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

March 8, 2024

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

Subject: Hilcorp Alaska, LLC – Beluga River Unit
Minor Permit Application to Revise or Rescind Terms and Conditions of a Title I Permit

Dear Application Intake,

Hilcorp Alaska, LLC (Hilcorp) submits the enclosed minor permit application to the Alaska Department of Environmental Conservation (ADEC) for Beluga River Unit (BRU). The application requests revisions to Permit No. AQ0942MSS02 under 18 Alaska Administrative Code (AAC) 50.508(6). The application contains the information required under 18 AAC 50.540(a), (b), and (k). Hilcorp requests that the Department incorporate the minor permit into the Title V operating permit via the integrated review process set out by 18 AAC 50.326(c)(1).

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

Please contact Natalia Lau at (907) 777-8304 or natalia.lau@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: Natalia Lau
Greg Arthur
Jeanette Brena - Boreal

Hilcorp Alaska, LLC

Beluga River Unit

Air Quality Minor Permit Application to Revise Minor Permit No. AQ0942MSS02

Prepared for:

Hilcorp Alaska, LLC

March 2024

BOREAL

Beluga River Unit

Air Quality Minor Permit Application to Revise Minor Permit No. AQ0942MSS02

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 requesting the Alaska Department of Environmental Conservation (ADEC) revise and rescind terms and conditions of Minor Permit No. AQ0942MSS02 for the Beluga River Unit (BRU) Portable Oil and Gas Operation (POGO) Project, per Title 18 Alaska Administrative Code (18 AAC) 50.508(6). The revisions to Minor Permit No. AQ0942MSS02 will authorize the installation and operation of alternative POGOs to allow for more operational flexibility for future BRU drilling activities. The requested revisions include amending minor permit conditions that were established to protect the annual nitrogen dioxide (NO_2); 24-hour particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}); annual particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$); and 1-hour, 3-hour, 24-hour, and annual sulfur dioxide (SO_2) Alaska Ambient Air Quality Standards (AAAQS). As a result, an ambient demonstration (modeling analysis) has been prepared to demonstrate the effect that the requested revisions will have on the underlying modeling analysis, per 18 AAC 50.540(k)(3)(c).

The following table provides a summary of required elements to revise or rescind terms and conditions of a Title I permit under 18 AAC 50.508(6) and shows where those elements are located in the application.

Required Application Elements

Regulatory Citation	Requirement	Application Section
18 AAC 50.540(b)	Stationary Source Identification Form	Before Attachment A
18 AAC 50.540(k)(1)	Copy of the Title I permit that established the permit term or condition	Attachment E
18 AAC 50.540(k)(2)	Explanation of why the permit term or condition should be revised or rescinded	Attachment B
18 AAC 50.540(k)(3)	Effect of revising or revoking the permit term or condition on emissions, other permit terms, and compliance monitoring	Attachments A, B, and D

Notes:

1. Additional application requirements for sources within the regional haze special protection area are provided in Attachment C.

Alaska Department of Environmental Conservation
Air Quality Minor Permit Application

STATIONARY SOURCE IDENTIFICATION FORM

Section 1 Stationary Source Information

Name: Beluga River Unit			SIC: 1311
Project Name (if different): POGO Project	Contact: Natalia Lau		
Physical Address:	City:	State: AK	Zip:
	Telephone: (907) 777-8304		
	E-Mail Address: Natalia.lau@hilcorp.com		
UTM Coordinates (m) or Latitude/Longitude:	Northing: 6784798	Easting: 605841	Zone: 5
	Latitude:	Longitude:	

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: Natalia Lau			
Mailing Address: 3800 Centerpoint Dr., Suite 1400	City: Anchorage	State: AK	Zip: 99503
	Telephone: (907) 777-8304		
	E-Mail Address: Natalia.lau@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 *
  Permit Number: AQ0942MSS02 Condition No. See attached
  Date: 6/30/2020

**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)*: AQ0942MSS02
  AQ0942TVP01, Rev. 2

- ☐ 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 requesting the Alaska Department of Environmental Conservation (ADEC) revise and rescind terms and conditions of Minor Permit No. AQ0942MSS02 for the Beluga River Unit (BRU) Portable Oil and Gas Operation (POGO) Project, per Title 18 Alaska Administrative Code (18 AAC) 50.508(6). The revisions to Minor Permit No. AQ0942MSS02 will authorize the installation and operation of alternative POGOs to allow for more operational flexibility for future BRU drilling activities. The requested revisions include amending minor permit conditions that were established to protect the annual nitrogen dioxide (NO_2); 24-hour particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}); annual particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$); and 1-hour, 3-hour, 24-hour, and annual sulfur dioxide (SO_2) Alaska Ambient Air Quality Standards (AAAQS). As a result, an ambient demonstration (modeling analysis) has been prepared to demonstrate the effect that the requested revisions will have on the underlying modeling analysis, per 18 AAC 50.540(k)(3)(c).

Hilcorp requests that the Department incorporate the pending minor permit into the Title V operating permit via the integrated review process set out by 18 AAC 50.326(c)(1).

Application Information

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

Attachment B provides information under Section 12 of this form pertaining to revising or rescinding a Title I permit condition.

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

Attachment D provides information on the ambient demonstration used for this application.

Attachment E provides a copy of the Title I permit that is being requested to be rescinded.

Attachment F provides electronic modeling files used for the ambient demonstration.

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)];

See Attachment B.

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

- Emissions;

See Attachments A and B.

- Other permit terms;

See Attachment B.

- The underlying ambient demonstration, if any;

See Attachments B and D.

- Compliance monitoring; and

See Attachment B.

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)]

See Attachment B.

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 Beluga River Unit (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: 3/8/2024
Printed Name: Trudi Hallett	Title: Asset Team Lead

Section 15 Attachments

☐ Attachments Included.

List attachments:

- Attachment A – Emissions Unit Information and Potential to Emit Calculations
- Attachment B – Revise and Rescind Title I Permit Conditions
- Attachment C – Requirements for Sources within Regional Haze Special Protection Area
- Attachment D – Ambient Air Quality Analysis
- Attachment E – Minor Permit No. AQ0942MSS02
- Attachment F – Electronic Files

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

Attachment A

Emissions Unit Information and Potential to Emit Calculations

Table A-1. Title I Minor Permit Applicability - POGO Project
Hilcorp Alaska, LLC - Beluga River Unit

Pollutant	Existing POGO Potential Emissions [1]	Proposed POGO Potential Emissions	Proposed Emissions Increase	Proposed Stationary Source Potential Emissions [2]	Minor Permit Applicability Threshold [3]	Minor Permit Required?	PSD Permit Applicability Threshold [4]	PSD Permit Required?
NO_X	5.2 tpy	4.1 tpy	-1.1 tpy	141.2 tpy	10 tpy	No	250 tpy	No
CO	1.3 tpy	0.7 tpy	-0.6 tpy	242.3 tpy	----[5]	----	250 tpy	No
PM	0.5 tpy	0.7 tpy	0.2 tpy	14.3 tpy	----	----	250 tpy	No
PM_{10}	0.5 tpy	0.5 tpy	0.0 tpy	14.1 tpy	10 tpy	No	250 tpy	No
$PM_{2.5}$	0.5 tpy	0.4 tpy	-0.1 tpy	14.1 tpy	10 tpy	No	250 tpy	No
VOC	0.2 tpy	0.0 tpy	-0.1 tpy	68.2 tpy	----	----	250 tpy	No
SO_2	0.1 tpy	0.0 tpy	0.0 tpy	7.7 tpy	10 tpy	No	250 tpy	No

Notes:

[1] Per Minor Permit No. AQ0942MSS02.

[2] Proposed stationary source emissions include project increases plus the existing stationary source emissions from the renewal application for Permit No. AQ0942TVP02 with minor corrections.

[3] Minor air permit thresholds for an existing stationary source that has emissions greater than those listed in 18 AAC 50.502(c)(1) per 18 AAC 50.502(c)(3).

[4] PSD permit thresholds in 40 CFR 52.21(b)(1)(i)(b).

[5] Not applicable.

Table A-2. Emissions Unit Inventory
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Emission Unit Description	Classification	Location	Fuel	Rating/Size	Maximum Operation
R-1	Mud Pump Engine	Detroit Diesel 12V200S12	POGO - Nonroad Engine	Various	Diesel	850 hp	3,840 hr/yr [1]
R-2	Mud Pump Engine	Detroit Diesel 12V200S12	POGO - Nonroad Engine	Various	Diesel	850 hp	3,840 hr/yr [1]
R-3	Drawworks/Carrier Engine	Detroit Diesel 6063HV39	POGO - Nonroad Engine	Various	Diesel	630 hp	3,840 hr/yr [1]
R-4	Power Generation Engine	Detroit Diesel 6063HV35	POGO - Nonroad Engine	Various	Diesel	635 hp	3,840 hr/yr [1]
R-5	Power Generation Engine	Detroit Diesel 6063HV35	POGO - Nonroad Engine	Various	Diesel	635 hp	3,840 hr/yr [1]
R-8	Power Generation Engine	Detroit Diesel 6063HV35	POGO - Nonroad Engine	Various	Diesel	635 hp	3,840 hr/yr [1]
R-9	Change House Engine	Cummins DGEA-3366915	POGO - Nonroad Engine	Various	Diesel	207 hp	3,840 hr/yr [1]
R-10	Auxiliary Engine	Kohler G50 Engine	POGO Rental - Nonroad Engine	Various	Diesel	90 hp	3,840 hr/yr [1]
R-11	Auxiliary Engine	Kohler G50 Engine	POGO Rental - Nonroad Engine	Various	Diesel	90 hp	3,840 hr/yr [1]
R-12	Hurricane Vacuum Pump Engine	John Deere 6068L Engine	POGO Rental - Nonroad Engine	Various	Diesel	156 hp	3,840 hr/yr [1]
R-13	Hurricane Vacuum Pump Engine	John Deere 6068L Engine	POGO Rental - Nonroad Engine	Various	Diesel	156 hp	3,840 hr/yr [1]
R-6	Boiler	Hurst Boiler NB-13376	POGO - Stationary	Various	Diesel	250 bhp	3,840 hr/yr [1]
R-7	Boiler	Volcano International CFN-A5689.62	POGO - Stationary	Various	Diesel	100 bhp	3,840 hr/yr [1]

Notes:

[1] Input into ambient demonstration to protect ambient air quality.

Table A-3. NO_X Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Maximum Operation	Emission Factor	Reference	NO_X Emissions
R-1	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	5.7 g/hp-hr [1,2]	EPA Tier 2	20.39 tpy
R-2	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	5.7 g/hp-hr [1,2]	EPA Tier 2	20.39 tpy
R-3	Detroit Diesel 6063HV39	630 hp	3,840 hr/yr	3.5 g/hp-hr [1,2]	EPA Tier 3	9.45 tpy
R-4	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	3.5 g/hp-hr [1,2]	EPA Tier 3	9.52 tpy
R-5	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	3.5 g/hp-hr [1,2]	EPA Tier 3	9.52 tpy
R-8	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	3.5 g/hp-hr [1,2]	EPA Tier 3	9.52 tpy
R-9	Cummins DGEA-3366915	207 hp	3,840 hr/yr	8.6 g/hp-hr [1]	EPA Tier 1	7.51 tpy
R-10	Kohler G50 Engine	90 hp	3,840 hr/yr	4.2 g/hp-hr [1,2]	EPA Tier 3	1.59 tpy
R-11	Kohler G50 Engine	90 hp	3,840 hr/yr	4.2 g/hp-hr [1,2]	EPA Tier 3	1.59 tpy
R-12	John Deere 6068L Engine	156 hp	3,840 hr/yr	8.6 g/hp-hr [1]	EPA Tier 1	5.66 tpy
R-13	John Deere 6068L Engine	156 hp	3,840 hr/yr	8.6 g/hp-hr [1]	EPA Tier 1	5.66 tpy
R-6	Hurst Boiler NB-13376	250 bhp	3,840 hr/yr	20 lb/kgal	AP-42 Table 1.3-1	2.93 tpy
R-7	Volcano International CFN-A5689.62	100 bhp	3,840 hr/yr	20 lb/kgal	AP-42 Table 1.3-1	1.17 tpy
					POGO Nonroad Engine Emissions	**100.8 tpy**
					POGO Stationary Source Potential Emissions	**4.1 tpy**

Notes:

[1] Includes 1.25 NTE.

[2] Assumes 95% NOx and 5% VOC.

