Hilcorp Alaska, LLC

Post Office Box 244027
Anchorage, AK 99524-4027

3800 Centerpoint Drive
Suite 1400
Anchorage, AK 99503

Phone: 907/777-8300
Fax: 907/777-8301

October 18, 2024

Alaska Department of Environmental Conservation
Air Permits Program
ATTN: Application Intake
555 Cordova Street
Anchorage, AK 99501

Subject: Hilcorp Alaska, LLC – Anna Platform
Air Quality Minor Permit Application

Dear Application Intake,

Hilcorp Alaska, LLC (Hilcorp) submits the enclosed minor permit application to the Alaska Department of Environmental Conservation (ADEC) for Anna Platform. The application requests a minor permit for the relocation of the Portable Oil and Gas Operation Spartan 151 drill rig to the Anna Platform under 18 Alaska Administrative Code (AAC) 50.502(c)(2)(A). The application contains the information required under 18 AAC 50.502(c)(2)(A).

Hilcorp expects the ADEC to charge an hourly permit administration fee for the processing of this application per 18 AAC 50.400(h).

Please contact Drew Anderson at (907) 777-8488 or ananderson@hilcorp.com with any questions or concerns.

Based on the information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Sincerely,

Trudi Hallett

Trudi Hallett
Asset Team Lead
Hilcorp Alaska, LLC

Enclosure

Cc: Drew Anderson
Jeanette Brena – Boreal

Hilcorp Alaska, LLC

Anna Platform
Spartan 151 Drilling Project
Application for a Minor Permit

Prepared for:

Hilcorp Alaska, LLC

October 2024

BOREAL

Anna Platform

Spartan 151 Drilling Project

Application for a Minor Permit

Prepared for:

Hilcorp Alaska, LLC

3800 Centerpoint Dr., Suite 1400
Anchorage, AK 99503

Prepared by:

Boreal Environmental Services

4300 B St., Suite 510
Anchorage, AK 99503

SUMMARY OF REQUIRED APPLICATION ELEMENTS

Hilcorp Alaska, LLC (Hilcorp) is submitting a minor air quality permit application under 18 AAC 50.502(c)(2)(A) for the relocation of the Portable Oil and Gas Operation (POGO) Spartan 151 drill rig to the Anna Platform. The ambient air quality analysis for the Spartan 151 drill rig operating at Granite Point Platform is being used for this project as a conservative representation of the ambient air quality impacts that would result from operating the rig at Anna Platform in accordance with 18 AAC 50.540(c)(2). Hilcorp is submitting under a separate cover, a subsequent minor air quality permit application to remove Anna Platform as an authorized location for the POGO Kuukpik V drill rig under Minor Permit No. AQ1411MSS02. Because the Title V operating permit has less than 3 years remaining until expiration, Hilcorp plans to incorporate the pending Title I minor permit and remove conditions associated with Minor Permit No. AQ1411MSS02 during the next renewal process. It does not appear that the existing operating permit will conflict with the pending minor permit since all limitations are associated with the Kuukpik V drill rig and not all generic rigs.

The following table provides a summary of required elements for a minor permit under 18 AAC 50.502(c)(2)(A) and shows where those elements are located in the application.

Required Application Elements

Regulatory Citation	Requirement	Application Section
18 AAC 50.502(c)(2)(A)		
18 AAC 50.540(b)	Stationary Source Identification Form	Before Attachment A
18 AAC 50.540(c)(1)(A)	Emissions Unit Information Form	Before Attachment A
18 AAC 50.540(c)(1)(B)	Emission Summary Form	Before Attachment A
18 AAC 50.540(c)(2)(B)	Ambient demonstration for sulfur dioxide, annual average PM-2.5, PM-10, and nitrogen dioxide for a portable oil and gas operation	Attachment C

Notes:

1. For emissions units being added to the inventory, a demonstration of compliance with the applicable standards in 18 AAC 50.055 is provided in Attachment B.
2. Additional application requirements for sources within the regional haze special protection area are provided in Attachment D.

Alaska Department of Environmental Conservation
Air Quality Minor Permit Application

STATIONARY SOURCE IDENTIFICATION FORM

Section 1 Stationary Source Information

Name: Anna Platform			SIC: 1311
Project Name (if different): Spartan 151 Drilling Project	Contact: Drew Anderson		
Physical Address: Upper Cook Inlet, Alaska	City: Anchorage	State: AK	Zip: 99503
	Telephone: (907) 777-8488		
	E-Mail Address: ananderson@hilcorp.com		
UTM Coordinates (m) or Latitude/Longitude:	Northing:	Easting:	Zone:
	Latitude: 60º 58’ 36.98” N	Longitude: 151º 18’ 47.99” W	

Section 2 Legal Owner

Name: Hilcorp Alaska, LLC		
Mailing Address: 3800 Centerpoint Dr., Suite 1400		
City: Anchorage	State: AK	Zip: 99503
Telephone #: (907) 777-8300		
E-Mail Address:		

Section 3 Operator *(if different from owner)*

Name: Same as Owner		
Mailing Address:		
City:	State:	Zip:
Telephone #:		
E-Mail Address:		

Section 4 Designated Agent *(for service of process)*

Name: CT Corporation Systems		
Mailing Address: 9360 Glacier Hwy, Suite 202		
City: Juneau	State: AK	Zip: 99801
Telephone #:		
E-Mail Address:		

Section 5 Billing Contact Person *(if different from owner)*

Name: Hilcorp Alaska, LLC Accounts Payable		
Mailing Address: PO Box 61529		
City: Houston	State: TX	Zip: 77208
Telephone #:		
E-Mail Address:		

Section 6 Application Contact

Name: Drew Anderson			
Mailing Address: 3800 Centerpoint Dr., Suite 1400	City: Anchorage	State: AK	Zip: 99503
	Telephone: (907) 777-8488		
	E-Mail Address: ananderson@hilcorp.com		

Section 7 Desired Process Method *(Check only one – see 18 AAC 50.542(a) for process descriptions and restrictions)*

☐ Fast track for a permit classification under 18 AAC 50.502 [18 AAC 50.542(b)]

☒ Public comment [18 AAC 50.542(d)]

Section 8 Source Classification(s) *(Check all that apply)*

[18 AAC 50.502(b)]

- ☐ Asphalt Plant [≥ 5 ton per hour]
- ☐ Thermal Soil Remediation Unit [≥ 5 ton per hour]
- ☐ Rock Crusher [≥ 5 ton per hour]
- ☐ Incinerator(s) [total rated capacity ≥ 1000 lb/hour]
- ☐ Coal Preparation Plant
- ☐ Port of Anchorage Facility

If you checked any of the above, is (are) the emission unit(s) ☐ new, ☐ relocated*, or ☐ existing?

