Hilcorp Alaska, LLC

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Date: October 26, 2018

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

Subject: Beluga River Unit Air Quality Operating Permit No. AQ0942TVP01, Rev. 2 – Application for Renewal Amendment

Dear Application Intake,

Hilcorp Alaska, LLC (Hilcorp) seeks an amendment to the Title V Operating Permit Renewal Application for Beluga River Unit (Beluga) submitted on July 6, 2018. As discussed below, the requested amendments revise the Emission Unit Inventory in Form B, D Forms and Form E3.

Hilcorp requests to update the ratings of the dehydrators to the throughput values for each dehydrator and addition of the reboilers as separate insignificant units for the purpose of clarity.

Please contact Drew Anderson at (907) 777-8488 regarding any questions or concerns associated with the attached documents.

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.

Sincerely,

David S. Wilkins
Senior Vice President
Hilcorp Alaska, LLC

cc: USEPA Region 10

FORM B
Emission Unit Listing For This Application

Permit Number: AQ0942TVP01, Rev. 2

EMISSION UNIT LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted					
Emission Unit ID Number	Emission Unit Name	Brief Emission Unit Description	Rating/Size	Construction Date	Notes
Emission Units To Be ADDED By This Application (New, Previously Unpermitted, or Replacement)					
43	B Pad Compressor Drive	Caterpillar 3306TA Engine	220 hp	2015	Model Year 2010 Engine
44	GDF	Gasoline Dispensing Facility	Less than 10,000 gallons per month throughput	Prior to 11/9/2006	Existing GDF
N/A	GDU	Pad H GDU Reboiler #1	0.25 MMBtu/hr	Pre-1990	Insignificant units based on 18 AAC 50.326(g)(5)
N/A	GDU	Pad H GDU Reboiler #2	0.25 MMBtu/hr	Pre-1990	
N/A	GDU	Pad H GDU Reboiler #3	0.18 MMBtu/hr	Pre-1990	
N/A	GDU	Pad A GDU Reboiler	0.075 MMBtu/hr	1973	
N/A	GDU	Pad B GDU Reboiler	0.25 MMBtu/hr	1968	
N/A	GDU	Pad C GDU Reboiler #1	0.25 MMBtu/hr	1987	
N/A	GDU	Pad C GDU Reboiler #2	0.25 MMBtu/hr	1987	
N/A	GDU	Pad D GDU Reboiler	0.25 MMBtu/hr	1968	
N/A	GDU	Pad E GDU Reboiler #1	0.25 MMBtu/hr	1968	
N/A	GDU	Pad E GDU Reboiler #2	0.125 MMBtu/hr	1968	
N/A	GDU	Pad F GDU Reboiler	0.25 MMBtu/hr	1968	
N/A	GDU	Pad G GDU Reboiler	0.50 MMBtu/hr	1968	
N/A	GDU	Pad I GDU Reboiler	0.25 MMBtu/hr	1968	
N/A	GDU	Pad J GDU Reboiler #1	0.25 MMBtu/hr	1985	
N/A	GDU	Pad J GDU Reboiler #2	0.175 MMBtu/hr	1985	
N/A	GDU	Pad J GDU Reboiler #3	0.125 MMBtu/hr	1985	
N/A	GDU	Pad K GDU Reboiler	0.25 MMBtu/hr	1985	

Emission Units To Be MODIFIED By This Application					
4	GDU	Pad H Glycol Dehydration Vent #1	5.53 MMscfd	Pre-1990	Update ratings to the values for the dehydrator vents. Reboilers will be added as insignificant units.
5	GDU	Pad H Glycol Dehydration Vent #2	55 MMscfd	Pre-1990	
6	GDU	Pad H Glycol Dehydration Vent #3	55 MMscfd	Pre-1990	
7	GDU	Pad A Glycol Dehydration Vent	0.45 MMscfd	1973	
8	GDU	Pad B Glycol Dehydration Vent	0.27 MMscfd	1968	
9	GDU	Pad C Glycol Dehydration Vent #1	5.14 MMscfd	1987	
10	GDU	Pad C Glycol Dehydration Vent #2	5.14 MMscfd	1987	
13	GDU	Pad D Glycol Dehydration Vent	3.92 MMscfd	1968	
14	GDU	Pad E Glycol Dehydration Vent #1	1.99 MMscfd	1968	
15	GDU	Pad E Glycol Dehydration Vent #2	3.87 MMscfd	1968	
16	GDU	Pad F Glycol Dehydration Vent	6.71 MMscfd	1968	
17	GDU	Pad G Glycol Dehydration Vent	2.10 MMscfd	1968	
18	GDU	Pad I Glycol Dehydration Vent	3.05 MMscfd	1968	
21	GDU	Pad J Glycol Dehydration Vent #1	2.37 MMscfd	1985	
22	GDU	Pad J Glycol Dehydration Vent #2	2.37 MMscfd	1985	
23	GDU	Pad J Glycol Dehydration Vent #3	2.37 MMscfd	1985	
24	GDU	Pad K Glycol Dehydration Vent	3.53 MMscfd	1985	

Emission Units To Be DELETED By This Application					
N/A	GDU	Enstar II Pad H Glycol Dehydration Unit	0.25 MMBtu/hr	Pre-1990	This was a mistaken duplication of EU ID 5 and can be removed from the insignificant emission unit list.
N/A	GDU	Enstar III Pad H Glycol Dehydration Unit	0.25 MMBtu/hr	Pre-1990	This was a mistaken duplication of EU ID 6 and can be removed from the insignificant emission unit list.

SIGNIFICANT EMISSION UNIT LISTING: Title V permitted emission units that have not been modified				
Emission Unit ID Number	Emission Unit Name	Brief Emission Unit Description	Rating/Size	Construction Date
1	Turbine Compressor	Solar Taurus 60 Compressor Drive	7,700 hp	2006
2	Emergency Compressor	Waukesha H24GLD MOC Compressor Drive	530 hp	2005
3	Emergency Generator	John Deere Engine	420 kW	2008
12	Emergency Generator	Cummins Engine	350 kW	Pre-1990
19	Emergency Generator	Duetz Engine	50 kW	Pre-1990
26	Incinerator	Thermal Engine Corp Incinerator	150 lb/hr	Pre-1990
37	Compressors	Wellsite Compressor Engines	7,500 hp (cumulative maximum allowable total)	2011
42	Emergency Generator	Caterpillar Engine	230 kW	2012

INSIGNIFICANT EMISSION UNIT LISTING: Insignificant Title V permitted emission units that have not been modified				
Emission Unit Name	Brief Emission Unit Description	Rating/Size	Construction Date	Basis for Insignificant Status
Process Heater	Pad 211-3/224-34 Process Heater	1.00 MMBtu/hr	1987	18 AAC 50.326(g)(5)
Process Heater	Pad 224-23/232-26/211-26 Process Heater	1.00 MMBtu/hr	1985	18 AAC 50.326(g)(5)
Process Heater	Pad 224-23/232-26/211-26 Process Heater	1.00 MMBtu/hr	1985	18 AAC 50.326(g)(5)
Office Heater	Office Coleman Heater	0.06 MMBtu/hr	Pre-1990	18 AAC 50.326(g)(5)
Shop Heater	Shop Perfection Schwank Heater	0.02 MMBtu/hr	Pre-1990	18 AAC 50.326(g)(5)
Heater	Electrical Shop Modine Heater	0.03 MMBtu/hr	Pre-1990	18 AAC 50.326(g)(5)
Heater	Mechanics Shop Modine Heater	0.11 MMBtu/hr	Pre-1990	18 AAC 50.326(g)(5)
Heater	Mechanics Shop Modine Heater	0.30 MMBtu/hr	Pre-1990	18 AAC 50.326(g)(5)
Heater	BRWD Heater	0.50 MMBtu/hr	Pre-1990	18 AAC 50.326(g)(5)
Heater	Mechanics Shop Used Oil Heater	0.5 MMBtu/hr	Pre-1990	18 AAC 50.326(g)(7)
Portable Frost Fighter	Portable Frost Fighter	0.4 MMBtu/hr	Pre-1990	18 AAC 50.326(g)(7)

Permit Number: AQ0942TVP01, Rev. 2

Table D-1a. Assessable Potential Emissions - Potential Annual Emissions (after controls/limitations)
Hilcorp Alaska, LLC - Beluga River Unit

		Emissions (tons/year)						
EU ID	**Emission Unit Name**	**NO_X**	**CO**	**PM_{10}**	**VOC**	**SO_2**	**CO_2e**	**HAP**
	Significant Units							
	Turbines and Engines							
1	Turbine Compressor- Out of Solonox	2.5	39.4	1.8	0.6	1.1	31,594	0.00
1	Turbine Compressor- In Solonox	7.7	5.6					
2	Compressor	0.1	2.45E-02	1.63E-05	2.50E-02	8.93E-04	25	0.00
3	Generator	0.3	0.2	0.2	0.2	3.02E-02	26	0.00
12	Generator	0.7	0.2	0.1	0.1	2.52E-02	27	0.00
19	Generator	0.1	2.24E-02	7.38E-03	8.28E-03	3.60E-03	4	0.00
37-1	Wellsite Compressor	0.4	2.8	0.3	0.1	1.24E-01	3,447	0.00
37-2	Wellsite Compressor	0.4	4.9	0.2	0.1	1.09E-01	3,036	0.00
37-3	Wellsite Compressor	1.3	0.5	0.1	2.70E-02	5.90E-02	1,641	0.00
37-4	Wellsite Compressor	3.8	6.2	0.3	0.2	1.24E-01	3,447	0.00
37-6	Wellsite Compressor	1.0	1.4	0.1	0	5.90E-02	1,641	0.00
37-7	Wellsite Compressor	4.0	7.9	0.3	0.2	1.24E-01	3,447	0.00
37-8	Wellsite Compressor	4.2	6.6	0.2	0.1	1.09E-01	3,036	0.00
37-9	Wellsite Compressor	3.3	6.9	0.2	0.1	1.09E-01	3,036	0.00
37-10	Wellsite Compressor	5.4	13.0	0.3	0.2	1.24E-01	3,447	0.00
42	Generator	0.1	2.35E-02	4.50E-03	6.50E-03	1.66E-02	14	0.00
43	Wellsite Compressor	1.4	1.6	0.1	0.1	3.25E-02	903	0.00
	Incinerator							
26	Incinerator	1.0	3.3	2.3	1.0	0.8	668	8.24E-02
	Gasoline Dispensing Facility							
44	GDF	0	0	0	1.5	0	0	0.00
	Significant Unit Total	37.7	100.3	6.5	4.4	3.0	59,439	8.24E-02
	Insignificant Units							
	Glycol Reboilers							
N/A	Pad H Glycol Reboiler #1	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	5.74E-05
N/A	Pad H Glycol Reboiler #2	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad H Glycol Reboiler #3	0.08	0.06	5.83E-03	3.08E-05	1.37E-01	90	
N/A	Pad A Glycol Reboiler	0.03	0.03	2.50E-03	1.32E-05	5.87E-02	38	
N/A	Pad B Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad C Glycol Reboiler #1	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad C Glycol Reboiler #2	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad D Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad E Glycol Reboiler #1	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad E Glycol Reboiler #2	0.05	0.05	4.16E-03	2.20E-05	9.79E-02	64	
N/A	Pad F Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad G Glycol Reboiler	0.22	0.18	1.66E-02	8.79E-05	3.92E-01	256	
N/A	Pad I Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad J Glycol Reboiler #1	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad J Glycol Reboiler #2	0.08	0.06	5.83E-03	3.08E-05	1.37E-01	90	
N/A	Pad J Glycol Reboiler #3	0.05	0.05	4.16E-03	2.20E-05	9.79E-02	64	
N/A	Pad K Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
	Glycol Dehydration Vents							
4	Pad H Glycol Dehydration Vent #1	0.00	0.00	0.00	2.33E-01	0.00	0.7	0.00
5	Pad H Glycol Dehydration Vent #2	0.00	0.00	0.00	0.00E+00	0.00	1.8	0.00
6	Pad H Glycol Dehydration Vent #3	0.00	0.00	0.00	1.08E-02	0.00	0.9	0.00
7	Pad A Glycol Dehydration Vent	0.00	0.00	0.00	1.70E-01	0.00	0.7	0.00
8	Pad B Glycol Dehydration Vent	0.00	0.00	0.00	8.00E-04	0.00	0.3	0.00
9	Pad C Glycol Dehydration Vent #1	0.00	0.00	0.00	1.31E-01	0.00	0.4	0.00
10	Pad C Glycol Dehydration Vent #2	0.00	0.00	0.00	0.00E+00	0.00	0.2	0.00
13	Pad D Glycol Dehydration Vent	0.00	0.00	0.00	2.60E-03	0.00	0.4	0.00
14	Pad E Glycol Dehydration Vent #1	0.00	0.00	0.00	1.50E-01	0.00	0.3	0.00
15	Pad E Glycol Dehydration Vent #2	0.00	0.00	0.00	7.23E-02	0.00	0.1	0.00
16	Pad F Glycol Dehydration Vent	0.00	0.00	0.00	8.00E-04	0.00	0.9	0.00
17	Pad G Glycol Dehydration Vent	0.00	0.00	0.00	3.87E-01	0.00	0.3	0.00
18	Pad I Glycol Dehydration Vent	0.00	0.00	0.00	2.76E-01	0.00	0.2	0.00
21	Pad J Glycol Dehydration Vent #1	0.00	0.00	0.00	2.36E-01	0.00	1.2	0.00
22	Pad J Glycol Dehydration Vent #2	0.00	0.00	0.00	2.35E-01	0.00	1.2	0.00
23	Pad J Glycol Dehydration Vent #3	0.00	0.00	0.00	2.70E-03	0.00	1.4	0.00
24	Pad K Glycol Dehydration Vent	0.00	0.00	0.00	1.96E-01	0.00	0.2	0.00
	Insignificant Heaters							
11	Process Heater	0.4	0.4	0.03	2.41E-02	0.78	512.9	1.46E-05
20	Process Heater	0.4	0.4	0.03	2.41E-02	0.78	512.9	2.78E-05
25	Process Heater	0.1	4.60E-02	4.16E-03	3.01E-03	0.10	64.1	1.83E-06
29	Office Coleman Heater	2.63E-02	2.21E-02	2.00E-03	1.45E-03	0.05	30.8	8.78E-07
30	Shop Perfection Schwank Heater	8.76E-03	7.36E-03	6.66E-04	4.82E-04	0.02	10.3	2.93E-07
31	Electrical Shop Modine Heater	1.31E-02	1.10E-02	9.99E-04	7.23E-04	0.02	15.4	4.39E-07
32	Mechanics Shop Modine Heater	4.82E-02	4.05E-02	3.66E-03	2.65E-03	0.09	56.4	1.61E-06
33	Mechanics Shop Modine Heater	0.1	0.1	0.01	7.23E-03	0.23	153.9	4.39E-06
34	BRWD Heater	0.2	0.2	0.02	1.20E-02	0.39	256.4	7.31E-06
35	Mechanics Shop Used Oil Heater	0.2	2.72E-02	0.22	1.60E-02	3.15E-03	358.3	4.01E-03
36	Portable Frost Fighter	0.3	0.1	0.04	8.95E-03	2.52E-03	286.6	0.00E+00
	Insignificant Unit Total	1.81	1.25	0.37	0.10	2.47	2,257.98	4.06E-03
	Total (Significant and Insignificant)	39.5	101.6	6.9	4.5	5.5	61,697	0.1
	Major/Minor	Minor	Major	Minor	Minor	NA	NA	NA
	Total Assessable Emissions	**148**						

Table D-1b. Unlimited Potential Emissions - Potential Annual Emissions (before controls/limitations)
Hilcorp Alaska, LLC - Beluga River Unit

		Emissions (tons/year)						
EU ID	**Emission Unit Name**	**NO_X**	**CO**	**PM_{10}**	**VOC**	**SO_2**	**CO_2e**	**HAP**
Significant Units								
Turbines and Engines								
1	Turbine Compressor- Out of Solonox	54.0	863.4	1.8	12.4	1.1	31,594	0.00
1	Turbine Compressor- In Solonox	0	0					
2	Compressor	0.6	0.1	8.16E-05	0.1	8.93E-04	124	0.00
3	Generator	1.5	0.8	0.8	14.2	2.6	132	0.00
12	Generator	3.6	0.8	0.3	5.1	2.2	134	0.00
19	Generator	0.5	0.1	3.69E-02	0.7	0.3	19	0.00
37-1	Wellsite Compressor	0.4	2.8	0.3	0.1	0.1	3,447	0.00
37-2	Wellsite Compressor	0.4	4.9	0.2	0.1	0.1	3,036	0.00
37-3	Wellsite Compressor	1.3	0.5	0.1	2.70E-02	0.1	1,641	0.00
37-4	Wellsite Compressor	3.8	6.2	0.3	0.2	0.1	3,447	0.00
37-6	Wellsite Compressor	1.0	1.4	0.1	0	0.1	1,641	0.00
37-7	Wellsite Compressor	4.0	7.9	0.3	0.2	0.1	3,447	0.00
37-8	Wellsite Compressor	4.2	6.6	0.2	0.1	0.1	3,036	0.00
37-9	Wellsite Compressor	3.3	6.9	0.2	0.1	0.1	3,036	0.00
37-10	Wellsite Compressor	5.4	13.0	0.3	0.2	0.1	3,447	0.00
42	Generator	0.6	0.1	2.25E-02	0.6	1.5	72	0.00
43	Wellsite Compressor	1.4	1.6	0.1	0.1	3.25E-02	903	0.00
Incinerator								
26	Incinerator	1.0	3.3	2.3	1.0	0.8	668	8.24E-02
Gasoline Dispensing Facility								
44	GDF	0	0	0	1.5	0	0	0
	Significant Unit Total	87.0	920.3	7.4	36.7	9.6	59,824	0.1
Insignificant Units								
Glycol Reboilers								
N/A	Pad H Glycol Reboiler #1	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	5.74E-05
N/A	Pad H Glycol Reboiler #2	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad H Glycol Reboiler #3	0.08	0.06	5.83E-03	3.08E-05	1.37E-01	90	
N/A	Pad A Glycol Reboiler	0.03	0.03	2.50E-03	1.32E-05	5.87E-02	38	
N/A	Pad B Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad C Glycol Reboiler #1	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad C Glycol Reboiler #2	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad D Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad E Glycol Reboiler #1	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad E Glycol Reboiler #2	0.05	0.05	4.16E-03	2.20E-05	9.79E-02	64	
N/A	Pad F Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad G Glycol Reboiler	0.22	0.18	1.66E-02	8.79E-05	3.92E-01	256	
N/A	Pad I Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad J Glycol Reboiler #1	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
N/A	Pad J Glycol Reboiler #2	0.08	0.06	5.83E-03	3.08E-05	1.37E-01	90	
N/A	Pad J Glycol Reboiler #3	0.05	0.05	4.16E-03	2.20E-05	9.79E-02	64	
N/A	Pad K Glycol Reboiler	0.11	0.09	8.32E-03	4.40E-05	1.96E-01	128	
Glycol Dehydration Vents								
N/A	Pad H Glycol Dehydration Vent #1	0.00	0.00	0.00	2.33E-01	0.00	7.23E-01	0.00
N/A	Pad H Glycol Dehydration Vent #2	0.00	0.00	0.00	0.00E+00	0.00	1.76E+00	0.00
N/A	Pad H Glycol Dehydration Vent #3	0.00	0.00	0.00	1.08E-02	0.00	8.85E-01	0.00
N/A	Pad A Glycol Dehydration Vent	0.00	0.00	0.00	1.70E-01	0.00	7.31E-01	0.00
N/A	Pad B Glycol Dehydration Vent	0.00	0.00	0.00	8.00E-04	0.00	3.24E-01	0.00
N/A	Pad C Glycol Dehydration Vent #1	0.00	0.00	0.00	1.31E-01	0.00	4.33E-01	0.00
N/A	Pad C Glycol Dehydration Vent #2	0.00	0.00	0.00	0.00E+00	0.00	1.89E-01	0.00
N/A	Pad D Glycol Dehydration Vent	0.00	0.00	0.00	2.60E-03	0.00	4.19E-01	0.00
N/A	Pad E Glycol Dehydration Vent #1	0.00	0.00	0.00	1.50E-01	0.00	2.81E-01	0.00
N/A	Pad E Glycol Dehydration Vent #2	0.00	0.00	0.00	7.23E-02	0.00	8.32E-02	0.00
N/A	Pad F Glycol Dehydration Vent	0.00	0.00	0.00	8.00E-04	0.00	9.46E-01	0.00
N/A	Pad G Glycol Dehydration Vent	0.00	0.00	0.00	3.87E-01	0.00	2.60E-01	0.00
N/A	Pad I Glycol Dehydration Vent	0.00	0.00	0.00	2.76E-01	0.00	2.06E-01	0.00
N/A	Pad J Glycol Dehydration Vent #1	0.00	0.00	0.00	2.36E-01	0.00	1.17E+00	0.00
N/A	Pad J Glycol Dehydration Vent #2	0.00	0.00	0.00	2.35E-01	0.00	1.16E+00	0.00
N/A	Pad J Glycol Dehydration Vent #3	0.00	0.00	0.00	2.70E-03	0.00	1.41E+00	0.00
N/A	Pad K Glycol Dehydration Vent	0.00	0.00	0.00	1.96E-01	0.00	2.30E-01	0.00
Insignificant Heaters								
11	Process Heater	0.4	0.4	3.33E-02	2.41E-02	0.78	513	1.46E-05
20	Process Heater	0.4	0.4	3.33E-02	2.41E-02	0.78	513	2.78E-05
25	Process Heater	0.1	4.60E-02	4.16E-03	3.01E-03	0.10	64	1.83E-06
29	Office Coleman Heater	2.63E-02	2.21E-02	2.00E-03	1.45E-03	0.05	31	8.78E-07
30	Shop Perfection Schwank Heater	8.76E-03	7.36E-03	6.66E-04	4.82E-04	0.02	10	2.93E-07
31	Electrical Shop Modine Heater	1.31E-02	1.10E-02	9.99E-04	7.23E-04	0.02	15	4.39E-07
32	Mechanics Shop Modine Heater	4.82E-02	4.05E-02	3.66E-03	2.65E-03	0.09	56	1.61E-06
33	Mechanics Shop Modine Heater	0.1	0.1	9.99E-03	7.23E-03	0.23	154	4.39E-06
34	BRWD Heater	0.2	0.2	1.66E-02	1.20E-02	0.39	256	7.31E-06
35	Mechanics Shop Used Oil Heater	0.2	0.0	2.24E-01	1.60E-02	3.15E-03	358	4.01E-03
36	Portable Frost Fighter	0.3	0.1	4.22E-02	8.95E-03	2.52E-03	287	0.00E+00
	Insignificant Unit Total	1.81	1.25	0.37	0.10	2.47	2,257.98	0.0
	Total (Significant and Insignificant)	88.8	921.6	7.8	36.8	12.0	62,082	0.1
	Major/Minor	Minor	Major	Minor	Minor	NA	NA	NA

Table D-1c. Estimated Actual Emissions - Expected Actual Annual Emissions (after controls/limitations)
Hilcorp Alaska, LLC - Beluga River Unit

		Emissions (tons/year)						
EU ID	**Emission Unit Name**	**NO_X**	**CO**	**PM_{10}**	**VOC**	**SO_2**	**CO_2e**	**HAP**
Significant Units								
Turbines and Engines								
1	Turbine Compressor- Out of Solonox	0	0	1.3	0.4	0.8	22,207	0
1	Turbine Compressor- In Solonox	5.7	4.1					
2	Compressor	0.1	0.0	1.63E-05	2.50E-02	8.91E-04	25	0
3	Generator	0.2	0.1	9.97E-02	9.97E-02	1.86E-02	16	0
12	Generator	0.4	0.1	2.51E-02	2.81E-02	1.22E-02	13	0
19	Generator	3.85E-02	8.30E-03	2.73E-03	3.07E-03	1.33E-03	1	0
37-1	Wellsite Compressor	0.3	2.3	2.30E-01	6.67E-02	1.02E-01	2,834	0
37-2	Wellsite Compressor	0.4	4.1	2.04E-01	5.92E-02	9.05E-02	2,517	0
37-3	Wellsite Compressor	1.1	0.4	1.09E-01	2.22E-02	4.85E-02	1,347	0
37-4	Wellsite Compressor	2.7	4.5	2.00E-01	1.74E-01	8.87E-02	2,465	0
37-6	Wellsite Compressor	0.8	1.1	1.08E-01	0	4.81E-02	1,337	0
37-7	Wellsite Compressor	3.2	6.4	2.29E-01	1.33E-01	1.01E-01	2,817	0
37-8	Wellsite Compressor	3.5	5.4	2.03E-01	1.18E-01	9.00E-02	2,502	0
37-9	Wellsite Compressor	2.7	5.7	2.03E-01	1.18E-01	9.01E-02	2,506	0
37-10	Wellsite Compressor	4.4	10.6	2.28E-01	1.99E-01	1.01E-01	2,815	0
42	Generator	2.68E-02	5.65E-03	1.08E-03	1.56E-03	3.98E-03	3	0
43	Wellsite Compressor	0.8	0.9	4.14E-02	3.61E-02	1.84E-02	511	0
Incinerator								
26	Incinerator	0.01	0.02	0.01	6.11E-03	0.01	4	0
Gasoline Dispensing Facility								
44	GDF	0	0	0	1.45	0	0	0
	Significant Unit Total	26.3	45.7	3.2	2.9	1.6	43,921	0.0

[1] Expected actual annual emissions are not required to be calculated for insignificant emission units. No insignificant emission units at Beluga River that are insignificant on an emission rate basis have potential annual emissions exceeding 80% of the thresholds.

