



November 18, 2020

Government Letter No. 46035

Alaska Department of Environmental Conservation
Air Permit Program
555 Cordova Street
Anchorage, Alaska 99501

Attn: Permit Intake Clerk

Subject: Pump Station 4 – Application for Renewal of Operating Permit AQ0075TVP03

Alyeska Pipeline Service Company (Alyeska) submits this application for an Air Quality Control (AQC) Operating Permit for Pump Station 4 (PS 4). The stationary source currently operates under Permit AQ0075TVP03, which expires on June 9, 2021, and as required by 18 AAC 50.326, an application must be submitted no sooner than December 9, 2019 and no later than December 9, 2020.

Pursuant to AS 46.14.150, and 18 AAC 50.326, this application is timely. Alyeska understands that completeness will be evaluated by the Alaska Department of Environmental Conservation (ADEC) according to the processes and elements established under 40 CFR 71.7.

Alyeska believes that this submittal constitutes a complete operating permit application according to the requirements of 18 AAC 50.326, which incorporates 40 CFR 71.7 and other relevant sections of 40 CFR Part 71. The application accompanying this letter utilizes the application forms required by ADEC.

Consistent with 18 AAC 50.400(a)(1) Alyeska understands that we will continue to pay an annual permit administrative fee and that no other fees are required with this submittal. If you have any questions or require additional information, please contact Don Mark Anthony at (907) 787-8568.

Sincerely,

Klinton D. VanWingerden
Operations Director

Attachment: PS 4 Operating Permit Application

cc: EPA Region 10

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DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
ANCH DAS



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Sincerely,

A handwritten signature in blue ink, appearing to read "Klinton D. VanWingerden", with a long horizontal flourish extending to the right.

Klinton D. VanWingerden
Operations Director

Attachment: PS 4 Operating Permit Application

cc: EPA Region 10



Application for an Air Quality Control Operating Permit

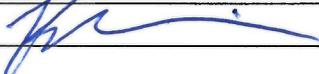
Pump Station 4

November 2020

Form Series A

Form A1
Stationary Source (General Information)

FORM A1
Stationary Source (General Information)

GENERAL INFORMATION		
1. Permittee:		
Permittee Name: Alyeska Pipeline Service Company		
Mailing Address Line 1: P.O. Box 196660		
Mailing Address Line 2		
City: Anchorage	State: AK	Zip Code: 99519-6660
2. Stationary Source Name: Pump Station 4 (PS-4)		
3. Stationary Source Physical Address :		
Physical Address Line 1: 155 miles south of Prudhoe Bay, AK		
Physical Address Line 2 Umiat Meridian		
City: N/A	State: AK	Zip Code: N/A
4. Location	Latitude: N 68° 25' 23"	Longitude: W 149° 21' 18"
:Click here to enter text.		
5. Primary SIC Code: 4612	SIC Code Description: Crude Oil Pipelines	Primary NAICS Code: 4861
6. Current/Previous Title V Air Permit No.: AQ0075TVP03		Expiration Date: June 9, 2021
7. Does this application contain confidential data? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
8. APPLICATION IS BEING MADE FOR:		
<input type="checkbox"/> Initial Title V Permit for this Stationary Source <input type="checkbox"/> Modify Title V Permit (currently permitted) <input checked="" type="checkbox"/> Title V Permit Renewal		
9. CONTACT INFORMATION (Attach additional sheets if needed)		
Owner:		Operator:
Name/Title: See current permit		Name/Title: APSC
Mailing Address Line 1:		Mailing Address Line 1: See above
Mailing Address Line 2		Mailing Address Line 2
City:	State:	Zip Code:
City:	State:	Zip Code:
Permittee's Responsible Official:		Designated Agent:
Name/Title: Klinton D. VanWingerden/Operations Director		Name/Title: CT Corporation
Mailing Address Line 1: APSC		Mailing Address Line 1: 9360 Glacier Hwy
Mailing Address Line 2 P.O. Box 196660		Mailing Address Line 2 Suite 202
City: Anchorage	State: AK	Zip Code: 99519
City: Juneau	State: AK	Zip Code: 99801
Stationary Source and Building Contact:		Fee Contact:
Name/Title: Mark Dahl/Tim Jones/Maintenance Supervisor PS-3 and PS-4		Name/Title: Alice Joseph/Environmental Program Specialist
Mailing Address Line 1: Pump Station 4		Mailing Address Line 1: APSC
Mailing Address Line 2 P.O.Box 196660		Mailing Address Line 2 P.O. Box 196660, MS 507
City: Anchorage	State: AK	Zip Code: 99519-6660
City: Anchorage	State: AK	Zip Code: 99519-6660
Phone: 907 787-4402	Email: Mark.Dahl@Alyeska-Pipeline.com/Tim.Jones@Alyeska-Pipeline.com	Phone: 907 787-5871
		Email: Alice.Joseph@alyeska-pipeline.com
Permit Contact:		Person or Firm that Prepared Application:
Name/Title: Don Mark Anthony/Air Quality SME		Name/Title: Keith Quincey/Senior Consultant
Mailing Address Line 1: APSC		Mailing Address Line 1:
Mailing Address Line 2 P.O. Box 196660, MS 507		Mailing Address Line 2
City: Anchorage	State: AK	Zip Code: 99519-6660
City:	State:	Zip Code:
Phone: 907 787-8568	Email: markanthonydt@alyeska-pipeline	Phone: 907 360-1171
		Email: KeithAQA@hotmail.com
10. STATEMENT OF CERTIFICATION		
Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.		
Name of Responsible Official (typed): Klinton D. VanWingerden		Title: Operations Director
X Signature (blue ink): 	Date: 11/17/2020	

Form A2
Stationary Source Description

FORM A2
Stationary Source Description

Permit Number: AQ0075TVP03

1.	<p>Stationary Source Description (a thorough description of the stationary source, its processes, raw materials, operating scenarios, and other specific information that may be necessary to determine the applicability of Title V requirements.) The information may include property area or map, number of employees, maximum capacity, and other primary emission-generating activities co-located or on adjacent properties.</p> <p>The stationary source is a crude oil pumping facility. The equipment is primarily natural gas-fired, with diesel fuel is used as an emergency back-up fuel in most of the equipment. A complete emissions unit inventory is provided with this application.</p>	
2.	Nonattainment area [yes/no; if yes, specify]	No
3.	Does the CAM rule [40 CFR Part 64] apply to any of the emissions units? [if yes, review the guidance provided for CAM in the Form A2 instructions for this item]	No
4.	Does the accidental release prevention regulation [40 CFR Part 68] apply to the facility? [if yes, provide the appropriate regulatory applicability document in detail.]	No

- 5. Attach plot plan.
- 6. Attach regional map.
- 7. Attach USGS map.