[18 AAC 50.502(c)(1)]

New or relocated* stationary source with potential emissions greater than:

- ☐ 40 tons per year (tpy) NOx
- ☐ 40 tpy SO_2
- ☐ 15 tpy PM-10
- ☐ 10 tpy PM-2.5
- ☐ 0.6 tpy lead
- ☐ 100 tpy CO in a nonattainment area

[18 AAC 50.502(c)(2)]

Construction or relocation* of a:

- ☒ Portable oil and gas operation
- ☐ ≥ 10 MMBtu/hr fuel burning equipment in a SO_2 special protection area

* *Relocation does NOT include moving equipment from one place to another within your current stationary source boundary.*

Section 9 Modification Classification(s) (*Check all that apply)*

[18 AAC 50.502(c)(3)]

- ☐ NOx Increase > 10 tpy [and existing PTE > 40 tpy]
- ☐ SO_2 Increase > 10 tpy [and existing PTE > 40 tpy]
- ☐ PM-10 Increase > 10 tpy [and existing PTE > 15 tpy]
- ☐ PM-2.5 Increase > 10 tpy [and existing PTE > 10 tpy]
- ☐ CO Increase > 100 tpy [and existing PTE > 100 tpy in a nonattainment area]

[18 AAC 50.502(c)(4)]

- ☐ NOx Increase > 40 tpy [and existing PTE ≤ 40 tpy]
- ☐ SO_2 Increase > 40 tpy [and existing PTE ≤ 40 tpy]
- ☐ PM-10 Increase > 15 tpy [and existing PTE ≤ 15 tpy]
- ☐ PM-2.5 Increase > 10 tpy [and existing PTE ≤ 10 tpy]
- ☐ CO Increase > 100 tpy [and Existing PTE ≤ 100 tpy in a nonattainment area]

Basis for calculating modification:

- ☐ Projected actual emissions minus baseline actual emissions
- ☐ New potential emissions minus existing potential emissions

Section 10 Permit Action Request (*Check all that apply)*

[18 AAC 50.508]

- ☐ Establish Plant-wide Applicability Limitation (PAL)
- ☐ Establish emission reductions to offset nonattainment pollutant
- ☐ Owner Requested Limit* (ORL)
- ☐ Revise or Rescind Title I Permit Conditions: All Conditions
  Permit Number: AQ0064MSS02 Revision 1

**Which to use? See* http://www.dec.state.ak.us/air/ap/docs/orlrtc.pdf

Section 11 Existing Permits and Limits

For an existing stationary source, do you have an existing:
(Check all that apply)

- ☒ Air quality permit Number(s)*: AQ0062TVP04
- ☐ Owner Requested Limit(s) Permit Number(s):
- ☐ Pre-Approved Emission Limit (PAEL) Number(s)**:

** All active construction, Title V, and minor permit numbers.*
***Optional. Please provide this number if possible.*
http://dec.alaska.gov/Applications/Air/airtoolsweb/

Section 12 Project Description

Provide a short narrative describing the project. Discuss the purpose for conducting this project, what emission units/activities will be added/modified under this project (i.e., project scope), and the project timeline. If the project is a modification to an existing stationary source, describe how this project will affect the existing process. Include any other discussion that may assist the Department in understanding your project or processing your application. Include a schedule of construction.

Please use additional copies of this sheet if necessary.

Hilcorp Alaska, LLC (Hilcorp) is submitting a minor air quality permit application under 18 AAC 50.502(c)(2)(A) for the relocation of the Portable Oil and Gas Operation (POGO) Spartan 151 drill rig to the Anna Platform. The ambient air quality analysis for the Spartan 151 drill rig operating at Granite Point Platform is being used for this project as a conservative representative of the ambient air quality impacts that would result from operating the rig at Anna Platform in accordance with 18 AAC 50.540(c)(2).

Hilcorp is submitting under a separate cover, a subsequent minor air quality permit application to remove Anna Platform as an authorized location for the POGO Kuukpik V drill rig under Minor Permit No. AQ1411MSS02.

Because the Title V operating permit has less than 3 years remaining until expiration, Hilcorp plans to incorporate the pending Title I minor permit and remove conditions associated with Minor Permit No. AQ1411MSS02 during the next renewal process. It does not appear that the existing operating permit will conflict with the pending minor permit since all limitations are associated with the Kuukpik V drill rig and not all generic rigs.

Application Information

Attachment A provides an air quality permit applicability summary for the project and provides emissions calculations.

Attachment B provides a demonstration of compliance with the state of Alaska emissions standards under 18 AAC 50, per Section 8 of the Emissions Unit Information Form.

Attachment C provides information on the ambient air quality analysis used for this application.

Attachment D provides additional application requirements for sources within the Regional Haze Special Protection Area.

Section 12 Project Description Continued

For **PALs under Section 10** of this application, include the information listed in 40 C.F.R. 52.21(aa)(3), adopted by reference in 18 AAC 50.040 [18 AAC 50.540(h)].

Not applicable.

For a **limit to establish offsetting emissions under Section 10** of this application, specify the physical or operational limitations necessary to provide actual emission reductions of the nonattainment air pollutant; including [18 AAC 50.540(i)]:

- A calculation of the expected reduction in actual emissions; and

Not applicable.

- The emission limitation representing that quantity of emission reduction.

Not applicable.

Section 12 Project Description Continued

For **ORLs under Section 10** of this application [18 AAC 50.540(j)], include:

A description of each proposed limit, including for each air pollutant a calculation of the effect the limit will have on the stationary source's potential to emit and the allowable emissions [18 AAC 50.225(b)(4)];

Not applicable.

A description of a verifiable method to attain and maintain each limit, including monitoring and recordkeeping requirements [18 AAC 50.225(b)(5)];

Not applicable.

Citation to each requirement that the person seeks to avoid, including an explanation of why the requirement would apply in the absence of the limit and how the limit allows the person to avoid the requirement [18 AAC 50.225(b)(6)];

Not applicable.

A statement that the owner or operator of the stationary source will be able to comply with each limit [18 AAC 50.225(b)(8)];

Not applicable.

Section 12 Project Description Continued

For **revising or rescinding Title I permit conditions under Section 10** of this application [18 AAC 50.540(k)], include:

An explanation of why the permit term or condition should be revised or rescinded [18 AAC 50.540(k)(2)];

Not applicable.

The effect of revising or revoking the permit term or condition on [18 AAC 50. 540 (k)(3)]:

- Emissions;

Not applicable.

- Other permit terms;

Not applicable.

- The underlying ambient demonstration, if any;

Not applicable.

- Compliance monitoring; and

Not applicable.

For revising a condition that allows avoidance of a permit classification, the information required for that type of permit, unless the revised condition would also allow the owner or operator to avoid the classification. [18 AAC 50.540(k)(4)]

Not applicable.

Section 13 Other Application Material

The information listed below must be included in your air quality control minor permit application. *Note: These must be attached in order for your application to be complete.*

If required to submit an analysis of ambient air quality under 18 AAC 50.540(c)(2), or if otherwise requested by the Department:

☐ Attached are maps, plans, and/or aerial photographs as necessary to show the locations and distances of
- emissions units, buildings, emitting activities and boundaries of the associated with the stationary source, and
- nearby or adjacent residences, roads, other occupied structures and general topography within 15 kilometers.

(Indicate compass direction and scale on each.)

☐ Attached is a document (e.g., spreadsheet) showing coordinates and elevations of each modeled unit, along with parameters necessary to characterize each unit for dispersion modeling.