[3] Conversions:

Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Fuel Density:	7	lb/gal
Boiler Heat Rate:	0.033446	MMBtu/bhp-hr
Boiler Efficiency:	0.8	

Table A-4. CO Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Maximum Operation	Emission Factor	Reference	CO Emissions
R-1	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	3.3 g/hp-hr [1]	EPA Tier 2	11.74 tpy
R-2	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	3.3 g/hp-hr [1]	EPA Tier 2	11.74 tpy
R-3	Detroit Diesel 6063HV39	630 hp	3,840 hr/yr	3.3 g/hp-hr [1]	EPA Tier 3	8.70 tpy
R-4	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	3.3 g/hp-hr [1]	EPA Tier 3	8.77 tpy
R-5	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	3.3 g/hp-hr [1]	EPA Tier 3	8.77 tpy
R-8	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	3.3 g/hp-hr [1]	EPA Tier 3	8.77 tpy
R-9	Cummins DGEA-3366915	207 hp	3,840 hr/yr	0.00668 lb/hp-hr	AP-42 Table 3.3-1	2.65 tpy
R-10	Kohler G50 Engine	90 hp	3,840 hr/yr	4.7 g/hp-hr [1]	EPA Tier 3	1.78 tpy
R-11	Kohler G50 Engine	90 hp	3,840 hr/yr	4.7 g/hp-hr [1]	EPA Tier 3	1.78 tpy
R-12	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.00668 lb/hp-hr	AP-42 Table 3.3-1	2.00 tpy
R-13	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.00668 lb/hp-hr	AP-42 Table 3.3-1	2.00 tpy
R-6	Hurst Boiler NB-13376	250 bhp	3,840 hr/yr	5 lb/kgal	AP-42 Table 1.3-1	0.73 tpy
R-7	Volcano International CFN-A5689.62	100 bhp	3,840 hr/yr	5 lb/kgal	AP-42 Table 1.3-1	0.29 tpy
					POGO Nonroad Engine Emissions	**68.7 tpy**
					POGO Stationary Source Potential Emissions	**0.7 tpy**

Notes:

[1] Includes 1.25 NTE.

[2] Conversions:

Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Fuel Density:	7	lb/gal
Boiler Heat Rate:	0.033446	MMBtu/bhp-hr
Boiler Efficiency:	0.8	

Table A-5. PM Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Maximum Operation	Emission Factor	Reference	PM Emissions
R-1	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 2	0.67 tpy
R-2	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 2	0.67 tpy
R-3	Detroit Diesel 6063HV39	630 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-4	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-5	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-8	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-9	Cummins DGEA-3366915	207 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.87 tpy
R-10	Kohler G50 Engine	90 hp	3,840 hr/yr	0.37 g/hp-hr [1]	EPA Tier 3	0.14 tpy
R-11	Kohler G50 Engine	90 hp	3,840 hr/yr	0.37 g/hp-hr [1]	EPA Tier 3	0.14 tpy
R-12	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.66 tpy
R-13	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.66 tpy
R-6	Hurst Boiler NB-13376	250 bhp	3,840 hr/yr	3.3 lb/kgal	AP-42 Table 1.3-1 & 2	0.48 tpy
R-7	Volcano International CFN-A5689.62	100 bhp	3,840 hr/yr	3.3 lb/kgal	AP-42 Table 1.3-1 & 2	0.19 tpy
					POGO Nonroad Engine Emissions	**5.8 tpy**
					POGO Stationary Source Potential Emissions	**0.7 tpy**

Notes:

[1] Includes 1.25 NTE.

[2] Conversions:

Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Fuel Density:	7	lb/gal
Boiler Heat Rate:	0.033446	MMBtu/bhp-hr
Boiler Efficiency:	0.8	

Table A-6. PM_{10} Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Maximum Operation	Emission Factor	Reference	PM_{10} Emissions
R-1	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 2	0.67 tpy
R-2	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 2	0.67 tpy
R-3	Detroit Diesel 6063HV39	630 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-4	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-5	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-8	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-9	Cummins DGEA-3366915	207 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.87 tpy
R-10	Kohler G50 Engine	90 hp	3,840 hr/yr	0.37 g/hp-hr [1]	EPA Tier 3	0.14 tpy
R-11	Kohler G50 Engine	90 hp	3,840 hr/yr	0.37 g/hp-hr [1]	EPA Tier 3	0.14 tpy
R-12	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.66 tpy
R-13	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.66 tpy
R-6	Hurst Boiler NB-13376	250 bhp	3,840 hr/yr	2.38 lb/kgal	AP-42 Table 1.3-2, 7	0.35 tpy
R-7	Volcano International CFN-A5689.62	100 bhp	3,840 hr/yr	2.38 lb/kgal	AP-42 Table 1.3-2, 7	0.14 tpy
					POGO Nonroad Engine Emissions	**5.8 tpy**
					POGO Stationary Source Potential Emissions	**0.5 tpy**

Notes:

[1] Includes 1.25 NTE.

[2] Conversions:

Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Fuel Density:	7	lb/gal
Boiler Heat Rate:	0.033446	MMBtu/bhp-hr
Boiler Efficiency:	0.8	

Table A-7. $PM_{2.5}$ Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Maximum Operation	Emission Factor	Reference	$PM_{2.5}$ Emissions
R-1	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 2	0.67 tpy
R-2	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 2	0.67 tpy
R-3	Detroit Diesel 6063HV39	630 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-4	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-5	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-8	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.19 g/hp-hr [1]	EPA Tier 3	0.50 tpy
R-9	Cummins DGEA-3366915	207 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.87 tpy
R-10	Kohler G50 Engine	90 hp	3,840 hr/yr	0.37 g/hp-hr [1]	EPA Tier 3	0.14 tpy
R-11	Kohler G50 Engine	90 hp	3,840 hr/yr	0.37 g/hp-hr [1]	EPA Tier 3	0.14 tpy
R-12	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.66 tpy
R-13	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.0022 lb/hp-hr	AP-42 Table 3.3-1	0.66 tpy
R-6	Hurst Boiler NB-13376	250 bhp	3,840 hr/yr	2.13 lb/kgal	AP-42 Table 1.3-2, 7	0.31 tpy
R-7	Volcano International CFN-A5689.62	100 bhp	3,840 hr/yr	2.13 lb/kgal	AP-42 Table 1.3-2, 7	0.12 tpy
					POGO Nonroad Engine Emissions	**5.8 tpy**
					POGO Stationary Source Potential Emissions	**0.4 tpy**

Notes:

[1] Includes 1.25 NTE.

[2] Conversions:

Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Fuel Density:	7	lb/gal
Boiler Heat Rate:	0.033446	MMBtu/bhp-hr
Boiler Efficiency:	0.8	

Table A-8. VOC Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Maximum Operation	Emission Factor	Reference	VOC Emissions
R-1	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.3 g/hp-hr [1,2]	EPA Tier 2	1.07 tpy
R-2	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.3 g/hp-hr [1,2]	EPA Tier 2	1.07 tpy
R-3	Detroit Diesel 6063HV39	630 hp	3,840 hr/yr	0.2 g/hp-hr [1,2]	EPA Tier 3	0.50 tpy
R-4	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.2 g/hp-hr [1,2]	EPA Tier 3	0.50 tpy
R-5	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.2 g/hp-hr [1,2]	EPA Tier 3	0.50 tpy
R-8	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.2 g/hp-hr [1,2]	EPA Tier 3	0.50 tpy
R-9	Cummins DGEA-3366915	207 hp	3,840 hr/yr	0.00247 lb/hp-hr	AP-42 Table 3.3-1	0.98 tpy
R-10	Kohler G50 Engine	90 hp	3,840 hr/yr	0.2 g/hp-hr [1,2]	EPA Tier 3	0.08 tpy
R-11	Kohler G50 Engine	90 hp	3,840 hr/yr	0.2 g/hp-hr [1,2]	EPA Tier 3	0.08 tpy
R-12	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.00247 lb/hp-hr	AP-42 Table 3.3-1	0.74 tpy
R-13	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.00247 lb/hp-hr	AP-42 Table 3.3-1	0.74 tpy
R-6	Hurst Boiler NB-13376	250 bhp	3,840 hr/yr	0.34 lb/kgal	AP-42 Table 1.3-3	0.05 tpy
R-7	Volcano International CFN-A5689.62	100 bhp	3,840 hr/yr	0.34 lb/kgal	AP-42 Table 1.3-3	0.02 tpy
					POGO Nonroad Engine Emissions	**6.8 tpy**
					POGO Stationary Source Potential Emissions	**0.0 tpy**

Notes:

[1] Includes 1.25 NTE.

[2] Assumes 95% NOx and 5% VOC.

[3] Conversions:

Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Fuel Density:	7	lb/gal
Boiler Heat Rate:	0.033446	MMBtu/bhp-hr
Boiler Efficiency:	0.8	

Table A-9. SO_2 Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Maximum Operation	Emission Factor	Reference	SO_2 Emissions
R-1	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.018 tpy
R-2	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.018 tpy
R-3	Detroit Diesel 6063HV39	630 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.013 tpy
R-4	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.013 tpy
R-5	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.013 tpy
R-8	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.013 tpy
R-9	Cummins DGEA-3366915	207 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.004 tpy
R-10	Kohler G50 Engine	90 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.002 tpy
R-11	Kohler G50 Engine	90 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.002 tpy
R-12	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.003 tpy
R-13	John Deere 6068L Engine	156 hp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.003 tpy
R-6	Hurst Boiler NB-13376	250 bhp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.031 tpy
R-7	Volcano International CFN-A5689.62	100 bhp	3,840 hr/yr	0.0015 wt.%S	Mass Balance	0.012 tpy
					POGO Nonroad Engine Emissions	**0.08 tpy**
					POGO Stationary Source Potential Emissions	**0.04 tpy**

Notes:

[1] Conversions:

Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Fuel Density:	7	lb/gal
Boiler Heat Rate:	0.033446	MMBtu/bhp-hr
Boiler Efficiency:	0.8	

Table A-10. GHG Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Maximum Operation	Emission Factor	Reference	CO_2e Emissions
R-1	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	1,869.12 tpy
R-2	Detroit Diesel 12V200S12	850 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	1,869.12 tpy
R-3	Detroit Diesel 6063HV39	630 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	1,385.35 tpy
R-4	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	1,396.34 tpy
R-5	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	1,396.34 tpy
R-8	Detroit Diesel 6063HV35	635 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	1,396.34 tpy
R-9	Cummins DGEA-3366915	207 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	455.19 tpy
R-10	Kohler G50 Engine	90 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	197.91 tpy
R-11	Kohler G50 Engine	90 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	197.91 tpy
R-12	John Deere 6068L Engine	156 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	343.04 tpy
R-13	John Deere 6068L Engine	156 hp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	343.04 tpy
R-6	Hurst Boiler NB-13376	250 bhp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	3,283.30 tpy
R-7	Volcano International CFN-A5689.62	100 bhp	3,840 hr/yr	74.214 kg/MMBtu	40 CFR 98 Tables C-1, C-2	1,313.32 tpy
					POGO Nonroad Engine Emissions	**10,849.7 tpy**
					POGO Stationary Source Potential Emissions	**4,596.6 tpy**

Notes:

[1] Conversions:

Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Diesel Fuel Density:	7	lb/gal
Boiler Heat Rate:	0.033446	MMBtu/bhp-hr
Boiler Efficiency:	0.8	

Attachment B

Revise or Rescind Title I Permit Conditions

ATTACHMENT B: REVISE OR RESCIND TITLE I PERMIT CONDITIONS

Hilcorp requests a minor permit to revise terms and conditions of a Title I permit pursuant to 18 AAC 50.508(6). Per 18 AAC 50.540(k), an application for a minor permit to revise or rescind terms and conditions of a Title I permit under 18 AAC 50.508(6) must include the information required by 18 AAC 50.540(k)(1) through (4). Each required element is addressed below.

18 AAC 50.540(k)(1)

Per 18 AAC 50.540(k)(1), a copy of Minor Permit No. AQ0942MSS02 is included in Attachment E.

18 AAC 50.540(k)(2)

Per 18 AAC 50.540(k)(2), an explanation of why the permit term or condition should be revised is detailed below.

