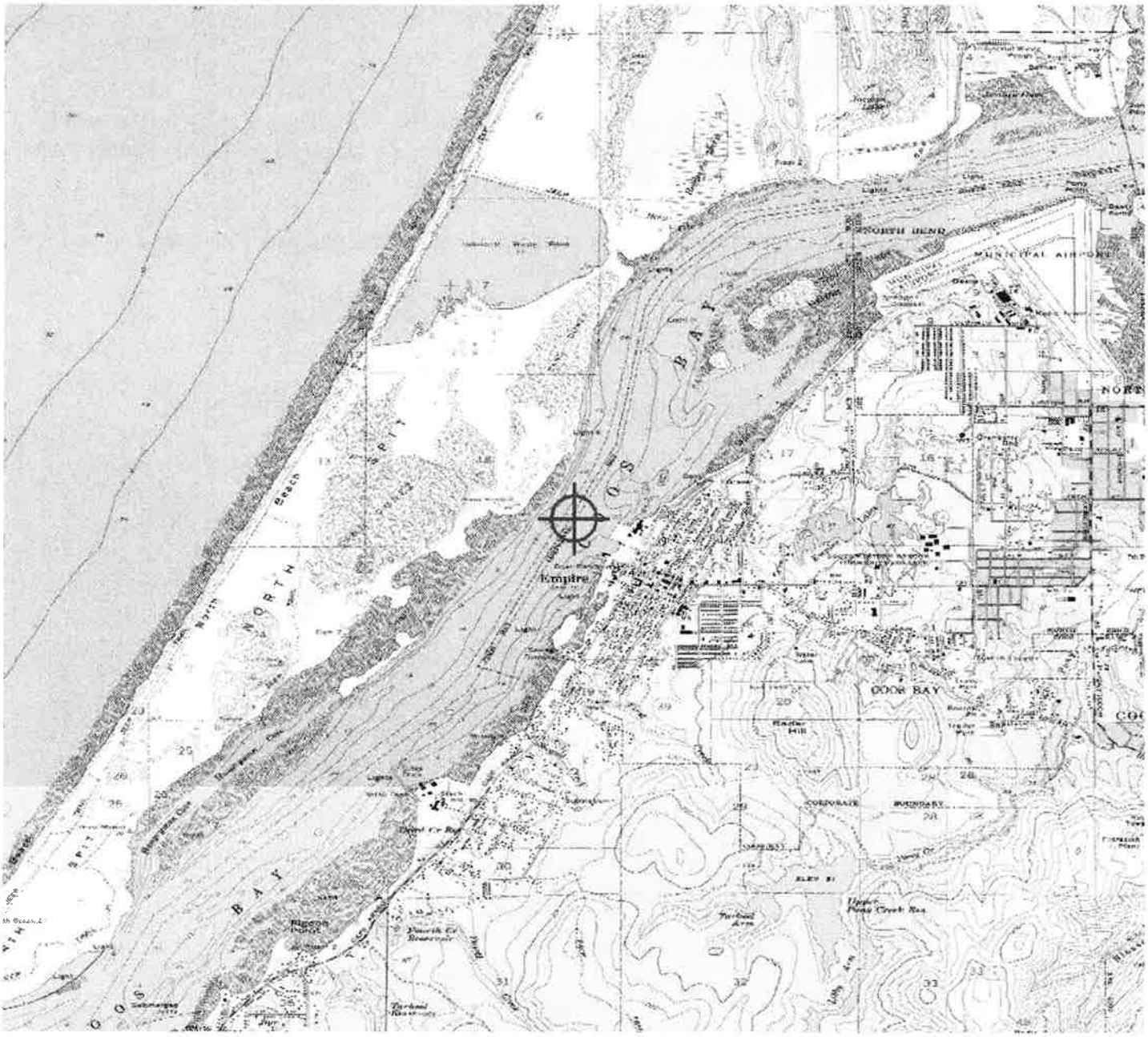
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Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2017-ANM-5418-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Carrier Vessel - Stack
Location:	North Bend, OR
Latitude:	43-25-40.52N NAD 83
Longitude:	124-15-57.06W
Heights:	10 feet site elevation (SE)
	199 feet above ground level (AGL)
	209 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 157 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

Any height exceeding 157 feet above ground level (167 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ANM-5418-OE.