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Table D-2a. HAPs Summary - Assessable Potential Emissions, with Limits
Hilcorp Alaska, LLC - Beluga River Unit

Hazardous Air Pollutant	Significant Units																		Total
	Emissions per Unit (tons)																		
	1	2	3	12	19	26	37-1	37-2	37-3	37-4	37-6	37-7	37-8	37-9	37-10	42	43	44	HAP Emissions
Volatile Organic Compounds																			
Acetaldehyde	1.08E-02	5.91E-04	1.51E-04	1.26E-04	1.80E-05	----	8.21E-02	7.23E-02	3.91E-02	8.21E-02	3.91E-02	8.21E-02	7.23E-02	7.23E-02	8.21E-02	8.28E-05	2.15E-02	----	6.57E-01
Acrolein	1.73E-03	5.58E-04	1.82E-05	1.52E-05	2.17E-06	----	7.74E-02	6.82E-02	3.69E-02	7.74E-02	3.69E-02	7.74E-02	6.82E-02	6.82E-02	7.74E-02	9.99E-06	2.03E-02	----	6.11E-01
Benzene	3.24E-03	3.35E-04	1.84E-04	1.53E-04	2.19E-05	----	4.65E-02	4.10E-02	2.21E-02	4.65E-02	2.21E-02	4.65E-02	4.10E-02	4.10E-02	4.65E-02	1.01E-04	1.22E-02	1.31E-02	3.82E-01
1,3 Butadiene	----	----	7.71E-06	6.42E-06	9.18E-07	----	----	----	----	----	----	----	----	----	----	4.22E-06	----	----	1.93E-05
Carbon tetrachloride	----	3.75E-06	----	----	----	----	5.21E-04	4.59E-04	2.48E-04	5.21E-04	2.48E-04	5.21E-04	4.59E-04	4.59E-04	5.21E-04	----	1.36E-04	----	4.10E-03
Chlorobenzene	----	2.73E-06	----	----	----	----	3.80E-04	3.34E-04	1.81E-04	3.80E-04	1.81E-04	3.80E-04	3.34E-04	3.34E-04	3.80E-04	----	9.94E-05	----	2.99E-03
Chloroform	----	2.90E-06	----	----	----	----	4.03E-04	3.55E-04	1.92E-04	4.03E-04	1.92E-04	4.03E-04	3.55E-04	3.55E-04	4.03E-04	----	1.06E-04	----	3.17E-03
Ethyl benzene	8.63E-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.45E-03	1.01E-02
Ethylene dibromide (Dibromoethane)	----	4.52E-06	----	----	----	----	6.27E-04	5.52E-04	2.99E-04	6.27E-04	2.99E-04	6.27E-04	5.52E-04	5.52E-04	6.27E-04	----	1.64E-04	----	4.93E-03
Formaldehyde	1.92E-01	4.35E-03	2.33E-04	1.94E-04	2.77E-05	----	6.03E-01	5.32E-01	2.87E-01	6.03E-01	2.87E-01	6.03E-01	5.32E-01	5.32E-01	6.03E-01	1.27E-04	1.58E-01	----	4.94E+00
n-Hexane	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.32E-02	2.32E-02
Hydrochloric acid	----	----	----	----	----	2.10E+00	----	----	----	----	----	----	----	----	----	----	----	----	2.10E+00
Methanol	----	6.49E-04	----	----	----	----	9.01E-02	7.93E-02	4.29E-02	9.01E-02	4.29E-02	9.01E-02	7.93E-02	7.93E-02	9.01E-02	----	2.36E-02	----	7.08E-01
Methylene chloride (Dichloromethane)	----	8.73E-06	----	----	----	----	1.21E-03	1.07E-03	5.77E-04	1.21E-03	5.77E-04	1.21E-03	1.07E-03	1.07E-03	1.21E-03	----	3.18E-04	----	9.54E-03
Polycyclic Organic Matter (POM)	5.94E-04	2.06E-05	3.31E-05	2.76E-05	3.94E-06	----	2.86E-03	2.52E-03	1.36E-03	2.86E-03	1.36E-03	2.86E-03	2.52E-03	2.52E-03	2.86E-03	1.81E-05	7.49E-04	7.26E-03	3.04E-02
Naphthalene	3.51E-04	2.06E-05	----	----	----	----	2.86E-03	2.52E-03	1.36E-03	2.86E-03	1.36E-03	2.86E-03	2.52E-03	2.52E-03	2.86E-03	----	7.49E-04	----	2.28E-02
Styrene	----	2.52E-06	----	----	----	----	3.50E-04	3.09E-04	1.67E-04	3.50E-04	1.67E-04	3.50E-04	3.09E-04	3.09E-04	3.50E-04	----	9.17E-05	----	2.75E-03
Toluene	3.51E-02	1.18E-04	8.06E-05	6.72E-05	9.60E-06	----	1.64E-02	1.45E-02	7.82E-03	1.64E-02	7.82E-03	1.64E-02	1.45E-02	1.45E-02	1.64E-02	4.42E-05	4.30E-03	1.89E-02	1.83E-01
2,2,4-Trimethylpentane	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.16E-02	1.16E-02
Vinyl chloride	----	1.52E-06	----	----	----	----	2.11E-04	1.86E-04	1.01E-04	2.11E-04	1.01E-04	2.11E-04	1.86E-04	1.86E-04	2.11E-04	----	5.53E-05	----	1.66E-03
Xylenes (isomers and mixture)	1.73E-02	4.13E-05	5.62E-05	4.68E-05	6.69E-06	----	5.74E-03	5.06E-03	2.73E-03	5.74E-03	2.73E-03	5.74E-03	5.06E-03	5.06E-03	5.74E-03	3.08E-05	1.50E-03	7.26E-03	6.98E-02
Total VOC HAPs	0.27	0.01	0.00	0.00	0.00	2.10	0.93	0.82	0.44	0.93	0.44	0.93	0.82	0.82	0.93	0.00	0.24	0.08	9.76
Non Volatile Organic Compounds																			
Arsenic Compounds (inorganic including arsine)	----	----	----	----	----	1.44E-03	----	----	----	----	----	----	----	----	----	----	----	----	1.44E-03
Cadmium Compounds	----	----	----	----	----	3.58E-03	----	----	----	----	----	----	----	----	----	----	----	----	3.58E-03
Chromium Compounds	----	----	----	----	----	2.95E-03	----	----	----	----	----	----	----	----	----	----	----	----	2.95E-03
Cobalt Compounds	----	----	----	----	----	---	----	----	----	----	----	----	----	----	----	----	----	----	0.00E+00
Lead Compounds	----	----	----	----	----	7.00E-02	----	----	----	----	----	----	----	----	----	----	----	----	7.00E-02
Manganese Compounds	----	----	----	----	----	---	----	----	----	----	----	----	----	----	----	----	----	----	0.00E+00
Mercury Compounds	----	----	----	----	----	1.84E-03	----	----	----	----	----	----	----	----	----	----	----	----	1.84E-03
Nickel Compounds	----	----	----	----	----	2.58E-03	----	----	----	----	----	----	----	----	----	----	----	----	2.58E-03
Total non-VOC HAPs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.24E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.08
Total HAPs	0.27	0.01	0.00	0.00	0.00	2.18	0.93	0.82	0.44	0.93	0.44	0.93	0.82	0.82	0.93	0.00	0.24	0.08	9.84

Notes:
[1] See individual emissions unit category emissions calculations for details on methodology and assumptions.

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Table D-2b. HAPs Summary - Assessable Potential Emissions, with Limits
Hilcorp Alaska, LLC - Beluga River Unit

Hazardous Air Pollutant	Insignificant Units												Total
	Emissions per Unit (tons)												
	Insignificant Reboilers	11	20	25	29	30	31	32	33	34	35	36	HAP Emissions
Volatile Organic Compounds													
Benzene	3.61E-05	9.20E-06	9.20E-06	1.15E-06	5.52E-07	1.84E-07	2.76E-07	1.01E-06	2.76E-06	4.60E-06	----	2.74E-06	6.78E-05
Formaldehyde	1.29E-03	3.29E-04	3.29E-04	4.11E-05	1.97E-05	6.57E-06	9.86E-06	3.61E-05	9.86E-05	1.64E-04	----	4.22E-04	2.74E-03
n-Hexane	3.09E-02	7.88E-03	7.88E-03	9.86E-04	4.73E-04	1.58E-04	2.37E-04	8.67E-04	2.37E-03	3.94E-03	----	----	5.57E-02
Nitrobenzene	3.61E-05	9.20E-06	9.20E-06	1.15E-06	5.52E-07	1.84E-07	2.76E-07	1.01E-06	2.76E-06	4.60E-06	----	----	6.50E-05
Phenol	----	----	----	----	----	----	----	----	----	----	3.84E-05	----	3.84E-05
Phosphorus	----	----	----	----	----	----	----	----	----	----	5.75E-04	----	5.75E-04
Polycyclic Organic Matter (POM)	1.05E-05	2.67E-06	2.67E-06	3.34E-07	1.60E-07	5.34E-08	8.02E-08	2.94E-07	8.02E-07	1.34E-06	2.08E-04	6.40E-07	2.27E-04
Naphthalene	1.05E-05	2.67E-06	2.67E-06	3.34E-07	1.60E-07	5.34E-08	8.02E-08	2.94E-07	8.02E-07	1.34E-06	2.08E-04	1.45E-05	2.41E-04
Toluene	5.85E-05	1.49E-05	1.49E-05	1.86E-06	8.94E-07	2.98E-07	4.47E-07	1.64E-06	4.47E-06	7.45E-06	----	7.93E-05	1.85E-04
Total VOC HAPs	3.24E-02	8.25E-03	8.25E-03	1.03E-03	4.95E-04	1.65E-04	2.47E-04	9.07E-04	2.47E-03	4.12E-03	8.57E-04	5.07E-04	0.06
Non Volatile Organic Compounds													
Antimony Compounds	----	----	----	----	----	----	----	----	----	----	5.44E-06	----	5.44E-06
Arsenic Compounds (inorganic including arsine)	3.44E-06	8.76E-07	8.76E-07	1.10E-07	5.26E-08	1.75E-08	2.63E-08	9.64E-08	2.63E-07	4.38E-07	4.00E-05	----	4.62E-05
Cadmium Compounds	1.89E-05	4.82E-06	4.82E-06	6.02E-07	2.89E-07	9.64E-08	1.45E-07	5.30E-07	1.45E-06	2.41E-06	2.40E-06	----	3.65E-05
Chromium Compounds	2.41E-05	6.13E-06	1.93E-05	7.67E-07	3.68E-07	1.23E-07	1.84E-07	6.75E-07	1.84E-06	3.07E-06	3.04E-03	----	3.09E-03
Cobalt Compounds	----	----	----	----	----	----	----	----	----	----	9.11E-05	----	9.11E-05
Manganese Compounds	6.53E-06	1.66E-06	1.66E-06	2.08E-07	9.99E-08	3.33E-08	4.99E-08	1.83E-07	4.99E-07	8.32E-07	3.52E-05	----	4.69E-05
Mercury Compounds	4.47E-06	1.14E-06	1.14E-06	1.42E-07	6.83E-08	2.28E-08	3.42E-08	1.25E-07	3.42E-07	5.69E-07	----	----	8.05E-06
Nickel Compounds	----	----	----	----	----	----	----	----	----	----	7.99E-04	----	7.99E-04
Total non-VOC HAPs	5.74E-05	1.46E-05	2.78E-05	1.83E-06	8.78E-07	2.93E-07	4.39E-07	1.61E-06	4.39E-06	7.31E-06	4.01E-03	0.00E+00	0.00
Total HAPs	3.24E-02	8.26E-03	8.28E-03	1.03E-03	4.96E-04	1.65E-04	2.48E-04	9.09E-04	2.48E-03	4.13E-03	4.86E-03	5.07E-04	0.06

Notes:
[1] See individual emissions unit category emissions calculations for details on methodology and assumptions.
[2] Insignificant glycol dehydrators vents have zero HAP emissions. See GRI-GlyCalc Summary for more details.

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Table D-2c. HAPs Summary - Unlimited Potential Emissions, without Limits
Hilcorp Alaska, LLC - Beluga River Unit

Hazardous Air Pollutant	Significant Units																		Total
	Emissions per Unit (tons)																		
	1	2	3	12	19	26	37-1	37-2	37-3	37-4	37-6	37-7	37-8	37-9	37-10	42	43	44	HAP Emissions
Volatile Organic Compounds																			
Acetaldehyde	1.08E-02	2.96E-03	3.85E-05	6.30E-04	9.00E-05	----	8.21E-02	7.23E-02	3.91E-02	8.21E-02	3.91E-02	8.21E-02	7.23E-02	7.23E-02	8.21E-02	4.14E-04	2.15E-02	----	6.60E-01
Acrolein	1.73E-03	2.79E-03	9.12E-05	7.60E-05	1.09E-05	----	7.74E-02	6.82E-02	3.69E-02	7.74E-02	3.69E-02	7.74E-02	6.82E-02	6.82E-02	7.74E-02	4.99E-05	2.03E-02	----	6.13E-01
Benzene	3.24E-03	1.67E-03	9.20E-04	7.66E-04	1.09E-04	----	4.65E-02	4.10E-02	2.21E-02	4.65E-02	2.21E-02	4.65E-02	4.10E-02	4.10E-02	4.65E-02	5.04E-04	1.22E-02	1.31E-02	3.86E-01
1,3 Butadiene	----	----	3.85E-05	3.21E-05	4.59E-06	----	----	----	----	----	----	----	----	----	----	2.11E-05	----	----	9.63E-05
Carbon tetrachloride	----	1.88E-05	----	----	----	----	5.21E-04	4.59E-04	2.48E-04	5.21E-04	2.48E-04	5.21E-04	4.59E-04	4.59E-04	5.21E-04	----	1.36E-04	----	4.11E-03
Chlorobenzene	----	1.37E-05	----	----	----	----	3.80E-04	3.34E-04	1.81E-04	3.80E-04	1.81E-04	3.80E-04	3.34E-04	3.34E-04	3.80E-04	----	9.94E-05	----	3.00E-03
Chloroform	----	1.45E-05	----	----	----	----	4.03E-04	3.55E-04	1.92E-04	4.03E-04	1.92E-04	4.03E-04	3.55E-04	3.55E-04	4.03E-04	----	1.06E-04	----	3.18E-03
Ethyl benzene	8.63E-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.45E-03	1.01E-02
Ethylene dibromide (Dibromoethane)	----	2.26E-05	----	----	----	----	6.27E-04	5.52E-04	2.99E-04	6.27E-04	2.99E-04	6.27E-04	5.52E-04	5.52E-04	6.27E-04	----	1.64E-04	----	4.95E-03
Formaldehyde	1.92E-01	2.17E-02	1.16E-03	9.69E-04	1.38E-04	----	6.03E-01	5.32E-01	2.87E-01	6.03E-01	2.87E-01	6.03E-01	5.32E-01	5.32E-01	6.03E-01	6.37E-04	1.58E-01	----	4.96E+00
n-Hexane	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.32E-02	2.32E-02
Hydrochloric acid	----	----	----	----	----	2.10E+00	----	----	----	----	----	----	----	----	----	----	----	----	2.10E+00
Methanol	----	3.24E-03	----	----	----	----	9.01E-02	7.93E-02	4.29E-02	9.01E-02	4.29E-02	9.01E-02	7.93E-02	7.93E-02	9.01E-02	----	2.36E-02	----	7.11E-01
Methylene chloride (Dichloromethane)	----	4.37E-05	----	----	----	----	1.21E-03	1.07E-03	5.77E-04	1.21E-03	5.77E-04	1.21E-03	1.07E-03	1.07E-03	1.21E-03	----	3.18E-04	----	9.57E-03
Polycyclic Organic Matter (POM)	5.94E-04	1.03E-04	1.66E-04	1.38E-04	1.97E-05	----	2.86E-03	2.52E-03	1.36E-03	2.86E-03	1.36E-03	2.86E-03	2.52E-03	2.52E-03	2.86E-03	9.07E-05	7.49E-04	7.26E-03	3.08E-02
Naphthalene	3.51E-04	1.03E-04	----	----	----	----	2.86E-03	2.52E-03	1.36E-03	2.86E-03	1.36E-03	2.86E-03	2.52E-03	2.52E-03	2.86E-03	----	7.49E-04	----	2.29E-02
Styrene	----	1.26E-05	----	----	----	----	3.50E-04	3.09E-04	1.67E-04	3.50E-04	1.67E-04	3.50E-04	3.09E-04	3.09E-04	3.50E-04	----	9.17E-05	----	2.76E-03
Toluene	3.51E-02	5.91E-04	4.03E-04	3.36E-04	4.80E-05	----	1.64E-02	1.45E-02	7.82E-03	1.64E-02	7.82E-03	1.64E-02	1.45E-02	1.45E-02	1.64E-02	2.21E-04	4.30E-03	1.89E-02	1.85E-01
2,2,4-Trimethylpentane	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.16E-02	1.16E-02
Vinyl chloride	----	7.61E-06	----	----	----	----	2.11E-04	1.86E-04	1.01E-04	2.11E-04	1.01E-04	2.11E-04	1.86E-04	1.86E-04	2.11E-04	----	5.53E-05	----	1.67E-03
Xylenes (isomers and mixture)	1.73E-02	2.07E-04	2.81E-04	2.34E-04	3.34E-05	----	5.74E-03	5.06E-03	2.73E-03	5.74E-03	2.73E-03	5.74E-03	5.06E-03	5.06E-03	5.74E-03	1.54E-04	1.50E-03	7.26E-03	7.05E-02
Total VOC HAPs	0.27	0.03	0.00	0.00	0.00	2.10	0.93	0.82	0.44	0.93	0.44	0.93	0.82	0.82	0.93	0.00	0.24	0.08	9.79E+00
Non Volatile Organic Compounds																			
Arsenic Compounds (inorganic including arsine)	----	----	----	----	----	1.44E-03	----	----	----	----	----	----	----	----	----	----	----	----	1.44E-03
Cadmium Compounds	----	----	----	----	----	3.58E-03	----	----	----	----	----	----	----	----	----	----	----	----	3.58E-03
Chromium Compounds	----	----	----	----	----	2.95E-03	----	----	----	----	----	----	----	----	----	----	----	----	2.95E-03
Lead Compounds	----	----	----	----	----	7.00E-02	----	----	----	----	----	----	----	----	----	----	----	----	7.00E-02
Mercury Compounds	----	----	----	----	----	1.84E-03	----	----	----	----	----	----	----	----	----	----	----	----	1.84E-03
Nickel Compounds	----	----	----	----	----	2.58E-03	----	----	----	----	----	----	----	----	----	----	----	----	2.58E-03
Total non-VOC HAPs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.24E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.24E-02
Total HAPs	0.27	0.03	0.00	0.00	0.00	2.18	0.93	0.82	0.44	0.93	0.44	0.93	0.82	0.82	0.93	0.00	0.24	0.08	9.87E+00

Notes:
[1] See individual emissions unit category emissions calculations for details on methodology and assumptions.

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Table D-2d. HAPs Summary - Unlimited Potential Emissions, without Limits
Hilcorp Alaska, LLC - Beluga River Unit

Hazardous Air Pollutant	Insignificant Units												Total
	Emissions per Unit (tons)												
	Insignificant Reboilers	11	20	25	29	30	31	32	33	34	35	36	HAP Emissions
Volatile Organic Compounds													
Benzene	3.97E-04	9.20E-06	9.20E-06	1.15E-06	5.52E-07	1.84E-07	2.76E-07	1.01E-06	2.76E-06	4.60E-06	----	2.74E-06	4.29E-04
1,4-Dichlorobenzene(p)	----	----	----	----	----	----	----	----	----	----	1.28E-08	----	1.28E-08
Ethyl benzene	----	----	----	----	----	----	----	----	----	----	----	8.13E-07	8.13E-07
Formaldehyde	1.42E-02	3.29E-04	3.29E-04	4.11E-05	1.97E-05	6.57E-06	9.86E-06	3.61E-05	9.86E-05	1.64E-04	----	4.22E-04	1.56E-02
n-Hexane	3.40E-01	7.88E-03	7.88E-03	9.86E-04	4.73E-04	1.58E-04	2.37E-04	8.67E-04	2.37E-03	3.94E-03	----	----	3.65E-01
Nitrobenzene	3.97E-04	9.20E-06	9.20E-06	1.15E-06	5.52E-07	1.84E-07	2.76E-07	1.01E-06	2.76E-06	4.60E-06	----	----	4.26E-04
Phenol	----	----	----	----	----	----	----	----	----	----	3.84E-05	----	3.84E-05
Phosphorus	----	----	----	----	----	----	----	----	----	----	5.75E-04	----	5.75E-04
Polycyclic Organic Matter (POM)	1.15E-04	2.67E-06	2.67E-06	3.34E-07	1.60E-07	5.34E-08	8.02E-08	2.94E-07	8.02E-07	1.34E-06	2.08E-04	6.40E-07	3.32E-04
Naphthalene	1.15E-04	2.67E-06	2.67E-06	3.34E-07	1.60E-07	5.34E-08	8.02E-08	2.94E-07	8.02E-07	1.34E-06	2.08E-04	1.45E-05	3.46E-04
Toluene	6.43E-04	1.49E-05	1.49E-05	1.86E-06	8.94E-07	2.98E-07	4.47E-07	1.64E-06	4.47E-06	7.45E-06	----	7.93E-05	7.69E-04
Xylenes (isomers and mixture)	----	----	----	----	----	----	----	----	----	----	----	1.39E-06	1.39E-06
Total VOC HAPs	3.56E-01	8.25E-03	8.25E-03	1.03E-03	4.95E-04	1.65E-04	2.47E-04	9.07E-04	2.47E-03	4.12E-03	8.57E-04	5.07E-04	3.83E-01
Non Volatile Organic Compounds													
Antimony Compounds	----	----	----	----	----	----	----	----	----	----	5.44E-06	----	5.44E-06
Arsenic Compounds (inorganic including arsine)	3.78E-05	8.76E-07	8.76E-07	1.10E-07	5.26E-08	1.75E-08	2.63E-08	9.64E-08	2.63E-07	4.38E-07	4.00E-05	----	8.05E-05
Cadmium Compounds	2.08E-04	4.82E-06	4.82E-06	6.02E-07	2.89E-07	9.64E-08	1.45E-07	5.30E-07	1.45E-06	2.41E-06	2.40E-06	----	2.26E-04
Chromium Compounds	2.65E-04	6.13E-06	1.93E-05	7.67E-07	3.68E-07	1.23E-07	1.84E-07	6.75E-07	1.84E-06	3.07E-06	3.04E-03	----	3.33E-03
Cobalt Compounds	----	----	----	----	----	----	----	----	----	----	9.11E-05	----	9.11E-05
Manganese Compounds	7.19E-05	1.66E-06	1.66E-06	2.08E-07	9.99E-08	3.33E-08	4.99E-08	1.83E-07	4.99E-07	8.32E-07	3.52E-05	----	1.12E-04
Mercury Compounds	4.92E-05	1.14E-06	1.14E-06	1.42E-07	6.83E-08	2.28E-08	3.42E-08	1.25E-07	3.42E-07	5.69E-07	----	----	5.27E-05
Nickel Compounds	----	----	----	----	----	----	----	----	----	----	7.99E-04	----	7.99E-04
Total non-VOC HAPs	6.32E-04	1.46E-05	2.78E-05	1.83E-06	8.78E-07	2.93E-07	4.39E-07	1.61E-06	4.39E-06	7.31E-06	4.01E-03	0.00E+00	4.70E-03
Total HAPs	3.57E-01	8.26E-03	8.28E-03	1.03E-03	4.96E-04	1.65E-04	2.48E-04	9.09E-04	2.48E-03	4.13E-03	4.86E-03	5.07E-04	3.88E-01

Notes:
[1] See individual emissions unit category emissions calculations for details on methodology and assumptions.
[2] Insignificant glycol dehydrator vents have zero HAP emissions. See GRI-GlyCalc Summary for more details.