**Form A2 Attachments
Location Map and Plot Plan**

C-Plan Map: 15

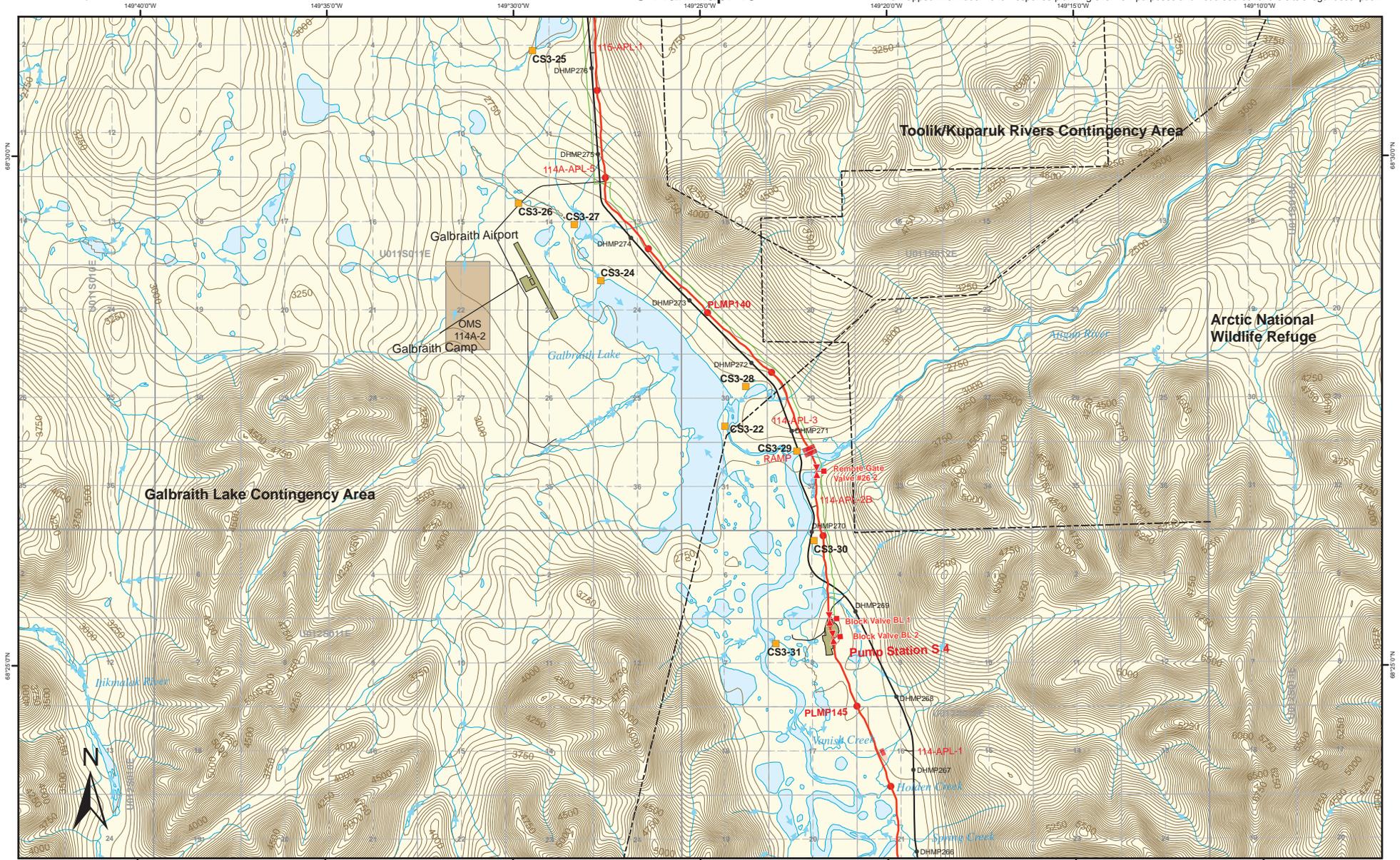
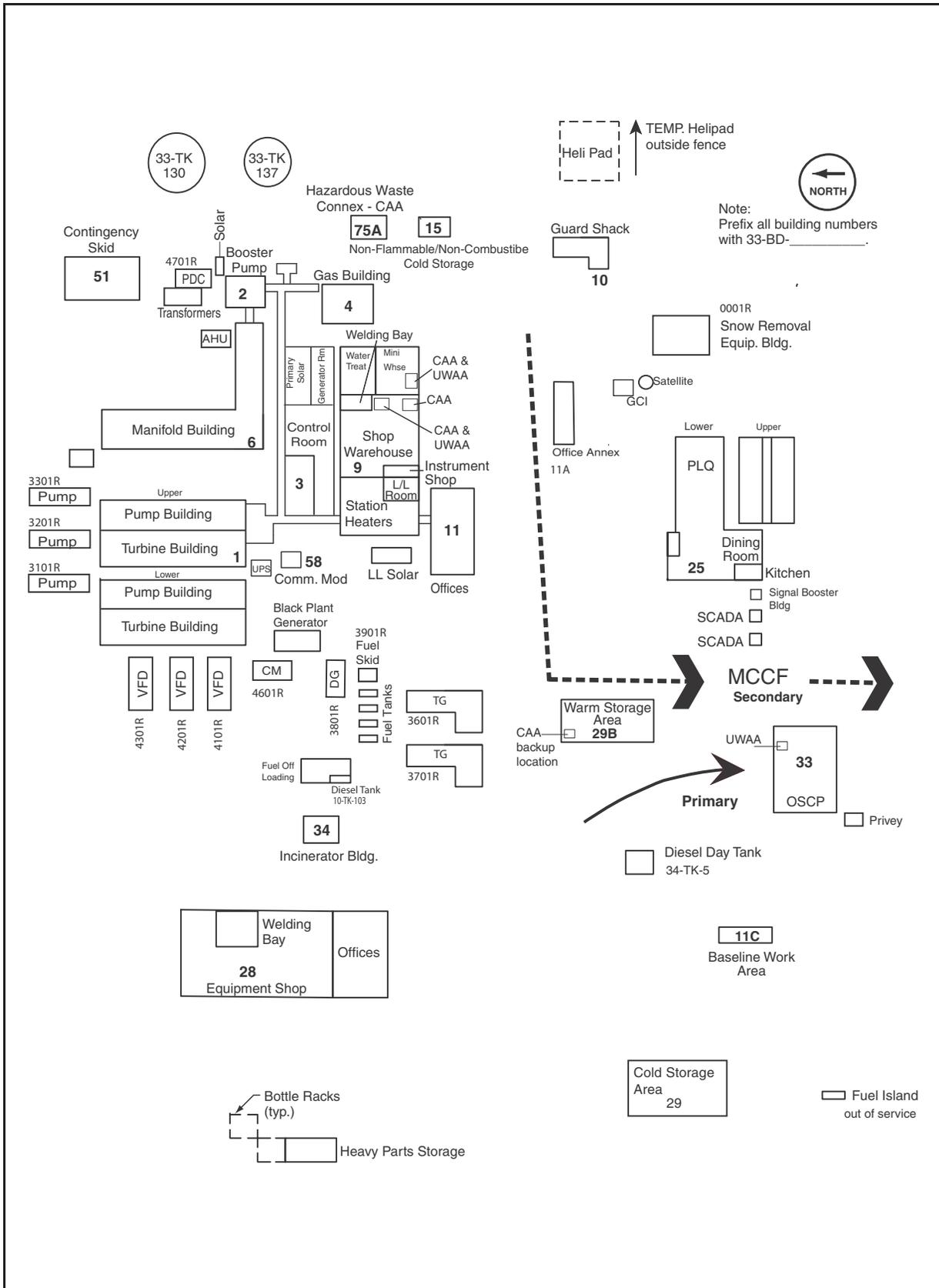


Figure 1. Pump Station Plot Plan



Form A3
Operating Scenario Description

Form A4
Title V Operating Permit Renewal
Application Information

FORM A4
Title V Air Operating Permit Renewal Application Information

Permit Number: AQ0075TVP03

1.	Permit Contact: Name	See Form A1.
	Title	See Form A1.
	Mailing Address Line 1	See Form A1.
	Mailing Address Line 2	See Form A1.
	Phone Number	See Form A1.
	Email	See Form A1.
2.	Were there any changes to stationary source General Information (Form A1)? If yes, complete and submit a Form A1.	Yes, see Form A1.
3.	Were there any changes to the stationary source description (Form A2)? If yes, complete and submit a Form A2.	No.
4.	Were there any off-permit changes? Reference any notifications provided to the Department, and attach copies of the notifications.	No.
	If yes, integrate changes into renewal permit? [if no, explain]	Not applicable.
5.	Have any Alaska Title I permits been issued to the stationary source since the most recent Title V permit or revision issuance?	No.
	If yes, integrate changes into renewal permit? [If yes, please list. If no, explain]	Not applicable.
6.	Will there be any changes to the operating scenario(s)? [if yes, describe and attach Form A3]	No.
7.	Will there be any new, modified, or reconstructed emission units or air pollution control equipment? [if yes, attach appropriate forms from Form Series B, C, D, and E]	No.
8.	Are the current emissions units correctly identified and defined in the permit? [if no, attach appropriate forms from Form Series B, C, D, and E]	Yes.
9.	Does the CAM rule [40 CFR Part 64] apply to any of the emissions units? [if yes, review the guidance provided for CAM in the Form A4 instructions for this item]	No.
10.	Does the accidental release prevention regulation [40 CFR Part 68] apply to the facility? [if yes, provide the appropriate regulatory applicability document in detail.]	No.
11.	Are there any other new applicable requirements? [if yes, list the new applicable requirements, emissions units, and attach the appropriate Series E Form]	No.

FORM A4

Title V Air Operating Permit Renewal Application Information

	Are there any requested changes in the assessable potential to emit other than those identified in item 9 above? [if yes, answer the following]	No.
12.	Are the changes a result of having better emissions information such as a new emission factor from a recent source test? [if yes, complete and attach any applicable emissions forms from Series D. Attach additional information as necessary to fully document.]	No.
	Are the changes due to an increase in production? [if yes, complete and attach the applicable emissions form from Series D. Attach additional information as necessary to fully document.]	No.
13.	Is the stationary source in compliance with all of the conditions of the current permit? If yes, attach a compliance certification. If no, attach a compliance schedule and/or actions taken for any out-of-compliance emission units.	Yes. A compliance certification is included as an Form A4 Attachment.
14.	Are there any requested changes to testing and/or monitoring conditions? [if yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	No.
15.	Are there any requested changes to monitoring conditions other than those being replaced by CAM? [if yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	No.
16.	Are there any requested changes to recordkeeping conditions? [if yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	No.
17.	Are there any requested changes to reporting conditions? [if yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	No.
18.	Are there any requested changes to the non-applicable requirements (i.e. permit shield)? [if yes, identify the emission unit, the requested change, and the reason in the appropriate Series B and/or D form. If the change applies stationary source-wide, complete the appropriate Series E form. Attach additional information as necessary to fully document.]	No.