Signature Control No: 350680505-364504065 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

Additional information for ASN 2017-ANM-5418-OE

ASN 2017-ANM-5418-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 199-foot AGL (209-foot AMSL) liquid natural gas carrier vessel (ship stack) docking location associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surface:

Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 42 feet.

Additionally, the proposed structure would exceed the OTH VFR traffic pattern airspace in the Part 77 VFR Horizontal Surface feet as defined in FAA JO 7400.2L, 6-3-8, Evaluating Effect on VFR Operations.

This proposed structure would exceed the OTH VFR Traffic Pattern Horizontal Surface by 42 feet. The not-to-exceed height of 157 feet AGL (167 AMSL) will avoid penetrating the Horizontal Surface.

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

Your options and conditions for this proposal are as follows:

1. You must resolve the 42 foot VFR Traffic Pattern Airspace penetration by lowering the structure height, with all appurtenances, to a maximum height at 157 feet AGL (167 AMSL). The FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

2. You can terminate the proposal at this location.

Further FAA study for any height greater than 157 feet AGL (167 AMSL) is not an option.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

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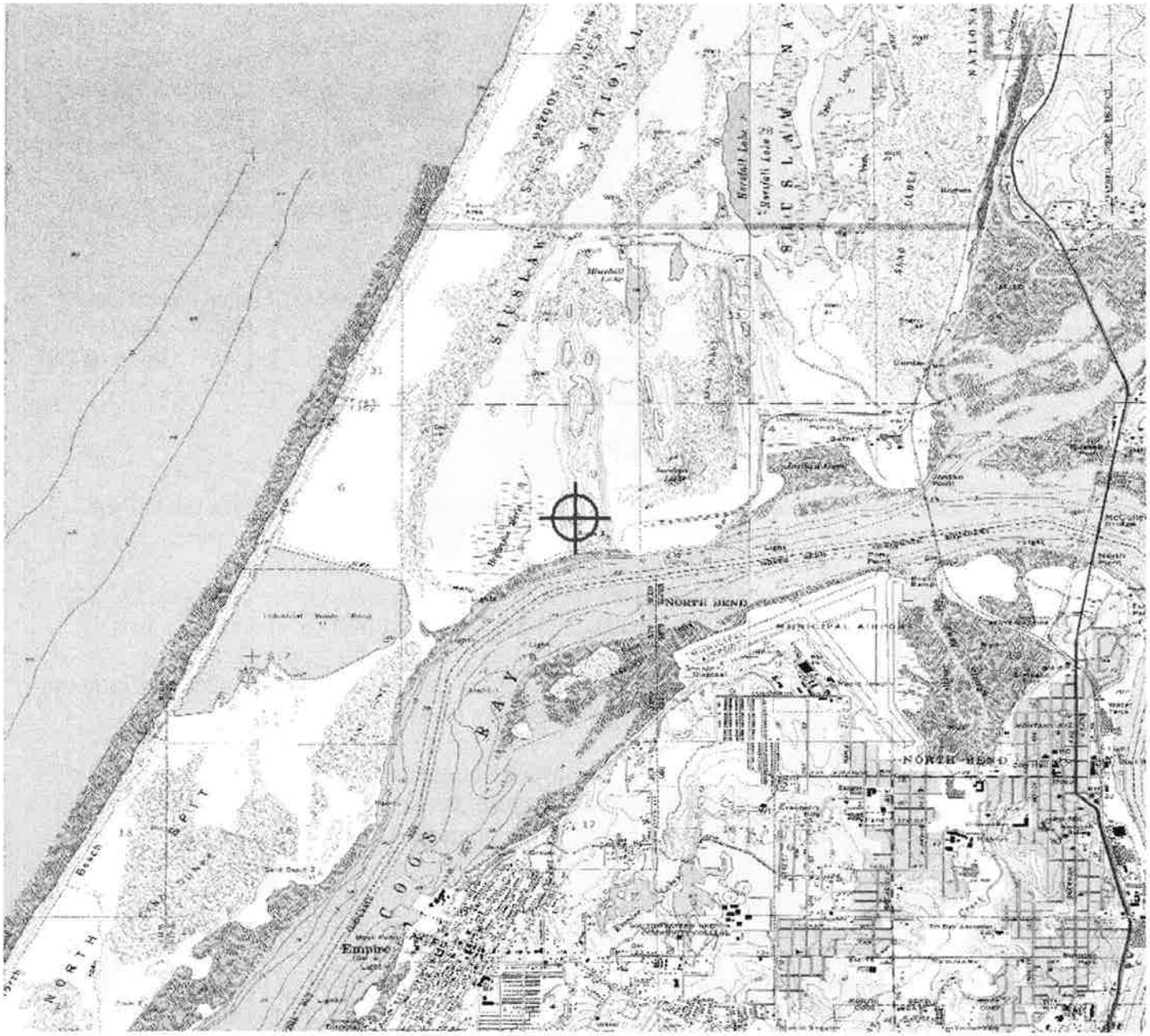
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Federal Aviation Administration
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Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2017-ANM-5389-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Amine Regenerator
Location:	North Bend, OR
Latitude:	43-26-01.57N NAD 83
Longitude:	124-16-03.43W
Heights:	42 feet site elevation (SE)
	126 feet above ground level (AGL)
	168 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 125 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ANM-5389-OE.