Hilcorp requests the following changes to Minor Permit No. AQ0942MSS02:

Condition	Requested Revisions to Conditions of Permit No. AQ0053MSS04
Title Page	Revise the project name on the permit title page to account for use of alternate rigs that comply with provisions of the permit as follows: **Project:** POGO Project
Title Page	Update the permit contact as follows: **Permit Contact:** Natalia Lau, (907) 777-8304, Natalia.Lau@hilcorp.com
Table 1, EU Inventory	Update Table 1, EU Inventory as detailed on page B-5. Specific changes are shown in underline and strikeouts and include: • the removal of EU 42; this unit is located on DW-1, which is not included in the updated ambient air quality analysis due to its location; • the addition of additional POGO equipment, EUs R-8 through R-13; and • the correction of EU descriptions, fuel, and ratings.
11.1.b	Delete Condition 11.1.b. EU 42 is located on DW-1 and was not included in the updated ambient air quality analysis due to its location.
11.2	Revise the nonroad engine rated capacity limit to account for the updated ambient air quality analysis and to specify that this cap is only applicable to POGO nonroad engines as follows: 11.2 **Nonroad Engines.** The Permittee shall limit the cumulative rated capacity of the nonroad engines <u>operating as POGO equipment</u> at the stationary source to no more than <u>4,934</u> ~~3,735~~ brake horsepower (bhp).

Condition	Requested Revisions to Conditions of Permit No. AQ0053MSS04
	a. Any time a change is made to the POGO nonroad engine emission unit inventory, calculate and record… b. Include the cumulative POGO nonroad engine rated capacity (bhp) in each… c. Report as excess emissions and permit deviations as described in the applicable operating permit tissued to the stationary source under AS 46.14 and 18 AAC 50 if the cumulative POGO nonroad engine rated capacity (bhp) exceeds…
12	Remove "Fuel Limits" from Condition 12.
12.1	Clarify that Condition 12.1 (and sub-conditions) applies to the POGO equipment and not all stationary source reciprocating engines pursuant to the ambient air quality analysis. In addition, add a title to the condition for consistency as follows: 12.1 **Liquid Fuel Sulfur Limit.** Combust only liquid fuel that meets the specifications of ultra low sulfur diesel (ULSD) (i.e., less than 0.0015 percent sulfur by weight) in all POGO nonroad engines, boilers, and heaters ~~reciprocating engines~~.
12.1.b	Delete Condition 12.1.b to be consistent with Standard Condition XI, which does not require that fuel receipts be included in the operating report when utilizing a fuel grade to document compliance. Condition 12.1.c adequately includes the reporting requirement to certify that all fuel combusted is ULSD.
13	Revise Condition 13 to limit operations of the POGO at the stationary source to protect the annual $PM_{2.5}$ ambient air quality standards per the updated ambient air quality analysis as follows: 13. To protect the annual PM-2.5 AAAQS, the Permittee shall: ~~The Permittee shall comply with Conditions 14 and 15 while operating the portable oil and gas operation (POGO) listed in Table 1 at the stationary source.~~ 13.1 **Operating Limit.** Limit POGO operations at the stationary source to no more than 160 rig days[1] per consecutive 12-month period. a. Record the dates of rig days at the stationary source. b. Report in the operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50, the number of rig days per 12-month period at the stationary source ~~dates and times the POGO was brought onsite and removed from the stationary source~~. c. Report as a permit deviation as described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50, if the number of rig days at the stationary source exceeds the limit in Condition 13.1. Footnote 1: As defined in 18 AAC 50.990(95), "rig day" means each calendar day that a single drill rig is drilling or testing an oil or gas well in normal operation or standby service; "rig day" does not include a day when (A) equipment is not operating; or (B) only light plants are operating.

Condition	Requested Revisions to Conditions of Permit No. AQ0053MSS04
14	Merge language from the original Condition 13 to clarify that the limit in Condition 14 only applies when the POGO is operating at the stationary source; revise reporting to include only the information related to the limit; and reformat the condition as follows: 14. To protect the 24-hour PM-10 AAAQS, the Permittee shall: 14.1 **Hour Limit.** Limit the operation of EU 3 to no more than 1 ~~one~~ non-emergency hour per day while operating the POGO at the stationary source. Monitor, record and report as follows for only those periods when operating the POGO at the stationary source: a. Install, maintain, and operate an hour meter on EU 3.~~;~~ b. Record the hour meter reading for EU 3 every time the EU is started and stopped to operate as non-emergency engine.~~;~~ c. Calculate and record the total hours of operation for EU 3 each day the EU is operated as a non-emergency engine.~~;~~ d. Report in each operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50, the ~~hour meter readings obtained under Condition 14.2 and~~ daily total hours of non-emergency operation calculated ~~cacluated~~ under Condition 14.1.c ~~14.3~~ for EU 3. e. Report as excess emissions and permit deviation as described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50, whenever the limit in Condition 14.1 ~~13~~ is exceeded, or if Conditions 14.1.a through 14.1.d ~~14.4~~ are not met.
15	Delete Condition 15. EU 42 is located on DW-1 and was not included in the updated ambient air quality analysis due to its location.
Subheading above Condition 16	Remove the subheading above Condition 16. This is duplicative and not needed.

18 AAC 50.540(k)(3)

Per 18 AAC 50.540(k)(3), an explanation of the effect of revising the permit term or condition on the elements listed below are detailed below:

- Emissions: See Attachment A.
- Other Permit Terms: No other permit terms are affected by the revisions above other than condition numbering.
- Underlying Ambient Demonstration (if any): An updated ambient demonstration is included in Attachment D.

- Compliance Monitoring: As shown above, it is requested that EU 42 be removed from the permit, and therefore, that EU 42 compliance monitoring be removed. Minor changes to remaining compliance monitoring are requested.

18 AAC 50.540(k)(4)

Per 18 AAC 50.540(k)(4), an explanation of the conditions' effect on avoiding a permit classification is detailed below.

This application requests revisions to the title page, EU inventory, and Conditions 11, 12, 13, 14, and 15 of Minor Permit No. AQ0942MSS02. The revised conditions from this application will allow the stationary source to have more operational flexibility when a POGO is onsite and clarify which conditions apply only to POGO equipment. This permit action has no effect on avoiding a permit classification.

Table 1 – EU Inventory

EU	EU Description	Make/Model	Fuel	Rating / Max Capacity	Install Date
Existing Stationary Source Equipment [1]					
1	Turbine Compressor	Solar Taurus 60 Compressor Drive	Fuel ~~Natural~~ Gas	7,700 hp	2006
2	Compressor Engine	Waukesha H24GLD	Fuel Gas ~~Diesel~~	530 hp	2005
3	Generator	John Deere Engine	Diesel	420 kW	2008
37	Compressors	Wellsite Compressor Engines	Fuel ~~Natural~~ Gas	7,500 hp (cumulative ~~maximum allowable total~~)	2011
~~42~~	~~Generator~~	~~Caterpillar Engine~~	~~Diesel~~	~~230 kW~~	~~2012~~
Portable Oil and Gas Operations (POGO) Equipment [2]					
R-1	Mud Pump Engine	Detroit Diesel 12V2000	Diesel	850 hp	TBD
R-2	Mud Pump Engine	Detroit Diesel 12V2000	Diesel	850 hp	TBD
R-3	Drawworks / Carrier Engine	Detroit Diesel Series 60	Diesel	630 ~~665~~ hp	TBD
R-4	Generator Engine	Detroit Diesel Series 60	Diesel	635 ~~685~~ hp	TBD
R-5	Generator Engine	Detroit Diesel Series 60	Diesel	635 ~~685~~ hp	TBD
R-8	Generator Engine	Detroit Diesel Series 60	Diesel	635 ~~685~~ hp	TBD
R-9	Change House Engine	Cummins DGEA-3366915	Diesel	207 hp	TBD
R-10	Auxiliary Engine	Kohler G50	Diesel	90 hp	TBD
R-11	Auxiliary Engine	Kohler G50	Diesel	90 hp	TBD
R-12	Hurricane Vacuum Pump Engine	John Deere 6068L	Diesel	156 hp	TBD
R-13	Hurricane Vacuum Pump Engine	John Deere 6068L	Diesel	156 hp	TBD
R-6	Boiler	Hurst Boiler NB-13376 ~~York Shipley~~	Diesel	250 ~~100~~ bhp	TBD
R-7	Boiler	Volcano International CFN-A5689.62 ~~York-Shipley~~	Diesel	100 bhp	TBD

Notes:

1 EUs 1, 2, 3 and 37 ~~have already been~~ are existing units installed at the stationary source ~~and are not included in this permit action~~ that have applicable requirements in this permit. Conditions 3, 10, and 16 were carried forward from Minor Permit No. AQ0942MSS01 and ORL No. AQ0942ORL01.

2 POGO equipment may change as long as the cumulative rated capacity of nonroad engines operating as POGO equipment complies with Condition 11.2.

Attachment C

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

ATTACHMENT C: 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)

Beluga River Unit was included in the baseline analysis the Alaska Department of Environmental Conservation (ADEC) prepared for developing 18 AAC 50.265 (see the Attachment No. 7 of Appendix to Section III.K.13.H). 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). Beluga River Unit was eliminated from the analysis in step one. See Pages III.K.13.F-8 through 9 for the sources that were selected from step one to advance to step two. 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.

Attachment D

Ambient Demonstration

ATTACHMENT D: AMBIENT DEMONSTRATION

1.0 OVERVIEW

Hilcorp Alaska, LLC (Hilcorp) operates the Beluga River Unit (BRU) stationary source, which is located on the northwestern shore of Cook Inlet, approximately 35 miles west of Anchorage, Alaska. Figure D-1 is a general location map of the BRU. Figure D-2 depicts the locations of the BRU gravel pads and Chugach Electric Association, Inc.'s (CEA) Beluga River Power Plant (BRPP), which is located within the BRU.

Hilcorp is requesting the Alaska Department of Environmental Conservation (ADEC) revise and rescind terms and conditions of Minor Permit No. AQ0942MSS02 for the BRU Portable Oil and Gas Operation (POGO) Project, per Title 18 Alaska Administrative Code (18 AAC) 50.508(6). The revisions to Minor Permit No. AQ0942MSS02 will authorize the installation and operation of alternative POGOs to allow for more operational flexibility for future BRU drilling activities. The requested revisions include amending minor permit conditions that were established to protect the annual nitrogen dioxide (NO_2); 24-hour particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}); annual particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$); and 1-hour, 3-hour, 24-hour, and annual sulfur dioxide (SO_2) Alaska Ambient Air Quality Standards (AAAQS). As a result, an ambient demonstration (modeling analysis) has been prepared to demonstrate the effect that the requested revisions will have on the underlying modeling analysis, per 18 AAC 50.540(k)(3)(c). The results of the modeling analysis demonstrate that the requested revisions to Minor Permit No. AQ0942MSS02 will not cause or contribute to a violation of the annual NO_2; 24-hour PM_{10}; annual $PM_{2.5}$; and 1-hour, 3-hour, 24-hour, and annual SO_2 AAAQS.