FORM A4
Title V Air Operating Permit Renewal Application Information

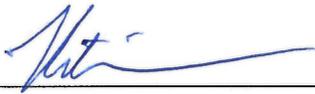
19.	Are there any other requested changes to any condition? [if yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	No.
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Statement of Certification:

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

Klinton D. VanWingerden
Name of Responsible Official

Operations Director
Title


Signature (blue ink)

11/17/2020
Date

**Form A4 Attachment
Compliance Certification**

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
Section 3 State Requirements				
1	Visible Emissions Standards - EU 8-10, 12-15, 18, and 22	Yes	Monitoring conducted under Condition 2, and reasonable inquiry.	For EU 8, 9, and 12 compliance status based on firing gas as primary fuel, and reasonable inquiry when firing liquid fuel. EU 13 burned only gas as fuel. EU 10, 14, and 18 had actual emissions less than permit limits, and/or the thresholds in 18 AAC 50.326(e); compliance based on reasonable inquiry. EU 15 and 22 operation less than the limits in Table B.
2-4	Visible Emissions Standards MR&R	Yes	Reasonable inquiry/records.	MR&R conducted as required.
5	Particulate Matter Emissions Standard - EU 8-10, 12-15, 18, and 22	Yes	Monitoring conducted under Condition 2, and reasonable inquiry.	Compliance based on demonstration for VE standard.
6-7	Particulate Matter Emissions Standards MR&R	Yes	Reasonable inquiry/records.	MR&R conducted as required.
8	Visible Emissions & Particulate Matter Emissions Standards MR&R – EU 8, 9 and 12	Yes	Reasonable inquiry/records.	EU 8, 9 and 12 operated less than 400 hr/yr on liquid fuel.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
9	Sulfur Compound Emissions Standard - EU 8, 9, 12-15, 18, and 22	Yes	Monitoring conducted under Conditions 10 and 12.	Fuel gas contained 150 ppmv or less H ₂ S. Liquid fuel contained less than 0.2 wt% sulfur.
10-11	Sulfur Compound Emissions Standard MR&R – Liquid Fuel	Yes	Reasonable inquiry/records.	MR&R conducted as required, records maintained.
12-14	Sulfur Compound Emissions Standard MR&R – Gaseous Fuel	Yes	Reasonable inquiry/records.	MR&R conducted as required, records maintained.
15 (15.1)	Operational Limits – EU 8 and 9	Yes	Monitoring records under Condition 15.2.	EU 8 and 9 complied with operational limits at time of signature.
15.2-15.5	Operational Limits MR&R	Yes	Reasonable inquiry/records.	All MR&R conducted as required, records maintained.
16	Tank 140 HAP Emissions ORL – EU 21	Yes	Monitoring and recordkeeping conducted under Conditions 16.1 and 16.2.	EU 21 HAP emissions less than the limits in Condition 16 at time of signature.
16.1-16.2	Tank 140 HAP Emissions ORL MR&R	Yes	Reasonable inquiry/records.	MR&R conducted as required, records maintained.
17	Strategic Reconfiguration Authorization and Notification Requirements	Yes	Reasonable inquiry/records.	No notifications required at time of signature.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
18 (18.1 and 18.2)	Fuel Sulfur Limits – EU 8-10, 12-15, 18, and 22	Yes	Monitoring conducted under Conditions 18.1 and 18.2.	Fuel gas contained 150 ppmv or less H ₂ S. Liquid fuel contained less than 0.2 wt% sulfur.
18.1-18.2	Fuel Sulfur Limits MR&R	Yes	Reasonable inquiry/records.	All MR&R conducted as required, records maintained.
19	Operational Limits – EU 12, 14, and 15	Yes	Monitoring and recordkeeping conducted under Conditions 19.1 and 19.2.	EU 12, 14, and 15 complied with the operational limits in Table B at time of signature.
19.1-19.4	Operational Limits MR&R	Yes	Reasonable inquiry/records.	All MR&R conducted as required, records maintained.
20	Stack Parameters	Yes	Reasonable inquiry/records.	Stacks maintained as required.
21 (21.2)	CO Emissions Limit – EU 12 and 13	Yes	Monitoring records under Condition 19.1, and monitoring conducted under Conditions 21.4-21.5.	EU 12 and 13 complied with operational limits in Table B, the load-based operating limits in Condition 21.2 and the intake temperature limit in Condition 21.3 at time of signature.
21.4-21.9	Operational Limits MR&R	Yes	Reasonable inquiry/records.	All MR&R conducted as required, records maintained.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
22 (22.1.a and 22.2)	NOx Emissions Limits – EU 12, 14, 15 and 22	Yes	Monitoring records under Conditions 19.1.	EU 12, 14, and 15 complied with operational limits in Table B at time of signature. EU 22 compliance with the limit in Condition 22.2.
22.1-22.2	NOx Emissions MR&R	Yes	Reasonable inquiry/records.	All MR&R conducted as required, records maintained.
23	SO ₂ Emissions Limit – EU 12, 14, and 15	Yes	Monitoring records under Conditions 18 and 19.	EU 12, 14, and 15 complied with operational limits in Table B and the fuel sulfur limits in Condition 13 at time of signature.
23.1	SO ₂ Emissions Limit MR&R	Yes	Reasonable inquiry/records.	All MR&R under Conditions 18 and 19 conducted as required, records maintained.
24	Insignificant Emission Unit Requirements	Yes	Reasonable inquiry.	Compliance with applicable emission standards based on reasonable inquiry. No insignificant EU had actual emissions greater than the thresholds in 18 AAC 50.326(e).
Section 4 Federal Requirements				
25	NSPS Subpart A Notification Requirements	Yes	Reasonable inquiry/records.	No notifications required at time of signature.
26	NSPS Subpart A Startup, Shutdown, Malfunction Requirements – EU 12 and 13	Yes	Reasonable inquiry/records.	Operation records are maintained electronically in Alyeska's data logger system and in the daily operator logs.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
27-28	NSPS Subpart A Excess Emissions and Monitoring Systems Performance Reports – EU ID 12	Yes	Reasonable inquiry/records.	Subpart A report for operation on diesel fuel filed as required.
29	NSPS Subpart A Performance Tests	Yes	Reasonable inquiry.	No performance tests required by EPA at time of signature.
30	NSPS Subpart A Good Air Pollution Control Practice – EU 12 and 13	Yes	Reasonable inquiry/records.	Complied with the routine maintenance procedures at time of signature. The units do not have an air pollution control device.
31	NSPS Subpart A Credible Evidence	Yes	Reasonable inquiry.	Credible evidence is not a Part 70/71 applicable requirement.
32	NSPS Subpart A Concealment of Emissions	Yes	Reasonable inquiry.	EU 12 and 13 operate with a positive pressure stack, eliminating potential dilution. Stacks in good condition.
33 (33.1-33.2)	NSPS Subpart GG NO _x Emissions Standard – EU 12 and 13	Yes	Monitoring conducted under Condition 33.3, and reasonably inquiry.	Most recent periodic testing results indicate compliance with the standard.
33.3-33.5	NSPS Subpart GG NO _x Emissions MR&R	Yes	Reasonable inquiry/records.	MR&R conducted as required at time of signature. No load restrictions apply under Condition 33.3.c.
34	NSPS Subpart GG SO ₂ Emissions Standard – EU 12 and 13	Yes	Monitoring under Condition 34.1	Fuels combusted contained less than 0.8% sulfur by weight.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
34.1-34.3	NSPS Subpart GG SO ₂ Emissions Standard MR&R	Yes	Reasonable inquiry/records.	Liquid fuel sampling conducted as required. Fuel gas meets definition of natural gas, no monitoring required. Records maintained.
35 (35.1)	NSPS Subpart A Requirements – EU 22	Yes	Reasonable inquiry.	Alyeska complied with Subpart A requirements as applicable to EU 22 during the permit term.
36 (36.1)	NSPS Subpart IIII Emissions Standards – EU 22	Yes	Compliance requirements under Condition 38.4.	EU 22 was certified by the manufacturer to the emission standards in Condition 36.1.
37 (37.1)	NSPS Subpart IIII Fuel Requirements – EU 22	Yes	Reasonable inquiry/records.	EU 22 burns only ULSD as fuel.
38	NSPS Subpart IIII Compliance Requirements	Yes	Reasonable inquiry/records.	Alyeska complied with Condition 38.1-38.4.
39	NSPS Subpart IIII Test Methods and Other Procedures	Yes	Reasonable inquiry.	No performance test conducted at time of signature.
40	Asbestos NESHAP	Yes	Reasonable inquiry/records.	Alyeska complied with the requirements of 40 CFR 61.145, 61.150, 61.152, Subpart M and applicable sections of Subpart A and Appendix A as triggered at time of signature.
41	NESHAP Subpart A Requirements	Yes	Reasonable inquiry.	Alyeska met all requirements of Subpart A identified in Table 8 of Subpart ZZZZ as applicable at time of signature.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
42	NESHAP Subpart ZZZZ Requirements – EU 10, 14, 15, and 22	See below	See below.	For EU 10, 14, and 15, see compliance under Conditions 43-47. For EU 22, see NSPS Subpart IIII compliance under Conditions 35-39.
43	NESHAP Subpart ZZZZ Management Practices for Emergency Engines – EU 10 and 14	Yes	Reasonable inquiry/records.	Alyeska met the management (maintenance) requirements in Condition 43.1-43.3.
44	NESHAP Subpart ZZZZ Management Practices for Non-Emergency Engines – EU 15	Yes	Reasonable inquiry/records.	Alyeska met the management (maintenance) requirements in Condition 44.1-44.3.
45	NESHAP Subpart ZZZZ Requirements – EU 10, 14 and 15	Yes	Reasonable inquiry/records.	Alyeska operated EU 10, 14, and 15 according to GAPCP and Condition 45.1. Alyeska met the operation and maintenance requirements in Condition 45.2 and 45.3. Alyeska met the emergency engine operating limitations in Condition 45.4.
46	NESHAP Subpart ZZZZ Operation and Maintenance Requirements – EU 10, 14 and 15	Yes	Reasonable inquiry/records.	Alyeska met the continuous compliance requirements in Condition 46.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
47	NESHAP Subpart ZZZZ Recordkeeping Requirements	Yes	Reasonable inquiry/records.	Alyeska met the requirements in Condition 47 at time of signature.
48	Protection of Stratospheric Ozone 40 CFR 82 Subparts F, G and H	Yes	Reasonable inquiry/records.	Alyeska complied with the recycling and emissions reduction requirements in Subpart F, and the applicable prohibitions in Subpart G and Subpart H.
49	NESHAP Applicability Determinations	Yes	Reasonable inquiry.	Any required NESHAP applicability determination records maintained as necessary at time of signature.
50	NSPS and NESHAP Reports	Yes	Reasonable inquiry/records.	Copies of any reports submitted under 40 CFR 60, 61 or 63 at time of signature included with operating report as required. Under Condition 50.2, no request by ADEC at time of signature for any EPA-granted waivers.
Section 5 General Conditions				
51-53	Standard Terms and Conditions	Yes	Reasonable inquiry.	No comments.
54	Administration Fees	Yes	Reasonable inquiry/records.	Fees paid as required.
55-56	Assessable Emissions Estimates	Yes	Reasonable inquiry/records.	Records document that the emission fee estimates for FY2021 were submitted to ADEC by March 31, 2020 and the emission fees paid.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
57	Good Air Pollution Control Practices – EU 8 and 9	Yes	Reasonable inquiry/records.	For EU 8 and 9, conducted regular maintenance at time of signature.
58	Dilution Prohibition	Yes	Reasonable inquiry.	Sources have positive pressure stacks, eliminating potential dilution. Stacks are in good condition
59	Reasonable Precautions to Prevent Fugitive Dust	Yes	Reasonable inquiry.	Precautions taken as needed at time of signature. No complaints received at time of signature.
60	Stack Injection Prohibition	Yes	Reasonable inquiry.	Only products of combustion or process emissions were released from applicable stacks.
61	Air Pollution Prohibited	Yes	Reasonable inquiry/records.	No complaints were received for the reporting period.
61.1	Air Pollution Prohibited MR&R	Yes	Reasonable inquiry/records.	No complaints were received; no MR&R triggered at time of signature.
62	Technology-Based Emission Standard Excess Emissions Requirements	Yes	Reasonable inquiry.	No unavoidable excess emissions occurred at time of signature.
63	Open Burning Requirements	Yes	Reasonable inquiry/records.	No open burning conducted at time of signature.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
Section 6 General Source Testing and Monitoring Requirements				
64-73	Source Tests Requirements and Methods	Yes	Reasonable inquiry.	Any source tests conducted during reporting period followed test requirements and methods as required.
Section 7 General Recordkeeping and Reporting Requirements				
74	General Recordkeeping Requirements	Yes	Reasonable inquiry/records.	Records maintained as required under specific conditions of permit.
75	Certification of Documents	Yes	Reasonable inquiry/records.	Alyeska certified all items subject to 18 AAC 50.205 submitted to the ADEC at time of signature.
76-77	Submittals and Information Requests	Yes	Reasonable inquiry/records.	Alyeska addressed submittals as required at time of signature. Information requests, if any, submitted in timely manner.
78	Excess Emissions and Permit Deviation Reports	Yes	Reasonable inquiry/records.	Permit Deviation and Excess Emission Reports filed as required.
79	Operating Reports	Yes	Reasonable inquiry/records.	Records document that operating reports were submitted to ADEC in a timely manner, and were consistent with the requirements of Conditions 79.1-79.4.
80	Annual Compliance Certification	Yes	Reasonable inquiry/records.	2019 Annual Compliance Certification Report submitted as required.
81	Emission Inventory Reporting	Yes	Reasonable inquiry/records.	Emissions report submitted as required.