Signature Control No: 350680447-364504785 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2017-ANM-5389-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 126-foot AGL (168-foot AMSL) amine regenerator structure associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surface:

Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by one (1) foot.

If you agree to limit the proposed structure height to 125 feet AGL (167 feet AMSL), the FAA can withdraw its objection as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

You also have the option to either terminate the proposal or request further FAA study of the structure at the originally requested height. Further study will include a public notice circularization and 37-day comment period where the outcome cannot be predicted.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

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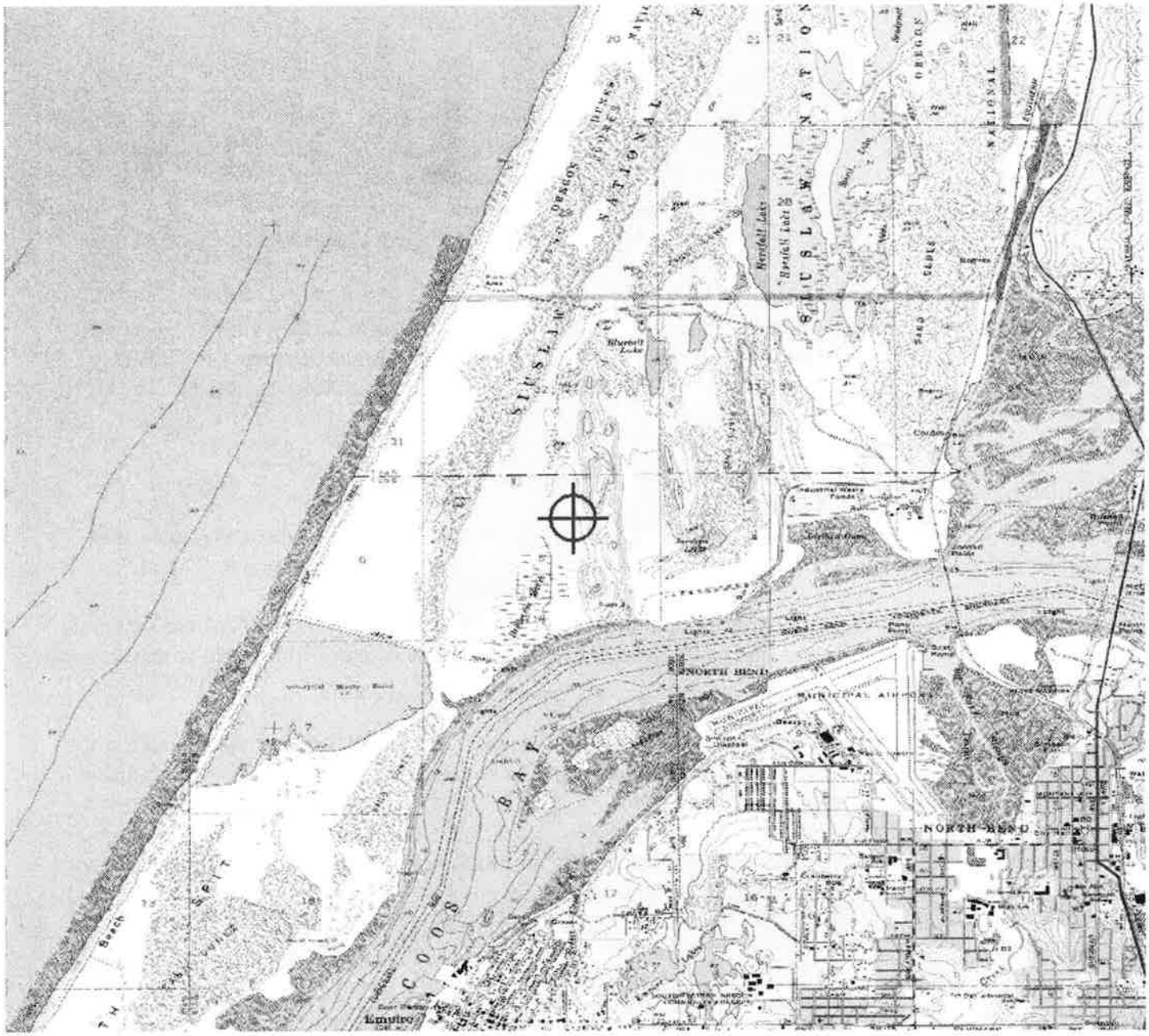
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MUNICIPAL AIRPORT
NORTH BEND
Empire

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2017-ANM-5388-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Oxidizer
Location:	North Bend, OR
Latitude:	43-25-59.24N NAD 83
Longitude:	124-16-00.87W
Heights:	42 feet site elevation (SE)
	131 feet above ground level (AGL)
	173 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 125 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ANM-5388-OE.

Signature Control No: 350680446-364505031 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2017-ANM-5388-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 131-foot AGL (173-foot AMSL) oxidizer structure associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surface:

Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by six (6) feet.

If you agree to limit the proposed structure height to 125 feet AGL (167 feet AMSL), the FAA can withdraw its objection as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

You also have the option to either terminate the proposal or request further FAA study of the structure at the originally requested height. Further study will include a public notice circularization and 37-day comment period where the outcome cannot be predicted.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