Figure D-1. Project Location Map

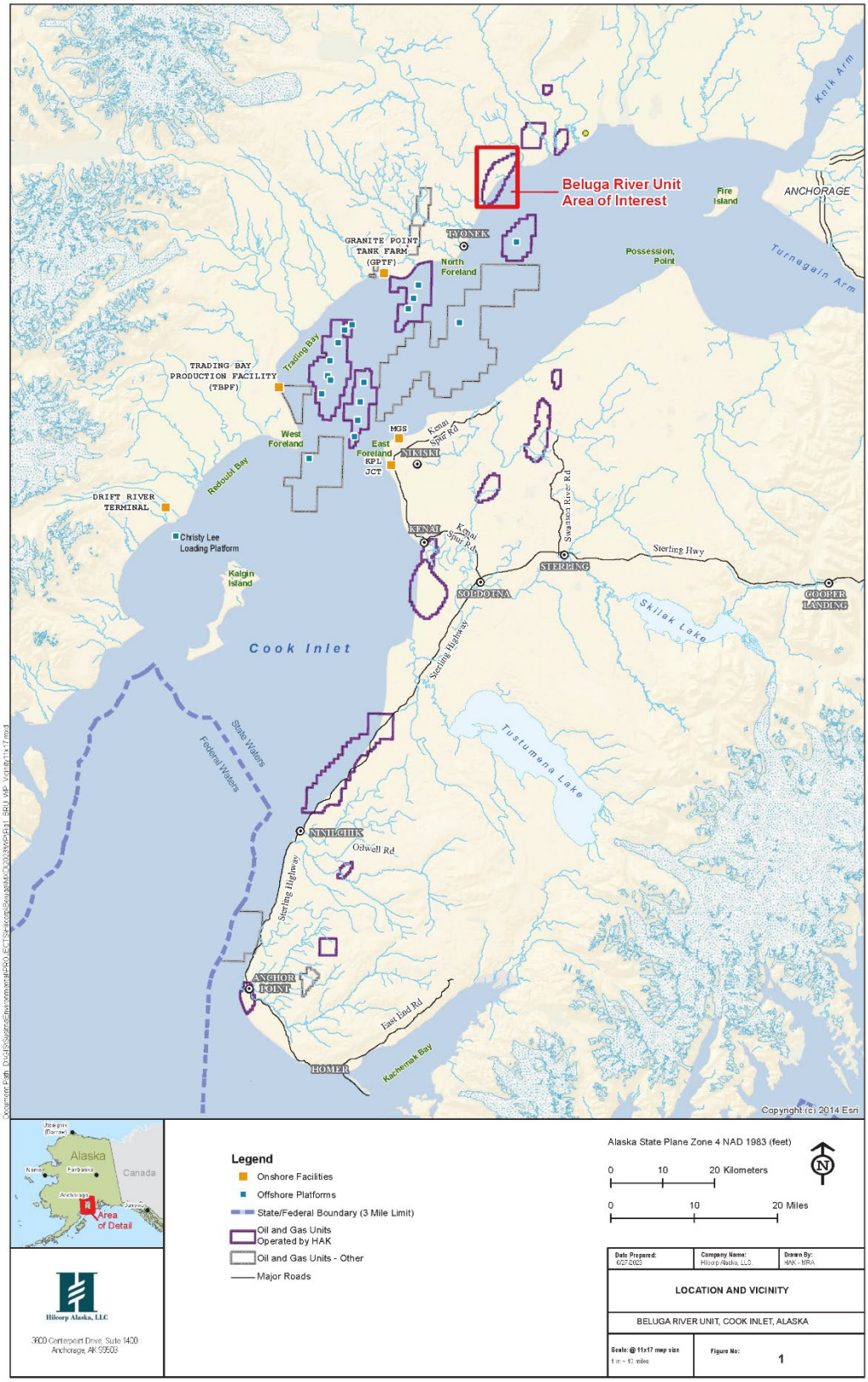
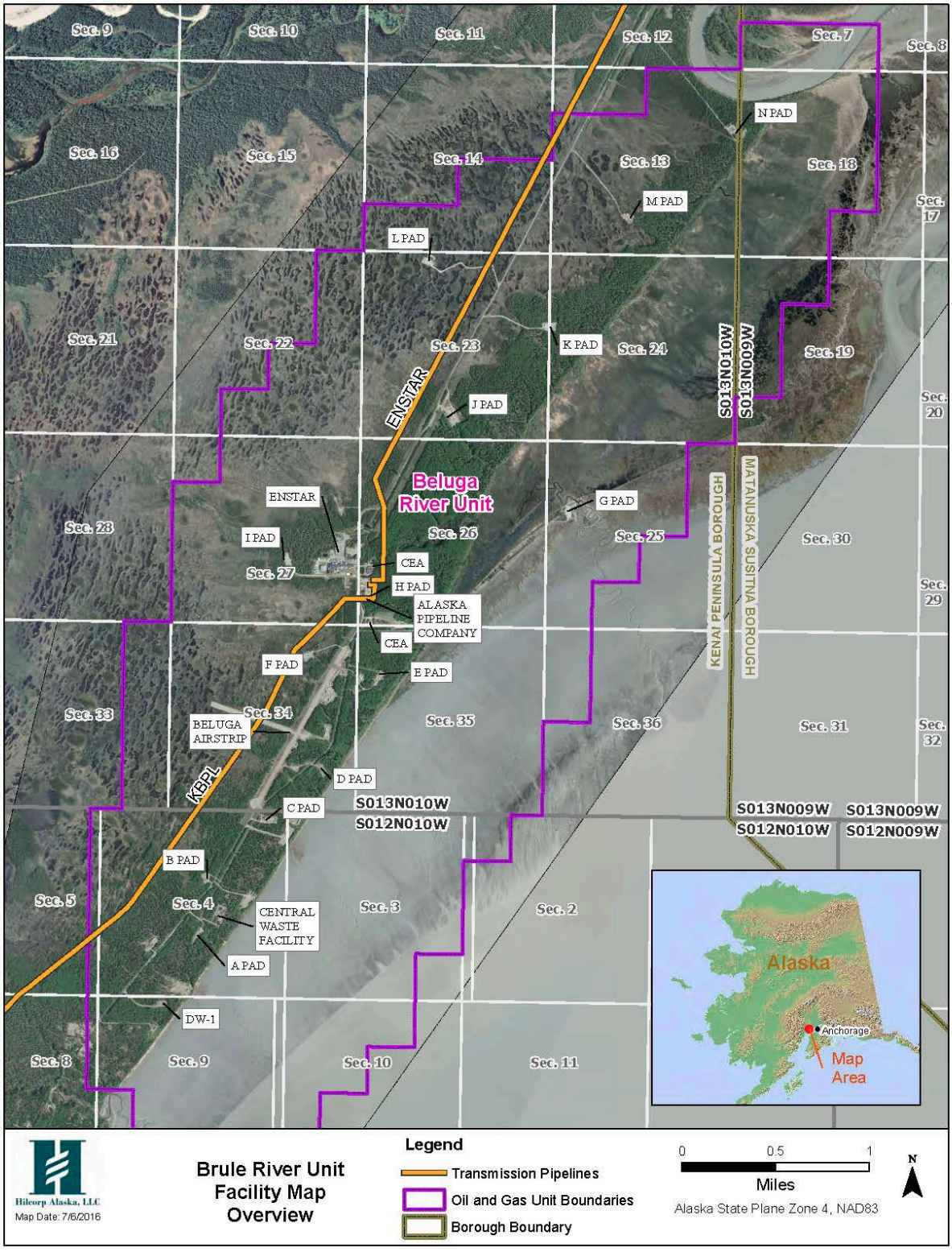


Figure D-2. BRU Stationary Source



2.0 MODELING METHODOLOGY

The modeling methodology is based on the latest version of the U.S. Environmental Protection Agency (EPA)-approved AERMOD (version 23132) air dispersion model. AERMOD is a steady-state, Gaussian dispersion model developed for the dispersion of emissions at distances within fifty kilometers (km) of the stationary source. The latest version of AERMET (23132) was used to prepare meteorological data and atmospheric stability parameter inputs for use in AERMOD. Terrain elevations from Digital Elevation Map (DEM) files acquired from the U.S. Geological Survey (USGS) were processed in the latest version of AERMAP (18081) to develop the receptor terrain elevations and corresponding hill height scales required by AERMOD. The most recent version of the Building Profile Input Program with Plume Rise Model Enhancements (BPIPPRM, version 04274) was used to model the effects of building downwash on the dispersion of emissions.

2.1 MODEL EMISSIONS UNIT INPUT PARAMETERS

Hilcorp anticipates that the Rig 169 or Rig 147 will be used for drilling operations. As such, the modeled emissions unit (EU) inventory includes a conservative proxy of the actual POGO that will operate at BRU. The modeled POGO EUs include 11 ultra-low sulfur diesel (ULSD)-fired nonroad engines that have a cumulative rating of 4,934 brake-horsepower (bhp) and two ULSD-fired boilers/heaters that have a cumulative rating of 350 boiler-horsepower (bhp).

While the BRU is composed of several gravel pads, the dispersion of potential emissions from the POGO operating at the BRU H-Pad were modeled for the analysis. This model scenario provides the most conservative assessment of potential cumulative ambient air quality impacts due to potential emissions from the POGO EUs compared to scenarios in which the POGO would operate at other BRU gravel pads. This is because the BRU H-Pad is located approximately 200 meters downwind from the CEA BRPP and because several of the largest EUs at the BRU stationary source are located at the BRU H-Pad. Additionally, the prevailing winds at the BRU will result in significant overlap of emissions plumes from the POGO EUs and the other BRU H-Pad EUs and CEA BRPP EUs.

Table D-1 provides the locations and exhaust stack parameters of the modeled EUs. All modeled EU exhaust points and structures were referenced to the Universal Transverse Mercator (UTM) coordinate system. All modeled EUs were characterized as vertical and uncapped point sources with the following exceptions. The CEA BRPP Backup AC Generator, identified as EU 10 in Permit No. AQ0164TVP03, was modeled as a point source with a horizontal, uncapped stack. Additionally, BRU EU 3 was modeled as a point source with a vertical stack and rain cap.

Table D-2 provides the pollutant emission rates of the modeled EUs. All modeled emission rates for the POGO EUs are based on the continuous, full-load operation of the POGO EUs except for the annual $PM_{2.5}$ emission rates, which are based on operating the POGO for 160 *Rig Days*, as defined in 18 AAC 50.990(95), per rolling 12-month period. Additionally, the SO_2 emission rates for the modeled POGO EUs are based on the assumption that the POGO EUs will fire only ULSD.

Table D-1. Modeled EU Exhaust Stack Parameters

Emissions Unit		Location (UTM Zone 5)		Exhaust Stack Parameters			
Model ID	Description	Easting (m)	Northing (m)	Height (m)	Temp. (K)	Vel. (m/s)	Dia. (m)
Modeled Hilcorp BRU Emissions Units							
MUD_1	Diesel-Fired Nonroad Engine	605,801	6,784,771	3.7	730	63	0.3
MUD_2	Diesel-Fired Nonroad Engine	605,796	6,784,771	3.7	730	63	0.3
DRAW_1	Diesel-Fired Nonroad Engine	605,805	6,784,781	4.4	715	84	0.2
POWER_1	Diesel-Fired Nonroad Engine	605,811	6,784,768	3.7	715	84	0.2
POWER_2	Diesel-Fired Nonroad Engine	605,811	6,784,766	3.7	715	84	0.2
POWER_3	Diesel-Fired Nonroad Engine	605,817	6,784,769	3.7	715	84	0.2
CH_ENG_1	Diesel-Fired Nonroad Engine	605,785	6,784,889	3.7	847	56	0.1
BOILER_1	Diesel-Fired Boiler	605,790	6,784,766	3.0	500	14	0.3
BOILER_2	Diesel-Fired Boiler	605,786	6,784,766	3.0	500	6	0.3
G50_1	Diesel-Fired Nonroad Engine	605,779	6,784,896	1.8	763	46	0.1
G50_2	Diesel-Fired Nonroad Engine	605,779	6,784,889	1.8	763	46	0.1
VACENG_1	Diesel-Fired Nonroad Engine	605,807	6,784,835	2.3	727	48	0.1
VACENG_2	Diesel-Fired Nonroad Engine	605,807	6,784,828	2.3	727	48	0.1
BRU_1	Gas-Fired Turbine Compressor Drive	605,765	6,784,803	13.4	757	50	1.1
BRU_2	Gas-Fired Internal Combustion Engine	605,785	6,784,868	5.9	713	44	0.2
BRU_3	Diesel-Fired Emergency Engine	605,743	6,784,757	3.1	700	49	0.2
BRU_37_4	Gas-Fired Internal Combustion Engine	605,915	6,784,075	5.0	786	62	0.2
BRU_37_7	Gas-Fired Internal Combustion Engine	605,836	6,784,819	5.0	786	62	0.2
BRU_37_8	Gas-Fired Internal Combustion Engine	605,836	6,784,832	5.0	786	62	0.2
Modeled CEA BRPP Emissions Units							
CEA1	Gas-Fired Turbine Generator	605,634	6,785,018	13.7	756	23	3.1
CEA2	Gas-Fired Turbine Generator	605,632	6,784,991	13.7	756	23	3.1
CEA3a	Gas-Fired Turbine Generator	605,606	6,784,997	13.7	728	61	2.4
CEA3b	Gas-Fired Turbine Generator	605,587	6,784,996	13.7	728	61	2.4
CEA5a	Gas-Fired Turbine Generator	605,567	6,784,996	13.7	728	61	2.4
CEA5b	Gas-Fired Turbine Generator	605,548	6,784,995	13.7	728	61	2.4
CEA6	Gas-Fired Turbine Generator	605,517	6,784,966	22.3	475	17	5.5
CEA7	Gas-Fired Turbine Generator	605,495	6,784,965	22.3	475	17	5.5
CEA10	Gas-Fired Backup Generator Engine	605,643	6,784,995	3.1	700	28	0.2