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Table D-2e. HAPs Summary - Estimated Actual Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Hazardous Air Pollutant	Significant Units																		Total
	Emissions per Unit (tons)																		
	1	2	3	12	19	26	37-1	37-2	37-3	37-4	37-6	37-7	37-8	37-9	37-10	42	43	44	HAP Emissions
Volatile Organic Compounds																			
Acetaldehyde	7.59E-03	5.90E-04	4.74E-06	6.12E-05	6.67E-06	----	5.91E-02	5.25E-02	2.81E-02	5.14E-02	2.79E-02	5.87E-02	5.22E-02	5.22E-02	5.87E-02	1.99E-05	1.22E-02	----	4.61E-01
Acrolein	1.21E-03	5.56E-04	1.12E-05	7.38E-06	8.04E-07	----	5.57E-02	4.95E-02	2.65E-02	4.84E-02	2.63E-02	5.54E-02	4.92E-02	4.93E-02	5.53E-02	2.40E-06	1.15E-02	----	4.29E-01
Benzene	2.28E-03	3.34E-04	1.13E-04	7.44E-05	8.11E-06	----	3.35E-02	2.97E-02	1.59E-02	2.91E-02	1.58E-02	3.33E-02	2.95E-02	2.96E-02	3.32E-02	2.42E-05	6.89E-03	1.31E-02	2.72E-01
1,3 Butadiene	----	----	4.74E-06	3.12E-06	3.40E-07	----	----	----	----	----	----	----	----	----	----	1.02E-06	----	----	9.22E-06
Carbon tetrachloride	----	3.74E-06	----	----	----	----	3.75E-04	3.33E-04	1.78E-04	3.26E-04	1.77E-04	3.73E-04	3.31E-04	3.31E-04	3.72E-04	----	7.72E-05	----	2.88E-03
Chlorobenzene	----	2.73E-06	----	----	----	----	2.73E-04	2.43E-04	1.30E-04	2.38E-04	1.29E-04	2.72E-04	2.41E-04	2.42E-04	2.71E-04	----	5.63E-05	----	2.10E-03
Chloroform	----	2.90E-06	----	----	----	----	2.90E-04	2.58E-04	1.38E-04	2.52E-04	1.37E-04	2.88E-04	2.56E-04	2.57E-04	2.88E-04	----	5.97E-05	----	2.23E-03
Ethyl benzene	6.07E-03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.45E-03	7.52E-03
Ethylene dibromide (Dibromoethane)	----	4.51E-06	----	----	----	----	4.51E-04	4.01E-04	2.14E-04	3.92E-04	2.13E-04	4.48E-04	3.98E-04	3.99E-04	4.48E-04	----	9.29E-05	----	3.46E-03
Formaldehyde	1.35E-01	4.34E-03	1.43E-04	9.41E-05	1.03E-05	----	4.34E-01	3.86E-01	2.06E-01	3.78E-01	2.05E-01	4.31E-01	3.83E-01	3.84E-01	4.31E-01	3.06E-05	8.94E-02	----	3.47E+00
n-Hexane	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.32E-02	2.32E-02
Hydrochloric acid	----	----	----	----	----	1.30E-02	----	----	----	----	----	----	----	----	----	----	----	----	1.30E-02
Methanol	----	6.47E-04	----	----	----	----	6.48E-02	5.76E-02	3.08E-02	5.64E-02	3.06E-02	6.44E-02	5.72E-02	5.73E-02	6.44E-02	----	1.33E-02	----	4.97E-01
Methylene chloride (Dichloromethane)	----	8.72E-06	----	----	----	----	8.73E-04	7.75E-04	4.15E-04	7.59E-04	4.12E-04	8.67E-04	7.70E-04	7.72E-04	8.67E-04	----	1.80E-04	----	6.70E-03
Polycyclic Organic Matter (POM)	4.17E-04	2.05E-05	2.04E-05	1.34E-05	1.46E-06	----	2.06E-03	1.83E-03	9.78E-04	1.79E-03	9.70E-04	2.04E-03	1.82E-03	1.82E-03	2.04E-03	4.36E-06	4.23E-04	7.26E-03	2.35E-02
Naphthalene	2.47E-04	2.05E-05	----	----	----	----	2.06E-03	1.83E-03	9.78E-04	1.79E-03	9.70E-04	2.04E-03	1.82E-03	1.82E-03	2.04E-03	----	4.23E-04	----	1.60E-02
Styrene	----	2.52E-06	----	----	----	----	2.52E-04	2.24E-04	1.20E-04	2.19E-04	1.19E-04	2.50E-04	2.22E-04	2.23E-04	2.50E-04	----	5.19E-05	----	1.93E-03
Toluene	2.47E-02	1.18E-04	4.96E-05	3.26E-05	3.56E-06	----	1.18E-02	1.05E-02	5.62E-03	1.03E-02	5.57E-03	1.17E-02	1.04E-02	1.04E-02	1.17E-02	1.06E-05	2.43E-03	1.89E-02	1.34E-01
2,2,4-Trimethylpentane	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.16E-02	1.16E-02
Vinyl chloride	----	1.52E-06	----	----	----	----	1.52E-04	1.35E-04	7.23E-05	1.32E-04	7.17E-05	1.51E-04	1.34E-04	1.34E-04	1.51E-04	----	3.13E-05	----	1.17E-03
Xylenes (isomers and mixture)	1.21E-02	4.13E-05	3.46E-05	2.27E-05	2.48E-06	----	4.13E-03	3.67E-03	1.96E-03	3.59E-03	1.95E-03	4.10E-03	3.65E-03	3.65E-03	4.10E-03	7.40E-06	8.50E-04	7.26E-03	5.12E-02
Total VOC HAPs	0.19	0.01	0.00	0.00	0.00	0.01	0.67	0.59	0.32	0.58	0.32	0.66	0.59	0.59	0.66	0.00	0.14	0.08	5.41E+00
Non Volatile Organic Compounds																			
Arsenic Compounds (inorganic including arsine)	----	----	----	----	----	8.90E-06	----	----	----	----	----	----	----	----	----	----	----	----	8.90E-06
Cadmium Compounds	----	----	----	----	----	2.22E-05	----	----	----	----	----	----	----	----	----	----	----	----	2.22E-05
Chromium Compounds	----	----	----	----	----	1.83E-05	----	----	----	----	----	----	----	----	----	----	----	----	1.83E-05
Cobalt Compounds	----	----	----	----	----	---	----	----	----	----	----	----	----	----	----	----	----	----	0.00E+00
Lead Compounds	----	----	----	----	----	4.34E-04	----	----	----	----	----	----	----	----	----	----	----	----	4.34E-04
Mercury Compounds	----	----	----	----	----	1.14E-05	----	----	----	----	----	----	----	----	----	----	----	----	1.14E-05
Nickel Compounds	----	----	----	----	----	1.60E-05	----	----	----	----	----	----	----	----	----	----	----	----	1.60E-05
Total non-VOC HAPs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-04
Total HAPs	0.19	0.01	0.00	0.00	0.00	0.01	0.67	0.59	0.32	0.58	0.32	0.66	0.59	0.59	0.66	0.00	0.14	0.08	5.41

Notes:
[1] See individual emissions unit category emissions calculations for details on methodology and assumptions.
[2] Because insignificant tank VOC emissions are so small, it is assumed that the HAP emissions from each tank and from all tanks combined is negligible. See VOC calculations for details.

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Table D-3a. Significant Emission Unit Inventory - NO_x Emissions
Hilcorp Alaska, LLC - Beluga River Unit

								Assessable Potential	Unlimited Potential	Actual
EU ID	**Emission Unit Name**	**Reference**	**Emission Factor**	**Rating/Size**	**Allowable Operation[1]**	**Unlimited Potential Operation[2]**	**Estimated Actuals[3]**	**NO_x Emissions**		
Turbines and Engines										
1	Turbine Compressor- Out of Solonox	Source Test	0.2 lb/MMBtu	7,700 hp	400 hr/yr	8,760 hr/yr[6]	0.0 hr/yr	2.5 tpy	54.0 tpy	0 tpy
1	Turbine Compressor- In Solonox	Source Test	1.84 lb/hr	7,700 hp	8,360 hr/yr		6,157.4 hr/yr	7.7 tpy		5.66 tpy
2	Compressor	Vendor Data	2 g/hp-hr	530 hp	100 hr/yr[4]	500 hr/yr[7]	99.8 hr/yr	0.1 tpy	0.6 tpy	0.12 tpy
3	Generator	Vendor Data	6.4 g/kW-hr	420 kW	100 hr/yr[5]	500 hr/yr[7]	61.6 hr/yr	0.3 tpy	1.5 tpy	0.18 tpy
12	Generator	AP-42 Table 3.3-1	0.031 lb/hp-hr	350 kW	100 hr/yr[4]	500 hr/yr[7]	48.6 hr/yr	0.7 tpy	3.6 tpy	0.35 tpy
19	Generator	AP-42 Table 3.3-1	0.031 lb/hp-hr	50 kW	100 hr/yr[4]	500 hr/yr[7]	37.1 hr/yr	0.1 tpy	0.5 tpy	0.04 tpy
37-1	Wellsite Compressor	Source Test	0.05 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,204.1 hr/yr	0.4 tpy	0.4 tpy	0.33 tpy
37-2	Wellsite Compressor	Source Test	0.06 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,261.5 hr/yr	0.4 tpy	0.4 tpy	0.36 tpy
37-3	Wellsite Compressor	Source Test	0.34 g/hp-hr	400 hp	8,760 hr/yr	8,760 hr/yr	7,191.7 hr/yr	1.3 tpy	1.3 tpy	1.08 tpy
37-4	Wellsite Compressor	Source Test	0.47 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	6,265.7 hr/yr	3.8 tpy	3.8 tpy	2.73 tpy
37-6	Wellsite Compressor	Source Test	0.27 g/hp-hr	400 hp	8,760 hr/yr	8,760 hr/yr	7,135.4 hr/yr	1.0 tpy	1.0 tpy	0.85 tpy
37-7	Wellsite Compressor	Source Test	0.49 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,159.1 hr/yr	4.0 tpy	4.0 tpy	3.25 tpy
37-8	Wellsite Compressor	Source Test	0.59 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,217.8 hr/yr	4.2 tpy	4.2 tpy	3.47 tpy
37-9	Wellsite Compressor	Source Test	0.46 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,230.4 hr/yr	3.3 tpy	3.3 tpy	2.71 tpy
37-10	Wellsite Compressor	Source Test	0.66 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,154.7 hr/yr	5.4 tpy	5.4 tpy	4.37 tpy
42	Generator	Vendor Data	2.23 lb/hr	230 kW	100 hr/yr[5]	500 hr/yr[7]	24.1 hr/yr	0.1 tpy	0.6 tpy	0.03 tpy
43	Wellsite Compressor	Source Test	0.66 g/hp-hr	220 hp	8,760 hr/yr	8,760 hr/yr	4,955.6 hr/yr	1.4 tpy	1.4 tpy	0.79 tpy
Incinerator										
26	Incinerator	AP-42 Table 2.1-12	3 lb/ton	150 lb/hr	8,760 hr/yr	8,760 hr/yr	54.3 hr/yr	1.0 tpy	1.0 tpy	0.01 tpy
Gasoline Dispensing Facility										
44	GDF	N/A	N A	<10,000 gallons/mo	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	0 tpy	0 tpy	0 tpy
							Totals	**37.7 tpy**	**87.0 tpy**	**26.3 tpy**

Notes:

[1] Allowable operation is based on full-time operation, or permit operating limits, where applicable. This value is used to calculate Assessable Potential Emissions.

[2] Maximum annual operation for all units based on full-time annual operation is used to calculate unlimited potential emissions.

[3] Estimated actual hours of operation are an average of actual hours of operation from 2015-2017.

[4] EU IDs 3 and 42 are limited to 100 hours per calendar year of operation by 40 CFR 60.4211, Subpart IIII.

[5] EU IDs 2, 12 and 19 are limited to 100 hours per calendar year of operation by 40 CFR 63.6640(f)(2), Subpart ZZZZ.

[6] Unlimited potential emissions for the SoLoNOx turbine is calculated as full-time operation out-of-SoLoNOx.

[7] According to a memorandum from John S. Seitz of the EPA, 500 hours of operation is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate per year.

Conversions:

Fuel Gas Heat Content:	1,000 Btu/scf
Diesel Fuel Heat Content:	137,000 Btu/gal
Diesel Engine Heat Rate:	7,000 Btu/hp-hr
Gas Engine Heat Rate	8,000 Btu/hp-hr

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Table D-3b. Insignificant Emission Unit Inventory - NO_X Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Reference	Emission Factor	Rating/Size	Allowable and Unlimited Potential Operation[1]	Estimated Actual Operation	Assessable and Unlimited Potential NO_X Emissions
Glycol Reboilers							
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,852.05 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,174.30 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.18 MMBtu/hr	8,760 hr/yr	6,198.35 hr/yr	7.67E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.08 MMBtu/hr	8,760 hr/yr	24.00 hr/yr	3.29E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	3,556.75 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,870.40 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	2,338.65 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,114.25 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,094.70 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.13 MMBtu/hr	8,760 hr/yr	7,158.45 hr/yr	5.48E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,155.90 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.50 MMBtu/hr	8,760 hr/yr	5,620.70 hr/yr	2.19E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,047.25 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,752.25 hr/yr	1.10E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.18 MMBtu/hr	8,760 hr/yr	2,857.30 hr/yr	7.67E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.13 MMBtu/hr	8,760 hr/yr	7,024.90 hr/yr	5.48E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	100 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,735.80 hr/yr	1.10E-01 tpy
Glycol Dehydration Vents							
4	GDU	N/A	N A	5.53 MMscfd	8,760 hr/yr	6,852.05 hr/yr	0 tpy
5	GDU	N/A	N A	55.00 MMscfd	8,760 hr/yr	6,174.30 hr/yr	0 tpy
6	GDU	N/A	N A	55.00 MMscfd	8,760 hr/yr	6,198.35 hr/yr	0 tpy
7	GDU	N/A	N A	0.45 MMscfd	8,760 hr/yr	24.00 hr/yr	0 tpy
8	GDU	N/A	N A	0.27 MMscfd	8,760 hr/yr	3,556.75 hr/yr	0 tpy
9	GDU	N/A	N A	5.14 MMscfd	8,760 hr/yr	6,870.40 hr/yr	0 tpy
10	GDU	N/A	N A	5.14 MMscfd	8,760 hr/yr	2,338.65 hr/yr	0 tpy
13	GDU	N/A	N A	3.92 MMscfd	8,760 hr/yr	7,114.25 hr/yr	0 tpy
14	GDU	N/A	N A	1.99 MMscfd	8,760 hr/yr	6,094.70 hr/yr	0 tpy
15	GDU	N/A	N A	3.87 MMscfd	8,760 hr/yr	7,158.45 hr/yr	0 tpy
16	GDU	N/A	N A	6.71 MMscfd	8,760 hr/yr	7,155.90 hr/yr	0 tpy
17	GDU	N/A	N A	2.10 MMscfd	8,760 hr/yr	5,620.70 hr/yr	0 tpy
18	GDU	N/A	N A	3.05 MMscfd	8,760 hr/yr	7,047.25 hr/yr	0 tpy
21	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	6,752.25 hr/yr	0 tpy
22	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	2,857.30 hr/yr	0 tpy
23	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	7,024.90 hr/yr	0 tpy
24	GDU	N/A	N A	3.53 MMscfd	8,760 hr/yr	6,735.80 hr/yr	0 tpy
Insignificant Heaters							
11	Process Heater	AP-42 Table 1.4-1	100 lb/MMscf	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.4 tpy
20	Process Heater	AP-42 Table 1.4-1	100 lb/MMscf	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.4 tpy
25	Process Heater	AP-42 Table 1.4-1	100 lb/MMscf	0.125 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.1 tpy
29	Office Coleman Heater	AP-42 Table 1.4-1	100 lb/MMscf	0.06 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.63E-02 tpy
30	Shop Perfection Schwank Heater	AP-42 Table 1.4-1	100 lb/MMscf	0.02 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	8.76E-03 tpy
31	Electrical Shop Modine Heater	AP-42 Table 1.4-1	100 lb/MMscf	0.03 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	1.31E-02 tpy
32	Mechanics Shop Modine Heater	AP-42 Table 1.4-1	100 lb/MMscf	0.11 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	4.82E-02 tpy
33	Mechanics Shop Modine Heater	AP-42 Table 1.4-1	100 lb/MMscf	0.3 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.1 tpy
34	BRWD Heater	AP-42 Table 1.4-1	100 lb/MMscf	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.2 tpy
35	Mechanics Shop Used Oil Heater	AP-42 Table 1.11-2	11 lb/kgal	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.176 tpy
36	Portable Frost Fighter	AP-42 Table 1.3-1	20 lb/kgal	0.4 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.256 tpy
						Totals	**3.5 tpy**

Notes:

[1] Hours of operation are not limited for insignificant units. Therefore limited and unlimited potential hours of operation are estimated as the highest number of hours possible in a year.

[2] Expected actual annual emissions are not required to be calculated for insignificant emission units. No insignificant emission units at Beluga River that are insignificant on an emission rate basis have potential annual emissions exceeding 80% of the thresholds.

Conversions:

Fuel Gas Heat Content:	1,000 Btu/scf
Diesel Fuel Heat Content:	137,000 Btu/gal
Diesel Fuel Density:	7 lb/gal
Diesel Engine Heat Rate:	7,000 Btu/hp-hr
Gas Engine Heat Rate	8,000 Btu/hp-hr

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Table D-4a. Significant Emission Unit Inventory - CO Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Reference	Emission Factor	Rating/Size	Allowable Operation[1]	Unlimited Potential Operation[2]	Estimated Actuals[3]	Assessable Potential	Unlimited Potential	Actual
								CO Emissions		
	Turbines and Engines									
1	Turbine Compressor- Out of Solonox	Source Test	3.2 lb/MMBtu	7,700 hp	400 hr/yr	8,760 hr/yr[6]	0.0 hr/yr	39.4 tpy	863.4 tpy	0 tpy
1	Turbine Compressor- In Solonox	Source Test	1.33 lb/hr	7,700 hp	8,360 hr/yr		6,157.4 hr/yr	5.6 tpy		4.1 tpy
2	Compressor	Source Test	0.49 lb/hr	530 hp	100 hr/yr[4]	500 hr/yr[7]	99.8 hr/yr	2.45E-02 tpy	0.1 tpy	2.45E-02 tpy
3	Generator	Vendor Data	3.5 g/kW-hr	420 kW	100 hr/yr[5]	500 hr/yr[7]	61.6 hr/yr	0.2 tpy	0.8 tpy	0.1 tpy
12	Generator	AP-42 Table 3.3-1	0.00668 lb/hp-hr	350 kW	100 hr/yr[4]	500 hr/yr[7]	48.6 hr/yr	0.2 tpy	0.8 tpy	0.1 tpy
19	Generator	AP-42 Table 3.3-1	0.00668 lb/hp-hr	50 kW	100 hr/yr[4]	500 hr/yr[7]	37.1 hr/yr	0.0 tpy	0.1 tpy	8.30E-03 tpy
37-1	Wellsite Compressor	Source Test	0.35 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,204.1 hr/yr	2.8 tpy	2.8 tpy	2.3 tpy
37-2	Wellsite Compressor	Source Test	0.69 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,261.5 hr/yr	4.9 tpy	4.9 tpy	4.1 tpy
37-3	Wellsite Compressor	Source Test	0.12 g/hp-hr	400 hp	8,760 hr/yr	8,760 hr/yr	7,191.7 hr/yr	0.5 tpy	0.5 tpy	0.4 tpy
37-4	Wellsite Compressor	Source Test	0.77 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	6,265.7 hr/yr	6.2 tpy	6.2 tpy	4.5 tpy
37-6	Wellsite Compressor	Source Test	0.35 g/hp-hr	400 hp	8,760 hr/yr	8,760 hr/yr	7,135.4 hr/yr	1.4 tpy	1.4 tpy	1.1 tpy
37-7	Wellsite Compressor	Source Test	0.97 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,159.1 hr/yr	7.9 tpy	7.9 tpy	6.4 tpy
37-8	Wellsite Compressor	Source Test	0.92 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,217.8 hr/yr	6.6 tpy	6.6 tpy	5.4 tpy
37-9	Wellsite Compressor	Source Test	0.96 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,230.4 hr/yr	6.9 tpy	6.9 tpy	5.7 tpy
37-10	Wellsite Compressor	Source Test	1.6 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,154.7 hr/yr	13.0 tpy	13.0 tpy	10.6 tpy
42	Generator	Vendor Data	0.47 lb/hr	230 kW	100 hr/yr[5]	500 hr/yr[7]	24.1 hr/yr	2.35E-02 tpy	0.1 tpy	5.65E-03 tpy
43	Wellsite Compressor	Source Test	0.36 lb/hr	220 hp	8,760 hr/yr	8,760 hr/yr	4,955.6 hr/yr	1.6 tpy	1.6 tpy	0.9 tpy
	Incinerator									
26	Incinerator	AP-42 Table 2.1-12	10 lb/ton	150 lb/hr	8,760 hr/yr	8,760 hr/yr	54.3 hr/yr	3.3 tpy	3.3 tpy	0.02 tpy
	Gasoline Dispensing Facility									
44	GDF	N/A	N A	<10,000 gallons/mo	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	0 tpy	0 tpy	0 tpy
							Totals	**97.1 tpy**	**917.0 tpy**	**45.7 tpy**

Notes:

[1] Allowable operation is based on full-time operation, or permit operating limits, where applicable. This value is used to calculate Assessable Potential Emissions.

[2] Maximum annual operation for all units based on full-time annual operation is used to calculate unlimited potential emissions.

[3] Estimated actual hours of operation are an average of actual hours of operation from 2015-2017.

[4] EU IDs 3 and 42 are limited to 100 hours per calendar year of operation by 40 CFR 60.4211, Subpart IIII.

[5] EU IDs 2, 12 and 19 are limited to 100 hours per calendar year of operation by 40 CFR 63.6640(f)(2), Subpart ZZZZ.

[6] Unlimited potential emissions for the SoLoNOx turbine is calculated as full-time operation out-of-SoLoNOx.

[7] According to a memorandum from John S. Seitz of the EPA, 500 hours of operation is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate per year.

Conversions:

Fuel Gas Heat Content:	1,000 Btu/scf
Diesel Fuel Heat Content:	137,000 Btu/gal
Diesel Engine Heat Rate:	7,000 Btu/hp-hr
NG Engine Heat Rate:	8,000 Btu/hp-hr

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Table D-4b. Insignificant Emission Unit Inventory - CO Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Reference	Emission Factor	Rating/Size	Allowable and Unlimited Potential Operation[1]	Estimated Actual Operation	Assessable and Unlimited Potential CO Emissions
			Glycol Reboilers				
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,852.05 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,174.30 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.18 MMBtu/hr	8,760 hr/yr	6,198.35 hr/yr	6.44E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.08 MMBtu/hr	8,760 hr/yr	24.00 hr/yr	2.76E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	3,556.75 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,870.40 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	2,338.65 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,114.25 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,094.70 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.13 MMBtu/hr	8,760 hr/yr	7,158.45 hr/yr	4.60E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,155.90 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.50 MMBtu/hr	8,760 hr/yr	5,620.70 hr/yr	1.84E-01 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,047.25 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,752.25 hr/yr	9.20E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.18 MMBtu/hr	8,760 hr/yr	2,857.30 hr/yr	6.44E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.13 MMBtu/hr	8,760 hr/yr	7,024.90 hr/yr	4.60E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	84 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,735.80 hr/yr	9.20E-02 tpy
			Glycol Dehydration Vents				
4	GDU	N/A	N A	5.53 MMscfd	8,760 hr/yr	6,852.05 hr/yr	0 tpy
5	GDU	N/A	N A	55.00 MMscfd	8,760 hr/yr	6,174.30 hr/yr	0 tpy
6	GDU	N/A	N A	55.00 MMscfd	8,760 hr/yr	6,198.35 hr/yr	0 tpy
7	GDU	N/A	N A	0.45 MMscfd	8,760 hr/yr	24.00 hr/yr	0 tpy
8	GDU	N/A	N A	0.27 MMscfd	8,760 hr/yr	3,556.75 hr/yr	0 tpy
9	GDU	N/A	N A	5.14 MMscfd	8,760 hr/yr	6,870.40 hr/yr	0 tpy
10	GDU	N/A	N A	5.14 MMscfd	8,760 hr/yr	2,338.65 hr/yr	0 tpy
13	GDU	N/A	N A	3.92 MMscfd	8,760 hr/yr	7,114.25 hr/yr	0 tpy
14	GDU	N/A	N A	1.99 MMscfd	8,760 hr/yr	6,094.70 hr/yr	0 tpy
15	GDU	N/A	N A	3.87 MMscfd	8,760 hr/yr	7,158.45 hr/yr	0 tpy
16	GDU	N/A	N A	6.71 MMscfd	8,760 hr/yr	7,155.90 hr/yr	0 tpy
17	GDU	N/A	N A	2.10 MMscfd	8,760 hr/yr	5,620.70 hr/yr	0 tpy
18	GDU	N/A	N A	3.05 MMscfd	8,760 hr/yr	7,047.25 hr/yr	0 tpy
21	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	6,752.25 hr/yr	0 tpy
22	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	2,857.30 hr/yr	0 tpy
23	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	7,024.90 hr/yr	0 tpy
24	GDU	N/A	N A	3.53 MMscfd	8,760 hr/yr	6,735.80 hr/yr	0 tpy
			Insignificant Heaters				
11	Process Heater	AP-42 Table 1.4-1	84 lb/MMscf	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.4 tpy
20	Process Heater	AP-42 Table 1.4-1	84 lb/MMscf	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.4 tpy
25	Process Heater	AP-42 Table 1.4-1	84 lb/MMscf	0.125 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	4.60E-02 tpy
29	Office Coleman Heater	AP-42 Table 1.4-1	84 lb/MMscf	0.06 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.21E-02 tpy
30	Shop Perfection Schwank Heater	AP-42 Table 1.4-1	84 lb/MMscf	0.02 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	7.36E-03 tpy
31	Electrical Shop Modine Heater	AP-42 Table 1.4-1	84 lb/MMscf	0.03 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	1.10E-02 tpy
32	Mechanics Shop Modine Heater	AP-42 Table 1.4-1	84 lb/MMscf	0.11 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	4.05E-02 tpy
33	Mechanics Shop Modine Heater	AP-42 Table 1.4-1	84 lb/MMscf	0.3 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.1 tpy
34	BRWD Heater	AP-42 Table 1.4-1	84 lb/MMscf	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	0.2 tpy
35	Mechanics Shop Used Oil Heater	AP-42 Table 1.11-2	1.7 lb/kgal	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.72E-02 tpy
36	Portable Frost Fighter	AP-42 Table 1.3-1	5 lb/kgal	0.4 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	6.39E-02 tpy
						Totals	**2.7 tpy**

Notes:

[1] Hours of operation are not required to be tracked for insignificant units. Therefore actual hours of operation are estimated as equal to the maximum full-time operation.

[2] Expected actual annual emissions are not required to be calculated for insignificant emission units. No insignificant emission units at Beluga River that are insignificant on an emission rate basis have potential annual emissions exceeding 80% of the thresholds.