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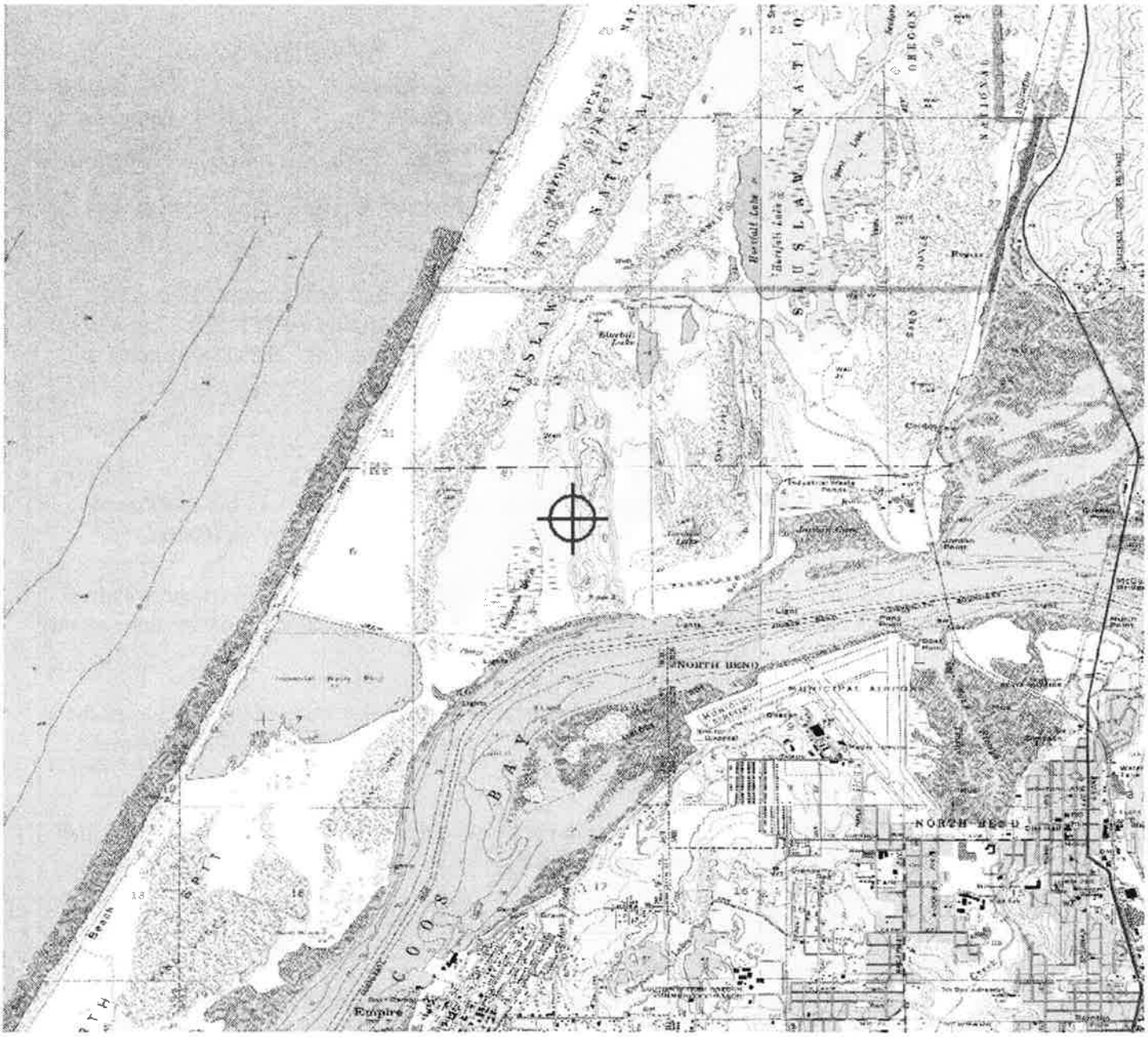
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Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2017-ANM-5387-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Tank North
Location:	North Bend, OR
Latitude:	43-25-53.61N NAD 83
Longitude:	124-16-01.16W
Heights:	23 feet site elevation (SE)
	219 feet above ground level (AGL)
	242 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 144 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

Any height exceeding 203 feet above ground level (226 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.

If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ANM-5387-OE.

Signature Control No: 350680445-364508370 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2017-ANM-5387-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 219-foot AGL (242-foot AMSL) north liquid natural gas tank structure associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surfaces:

a. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet. This proposed structure would exceed the OTH Part 77.17(a)(2) surface by 19 feet.

b. Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 75 feet.

Additionally, this proposed structure would exceed the OTH VFR traffic pattern airspace in the Part 77 Conical Surface as defined in FAA JO 7400.2L, 6-3-8, Evaluating Effect on VFR Operations. The VFR Conical Surface is defined in Part 77 Section 77.19(b) as a surface extending outward and upward from the periphery of the VFR Part 77 Horizontal Surface at a slope of 20:1 for a horizontal distance of 4,000 feet .

This proposed structure would exceed the OTH VFR Traffic Pattern Conical Surface by 16 feet. The not-to-exceed height of 203 feet AGL (226 AMSL) will avoid penetrating the Conical Surface.