Table D-2. Modeled EU Emission Rates

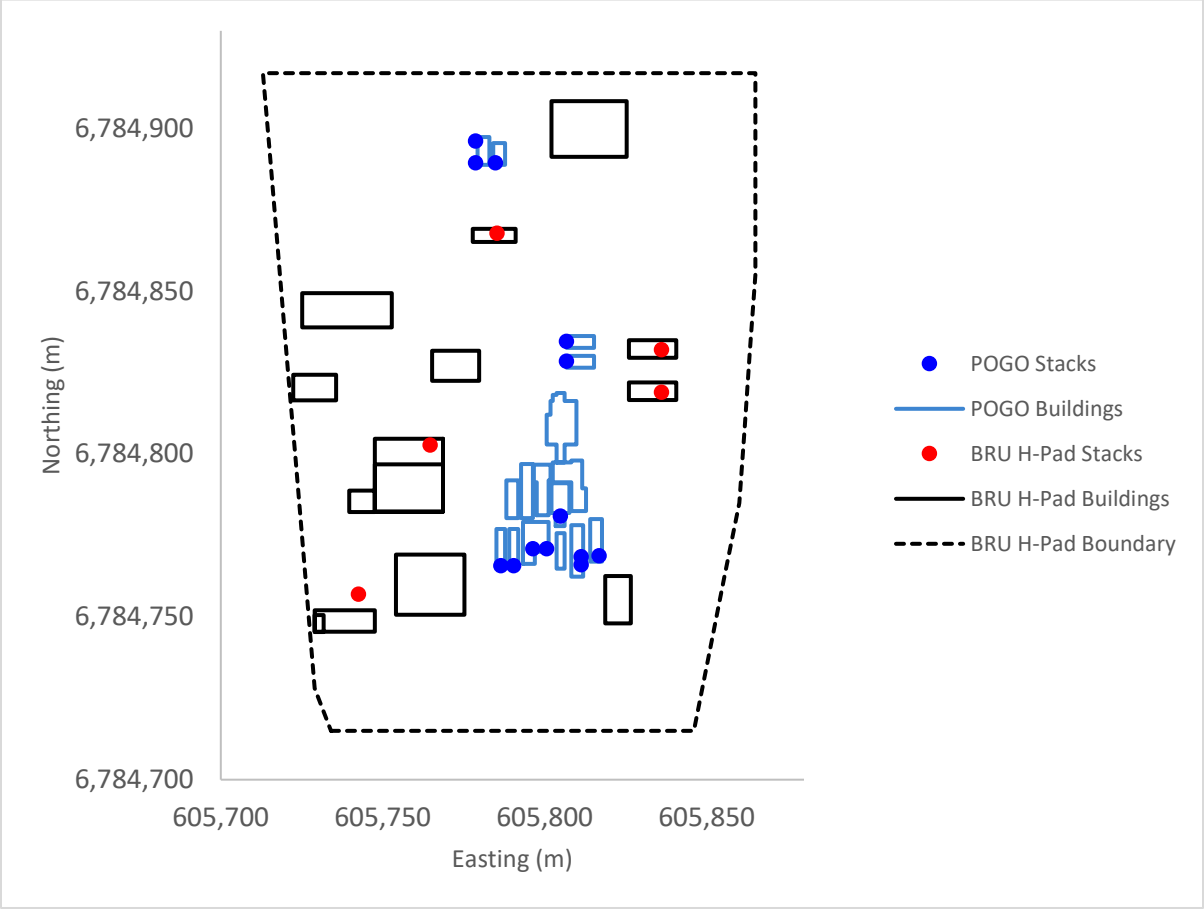
Emissions Unit		Modeled Emission Rates (g/s)				
Model ID	**Description**	**Annual NO_X**	**Annual $PM_{2.5}$**	**24-Hour PM_{10}**	**Annual SO_2**	**Short-Term SO_2**
Modeled Hilcorp BRU Emissions Units						
MUD_1	Diesel-Fired Nonroad Engine	1.34E+00	1.93E-02	4.40E-02	1.15E-03	1.15E-03
MUD_2	Diesel-Fired Nonroad Engine	1.34E+00	1.93E-02	4.40E-02	1.15E-03	1.15E-03
DRAW_1	Diesel-Fired Nonroad Engine	6.20E-01	1.43E-02	3.26E-02	8.52E-04	8.52E-04
POWER_1	Diesel-Fired Nonroad Engine	6.25E-01	1.44E-02	3.29E-02	8.58E-04	8.58E-04
POWER_2	Diesel-Fired Nonroad Engine	6.25E-01	1.44E-02	3.29E-02	8.58E-04	8.58E-04
POWER_3	Diesel-Fired Nonroad Engine	6.25E-01	1.44E-02	3.29E-02	8.58E-04	8.58E-04
CH_ENG_1	Diesel-Fired Nonroad Engine	4.93E-01	2.52E-02	5.74E-02	2.80E-04	2.80E-04
BOILER_1	Diesel-Fired Boiler	1.92E-01	8.98E-03	2.29E-02	2.02E-03	2.02E-03
BOILER_2	Diesel-Fired Boiler	7.70E-02	3.59E-03	9.15E-03	8.08E-04	8.08E-04
G50_1	Diesel-Fired Nonroad Engine	1.04E-01	4.09E-03	9.33E-03	1.22E-04	1.22E-04
G50_2	Diesel-Fired Nonroad Engine	1.04E-01	4.09E-03	9.33E-03	1.22E-04	1.22E-04
VACENG_1	Diesel-Fired Nonroad Engine	3.72E-01	1.90E-02	4.32E-02	2.11E-04	2.11E-04
VACENG_2	Diesel-Fired Nonroad Engine	3.72E-01	1.90E-02	4.32E-02	2.11E-04	2.11E-04
BRU_1	Gas-Fired Turbine Compressor Drive	8.72E-01	5.04E-02	1.10E+00	3.35E-02	3.35E-02
BRU_2	Gas-Fired Internal Combustion Engine	2.94E-01	5.34E-03	5.34E-03	2.25E-03	2.25E-03
BRU_3	Diesel-Fired Emergency Engine	5.06E-02	1.66E-03	1.22E-03	1.45E-02	1.06E-02
BRU_37_4	Gas-Fired Internal Combustion Engine	2.33E-01	1.64E-02	1.64E-02	3.57E-03	3.57E-03
BRU_37_7	Gas-Fired Internal Combustion Engine	2.33E-01	1.64E-02	1.64E-02	3.57E-03	3.57E-03
BRU_37_8	Gas-Fired Internal Combustion Engine	2.33E-01	1.64E-02	1.64E-02	3.57E-03	3.57E-03
Modeled CEA BRPP Emissions Units						
CEA1	Gas-Fired Turbine Generator	1.09E+01	2.25E-01	2.25E-01	1.15E-01	1.15E-01
CEA2	Gas-Fired Turbine Generator	1.09E+01	2.25E-01	2.25E-01	1.15E-01	1.15E-01
CEA3a	Gas-Fired Turbine Generator	1.90E+01	3.91E-01	3.91E-01	2.00E-01	2.00E-01
CEA3b	Gas-Fired Turbine Generator	1.90E+01	3.91E-01	3.91E-01	2.00E-01	2.00E-01
CEA5a	Gas-Fired Turbine Generator	1.90E+01	3.91E-01	3.91E-01	2.00E-01	2.00E-01
CEA5b	Gas-Fired Turbine Generator	1.90E+01	3.91E-01	3.91E-01	2.00E-01	2.00E-01
CEA6	Gas-Fired Turbine Generator	2.57E+01	1.17E+00	1.17E+00	1.30E-01	1.30E-01
CEA7	Gas-Fired Turbine Generator	4.39E+01	1.04E+00	1.04E+00	7.79E-01	7.79E-01
CEA10	Gas-Fired Backup Generator Engine	1.22E-01	1.86E-03	3.27E-02	4.66E-05	8.16E-04

Other offsite stationary sources evaluated for the modeling analysis include platforms located in the upper Cook Inlet. These sources are located more than 10 km downwind from the BRU. As a result, the occurrence of a significant concentration gradient from overlapping emissions plumes from the BRU sources and Cook Inlet platforms is unlikely. Therefore, ambient air quality impacts from offsite stationary sources, other than the CEA BRPP EUs, were not explicitly modeled.

2.2 BUILDING DOWNWASH ANALYSIS

The modeling analysis follows the guidance provided in the EPA's *Guidelines for Determination of Good Engineering Practice Stack Height* (EPA-450/4-80-023R, June 1985). The latest version of BPIPPRM (04274) was used to process building downwash parameters. Building coordinates and heights for each structure that could influence a modeled EU were entered into BPIPPRM and the output dimensions were used to ensure that no stack exceeds good engineering practice stack height and to provide the direction-specific downwash dimensions to the AERMOD model. All building and EU exhaust stack locations were referenced to UTM Zone 5 coordinates. The layout of the modeled BRU H-Pad buildings and EUs and modeled POGO buildings and EUs are provided in Figure D-3 below. BPIPPRM input and output files prepared for the modeling analysis are provided in Attachment F.

Figure D-3. Modeled BRU H-Pad with POGO Layout



2.3 MODEL RECEPTORS AND TERRAIN

Per 18 AAC 50.990(9) and Title 40 of the Code of Federal Regulations (CFR) 50.1(e), ambient air is defined as that portion of the atmosphere, external to buildings, to which the general public has access. For the purposes of modeling stationary source emissions, the area to which an owner or operator of a stationary source controls public access via a physical barrier is not considered ambient air. Access to the BRU H-Pad is continuously controlled by security personnel. Furthermore, the north, east, and south edges of the BRU H-Pad are surrounded by dense forests, which hinders public access to the H-Pad. As such, model receptors were placed along the H-Pad edges to represent the ambient air boundary. Per ADEC Policy No. 04.02.108, *Worker Housing Aggregation and Modeling* (May 2021), no receptors were placed at any worker housing or camp areas because all workers will be active and "on-call" at all times and because these areas are not otherwise open to public access.

Pollutant concentrations were modeled within three Cartesian receptor grids to determine the location of the modeled maximum ambient air quality impacts. Terrain elevations from DEM files acquired from the USGS were processed in the latest version of AERMAP (18101) to develop receptor terrain elevations and corresponding hill height scales. The near field model receptors were centered over the BRU H-Pad and include receptors placed along the ambient air boundary. All receptors in the near field grids are separated by no more than 25 meters from adjacent receptors. The maximum pollutant impacts were predicted within the near field receptor grids for all modeled pollutants. As a result, the near-field grid extent did not need to be adjusted because the maximum pollutant concentrations had been correctly identified.

Other receptor grids used for the modeling analyses include:

- A mid receptor field consisting of receptors spaced 50-meters apart within a 1 km by 1 km area centered over the BRU H-Pad, and

- A far receptor grid with receptors spaced 100-meters apart within a 2 km by 2 km area centered over the BRU H-Pad.

2.4 NO_2 MODELING APPROACH

Because the AAAQS for nitrogen oxides (NO_X) are expressed in terms of NO_2, additional calculations and modeling approaches are used to determine NO_2 impacts from modeled NO_X emissions. A multi-tiered screening approach was used for the modeling analysis that follows the guidance in 40 CFR 51, Appendix W, Section 4.2.3.4 Models for Nitrogen Dioxide. The first tier (Tier 1) screening method assumes that all emitted NO_X is converted to NO_2. The Tier 2 screening approach multiplies the Tier 1 results by the Ambient Ratio Method 2 (ARM2), which provides estimates of representative equilibrium ratios of NO_2-to-NO_X values based on ambient levels of NO_2 and NO_X derived from national data from EPA. Because the Tier 1 and Tier 2 approaches proved to be overly conservative, a third level screening approach (Tier 3) was used.

For the Tier 3 approach, the Ozone Limiting Method (OLM) was used in accordance with the EPA modeling guidance memos, *Applicability of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard* (June 28, 2010) and *Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard* (September 30, 2014). The OLM was used because this method is representative for large groups of sources and sources with near-surface releases, such as the majority of EUs at the BRU H-Pad. The OLM was used to determine the conversion rate for NOx to NO_2 based on the assumption that all ambient ozone (O_3) is available for NO titration.

The use of the OLM requires in-stack NO_2-to-NO_X ratios for the modeled EUs and background O_3 data. The modeled EU inventory is comprised of natural gas-fired turbine generators, natural gas-fired reciprocating internal combustion engines (RICE), ULSD-fired RICE, and ULSD-fired boilers/heaters. Source specific NO_2-to-NO_X ratios for all modeled EUs are provided in NO_2-to-NO_X ratios per *Source Tests Approved by the Alaska Department of Environmental Conservation*, updated August 23, 2013. Based on the source-specific in-stack NO_2-to-NO_X data, NO_2-to-NO_X ratios of 0.30 were assumed for natural gas-fired turbine generators and NO_2-to-NO_X ratios of 0.10 were assumed for all other modeled EUs.