Compliance Certification
Operating Permit AQ0075TVP03/Applicable Requirements
Pump Station 4

Permit Condition		In Compliance?	Method Used to Determine Status	Comments on Condition, Compliance Method or Compliance Status
No(s).	Summary/Description			
Section 8 Permit Changes and Renewal				
82	Permit Applications and Submittals to EPA	Yes	Reasonable inquiry/records.	Permit application submitted as required.
83	Emissions Trading	Yes	Reasonable inquiry.	PS 4 does not engage in emissions trading.
84	Off Permit Changes	Yes	Reasonable inquiry/records.	Any off permit changes made at time of signature and requiring a notification under Condition 84.2 submitted as required.
85	Operational Flexibility	Yes	Reasonable inquiry/records.	No operational flexibility changes made at time of signature.
86	Permit Renewal	Yes	Reasonable inquiry.	Renewal application submitted as required.
Section 9 General Compliance Requirements				
87-91	General Compliance Requirements	Yes	Reasonable inquiry.	No comments.

Notes:

1. “Reasonable inquiry” may include but is not limited to process or operator knowledge; routine procedures; current and historical observations; and review of files, monitoring records or reports.
2. The description of compliance status indicates whether the stationary source was in compliance at the time of this certification. For the description of compliance status below, a “yes” means that Alyeska certifies that it was in compliance at the time of this certification and that it believes it will continue to comply. A “no” means that the stationary source was either not in compliance at the time of the application or that it will not be able to achieve continuous compliance with the current permit.

3. As required by 40 CFR 71.5(c)(8)(ii)(A) and (iii)(A), Alyeska hereby states that the stationary source, Pump Station 4, will continue to comply with applicable requirements with which the source is in compliance.

Form Series B

Form B
Emission Unit Listing for This Application

Form B1
Emission Unit Detail Form
External Combustion Equipment
(Boilers and Heaters)

FORM B1**Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)**Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU ID 8 and 9
2.	Date installation/construction commenced	Pre-1980
3.	Date installed	Pre-1980
4.	Emission Unit serial number	34-H-1A and 34-H-1B
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Eclipse
7.	Description of emission unit, including type of boiler/heater and firing method: Eclipse Therminol Heater, 1000-5 HCLT Design (2). EU IDs 8 and 9 fire natural gas as the primary fuel, and are capable of firing diesel fuel.	
8.	Rated design capacity (heat input, MMBtu/hr)	20.6 MMBtu/hr
9.	Maximum steam production rate (lbs/hr)	
10.	Maximum steam pressure (psi)	
11.	Maximum steam temperature (°F)	

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel fuel	153.8 gal/hr
Natural gas	21,436 scf/hr

13.	Is waste heat utilized for any purpose? If yes, describe:

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 1	18 AAC 50.055(a)(1)	Visible Emissions	20% Opacity	Yes	Permit AQ0075TVP03, Conditions 1.1, 2-4
AQ0075TVP03, Condition 5	18 AAC 50.055(b)(1)	Particulate Matter	0.05 gr/scf	Yes	Permit AQ0075TVP03, Conditions 5.1 and 8
AQ0075TVP03, Condition 9	18 AAC 50.055(c)	Sulfur Compound Emissions	500 ppm	Yes	Permit AQ0075TVP03, Conditions 10-14
AQ0075TVP03, Condition 15	Permit to Operate 9572-AA009, Amendment No. 2, 12/04/98	Owner Requested Limit	The lesser of: 1,000 hours; or 159,000 gallons per rolling 12-month period.	Yes	Permit AQ0075TVP03, Conditions 15.1-15.5
AQ0075TVP03, Condition 18	Construction Permit AQ0075CPT02	ORL to Protect Ambient Air	150 ppmv H ₂ S limit in fuel gas 0.2 wt% S limit in liquid fuel	Yes	Permit AQ0075TVP03, Conditions 18.1 and 18.2
AQ0075TVP03, Condition 57	18 AAC 50.045(a)	Good Air Pollution Control Practice	Work Practice	Yes	Permit AQ0075TVP03, Condition 57.1-57.4.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU 18 (11 insignificant emission units)
2.	Date installation/construction commenced	
3.	Date installed	2009
4.	Emission Unit serial number	
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Various
7.	Description of emission unit, including type of boiler/heater and firing method: Natural gas-fired space heaters (11)	
8.	Rated design capacity (heat input, MMBtu/hr)	3.28 MMBtu/hr combined
9.	Maximum steam production rate (lbs/hr)	
10.	Maximum steam pressure (psi)	
11.	Maximum steam temperature (°F)	