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

Your options and conditions for this proposal are as follows:

1. You must resolve the 16 foot VFR Traffic Pattern Airspace penetration by lowering the structure height, with all appurtenances, to a maximum height at 203 feet AGL (226 AMSL).

2. You can agree to limit the structure height to 144 feet AGL (167 feet AMSL). The FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

3. You can terminate the proposal at this location.

4. You can request further study for any height between 144 AGL and 203 AGL. Further study will include a public notice circularization and 37-day comment period where the outcome cannot be predicted. Further FAA study for any height greater than 203 AGL/ 226 AMSL is not an option.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

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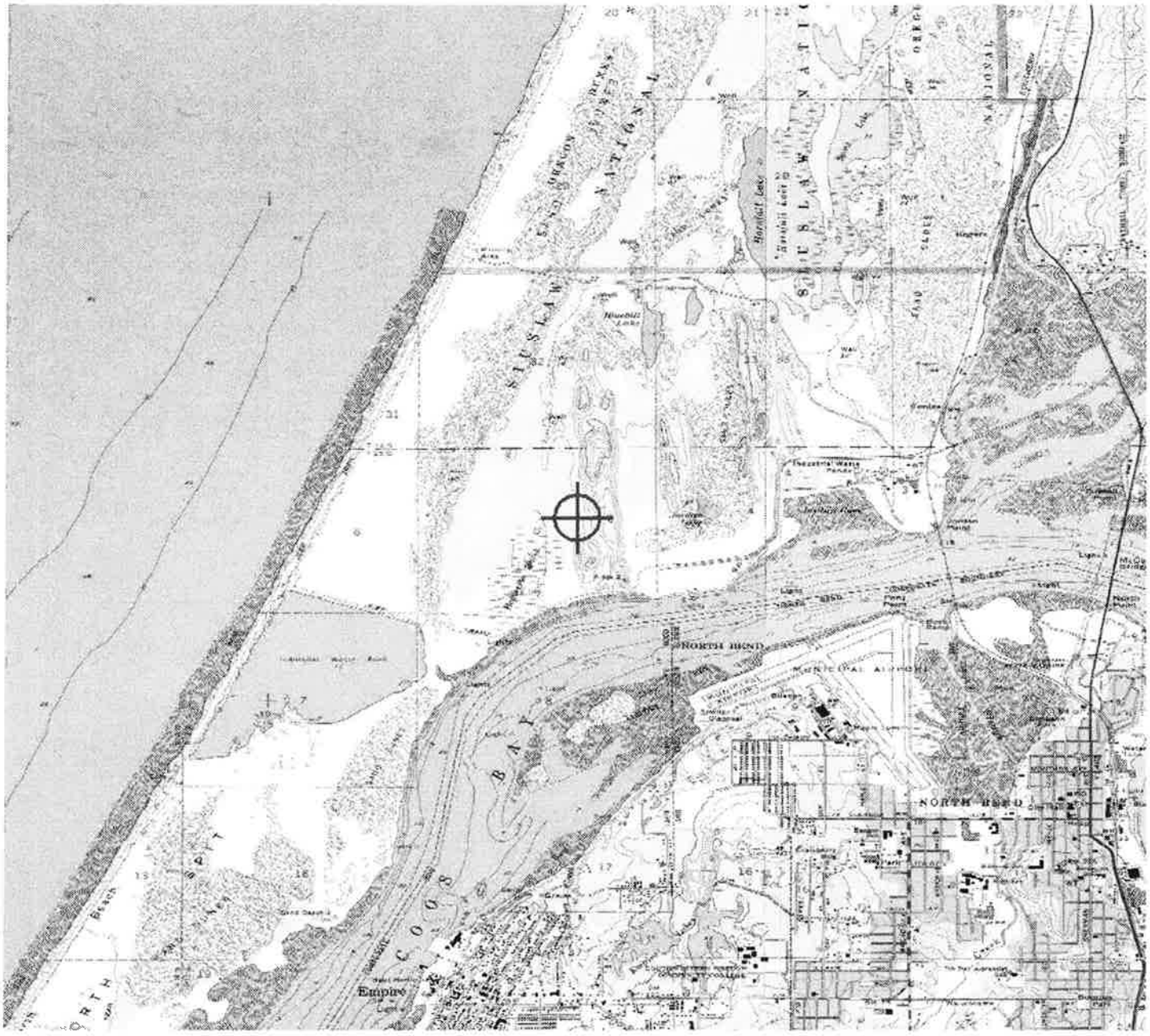
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COOS BAY
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Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2017-ANM-5386-OE