Conversions:

Fuel Gas Heat Content:	1,000 Btu/scf
Diesel Fuel Heat Content:	137,000 Btu/gal
Diesel Fuel Density:	7 lb/gal
Diesel Engine Heat Rate:	7,000 Btu/hp-hr
NG Engine Heat Rate:	8,000 Btu/hp-hr

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Table D-5a. Significant Emission Unit Inventory - PM Emissions
Hilcorp Alaska, LLC - Beluga River Unit

								Assessable Potential	Unlimited Potential	Actual
EU ID	Emission Unit Name	Reference	Emission Factor	Rating/Size	Allowable Operation[1]	Unlimited Potential Operation[2]	Estimated Actuals[3]	PM Emissions		
Turbines and Engines										
1	Turbine Compressor - Total	AP-42 Table 3.1-2a	0.0066 lb/MMBtu	7,700 hp	8,760 hr/yr	8,760 hr/yr	6,157 hr/yr	1.8 tpy	1.8 tpy	1.3 tpy
2	Compressor	AP-42 Table 3.2-2	7.7E-05 lb/MMBtu	530 hp	100 hr/yr[4]	500 hr/yr[5]	99.8 hr/yr	1.63E-05 tpy	8.16E-05 tpy	1.63E-05 tpy
3	Generator	Vendor Data	3.5 g/kW-hr	420 kW	100 hr/yr[4]	500 hr/yr[5]	62 hr/yr	0.2 tpy	0.8 tpy	0.1 tpy
12	Generator	AP-42 Table 3.3-1	0.0022 lb/hp-hr	350 kW	100 hr/yr[4]	500 hr/yr[6]	49 hr/yr	0.1 tpy	0.3 tpy	2.51E-02 tpy
19	Generator	AP-42 Table 3.3-1	0.0022 lb/hp-hr	50 kW	100 hr/yr[4]	500 hr/yr[6]	37 hr/yr	7.38E-03 tpy	3.69E-02 tpy	2.73E-03 tpy
37-1	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	840 hp	8,760 hr/yr	8,760 hr/yr	7,204 hr/yr	0.3 tpy	0.3 tpy	0.2 tpy
37-2	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	740 hp	8,760 hr/yr	8,760 hr/yr	7,262 hr/yr	0.2 tpy	0.2 tpy	0.2 tpy
37-3	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	400 hp	8,760 hr/yr	8,760 hr/yr	7,192 hr/yr	0.1 tpy	0.1 tpy	0.1 tpy
37-4	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	840 hp	8,760 hr/yr	8,760 hr/yr	6,266 hr/yr	0.3 tpy	0.3 tpy	0.2 tpy
37-6	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	400 hp	8,760 hr/yr	8,760 hr/yr	7,135 hr/yr	0.1 tpy	0.1 tpy	0.1 tpy
37-7	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	840 hp	8,760 hr/yr	8,760 hr/yr	7,159 hr/yr	0.3 tpy	0.3 tpy	0.2 tpy
37-8	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	740 hp	8,760 hr/yr	8,760 hr/yr	7,218 hr/yr	0.2 tpy	0.2 tpy	0.2 tpy
37-9	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	740 hp	8,760 hr/yr	8,760 hr/yr	7,230 hr/yr	0.2 tpy	0.2 tpy	0.2 tpy
37-10	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	840 hp	8,760 hr/yr	8,760 hr/yr	7,155 hr/yr	0.3 tpy	0.3 tpy	0.2 tpy
42	Generator	Vendor Data	0.09 lb/hr	230 kW	100 hr/yr[5]	500 hr/yr[6]	24 hr/yr	4.50E-03 tpy	2.25E-02 tpy	1.08E-03 tpy
43	Wellsite Compressor	AP-42 Table 3.2-3	0.0095 lb/MMBtu	220 hp	8,760 hr/yr	8,760 hr/yr	4,956 hr/yr	0.1 tpy	0.1 tpy	4.14E-02 tpy
Incinerator										
26	Incinerator	AP-42 Table 2.1-12	7 lb/ton	150 lb/hr	8,760 hr/yr	8,760 hr/yr	54 hr/yr	2.3 tpy	2.3 tpy	0.01 tpy
Gasoline Dispensing Facility										
44	GDF	N/A	N A	<10,000 gallons/mo	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	0 tpy	0 tpy	0 tpy
							Totals	**6.5 tpy**	**5.1 tpy**	**3.1 tpy**

Notes:

[1] Allowable operation is based on full-time operation, or permit operating limits, where applicable. This value is used to calculate Assessable Potential Emissions.

[2] Maximum annual operation for all units based on full-time annual operation is used to calculate unlimited potential emissions.

[3] Estimated actual hours of operation are an average of actual hours of operation from 2015-2017.

[4] EU IDs 3 and 42 are limited to 100 hours per calendar year of operation by 40 CFR 60.4211, Subpart IIII.

[5] EU IDs 2, 12 and 19 are limited to 100 hours per calendar year of operation by 40 CFR 63.6640(f)(2), Subpart ZZZZ.

[6] According to a memorandum from John S. Seitz of the EPA, 500 hours of operation is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate per year.

Conversions:

Fuel Gas Heat Content:	1,000 Btu/scf
Diesel Fuel Heat Content:	137,000 Btu/gal
Diesel Engine Heat Rate:	7,000 Btu/hp-hr
NG Engine Heat Rate	8,000 Btu/hp-hr

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Table D-5b. Insignificant Emission Unit Inventory - PM Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Reference	Emission Factor	Rating/Size	Allowable and Unlimited Potential Operation[1]	Estimated Actual Operation	Assessable and Unlimited Potential PM Emissions
Glycol Reboilers							
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,852.05 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,174.30 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.18 MMBtu/hr	8,760 hr/yr	6,198.35 hr/yr	5.83E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.08 MMBtu/hr	8,760 hr/yr	24.00 hr/yr	2.50E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	3,556.75 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,870.40 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	2,338.65 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,114.25 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,094.70 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.13 MMBtu/hr	8,760 hr/yr	7,158.45 hr/yr	4.16E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,155.90 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.50 MMBtu/hr	8,760 hr/yr	5,620.70 hr/yr	1.66E-02 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,047.25 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,752.25 hr/yr	8.32E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.18 MMBtu/hr	8,760 hr/yr	2,857.30 hr/yr	5.83E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.13 MMBtu/hr	8,760 hr/yr	7,024.90 hr/yr	4.16E-03 tpy
N/A	Reboiler	AP-42 Table 1.4-1	7.6 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,735.80 hr/yr	8.32E-03 tpy
Glycol Dehydration Vents							
4	GDU	N/A	N A	5.53 MMscfd	8,760 hr/yr	6,852.05 hr/yr	0 tpy
5	GDU	N/A	N A	55.00 MMscfd	8,760 hr/yr	6,174.30 hr/yr	0 tpy
6	GDU	N/A	N A	55.00 MMscfd	8,760 hr/yr	6,198.35 hr/yr	0 tpy
7	GDU	N/A	N A	0.45 MMscfd	8,760 hr/yr	24.00 hr/yr	0 tpy
8	GDU	N/A	N A	0.27 MMscfd	8,760 hr/yr	3,556.75 hr/yr	0 tpy
9	GDU	N/A	N A	5.14 MMscfd	8,760 hr/yr	6,870.40 hr/yr	0 tpy
10	GDU	N/A	N A	5.14 MMscfd	8,760 hr/yr	2,338.65 hr/yr	0 tpy
13	GDU	N/A	N A	3.92 MMscfd	8,760 hr/yr	7,114.25 hr/yr	0 tpy
14	GDU	N/A	N A	1.99 MMscfd	8,760 hr/yr	6,094.70 hr/yr	0 tpy
15	GDU	N/A	N A	3.87 MMscfd	8,760 hr/yr	7,158.45 hr/yr	0 tpy
16	GDU	N/A	N A	6.71 MMscfd	8,760 hr/yr	7,155.90 hr/yr	0 tpy
17	GDU	N/A	N A	2.10 MMscfd	8,760 hr/yr	5,620.70 hr/yr	0 tpy
18	GDU	N/A	N A	3.05 MMscfd	8,760 hr/yr	7,047.25 hr/yr	0 tpy
21	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	6,752.25 hr/yr	0 tpy
22	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	2,857.30 hr/yr	0 tpy
23	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	7,024.90 hr/yr	0 tpy
24	GDU	N/A	N A	3.53 MMscfd	8,760 hr/yr	6,735.80 hr/yr	0 tpy
Insignificant Heaters							
11	Process Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	3.33E-02 tpy
20	Process Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	3.33E-02 tpy
25	Process Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	0.125 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	4.16E-03 tpy
29	Office Coleman Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	0.06 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.00E-03 tpy
30	Shop Perfection Schwank Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	0.02 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	6.66E-04 tpy
31	Electrical Shop Modine Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	0.03 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	9.99E-04 tpy
32	Mechanics Shop Modine Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	0.11 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	3.66E-03 tpy
33	Mechanics Shop Modine Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	0.3 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	9.99E-03 tpy
34	BRWD Heater	AP-42 Table 1.4-1	7.6 lb/MMscf	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	1.66E-02 tpy
35	Mechanics Shop Used Oil Heater	AP-42 Table 1.11-1	14 lb/kgal	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.24E-01 tpy
36	Portable Frost Fighter	AP-42 Table 1.3-1	3.3 lb/kgal	0.4 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	4.22E-02 tpy
						Totals	**0.5 tpy**

Notes:

[1] Hours of operation are not required to be tracked for insignificant units. Therefore actual hours of operation are estimated as equal to the maximum full-time operation.

[2] Expected actual annual emissions are not required to be calculated for insignificant emission units. No insignificant emission units at Beluga River that are insignificant on an emission rate basis have potential annual emissions exceeding 80% of the thresholds.

Conversions:

Fuel Gas Heat Content:	1,000	Btu/scf
Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Fuel Density:	7	lb/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
NG Engine Heat Rate	8,000	Btu/hp-hr

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Table D-6a. Significant Emission Unit Inventory - VOC Emissions
Hilcorp Alaska, LLC - Beluga River Unit

								Assessable Potential	Unlimited Potential	Actual
EU ID	Emission Unit Name	Reference	Emission Factor	Rating/Size	Allowable Operation[1]	Unlimited Potential Operation[2]	Estimated Actuals[3]	VOC Emissions		
Turbines and Engines										
1	Turbine Compressor - Total	AP-42 Table 3.1-2a	0.0021 lb/MMBtu	7,700 hp	8,760 hr/yr	8,760 hr/yr	6,157 hr/yr	0.567 tpy	12.41 tpy	0.4 tpy
2	Compressor	AP-42 Table 3.2-2	0.118 lb/MMBtu	530 hp	100 hr/yr[4]	500 hr/yr[5]	99.8 hr/yr	0.025 tpy	0.13 tpy	2.50E-02 tpy
3	Generator	Vendor Data	3.5 g/kW-hr	420 kW	100 hr/yr[5]	500 hr/yr[5]	62 hr/yr	0.2 tpy	14.2 tpy	0.1 tpy
12	Generator	AP-42 Table 3.3-1	0.00247 lb/hp-hr	350 kW	100 hr/yr[4]	500 hr/yr[5]	49 hr/yr	0.1 tpy	5.1 tpy	2.81E-02 tpy
19	Generator	AP-42 Table 3.3-1	0.00247 lb/hp-hr	50 kW	100 hr/yr[4]	500 hr/yr[5]	37 hr/yr	8.28E-03 tpy	0.7 tpy	3.07E-03 tpy
37-1	Wellsite Compressor	Source Test	0.01 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,204 hr/yr	0.1 tpy	0.1 tpy	0.1 tpy
37-2	Wellsite Compressor	Source Test	0.01 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,262 hr/yr	0.1 tpy	0.1 tpy	0.1 tpy
37-3	Wellsite Compressor	Source Test	0.007 g/hp-hr	400 hp	8,760 hr/yr	8,760 hr/yr	7,192 hr/yr	0.03 tpy	0.03 tpy	0.02 tpy
37-4	Wellsite Compressor	Source Test	0.03 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	6,266 hr/yr	0.2 tpy	0.2 tpy	0.2 tpy
37-6	Wellsite Compressor	Source Test	0.00 g/hp-hr	400 hp	8,760 hr/yr	8,760 hr/yr	7,135 hr/yr	0 tpy	0 tpy	0 tpy
37-7	Wellsite Compressor	Source Test	0.02 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,159 hr/yr	0.2 tpy	0.2 tpy	0.1 tpy
37-8	Wellsite Compressor	Source Test	0.02 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,218 hr/yr	0.1 tpy	0.1 tpy	0.1 tpy
37-9	Wellsite Compressor	Source Test	0.02 g/hp-hr	740 hp	8,760 hr/yr	8,760 hr/yr	7,230 hr/yr	0.1 tpy	0.1 tpy	0.1 tpy
37-10	Wellsite Compressor	Source Test	0.03 g/hp-hr	840 hp	8,760 hr/yr	8,760 hr/yr	7,155 hr/yr	0.2 tpy	0.2 tpy	0.2 tpy
42	Generator	Vendor Data	0.13 lb/hr	230 kW	100 hr/yr[5]	500 hr/yr[6]	24 hr/yr	0.0 tpy	0.6 tpy	1.56E-03 tpy
43	Wellsite Compressor	Source Test	0.03 g/hp-hr	220 hp	8,760 hr/yr	8,760 hr/yr	4,956 hr/yr	0.1 tpy	0.1 tpy	3.61E-02 tpy
Incinerator										
26	Incinerator	AP-42 Table 2.1-12	3 lb/ton	150 lb/hr	8,760 hr/yr	8,760 hr/yr	54 hr/yr	0.99 tpy	0.99 tpy	0.01 tpy
Gasoline Dispensing Facility										
44	GDF	AP-42 Table 5.2-7	24.2 lb/kgal	<10,000 gallons/mo	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	1.45 tpy	1.45 tpy	1.45 tpy
							Totals	**4.4 tpy**	**36.7 tpy**	**2.9 tpy**

Notes:

[1] Allowable operation is based on full-time operation, or permit operating limits, where applicable. This value is used to calculate Assessable Potential Emissions.

[2] Maximum annual operation for all units based on full-time annual operation is used to calculate unlimited potential emissions.

[3] Estimated actual hours of operation are an average of actual hours of operation from 2015-2017.

[4] EU IDs 3 and 42 are limited to 100 hours per calendar year of operation by 40 CFR 60.4211, Subpart IIII.

[5] EU IDs 2, 12 and 19 are limited to 100 hours per calendar year of operation by 40 CFR 63.6640(f)(2), Subpart ZZZZ.

[6] According to a memorandum from John S. Seitz of the EPA, 500 hours of operation is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate per year.

Conversions:

Fuel Gas Heat Content:	1,000 Btu/scf
Diesel Fuel Heat Content:	137,000 Btu/gal
Diesel Engine Heat Rate:	7,000 Btu/hp-hr
NG Engine Heat Rate	8,000 Btu/hp-hr

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Table D-6b. Insignificant Emission Unit Inventory - VOC Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Reference	Emission Factor	Rating/Size	Allowable and Unlimited Potential Operation[1]	Estimated Actual Operation	Assessable and Unlimited Potential VOC Emissions
Glycol Reboilers							
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,852.05 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,174.30 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.18 MMBtu/hr	8,760 hr/yr	6,198.35 hr/yr	3.08E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.08 MMBtu/hr	8,760 hr/yr	24.00 hr/yr	1.32E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	3,556.75 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,870.40 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	2,338.65 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,114.25 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,094.70 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.13 MMBtu/hr	8,760 hr/yr	7,158.45 hr/yr	2.20E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,155.90 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.50 MMBtu/hr	8,760 hr/yr	5,620.70 hr/yr	8.79E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	7,047.25 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,752.25 hr/yr	4.40E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.18 MMBtu/hr	8,760 hr/yr	2,857.30 hr/yr	3.08E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.13 MMBtu/hr	8,760 hr/yr	7,024.90 hr/yr	2.20E-05 tpy
N/A	Reboiler	AP-42 Table 1.4-1	5.5 lb/MMscf	0.25 MMBtu/hr	8,760 hr/yr	6,735.80 hr/yr	4.40E-05 tpy
Glycol Dehydrator Vents							
4	GDU	GRI GlyCalc		5.53 MMscfd	8,760 hr/yr	6,852.05 hr/yr	2.33E-01 tpy
5	GDU	GRI GlyCalc		55.00 MMscfd	8,760 hr/yr	6,174.30 hr/yr	0 tpy
6	GDU	GRI GlyCalc		55.00 MMscfd	8,760 hr/yr	6,198.35 hr/yr	1.08E-02 tpy
7	GDU	GRI GlyCalc		0.45 MMscfd	8,760 hr/yr	24.00 hr/yr	1.70E-01 tpy
8	GDU	GRI GlyCalc		0.27 MMscfd	8,760 hr/yr	3,556.75 hr/yr	8.00E-04 tpy
9	GDU	GRI GlyCalc		5.14 MMscfd	8,760 hr/yr	6,870.40 hr/yr	1.31E-01 tpy
10	GDU	GRI GlyCalc		5.14 MMscfd	8,760 hr/yr	2,338.65 hr/yr	0 tpy
13	GDU	GRI GlyCalc		3.92 MMscfd	8,760 hr/yr	7,114.25 hr/yr	2.60E-03 tpy
14	GDU	GRI GlyCalc		1.99 MMscfd	8,760 hr/yr	6,094.70 hr/yr	1.50E-01 tpy
15	GDU	GRI GlyCalc		3.87 MMscfd	8,760 hr/yr	7,158.45 hr/yr	7.23E-02 tpy
16	GDU	GRI GlyCalc		6.71 MMscfd	8,760 hr/yr	7,155.90 hr/yr	8.00E-04 tpy
17	GDU	GRI GlyCalc		2.10 MMscfd	8,760 hr/yr	5,620.70 hr/yr	3.87E-01 tpy
18	GDU	GRI GlyCalc		3.05 MMscfd	8,760 hr/yr	7,047.25 hr/yr	2.76E-01 tpy
21	GDU	GRI GlyCalc		2.37 MMscfd	8,760 hr/yr	6,752.25 hr/yr	2.36E-01 tpy
22	GDU	GRI GlyCalc		2.37 MMscfd	8,760 hr/yr	2,857.30 hr/yr	2.35E-01 tpy
23	GDU	GRI GlyCalc		2.37 MMscfd	8,760 hr/yr	7,024.90 hr/yr	2.70E-03 tpy
24	GDU	GRI GlyCalc		3.53 MMscfd	8,760 hr/yr	6,735.80 hr/yr	1.96E-01 tpy
Insignificant Heaters							
11	Process Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	1.000 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.41E-02 tpy
20	Process Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	1.000 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.41E-02 tpy
25	Process Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	0.125 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	3.01E-03 tpy
29	Office Coleman Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	0.060 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	1.45E-03 tpy
30	Shop Perfection Schwank Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	0.020 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	4.82E-04 tpy
31	Electrical Shop Modine Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	0.030 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	7.23E-04 tpy
32	Mechanics Shop Modine Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	0.110 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.65E-03 tpy
33	Mechanics Shop Modine Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	0.300 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	7.23E-03 tpy
34	BRWD Heater	AP-42 Table 1.4-1	5.5 lb/MMscf	0.500 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	1.20E-02 tpy
35	Mechanics Shop Used Oil Heater	AP-42 Table 1.11-3	1.0 lb/kgal	0.500 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	1.60E-02 tpy
36	Portable Frost Fighter	AP-42 Table 1.3-1	0.7 lb/kgal	0.400 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	8.95E-03 tpy
						Totals	**2.2 tpy**

Notes:

[1] Hours of operation are not required to be tracked for insignificant units. Therefore actual hours of operation are estimated as equal to the maximum full-time operation.

[2] Expected actual annual emissions are not required to be calculated for insignificant emission units. No insignificant emission units at Beluga River that are insignificant on an emission rate basis have potential annual emissions exceeding 80% of the thresholds.

Conversions:

Fuel Gas Heat Content:	1,000 Btu/scf
Diesel Fuel Heat Content:	137,000 Btu/gal
Diesel Fuel Density:	7 lb/gal
Diesel Engine Heat Rate:	7,000 Btu/hp-hr
NG Engine Heat Rate	8,000 Btu/hp-hr

Permit Number: AQ0094TVP03, Rev. 1

Table D-9. Glycol Dehdration Unit Parameters and Emissions Summary
Hilcorp - Beluga River Unit

	Glycol Regen ID	Pad H #1	Pad H #2	Pad H #3	Pad A	Pad B	Pad C#1	Pad C#2	Pad D	Pad E #1	Pad E #2	Pad F	Pad G	Pad I	Pad J #1	Pad J #2	Pad J #3	Pad K
Potential Hours of Operation (hr/yr)		8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760
Actual Hours of Operation (hr/yr)[1]		6,852	6,174	6,198	24	3,557	6,870	2,339	7,114	6,095	7,158	7,156	5,621	7,047	6,752	2,857	7,025	6,736
Wet Gas	Temperature (°F)	75	70	60	75	42	60	59	58	48	66	65	50	50	77	77	49	72
	Pressure (psia)	300	775	300	300	100	90	90	130	100	45	310	175	90	300	310	315	155
	Water Content	0.16%	0.06%	0.09%	0.16%	0.14%	0.29%	0.28%	0.19%	0.17%	0.71%	0.11%	0.11%	0.20%	0.17%	0.16%	0.06%	0.26%
	Composition (vol.%) [2]																	
	CO_2	0.514	0.542	0.557	0.514	0.466	0.843	0.364	0.556	0.431	0.341	0.595	0.238	0.359	0.843	0.805	0.741	0.296
	N_2	0.698	0.615	0.469	0.698	0.563	0.583	1.04	0.343	0.274	0.839	0.738	2.11	1.29	0.504	0.349	0.332	0.309
	methane (C1)	98.6	98.7	98.8	98.6	98.8	98.3	98.3	98.9	99.1	98.774	98.5	97.5	98.1	98.4	98.6	98.8	99
	ethane (C2)	0.0709	0.051	0.0559	0.0709	0.035	0.0339	0.0369	0.0649	0.0589	0.044	0.042	0.038	0.0559	0.0509	0.0509	0.045	0.0997
	propane (C3)	0.00399	0	0.004	0.00399	0.002	0	0	0.00399	0.003	0.001	0.000999	0.000999	0.00299	0.002	0.003	0.003	0.00997
	isobutane (iC4)	0	0	0	0	0	0	0	0.000998	0.002	0	0	0	0	0.000998	0	0	0
	n-butane (nC4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	i-pentane (iC5)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	n-pentane (nC5)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	cyclopentane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	n-hexane (nC6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	cyclohexane (C6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	other hexanes (C6)	0	0	0.000999	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	all heptanes (C7)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	methylcyclohexane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C8+ heavies	0.000999	0	0	0.000999	0	0.000997	0	0	0.000999	0.001	0	0.002	0.002	0.000998	0.000998	0	0.000997
	Benzene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Toluene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ethylbenzene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Xylenes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2,2,4-Trimethylpentane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	100	100	100	100	100	100	100	100	100	100.0	100	100	100	100	100	100	100
Dry Gas	Flow Rate (MMcfd) [5-Year Max. * 1.2]	5.53	55	55	0.45	0.27	5.14	5.14	3.92	1.99	3.87	6.71	2.1	3.05	2.37	2.37	2.37	3.53
	Absorber Stages (*Assumed Value*)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Lean Glycol	Water Content (wt.%) [3]	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.00%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
	Flow Rate (gpm)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Pump Type		Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec
Flash Tank	Flash Tank?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Temperature (°F)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Pressure (psig)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Uncontrolled Emissions (tpy)	Total VOC	0.2334	0	0.0108	0.1703	0.0008	0.1314	0	0.0026	0.1503	0.0723	0.0008	0.3871	0.2763	0.2359	0.235	0.0027	0.1961
	Methane (C1)	2.7999	6.3362	2.6307	2.918	1.0128	0.8524	0.8548	1.2649	1.0014	0.4134	2.9164	1.7103	0.884	2.8604	2.9595	3.0585	1.4812
	Carbon Dioxide (lb/hr)	0.165	0.402	0.202	0.167	0.0739	0.0988	0.0431	0.0957	0.0642	0.019	0.216	0.0593	0.0471	0.268	0.264	0.321	0.0526
	Total HAP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	n-Hexane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2,2,4-Trimethylpentane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Benzene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Toluene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ethylbenzene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Xylenes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Actual Emissions (tpy)	Total VOC	0.1865	0	0.1133	0.0008	0.0004	0.116	0	0.0024	0.1183	0.0798	0.0007	0.2684	0.2525	0.1921	0.0808	0.0023	0.1621
	Methane (C1)	2.2953	4.552	1.956	0.0084	0.4706	0.7815	0.2667	1.1439	0.7987	0.4567	2.4887	1.1878	0.828	2.3105	1.01	2.5617	1.2487
	Carbon Dioxide (lb/hr)	0.173	0.408	0.211	0.175	0.0847	0.115	0.0501	0.106	0.0732	0.0252	0.224	0.0641	0.0546	0.281	0.276	0.335	0.0575
	Total HAP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	n-Hexane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2,2,4-Trimethylpentane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Benzene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Toluene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ethylbenzene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Xylenes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Technical Reference Manual for GRI-GLYCalc v.4.0.

[1] Estimated actual hours of operation are an average of 2016 and 2017 hours of operation.

[2] Analysis of wet gas samples performed by according to GPA Method 2261-90.

[3] Program default value

As defined under Subpart HH, this system is not a control device or a closed vent system.

Permit Number: AQ0942TVP01, Rev. 2

Table D-7a. Significant Emission Unit Inventory - SO_2 Emissions
Hilcorp Alaska, LLC - Beluga River Unit

								Assessable Potential	Unlimited Potential	Actual
EU ID	**Emission Unit Name**	**Reference**	**Emission Factor**	**Rating/Size**	**Allowable Operation[1]**	**Unlimited Potential Operation[2]**	**Estimated Actuals[3]**	**SO_2 Emissions**		
Turbines and Engines										
1	Turbine Compressor - Total	Mass Balance	25 ppmvd H_2S	7,700 hp	8,760 hr/yr	8,760 hr/yr	6,157 hr/yr	1.1 tpy	1.1 tpy	0.80 tpy
2	Compressor	Mass Balance	25 ppmvd H_2S	530 hp	100 hr/yr[4]	500 hr/yr[6]	100 hr/yr	8.93E-04 tpy	8.93E-04 tpy	8.91E-04 tpy
3	Generator	Mass Balance	0.0015 wt.%S	420 kW	100 hr/yr[4]	500 hr/yr[6]	62 hr/yr	3.02E-02 tpy	2.6 tpy	0.02 tpy
12	Generator	Mass Balance	0.0015 wt.%S	350 kW	100 hr/yr[4]	500 hr/yr[6]	49 hr/yr	2.52E-02 tpy	2.2 tpy	0.01 tpy
19	Generator	Mass Balance	0.0015 wt.%S	50 kW	100 hr/yr[4]	500 hr/yr[6]	37 hr/yr	3.60E-03 tpy	0.3 tpy	0.00 tpy
37-1	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	840 hp	8,760 hr/yr	8,760 hr/yr	7,204 hr/yr	0.1 tpy	0.1 tpy	0.10 tpy
37-2	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	740 hp	8,760 hr/yr	8,760 hr/yr	7,262 hr/yr	0.1 tpy	0.1 tpy	0.09 tpy
37-3	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	400 hp	8,760 hr/yr	8,760 hr/yr	7,192 hr/yr	0.1 tpy	0.1 tpy	0.05 tpy
37-4	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	840 hp	8,760 hr/yr	8,760 hr/yr	6,266 hr/yr	0.1 tpy	0.1 tpy	0.09 tpy
37-6	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	400 hp	8,760 hr/yr	8,760 hr/yr	7,135 hr/yr	0.1 tpy	0.1 tpy	0.05 tpy
37-7	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	840 hp	8,760 hr/yr	8,760 hr/yr	7,159 hr/yr	0.1 tpy	0.1 tpy	0.10 tpy
37-8	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	740 hp	8,760 hr/yr	8,760 hr/yr	7,218 hr/yr	0.1 tpy	0.1 tpy	0.09 tpy
37-9	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	740 hp	8,760 hr/yr	8,760 hr/yr	7,230 hr/yr	0.1 tpy	0.1 tpy	0.09 tpy
37-10	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	840 hp	8,760 hr/yr	8,760 hr/yr	7,155 hr/yr	0.1 tpy	0.1 tpy	0.10 tpy
42	Generator	Mass Balance	0.0015 wt.%S	230 kW	100 hr/yr[4]	500 hr/yr[6]	24 hr/yr	1.66E-02 tpy	1.5 tpy	3.98E-03 tpy
43	Wellsite Compressor	Mass Balance	25 ppmvd H_2S	220 hp	8,760 hr/yr	8,760 hr/yr	4,956 hr/yr	3.25E-02 tpy	3.25E-02 tpy	0.02 tpy
Incinerator										
26	Incinerator	AP-42, Table 2.1-12	2.5 lb/ton	150 lb/hr	8,760 hr/yr	8,760 hr/yr	54 hr/yr	0.82 tpy	0.82 tpy	0.01 tpy
Gasoline Dispensing Facility										
44	GDF	N/A	N A	<10,000 gallons/mo	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	0 tpy	0 tpy	0 tpy
							Totals	**3.0 tpy**	**9.6 tpy**	**1.6 tpy**

Notes:

[1] Allowable operation is based on full-time operation, or permit operating limits, where applicable. This value is used to calculate Assessable Potential Emissions.