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Natural Gas	3.28 MMBtu/hr

13.	Is waste heat utilized for any purpose? If yes, describe:

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 1	18 AAC 50.055(a)(1)	Visible Emissions	20% Opacity	Yes	Permit AQ0075TVP03, Condition 1.5
AQ0075TVP03, Condition 5	18 AAC 50.055(b)(1)	Particulate Matter	0.05 gr/scf	Yes	Permit AQ0075TVP03, Condition 5.5
AQ0075TVP03, Condition 9	18 AAC 50.055(c)	Sulfur Compound Emissions	500 ppm	Yes	Permit AQ0075TVP03, Conditions 9.1 - 9.4
AQ0075TVP03, Condition 17	Minor Permit AQ0075MSS02	N/A	Specific requirements pertaining to the configuration of equipment under Strategic Reconfiguration	Yes	Permit AQ0075TVP03, Conditions 17.1-17.4
AQ0075TVP03, Condition 18	Permit AQ0075CPT02	ORL to Protect Ambient Air	150 ppmv H ₂ S limit in fuel gas	Yes	Permit AQ0075TVP03, Condition 18.1
AQ0075TVP03, Condition 24	18 AAC 50.045(a)	Good Air Pollution Control Practice	Work Practice	Yes	Permit AQ0075TVP03, Condition 24.4.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	NA-Insignificant Emission Units
2.	Date installation/construction commenced	
3.	Date installed	
4.	Emission Unit serial number	
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Burnham
7.	Description of emission unit, including type of boiler/heater and firing method: Forced air, natural gas-fired heaters (2)	
8.	Rated design capacity (heat input, MMBtu/hr)	0.8 MMBtu/hr
9.	Maximum steam production rate (lbs/hr)	N/A
10.	Maximum steam pressure (psi)	N/A
11.	Maximum steam temperature (°F)	N/A

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Natural Gas	Fuel throughput combined for all IEU heaters. See D Form series for emission calculation methods.

13.	Is waste heat utilized for any purpose? If yes, describe: No.
-----	--

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 24	18 AAC 50.055(a)(1), 50.055(b)(1), and 50.055(c)	Visible Emissions; Particulate Matter; Sulfur Compound Emissions	20% opacity; 0.05 gr/scf; 500 ppm	Yes	Permit AQ0075TVP03, Condition 24.4

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	NA-Insignificant Emission Units
2.	Date installation/construction commenced	
3.	Date installed	
4.	Emission Unit serial number	
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Hastings
7.	Description of emission unit, including type of boiler/heater and firing method: Natural gas-fired space heaters (8)	
8.	Rated design capacity (heat input, MMBtu/hr)	0.30 MMBtu/hr
9.	Maximum steam production rate (lbs/hr)	N/A
10.	Maximum steam pressure (psi)	N/A
11.	Maximum steam temperature (°F)	N/A

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Natural Gas	Fuel throughput combined for all IEU heaters. See D form series for emission calculation methods.

13.	Is waste heat utilized for any purpose? If yes, describe: No.
-----	--

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 24	18 AAC 50.055(a)(1), 50.055(b)(1), and 50.055(c)	Visible Emissions; Particulate Matter; Sulfur Compound Emissions	20% opacity; 0.05 gr/scf; 500 ppm	Yes	Permit AQ0075TVP03, Conditions 24.4

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	NA-Insignificant Emission Units
2.	Date installation/construction commenced	
3.	Date installed	
4.	Emission Unit serial number	
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Ground
7.	Description of emission unit, including type of boiler/heater and firing method: Diesel-fired space heater	
8.	Rated design capacity (heat input, MMBtu/hr)	0.5 MMBtu/hr
9.	Maximum steam production rate (lbs/hr)	N/A
10.	Maximum steam pressure (psi)	N/A
11.	Maximum steam temperature (°F)	N/A

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	Fuel throughput combined for all IEU heaters. See D form series for emission calculation methods.

13.	Is waste heat utilized for any purpose? If yes, describe: No.
-----	--

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 24	18 AAC 50.055(a)(1), 50.055(b)(1), and 50.055(c)	Visible Emissions; Particulate Matter; Sulfur Compound Emissions	20% opacity; 0.05 gr/scf; 500 ppm	Yes	Permit AQ0075TVP03, Condition 24.4

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	NA-Insignificant Emission Units
2.	Date installation/construction commenced	
3.	Date installed	
4.	Emission Unit serial number	
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Modine
7.	Description of emission unit, including type of boiler/heater and firing method: Natural gas-fired space heater (9)	
8.	Rated design capacity (heat input, MMBtu/hr)	0.5 MMBtu/hr
9.	Maximum steam production rate (lbs/hr)	N/A
10.	Maximum steam pressure (psi)	N/A
11.	Maximum steam temperature (°F)	N/A

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Natural Gas	Fuel throughput combined for all IEU heaters. See D form series for emission calculation methods.

13.	Is waste heat utilized for any purpose? If yes, describe: No.
-----	--

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 24	18 AAC 50.055(a)(1), 50.055(b)(1), and 50.055(c)	Visible Emissions; Particulate Matter; Sulfur Compound Emissions	20% opacity; 0.05 gr/scf; 500 ppm	Yes	Permit AQ0075TVP03, Condition 24.4

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	NA-Insignificant Emission Units
2.	Date installation/construction commenced	
3.	Date installed	
4.	Emission Unit serial number	
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Chinook
7.	Description of emission unit, including type of boiler/heater and firing method: Diesel-fired space heater (2)	
8.	Rated design capacity (heat input, MMBtu/hr)	0.8 MMBtu/hr each
9.	Maximum steam production rate (lbs/hr)	N/A
10.	Maximum steam pressure (psi)	N/A
11.	Maximum steam temperature (°F)	N/A

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	Fuel throughput combined for all IEU heaters. See D form series for emission calculation methods.

13.	Is waste heat utilized for any purpose? If yes, describe: No.
-----	--

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 24	18 AAC 50.055(a)(1), 50.055(b)(1), and 50.055(c)	Visible Emissions; Particulate Matter; Sulfur Compound Emissions	20% opacity; 0.05 gr/scf; 500 ppm	Yes	Permit AQ0075TVP03, Condition 20.4

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	NA-Insignificant Emission Units
2.	Date installation/construction commenced	
3.	Date installed	
4.	Emission Unit serial number	
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Tioga
7.	Description of emission unit, including type of boiler/heater and firing method: Diesel-fired space heater (2)	
8.	Rated design capacity (heat input, MMBtu/hr)	0.6 MMBtu/hr
9.	Maximum steam production rate (lbs/hr)	N/A
10.	Maximum steam pressure (psi)	N/A
11.	Maximum steam temperature (°F)	N/A

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	Fuel throughput combined for all IEU heaters. See D form series for emission calculation methods.

13.	Is waste heat utilized for any purpose? If yes, describe: No.
-----	--

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 24	18 AAC 50.055(a)(1), 50.055(b)(1), and 50.055(c)	Visible Emissions; Particulate Matter; Sulfur Compound Emissions	20% opacity; 0.05 gr/scf; 500 ppm	Yes	Permit AQ0075TVP03, Condition 20.4

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	NA-Insignificant Emission Units
2.	Date installation/construction commenced	
3.	Date installed	
4.	Emission Unit serial number	
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer	Aerotec
7.	Description of emission unit, including type of boiler/heater and firing method: Diesel-fired space heater	
8.	Rated design capacity (heat input, MMBtu/hr)	0.4 MMBtu/hr
9.	Maximum steam production rate (lbs/hr)	N/A
10.	Maximum steam pressure (psi)	N/A
11.	Maximum steam temperature (°F)	N/A

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	Fuel throughput combined for all IEU heaters. See D form series for emission calculation methods.