Issued Date: 05/07/2018

Drew Jackson
Jordan Cove LNG
5615 Kirby Dr
Houston, TX 77005

**** NOTICE OF PRESUMED HAZARD ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	LNG Tank South
Location:	North Bend, OR
Latitude:	43-25-48.88N NAD 83
Longitude:	124-16-00.87W
Heights:	23 feet site elevation (SE)
	219 feet above ground level (AGL)
	242 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 144 feet above ground level (167 feet above mean sea level), it would not create a substantial adverse effect and a favorable determination could subsequently be issued.

Any height exceeding 181 feet above ground level (204 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

See Attachment for Additional information.

NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.

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If we can be of further assistance, please contact our office at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ANM-5386-OE.

Signature Control No: 350680444-364508838 (NPH)
Paul Holmquist
Specialist

Attachment(s)
Additional Information

ASN 2017-ANM-5386-OE

Abbreviations

AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical mile
ASN- Aeronautical Study Number	CAT - category aircraft	
MDA - minimum descent altitude	DA - decision altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace

Our aeronautical study has disclosed that the proposed 219-foot AGL (242-foot AMSL) south liquid natural gas tank structure associated with the proposed Jordan Cove Liquid Natural Gas Terminal penetrates 14 CFR Part 77 protected airspace surfaces at Southwest Oregon Regional Airport (OTH) in North Bend, OR. The OTH airport elevation is 17 feet AMSL.

The proposed structure would exceed the following Part 77 surfaces:

a. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet. This proposed structure would exceed this surface by 19 feet.

b. Section 77.19(a): Horizontal Surface-a height exceeding a horizontal plane 150 feet above the established airport elevation. The proposed structure would exceed the OTH Horizontal Surface by 75 feet.

Additionally, this proposed structure would exceed the OTH VFR traffic pattern airspace in the Part 77 Conical Surface as defined in FAA JO 7400.2L, 6-3-8, Evaluating Effect on VFR Operations. The VFR Conical Surface is defined in Part 77 Section 77.19(b) as a surface extending outward and upward from the periphery of the VFR Part 77 Horizontal Surface at a slope of 20:1 for a horizontal distance of 4,000 feet .

This proposed structure would exceed the OTH VFR Traffic Pattern Altitude (TPA) Conical Surface by 37 feet and the OTH VFR TPA Conical Surface plan on file by 38 feet. . The not-to-exceed height of 181 AGL / 204 AMSL will avoid penetrating the Conical Surface (plan on file).

The OTH Airport Master Record, http://www.gcr1.com/5010web/airport.cfm?Site=OTH, states there are 36 single engine, eight (8) multi-engine, one (1) jet, and six (6) helicopter aircraft based there with 18,277 total operations for the 12 months ending 31 December 2013 (latest information). RWY 31 is designated Right Traffic.

Your options and conditions for this proposal are as follows:

1. You must resolve the 38 foot VFR Traffic Pattern Airspace penetration by lowering the structure height, with all appurtenances, to a maximum height at 181 AGL / 204 AMSL.

2. You can agree to limit the structure height to 144 feet AGL (167 feet AMSL). The FAA can then withdraw this objection to the proposed structure as it would not exceed obstruction standards and a favorable determination could be subsequently issued.

3. You can terminate the proposal at this location.

4. You can request further study for any height between 144 AGL and 181 AGL. Further study will include a public notice circularization and 37-day comment period where the outcome cannot be predicted. Further FAA study for any height greater than 181 AGL/ 204 AMSL is not an option.