☐ Attached is an electronic copy of all modeling files.

Section 14 Certification

This certification applies to the Air Quality Control Minor Permit Application for the Anna Platform (Stationary Source Name) submitted to the Department on: see date below.

Type of Application

☒ Initial Application

☐ Change to Initial Application

The application is **NOT** complete unless the certification of truth, accuracy, and completeness on this form bears the signature of a **Responsible Official**. Responsible Official is defined in 18 AAC 50.990. (18 AAC 50.205)

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

"Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete."

Signature: Trudi Hallett	Date: 10/28/24
Printed Name: Trudi Hallett	Title: Asset Team Lead

Section 15 Attachments

☒ Attachments Included.

Attachment A – Emissions Calculations
Attachment B – Compliance Demonstration
Attachment C – Ambient Air Quality Analysis
Attachment D – Additional Requirements for Sources within Regional Haze Protection Area

Section 16 Mailing Address

Submit the minor permit application to the Permit Intake Clerk in the Department's Anchorage office. Submitting to a different office will delay processing. The mailing address and phone number for the Anchorage office is:

Permit Intake Clerk
Alaska Department of Environmental Conservation
Air Permit Program
555 Cordova Street
Anchorage, Alaska 99501
(907) 269-6881

Alaska Department of Environmental Conservation
Air Quality Control Minor Permit Application

MINOR PERMIT APPLICATION – EMISSION UNIT INFORMATION

FOR A NEW STATIONARY SOURCE: Complete this form for all emissions units.

FOR A MODIFICATION TO AN EXISTING STATIONARY SOURCE:
IF YOU HAVE A TITLE V PERMIT: Complete this form for each emissions unit that is new or that is affected by a physical change or change in the method of operation.
IF YOU DO NOT HAVE A TITLE V PERMIT or APPLICATION CLASSIFIED UNDER 18 AAC 50.508(5): Complete this form for all emissions units.

Section 1 Stationary Source Information

Stationary Source Name: Anna Platform – Spartan 151 Drilling Project

Section 2 Emissions Unit (EU) Identification (ID) and Description

Note: Do not use this section for emission units associated with asphalt plants, soil remediation, and rock crushers. Use the Supplementary Forms for these units.

EU ID No.	Description	Construction Date	Make / Model	Serial No.	Requested Limit* (specify units)	Max. Rated Capacity or Design Throughput
S1	Spartan Drill Rig Engine No. 1	1981	Caterpillar D-399	N/A	N/A	1,100 hp
S2	Spartan Drill Rig Engine No. 2	1981	Caterpillar D-399	N/A	N/A	1,100 hp
S3	Spartan Drill Rig Engine No. 3	1981	Caterpillar D-398	N/A	N/A	970 hp
S4	Spartan Drill Rig Engine No. 4	1981	Caterpillar C-398	N/A	N/A	970 hp
S5	Spartan Drill Rig Engine No. 5	1981	Caterpillar D-398	N/A	N/A	970 hp
S6	Spartan Drill Rig Engine No. 6	1981	Caterpillar D-398	N/A	N/A	970 hp
S7	Spartan Drill Rig Engine No. 7	1981	Caterpillar D-398	N/A	N/A	970 hp

EU ID No.	Description	Construction Date	Make / Model	Serial No.	Requested Limit* (specify units)	Max. Rated Capacity or Design Throughput
S8	Spartan Drill Rig Crane Engine No. 1	1981	Caterpillar D-3306	N/A	N/A	300 hp
S9	Spartan Drill Rig Crane Engine No. 2	1981	Detroit Diesel 671	N/A	N/A	285 hp
S10	Spartan Drill Rig Cement Pump Engine No. 1	1981	TBD	N/A	N/A	490 hp
S11	Spartan Drill Rig Cement Pump Engine No. 2	1981	TBD	N/A	N/A	490 hp
S12	Spartan Drill Rig Tank No. 10	1981	Diesel Tank	N/A	N/A	32,943 gallons
	Spartan Drill Rig Tank No. 11	1981	Diesel Tank	N/A	N/A	646 gallons
	Spartan Drill Rig Tank No. 12	1981	Diesel Tank	N/A	N/A	28,663 gallons
	Spartan Drill Rig Tank No. 13	1981	Diesel Tank	N/A	N/A	3,305 gallons
S13	Lifeboat Engine No. 1	1981	TBD	N/A	N/A	36 hp
S14	Lifeboat Engine No. 2	1981	TBD	N/A	N/A	36 hp

**If no annual limit is applicable (e.g., hours, fuel), then specify not applicable (N/A).*
Please use additional copies of this sheet if necessary.

Have you identified each emission unit (if you do not have a Title V permit), or each new or affected emission unit (if you have an existing Title V permit) in Section 2 above? ☒ Yes ☐ No
If not, please explain:

Section 3 Emissions Unit Use

EU ID No.	Is unit portable?		Is the unit:						Is this unit a:		If limited operation, is the unit:		
[List same EUs as in Section 2.]	Yes	No	a nonroad engine? Yes	No	an intermittently used oil field support equipment per Policy 04.02.105? Yes	No	an oil field construction unit per Policy 04.02.104? Yes	No	primary (base load) unit?	or limited operation unit?	emergency or black start unit?	subject to a permit limit?	or other (specify)?
S1	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S2	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S3	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S4	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S5	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S6	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S7	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S8	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S9	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S10	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S11	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S12	☒	☐	☐	☒	☐	☒	☐	☒	☒	☐	☐	☐	☐
S13	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐
S14	☒	☐	☒	☐	☐	☒	☐	☒	☒	☐	☐	☐	☐

Please use additional copies of this sheet if necessary.

Have you specified the use of each emission unit in Section 3 above? ☒ Yes ☐ No

If not, please explain:

Section 4 Fuel Information

Complete Section 4a or 4b for each emissions unit, as appropriate.

Section 4a Fuel Burning Equipment not Including Flares

EU ID No.	Fuel type(s)	Maximum fuel sulfur content	Fuel density (lb/gal) (if liquid fuel)	Higher heating value*	Maximum fuel consumption rate (gallons/hour or Mscf/hour)
S1	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	56.2
S2	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	56.2
S3	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	49.6
S4	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	49.6
S5	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	49.6
S6	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	49.6
S7	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	49.6
S8	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	15.3
S9	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	14.6
S10	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	25.0
S11	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	25.0
S13	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	1.8
S14	Diesel	0.0015 ☒ wt. % S ☐ ppmv H2S	7	137,000 ☒ Btu/gal ☐ Btu/dscf Other	1.8

**Use British thermal unit (Btu) per gallon (gal) for liquid fuels. Use Btu per dry standard cubic foot (dscf) for gaseous fuels.*
Please use additional copies of this sheet if necessary.

Have you provided the fuel details for each fuel-burning emission unit (excluding flares) in Section 4a above? ☒ Yes ☐ No
If not, please explain:

Section 4b Flares

Complete this section if the project/stationary source contains a flare.