To obtain conservative estimates of ambient NO_2 impacts, a representative hourly ambient O_3 concentration of 64 parts per billion by volume (ppbv) was used for the NO_2 modeling analysis. This value is based on the maximum hourly O_3 concentration recorded at the Interagency Monitoring of Protected Visual Environments (IMPROVE) ambient air monitoring site located at Denali National Park during the most recent five-year period of record (2017 through 2021). The modeled ambient O_3 concentration value of 64 ppbv provides a conservative estimate of hourly ambient O_3 concentrations for the following reasons. First, actual ambient O_3 concentrations vary on a seasonal basis and, therefore, using the maximum measured one-hour O_3 value over a 5-year period very likely overestimates actual ambient one-hour O_3 levels throughout the year. Additionally, as indicated in the ADEC *State of Alaska 2020 Ambient Air Quality Network Assessment*, July 1, 2020, ambient O_3 levels in southcentral Alaska are consistently lower than the ambient O_3 levels at the IMRPOVE Denali National Park monitoring site. This is because the monitoring site is located in a pristine area that does not frequently experience scavenging of ambient O_3 levels due to low ambient NO concentrations. Because the modeled ambient NO_2 impacts that are based on the simulated reaction of NO with O_3 are proportional to the modeled ambient O_3 concentration, the use of a conservatively high ambient one-hour O_3 value (64 ppbv) very likely overpredicts the actual ambient NO_2 impacts.

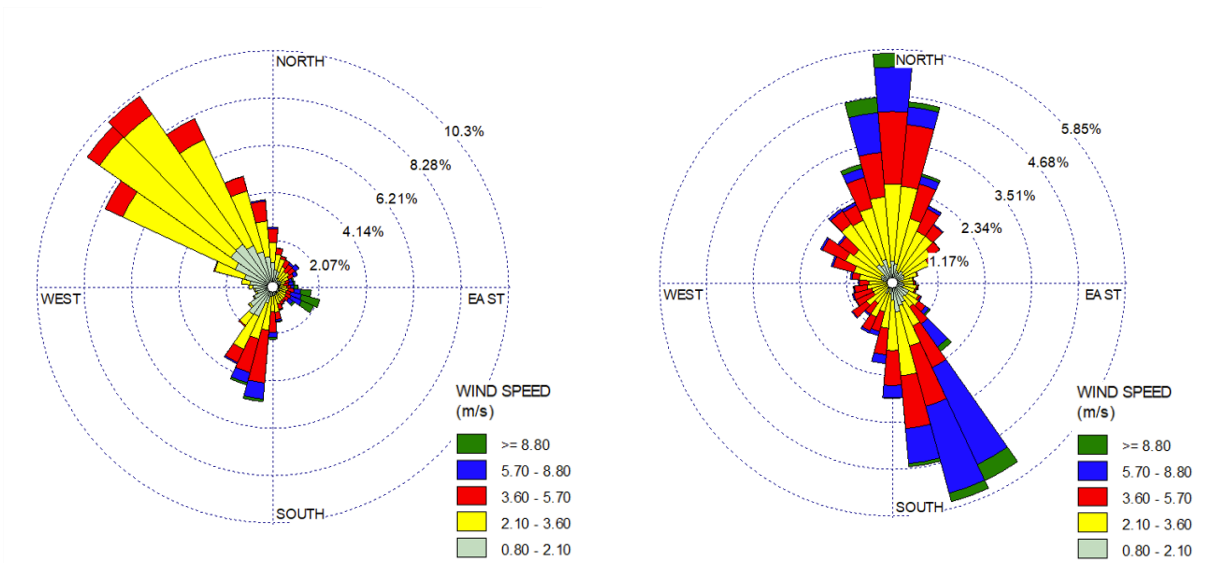
2.5 AERMET METEOROLOGICAL DATA

Two years of representative site-specific surface meteorological data were used to estimate air pollutant impacts, which meets the requirements of 40 CFR 51, Appendix W. The modeling analysis uses hourly surface meteorological data collected from May 2006 through April 2007 and May 2008 through April 2009 at the Ladd Landing monitoring site with concurrent twice-daily upper air meteorological data collected by the National Weather Service (NWS) at the Ted Stevens Anchorage International Airport (TSAIA) processed using the latest version of AERMET

(23132). The Ladd Landing monitoring site is located about 12 km to the south-southwest of the BRU H-Pad and is located near the western shoreline of the Cook Inlet. The Ladd Landing surface meteorological data parameters include wind speed, wind direction, ambient 2-meter temperature, ambient 10-meter temperature, vertical temperature difference (10-meter temperature minus 2-meter temperature, “Delta T”), and solar radiation (insolation). The ADEC has reviewed the meteorological data set and has determined that the data meet all Prevention of Significant Deterioration (PSD) quality assurance criteria.

The Ladd Landing meteorological data set has been used most recently in support of Minor Permit No. AQ0942MSS02 issued on June 30, 2020 for the BRU Rig 169 Project. As such, ADEC has already evaluated and approved the use of the Ladd Landing data for representing emissions plume dispersion and transport conditions at the BRU stationary source. Previous discussions with ADEC regarding the representativeness of the Ladd Landing data included consideration of using more recently collected surface meteorological data collected by the NWS at the TSAIA monitoring site in lieu of the Ladd Landing data. Figure D-4 depicts wind roses based on the Ladd Landing and NWS TSAIA wind data, respectively, and shows that there are significant differences between the predominant winds at the two monitoring sites. These differences are mainly due to different geographic and terrain features that influence the wind patterns at the respective locations. Because wind input parameters used in AERMOD are crucial for adequately characterizing the dispersion of emissions plumes, the Ladd Landing surface meteorological data set is the most representative data set available and, for this reason, was selected for use in the modeling analysis.

Figure D-4. Ladd Landing and NWS TSAIA Wind Roses



Ladd Landing NWS TSAIA

The AERMET algorithms process upper air and surface meteorological data with site-specific geophysical inputs to calculate the atmospheric boundary layer parameters that are then supplied to AERMOD for use in the air dispersion model algorithms. The geophysical parameters are albedo, Bowen ratio, and surface roughness length. The procedures used to determine these

input parameters are outlined in the EPA AERMOD Implementation Guide (October 2023). The recommendations for determining the geophysical input parameters are summarized below.

- Albedo is based on a simple un-weighted arithmetic mean for a representative domain defined by a 10 km by 10 km grid with a resolution on 1 km^2 and centered on the surface measurement site.

- Bowen Ratio is based on simple un-weighted geometric mean for the same representative domain that is used to define the site-specific albedo.

- Surface roughness length is based on an inverse-distance weighted geometric mean for a default up wind distance of 1 km relative to the surface metrological measurement site. Surface roughness length may be varied by sector to account for variations in land cover near the measurement site. The sector widths should be no smaller than 30 degrees.

The seasonal site-specific albedo, Bowen ratio, and surface roughness length values that ADEC evaluated and approved for the modeling analysis conducted to support Minor Permit No. AQ0942MSS02 were used for this modeling analysis.

2.6 BACKGROUND AMBIENT AIR DATA

Background ambient air quality data are required in a cumulative impact analysis to represent the contribution of ambient air pollutant concentrations from non-modeled sources, per 40 CFR 51, Appendix W, Section 8.3.1. The ambient air pollutant concentrations from the 2015 Alaska LNG Project monitoring site located in Nikiski, Alaska were used to represent the contribution of ambient air pollutant levels from non-modeled sources. The 2015 Alaska LNG Nikiski, Alaska ambient air quality data set is summarized in Table D-3 and has been reviewed by ADEC and found to meet all PSD data quality standards. The 2015 Alaska LNG Nikiski, Alaska ambient air quality data adequately represent ambient air levels at the BRU because the ambient air quality at the BRU is generally influenced by similar emissions sources that influence ambient air quality at the AK LNG Nikiski, Alaska monitoring site. Furthermore, the AK LNG Nikiski, Alaska monitoring site location was selected to capture acute ambient air quality impacts due to nearby air pollutant emissions sources for meeting PSD pre-construction data collection requirements. Specifically, the Alaska LNG Nikiski, Alaska monitoring site was located adjacent to the Agrium Kenai Nitrogen Operations Facility, Tesoro Kenai Refinery, Kenai Pipeline Terminal, and Nikiski Terminal and downwind of several other industrial, commercial, and residential stationary and mobile sources. Therefore, the 2015 AK LNG Nikiski, Alaska ambient air quality data provide a conservative representation of background ambient air pollutant levels at the BRU H-Pad.

Table D-3. Summary of Ambient Background Concentrations

Pollutant	Averaging Period	Background Concentration (µg/m^3)	AAAQS (µg/m^3)
NO_2	Annual	2.6	100
$PM_{2.5}$	Annual	3.7	12
PM_{10}	24-Hour [1]	30	150
SO_2	1-Hour [2]	4.3	196
	3-Hour [1]	0	1,300
	24-Hour [1]	0	365
	Annual	0	80

Notes:
[1] Based on the highest-second high value during the monitoring year.
[2] Based on the 99th percentile of the daily maximum 1-hour average values during the monitoring year.

2.7 DISPERSION MODELING ANALYSIS RESULTS

Table D-4 provides the maximum ambient air quality impacts for all modeled scenarios. The ambient background concentrations provided in Table D-3 were added to the modeled impacts to estimate cumulative ambient air quality impacts for comparison to the applicable AAAQS. The results in Table D-4 show that the modeled impacts, when added to background ambient air levels, are below the AAAQS.

Table D-4. Cumulative Impact Analysis Results

Air Pollutant	Averaging Period	Maximum Modeled Impact (µg/m^3)	Background Concentration (µg/m^3)	Maximum Cumulative Impact (µg/m^3)	AAAQS (µg/m^3)	Percent of AAAQS
NO_2	Annual	78.1	2.6	80.7	100	80.7%
$PM_{2.5}$	Annual	7.0	3.7	10.7	12	88.9%
PM_{10}	24-Hour	93.3 [1]	30	123.3	150	82.2%
SO_2	1-Hour	92.2 [2]	4.3	96.5	196	49.2%
	3-Hour	49.6 [3]	0	49.6	1,300	3.8%
	24-Hour	11.1 [3]	0	11.1	365	3.0%
	Annual	3.5	0	3.5	80	4.4%

Notes:
[1] Based on the maximum highest-first high (H1H) 24-hour average PM_{10} value from the two model years.
[2] Based on the maximum highest-fourth high (H4H) daily maximum 1-hour average SO_2 value.
[3] Based on the maximum highest-second high (H2H) value of each model year.

3.0 REFERENCES

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EPA, *Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard*, Memorandum, EPA Model Clearinghouse, Office of Air Quality Planning and Standards, Research Triangle Park, N.C., September 30, 2014.

EPA, *Applicability of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard,* EPA Model Clearinghouse, Office of Air Quality Planning and Standards, Research Triangle Park, N.C, June 28, 2010.

EPA, *Guidelines for Determination of Good Engineering Practice Stack Height*, EPA-450/4-80-023R, Office of Air Quality Planning and Standards, Research Triangle Park, N.C., June 1985.

Attachment E

Title I Minor Permit No. AQ0942MSS02

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONTROL MINOR PERMIT

Minor Permit: **AQ0942MSS02** **Final Date – June 30, 2020**
Rescinds Permits: AQ0942ORL01, AQ0942MSS01

The Alaska Department of Environmental Conservation (Department), under the authority of AS 46.14 and 18 AAC 50, issues Air Quality Control Minor Permit AQ0942MSS02 to the Permittee listed below.

Permittee:	**Hilcorp Alaska, LLC**
	3800 Centerpoint Drive, Suite 1400, Anchorage, AK 99503
Stationary Source:	**Beluga River Unit**
Location:	Northing: 6784798; Easting: 605841; Zone: 5
Project:	Rig 169 POGO Project
Permit Contact:	Julieanna Potter, (907) 777-8444, jupotter@hilcorp.com

The Permittee submitted an application for Minor Permit AQ0942MSS02 under 18 AAC 50.502(c)(2) for the construction or relocation of a portable oil and gas operation.

This permit satisfies the obligation of the Permittee to obtain a minor permit under 18 AAC 50. As required by AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this permit.