[2] Maximum annual operation for all units based on full-time annual operation is used to calculate unlimited potential emissions.

[3] Estimated actual hours of operation are an average of actual hours of operation from 2015-2017.

[4] EU IDs 3 and 42 are limited to 100 hours per calendar year of operation by 40 CFR 60.4211, Subpart IIII.

[5] EU IDs 2, 12 and 19 are limited to 100 hours per calendar year of operation by 40 CFR 63.6640(f)(2), Subpart ZZZZ.

[6] According to a memorandum from John S. Seitz of the EPA, 500 hours of operation is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate per year.

Conversions:

Fuel Gas Heat Content:	1,000 Btu/scf
Diesel Fuel Heat Content:	137,000 Btu/gal
Diesel Fuel Density:	7 lb/gal
Diesel Engine Heat Rate:	7,000 Btu/hp-hr
Natural Gas Engine Heat Rate:	8,000 Btu/hp-hr

Permit Number: AQ0942TVP01, Rev. 2

Table D-7b. Insignificant Emission Unit Inventory - SO_2 Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Reference	Emission Factor	Rating/Size	Allowable and Unlimited Potential Operation[1]	Estimated Actual Operation	Assessable and Unlimited Potential SO_2 Emissions
Glycol Reboilers							
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	6,852.05 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	6,174.30 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.18 MMBtu/hr	8,760 hr/yr	6,198.35 hr/yr	1.37E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.08 MMBtu/hr	8,760 hr/yr	24.00 hr/yr	5.87E-02 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	3,556.75 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	6,870.40 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	2,338.65 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	7,114.25 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	6,094.70 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.13 MMBtu/hr	8,760 hr/yr	7,158.45 hr/yr	9.79E-02 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	7,155.90 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.50 MMBtu/hr	8,760 hr/yr	5,620.70 hr/yr	3.92E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	7,047.25 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	6,752.25 hr/yr	1.96E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.18 MMBtu/hr	8,760 hr/yr	2,857.30 hr/yr	1.37E-01 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.13 MMBtu/hr	8,760 hr/yr	7,024.90 hr/yr	9.79E-02 tpy
N/A	Reboiler	Mass Balance	25 ppmvd H_2S	0.25 MMBtu/hr	8,760 hr/yr	6,735.80 hr/yr	1.96E-01 tpy
Glycol Dehydrator Vents							
4	GDU	N/A	N A	5.53 MMscfd	8,760 hr/yr	6,852.05 hr/yr	0.00 tpy
5	GDU	N/A	N A	55.00 MMscfd	8,760 hr/yr	6,174.30 hr/yr	0.00 tpy
6	GDU	N/A	N A	55.00 MMscfd	8,760 hr/yr	6,198.35 hr/yr	0.00 tpy
7	GDU	N/A	N A	0.45 MMscfd	8,760 hr/yr	24.00 hr/yr	0.00 tpy
8	GDU	N/A	N A	0.27 MMscfd	8,760 hr/yr	3,556.75 hr/yr	0.00 tpy
9	GDU	N/A	N A	5.14 MMscfd	8,760 hr/yr	6,870.40 hr/yr	0.00 tpy
10	GDU	N/A	N A	5.14 MMscfd	8,760 hr/yr	2,338.65 hr/yr	0.00 tpy
13	GDU	N/A	N A	3.92 MMscfd	8,760 hr/yr	7,114.25 hr/yr	0.00 tpy
14	GDU	N/A	N A	1.99 MMscfd	8,760 hr/yr	6,094.70 hr/yr	0.00 tpy
15	GDU	N/A	N A	3.87 MMscfd	8,760 hr/yr	7,158.45 hr/yr	0.00 tpy
16	GDU	N/A	N A	6.71 MMscfd	8,760 hr/yr	7,155.90 hr/yr	0.00 tpy
17	GDU	N/A	N A	2.10 MMscfd	8,760 hr/yr	5,620.70 hr/yr	0.00 tpy
18	GDU	N/A	N A	3.05 MMscfd	8,760 hr/yr	7,047.25 hr/yr	0.00 tpy
21	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	6,752.25 hr/yr	0.00 tpy
22	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	2,857.30 hr/yr	0.00 tpy
23	GDU	N/A	N A	2.37 MMscfd	8,760 hr/yr	7,024.90 hr/yr	0.00 tpy
24	GDU	N/A	N A	3.53 MMscfd	8,760 hr/yr	6,735.80 hr/yr	0.00 tpy
Insignificant Heaters							
11	Process Heater	Mass Balance	25 ppmvd H_2S	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	7.83E-01 tpy
20	Process Heater	Mass Balance	25 ppmvd H_2S	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	7.83E-01 tpy
25	Process Heater	Mass Balance	25 ppmvd H_2S	0.125 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	9.79E-02 tpy
29	Office Coleman Heater	Mass Balance	25 ppmvd H_2S	0.06 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	4.70E-02 tpy
30	Shop Perfection Schwank Heater	Mass Balance	25 ppmvd H_2S	0.02 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	1.57E-02 tpy
31	Electrical Shop Modine Heater	Mass Balance	25 ppmvd H_2S	0.03 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.35E-02 tpy
32	Mechanics Shop Modine Heater	Mass Balance	25 ppmvd H_2S	0.11 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	8.62E-02 tpy
33	Mechanics Shop Modine Heater	Mass Balance	25 ppmvd H_2S	0.3 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.35E-01 tpy
34	BRWD Heater	Mass Balance	25 ppmvd H_2S	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	3.92E-01 tpy
35	Mechanics Shop Used Oil Heater	Mass Balance	0.0015 wt.%S	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	3.15E-03 tpy
36	Portable Frost Fighter	Mass Balance	0.0015 wt.%S	0.4 MMBtu/hr	8,760 hr/yr	8,760 hr/yr[2]	2.52E-03 tpy
						Totals	**5.5 tpy**

Notes:

[1] Hours of operation are not required to be tracked for insignificant units. Therefore actual hours of operation are estimated as equal to the maximum full-time operation.

[2] Expected actual annual emissions are not required to be calculated for insignificant emission units. No insignificant emission units at Beluga River that are insignificant on an emission rate basis have potential annual emissions exceeding 80% of the thresholds.

Conversions:

Fuel Gas Heat Content:	1,000	Btu/scf
Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Fuel Density:	7	lb/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Natural Gas Engine Heat Rate:	8,000	Btu/hp-hr

Table D-8a. Significant Emission Unit Inventory - CO_2e Emissions
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Emission Unit Name	Rating/Size	Allowable Operation[1]	Unlimited Potential Operation[2]	Estimated Actuals[3]	Assessable Potential	Unlimited Potential	Actual	Assessable Potential	Unlimited Potential	Actual	Assessable Potential	Unlimited Potential	Actual	Assessable Potential	Unlimited Potential	Actual
						CO_2 Emissions			CH_4 Emissions			N_2O Emissions			CO_2e Emissions		
Turbines and Engines																	
1	Turbine Compressor - Total	7,700 hp	8,760 hr/yr	8,760 hr/yr	6,157 hr/yr	31,561 tpy	31,561 tpy	22,184 tpy	5.95E-01 tpy	5.95E-01 tpy	4.18E-01 tpy	5.95E-02 tpy	5.95E-02 tpy	4.18E-02 tpy	31,594 tpy	31,594 tpy	22,207 tpy
2	Compressor	530 hp	100 hr/yr[4]	500 hr/yr[5]	99.8 hr/yr	25 tpy	124 tpy	25 tpy	4.67E-04 tpy	2.34E-03 tpy	4.66E-04 tpy	4.67E-05 tpy	2.34E-04 tpy	4.66E-05 tpy	25 tpy	124 tpy	25 tpy
3	Generator	420 kW	100 hr/yr[4]	500 hr/yr[5]	61.55 hr/yr	26 tpy	132 tpy	16 tpy	4.97E-04 tpy	2.48E-03 tpy	3.06E-04 tpy	4.97E-05 tpy	2.48E-04 tpy	3.06E-05 tpy	26 tpy	132 tpy	16 tpy
12	Generator	350 kW	100 hr/yr[4]	500 hr/yr[5]	48.55 hr/yr	27 tpy	134 tpy	13 tpy	1.09E-03 tpy	5.43E-03 tpy	5.27E-04 tpy	2.17E-04 tpy	1.09E-03 tpy	1.05E-04 tpy	27 tpy	134 tpy	13 tpy
19	Generator	50 kW	100 hr/yr[4]	500 hr/yr[5]	37.05 hr/yr	4 tpy	19 tpy	1 tpy	1.55E-04 tpy	7.76E-04 tpy	5.75E-05 tpy	3.10E-05 tpy	1.55E-04 tpy	1.15E-05 tpy	4 tpy	19 tpy	1 tpy
37-1	Wellsite Compressor	840 hp	8,760 hr/yr	8,760 hr/yr	7,204 hr/yr	3,443 tpy	3,443 tpy	2,831 tpy	6.49E-02 tpy	6.49E-02 tpy	5.34E-02 tpy	6.49E-03 tpy	6.49E-03 tpy	5.34E-03 tpy	3,447 tpy	3,447 tpy	2,834 tpy
37-2	Wellsite Compressor	740 hp	8,760 hr/yr	8,760 hr/yr	7,262 hr/yr	3,033 tpy	3,033 tpy	2,514 tpy	5.72E-02 tpy	5.72E-02 tpy	4.74E-02 tpy	5.72E-03 tpy	5.72E-03 tpy	4.74E-03 tpy	3,036 tpy	3,036 tpy	2,517 tpy
37-3	Wellsite Compressor	400 hp	8,760 hr/yr	8,760 hr/yr	7,192 hr/yr	1,640 tpy	1,640 tpy	1,346 tpy	3.09E-02 tpy	3.09E-02 tpy	2.54E-02 tpy	3.09E-03 tpy	3.09E-03 tpy	2.54E-03 tpy	1,641 tpy	1,641 tpy	1,347 tpy
37-4	Wellsite Compressor	840 hp	8,760 hr/yr	8,760 hr/yr	6,266 hr/yr	3,443 tpy	3,443 tpy	2,463 tpy	6.49E-02 tpy	6.49E-02 tpy	4.64E-02 tpy	6.49E-03 tpy	6.49E-03 tpy	4.64E-03 tpy	3,447 tpy	3,447 tpy	2,465 tpy
37-6	Wellsite Compressor	400 hp	8,760 hr/yr	8,760 hr/yr	7,135 hr/yr	1,640 tpy	1,640 tpy	1,335 tpy	3.09E-02 tpy	3.09E-02 tpy	2.52E-02 tpy	3.09E-03 tpy	3.09E-03 tpy	2.52E-03 tpy	1,641 tpy	1,641 tpy	1,337 tpy
37-7	Wellsite Compressor	840 hp	8,760 hr/yr	8,760 hr/yr	7,159 hr/yr	3,443 tpy	3,443 tpy	2,814 tpy	6.49E-02 tpy	6.49E-02 tpy	5.30E-02 tpy	6.49E-03 tpy	6.49E-03 tpy	5.30E-03 tpy	3,447 tpy	3,447 tpy	2,817 tpy
37-8	Wellsite Compressor	740 hp	8,760 hr/yr	8,760 hr/yr	7,218 hr/yr	3,033 tpy	3,033 tpy	2,499 tpy	5.72E-02 tpy	5.72E-02 tpy	4.71E-02 tpy	5.72E-03 tpy	5.72E-03 tpy	4.71E-03 tpy	3,036 tpy	3,036 tpy	2,502 tpy
37-9	Wellsite Compressor	740 hp	8,760 hr/yr	8,760 hr/yr	7,230 hr/yr	3,033 tpy	3,033 tpy	2,504 tpy	5.72E-02 tpy	5.72E-02 tpy	4.72E-02 tpy	5.72E-03 tpy	5.72E-03 tpy	4.72E-03 tpy	3,036 tpy	3,036 tpy	2,506 tpy
37-10	Wellsite Compressor	840 hp	8,760 hr/yr	8,760 hr/yr	7,155 hr/yr	3,443 tpy	3,443 tpy	2,812 tpy	6.49E-02 tpy	6.49E-02 tpy	5.30E-02 tpy	6.49E-03 tpy	6.49E-03 tpy	5.30E-03 tpy	3,447 tpy	3,447 tpy	2,815 tpy
42	Generator	230 kW	100 hr/yr[4]	500 hr/yr[5]	24 hr/yr	14 tpy	72 tpy	3 tpy	2.72E-04 tpy	1.36E-03 tpy	6.54E-05 tpy	2.72E-05 tpy	1.36E-04 tpy	6.54E-06 tpy	14 tpy	72 tpy	3 tpy
43	Wellsite Compressor	220 hp	8,760 hr/yr	8,760 hr/yr	4,956 hr/yr	902 tpy	902 tpy	510 tpy	1.70E-02 tpy	1.70E-02 tpy	9.61E-03 tpy	1.70E-03 tpy	1.70E-03 tpy	9.61E-04 tpy	903 tpy	903 tpy	511 tpy
Incinerator																	
26	Incinerator	150 lb/hr	8,760 hr/yr	8,760 hr/yr	54.3 hr/yr	654 tpy	654 tpy	4.1 tpy	2.31E-01 tpy	2.31E-01 tpy	1.43E-03 tpy	3.03E-02 tpy	3.03E-02 tpy	1.88E-04 tpy	668 tpy	668 tpy	4 tpy
Gasoline Dispensing Facility																	
44	GDF	<10,000 gallons/mo	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	0 tpy	0 tpy	0.0 tpy	0 tpy	0 tpy	0 tpy	0 tpy	0 tpy	0 tpy	0 tpy	0 tpy	0 tpy
					Totals	**59,363 tpy**	**59,748 tpy**	**43,876 tpy**	**1.3E+00 tpy**	**1.3E+00 tpy**	**8.3E-01 tpy**	**1.4E-01 tpy**	**1.4E-01 tpy**	**8.3E-02 tpy**	**59,439 tpy**	**59,824 tpy**	**43,921 tpy**

Notes:

[1] Allowable operation is based on full-time operation, or permit operating limits, where applicable. This value is used to calculate Assessable Potential Emissions.
[2] Maximum annual operation for all units based on full-time annual operation is used to calculate unlimited potential emissions.
[3] Estimated actual hours of operation are an average of actual hours of operation from 2015-2017.
[4] EU IDs 3 and 42 are limited to 100 hours per calendar year of operation by 40 CFR 60.4211, Subpart IIII.
[5] EU IDs 2, 12 and 19 are limited to 100 hours per calendar year of operation by 40 CFR 63.6640(f)(2), Subpart ZZZZ.
[6] According to a memorandum from John S. Seitz of the EPA, 500 hours of operation is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate per year.

Conversions:

Fuel Gas Heat Content:	1,000	Btu/scf
Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Fuel Density:	7	lb/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
NG Engine Heat Rate:	8,000	Btu/hp-hr
Municipal Solid Waste HHV:	9.95	MMBtu/short ton

GHG Emission Factors (kg/MMBtu):	Fuel Gas	Diesel	MSW	GWP
CO_2	53.06	73.96	90.7	1
CH_4	1.00E-03	3.00E-03	3.20E-02	25
N_2O	1.00E-04	6.00E-04	4.20E-03	298

Table D-8b. Insignificant Emission Unit Inventory - CO_2e Emissions
Hilcorp Alaska, LLC - Beluga River Unit

					Assessable and Unlimited Potential	Assessable and Unlimited Potential	Assessable and Unlimited Potential	Assessable and Unlimited Potential
EU ID	**Emission Unit Name**	**Rating/Size**	**Allowable and Unlimited Potential Operation[1]**	**Estimated Actual Operation**	**CO_2 Emissions**	**CH_4 Emissions**	**N_2O Emissions**	**CO_2e Emissions**
				Glycol Reboilers				
N/A	Pad H Glycol Reboiler #1	0.25 MMBtu/hr	8,760 hr/yr	6,852.05 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad H Glycol Reboiler #2	0.25 MMBtu/hr	8,760 hr/yr	6,174.30 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad H Glycol Reboiler #3	0.18 MMBtu/hr	8,760 hr/yr	6,198.35 hr/yr	8.97E+01 tpy	1.69E-03 tpy	1.69E-04 tpy	8.98E+01 tpy
N/A	Pad A Glycol Reboiler	0.08 MMBtu/hr	8,760 hr/yr	24.00 hr/yr	3.84E+01 tpy	7.24E-04 tpy	7.24E-05 tpy	3.85E+01 tpy
N/A	Pad B Glycol Reboiler	0.25 MMBtu/hr	8,760 hr/yr	3,556.75 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad C Glycol Reboiler #1	0.25 MMBtu/hr	8,760 hr/yr	6,870.40 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad C Glycol Reboiler #2	0.25 MMBtu/hr	8,760 hr/yr	2,338.65 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad D Glycol Reboiler	0.25 MMBtu/hr	8,760 hr/yr	7,114.25 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad E Glycol Reboiler #1	0.25 MMBtu/hr	8,760 hr/yr	6,094.70 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad E Glycol Reboiler #2	0.13 MMBtu/hr	8,760 hr/yr	7,158.45 hr/yr	6.40E+01 tpy	1.21E-03 tpy	1.21E-04 tpy	6.41E+01 tpy
N/A	Pad F Glycol Reboiler	0.25 MMBtu/hr	8,760 hr/yr	7,155.90 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad G Glycol Reboiler	0.50 MMBtu/hr	8,760 hr/yr	5,620.70 hr/yr	2.56E+02 tpy	4.83E-03 tpy	4.83E-04 tpy	2.56E+02 tpy
N/A	Pad I Glycol Reboiler	0.25 MMBtu/hr	8,760 hr/yr	7,047.25 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad J Glycol Reboiler #1	0.25 MMBtu/hr	8,760 hr/yr	6,752.25 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
N/A	Pad J Glycol Reboiler #2	0.18 MMBtu/hr	8,760 hr/yr	2,857.30 hr/yr	8.97E+01 tpy	1.69E-03 tpy	1.69E-04 tpy	8.98E+01 tpy
N/A	Pad J Glycol Reboiler #3	0.13 MMBtu/hr	8,760 hr/yr	7,024.90 hr/yr	6.40E+01 tpy	1.21E-03 tpy	1.21E-04 tpy	6.41E+01 tpy
N/A	Pad K Glycol Reboiler	0.25 MMBtu/hr	8,760 hr/yr	6,735.80 hr/yr	1.28E+02 tpy	2.41E-03 tpy	2.41E-04 tpy	1.28E+02 tpy
				Glycol Dehydrator Vents				
4	Pad H Glycol Dehydration Vent #1	5.53 MMscfd	8,760 hr/yr	6,852.05 hr/yr	0.72 tpy	0 tpy	0 tpy	7.23E-01 tpy
5	Pad H Glycol Dehydration Vent #2	55 MMscfd	8,760 hr/yr	6,174.30 hr/yr	1.76 tpy	0 tpy	0 tpy	1.76E+00 tpy
6	Pad H Glycol Dehydration Vent #3	55 MMscfd	8,760 hr/yr	6,198.35 hr/yr	0.88 tpy	0 tpy	0 tpy	8.85E-01 tpy
7	Pad A Glycol Dehydration Vent	0.45 MMscfd	8,760 hr/yr	24.00 hr/yr	0.73 tpy	0 tpy	0 tpy	7.31E-01 tpy
8	Pad B Glycol Dehydration Vent	0.27 MMscfd	8,760 hr/yr	3,556.75 hr/yr	0.32 tpy	0 tpy	0 tpy	3.24E-01 tpy
9	Pad C Glycol Dehydration Vent #1	5.14 MMscfd	8,760 hr/yr	6,870.40 hr/yr	0.43 tpy	0 tpy	0 tpy	4.33E-01 tpy
10	Pad C Glycol Dehydration Vent #2	5.14 MMscfd	8,760 hr/yr	2,338.65 hr/yr	0.19 tpy	0 tpy	0 tpy	1.89E-01 tpy
13	Pad D Glycol Dehydration Vent	3.92 MMscfd	8,760 hr/yr	7,114.25 hr/yr	0.42 tpy	0 tpy	0 tpy	4.19E-01 tpy
14	Pad E Glycol Dehydration Vent #1	1.99 MMscfd	8,760 hr/yr	6,094.70 hr/yr	0.28 tpy	0 tpy	0 tpy	2.81E-01 tpy
15	Pad E Glycol Dehydration Vent #2	3.87 MMscfd	8,760 hr/yr	7,158.45 hr/yr	0.08 tpy	0 tpy	0 tpy	8.32E-02 tpy
16	Pad F Glycol Dehydration Vent	6.71 MMscfd	8,760 hr/yr	7,155.90 hr/yr	0.95 tpy	0 tpy	0 tpy	9.46E-01 tpy
17	Pad G Glycol Dehydration Vent	2.10 MMscfd	8,760 hr/yr	5,620.70 hr/yr	0.26 tpy	0 tpy	0 tpy	2.60E-01 tpy
18	Pad I Glycol Dehydration Vent	3.05 MMscfd	8,760 hr/yr	7,047.25 hr/yr	0.21 tpy	0 tpy	0 tpy	2.06E-01 tpy
21	Pad J Glycol Dehydration Vent #1	2.37 MMscfd	8,760 hr/yr	6,752.25 hr/yr	1.17 tpy	0 tpy	0 tpy	1.17E+00 tpy
22	Pad J Glycol Dehydration Vent #2	2.37 MMscfd	8,760 hr/yr	2,857.30 hr/yr	1.16 tpy	0 tpy	0 tpy	1.16E+00 tpy
23	Pad J Glycol Dehydration Vent #3	2.37 MMscfd	8,760 hr/yr	7,024.90 hr/yr	1.41 tpy	0 tpy	0 tpy	1.41E+00 tpy
24	Pad K Glycol Dehydration Vent	3.53 MMscfd	8,760 hr/yr	6,735.80 hr/yr	0.23 tpy	0 tpy	0 tpy	2.30E-01 tpy
				Insignificant Heaters				
11	Process Heater	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	5.12E+02 tpy	9.66E-03 tpy	9.66E-04 tpy	5.13E+02 tpy
20	Process Heater	1 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	5.12E+02 tpy	9.66E-03 tpy	9.66E-04 tpy	5.13E+02 tpy
25	Process Heater	0.125 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	6.40E+01 tpy	1.21E-03 tpy	1.21E-04 tpy	6.41E+01 tpy
29	Office Coleman Heater	0.06 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	3.07E+01 tpy	5.79E-04 tpy	5.79E-05 tpy	3.08E+01 tpy
30	Shop Perfection Schwank Heater	0.02 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	1.02E+01 tpy	1.93E-04 tpy	1.93E-05 tpy	1.03E+01 tpy
31	Electrical Shop Modine Heater	0.03 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	1.54E+01 tpy	2.90E-04 tpy	2.90E-05 tpy	1.54E+01 tpy
32	Mechanics Shop Modine Heater	0.11 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	5.64E+01 tpy	1.06E-03 tpy	1.06E-04 tpy	5.64E+01 tpy
33	Mechanics Shop Modine Heater	0.3 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	1.54E+02 tpy	2.90E-03 tpy	2.90E-04 tpy	1.54E+02 tpy
34	BRWD Heater	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	2.56E+02 tpy	4.83E-03 tpy	4.83E-04 tpy	2.56E+02 tpy
35	Mechanics Shop Used Oil Heater	0.5 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	3.57E+02 tpy	1.45E-02 tpy	2.90E-03 tpy	3.58E+02 tpy
36	Portable Frost Fighter	0.4 MMBtu/hr	8,760 hr/yr	8,760 hr/yr	2.86E+02 tpy	1.16E-02 tpy	2.32E-03 tpy	2.87E+02 tpy
				Totals	**4,276 tpy**	**9.43E-02 tpy**	**1.20E-02 tpy**	**4,282 tpy**

Notes:

[2] Expected actual annual emissions are not required to be calculated for insignificant emission units. No insignificant emission units at Beluga River that are insignificant on an emission rate basis have potential annual emissions exceeding 80% of the thresholds.