Do you own or operate a flare? ☐ Yes ☒ No *(If not skip this section)*

EU ID No:	Heat release rate for pilot / purge operation (MMBtu/hr)	Maximum heat release rate (MMBtu/hr)	Flare gas heat content (Btu/scf)	Flare gas H_2S content (ppmv)

Please use additional copies of this sheet if necessary

Include additional notes as warranted.

Have you provided the fuel use details for all flares in Section 4b above? ☐ Yes ☐ No

If not, please explain:

Section 5 Materials Processed and Methods of Operation

Complete this section if the project/stationary source contains a materials-handling process.

Do you own or operate a flare? ☐ Yes ☒ No *(If not, skip this section)*

EU ID No.	Materials processed	Maximum material processing rate	Describe method of operation

Please use additional copies of this sheet if necessary

Include additional notes as warranted.

Have you specified the material processing details in Section 5 above? ☐ Yes ☐ No

If not, please explain:

Section 6 Emission Control Information (if applicable)

Complete this section if the project/stationary source contains emission control equipment.

Do you own or operate emission control equipment? ☐ Yes ☒ No *(If not, note below and skip this section.)*

EU ID No.	Control equipment	Pollutant(s) controlled:	Description of the control equipment	Description of significant operating parameters and set points for the control equipment	The control equipment is necessary:		
					To comply with an emission standard	To avoid a project classification	Other – give purpose of control equipment
					☐	☐	
					☐	☐	

Please use additional copies of this sheet if necessary

Include additional notes as warranted.

Have you specified the details of any emission controls in Section 6 above? ☐ Yes ☐ No

If not, please explain:

Section 7 Emission Factors

Give exact citations of emission factor sources.

EU ID No.	Emission Factors								
	NOx [1,2]	**CO [1]**	**PM-2.5 [1]**	**PM-10 [1]**	**PM [1]**	**SO_2 [1]**	**VOC [1,3]**	**HAPs**	**Lead**
S1	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S2	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S3	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S4	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S5	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S6	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S7	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S8	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S9	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S10	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S11	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S12	N/A	N/A	N/A	N/A	N/A	N/A	1.56E-3 lb/hr	N/A	N/A
S13	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S14	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)

EU ID No.	Sources and References for Emission Factors								
	NOx	**CO**	**PM-2.5**	**PM-10**	**PM**	**SO_2**	**VOC**	**HAPs**	**Lead**
S1	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S2	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S3	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S4	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S5	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S6	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S7	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S8	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S9	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S10	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S11	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S12	N/A	N/A	N/A	N/A	N/A	N/A	AP-42 Sec. 7.1	N/A	N/A
S13	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)
S14	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)	N/A (NRE)

Please use additional copies of this sheet if necessary.

Include additional notes as warranted.

Have you specified all emission factors and reference sources in Section 7 above? ☒ Yes ☐ No

If not, please explain:

Section 8 Applicable State Emission Limits (listed in 18 AAC 50.050 through 18 AAC 50.090)

Complete this section for emissions units that are new or are affected by the physical change or change in operation.

EU ID No.	Emission Limit or Standard	Regulation Citation	Compliance Method

Please use additional copies of this sheet if necessary.

Have you specified all applicable state emission limits in Section 8 above? ☒ Yes ☐ No
Have you specified a demonstration of compliance for each emission limit or standard? ☒ Yes ☐ No

If you answered "no" to either question, please explain:

The project includes installation of tanks and nonroad engines; no applicable state emissions standards (see also Attachment B).

Section 9 Incinerators

Complete this section if the project/stationary source contains an incinerator.

Do you own or operate an incinerator? ☐ Yes ☒ No *(If not, skip this section.)*

EU ID No.	Fuels Burned (type and consumption rate)	Rated capacity in pounds per hour	Type of waste burned

Please use additional copies of this sheet if necessary

Include additional notes as warranted.

Have you specified the details of all incinerators in Section 9 above? ☐ Yes ☐ No

If not, please explain:

Alaska Department of Environmental Conservation
Air Quality Control Minor Permit Application

EMISSIONS SUMMARY FORM
Modification of an Existing Stationary Source

Section 1 Stationary Source Information

Stationary Source Name: Anna Platform – Spartan 151 Drilling Project

Section 2 Existing Potential to Emit (PTE) for the Entire Stationary Source BEFORE the Modification

EU ID No.	*Does project affect the emissions unit?*	PTE (tpy)								
		CO	**NOx[4]**	**PM-2.5[1]**	**PM-10[1]**	**PM**	**SO_2**	**VOC[2]**	**Fugitive VOC[3]**	**Fugitive PM[3]**
All Stationary Source Emissions Units (2 – 5, 7 – 19, 27, Insignificant Units)	☐ Yes ☒ No	298.8	380.4	11.9	11.9	11.9	89.8	72.7		
Total tons per year (tpy)		**298.8**	**380.4**	**11.9**	**11.9**	**11.9**	**89.8**	**72.7**		

☒ Detailed Excel spreadsheet emissions calculations are attached. *These must be attached in order for your application to be complete.*
Include multiple copies of this page if more space is required.

☐ *Check this box if fugitive emissions are included in permit applicability under 18 AAC 50.502(i).*
Brief description of why fugitive emissions are included in permit applicability:

Notes:
1 Include condensable particulate matter for PM-10 and PM-2.5.
2 If total PTE for volatile organic compounds (VOCs) is at least 10 tpy, include a separate Excel spreadsheet that shows the HAP emissions.
3 Fugitive VOC and PM emissions are included as assessable emissions regardless of permit applicability.
4 Fugitive NOx emissions from blasting should be included in the PTE column for NOx.

Have you completed Section 2 above? ☒ Yes ☐ No
If not, please explain:

Section 3 Change in Emissions

Show ONLY existing emissions units that are affected by the project. Show EITHER the change in actual emissions (Sections 3a and 3b) OR the change in potential emissions (Sections 2 and 3c).

Section 3a Actual Emissions – NOx, CO, PM-2.5, PM-10, PM, SO_2 (18 AAC 50.502(c)(3)(B) or 18 AAC 50.508(5))

If an existing emissions unit is being removed, enter zero for "projected actual emissions" for that unit.

See 18 AAC 50.502 for directions on calculating "baseline actual emissions" and "projected actual emissions."

EU ID No.	Type of Modification		Baseline Actual Emissions (tpy)					Projected Actual Emissions (tpy)				
	Modified EU	Removed EU	CO	NO_X	PM-2.5[1]	PM-10[1]	SO_2	CO	NO_X	PM-2.5[1]	PM-10[1]	SO_2
	☐	☐										
	☐	☐										
	☐	☐										
	☐	☐										
	☐	☐										
	☐	☐										
	☐	☐										
	☐	☐										
	☐	☐										
	☐	☐										
	☐	☐										
Total												

Use this table only if the project does not include new emission units. See 18 AAC 50.502(e) and (h)(4)

☐ Detailed Excel spreadsheets emissions calculations are attached. *These must be attached in order for your application to be complete. You may give an example calculation where the method of calculation is identical for multiple emissions units.*

Notes:

[1] Include condensable particulate matter for PM-10 and PM-2.5.