James R. Plosay, Manager
Air Permits Program

Table of Contents

Abbreviations and Acronyms

AAC.....Alaska Administrative Code
ADEC.....Alaska Department of Environmental Conservation
AS.....Alaska Statutes
ASTM.....American Society for Testing and Materials
BACT.....best available control technology
bhp.....brake horsepower
CDX.....Central Data Exchange
CEDRI.....Compliance and Emissions Data Reporting Interface
C.F.R. .....Code of Federal Regulations
CAA.....Clean Air Act
CO .....carbon monoxide
Department.....Alaska Department of Environmental Conservation
dscf .....dry standard cubic foot
EPA .....US Environmental Protection Agency
EU.....emissions unit
gr/dscf.....grain per dry standard cubic foot (1 pound = 7000 grains)
gph.....gallons per hour
HAPs .....hazardous air pollutants [as defined in AS 46.14.990]
hp.....horsepower
ID.....emissions unit identification number
kPa.....kiloPascals
LAER.....lowest achievable emission rate
MACT .....maximum achievable control technology [as defined in 40 C.F.R. 63]
MMBtu/hr.....million British thermal units per hour
MMSCF.....million standard cubic feet
MR&R.....monitoring, recordkeeping, and reporting
NESHAPs.....National Emission Standards for Hazardous Air Pollutants [as contained in 40 C.F.R. 61 and 63]
NOx.....nitrogen oxides
NRE.....nonroad engine
NSPS .....New Source Performance Standards [as contained in 40 C.F.R. 60]
O & M .....operation and maintenance
O_2.....oxygen
PAL .....plantwide applicability limitation
PM-10.....particulate matter less than or equal to a nominal 10 microns in diameter
PM-2.5.....particulate matter less than or equal to a nominal 2.5 microns in diameter
ppm .....parts per million
ppmv, ppmvd.....parts per million by volume on a dry basis
psia .....pounds per square inch (absolute)
PSD .....prevention of significant deterioration
PTE.....potential to emit
SIC.....Standard Industrial Classification
SIP.....State Implementation Plan
SPC.....Standard Permit Condition or Standard Operating Permit Condition
SO_2 .....sulfur dioxide
The Act.....Clean Air Act
TPH .....tons per hour
tpy.....tons per year
VOC .....volatile organic compound [as defined in 40 C.F.R. 51.100(s)]
VOL.....volatile organic liquid [as defined in 40 C.F.R. 60.111b, Subpart Kb]
vol% .....volume percent
wt% .....weight percent
wt%S_{fuel} .....weight percent of sulfur in fuel

Section 1 Emissions Unit Inventory

Emissions Unit (EU) Authorization. The Permittee is authorized to install and operate the EUs listed in Table 1 in accordance with the minor permit application and the terms and conditions of this permit. The information in Table 1 is for identification purposes only, unless otherwise noted in the permit. The specific EU descriptions do not restrict the Permittee from replacing an EU identified in Table 1.

Table 1 – EU Inventory

EU #	EU Description	Make/Model	Fuel	Rating/Max Capacity	Installation Date
1	Turbine Compressor	Solar Taurus 60 Compressor Drive	Natural Gas	7,700 hp	2006
2	Compressor Engine	Wauksha H24GLD	Diesel	530 hp	2005
3	Generator	John Deere Engine	Diesel	420 kW	2008
37	Compressors	Wellsite Compressor Engines	Natural Gas	7,500 hp (cumulative maximum allowable total)	2011
42	Generator	Caterpillar Engine	Diesel	230 kW	2012
R-1	Mud Pump Engine	Detroit Diesel 12V2000	Diesel	850 hp	TBD
R-2	Mud Pump Engine	Detroit Diesel 12V2000	Diesel	850 hp	TBD
R-3	Drawworks/Carrier Engine	Detroit Diesel Series 60	Diesel	665 hp	TBD
R-4	Generator	Detroit Diesel Series 60	Diesel	685 hp	TBD
R-5	Generator	Detroit Diesel Series 60	Diesel	685 hp	TBD
R-6	Boiler	York-Shipley Boiler	Diesel	100 bhp	TBD
R-7	Boiler	York-Shipley Boiler	Diesel	100 bhp	TBD

Notes:

[A] EUs 1 and 37 have already been installed at the stationary source and are not included in this permit action.

1. The Permittee shall comply with all applicable provisions of AS 46.14 and 18 AAC 50 when installing a replacement EU, including any applicable minor or construction permit requirements.

2. **Verification of Equipment Specifications and Maintenance of Equipment.** The Permittee shall install and maintain the equipment listed in Table 1 according to the manufacturer's or operator's maintenance procedures. Keep a copy of the manufacturer's or operator's maintenance procedure onsite and make records available to the Department personnel upon request. The records may be kept in electronic format.

3. **Aggregate Capacity Limits.** The Permittee shall limit the aggregate capacity of EU 37 to 7,500 hp.

   3.1 Include the following information regarding EU 37 in the operating report described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50.

      a. the number of individual units operated as EU 37 during the reporting period;

      b. the rated capacity of each individual unit;

      c. the aggregate capacity of all EU 37 units; and

      d. the location of each unit.

Section 2 Fee Requirements

4. **Administration Fees.** The Permittee shall pay to the Department all assessed permit administration fees. Administration fee rates are set out in 18 AAC 50.400-403.

5. **Assessable Emissions**. The Permittee shall pay to the Department annual emission fees based on the stationary source's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410. The Department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities 10 tons per year or greater. The quantity for which fees will be assessed is the lesser of:

   5.1 the stationary source's assessable potential to emit of 430 tpy; or

   5.2 the stationary source's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon credible evidence of actual annual emissions emitted during the most recent calendar year or another 12 month period approved in writing by the Department, when demonstrated by the most representative of one or more of the following methods:

      a. an enforceable test method described in 18 AAC 50.220;

      b. material balance calculations;

      c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035;

      d. other methods and calculations approved by the Department, including appropriate vendor-provided emissions factors when sufficient documentation is provided.

6. **Assessable Emission Estimates.** Emission fees will be assessed as follows:

   6.1 no later than March 31 of each year, the Permittee may submit an estimate of the stationary source's assessable emissions via the Department's Air Online Services (AOS) System at http://dec.alaska.gov/applications/air/airtoolsweb using the Permittee Portal option and filling out the Emission Fee Estimate form. Alternatively, the report may be submitted by:

      a. E-mail under a cover letter using dec.aq.airreports@alaska.gov; or

      b. hard copy to the following address: ADEC Air Permits Program, ATTN: Assessable Emissions Estimate, 555 Cordova Street, Anchorage, Alaska 99501.

   6.2 The Permittee shall include with the assessable emissions report all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates.

   6.3 If no estimate is submitted on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set out in Condition 5.1.

Section 3 State Emission Standards

7. **Visible Emissions for Industrial Process and Fuel-Burning Equipment.** The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from EUs R-6 and R-7 to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.

8. **Particulate Matter for Industrial Process and Fuel-Burning Equipment.** The Permittee shall not cause or allow particulate matter emitted from EUs R-6 and R-7 listed in Table 1, to exceed 0.05 grains per dry standard cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

9. **Sulfur Compound Emissions.** The Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2, from EUs R-6 and R-7, to exceed 500 parts per million (ppm) averaged over three hours.

Section 4 Ambient Air Quality Protection Requirements

10. To protect the annual average NO_2 ambient air quality standard, the Permittee shall:

    10.1 Comply with the NSPS Subpart JJJJ NOx emission rate requirements for all EU 37 engines below:

        a. 1.0 grams per horsepower-hour (g/hp-hr) or 82 parts per million dry volume (ppmvd) at 15% O_2 for NOx;

        b. 2.0 g/hp-hr or 270 ppmvd at 15% O_2 for CO; and

        c. 0.7 g/hp-hr or 60 ppmvd at 15% O_2 for VOC.

    10.2 **Stack Configuration**.

        a. For all EU 37 engines, install and maintain each exhaust stack with a release height that equals or exceeds 16 feet above grade.

        b. Provide as-built drawings and photographs of each exhaust EU 37 stack in the first operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 due after installation of an EU 37 stack.

11. To protect the annual nitrogen dioxide (NO_2); 24-hour particulate matter with an aerodynamic diameter of 10 microns or less (PM-10); annual particulate matter with an aerodynamic diameter of 2.5 microns or less (PM-2.5); and 1-hour, 3-hour, 24-hour, and annual sulfur dioxide (SO_2) Alaskan ambient air quality standards (AAAQS), the Permittee shall operate the stationary source as described below:

    11.1 **Stack Configuration.** Construct and maintain vertical, uncapped exhaust stacks for all EUs listed in Table 1, except as follows:

        a. EU 3 may use a capped releases;

        b. EU 42 may use a horizontal release; and

        c. All EUs may use flapper-style rain covers, or other similar designs, that do not hinder the vertical momentum of their exhaust plume.

        d. Report in the first operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50, that would be due after the installation of each EU listed in Table 1, a statement that the exhaust stack for that EU complies with Condition 11.1.

        e. Report as excess emissions and permit deviation as described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 if a requirement under Condition 11.1 is not met.

    11.2 **Nonroad Engines.** The Permittee shall limit the cumulative rated capacity of the nonroad engines at the stationary source to no more than 3,735 brake horsepower (bhp).

a. Any time a change is made to the nonroad engine emission unit inventory, calculate and record the cumulative nonroad engine rated capacity (bhp).

b. Include the cumulative nonroad engine rated capacity (bhp) in each operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50.

c. Report as excess emissions and permit deviation as described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 if the cumulative nonroad engine rated capacity (bhp) exceeds the limit in Condition 11.2.

12. **Fuel Limits**. To protect the 1-hour, 3-hour, 24-hour, and annual SO_2 AAAQS, the Permittee shall:

12.1 Combust only liquid fuel that meets the specifications of ultra low sulfur diesel (ULSD) (i.e., less than 0.0015 percent sulfur by weight) in all reciprocating engines.

a. Obtain and keep certified receipts from fuel suppliers that confirm diesel fuel combusted in all reciprocating meets the specifications of ULSD.

b. Include copies of the records specified in Condition 12.1a in the operating report required by the applicable operating permit issued to the stationary source under AS 46.14.14 and 18 AAC 50.

c. Report in each operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 a statement indicating whether all fuel combusted in the reciprocating engines during the reporting period is ULSD.

d. Report as excess emissions and permit deviation as described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 if any fuel combusted in the reciprocating engines exceeds the fuel sulfur content limit required by Condition 12.1, or if Conditions 12.1a and 12.1c are not met.

13. The Permittee shall comply with Conditions 14 and 15 while operating the portable oil and gas operation (POGO) listed in Table 1 at the stationary source.

13.1 Record in the operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 the dates and times the POGO was brought onsite and removed from the stationary source.

14. To protect the 24-hour PM-10 AAAQS, the Permittee shall limit the operation of EU 3 to no more than one non-emergency hour per day.

Monitor, record and report as follows:

14.1 Install, maintain, and operate an hour meter on EU 3;

14.2 Record the hour meter reading for EU 3 every time the EU is started and stopped to operate as non-emergency engine;

14.3 Calculate and record the total hours of operation for EU 3 each day the EU is operated as a non-emergency engine;

14.4 Report in each operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 the hour meter readings obtained under Condition 14.2 and daily total cacluated under Condition 14.3 for EU 3.

14.5 Report as excess emissions and permit deviation as described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50, whenever the limit in Condition 13 is exceeded, or if Conditions 14.1 through 14.4 are not met.

15. To protect the annual and 24-hour PM-10 AAAQS, the Permittee shall limit the operation of EU 42 to no more than seven non-emergency hour per day.

Monitor, record and report as follows:

15.1 Install, maintain, and operate an hour meter on EU 42;

15.2 Record the hour meter reading for EU 42 every time the EU is started and stopped to operate as a non-emergency engine;

15.3 Calculate and record the total hours of operation for EU 42 each day the EU is operated as a non-emergency engine;

15.4 Report in each operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 the hour meter readings obtained under Condition 15.2 and daily total operation calculated under Condition 15.2 for EU 42.

15.5 Report as excess emissions and permit deviation as described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50, whenever the limit in Condition 15 is exceeded, or if Conditions 15.1 through 15.4 are not met.