13.	Is waste heat utilized for any purpose? If yes, describe: No.
-----	--

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 24	18 AAC 50.055(a)(1), 50.055(b)(1), and 50.055(c)	Visible Emissions; Particulate Matter; Sulfur Compound Emissions	20% opacity; 0.05 gr/scf; 500 ppm	Yes	Permit AQ0075TVP03, Condition 24.4

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emission Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

Form B2
Emission Unit Detail Form—Internal Combustion
Equipment (Engines and Turbines)

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU ID 10 / Operating Scenario 1
2.	Date installation/construction commenced ¹	Pre-1980
3.	Date installed	
4.	Emission Unit serial number	34-FP-2PK
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer and model number	Detroit Diesel 6-71
7.	Type of combustion device	Reciprocating internal combustion engine
8.	Rated design capacity (horsepower rating for engines)	190 hp
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	
10.	If used for power generation, electrical output (kW)	

¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	9.9 gal/hr

12.	Describe any specific modifications to the emission unit that must be addressed in the permit:
-----	--

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 1	18 AAC 50.055(a)(1)	Visible Emissions	20% Opacity	Yes	Permit AQ0075TVP03, Condition 1.2 or Conditions 2-4
AQ0075TVP03, Condition 5	18 AAC 50.055(b)(1)	Particulate Matter	0.05 gr/scf	Yes	Permit AQ0075TVP03, Conditions 5.2 or 6-7
AQ0075TVP03, Condition 9	18 AAC 50.055(c)	Sulfur Compound Emissions	500 ppm	Yes	Permit AQ0075TVP03, Conditions 10 and 11
AQ0075TVP03, Condition 18	Construction Permit AQ0075CPT02	ORL to Protect Ambient Air	0.2 wt% S limit in liquid fuel	Yes	Permit AQ0075TVP03, Condition 18.2
AQ0075TVP03, Conditions 43-47	40 C.F.R. 63 Subpart ZZZZ	Management practices, etc.	Requirements applicable to emergency engines located at an area source.	Yes	Permit AQ0075TVP03, Conditions 46 and 47

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU ID 12
2.	Date installation/construction commenced ¹	2005
3.	Date installed	
4.	Emission Unit serial number	34-PK-3701R
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer and model number	Siemens Cyclone, PK Model #SGT-400
7.	Type of combustion device	Gas Turbine
8.	Rated design capacity (horsepower rating for engines)	
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	
10.	If used for power generation, electrical output (kW)	12,900 kW (12.9 MW) ISO

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Natural gas	128,512 scf/hr
Diesel	922.2 gal/hr

12.	Describe any specific modifications to the emission unit that must be addressed in the permit:
-----	--

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 1	18 AAC 50.055(a)(1)	Visible Emissions	20% Opacity	Yes	Permit AQ0075TVP03, Conditions 1.1, and 2-4
AQ0075TVP03, Condition 5	18 AAC 50.055(b)(1)	Particulate Matter	0.05 gr/scf	Yes	Permit AQ0075TVP03, Conditions 5.1 and 8
AQ0075TVP03, Condition 9	18 AAC 50.055(c)	Sulfur Compound Emissions	500 ppm	Yes	Permit AQ0075TVP03, Conditions 10-14
AQ0075TVP03, Condition 18	Construction Permit AQ0075CPT02	ORL to Protect Ambient Air	150 ppmv H ₂ S limit in fuel gas 0.2 wt% S limit in liquid fuel	Yes	Permit AQ0075TVP03, Conditions 18.1 and 18.2
AQ0075TVP03, Condition 19	Minor Permit AQ0075MSS02	Owner Requested Limits	240 hours per rolling 12 months when combusting diesel fuel	Yes	Permit AQ0075TVP03, Conditions 19.1 - 19.4
AQ0075TVP03, Condition 20	Construction Permit AQ0075CPT02	Stack Parameters	Exhaust stack height: 51 feet a.g.l.	Yes	Reasonable inquiry
AQ0075TVP03, Condition 21	Construction Permit AQ0075CPT02	Owner Requested Limit	Operating limits as described in the current permit condition	Yes	Permit AQ0075TVP03, Conditions 21.4 - 21.9
AQ0075TVP03, Condition 22	Minor Permit AQ0075MSS03	Nitrogen Oxides	240 hours per rolling 12 months when combusting diesel fuel	Yes	Permit AQ0075TVP03, Conditions 22.1.b and 22.1.c
AQ0075TVP03, Condition 23	Construction Permit AQ0075CPT03	Sulfur Dioxide	240 hours per rolling 12 months when combusting diesel fuel	Yes	Permit AQ0075TVP03, Condition 23.1

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Conditions 26-28	40 CFR 60.7	N/A	Subpart A General Provisions - MR&R requirements	Yes	Compliance based upon reasonable inquiry.
AQ0075TVP03, Conditions 30-32	40 CFR 60.11 & 60.12	N/A	Subpart A General Provisions - GAPCP	Yes	Compliance based upon reasonable inquiry.
AQ0075TVP03, Condition 33	40 C.F.R. 60.332(a)(2) & (d)	NSPS Subpart GG NOx Standard	Gas: 212 ppmv at 15% O ₂ ; Diesel: 205 ppmv at 15% O ₂	Yes	Permit AQ0075TVP03, Conditions 33.3-33.5
AQ0075TVP03, Condition 34	40 C.F.R. 60.333(b)	NSPS Subpart GG Sulfur Standard	Sulfur content of fuel limited to 0.8% by weight	Yes	Permit AQ0075TVP03, Conditions 34.1-34.3

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU ID 13
2.	Date installation/construction commenced ¹	2005
3.	Date installed	
4.	Emission Unit serial number	34-PK-3601R
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer and model number	Siemens Cyclone, PK Model #SGT-400
7.	Type of combustion device	Gas Turbine
8.	Rated design capacity (horsepower rating for engines)	
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	
10.	If used for power generation, electrical output (kW)	12,900 kW (12.9 MW) ISO

¹ See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Natural gas	128,512 scf/hr

12.	Describe any specific modifications to the emission unit that must be addressed in the permit:
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FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/Pollutant	Limit/Standard/Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 1	18 AAC 50.055(a)(1)	Visible Emissions	20% Opacity	Yes	Permit AQ0075TVP03, Conditions 1.1, and 2-4
AQ0075TVP03, Condition 5	18 AAC 50.055(b)(1)	Particulate Matter	0.05 gr/scf	Yes	Permit AQ0075TVP03, Conditions 5.1 and 8
AQ0075TVP03, Condition 9	18 AAC 50.055(c)	Sulfur Compound Emissions	500 ppm	Yes	Permit AQ0075TVP03, Conditions 10-14
AQ0075TVP03, Condition 18	Construction Permit AQ0075CPT02	ORL to Protect Ambient Air	150 ppmv H ₂ S limit in fuel gas	Yes	Permit AQ0075TVP03, Condition 18.1
AQ0075TVP03, Condition 19	Minor Permit AQ0075MSS02	Owner Requested Limits	240 hours per rolling 12 months when combusting diesel fuel	Yes	Permit AQ0075TVP03, Conditions 19.1 - 19.4
AQ0075TVP03, Condition 20	Construction Permit AQ0075CPT02	Stack Parameters	Exhaust stack height: 51 feet a.g.l.	Yes	Reasonable inquiry
AQ0075TVP03, Condition 21	Construction Permit AQ0075CPT02	Owner Requested Limit	Operating limits as described in the current permit condition	Yes	Permit AQ0075TVP03, Conditions 21.4 - 21.9
AQ0075TVP03, Conditions 26-28	40 CFR 60.7	N/A	Subpart A General Provisions - MR&R requirements	Yes	Compliance based upon reasonable inquiry.
AQ0075TVP03, Conditions 30-32	40 CFR 60.11 & 60.12	N/A	Subpart A General Provisions - GAPCP	Yes	Compliance based upon reasonable inquiry.

FORM B2**Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)**

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 33	40 C.F.R. 60.332(a)(2) & (d)	NSPS Subpart GG NOx Standard	Gas: 212 ppmv at 15% O ₂	Yes	Permit AQ0075TVP03, Conditions 33.3-33.5
AQ0075TVP03, Condition 34	40 C.F.R. 60.333(b)	NSPS Subpart GG Sulfur Standard	Sulfur content of fuel limited to 0.8% by weight	Yes	Permit AQ0075TVP03, Conditions 34.1-34.3

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU ID 14 / Operating Scenario 1
2.	Date installation/construction commenced ¹	2005
3.	Date installed	
4.	Emission Unit serial number	34-GEN-3801R
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer and model number	Caterpillar 3516B
7.	Type of combustion device	Reciprocating internal combustion engine
8.	Rated design capacity (horsepower rating for engines)	
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	
10.	If used for power generation, electrical output (kW)	2,250 kW

¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	147 gal/hr

12.	Describe any specific modifications to the emission unit that must be addressed in the permit:
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FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 1	18 AAC 50.055(a)(1)	Visible Emissions	20% Opacity	Yes	Permit AQ0075TVP03, Condition 1.6 or Conditions 2-4
AQ0075TVP03, Condition 5	18 AAC 50.055(b)(1)	Particulate Matter	0.05 gr/scf	Yes	Permit AQ0075TVP03, Condition 5.6 or Conditions 6-7
AQ0075TVP03, Condition 9	18 AAC 50.055(c)	Sulfur Compound Emissions	500 ppm	Yes	Permit AQ0075TVP03, Conditions 10 and 11
AQ0075TVP03, Condition 18.2	Construction Permit AQ0075CPT02	Fuel Sulfur Limit	0.2 % S by weight	Yes	Permit AQ0075TVP03, Condition 18.2.a – 18.2.d
AQ0075TVP03, Condition 19	Minor Permit AQ0075MSS02	Owner Requested Limits	600 hours per rolling 12 months	Yes	Permit AQ0075TVP03, Conditions 19.1-19.4
AQ0075TVP03, Condition 22	Minor Permit AQ0075MSS02	Nitrogen Oxides	600 hours per rolling 12 months	Yes	Permit AQ0075TVP03, Condition 22.1
AQ0075TVP03, Condition 23	Construction Permit AQ0075CPT03	Sulfur Dioxide	600 hours per rolling 12 months, 0.2 % S by weight	Yes	Permit AQ0075TVP03, Condition 23.1
AQ0075TVP03, Condition 43, and 45-47	40 C.F.R. 63 Subpart ZZZZ	Management practices, etc.	Requirements applicable to emergency engines located at an area source.	Yes	Permit AQ0075TVP03, Conditions 46 and 47