Section 3b Change in Actual Emissions (18 AAC 50.502(c)(3)(B) or 18 AAC 50.502(c)(4)(B))

If you choose actual emissions as your basis, complete Sections 3a and 3b for each emissions unit for which you answered "YES" in Section 2. Change in actual emissions = "projected actual emissions" minus "baseline actual emissions" from Section 3a.

EU ID No.	Change in Actual Emissions (tpy)				
	CO	NOx	PM-2.5[1]	PM-10[1]	SO_2
Total					

Use this table only if the project does not include new emission units. See 18 AAC 50.502(e) and (h)(4)

[1] Include condensable particulate matter for PM-10 and PM-2.5.

Have you completed Section 3a and 3b above? ☐ Yes ☒ No

If not, please explain:

Opting to use potential emissions for this application.

Section 3c Change in Potential to Emit (PTE) (18 AAC 50.502(c)(3)(A) or 18 AAC 50.502(c)(4)(A))

If you choose PTE as your basis for calculation, complete this section for each emissions unit that is new and for each emissions unit for which you answered "YES" in Section 2.

Under "PTE AFTER the Modification", enter zero if you are removing the emissions unit.

Under "Change in PTE":
For each EXISTING emissions unit, subtract the amount of PTE BEFORE Modification in Section 2 from the "PTE AFTER the Modification"
For each NEW emissions unit, enter the amount from "PTE AFTER the Modification."

EU ID No.	PTE - AFTER the Modification (tpy) [only from modified and new emissions units. Do not list emission units for which you answered "NO" in Section 2.]								Change in PTE (tpy)							
	CO	NO_X	PM-2.5[1]	PM-10[1]	PM	SO_2	VOC	HAPs[2]	CO	NO_X	PM-2.5[1]	PM-10[1]	PM	SO_2	VOC	HAPs
S12	0	0	0	0	0	0	3.4E-03	0	0	0	0	0	0	0	3.4E-03	0
	0	0	0	0	0	0	7.0E-05	0	0	0	0	0	0	0	7.0E-05	0
	0	0	0	0	0	0	3.0E-03	0	0	0	0	0	0	0	3.0E-03	0
	0	0	0	0	0	0	3.8E-04	0	0	0	0	0	0	0	3.8E-04	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**6.8E-03**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6.8E-03**	**0**

Include multiple copies of this page if more space is required.
☒ Detailed Excel spreadsheet emissions calculations are attached. *These must be attached for your application to be complete.*

Notes:
1 Include condensable particulate matter for PM-10 and PM-2.5
2 If the total PTE for hazardous air pollutants (HAPs) for the entire stationary source is at least 10 tpy, include a separate Excel spreadsheet that shows the HAP emissions.

Have you completed all portions of Section 3c above? ☒ Yes ☐ No If not, please explain:

Attachment A

Emissions Calculations

Table A-1a. Prevention of Significant Deterioration (PSD) Permit Applicability
Hilcorp Alaska, LLC - Anna Platform

Pollutant	Baseline Actual Emissions [1]	Projected Actual Emissions [2]	Proposed Project Emissions Increase	PSD Permit Significant Emission Rate Threshold [3]	PSD Permit Required?
NO_X	0 tpy	0 tpy	0 tpy	40 tpy	No
CO	0 tpy	0 tpy	0 tpy	100 tpy	No
PM	0 tpy	0 tpy	0 tpy	25 tpy	No
PM_{10}	0 tpy	0 tpy	0 tpy	15 tpy	No
$PM_{2.5}$	0 tpy	0 tpy	0 tpy	10 tpy	No
VOC	0 tpy	6.8E-03 tpy	6.8E-03 tpy	40 tpy	No
SO_2	0 tpy	0 tpy	0 tpy	40 tpy	No
NO_X as a $PM_{2.5}$ precursor	0 tpy	0 tpy	0 tpy	40 tpy	No
SO_2 as a $PM_{2.5}$ precursor	0 tpy	0 tpy	0 tpy	40 tpy	No
GHG (CO_2e)	0 tpy	0 tpy	0 tpy	75,000 tpy	No

Notes:

[1] Baseline actual emissions are zero for new emissions units.

[2] Projected actual emissions are equal the Spartan 151 drill rig's potential to emit, excluding nonroad engines per 18 AAC 50.100.

[3] PSD significant emission rates for a modified major stationary source (40 CFR 52.21(b)(23)(i) and (b)(49)(iv)(a)).

Table A-1b. Minor Permit Applicability
Hilcorp Alaska, LLC - Anna Platform

Pollutant	Existing Source Potential Emissions [1]	Proposed Source Potential Emissions	Proposed Emissions Increase	Minor Air Quality Permit Applicability Threshold [2]	Minor Source Air Permit Required?
NO_X	380.4 tpy	380.4 tpy	0 tpy	10 tpy	No
CO	298.8 tpy	298.8 tpy	0 tpy	---- [3]	N/A
PM	11.9 tpy	11.9 tpy	0 tpy	----	N/A
PM_{10}	11.9 tpy	11.9 tpy	0 tpy	10 tpy	No
$PM_{2.5}$	11.9 tpy	11.9 tpy	0 tpy	10 tpy	No
VOC	72.7 tpy	72.7 tpy	6.8E-03 tpy	----	N/A
SO_2	89.8 tpy	89.8 tpy	0 tpy	10 tpy	No

Notes:

[1] Existing source potential emissions are from the Statement of Basis for Permit No. AQ0062TVP04 minus emissions for the Kuukpik V drill rig; the Kuukpik V drill rig is not included in the emission unit inventory because Hilcorp is separatetly requesting that Anna Platform be removed as an authorized location for the drill rig under Minor Permit No. AQ1411MSS02.

[2] Minor air permit thresholds for an existing stationary source under 18 AAC 50.502(c)(3).

[3] Not applicable.

Table A-2. New Emission Unit Inventory
Hilcorp Alaska, LLC - Anna Platform

EU ID	Emission Unit Name	Emission Unit Description [1]	Fuel	Max. Capacity	Max. Operation
S1	Spartan Drill Rig Engine No. 1	Caterpillar D-399 (NRE)	Diesel	1,100 hp	8,760 hr/yr
S2	Spartan Drill Rig Engine No. 2	Caterpillar D-399 (NRE)	Diesel	1,100 hp	8,760 hr/yr
S3	Spartan Drill Rig Engine No. 3	Caterpillar D-398 (NRE)	Diesel	970 hp	8,760 hr/yr
S4	Spartan Drill Rig Engine No. 4	Caterpillar D-398 (NRE)	Diesel	970 hp	8,760 hr/yr
S5	Spartan Drill Rig Engine No. 5	Caterpillar D-398 (NRE)	Diesel	970 hp	8,760 hr/yr
S6	Spartan Drill Rig Engine No. 6	Caterpillar D-398 (NRE)	Diesel	970 hp	8,760 hr/yr
S7	Spartan Drill Rig Engine No. 7	Caterpillar D-398 (NRE)	Diesel	970 hp	8,760 hr/yr
S8	Spartan Drill Rig Crane Engine No. 1	Caterpillar D-3306 (NRE)	Diesel	300 hp	8,760 hr/yr
S9	Spartan Drill Rig Crane Engine No. 2	Detroit Diesel 671 (NRE)	Diesel	285 hp	8,760 hr/yr
S10	Spartan Drill Rig Cement Pump Engine No. 1	TBD (NRE)	Diesel	490 hp	8,760 hr/yr
S11	Spartan Drill Rig Cement Pump Engine No. 2	TBD (NRE)	Diesel	490 hp	8,760 hr/yr
S12	Spartan Drill Rig Tank	Diesel Storage Tank No. 10	N/A	32,943 gallons	8,760 hr/yr
	Spartan Drill Rig Tank	Diesel Storage Tank No. 11	N/A	646 gallons	8,760 hr/yr
	Spartan Drill Rig Tank	Diesel Storage Tank No. 12	N/A	28,663 gallons	8,760 hr/yr
	Spartan Drill Rig Tank	Diesel Storage Tank No. 13	N/A	3,305 gallons	8,760 hr/yr
S13	Spartan Drill Rig Lifeboat Engine No. 1	TBD (NRE)	Diesel	36 hp	8,760 hr/yr
S14	Spartan Drill Rig Lifeboat Engine No. 2	TBD (NRE)	Diesel	36 hp	8,760 hr/yr