Section 5 ORLs to Avoid Permit Classifications

PSD Avoidance Limits for CO:

16. The Permittee shall limit the emissions of CO from EU 1 to less than 73.5 tpy as follows:

16.1 The Permittee shall limit operation of EU 1 out of SoLoNOx mode not to exceed 400 hours per any consecutive 12-month period.

a. Continuously monitor and record the EU 1 pilot fuel valve position. All periods during which the pilot valve is in the low position represents operation in SoLoNOx mode. All periods during which the pilot fuel valve is not in the low setting represents operation out of SoLoNOx mode.

b. Maintain records for each calendar month and consecutive 12-month total hours of operation out of SoLoNOx mode for EU 1.

c. Maintain records for each calendar month and consecutive 12-month total hours of operation in SoLoNOx mode for EU 1.

d. Report in the operating report required by the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50 each calendar month hours of operation and consecutive 12-month total hours of operation for both, in and out of SoLoNOx mode for EU 1.

e. Report any failure to comply with the operating hours limit in Condition 16.1 or the monitoring, recordkeeping and reporting requirements as excess emissions and permit deviation as described in the applicable operating permit issued to the stationary source under AS 46.14 and 18 AAC 50.

Section 6 Recordkeeping, Reporting, and Certification Requirements

17. **Certification.** The Permittee shall certify any permit application, report, affirmation, or compliance certification submitted to the Department and required under the permit by including the signature of a responsible official for the permitted stationary source following the statement: "*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.*" Excess emissions reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal.

    17.1 The Department may accept an electronic signature on an electronic application or other electronic record required by the Department if

        a. A certifying authority registered under AS 09.25.510 verifies that the electronic signature is authentic; and

        b. The person providing the electronic signature has made an agreement with the certifying authority described in Condition 17.1a that the person accepts or agrees to be bound by an electronic record executed or adopted with that signature.

18. **Submittals.** Unless otherwise directed by the Department or this permit, the Permittee shall submit reports, compliance certifications, and/or other submittals required by this permit, via the Department's Air Online Services (AOS) System at http://dec.alaska.gov/applications/air/airtoolsweb using the Permittee Portal option.

    18.1 Alternatively, the documents may be certified in accordance with Condition 17 and submitted either by:

        a. E-mail under a cover letter using dec.aq.airreports@alaska.gov; or

        b. Certified mail to the following address: ADEC Air Permits Program, ATTN: Compliance Technician, 610 University Ave., Fairbanks, AK 99709-3643.

Section 7 Standard Permit Conditions

19. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

    19.1 an enforcement action; or

    19.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.

20. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

21. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

22. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

23. The permit does not convey any property rights of any sort, nor any exclusive privilege.

24. The Permittee shall allow the Department or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator to

    24.1 enter upon the premises where an emissions unit subject to this permit is located or where records required by the permit are kept;

    24.2 have access to and copy any records required by this permit;

    24.3 inspect any stationary source, equipment, practices, or operations regulated by or referenced in the permit; and

    24.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

Section 8 Permit Documentation

Date	Document Details
February 28, 2020	Application Received

Section 9 Complaint Form

COMPLAINT FORM

Date Time:

Activities Involved:

Provide a description of reported complaint. Attach sheets as necessary.

If applicable, operational conditions which contributed to the complaint:

If applicable, ambient conditions which contributed to the complaint:

If applicable, describe measures taken to immediately address the complaint.

If applicable, describe measures taken to address preventing the condition which generated the complaint.

If applicable, describe any reason that you feel the complaint may not be a violation:

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.

_____	_____	_____
Printed Name	Signature	Date

Attachment 1 – Visible Emissions Form

VISIBLE EMISSION OBSERVATION FORM

This form is designed to be used in conjunction with EPA Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources." Temporal changes in emission color, plume water droplet content, background color, sky conditions, observer position, etc. should be noted in the comments section adjacent to each minute of readings. Any information not dealt with elsewhere on the form should be noted under additional information. Following are brief descriptions of the type of information that needs to be entered on the form: for a more detailed discussion of each part of the form, refer to "Instructions for Use of Visible Emission Observation Form."

- Source Name: full company name, parent company or division or subsidiary information, if necessary.
- Address: street (not mailing or home office) address of facility where VE observation is being made.
- Phone (Key Contact): number for appropriate contact.
- Source ID Number: number from NEDS, agency file, etc.
- Process Equipment, Operating Mode: brief description of process equipment (include type of facility) and operating rate, % capacity, and/or mode (e.g. charging, tapping, shutdown).
- Control Equipment, Operating Mode: specify type of control device(s) and % utilization, control efficiency.
- Describe Emission Point: for identification purposes, stack or emission point appearance, location, and geometry; and whether emissions are confined (have a specifically designed outlet) or unconfined (fugitive).
- Height Above Ground Level: stack or emission point height relative to ground level; can use engineering drawings, Abney level, or clineometer.
- Height Relative to Observer: indicate height of emission point relative to the observation point.
- Distance from Observer: distance to emission point; can use rangefinder or map.
- Direction from Observer: direction plume is traveling from observer.
- Describe Emissions and Color: include physical characteristics, plume behavior (e.g., looping, lacy, condensing, fumigating, secondary particle formation, distance plume visible, etc.), and color of emissions (gray, brown, white, red, black, etc.). Note color changes in comments section.
- Visible Water Vapor Present?: check "yes" if visible water vapor is present.
- If Present, is Plume…: check "attached" if water droplet plume forms prior to exiting stack, and "detached" if water droplet plume forms after exiting stack.
- Point in Plume at Which Opacity was Determined: describe physical location in plume where readings were made (e.g., 1 ft above stack exit or 10 ft. after dissipation of water plume).
- Describe Plume Background: object plume is read against, include texture and atmospheric conditions (e.g., hazy).
- Background Color: sky blue, gray-white, new leaf green, etc.
- Sky Conditions: indicate cloud cover by percentage or by description (clear, scattered, broken, overcast).
- Wind Speed: record wind speed; can use Beaufort wind scale or hand-held anemometer to estimate.
- Wind Direction From: direction from which wind is blowing; can use compass to estimate to eight points.
- Ambient Temperature: in degrees Fahrenheit or Celsius.

  Wet Bulb Temperature: can be measured using a sling psychrometer

  RH Percent: relative humidity measured using a sling psychrometer; use local US Weather Bureau measurements only if nearby.
- Source Layout Sketch: include wind direction, sun position, associated stacks, roads, and other landmarks to fully identify location of emission point and observer position.

  Draw North Arrow: to determine, point line of sight in direction of emission point, place compass beside circle, and draw in arrow parallel to compass needle.

  Sun's Location: point line of sight in direction of emission point, move pen upright along sun location line, mark location of sun when pen's shadow crosses the observer's position.
- Observation Date: date observations conducted.
- Start Time, End Time: beginning and end times of observation period (e.g., 1635 or 4:35 p.m.).
- Data Set: percent opacity to nearest 5%; enter from left to right starting in left column. Use a second (third, etc.) form, if readings continue beyond 30 minutes. Use dash (-) for readings not made; explain in adjacent comments section.

  Comments: note changing observation conditions, plume characteristics, and/or reasons for missed readings.

  Range of Opacity: note highest and lowest opacity number.
- Observer's Name: print in full.

  Observer's Signature, Date: sign and date after performing VE observation.
- Organization: observer's employer.
- Certified By, Date: name of "smoke school" certifying observer and date of most recent certification.

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY DIVISION - VISIBLE EMISSIONS OBSERVATION FORM

Page No._____

Source Name		Type of Source		Observation Date		Start Time		End Time
Address				Min \ Sec	0	15	30	45	Comments
City	State	Zip		1					
Phone # (Key Contact)		Source ID Number		2					
Process Equipment		Operating Mode		3					
Control Equipment		Operating Mode		4					
Describe Emission Point				5					
Height above ground level	Height relative to observer	Inclinometer Reading		6					
Distance From Observer		Direction From Observer		7					
		Start	End	8					
Describe Emissions & Color				9					
Start		End							
Visible Water Vapor Present? If yes, determine approximate distance from the				10					
No Yes stack exit to where the plume was read									
Point in Plume at Which Opacity Was Determined				11					
Describe Plume Background		Background Color		12					
Start		Start		13					
End		End							
Sky Conditions: Start				14					
Wind Speed		Wind Direction From		15					
		Start	End						
Ambient Temperature		Wet Bulb Temp	RH percent	16					
NOTES: 1 Stack or Point Being Read		2 Wind Direction From		17					
3 Observer Location 4 Sun Location 5 North Arrow 6 Other Stacks				18					
				19					
				20					
				21					
				22					
				23					
				24					
				25					
				26					
				27					
				28					
				29					
				30					
				Range of Opacity					
				Minimum			Maximum		
I have received a copy of these opacity observations				Print Observer's Name					
Print Name:				Observer's Signature			Date		
Signature:									
Title		Date		Organization					
				Certified By:			Date		

Attachment 2 - ADEC Notification Form

Excess Emissions and Permit Deviation Reporting
State of Alaska Department of Environmental Conservation
Division of Air Quality

Beluga River Unit	AQ0942MSS02
Stationary Source Name	**Air Quality Permit**
Hilcorp Alaska, LLC	
Company Name	**Date**

When did you discover the Excess Emissions/Permit Deviation?

Date: _____ / _____ / _____ Time: _____ :/ _____

When did the event/deviation?

Begin Date: _____ / _____ / _____ Time: _____ : _____ (Use 24-hr clock.)

End Date _____ / _____ / _____ Time: _____ : _____ (Use 24-hr clock.)

What was the duration of the event/deviation? ____ : ____ (hrs:min) or _____ days

(total # of hrs, min, or days, if intermittent then include only the duration of the actual emissions/deviation)

Reason for notification: (please check only 1 box and go to the corresponding section)

☐ Excess Emissions Complete Section 1 and Certify

☐ Deviation from permit conditions complete Section 2 and certify

☐ Deviation from COBC, CO, or Settlement Agreement Complete Section 2 and certify

Section 1. Excess Emissions

(a) **Was the exceedance** ☐ Intermittent or ☐ Continuous

(b) **Cause of Event (Check one that applies):**

☐ Start Up/Shut Down ☐ Natural Cause (weather/earthquake/flood)

☐ Control Equipment Failure ☐ Scheduled Maintenance/Equipment Adjustments

☐ Bad fuel/coal/gas ☐ Upset Condition ☐ Other

(c) **Description**

Describe briefly, what happened and the cause. Include the parameters/operating conditions exceeded, limits, monitoring data and exceedance.

(d) **Emission unit(s) Involved:**

Identify the emission units involved in the event, using the same identification number and name as in the permit. Identify each emission standard potentially exceeded during the event and the exceedance.

EU ID	EU Name	Permit Condition Exceeded/Limit/Potential Exceedance

(e) **Type of Incident** (please check only one):

☐Opacity % ☐Venting (gas/scf) ☐Control Equipment Down
☐Fugitive Emissions ☐Emission Limit Exceeded ☐Record Keeping Failure
☐Marine Vessel Opacity ☐Failure to monitor/report ☐Flaring
☐Other:

(f) **Unavoidable Emissions:**

Do you intend to assert that these excess emissions were unavoidable? ☐YES ☐NO
Do you intend to assert the affirmative defense of 18 AAC 50.235? ☐YES ☐NO

Certify Report (go to end of form)

Section 2. Permit Deviations

(a) **Permit Deviation Type** (check only one box corresponding with the section in the permit)

☐ Emission Unit Specific
☐ General Source Test/Monitoring Requirements
☐ Recordkeeping/Reporting/Compliance Certification
☐ Standard Conditions Not Included in Permit
☐ Generally Applicable Requirements
☐ Reporting/Monitoring for Diesel Engines
☐ Insignificant Emission Unit
☐ Stationary Source-Wide
☐ Other Section: (title of section and section # of your permit)

(b) **Emission unit(s) Involved:**

Identify the emission unit involved in the event, using the same identification number and name as in the permit. List the corresponding Permit condition and the deviation.

EU ID	Emission Unit Name	Permit Condition /Potential Deviation

(c) **Description of Potential Deviation:**

Describe briefly, what happened and the cause. Include the parameters/operating conditions and the potential deviation.

(d) **Corrective Actions:**

Describe actions taken to correct the deviation or potential deviation and to prevent future recurrence.

Certification:

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.

Printed Name: _____ Title: _____ Date: _____

Signature: _____ Phone Number: _____

NOTE: *This document must be certified in accordance with 18 AAC 50.345(j)*

To submit this report:

1. Department's Air Online Services using the Permittee Portal option:
   http://dec.alaska.gov/applications/air/airtoolsweb
   If submitted online, report must be submitted by an authorized E-Signer for the stationary source.

Or

2. Fax to: 907-451-2187

Or

3. Email to: DEC.AQ.Airreports@alaska.gov

Or

4. Mail to: ADEC
   Air Permits Program
   610 University Avenue
   Fairbanks, AK 99709-3643

Or

5. Phone Notifications: 907-451-5173
   Phone notifications require a written follow-up report.

Attachment F

Electronic Files