Conversions:

Fuel Gas Heat Content:	1,000	Btu/scf
Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Fuel Density:	7	lb/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
NG Engine Heat Rate:	8,000	Btu/hp-hr
Municipal Solid Waste HHV:	9.95	MMBtu/short ton

GHG Emission Factors (kg/MMBtu):	Fuel Gas	Diesel	GWP
CO_2	53.06	73.96	1
CH_4	1.00E-03	3.00E-03	25
N_2O	1.00E-04	6.00E-04	298

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Table D-9. Gas-Fired Turbines - Estimated Actual and Potential HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Total Assessable and Unlimited Heat Input: 539,616 MMBtu/yr [1]
Total Estimated Actual Heat Input: 379,293 MMBtu/yr [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	EU ID 1	
No.	**CAS No.**	**Chemical Name**	**Emission Factor [2]**	**Assessable and Unlimited Potential Emissions**	**Estimated Actual Emissions**
35	75070	Acetaldehyde	4.00E-05 lb/MMBtu	1.08E-02 tpy	7.59E-03 tpy
39	107028	Acrolein	6.40E-06 lb/MMBtu	1.73E-03 tpy	1.21E-03 tpy
48	71432	Benzene	1.20E-05 lb/MMBtu	3.24E-03 tpy	2.28E-03 tpy
99	100414	Ethyl benzene	3.20E-05 lb/MMBtu	8.63E-03 tpy	6.07E-03 tpy
109	5000	Formaldehyde	7.10E-04 lb/MMBtu	1.92E-01 tpy	1.35E-01 tpy
145	91203	Naphthalene	1.30E-06 lb/MMBtu	3.51E-04 tpy	2.47E-04 tpy
162	N/A	Polycylic Organic Matter	2.20E-06 lb/MMBtu	5.94E-04 tpy	4.17E-04 tpy
176	108883	Toluene	1.30E-04 lb/MMBtu	3.51E-02 tpy	2.47E-02 tpy
188	106423	Xylenes (isomers and mixture)	6.40E-05 lb/MMBtu	1.73E-02 tpy	1.21E-02 tpy
			Total HAP Emissions	**0.27 tpy**	**0.19 tpy**

Notes/Comments:

[1] Total heat consumption based on maximum full-time operation, permit-limited operation, or actual operation estimated as the average of 2016 - 2017 hours of operation as noted below:

(1) 7,700 hp Solar Taurus 60 Compressor Drive

Assessable and Unlimited Potential Heat Input (EU ID 1)		539,616.0 MMBtu @	8,760 hr/yr
Estimated Actual Heat Input (EU ID 1)		379,292.8 MMBtu @	6,157 hr/yr
Total Potential Heat Input	TOTAL	539,616.0 MMBtu/yr	
Total Estimated Actual Heat Input	TOTAL	379,292.8 MMBtu/yr	

[2] Reference: AP-42, Tables 3.1-3

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Table D-10. Gas-Fired Engines - Estimated Actual and Potential HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Total Assessable and Unlimited Potential Heat Input: 540,758 MMBtu/yr [1]
Total Estimated Actual Heat Input: 383,951 MMBtu/yr [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	Assessable Potential Emissions	Unlimited Potential Emissions	Assessable and Unlimited Potential Emissions				Estimated Actual Emissions										
No.	CAS No.	Chemical Name	Emission Factor [2]	EU ID 2		Each of EU IDs 37-1/4/7/10	Each of EU IDs 37-2/8/9	Each of EU IDs 37-3/6	EU ID 43	EU ID 2	EU ID 37-1	EU ID 37-2	EU ID 37-3	EU ID 37-4	EU ID 37-6	EU ID 37-7	EU ID 37-8	EU ID 37-9	EU ID 37-10	EU ID 43
1	79345	1,1,2,2-Tetrachloroethane	2.53E-05 lb/MMBtu	5.36E-06 tpy	2.68E-05 tpy	7.45E-04 tpy	6.56E-04 tpy	3.55E-04 tpy	1.95E-04 tpy	5.35E-06 tpy	5.36E-04 tpy	4.76E-04 tpy	2.55E-04 tpy	4.66E-04 tpy	2.53E-04 tpy	5.33E-04 tpy	4.73E-04 tpy	4.74E-04 tpy	5.32E-04 tpy	1.10E-04 tpy
2	79005	1,1,2-Trichloroethane	1.53E-05 lb/MMBtu	3.24E-06 tpy	1.62E-05 tpy	4.50E-04 tpy	3.97E-04 tpy	2.14E-04 tpy	1.18E-04 tpy	3.24E-06 tpy	3.24E-04 tpy	2.88E-04 tpy	1.54E-04 tpy	2.82E-04 tpy	1.53E-04 tpy	3.22E-04 tpy	2.86E-04 tpy	2.87E-04 tpy	3.22E-04 tpy	6.67E-05 tpy
9	106990	1,3-Butadiene	6.63E-04 lb/MMBtu	1.41E-04 tpy	7.03E-04 tpy	1.95E-02 tpy	1.72E-02 tpy	9.29E-03 tpy	5.11E-03 tpy	1.40E-04 tpy	1.40E-02 tpy	1.25E-02 tpy	6.68E-03 tpy	1.22E-02 tpy	6.62E-03 tpy	1.40E-02 tpy	1.24E-02 tpy	1.24E-02 tpy	1.39E-02 tpy	2.89E-03 tpy
10	542756	1,3-Dichloropropene	1.27E-05 lb/MMBtu	2.69E-06 tpy	1.35E-05 tpy	3.74E-04 tpy	3.29E-04 tpy	1.78E-04 tpy	9.79E-05 tpy	2.69E-06 tpy	2.69E-04 tpy	2.39E-04 tpy	1.28E-04 tpy	2.34E-04 tpy	1.27E-04 tpy	2.67E-04 tpy	2.37E-04 tpy	2.38E-04 tpy	2.67E-04 tpy	5.54E-05 tpy
35	75070	Acetaldehyde	2.79E-03 lb/MMBtu	5.91E-04 tpy	2.96E-03 tpy	8.21E-02 tpy	7.23E-02 tpy	3.91E-02 tpy	2.15E-02 tpy	5.90E-04 tpy	5.91E-02 tpy	5.25E-02 tpy	2.81E-02 tpy	5.14E-02 tpy	2.79E-02 tpy	5.87E-02 tpy	5.22E-02 tpy	5.22E-02 tpy	5.87E-02 tpy	1.22E-02 tpy
39	107028	Acrolein	2.63E-03 lb/MMBtu	5.58E-04 tpy	2.79E-03 tpy	7.74E-02 tpy	6.82E-02 tpy	3.69E-02 tpy	2.03E-02 tpy	5.56E-04 tpy	5.57E-02 tpy	4.95E-02 tpy	2.65E-02 tpy	4.84E-02 tpy	2.63E-02 tpy	5.54E-02 tpy	4.92E-02 tpy	4.93E-02 tpy	5.53E-02 tpy	1.15E-02 tpy
48	71432	Benzene	1.58E-03 lb/MMBtu	3.35E-04 tpy	1.67E-03 tpy	4.65E-02 tpy	4.10E-02 tpy	2.21E-02 tpy	1.22E-02 tpy	3.34E-04 tpy	3.35E-02 tpy	2.97E-02 tpy	1.59E-02 tpy	2.91E-02 tpy	1.58E-02 tpy	3.33E-02 tpy	2.95E-02 tpy	2.96E-02 tpy	3.32E-02 tpy	6.89E-03 tpy
63	56235	Carbon tetrachloride	1.77E-05 lb/MMBtu	3.75E-06 tpy	1.88E-05 tpy	5.21E-04 tpy	4.59E-04 tpy	2.48E-04 tpy	1.36E-04 tpy	3.74E-06 tpy	3.75E-04 tpy	3.33E-04 tpy	1.78E-04 tpy	3.26E-04 tpy	1.77E-04 tpy	3.73E-04 tpy	3.31E-04 tpy	3.31E-04 tpy	3.72E-04 tpy	7.72E-05 tpy
70	108907	Chlorobenzene	1.29E-05 lb/MMBtu	2.73E-06 tpy	1.37E-05 tpy	3.80E-04 tpy	3.34E-04 tpy	1.81E-04 tpy	9.94E-05 tpy	2.73E-06 tpy	2.73E-04 tpy	2.43E-04 tpy	1.30E-04 tpy	2.38E-04 tpy	1.29E-04 tpy	2.72E-04 tpy	2.41E-04 tpy	2.42E-04 tpy	2.71E-04 tpy	5.63E-05 tpy
72	67663	Chloroform	1.37E-05 lb/MMBtu	2.90E-06 tpy	1.45E-05 tpy	4.03E-04 tpy	3.55E-04 tpy	1.92E-04 tpy	1.06E-04 tpy	2.90E-06 tpy	2.90E-04 tpy	2.58E-04 tpy	1.38E-04 tpy	2.52E-04 tpy	1.37E-04 tpy	2.88E-04 tpy	2.56E-04 tpy	2.57E-04 tpy	2.88E-04 tpy	5.97E-05 tpy
102	1006934	Ethylene dibromide (Dibromoethane)	2.13E-05 lb/MMBtu	4.52E-06 tpy	2.26E-05 tpy	6.27E-04 tpy	5.52E-04 tpy	2.99E-04 tpy	1.64E-04 tpy	4.51E-06 tpy	4.51E-04 tpy	4.01E-04 tpy	2.14E-04 tpy	3.92E-04 tpy	2.13E-04 tpy	4.48E-04 tpy	3.98E-04 tpy	3.99E-04 tpy	4.48E-04 tpy	9.29E-05 tpy
109	5000	Formaldehyde	2.05E-02 lb/MMBtu	4.35E-03 tpy	2.17E-02 tpy	6.03E-01 tpy	5.32E-01 tpy	2.87E-01 tpy	1.58E-01 tpy	4.34E-03 tpy	4.34E-01 tpy	3.86E-01 tpy	2.06E-01 tpy	3.78E-01 tpy	2.05E-01 tpy	4.31E-01 tpy	3.83E-01 tpy	3.84E-01 tpy	4.31E-01 tpy	8.94E-02 tpy
129	67561	Methanol	3.06E-03 lb/MMBtu	6.49E-04 tpy	3.24E-03 tpy	9.01E-02 tpy	7.93E-02 tpy	4.29E-02 tpy	2.36E-02 tpy	6.47E-04 tpy	6.48E-02 tpy	5.76E-02 tpy	3.08E-02 tpy	5.64E-02 tpy	3.06E-02 tpy	6.44E-02 tpy	5.72E-02 tpy	5.73E-02 tpy	6.44E-02 tpy	1.33E-02 tpy
141	75092	Methylene chloride(Dichloromethane)	4.12E-05 lb/MMBtu	8.73E-06 tpy	4.37E-05 tpy	1.21E-03 tpy	1.07E-03 tpy	5.77E-04 tpy	3.18E-04 tpy	8.72E-06 tpy	8.73E-04 tpy	7.75E-04 tpy	4.15E-04 tpy	7.59E-04 tpy	4.12E-04 tpy	8.67E-04 tpy	7.70E-04 tpy	7.72E-04 tpy	8.67E-04 tpy	1.80E-04 tpy
145	91203	Naphthalene	9.71E-05 lb/MMBtu	2.06E-05 tpy	1.03E-04 tpy	2.86E-03 tpy	2.52E-03 tpy	1.36E-03 tpy	7.49E-04 tpy	2.05E-05 tpy	2.06E-03 tpy	1.83E-03 tpy	9.78E-04 tpy	1.79E-03 tpy	9.70E-04 tpy	2.04E-03 tpy	1.82E-03 tpy	1.82E-03 tpy	2.04E-03 tpy	4.23E-04 tpy
172	100425	Styrene	1.19E-05 lb/MMBtu	2.52E-06 tpy	1.26E-05 tpy	3.50E-04 tpy	3.09E-04 tpy	1.67E-04 tpy	9.17E-05 tpy	2.52E-06 tpy	2.52E-04 tpy	2.24E-04 tpy	1.20E-04 tpy	2.19E-04 tpy	1.19E-04 tpy	2.50E-04 tpy	2.22E-04 tpy	2.23E-04 tpy	2.50E-04 tpy	5.19E-05 tpy
176	108883	Toluene	5.58E-04 lb/MMBtu	1.18E-04 tpy	5.91E-04 tpy	1.64E-02 tpy	1.45E-02 tpy	7.82E-03 tpy	4.30E-03 tpy	1.18E-04 tpy	1.18E-02 tpy	1.05E-02 tpy	5.62E-03 tpy	1.03E-02 tpy	5.57E-03 tpy	1.17E-02 tpy	1.04E-02 tpy	1.04E-02 tpy	1.17E-02 tpy	2.43E-03 tpy
183	75014	Vinyl chloride	7.18E-06 lb/MMBtu	1.52E-06 tpy	7.61E-06 tpy	2.11E-04 tpy	1.86E-04 tpy	1.01E-04 tpy	5.53E-05 tpy	1.52E-06 tpy	1.52E-04 tpy	1.35E-04 tpy	7.23E-05 tpy	1.32E-04 tpy	7.17E-05 tpy	1.51E-04 tpy	1.34E-04 tpy	1.34E-04 tpy	1.51E-04 tpy	3.13E-05 tpy
185	1330207	Xylenes (isomers and mixture)	1.95E-04 lb/MMBtu	4.13E-05 tpy	2.07E-04 tpy	5.74E-03 tpy	5.06E-03 tpy	2.73E-03 tpy	1.50E-03 tpy	4.13E-05 tpy	4.13E-03 tpy	3.67E-03 tpy	1.96E-03 tpy	3.59E-03 tpy	1.95E-03 tpy	4.10E-03 tpy	3.65E-03 tpy	3.65E-03 tpy	4.10E-03 tpy	8.50E-04 tpy
		Total HAP Emissions		**0.01 tpy**	**0.03 tpy**	**0.95 tpy**	**0.84 tpy**	**0.45 tpy**	**0.25 tpy**	**0.01 tpy**	**0.68 tpy**	**0.61 tpy**	**0.32 tpy**	**0.59 tpy**	**0.32 tpy**	**0.68 tpy**	**0.60 tpy**	**0.60 tpy**	**0.68 tpy**	**0.14 tpy**

Notes/Comments:

[1] Total heat consumption based on maximum full-time operation, permit-limited operation, or actual operation estimated as the average of 2016 - 2017 hours of operation as noted below:

(1) 530 hp Waukesha Compressor
- Assessable Potential Heat Input (EU ID 2): 424 MMBtu/yr @ 100 hr/yr[3]
- Unlimited Potential Heat Input (EU ID 2): 2,120 MMBtu/yr @ 500 hr/yr[4]
- Estimated Actual Heat Input (EU ID 2): 423 MMBtu/yr @ 99.8 hr/yr

(7) 740 hp Wellsite Compressors
- Assessable and Unlimited Potential Heat Input (each of EU IDs 37-2, 37-8, and 37-9): 51,859.2 MMBtu @ 8,760.0 hr/yr, each
- Estimated Actual Heat Input (EU ID 37-2): 37,614.6 MMBtu @ 7,261.5 hr/yr
- Estimated Actual Heat Input (EU ID 37-8): 37,387.9 MMBtu @ 7,217.8 hr/yr
- Estimated Actual Heat Input (EU ID 37-9): 37,453.5 MMBtu @ 7,230.4 hr/yr

(4) 840 hp Wellsite Compressors
- Assessable and Unlimited Potential Heat Input (each of EU IDs 37-1, 37-4, 37-7, & 37-10): 58,867.2 MMBtu @ 8,760.0 hr/yr, each
- Estimated Actual Heat Input (EU ID 37-1): 42,359.8 MMBtu @ 7,204.1 hr/yr
- Estimated Actual Heat Input (EU ID 37-4): 36,842.3 MMBtu @ 6,265.7 hr/yr
- Estimated Actual Heat Input (EU ID 37-7): 42,095.2 MMBtu @ 7,159.1 hr/yr
- Estimated Actual Heat Input (EU ID 37-10): 42,069.3 MMBtu @ 7,154.7 hr/yr

(2) 400 hp Wellsite Compressors
- Assessable and Unlimited Potential Heat Input (each of EU IDs 37-3 & 37-6): 28,032.0 MMBtu @ 8,760.0 hr/yr, each
- Estimated Actual Heat Input (EU ID 37-3): 20,136.8 MMBtu @ 7,191.7 hr/yr
- Estimated Actual Heat Input (EU ID 37-6): 19,979.1 MMBtu @ 7,135.4 hr/yr

(1) 220 hp Wellsite Compressor
- Assessable and Unlimited Potential Heat Input (EU ID 43): 15,417.6 MMBtu @ 8,760.0 hr/yr
- Estimated Actual Heat Input (EU ID 43): 8,721.8 MMBtu @ 4,955.6 hr/yr

Total Assessable and Unlimited Potential Heat Input TOTAL 540,758.4 MMBtu/yr
Total Estimated Actual Heat Input TOTAL 383,950.7 MMBtu/yr

[2] Reference: AP-42, Tables 3.2-3

[3] EU ID 2 is limited to 100 hours per calendar year of operation by 40 CFR 63.6640(f)(2)(i), Subpart ZZZZ.

[4] According to a memorandum from John S. Seitz of the EPA, 500 hours of operation is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate per year.

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Table D-11a. Gas-Fired Heaters - Estimated Actual and Potential HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Total Actual and Potential Fuel Use: 28 MMscf/yr [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations		Assessable and Unlimited Potential Emissions							
No.	CAS No.	Chemical Name	Emission Factor [2]	All Units	Each of EU ID 11/20	EU ID 25	EU ID 29	EU ID 30	EU ID 31	EU ID 32	EU ID 33	EU ID 34
46	N/A	Arsenic Compounds	2.00E-04 lb/MMscf	2.76E-06 tpy	8.76E-07 tpy	1.10E-07 tpy	5.26E-08 tpy	1.75E-08 tpy	2.63E-08 tpy	9.64E-08 tpy	2.63E-07 tpy	4.38E-07 tpy
48	71432	Benzene	2.10E-03 lb/MMscf	2.89E-05 tpy	9.20E-06 tpy	1.15E-06 tpy	5.52E-07 tpy	1.84E-07 tpy	2.76E-07 tpy	1.01E-06 tpy	2.76E-06 tpy	4.60E-06 tpy
58	N/A	Cadmium Compounds	1.10E-03 lb/MMscf	1.52E-05 tpy	4.82E-06 tpy	6.02E-07 tpy	2.89E-07 tpy	9.64E-08 tpy	1.45E-07 tpy	5.30E-07 tpy	1.45E-06 tpy	2.41E-06 tpy
75	N/A	Chromium Compounds	1.40E-03 lb/MMscf	1.93E-05 tpy	6.13E-06 tpy	7.67E-07 tpy	3.68E-07 tpy	1.23E-07 tpy	1.84E-07 tpy	6.75E-07 tpy	1.84E-06 tpy	3.07E-06 tpy
109	5000	Formaldehyde	7.50E-02 lb/MMscf	1.03E-03 tpy	3.29E-04 tpy	4.11E-05 tpy	1.97E-05 tpy	6.57E-06 tpy	9.86E-06 tpy	3.61E-05 tpy	9.86E-05 tpy	1.64E-04 tpy
118	110543	N-Hexane	1.80E+00 lb/MMscf	2.48E-02 tpy	7.88E-03 tpy	9.86E-04 tpy	4.73E-04 tpy	1.58E-04 tpy	2.37E-04 tpy	8.67E-04 tpy	2.37E-03 tpy	3.94E-03 tpy
127	N/A	Manganese Compounds	3.80E-04 lb/MMscf	5.23E-06 tpy	1.66E-06 tpy	2.08E-07 tpy	9.99E-08 tpy	3.33E-08 tpy	4.99E-08 tpy	1.83E-07 tpy	4.99E-07 tpy	8.32E-07 tpy
128	N/A	Mercury Compounds	2.60E-04 lb/MMscf	3.58E-06 tpy	1.14E-06 tpy	1.42E-07 tpy	6.83E-08 tpy	2.28E-08 tpy	3.42E-08 tpy	1.25E-07 tpy	3.42E-07 tpy	5.69E-07 tpy
145	91203	Naphthalene	6.10E-04 lb/MMscf	8.40E-06 tpy	2.67E-06 tpy	3.34E-07 tpy	1.60E-07 tpy	5.34E-08 tpy	8.02E-08 tpy	2.94E-07 tpy	8.02E-07 tpy	1.34E-06 tpy
147	98953	Nitrobenzene	2.10E-03 lb/MMscf	2.89E-05 tpy	9.20E-06 tpy	1.15E-06 tpy	5.52E-07 tpy	1.84E-07 tpy	2.76E-07 tpy	1.01E-06 tpy	2.76E-06 tpy	4.60E-06 tpy
176	108883	Toluene	3.40E-03 lb/MMscf	4.68E-05 tpy	1.49E-05 tpy	1.86E-06 tpy	8.94E-07 tpy	2.98E-07 tpy	4.47E-07 tpy	1.64E-06 tpy	4.47E-06 tpy	7.45E-06 tpy
		Total HAP Emissions	**2.60E-02 tpy**		**8.26E-03 tpy**	**1.03E-03 tpy**	**4.96E-04 tpy**	**1.65E-04 tpy**	**2.48E-04 tpy**	**9.09E-04 tpy**	**2.48E-03 tpy**	**4.13E-03 tpy**

Notes/Comments:

[1] Total heat consumption based on maximum full-time operation as noted below:

Hours of operation are not required to be tracked for insignificant units. Therefore actual hours of operation are estimated as equal to the maximum full-time operation.

(2) 1.0 MMBtu/hr	Process Heater Actual and Potential Fuel Use (each of EU IDs 11 & 20)	8.76	MMscf @ 8,760 hr/yr, each
(1) 0.125 MMBtu/hr	Process Heater Actual and Potential Fuel Use (EU ID 25)	1.1	MMscf @ 8,760 hr/yr
(1) 0.06 MMBtu/hr	Office Coleman Heater Actual and Potential Fuel Use (EU ID 29)	0.5	MMscf @ 8,760 hr/yr
(1) 0.02 MMBtu/hr	Shop Perfection Schwank Heater Actual and Potential Fuel Use (EU ID 30)	0.2	MMscf @ 8,760 hr/yr
(1) 0.03 MMBtu/hr	Electrical Shop Modine Heater Actual and Potential Fuel Use (EU ID 31)	0.3	MMscf @ 8,760 hr/yr
(1) 0.11 MMBtu/hr	Mechanics Shop Modine Heater Actual and Potential Fuel Use (EU ID 32)	1.0	MMscf @ 8,760 hr/yr
(1) 0.30 MMBtu/hr	Mechanics Shop Modine Heater Actual and Potential Fuel Use (EU ID 33)	2.6	MMscf @ 8,760 hr/yr
(1) 0.50 MMBtu/hr	BRWD Heater Actual and Potential Fuel Use (EU ID 34)	4.4	MMscf @ 8,760 hr/yr
Total Actual and Potential Fuel Use:	TOTAL	27.6	MMscf/yr

[2] Reference: AP-42, Table 1.4-3 & 1.4-4

[3] Actual emissions for units that are considered insignificant under 18 AAC 50.326(g) are not required to be included in accordance with the instructions for D forms.

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Table D-11b. Gas-Fired Heaters - Assessable and Unlimited Potential HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Total Assessable and Unlimited Potential Fuel Use: 34 MMscf/yr [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	Assessable and Unlimited Potential Emissions
No.	**CAS No.**	**Chemical Name**	**Emission Factor [2]**	**Insignificant Reboilers**
46	N/A	Arsenic Compounds	2.00E-04 lb/MMscf	3.44E-06 tpy
48	71432	Benzene	2.10E-03 lb/MMscf	3.61E-05 tpy
58	N/A	Cadmium Compounds	1.10E-03 lb/MMscf	1.89E-05 tpy
75	N/A	Chromium Compounds	1.40E-03 lb/MMscf	2.41E-05 tpy
109	5000	Formaldehyde	7.50E-02 lb/MMscf	1.29E-03 tpy
118	110543	n-Hexane	1.80E+00 lb/MMscf	3.09E-02 tpy
127	N/A	Manganese Compounds	3.80E-04 lb/MMscf	6.53E-06 tpy
128	N/A	Mercury Compounds	2.60E-04 lb/MMscf	4.47E-06 tpy
145	91203	Naphthalene	6.10E-04 lb/MMscf	1.05E-05 tpy
147	98953	Nitrobenzene	2.10E-03 lb/MMscf	3.61E-05 tpy
176	108883	Toluene	3.40E-03 lb/MMscf	5.85E-05 tpy
			Total HAP Emissions	**3.24E-02 tpy**

Notes/Comments:

[1] Total heat consumption based on maximum full-time operation as noted below:

(17) Insignificant Glycol Reboilers, total rating 3.93 MMBtu/hr

Assessable and Unlimited Potential Fuel Use 34.383 MMscf @ 8,760.0

Total Assessable and Unlimited Potential Fuel Use: TOTAL 34.4 MMscf/yr

[2] Reference: AP-42, Table 1.4-3 & 1.4-4

Conversions:

Fuel Gas Heat Content: 1,000 Btu/scf

[3] Actual emissions for units that are considered insignificant under 18 AAC 50.326(g) are not required to be included in accordance with the instructions for D forms.

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Table D-12. Insignificant Diesel-Fired Heater - Estimated Actual and Potential HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Total Actual and Potential Fuel Use: 26 kgal/yr [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	Actual and Potential Emissions
No.	**CAS No.**	**Chemical Name**	**Emission Factor [2]**	**EU ID 36**
48	71432	Benzene	2.14E-04 lb/kgal	2.74E-06 tpy
99	100414	Ethyl benzene	6.36E-05 lb/kgal	8.13E-07 tpy
109	5000	Formaldehyde	3.30E-02 lb/kgal	4.22E-04 tpy
145	91203	Naphthalene	1.13E-03 lb/kgal	1.45E-05 tpy
162	N/A	Polycylic Organic Matter	5.01E-05 lb/kgal	6.40E-07 tpy
176	108883	Toluene	6.20E-03 lb/kgal	7.93E-05 tpy
188	106423	Xylenes (isomers and mixture)	1.09E-04 lb/kgal	1.39E-06 tpy
			Total HAP Emissions	**5.21E-04 tpy**

Notes/Comments:

[1] Total heat consumption based on maximum full-time operation as noted below:
Hours of operation are not required to be tracked for insignificant units. Therefore actual hours of operation are estimated as equal to the maximum full-time operation.