Notes:

[1] All drill rig engines are nonroad engines (NRE), which are excluded from permit applicability per 18 AAC 50.100.

Table A-3. New Potential NO_X Emissions
Hilcorp Alaska, LLC - Anna Platform

EU ID	Emission Unit Name	Rating/Size	Allowable Operation	Emission Factor	Reference	Potential Emissions
S12	Spartan Drill Rig Tank	32,943 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	646 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	28,663 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	3,305 gallons	8,760 hr/yr	N/A	N/A	0 tpy
					Total	**0.0 tpy**

Table A-4. New Potential CO Emissions
Hilcorp Alaska, LLC - Anna Platform

EU ID	Emission Unit Name	Rating/Size	Allowable Operation	Emission Factor	Reference	Potential Emissions
S12	Spartan Drill Rig Tank	32,943 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	646 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	28,663 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	3,305 gallons	8,760 hr/yr	N/A	N/A	0 tpy
					Total	**0.0 tpy**

Table A-5. New Potential PM Emissions
Hilcorp Alaska, LLC - Anna Platform

EU ID	Emission Unit Name	Rating/Size	Allowable Operation	Emission Factor	Reference	Potential Emissions
S12	Spartan Drill Rig Tank	32,943 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	646 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	28,663 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	3,305 gallons	8,760 hr/yr	N/A	N/A	0 tpy
					Total	**0.0 tpy**

Table A-6a. New Potential VOC Emissions
Hilcorp Alaska, LLC - Anna Platform

EU ID	Emission Unit Name	Rating/Size	Allowable Operation	Emission Factor	Reference	Potential Emissions
S12	Spartan Drill Rig Tank	32,943 gallons	8,760 hr/yr	6.88 lb/yr	AP-42 Section 7.1 [1]	3.4E-03 tpy
	Spartan Drill Rig Tank	646 gallons	8,760 hr/yr	0.14 lb/yr	AP-42 Section 7.1 [1]	7.0E-05 tpy
	Spartan Drill Rig Tank	28,663 gallons	8,760 hr/yr	5.92 lb/yr	AP-42 Section 7.1 [1]	3.0E-03 tpy
	Spartan Drill Rig Tank	3,305 gallons	8,760 hr/yr	0.76 lb/yr	AP-42 Section 7.1 [1]	3.8E-04 tpy
					Total	**6.8E-03 tpy**

Notes:

[1] Tank emissions calculations are provided in Table 6b.

Table 6b. Tank VOC Emissions Summary
Hilcorp Alaska, LLC - Anna Platform

Tank Emission Calculations [1]					
Parameter	**S12 Tank 10**	**S12 Tank 11**	**S12 Tank 12**	**S12 Tank 13**	**Equation**
Standing Loss (Ls) Calculations					
Vapor Space Expansion Factor, K_E	3.9E-02	3.9E-02	3.9E-02	3.9E-02	Eq. 1-12
Effective Height, H_E (ft)	14.1	3.9	13.4	7.1	Eq. 1-15
Vapor Space Outage, H_{VO} (ft)	7.1	2.0	6.7	3.5	Eq. 1-15
Average Daily Temp, T_{AA}(^{o}R)	496.22	496.22	496.22	496.22	Eq. 1-30
Liquid Bulk Temp, T_B (^{o}R)	498.00	498.00	498.00	498.00	Eq. 1-31
Average Daily Liquid Temp, T_{LA} (^{o}R)	500.27	500.27	500.27	500.27	Eq. 1-28
Vapor Pressure, P_{VA} (psia)	3.3E-03	3.3E-03	3.3E-03	3.3E-03	Eq. 1-25
Vented Vapor Sat Factor, K_S	1.00	1.00	1.00	1.00	Eq. 1-21
Average Vapor Temp, T_V (^{o}R)	502.11	502.11	502.11	502.11	Eq. 1-33
Vapor Density, W_V (lb/ft^3)	8.0E-05	8.0E-05	8.0E-05	8.0E-05	Eq. 1-22
Effective Diameter, D_E (ft)	20.31	5.64	19.18	10.16	Eq. 1-14
Vapor Space Volume, V_V (ft^3)	2,290.22	49.09	1,929.33	286.28	Eq. 1-3
Standing Loss, L_S (lb/yr)	2.63	0.06	2.22	0.33	Eq. 1-2
Working Loss (Lw) Calculations					
Annual Sum Liquid, ΣH_{QI}(ft/yr)	163.09	41.45	159.08	65.45	Eq. 1-37
Maximum Liquid Height, H_{LX} (ft)	14.14	3.93	13.35	7.07	Eq. 1-36
Minimum Liquid Height, H_{LN} (ft)	0	0	0	0	Eq. 1-36
Number of Turnovers, N	11.54	10.55	11.91	9.26	Eq. 1-36
Factors, K_N, K_B	1	1	1	1	Eq. 1-35
Factor, K_P	1	1	1	1	Eq. 1-35
Net Working Loss, V_Q (ft^3/yr)	52,841	1,036	45,975	5,301	Eq. 1-39
Working Loss, L_W (lb/yr)	4.25	0.08	3.70	0.43	Eq. 1-35
Potential Emissions (tpy)					
Total VOCs per Tank (tpy)	3.4E-03	7.0E-05	3.0E-03	3.8E-04	Eq. 1-1

Tank Information				
Parameter	**S12 Tank 10**	**S12 Tank 11**	**S12 Tank 12**	**S12 Tank 13**
Tank Contents	Diesel	Diesel	Diesel	Diesel
Tank Capacity (gal)	32,943	646	28,663	3,305
Orientation	Horizontal	Horizontal	Horizontal	Horizontal
Diameter (ft)	18	5	17	9
Length/Height (ft)	18	5	17	9
Color	Grey	Grey	Grey	Grey
Throughput (gal/yr) [2]	395,316	7,752	343,956	39,660
Paint Condition	Average	Average	Average	Average
Paint Solar Absorptance, α	0.71	0.71	0.71	0.71

Meteorological Inputs (Kenai, AK)		
Average Daily Max Temp, T_{AX}	43.6 ^{o}F	503.3 ^{o}R
Average Daily Min Temp, T_{AN}	29.5 ^{o}F	489.2 ^{o}R
Insolation Factor, i	838 Btu/ft^2-d	N/A

Fuel Constants		
Parameter	**Diesel**	**Crude**
Vapor Molecular Weight, M_V (lb/lb-mol)	130	50
Vapor Pressure Constant, A	12.101	11.5
Vapor Pressure Constant, B (°R)	8,907.0	5,575.3
Reid Vapor Pressure (psi)	N/A	4.0

Notes:

[1] Reference: AP-42 Section 7.1.