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Non-applicable Requirements Specific to Emission Unit (attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU ID 15 / Operating Scenario 1
2.	Date installation/construction commenced ¹	2005
3.	Date installed	
4.	Emission Unit serial number	34-GEN-4605R
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer and model number	UPS Electric Generator PK Model #PPJD65MOD-1
7.	Type of combustion device	Reciprocating internal combustion engine
8.	Rated design capacity (horsepower rating for engines)	
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	
10.	If used for power generation, electrical output (kW)	65 kW

¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	4.25 gal/hr

12.	Describe any specific modifications to the emission unit that must be addressed in the permit:
-----	--

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 1	18 AAC 50.055(a)(1)	Visible Emissions	20% Opacity	Yes	Permit AQ0075TVP03, Condition 1.4
AQ0075TVP03, Condition 5	18 AAC 50.055(b)(1)	Particulate Matter	0.05 gr/scf	Yes	Permit AQ0075TVP03, Condition 5.4
AQ0075TVP03, Condition 9	18 AAC 50.055(c)	Sulfur Compound Emissions	500 ppm	Yes	Permit AQ0075TVP03, Conditions 10 and 11
AQ0075TVP03, Condition 18.2	Construction Permit AQ0075CPT02	Fuel Sulfur Limit	0.2 % S by weight	Yes	Permit AQ0075TVP03, Condition 18.2.a – 18.2.d
AQ0075TVP03, Condition 19	Minor Permit AQ0075MSS02	Owner Requested Limit	300 hours per 12 month period	Yes	Permit AQ0075TVP03, Conditions 19.1-19.4
AQ0075TVP03, Condition 22	Minor Permit AQ0075MSS02	Nitrogen Oxides	300 hours per rolling 12 months	Yes	Permit AQ0075TVP03, Condition 22.1
AQ0075TVP03, Condition 23	Construction Permit AQ0075CPT03	Sulfur Dioxide	300 hours per rolling 12 months, 0.2 % S by weight	Yes	Permit AQ0075TVP03, Condition 23.1

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 43, and 45-47	40 C.F.R. 63 Subpart ZZZZ	Management practices, etc.	Requirements applicable to emergency engines located at an area source.	Yes	Permit AQ0075TVP03, Conditions 46 and 47

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU ID 22 / Operating Scenario 1
2.	Date installation/construction commenced ¹	2010
3.	Date installed	
4.	Emission Unit serial number	34-GEN-4401
5.	Special control requirements? [if yes, describe]	
6.	Manufacturer and model number	MTU Detroit 16V 2000G45TB
7.	Type of combustion device	Reciprocating internal combustion engine
8.	Rated design capacity (horsepower rating for engines)	
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	
10.	If used for power generation, electrical output (kW)	800 kW _e

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	52.25 gal/hr

12.	Describe any specific modifications to the emission unit that must be addressed in the permit:
-----	--

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 1	18 AAC 50.055(a)(1)	Visible Emissions	20% Opacity	Yes	Permit AQ0075TVP03, Condition 1.4
AQ0075TVP03, Condition 5	18 AAC 50.055(b)(1)	Particulate Matter	0.05 gr/scf	Yes	Permit AQ0075TVP03, Condition 5.4
AQ0075TVP03, Condition 9	18 AAC 50.055(c)	Sulfur Compounds	500 ppm	Yes	Permit AQ0075TVP03, Conditions 10 and 11
AQ0075TVP03, Condition 18.2	Construction Permit AQ0075CPT02	Fuel Sulfur Limit	0.2 % S by weight	Yes	Permit AQ0075TVP03, Condition 18.2.a – 18.2.d
AQ0075TVP03, Condition 22.2	Minor Permit AQ0075MSS03	Nitrogen Oxides	200 hours per rolling 12 months	Yes	Permit AQ0075TVP03, Condition 22.2.a – 22.2.c
AQ0075TVP03, Conditions 36 and 37	NSPS Subpart IIII	2007 MY and later stationary CI ICE emission standards (NO _x , CO, PM, HC); and fuel requirements	See 60.4204(b) and 60.4207(b)	Yes	Permit AQ0075TVP03, Conditions 38 and 39

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emission Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

Form B4
Emission Unit Detail Form—Volatile Liquid
Storage Tanks

FORM B4
Emission Unit Detail Form – Volatile Liquid Storage Tanks

Permit Number: AQ0075TVP03

1.	Emission Unit ID Number // Operating Scenario	EU ID 21
2.	Date installation/construction commenced	Pre-1978
3.	Date installed	Pre-1978
4.	Special control requirements? [if yes, describe]	No
5.	Rated capacity (gallons)	2,310,000 gallons (55,000 bbls)
6.	Tank height (ft)	32
7.	Tank diameter (ft)	116
8.	Tank age (years)	34
9.	Submerged fill pipe?	Yes
10.	Type of tank (specify)	Fixed Roof
11.	Underground?	No
	If underground, specify type of tube and vapor return.	
12.	Above ground vapor control information:	
	Pipe material	
	Pipe size	
	Piping drainage (continuous drain downward or condensate collection tank – if condensate collection, attach a description)	
	Isolation valve installed in piping?	
13.	Pressure vacuum relief valves:	
	Vent pressure settings (psia)	0.006
	Months in which relief valves removed (specify)	N/A
14.	Pressure conservation vent? [if yes, specify pressure setting – psia]	
15.	Fixed roof tanks:	
	Roof color	White
	Shell color	Green
	Average vapor space height (ft)	22
	Shell condition (specify)	Good

FORM B4

Emission Unit Detail Form – Volatile Liquid Storage Tanks

	Emission Unit ID Number	21
16	Floating roof tanks:	
	Type of construction (specify)	
	Condition (specify)	
	Tank color	
	Deck type (specify)	
17.	External floating roof tanks, seal type (specify)	
18.	Internal floating roof tanks:	
	Seal type (specify)	
	Number of columns	
	Effective column diameter (ft)	
	Total deck seam length (ft)	
	Deck fitting types – access hatch	
	bolted cover, gasketed	
	unbolted cover, gasketed	
	unbolted cover, ungasketed	
	Deck fitting types - Automatic gauge float well	
	bolted cover, gasketed	
	unbolted cover, gasketed	
	unbolted cover, ungasketed	
	Deck fitting types – column well	
	Built up column – sliding cover, gasketed	
	Built up column – sliding cover, ungasketed	
	Pipe column – flexible fabric sleeve seal	
	Pipe column – sliding cover, gasketed	
	Pipe column – sliding cover, ungasketed	
	Deck fitting types – ladder well	
	sliding cover, gasketed	
	sliding cover, ungasketed	

FORM B4

Emission Unit Detail Form – Volatile Liquid Storage Tanks

	Emission Unit ID Number	21
	Deck fitting types – simple well or pipe	
	Slotted pipe – sliding cover, gasketed	
	Slotted pipe – sliding cover, ungasketed	
	Sample well – slit fabric seal, 10% open area	
	Stub drain – 1-inch diameter	
	Deck fitting type – roof leg or hanger will	
	Adjustable	
	fixed	
	Deck fitting type – vacuum breaker	
	Weighted mechanical actuation, gasketed	
	Weighted mechanical actuation, ungasketed	
19.	Maximum liquid loading rate (gal/hr)	1,000,000
20.	Submerged fill at out-loading (describe)	
21.	Material(s) stored	
	Type of material	Crude Oil
	Normal annual throughput (gal/yr)	Varies
	Normal turnovers per year	Varies
	Density (lbs/gal)	7
	Molecular weight	203
	Average storage temperature (°F)	57
	Vapor pressure (psi)	4.3

FORM B4

Emission Unit Detail Form – Volatile Liquid Storage Tanks

Applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Applicable Requirements*):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
AQ0075TVP03, Condition 16	Construction Permit AQ0075CPT03	Hazardous Air Pollutants	8.0 tpy any individual HAP; 16.9 tpy total HAPs	Yes	Permit AQ0075TVP03, Conditions 16.1 and 16.2

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B4
Emission Unit Detail Form – Volatile Liquid Storage Tanks

Non-applicable Requirements Specific to Emission Unit (*attach additional sheets as needed. Form B Supplement - Emission Unit-Specific Permit Shield Request*):