(1) 0.4 MMBtu/hr	Portable Frost Fighter		
	Actual and Potential Fuel Use (EU ID 36)		25.6 kgal @ 8,760 hr/yr
Total Actual and Potential Fuel Use		TOTAL	25.6 kgal/yr

[2] Reference: AP-42, Table 1.3-9

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Table D-13. Insignificant Waste Oil Fired Heater - Estimated Actual and Potential HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Actual and Potential Fuel Use: 32 kgal/yr [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	Actual and Potential Emissions
No.	**CAS No.**	**Chemical Name**	**Emission Factor [2]**	**EU ID 35**
12	106467	1,4-Dichlorobenzene(p)	8.00E-07 lb/kgal	1.28E-08 tpy
45	N/A	Antimony Compounds	3.40E-04 lb/kgal	5.44E-06 tpy
46	N/A	Arsenic Compounds	2.50E-03 lb/kgal	4.00E-05 tpy
55	117817	Bis(2-ethylhexyl)phthalate (DEHP)	2.20E-03 lb/kgal	3.52E-05 tpy
58	N/A	Cadmium Compounds	1.50E-04 lb/kgal	2.40E-06 tpy
75	N/A	Chromium Compounds	1.90E-01 lb/kgal	3.04E-03 tpy
76	N/A	Cobalt Compounds	5.70E-03 lb/kgal	9.11E-05 tpy
127	N/A	Manganese Compounds	2.20E-03 lb/kgal	3.52E-05 tpy
145	91203	Naphthalene	1.30E-02 lb/kgal	2.08E-04 tpy
146	N/A	Nickel Compounds	5.00E-02 lb/kgal	7.99E-04 tpy
156	108952	Phenol	2.40E-03 lb/kgal	3.84E-05 tpy
158	7723140	Phosphorus	3.60E-02 lb/kgal	5.75E-04 tpy
			Total HAP Emissions	**4.87E-03 tpy**

Notes/Comments:

[1] Total heat consumption based on maximum full-time operation as noted below:
Hours of operation are not required to be tracked for insignificant units. Therefore actual hours of operation are estimated as equal to the maximum full-time operation.

(1) 0.5 MMBtu/hr Mechanics Shop Used Oil Heater
Actual and Potential Fuel Use (EU ID 35) 32.0 kgal @ 8,760 hr/yr

Total Actual and Potential Fuel Use TOTAL 32.0 kgal/yr

[2] Reference: AP-42, Table 1.11-4 and 1.11-5

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Table D-14. Diesel-Fired Reciprocating ICE ≤ 600 hp - Estimated Actual and Potential HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Total Assessable Potential Heat Input: 986 MMBtu/yr [1]
Total Unlimited Potential Heat Input: 4,928 MMBtu/yr [1]
Total Estimated Actual Heat Input: 471 MMBtu/yr [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	Assessable Potential Emissions				Unlimited Potential Emissions				Estimated Actual Emissions			
No.	CAS No.	Chemical Name	Emission Factor [2]	EU ID 3	EU ID 12	EU ID 19	EU ID 42	EU ID 3	EU ID 12	EU ID 19	EU ID 42	EU ID 3	EU ID 12	EU ID 19	EU ID 42
9	106990	1,3-Butadiene	3.91E-05 lb/MMBtu	7.71E-06 tpy	6.42E-06 tpy	9.18E-07 tpy	4.22E-06 tpy	3.85E-05 tpy	3.21E-05 tpy	4.59E-06 tpy	2.11E-05 tpy	4.74E-06 tpy	3.12E-06 tpy	3.40E-07 tpy	1.02E-06 tpy
35	75070	Acetaldehyde	7.67E-04 lb/MMBtu	1.51E-04 tpy	1.26E-04 tpy	1.80E-05 tpy	8.28E-05 tpy	7.56E-04 tpy	6.30E-04 tpy	9.00E-05 tpy	4.14E-04 tpy	9.31E-05 tpy	6.12E-05 tpy	6.67E-06 tpy	1.99E-05 tpy
39	107028	Acrolein	9.25E-05 lb/MMBtu	1.82E-05 tpy	1.52E-05 tpy	2.17E-06 tpy	9.99E-06 tpy	9.12E-05 tpy	7.60E-05 tpy	1.09E-05 tpy	4.99E-05 tpy	1.12E-05 tpy	7.38E-06 tpy	8.04E-07 tpy	2.40E-06 tpy
48	71432	Benzene	9.33E-04 lb/MMBtu	1.84E-04 tpy	1.53E-04 tpy	2.19E-05 tpy	1.01E-04 tpy	9.20E-04 tpy	7.66E-04 tpy	1.09E-04 tpy	5.04E-04 tpy	1.13E-04 tpy	7.44E-05 tpy	8.11E-06 tpy	2.42E-05 tpy
109	5000	Formaldehyde	1.18E-03 lb/MMBtu	2.33E-04 tpy	1.94E-04 tpy	2.77E-05 tpy	1.27E-04 tpy	1.16E-03 tpy	9.69E-04 tpy	1.38E-04 tpy	6.37E-04 tpy	1.43E-04 tpy	9.41E-05 tpy	1.03E-05 tpy	3.06E-05 tpy
162	N/A	Polycylic Organic Matter	1.68E-04 lb/MMBtu	3.31E-05 tpy	2.76E-05 tpy	3.94E-06 tpy	1.81E-05 tpy	1.66E-04 tpy	1.38E-04 tpy	1.97E-05 tpy	9.07E-05 tpy	2.04E-05 tpy	1.34E-05 tpy	1.46E-06 tpy	4.36E-06 tpy
176	108883	Toluene	4.09E-04 lb/MMBtu	8.06E-05 tpy	6.72E-05 tpy	9.60E-06 tpy	4.42E-05 tpy	4.03E-04 tpy	3.36E-04 tpy	4.80E-05 tpy	2.21E-04 tpy	4.96E-05 tpy	3.26E-05 tpy	3.56E-06 tpy	1.06E-05 tpy
188	106423	Xylenes (isomers and mixture)	2.85E-04 lb/MMBtu	5.62E-05 tpy	4.68E-05 tpy	6.69E-06 tpy	3.08E-05 tpy	2.81E-04 tpy	2.34E-04 tpy	3.34E-05 tpy	1.54E-04 tpy	3.46E-05 tpy	2.27E-05 tpy	2.48E-06 tpy	7.40E-06 tpy
		Total HAP Emissions	**7.64E-04 tpy**	**6.36E-04 tpy**	**9.09E-05 tpy**	**4.18E-04 tpy**	**3.82E-03 tpy**	**3.18E-03 tpy**	**4.55E-04 tpy**	**2.09E-03 tpy**	**4.70E-04 tpy**	**3.09E-04 tpy**	**3.37E-05 tpy**	**1.01E-04 tpy**	

Notes/Comments:

[1] Total heat consumption based on maximum full-time operation, permit-limited operation, or actual operation estimated as the average of 2016 - 2017 hours of operation as noted below:

(1) 420 kW	John Deere Engine				
	Assessable Potential Heat Input (EU ID 3)	394	MMBtu/yr @	100	hr/yr[3]
	Unlimited Potential Heat Input (EU ID 3)	1,971	MMBtu/yr @	500	hr/yr[5]
	Estimated Actual Heat Input (EU ID 3)	243	MMBtu/yr @	62	hr/yr
(1) 350 kW	Cummins Engine				
	Assessable Potential Heat Input (EU ID 12)	329	MMBtu/yr @	100	hr/yr[4]
	Unlimited Potential Heat Input (EU ID 12)	1,643	MMBtu/yr @	500	hr/yr[5]
	Estimated Actual Heat Input (EU ID 12)	160	MMBtu/yr @	49	hr/yr
(1) 50 kW	Duetz Engine				
	Assessable Potential Heat Input (EU ID 19)	47	MMBtu/yr @	100	hr/yr[4]
	Unlimited Potential Heat Input (EU ID 19)	235	MMBtu/yr @	500	hr/yr[5]
	Estimated Actual Heat Input (EU ID 19)	17	MMBtu/yr @	37	hr/yr
(1) 230 kW	Caterpillar Engine				
	Assessable Potential Heat Input (EU ID 42)	216	MMBtu/yr @	100	hr/yr[3]
	Unlimited Potential Heat Input (EU ID 42)	1,080	MMBtu/yr @	500	hr/yr[5]
	Estimated Actual Heat Input (EU ID 42)	52	MMBtu/yr @	24	hr/yr
	Total Assessable Potential Heat Input	TOTAL	986	MMBtu/yr	
	Total Unlimited Potential Heat Input	TOTAL	4,928	MMBtu/yr	
	Total Estimated Actual Heat Input	TOTAL	471	MMBtu/yr	

[2] Reference: AP-42, Tables 3.3-2

[3] EU IDs 3 and 42 are limited to 100 hours per calendar year of operation by 40 CFR 60.4211, Subpart IIII.

[4] EU IDs 12 and 19 are limited to 100 hours per calendar year of operation by 40 CFR 63.6640(f)(2), Subpart ZZZZ.

[5] According to a memorandum from John S. Seitz of the EPA, 500 hours of operation is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate per year.

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Table D-15. Incinerator - Estimated Actual and Potential HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Total Assessable and Unlimited Potential Waste Burned: 657 tons/yr [1]
Total Estimated Actual Waste Burned: 4 tons/yr [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	Assessable and Unlimited Potential Emissions	Estimated Actual Emissions
No.	**CAS No.**	**Chemical Name**	**Emission Factor [2]**	**EU ID 26**	
46	N/A	Arsenic Compounds	4.37E-03 lb/ton	1.44E-03 tpy	8.90E-06 tpy
58	N/A	Cadmium Compounds	1.09E-02 lb/ton	3.58E-03 tpy	2.22E-05 tpy
75	N/A	Chromium Compounds	8.97E-03 lb/ton	2.95E-03 tpy	1.83E-05 tpy
120	7647010	Hydrochloric acid	6.40E+00 lb/ton	2.10 tpy	1.30E-02 tpy
124	N/A	Lead Compounds	2.13E-01 lb/ton	7.00E-02 tpy	4.34E-04 tpy
128	N/A	Mercury Compounds	5.60E-03 lb/ton	1.84E-03 tpy	1.14E-05 tpy
146	N/A	Nickel Compounds	7.85E-03 lb/ton	2.58E-03 tpy	1.60E-05 tpy
			Total HAP Emissions	**2.18 tpy**	**1.35E-02 tpy**

Notes/Comments:

[1] Total heat consumption based on maximum full-time operation, permit-limited operation, or actual operation estimated as the average of 2016 - 2017 hours of operation as noted below:

(1) 150 lbs/hr	Thermal Engine Corp. Incinerator			
	Assessable and Unlimited Potential Tons Burned (EU ID 26)	657 tons @	8,760 hr/yr	
	Estimated Actual Tons Burned (EU ID 26)	4.1 tons @	54.3 hr/yr	

Total Assessable and Unlimited Potential Tons Burned	TOTAL	657 tons/yr	
Total Estimated Actual Tons Burned	TOTAL	4 tons/yr	

[2] Reference: AP-42, Table 2.1-2

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Table D-16. Gasoline Dispensing Facility - Estimated Potential and Actual HAP Emissions
Hilcorp Alaska, LLC - Beluga River Unit

Total Potential VOCs: 1.5 tpy [1]

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations		Actual and Potential Emissions	
No.	CAS No.	Chemical Name	Emission Factor [2]		EU ID 44	
14	540841	2,2,4-Trimethylpentane	0.8	wt.%VOC	1.16E-02	tpy
48	71432	Benzene	0.9	wt.%VOC	1.31E-02	tpy
99	100414	Ethyl benzene	0.1	wt.%VOC	1.45E-03	tpy
118	110543	N-Hexane	1.6	wt.%VOC	2.32E-02	tpy
162	N/A	Polycylic Organic Matter	0.5	wt.%VOC	7.26E-03	tpy
176	108883	Toluene	1.3	wt.%VOC	1.89E-02	tpy
188	106423	Xylenes (isomers and mixture)	0.5	wt.%VOC	7.26E-03	tpy
			Total HAP Emissions		**0.08**	**tpy**

Notes/Comments:

[1] Total VOC based on full time operation as noted below:

Actual hours of operation are not required to be tracked and are assumed to be the same as full time operation.

(1) <10,000 gal/mo Gasoline Dispensing Facility

Potential VOC Emissions (EU ID 44)		1.5	tpy VOC
Total Potential VOCs:	TOTAL	1.5	tpy VOC

[2] Emission factors from Table 4, "Normal" column in *Developing a Consistent Methodology to Calculate VOC and HAP Evaporative Emissions for Stage I and Stage II Operations at Gasoline Service Stations for the 1999 NEI*

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Significant Emission Unit Inventory (DON'T INCLUDE IN APPLICATION)
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Tag No.	Emission Unit Name	Emission Unit Description	Fuel	Rating/Size	Maximum Operation	Construction Date	Actual Hours 2016	Actual Hours 2017
			Turbines and Engines						
1	BA-C-M48000	Turbine Compressor- Out of Solonox	Solar Taurus 60 Compressor Drive - Out of Solonox	FG	7,700 hp	400 hr/yr	2006	0	0
1	BA-C-M48000SN	Turbine Compressor- In Solonox	Solar Taurus 60 Compressor Drive - In Solonox	FG	7,700 hp	8,760 hr/yr	2006	4319	7995.7
2	BA-C-0002	Compressor	Waukesha H24GLD MOC Compressor Drive	FG	530 hp	100 hr/yr	2005	147.3	52.3
3	BA-G-0003	Generator	John Deere Engine	Diesel	420 kW	100 hr/yr	2008	96	27.1
12	BA-G-0012	Generator	Cummins Engine	Diesel	350 kW	100 hr/yr	Pre-1990	48	49.1
19	BA-G-0019	Generator	Duetz Engine	Diesel	50 kW	100 hr/yr	Pre-1990	0	74.1
37-1	BA-C-01-3000	Wellsite Compressor	Pad C WH Comp-01 EU 37	FG	840 hp	8,760 hr/yr	2011	5853.5	8554.6
37-2	BA-C-02-3000	Wellsite Compressor	Pad C WH Comp-02 EU 37	FG	740 hp	8,760 hr/yr	2011	5853.5	8669.5
37-3	BA-C-03-3000	Wellsite Compressor	Pad D WH Comp-03 EU 37	FG	400 hp	8,760 hr/yr	2011	5720.8	8662.6
37-4	BA-C-04-3000	Wellsite Compressor	Pad E WH Comp-04 EU 37	FG	840 hp	8,760 hr/yr	2011	5772.9	6758.5
37-6	BA-C-06-3000	Wellsite Compressor	Pad F WH Comp-06 EU 37	FG	400 hp	8,760 hr/yr	2011	5746	8524.8
37-7	BA-C-07-3000	Wellsite Compressor	Pad H WH Comp-07 EU 37	FG	840 hp	8,760 hr/yr	2011	5740	8578.1
37-8	BA-C-08-3000	Wellsite Compressor	Pad H WH Comp-08 EU 37	FG	740 hp	8,760 hr/yr	2011	5776.4	8659.1
37-9	BA-C-09-3000	Wellsite Compressor	Pad J WH Comp-09 EU 37	FG	740 hp	8,760 hr/yr	2011	5840.3	8620.5
37-10	BA-C-10-3000	Wellsite Compressor	Pad J WH Comp-10 EU 37	FG	840 hp	8,760 hr/yr	2011	5709.6	8599.7
42	BA-G-0042	Generator	Caterpillar Engine	Diesel	230 kW	100 hr/yr	Installed 2012, model year 2009	24	24.1
43	BA-C-11-3000	Wellsite Compressor	Pad B Cat 3306 Comp-11 EU 37	FG	220 hp	8,760 hr/yr	Installed 2015, model year 2010	2474.6	7436.5
			Incinerator						
26	Incinerator	Incinerator	Thermal Engine Corp. Incinerator	Waste	150 lb/hr	8,760 hr/yr	Pre-1990	56.4	52.2
			Gasoline Dispensing Facility						
44	None	GDF	Gasoline Dispensing Facility	Gasoline	<10,000 gallons/mo	8,760 hr/yr	Prior to 11/9/2006		

Insignificant Emission Unit Inventory
Hilcorp Alaska, LLC - Beluga River Unit

EU ID	Tag No.	Emission Unit Name	Emission Unit Description	Fuel	Rating/Size	Maximum Operation	Insignificant Status		
			Glycol Reboilers						
N/A	BA-GDU-0004	Reboiler	Pad H Glycol Reboiler #1	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	4954	8750.1
N/A	BA-GDU-0005	Reboiler	Pad H Glycol Reboiler #2	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	3592	8756.6
N/A	BA-GDU-0006	Reboiler	Pad H Glycol Reboiler #3	FG	0.18 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	3692.3	8704.4
N/A	BA-GDU-0007	Reboiler	Pad A Glycol Reboiler	FG	0.075 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	24	24
N/A	BA-GDU-0008	Reboiler	Pad B Glycol Reboiler	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	73.3	7040.2
N/A	BA-GDU-0009	Reboiler	Pad C Glycol Reboiler #1	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5038.8	8702
N/A	BA-GDU-0010	Reboiler	Pad C Glycol Reboiler #2	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	4173.3	504
N/A	BA-GDU-0013	Reboiler	Pad D Glycol Reboiler	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5494	8734.5
N/A	BA-GDU-0014-1	Reboiler	Pad E Glycol Reboiler #1	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	4996	7193.4
N/A	BA-GDU-0014-2	Reboiler	Pad E Glycol Reboiler #2	FG	0.125 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5558.9	8758
N/A	BA-GDU-0016	Reboiler	Pad F Glycol Reboiler	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5580.8	8731
N/A	BA-GDU-0017	Reboiler	Pad G Glycol Reboiler	FG	0.50 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5403.4	5838
N/A	BA-GDU-0018	Reboiler	Pad I Glycol Reboiler	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5446.2	8648.3
N/A	BA-GDU-0021	Reboiler	Pad J Glycol Reboiler #1	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5038.5	8466
N/A	BA-GDU-0022	Reboiler	Pad J Glycol Reboiler #2	FG	0.175 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	4730.6	984
N/A	BA-GDU-0023	Reboiler	Pad J Glycol Reboiler #3	FG	0.125 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5295	8754.8
N/A	BA-GDU-0024	Reboiler	Pad K Glycol Reboiler	FG	0.25 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)	5568	7903.6
			Glycol Dehydration Vents						
4	N/A	GDU	Pad H Glycol Dehydration Vent #1	FG	5.53 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	4954	8750.1
5	N/A	GDU	Pad H Glycol Dehydration Vent #2	FG	55 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	3592	8756.6
6	N/A	GDU	Pad H Glycol Dehydration Vent #3	FG	55 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	3692.3	8704.4
7	N/A	GDU	Pad A Glycol Dehydration Vent	FG	0.45 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	24	24
8	N/A	GDU	Pad B Glycol Dehydration Vent	FG	0.27 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	73.3	7040.2
9	N/A	GDU	Pad C Glycol Dehydration Vent #1	FG	5.14 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5038.8	8702
10	N/A	GDU	Pad C Glycol Dehydration Vent #2	FG	5.14 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	4173.3	504
13	N/A	GDU	Pad D Glycol Dehydration Vent	FG	3.92 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5494	8734.5
14	N/A	GDU	Pad E Glycol Dehydration Vent #1	FG	1.99 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	4996	7193.4
15	N/A	GDU	Pad E Glycol Dehydration Vent #2	FG	3.87 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5558.9	8758
16	N/A	GDU	Pad F Glycol Dehydration Vent	FG	6.71 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5580.8	8731
17	N/A	GDU	Pad G Glycol Dehydration Vent	FG	2.10 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5403.4	5838
18	N/A	GDU	Pad I Glycol Dehydration Vent	FG	3.05 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5446.2	8648.3
21	N/A	GDU	Pad J Glycol Dehydration Vent #1	FG	2.37 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5038.5	8466
22	N/A	GDU	Pad J Glycol Dehydration Vent #2	FG	2.37 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	4730.6	984
23	N/A	GDU	Pad J Glycol Dehydration Vent #3	FG	2.37 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5295	8754.8
24	N/A	GDU	Pad K Glycol Dehydration Vent	FG	3.53 MMscfd	8,760 hr/yr	18 AAC 50.326(e)	5568	7903.6
			Insignificant Heaters						
11	N/A	Process Heater	Process Heater	FG	1 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
20	N/A	Process Heater	Process Heater	FG	1 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
25	N/A	Process Heater	Process Heater	FG	0.125 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
29	N/A	Heater	Office Coleman Heater	FG	0.06 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
30	N/A	Heater	Shop Perfection Schwank Heater	FG	0.02 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
31	N/A	Heater	Electrical Shop Modine Heater	FG	0.03 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
32	N/A	Heater	Mechanics Shop Modine Heater	FG	0.11 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
33	N/A	Heater	Mechanics Shop Modine Heater	FG	0.30 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
34	N/A	Heater	BRWD Heater	FG	0.50 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(5)		
35	N/A	Heater	Mechanics Shop Used Oil Heater	Used Oil	0.5 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(7)		
36	N/A	Frost Fighter	Portable Frost Fighter	Diesel	0.4 MMBtu/hr	8,760 hr/yr	18 AAC 50.326(g)(7)		

Conversions:

Fuel Gas Heat Content:	1,000	Btu/scf
Diesel Fuel Heat Content:	137,000	Btu/gal
Diesel Fuel Density:	7	lb/gal
Diesel Engine Heat Rate:	7,000	Btu/hp-hr
Natural Gas Engine Heat Rate:	8,000	Btu/hp-hr

FORM E3

Title V Condition Change Request

Permit Number: AQ0942TVP01, Revision 2

Title V Permit Information (*attach additional sheets as needed*):

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
AQ0942TVP01, Rev. 2, Table A	Revise	EU ID 43 was installed in April 2015 and EU ID 44 was inadvertently left out of the original permit application.	Add EU IDs 43 and 44. Please see Form B for unit descriptions.
AQ0942TVP01, Rev. 2, Table A	Revise	EU ID 42 was installed in 2012 but the engine was manufactured in 2009 and certified to Tier 3 standards.	Add a footnote stating "EU ID 42 is a model year 2009 engine."
AQ0942TVP01, Rev. 2, Table A Note 2	Revise	Revise the table note to account for the fact that the GDUs now only include the dehydrator vents.	Revise the footnote as follows: "GDUs include only the dehydrator vents that are subject to recordkeeping under 40 CFR 63 Subpart HH. Glycol reboilers have been assigned separate IDs and moved to the insignificant emission unit list."
AQ0942TVP01, Rev. 2, List of Abbreviations and Conditions	Revise	Corrects typographical error.	Please update "g/hphr" to "g/hp-hr."
AQ0942TVP01, Rev. 2, Conditions 1, 1.1, 6, 6.1, 9, 9.5-9.7, Condition 9.5 heading	Revise	Updates conditions to account for installation of EU 43.	Add reference to EU ID 43.

AQ0942TVP01, Rev. 2, Condition 2.3	Revise	Clarifies when the VE observation is required if Condition 2.3 is triggered, and clarifies the information required by the VE observation form when conducting a VE observation under Condition 2.3.	"When required by Condition 2.2, observe visible emissions for 18 consecutive minutes to obtain a minimum of 72 observations in accordance with Method 9 of 40 CFR 60, Appendix A. <u>For each observation, record the information required by Condition 4.1. Complete the observation within 30 days after the end of the month during which the operational threshold in Condition 2.2 is exceeded or during the unit's next scheduled operation, whichever is later. Method 9 monitoring is not required to be completed any more frequently than</u> ~~at least~~ once each calendar year."
AQ0942TVP01, Rev. 2, Condition 2.4	Revise	Clarifies requirement, and is consistent with other VE reporting.	Replace with the following: 2.4. Report in accordance with Condition 5.1b.
AQ0942TVP01, Rev. 2, Condition 2.5	Revise	Clarifies requirement, and is consistent with other VE reporting.	Replace with the following: 2.5. Report in accordance with Condition 5.2.
AQ0942TVP01, Rev. 2, Conditions 3, 3.1a, 4, 4.1, and 5.1	Revise	Hilcorp does not utilize the Smoke/No Smoke Plan at any of its facilities. Removing the requirements streamlines the permit.	Revise conditions to delete all references to Smoke/No Smoke Plan and revise as necessary.
AQ0942TVP01, Rev. 2, Conditions 3.2, 3.3, 4.2	Remove	Hilcorp does not utilize the Smoke/No Smoke Plan at any of its facilities. Removing the requirements streamlines the permit.	Conditions 3.2, 3.3, 4.2. *Remove.*
AQ0942TVP01, Rev. 2, Condition 5.2b	Revise	The additional reference ensures that Condition 5.2b requires reporting for failure to monitor under both Condition 3 and Condition 2.3.	Add reference to monitoring required by Condition 2.3.