[2] Diesel Tank 2 assumes a throughput of 1/4 tank volume per year and all other tanks assume a throughput of one tank volume per month.

Table A-7. New Potential SO_2 Emissions
Hilcorp Alaska, LLC - Anna Platform

EU ID	Emission Unit Name	Rating/Size	Allowable Operation	Emission Factor	Reference	Potential Emissions
S12	Spartan Drill Rig Tank	32,943 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	646 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	28,663 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	3,305 gallons	8,760 hr/yr	N/A	N/A	0 tpy
					Total	**0 tpy**

Table A-8. New Potential CO_2e Emissions

Hilcorp Alaska, LLC - Anna Platform

EU ID	Emission Unit Name	Rating/Size	Allowable Operation	Emission Factor	Reference	Potential Emissions
S12	Spartan Drill Rig Tank	32,943 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	646 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	28,663 gallons	8,760 hr/yr	N/A	N/A	0 tpy
	Spartan Drill Rig Tank	3,305 gallons	8,760 hr/yr	N/A	N/A	0 tpy
					Total	**0 tpy**

Attachment B

Compliance Demonstration

ATTACHMENT B: COMPLIANCE DEMONSTRATION

Per Section 8 of the Emissions Unit Information Form, a demonstration of compliance with the State emission limits listed in 18 AAC 50.050 through 18 AAC 50.090 is provided below.

18 AAC 50.055(a)

The Spartan 151 Drill Rig contains only nonroad engines and fuel storage tanks, and there are no fuel burning equipment subject to the visible emissions requirement of 18 AAC 50.055(a)(1).

18 AAC 50.055(b)(1)

The Spartan 151 Drill Rig contains only nonroad engines and fuel storage tanks, and there are no fuel burning equipment subject to the particulate matter (PM) emissions requirement of 18 AAC 50.055(b)(1).

18 AAC 50.055(c)

The Spartan 151 Drill Rig contains only nonroad engines and fuel storage tanks, and there are no fuel burning equipment subject to the sulfur compound emissions requirement of 18 AAC 50.055(c).

Attachment C

Ambient Air Quality Analysis

ATTACHMENT C: AMBIENT AIR QUALITY ANALYSIS

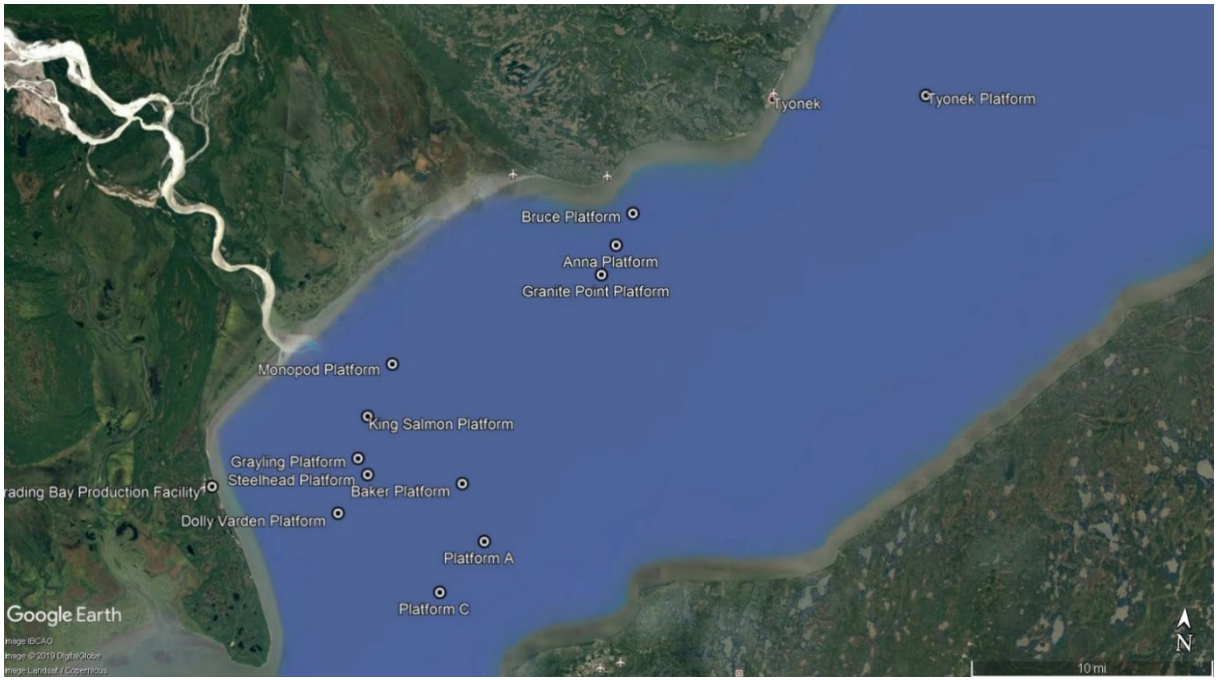
The Spartan 151 Drilling Project is classified under 18 Alaska Administrative Code (AAC) 50.502(c)(2) for the relocation of a portable oil and gas operation (POGO) to the Anna Platform. Per 18 AAC 50.540(c)(2)(B), the minor air permit application for the project will require an ambient demonstration (modeling) to demonstrate that the project will not result in a violation of the annual nitrogen dioxide (NO_2), annual particulate matter with an aerodynamic diameter of less than 2.5 microns ($PM_{2.5}$), 24-hour particulate matter with an aerodynamic diameter of less than 10 microns (PM_{10}), and one-hour, three-hour, 24-hour, and annual sulfur dioxide (SO_2) Alaska Ambient Air Quality Standards (AAAQS), unless the Alaska Department of Environmental Conservation (ADEC) provides a written finding that a modeling analysis in not necessary.

The Spartan 151 Drill Rig is a jack-up-style portable oil and gas drilling rig consisting of eleven diesel-fired internal combustion engines and four diesel storage tanks. Seven of the eleven engines are used for drilling. The other four engines include two crane engines and two cement pump engines. The rig also has two lifeboat engines excluded from the total engine count. The Spartan 151 Drill Rig can be configured to drill wells independently or to saddle up to an existing platform to drill through the platform legs. Figure C-1 shows the drill rig sitting on jack-up legs.