Please email me within 60 days of the date of this letter at Paul.Holmquist@faa.gov with your intentions and any questions you might have regarding this aeronautical study.

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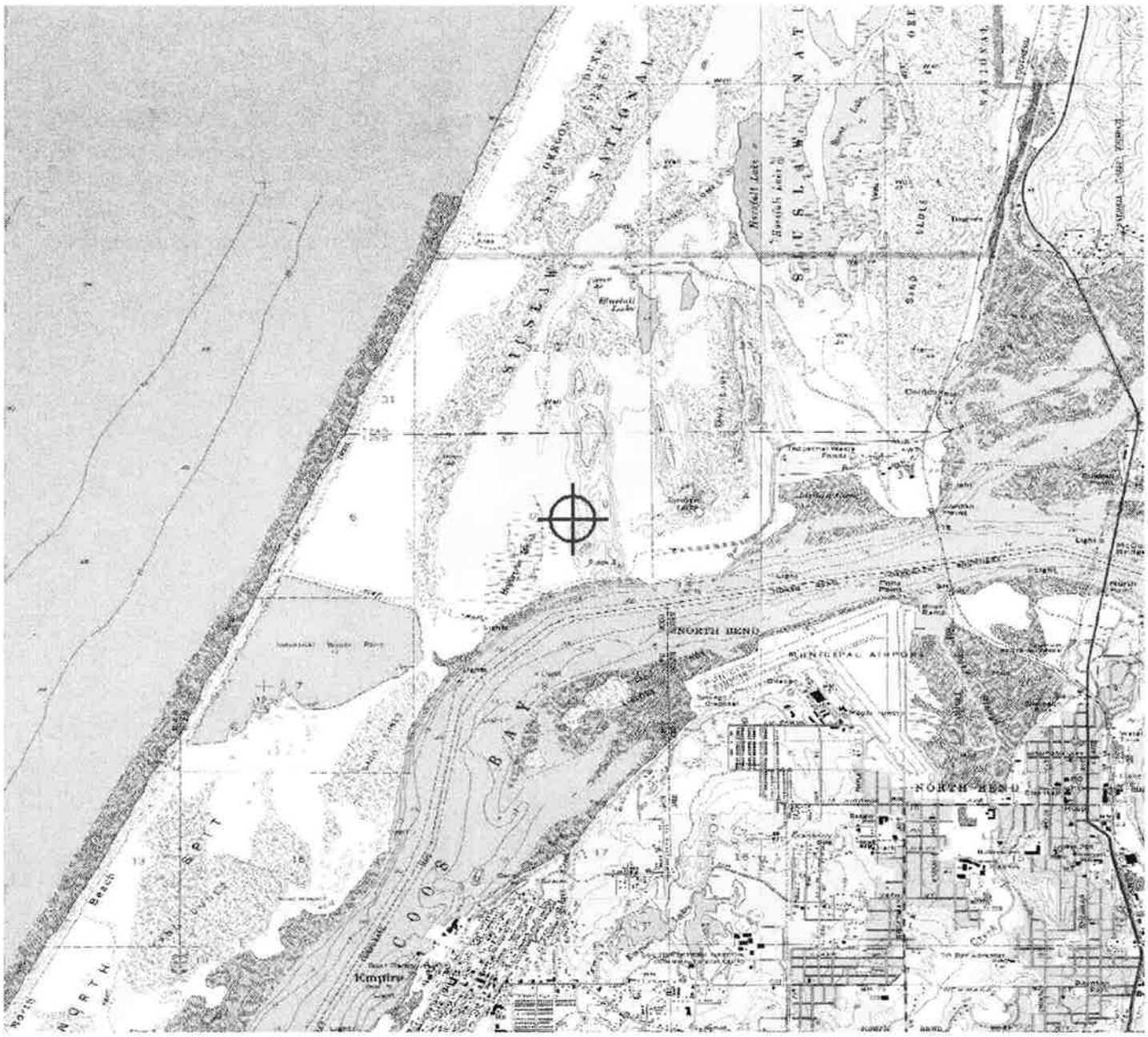
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