AQ0942TVP01, Rev. 2, Condition 7.3	Revise	The visible emissions limit is a 6-minute average opacity value.	Revise as indicated below: 7.3. During each one-hour PM source test run, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the highest ~~average~~ 6-minute <u>average</u> opacity that…
AQ0942TVP01, Rev. 2, Condition 8.2	Revise	Corrects typographical error.	Please add a space between "7.2" and "within."
AQ0942TVP01, Rev. 2, Conditions 8.3a and 8.3c	Revise	As indicated in Footnote 1 of the permit, all EUs subject to Condition 7.2 have a stack diameter less than 18 inches. Therefore, Condition 7.2 includes only one threshold.	Revise Condition 8.3a as indicated: a. the dates, EU IDs, and results when an observed 18-minute average was greater than ~~an applicable~~ <u>the</u> threshold in Condition 7.2. Revise Condition 8.3c as indicated: c. copies of any VE observation results (opacity observations) greater than the ~~thresholds~~ <u>threshold</u> of Condition 7.2, if they were not already submitted.
AQ0942TVP01, Rev. 2, Condition 9.1b	Revise	The requirement to keep a receipt specifying a fuel grade and amount is only relevant for fuel that requires a sulfur content less than 0.5 percent by weight as described in Condition 9.1a. Condition 9.1b requires testing of fuels that do not require a sulfur content less than 0.5 percent by weight, so there is no point in requiring that receipts be kept regarding delivery of this type of fuel.	Revise as indicated: b. If the fuel grade does not require a sulfur content less than 0.5 percent by weight, ~~keep receipts that specify fuel grade and amount and~~

AQ0942TVP01, Rev. 2, Condition 9.2	Revise	No fuel testing is required under Condition 9.1a. A method does not have to be listed in both 18 AAC 50.035(b)-(c) and 40 C.F.R. 60.17 to be preapproved for use.	Revise as indicated: 9.2. Fuel testing under Condition ~~9.1~~ 9.1.b must follow an appropriate method listed in 18 AAC 50.035(b)-(c) ~~and~~ or 40 C.F.R. 60.17 incorporated by reference in 18 AAC 50.040(a)(1).
AQ0942TVP01, Rev. 2, Condition 9.3	Revise	Consistent with language used in Condition 9.1.	Replace the word "load" with the word "shipment."
AQ0942TVP01, Rev. 2, Conditions 10.2 and 10.3.	Revise	Corrects language.	Replace the phrase "maintain records for" with the phrase "maintain records of" in Condition 10.2 and Condition 10.3.
AQ0942TVP01, Rev. 2, Conditions 12, 23.1 and Footnote 4	Revise	Corrects typographical error.	Please change "EU 37" to "EU ID 37."
AQ0942TVP01, Rev. 2, Condition 12.1	Revise	More exact language as indicated will decrease confusion.	Revise as indicated: 12.1. Include the following information regarding the emission units included in EU ID 37 in the operating reports submitted under Condition 66: a. the number of ~~emission units~~ individual units operated as EU ID 37 during the reporting period; b. the rated capacity of each individual ~~emission~~ unit; c. the aggregate capacity of all ~~emission units~~ EU ID 37 units; and d. the location of each ~~emission~~ unit.

AQ0942TVP01, Rev. 2, Condition 13	Revise	Remove EU ID 26 from this condition per the Application for Significant Modification submitted on February 7, 2018.	Revise the condition to remove reference to EU ID 26.
AQ0942TVP01, Rev. 2, Condition 14.4 citation	Revise	Corrects citation.	Please add "Subpart A" to the citation.
AQ0942TVP01, Rev.2, Footnotes 2 and 3.	Revise	Remove outdated effective dates.	Please remove "effective 7/1/07."
AQ0942TVP01, Rev. 2, Condition 18	Revise	Correct a typographical error.	Update the language as described below: "…of any credible evidence or information relevant to whether EU ID~~s~~ 1 would have been in compliance…"
AQ0942TVP01, Rev. 2, Conditions 20.1, 20.2, 21, and 22	Revise	A citation of the location in 18 AAC 50 where Subpart IIII is adopted by reference should be included.	In citations associated with these condition, revise the first citation as follows: [18 AAC 50.040(c)(23)(a)(2)(OO); 18 AAC 50.040(j)(4); 18 AAC 50.326(j)]
AQ0942TVP01, Rev. 2, Condition 21	Revise	60.4201(d) applies to manufacturers of marine CI engines, and is not relevant to EU IDs 3 or 42. 60.4204(b) applies to non-emergency CI engines. 60.4205(b) applies to emergency CI engines. Hilcorp requests a reclassification of EU IDs 3 and 42 as emergency engines under Subpart IIII.	Revise the condition to require compliance with the emissions standards for new CI engines in 60.4205(b) (instead of 60.4204). In the citation, delete the reference to 60.4201(d) and change the reference from 60.4204(b) to 60.4205(b).
AQ0942TVP01, Rev. 2, Condition 21 citation	Revise	Correct a typographical error.	Please add brackets to the last citation.

AQ0942TVP01, Rev. 2, Condition 22	Revise	Correct a formatting error.	Please update the formatting of the condition to make the following not bold: "For EU IDs 3 and 42, the…"
AQ0942TVP01, Rev. 2, Condition 22	Revise	60.4209(b) does not apply because neither EU 3 nor EU 42 is equipped with a particulate filter to comply with 60.4204.	In citation, delete reference to 60.4209(b).
AQ0942TVP01, Rev. 2, Condition 22.1	Revise	Update permit condition to clarify requirements. The correct citation and permit language in Condition 22.1 are from 60.4211(c) because EU 3 and EU 42 are MY2007 or later engines (EU 3 is MY 2008 and EU 42 is MY 2009). 60.4202(g) and 60.4216(b) contain the specific language that allows an engine located in areas of Alaska not accessible by the FAHS to be certified according to the provisions of 40 CFR 94.	Revise the condition as follows: 22.1. ~~Purchasing~~ Purchase an engine certified according to ~~40 C.F.R. Part 89 or~~ 40 C.F.R. Part 94~~, as applicable,~~ for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emissions-related specifications, except as permitted in Condition 22.2. [40 C.F.R. 60.4211(c)~~(b)~~, 60.4202(g), 60.4216(b), Subpart IIII]
AQ0942TVP01, Rev. 2, Condition 23	Revise	Addresses changes necessary to add EU 43, clarifies requirements, incorporates exact rule language, corrects typographical errors, and corrects citations.	Revise as indicated below: 23. **NSPS Subpart JJJJ Standards:** For engines included in EU ID 37, and for EU ID 43, the Permittee shall comply with the standards in Conditions 23.1 through ~~23.5~~ 23.6. [18 AAC 50.040(a)(2)(PP) & (j)(4); 18 AAC 50.326(j)] [40 C.F.R. 71.6(a)(1)] [40 C.F.R. 60.4230(a)(4), Subpart JJJJ]

AQ0942TVP01, Rev. 2, Condition 23.1	Revise	Clarifies requirements, incorporates exact rule language, corrects typographical errors, and corrects citations.	Revise as indicated below: 23.1. The Permittee shall not allow emissions from any engine included in EU ID 37 to exceed: a. 1.0 gram per horsepower-hour (g/~~hphr~~hp-hr) or 82 parts per million by dry volume (ppmvd) at 15% O_2 for NOx; b. 2.0 g/~~hphr~~hp-hr or 270 ppmvd at 15% O_2 for CO; and a. 0.7 g/~~hphr~~hp-hr or 60 ppmvd at 15% O_2 for VOC. Do not include emissions of formaldehyde when calculating VOC emissions. [40 C.F.R. 60.4233(e), Table 1, & Table 1 Footnote d, Subpart JJJJ]
AQ0942TVP01, Rev. 2, Condition 23.2	Revise	Addresses changes necessary to add EU 43, clarifies requirements, incorporates exact rule language, corrects typographical errors, and corrects citations.	Re-number this condition to 23.3 and revise as indicated below: ~~23.2~~. 23.3 Operate and maintain each engine included in EU ID 37 and EU ID 43 such that the emission standards in ~~Condition 23.1~~ Conditions 23.1 and 23.2 are met over the lifetime of the engine. [40 C.F.R. 60.4234, Subpart JJJJ]

AQ0942TVP01, Rev. 2, Condition 23.3	Revise	Addresses changes necessary to add EU 43, clarifies requirements, incorporates exact rule language, corrects typographical errors, and corrects citations.	Re-number this condition to 23.4 and revise as indicated below: ~~23.3~~. 23.4. The Permittee shall demonstrate compliance with the emissions standards in Condition<u>s</u> 23.1 <u>and 23.2</u> as follows: a. For <u>EU ID 43 and</u> each engine <u>included in EU ID 37</u> less than or equal to 500 HP, keep a maintenance plan and records of conducted maintenance and ~~must~~, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, ~~you must~~ conduct an initial performance test to demonstrate compliance. If the engine has been rebuilt (as defined in 40 CFR 94.11(a)), conduct an additional performance test within 180 days of the subsequent startup of the emission unit. b. For each engine <u>included in EU ID 37</u> greater than 500 HP, keep a maintenance plan and records of conducted maintenance and ~~must~~, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, ~~you must~~ conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. c. ~~If utilized, the air-to-fuel ratio must be maintained and operated appropriately to ensure proper operation of the engine and control device to minimize emissions at all times.~~ <u>For rich burn engines included in EU ID 37 and for EU ID 43, it is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.</u> [40 C.F.R. 60.4243(b)(2) & 40 C.F.R. 60.4243(f) & (g)<u>, Subpart JJJJ</u>]

AQ0942TVP01, Rev. 2, Condition 23.4	Revise	Addresses changes necessary to add EU 43, clarifies requirements, incorporates exact rule language, corrects typographical errors, and corrects citations.	Renumber to 23.5 and revise as indicated below: ~~23.4~~. 23.5 The Permittee shall conduct all performance tests required under Condition ~~23.3~~ 23.4 in accordance with 40 CFR 60.4244. [40 C.F.R. 60.4243(b)(2), Subpart JJJJ] [40 C.F.R. 60.4244~~(d) – (g)~~, Subpart JJJJ]
AQ0942TVP01, Rev. 2, Condition 23.5	Revise	Addresses changes necessary to add EU 43, clarifies requirements, incorporates exact rule language, corrects typographical errors, and corrects citations.	Renumber to 23.6 and revise as indicated below: ~~23.5~~. 23.6 The Permittee shall meet the following notification, reporting, and recordkeeping requirements for EU IDs 37 and 43: a. Keep records of (i) all notifications submitted to comply with Subpart JJJJ and all documentations supporting any notification; (ii) maintenance conducted on the engines ~~engine(s)~~; and (iii) documentation that the ~~engine meets~~ engines meet the emission standards. [40 C.F.R. 60.4245(a)(1), (2), & (4), Subpart JJJJ] b. Submit to the Department and EPA a copy of each performance test as required in Condition ~~23.3~~ 23.4 within 60 days after completion of the test. [40 C.F.R. 60.4245(d), Subpart JJJJ]

AQ0942TVP02, Rev. 2, Conditions 24.1-24.5	Revise	Corrects a formatting error.	Please bold the initial statements, e.g., **NOx Emission Standard.**
AQ0942TVP02, Rev. 2, Condition 24.2	Revise	In conjunction with the change to Condition 24.5 requested below, the change to Condition 24.2 clarifies the testing requirement. Note that Conditions 24.2a and 24.2b describe when testing is allowed to be completed less frequent than annually.	Revise as indicated below: 24.2. **NOx Emissions Standard Monitoring**. The Permittee shall perform annual performance tests <u>(no more than 14 calendar months following the previous performance test)</u> in accordance with Condition 24.5 to demonstrate continuous compliance, ~~as follows:~~<u>except as allowed under Conditions 24.2a and 24.2b.</u>
AQ0942TVP02, Rev. 2, Condition 24.2b	Revise	The referenced limit is in Condition 24.1 and not in Condition 24. Also correct the citation to state 60.4400 instead of just 4400.	Please revise as indicated below: 24.2 b. If the results of any subsequent performance test exceed 75 percent of the NOx emission limit in Condition 24<u>.1</u>, the Permittee must resume annual performance tests. [40 CFR 60.4340(a) & <u>60.</u>4400]
AQ0942TVP02, Rev. 2, Condition 24.3	Revise	Corrects typographical error.	Please revise as indicated below: "…keep records of all performance ~~tests~~ <u>test</u> data in …"
AQ0942TVP02, Rev. 2, Condition 24.4	Revise	Should reference Condition 60 which is the Source Test report condition rather than the Operating Report condition, Condition 66.	Please revise as indicated below: 24.4. **Reporting**. The Permittee shall submit a written report of the results of each performance test required under Conditions 24.2 and 24.5 before the close of business on the 60th day following the completion of the performance test and in accordance with Condition ~~66~~ <u>60</u>.

AQ0942TVP02, Rev. 2, Condition 24.5	Revise	In conjunction with the change to Condition 24.2 requested above, the proposed change to Condition 24.5 clarifies the testing requirement. In conjunction with the request to remove Conditions 24.5a-24.5f (see below), the proposed change to Condition 24.5 replaces the detailed test methodology language with a reference to the rule.	Revise as indicated below: 24.5. **Performance Tests**. The Permittee shall conduct an initial performance test as required in Condition 16, and conduct subsequent NOx performance tests ~~on an annual basis (no more than 14 calendar months following the previous performance test)~~, as provided in Condition~~s~~ 24.2~~.a and 24.2.b.~~ <u>Performance tests shall be conducted in accordance with 40 C.F.R 60.4400.</u>
AQ0942TVP02, Rev. 2, Condition 24.5.a - f	Remove	We propose to add the reference to the test methods in Condition 24.5 (see above). This approach is both preferable and practical because it simplifies the permit and the test methodology is directly utilized by the source test contractor, not the Permittee. The source test contractor should refer directly to the rule to determine the required testing procedures and not to the permit.	Conditions 24.5 a – f. *Remove.*

AQ0942TVP02, Rev. 2, Condition 27, Condition 27 header	Revise	Add reference to 40 CFR 60 Subpart OOOOa and incorporate updates to Subpart OOOO, and corrects some typographical errors.	Please revise the condition as follows: **Equipment Potentially Subject to NSPS Subpart OOOO and Subpart OOOOa** 27. The Permittee shall comply with the requirements of 40 CFR 60 Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which Construction, Modification or Reconstruction Commenced after August 23, 2011, and on or before September 18, 2015) and 40 CFR 60 Subpart OOOOa (Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced after September 18, 2015), as applicable, to any gas or oil well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, collection of fugitive emissions components at wellsites and/or compressor stations, and storage vessel affected facility located at the stationary source. [40 CFR 60.5360 – 5430, Subpart OOOO] [40 CFR 60.5360a-5432a, Subpart OOOOa]
AQ0942TVP02, Rev. 2, Condition 28 header	Revise	Corrects typographical error.	Please revise the header for Condition 28 as follows: **Emission Units Subject to ~~NESHAPS~~ NESHAP Subpart A (EU IDs 2, 12, 19, 4-10, 13-18, ~~and~~ 21-24, and 44)**

AQ0942TVP01, Rev. 2, Condition 28	Revise	The format requested provides additional clarity.	Replace with the language below: 28. **NESHAP (40 C.F.R. 63) General Provisions**. Affected facilities subject to a Federal Part 63 NESHAP are subject to the General Provisions outlined under Subpart A of the respective Federal regulation as follows: [18 AAC 50.040(j) & 50.326(j)] [40 C.F.R. 71.6(a)(1)] 28.1 **Triethylene Glycol (TEG) Dehydration Units Subject to Subpart HH**. For EU IDs 4-10, 13-18, and 21-24, comply with the applicable requirements of 40 C.F.R. 63, Subpart A in accordance with the provisions for applicability of Subpart A described in Table 2 to Subpart HH. [40 C.F.R. 63.764 & Table 2, Subpart HH] [40 C.F.R. 63.1 - 63.15, Subpart A] 28.2 **RICE Subject to Subpart ZZZZ**. For EU IDs 2, 12, and 19, comply with the applicable requirements of 40 C.F.R. 63, Subpart A in accordance with the provisions for applicability of Subpart A described in Table 8 to Subpart ZZZZ. [40 C.F.R. 63.6665 & Table 8, Subpart ZZZZ] [40 C.F.R. 63.1 - 63.15, Subpart A] 28.3 **Area Source Existing Gasoline Dispensing Facility Subject to Subpart CCCCCC**. For EU ID 44, comply with the applicable requirements of 40 C.F.R. 63, Subpart A in accordance with the provisions for applicability of Subpart A described in Table 3 to Subpart CCCCCC. [40 C.F.R. 63.11130 & Table 3, Subpart CCCCCC] [40 C.F.R. 63.1 - 63.15, Subpart A]

AQ0942TVP01, Rev. 2, Conditions 28 and 29 (citations)	Revise	Corrects typographical errors.	Move citations of 63.774(a) and 63.775(a) that follow Condition 29 to instead be part of the citations that follow Condition 28 because they describe Subpart A requirements. Also, change "63,775(a)" to "63.775(a)."
AQ0942TVP01, Rev. 2, Condition 29	Revise	Corrects typographical errors.	Please add a space between "40" and "CFR" and add "Subpart HH" to the citations.
AQ0942TVP01, Rev. 2, Condition 29.1	Revise	Corrects formatting errors.	Please bold "Recordkeeping Requirements."
AQ0942TVP01, Rev. 2, Footnote 6	Revise	Add a reference to EU ID 43 to the 2nd sentence of the footnote and correct a typographical error.	Revise Footnote 6 as follows: [6] … EU IDs 3, 37, ~~and~~42<u>, and 43</u> are new affected sources under 40 CFR 63, Subpart ZZZZ. Per 40 CFR 63.6590(c), by complying with 40 CFR 60 Subparts IIII and ~~Subpart~~ JJJJ, they comply with 40 CFR 63, Subpart ZZZZ.
AQ0942TVP01, Rev. 2, Conditions 30, 31, 34.2, and 35.2	Remove	Hilcorp is requesting to reclassify EU ID 2 as an emergency engine under Subpart ZZZZ. This requirement no longer applies.	Conditions 30, 31, 34.2, and 35.2. *Remove.*
AQ0942TVP01, Rev. 2, Conditions 32, 33.3, and 34.1	Revise	Hilcorp is requesting to reclassify EU ID 2 as an emergency engine under Subpart ZZZZ. Update the condition to include EU ID 2.	Revise the condition to include EU ID 2.

AQ0942TVP01, Rev. 2, Condition 32.1	Revise	Hilcorp is requesting to reclassify EU IDs 2, 12 and 19 as emergency engines under Subpart ZZZZ. Revise the condition as indicated in order to address the emergency engine requirements applicable to EUs 2, 12 and 19 upon reclassification as emergency engines under Subpart ZZZZ.	Change the oil change frequency in Condition 32.1 from "1,000 hours" to "500 hours".
AQ0942TVP01, Rev. 2, Condition 32.3	Revise	Hilcorp is requesting to reclassify EU IDs 2, 12 and 19 as emergency engines under Subpart ZZZZ. Revise the condition as indicated in order to address the emergency engine requirements applicable to EUs 12 and 19 upon reclassification as emergency engines under Subpart ZZZZ.	Change the citation that follows Condition 32.3 as follows: [40 CFR ~~63, Subpart ZZZZ,~~ 63.6603(a),~~(b),~~ 63.6625(i) and Table 2d, ~~Item 1~~ Item 4, Subpart ZZZZ]
AQ0942TVP01, Rev. 2, Condition 32.2	Revise	Adds missing rule language.	Add the phrase "and replace as necessary." to the end of the sentence.
AQ0942TVP01, Rev. 2, Condition 32.2b	Revise	Clarifies/corrects rule references. 63.6625(e)(3) specifically applies to emergency CI RICE. 63.6625(e)(4) applies to non-emergency CI RICE rated at less than or equal to 300 hp. With this application, we are reclassifying EU IDs 12 and 19 as emergency CI RICE.	Revise citation as shown below: [40 C.F.R. 63.6625(e)(3)~~(3 & 4)~~, 63.6640(a) & Table 6, item 9, Subpart ZZZZ]

AQ0942TVP01, Rev. 2, Condition 33.2	Revise	Correct language for grammatical and typographical errors.	Correct the language as follows: "For EU IDs 2, 12, and 19, minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup apply."
AQ0942TVP01, Rev. 2, Condition 35.1	Revise	Corrects the citation pertaining to the condition.	Revise the citation under Condition 35.1 as indicated below: [40 CFR 63.6640(e), 63.6650(f), Subpart ZZZZ]
AQ0942TVP01, Rev. 2, Condition 36	Remove	All notifications are associated with 1) the initial compliance demonstration, which has already been completed; 2) engines using a CMS, or 3) engines using an alternative monitoring method. Furthermore, the requirement of Condition 28 to comply with 40 C.F.R. 63, Subpart A, encompasses the notification requirements outlined in Condition 36.	Condition 36. *Remove.*
AQ0942TVP01, Rev. 2, Conditions 38.2 and 38.3	Remove	Halon is not used at Beluga River, therefore the requirements stated in Conditions 38.2 and 38.3 do not apply.	Conditions 38.2 and 38.3. *Remove.*

AQ0942TVP01, Rev. 2, Condition 39	Revise	The suggested language more closely matches the rule, and clarifies notification requirements not included in the current permit language.	Replace Condition 39 language with the following: **NESHAPs Applicability Determinations.** The Permittee shall determine rule applicability and designation of affected sources under National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories (40 C.F.R. 63) in accordance with the procedures described in 40 C.F.R. 63.1(b). If a source becomes affected by an applicable subpart of 40 C.F.R. 63, the Permittee shall notify the Department and the Administrator as required by the applicable subpart and in accordance with 40 C.F.R. 63.9(b)(1) and shall comply with such standard by the compliance date established by the Administrator in the applicable subpart, in accordance with 40 C.F.R. 63.6(c). [18 AAC 50.040(c)(1), 50.040(j), & 50.326(j)] [40 C.F.R. 71.6(a)(3)(ii)] [40 C.F.R. 63.1(b), 63.1(c)(5), 63.6(c)(1) & 63.9(b)(1), Subpart A]
AQ0942TVP01, Rev. 2, Condition 44	Revise	Standard permit condition revised after issuance of AQ0942TVP01 Rev. 2.	Update to Standard Permit Condition I.1. (Revised May 18, 2016)
AQ0942TVP01, Rev. 2, Condition 45	Revise	Standard permit condition revised after issuance of AQ0942TVP01 Rev. 2.	Update to Standard Permit Condition I.2. (Revised May 18, 2016)

AQ0942TVP01, Rev. 2, Condition 63	Revise	Remove the requirement to submit copies of the reports based upon the September 1, 2014 policy and procedure (04.02.110) to remove obsolete obligations. Also, clarify the last sentence to clearly state that original reports may be submitted electronically. As written, it could be understood that the electronic submittal pertains to another copy of the same report.	Revise the condition as indicated: **Submittals.** Unless otherwise directed by the Department or this permit (e.g., Condition 66 for operation reports), the Permittee shall send an original version ~~and one copy~~ of reports, compliance certifications, and other submittals required by this permit to ADEC, Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician. The Permittee may, upon consultation with the Compliance Technician regarding software compatibility, ~~provide electronic copies of~~ submit data reports, ~~emission~~ source test reports, or other records electronically under a cover letter certified in accordance with Condition 62.
AQ0942TVP01, Rev. 2, Condition 65.1c(i)	Revise	It is impossible to report a deviation until it is discovered. If a deviation is not discovered within 30 days of the end of the month that the deviation occurred, it is impossible to comply with the condition.	Add the phrase "or is discovered" after the word "occurred."
AQ0942TVP01, Rev. 2, Condition 65.1c(iii)	Revise	Clarifies the permit deviation reporting requirement and associated deadlines.	Revise the condition as follows: (iii) according to the required deadline for failure to monitor, as specified in Conditions 2.5, 5.2b, and 8.1b ~~as required in other applicable conditions of this permit~~.

AQ0942TVP01, Rev. 2, Condition 66	Revise	Update the deadlines for submittal of the operating reports to coincide with the deadlines for reporting for other Hilcorp permits. Update the condition to reflect the intent to allow one of the two copies of the operating report to be submitted electronically.	Revise the condition as follows: **Operating Reports.** During the life of this permit, the Permittee shall submit to the Department an original and one copy of an operating report by August ~~15~~ 1 for the period January 1 to June 30 of the current year and by February ~~15~~ 1 for the period July 1 to December 31 of the previous year. The copy of the operating report may be submitted electronically under a cover letter certified in accordance with Condition 62.
AQ0942TVP01, Rev. 2, Condition 66, and subconditions	Revise	Standard permit condition revised after issuance of AQ0942TVP01 Rev. 2.	Update to Standard Permit Condition VII.1. (Revised May 18, 2016)
AQ0942TVP01, Rev. 2, Condition 66.4d (citation)	Revise	Update the citation to the correct reference for the standard operating permit condition that addresses operating reports.	Change the citation from "18 AAC 50.346(a)" to "18 AAC 50.346(b)(6)."
AQ0942TVP01, Rev. 2, Condition 67	Revise	Clarifies the number of required copies of compliance certification reports to be submitted. We ask that the Department remove the requirement to submit a copy of the annual compliance certification report based upon the September 1, 2014 policy and procedure (04.02.110) to remove obsolete obligations. Also, add a reference to Condition 63 to point the reader to additional information regarding report submittal, including the option to submit the report electronically.	Revise the condition as indicated and add a new footnote as shown: **Annual Compliance Certification.** Each year by March 31, the Permittee shall compile and submit to the Department ~~an original and one copy of~~ an annual compliance certification report according to Condition 63. <New footnote> A single copy of the signed certification must also be submitted to EPA, per Condition 67.2.

AQ0942TVP01, Rev. 2, Condition 68	Revise	Standard permit condition revised after issuance of AQ0942TVP01 Rev. 2.	Update to Standard Permit Condition XV.1. (Revised May 18, 2016)
AQ0942TVP01, Rev. 2, Condition 69.2	Revise	Although 40 CFR 60.13 and 63.10(d) and (f) discuss the fact that affected sources can obtain from EPA approval for various types of waivers, alternative requirements, and custom schedules, they do not pertain to the underlying requirement of this condition, which is to provide copies of said documents to the Department. These rules also do not include a requirement to keep a copy of said documents with the permit, which is another underlying requirement of the condition. In addition, 40 C.F.R. 60.13 specifically addresses the fact that affected sources can obtain from EPA approval for various types of waivers and alternative monitoring pertaining to CEMS operation and relative accuracy testing. However, there are no CEMS at the BRU, so the waivers and alternative monitoring provisions discussed in 40 C.F.R. 60.13 are not relevant to BRU. For these reasons, 40 C.F.R. 60.13 and 40 C.F.R. 63.10(d) and (f) should not be cited with the "NSPS and NESHAP Reports" condition.	Revise the citation following Condition 69.2 as follows: [40 C.F.R. ~~60.13, 63.10(d and f); &~~ 71.6(c)(6)]
AQ0942TVP01, Rev. 2, Condition 76.2c (citation)	Revise	Correct typographical error.	Change the citation from "326(j)" to "50.326(j)."

AQ0942TVP01, Rev. 2, Section 13 – Emission Inventory Form	Revise	Standard permit condition revised after issuance of AQ0942TVP01 Rev. 2.	Update to Standard Permit Condition XVI. (Revised May 18, 2016)