Figure C-1: Spartan 151 Drill Rig (Photo Courtesy of Carol Griswold, Seward City News)

Hilcorp Alaska, LLC (Hilcorp) anticipates using the Spartan 151 Drill Rig at the Anna Platform to provide extended drilling capability through the platform legs. Figure C-2 shows the location of the Anna Platform and other stationary sources in the Cook Inlet.

Figure C-2: Anna Platform Location



A modeling analysis has been prepared for a Title I minor air permit to authorize the operation of the Spartan 151 Drill Rig at the Granite Point Platform[1], which is located near the Anna Platform. Subsequently, ADEC determined that the results from that analysis are representative of potential ambient air impacts from the operation of the Spartan 151 Drill Rig at the Tyonek Platform and Bruce Platform. As a result, ADEC allowed the use of that analysis for the Tyonek and Bruce Platforms' Minor Air Permits[2].

The modeling analysis is a conservative proxy of potential ambient air impacts from the operation of the Spartan 151 Drill Rig at the Anna Platform because the Granite Point Platform has a larger emissions unit inventory and greater potential emissions than the Anna Platform, as shown in Table C-1. Additionally, the Granite Point Platform and Anna Platform experience similar meteorological conditions that influence the dispersion of emissions.

Table C-1: Potential Emissions Comparison

Air Pollutant	Granite Point Platform (tpy)[1]	Anna Platform (tpy)[2]
NO_X	689.1	380.4
$PM_{2.5}$	54.7	11.9
PM_{10}	54.7	11.9
SO_2	176.6	89.8

Notes:
(1) Total potential emissions for Granite Point Platform are from the Spartan 151 POGO Title I minor air quality permit application submitted to the ADEC in January 2019 with Permit No. AQ0066MSS02 issued in May 2019.
(2) Total potential emissions for Anna Platform are calculated in Attachment A.

[1] Title I Minor Permit No. AQ0066MSS02 issued May 30, 2019.
[2] Title I Minor Permit No. AQ0091MSS04 issued December 23, 2020 (Tyonek Platform) and Title I Minor Permit No. AQ0064MSS03 issued August 8, 2023 (Bruce Platform).

The modeling demonstration prepared for the Granite Point Platform Title I minor air quality permit shows that the project impacts for all SO_2 averaging periods are below the respective SO_2 significant impact levels (SILs), as shown in Table C-2. These results are representative of the operation of the Spartan 151 Drill Rig at the Anna Platform because the emissions and emissions unit inventory for the Spartan 151 Drill Rig are identical for both projects. Any slight changes in the rig orientation that may result in an increase or decrease of modeled SO_2 impacts would not change the conclusion that modeled SO_2 impacts are insignificant because of the large margin between the modeled SO_2 results and the SO_2 SILs.

Table C-2: SO_2 SIL Modeling Results for Spartan 151 Drill Rig at Granite Point Platform

Air Pollutant	Averaging Period	SIL ($\mu g/m^3$)	SIL Modeling Results ($\mu g/m^3$)	Percent of SIL
SO_2	1-hour	8	0.6	7.5 pct.
	3-hour	25	0.3	1.2 pct.
	24-hour	5	0.2	4.0 pct.
	Annual	1.0	0.1	10.0 pct.

Furthermore, the modeling demonstration prepared in support of the Granite Point Platform Title I minor air permit shows that the cumulative modeled NO_2, PM_{10}, and $PM_{2.5}$ impacts are approximately 50 percent or less of the applicable AAAQS, as shown in Table C-3. For the reasons described in the previous paragraph, these modeling results are representative of potential ambient air impacts from the operation of the Spartan 151 Drill Rig at the Anna Platform. Because the potential emissions from operations at the Anna Platform are less than those from operations at the Granite Point Platform, the results for the Spartan 151 Drill Rig at Anna Platform likely provide a conservative estimate of the ambient air impacts that will occur from the operation of the Spartan 151 Drill Rig at the Granite Point Platform.

Table C-3: NO_2, PM_{10}, and $PM_{2.5}$ Cumulative Impact Modeling Results for Spartan 151 Drill Rig at Granite Point Platform

Air Pollutant	Averaging Period	Modeled Impact ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Maximum Total Impact ($\mu g/m^3$)	AAQS ($\mu g/m^3$)	Percent of AAQS
NO_2	Annual	44.5	5.60	50.1	100	50.1 pct.
PM_{10}	24-hour	18.0	30.0	48.0	150	32.0 pct.
$PM_{2.5}$	Annual	2.6	3.7	6.3	12	52.5 pct.

In summary, the results of the ambient modeling demonstration for the operation of the Spartan 151 Drill Rig at the Granite Point Platform can be used to demonstrate that the operation of the Spartan 151 Drill Rig at Anna Platform will not cause or contribute to a violation of the annual NO_2, 24-hour PM_{10}, the annual $PM_{2.5}$, and 1-hour, 3-hour, 24-hour and annual SO_2 AAAQS. Therefore, an additional modeling analysis under 18 AAC 50.540(c)(2)(B) is not warranted for the project.

Attachment D

Additional Application Requirements for Sources within the Regional Haze Special Protection Area

ATTACHMENT D: ADDITIONAL APPLICATION REQUIREMENTS FOR SOURCES WITHIN THE REGIONAL HAZE SPECIAL PROTECTION AREA

Per 18 AAC 50.265, an application for a construction permit, new permit, permit renewal, or permit modification must include the following information.

18 AAC 50.265(4)(A)

Per 18 AAC 50.265(4)(A), the anticipated equipment major maintenance schedules are currently unavailable.

18 AAC 50.265(4)(B)

Per 18 AAC 50.265(4)(B), the projected equipment life of each significant emissions unit located at the stationary source is currently unavailable.

18 AAC 50.265(4)(C)

Anna Platform and the Spartan 151 Drill Rig in Cook Inlet were both included in the baseline analysis the Alaska Department of Environmental Conservation (ADEC) prepared for developing 18 AAC 50.265. According to the State Air Quality Control Plan Volume II, Section III.K.13.F, the Regional Haze Rule requires the ADEC to submit a plan to make reasonable progress towards natural visibility conditions at Class I areas. To achieve this goal, the ADEC is required to develop a long-term strategy that must “include emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress’’ and “identify all anthropogenic sources of visibility impairment considered by the state in developing its long-term strategy”. In developing these goals, the ADEC selected sources and considered four factors to evaluate the potential control measures for the selected sources: 1) cost of compliance; 2) time necessary for compliance; 3) energy and non-air quality environmental impacts; and 4) remaining useful life. To select sources for evaluation, the ADEC used a two-step approach. The initial step (step one) involved an area of influence (AOI) and weighted emissions potential (WEP) analysis. The final step (step two) involved a Q/d analysis (quantity of actual emissions in tons per year divided by distance in kilometers). Anna Platform was not selected for evaluation. Because all emissions associated with the proposed project would be included in the baseline analysis, no further analysis was conducted.

18 AAC 50.265(4)(D)

Per 18 AAC 50,265(4)(D), no mitigation measures have been identified as necessary to minimize any potential adverse impacts on the reasonable further progress goals for Class I areas, as identified in the State Air Quality Control Plan, adopted by reference in 18 AAC 50.030.