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

Form Series D

**Forms D1 and D2
Spreadsheets Containing Required Information**

**Emissions Summary
Pump Station 4**

Emissions Unit Type	Emissions (tons per year)						
	NO _x	CO	PM10/2.5	VOC	SO ₂	CO ₂ e	HAP
Potential Emissions (w/ Controls and Limitations)							
Significant	175	1,058	10	365	17	149,835	see spreadsheets
Insignificant	4	2	0.3	0.1	3	4,113	see spreadsheets
Total Emissions	178	1,061	10	365	20	153,947	9.3
Unrestricted Emissions (w/o Controls and Limitations)							
Significant	551	1,072	16	374	73	195,421	see spreadsheets
Insignificant	4	2	0.3	0.1	3	4,113	see spreadsheets
Total Emissions	554	1,074	16	374	76	199,534	9.5
Expected Actual Emissions							
Significant	52	267	3	26	4	77,011	see spreadsheets
Insignificant	N/A	N/A	N/A	N/A	N/A	N/A	see spreadsheets
Total Emissions	52	267	3	26	4	77,011	0.7

Notes:

1. Criteria air pollutant calculations based on AP-42 emission factors, manufacturer's data, and mass balances as shown in accompanying spreadsheets. Additional documentation on calculation methods can be found in applications filed by Alyeska for Permits AQ0074CP03 and AQ0074MSS01.
2. HAP emissions calculations as shown in following spreadsheets. Note that Tank 150 HAP emissions included directly above are based on the limit of 8.0 tpy (single HAP) under AQC Permit 098CP01. N-hexane is highest emitted HAP.
3. Emissions from insignificant units calculated as shown or estimated based on conservative assumptions.
4. Fees paid on each pollutant emitted in quantities greater than 10 tpy per 18 AAC 50.410.
5. Maximum fuel use rates for all units based on manufacturer's fuel or heat input rates, and permit operating limits (i.e., ORLs) where applicable.
6. Actual emissions shown are from assessable emissions estimates filed by APSC.
7. HAP emissions calculated in detail for Restricted PTE (see attached spreadsheets). Unrestricted and actual emissions calculated by proportion, using VOC emissions as a basis for the proportion.

**Significant Emission Unit Inventory
Pump Station 4**

EU No.	Tag No.	Emitting Unit	Fuel	Rating
8	34-H-1A	Eclipse Therminol Heater	NG/Dsl	20.6 MMBtu/hr
9	34-H-1B	Eclipse Therminol Heater	NG/Dsl	20.6 MMBtu/hr
10	34-FP-2PK	Detroit Diesel 6-71 Firewater Pump	Dsl	190 hp
12	34-PK-3601R	Siemens Cyclone Turbine Electric Generator	NG/Dsl	12.9 MW
13	34-PK-3701R	Siemens Cyclone Turbine Electric Generator	NG	12.9 MW
14	34-GEN-3801R	Caterpillar 3516B Engine Electric Generator	Dsl	2,250 kW
15	34-GEN-4605R	UPS Engine Electric Generator	Dsl	65 kW
21	TK-140	Breakout Tank 140	N/A	50,000 bbl
22	34-GEN-4401	MTU Detroit Diesel 16V 2000G45TB	Diesel	800 kW

Notes:

- Unit 15 has potential emissions less than the significant thresholds under 18 AAC 50.326(e) but cannot be insignificant per 18 AAC 50.326(d)(1)(B).

**Insignificant Emission Unit Inventory
Pump Station 4**

EU No.	Emitting Unit	Fuel	Rating	Basis for Insignificance
None	(2) Burnham PLQ Heater	NG	0.8 MMBtu/hr	18 AAC 50.326(g)(5)
None	(8) Hastings Heaters	NG	0.3 MMBtu/hr	18 AAC 50.326(g)(5)
None	(9) Modine Heaters	NG	0.5 MMBtu/hr	18 AAC 50.326(g)(5)
18	(11) Miscellaneous Shop Heaters	NG	3.3 MMBtu/hr	18 AAC 50.326(g)(5)
None	Ground Heater	Dsl	0.5 MMBtu/hr	18 AAC 50.326(g)(7)
None	(2) Tioga Heaters	Dsl	0.6 MMBtu/hr	18 AAC 50.326(g)(7)
None	(2) Chinook Heaters	Dsl	0.8 MMBtu/hr	18 AAC 50.326(g)(7)
None	Aerotec Heater	Dsl	0.4 MMBtu/hr	18 AAC 50.326(g)(7)

Note:

1. Rating for Unit 18 is total for all units from Minor Permit AQ0075MSS01.

Emissions Calculations - NO_x
Pump Station 4

EU No.	Emitting Unit	Rating	Factor Reference	NO _x Emission Factor		Operation w/Limits		Potential Emissions (w/ Limits) (tpy)	Unrestricted Emissions (w/o Limits) (tpy)	Estimated Actual Emissions (tpy)
				Diesel	Fuel Gas	Diesel (gal/yr)	Fuel Gas (MMscf/yr)			
8	34-H-1A Eclipse Therminol Heater	20.6 MMBtu/hr	AP-42 Tables 1.4-1/1.3-1	20 lb/Mgal	100 lb/MMscf	76,909	177.1	9.6	13.5	5.0
9	34-H-1B Eclipse Therminol Heater	20.6 MMBtu/hr	AP-42 Tables 1.4-1/1.3-1	20 lb/Mgal	100 lb/MMscf	76,909	177.1	9.6	13.5	0.7
10	Detroit Diesel 6-71 Firewater Pump	190 hp	AP-42 Table 3.3-1	0.031 lb/hp-hr	N/A	4,965	N/A	1.5	25.8	0.0
12	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	Manufacturer's Data	See PS 4 SR Construction Permit and Application				65.8	65.8	31
13	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	Manufacturer's Data	See PS 4 SR Construction Permit and Application				65.8	65.8	15
14	Caterpillar 3516B Engine Electric Generator	2,250 kW	Manufacturer's Data	71 lb/hr	N/A	88,190	N/A	21.3	311.0	0.2
15	UPS Engine Electric Generator	65 kW	Tier 2 Standard	9.2 g/kW-hr	N/A	1,274	N/A	0.00005	5.8	0.01
-	Insignificant Diesel Heaters	2.3 MMBtu/hr	AP-42 Table 1.3-1	20 lb/Mgal	N/A	150,443	N/A	1.5	1.5	N/A
-	Insignificant NG Heaters, including EU 18	4.8 MMBtu/hr	AP-42 Table 1.4-1	N/A	100 lb/MMscf	N/A	44.1	2.2	2.2	N/A
21	Breakout Tank 140	55,000 bbl	N/A	N/A	N/A	N/A	N/A	0.0	0.0	N/A
22	34-GEN-4401 MTU Detroit Engine	800 kW	Manufacturer's Data	11.3 lb/hr	N/A	10,452	N/A	1.1	49.5	0.01
								178.5	554.3	51.8

Notes:

- Diesel fuel heating value: 133,925 Btu/gal (HHV)
- Default engine heat rate (Btu/hp-hr): 7,000 Btu/hp-hr
- Default engine heat rate (Btu/kW-hr): 8,749 Btu/kW-hr
- Diesel fuel density: 7.0 lb/gal
- NG heating value: 961 Btu/scf
- Emission rates based on manufacturer's data are documented in permit applications filed by Alyeska for Permits AQ0075CP02 and AQ0075MSS01.
- Emissions for EU ID 12 and 13 based on AQ0075MSS03 TAR, Table 1.
- Total diesel operation allowed for EU 8 and 9 applied equally (500 hr/unit).
- Operation on diesel fuel limited for the following (hr/yr ORL):
 - EU 8, 9 (combined): 1,000
 - EU 10: 500
 - EU 12: 240
 - EU 14: 600
 - EU 15: 300
 - EU 22: 200

**Emissions Calculations - CO
Pump Station 4**

EU No.	Emitting Unit	Rating	Factor Reference	CO Emission Factor		Operation w/Limits		Potential Emissions (w/ Limits) (tpv)	Unrestricted Emissions (w/o Limits) (tpv)	Estimated Actual Emissions (tpv)
				Diesel	Natural Gas	Diesel (gal/yr)	Natural Gas (MMscf/yr)			
8	34-H-1A Eclipse Therminol Heater	20.6 MMBtu/hr	AP-42 Tables 1.4-1/1.3-1	5 lb/Mgal	84 lb/MMscf	76,909	177	7.6	3.4	4.0
9	34-H-1B Eclipse Therminol Heater	20.6 MMBtu/hr	AP-42 Tables 1.4-1/1.3-1	5 lb/Mgal	84 lb/MMscf	76,909	177	7.6	3.4	0.6
10	Detroit Diesel 6-71 Firewater Pump	190 hp	AP-42 Table 3.3-1	0.0067 lb/hp-hr	NA	4,965	N/A	0.3	5.6	0.0
12	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	Manufacturer's Data	See PS 4 SR Construction Permit and Application				521.0	521.0	154
13	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	Manufacturer's Data	See PS 4 SR Construction Permit and Application				521.0	521.0	108
14	Caterpillar 3516B Engine Electric Generator	2,250 kW	Manufacturer's Data	2.2 lb/hr	NA	88,190	N/A	0.7	9.7	0.01
15	UPS Engine Electric Generator	65 kW	Tier 2 Standard	5.0 g/kW-hr	NA	1,274	N/A	0.1	3.1	0.004
-	Insignificant Diesel Heaters	2.3 MMBtu/hr	AP-42 Table 1.3-1	5 lb/Mgal	NA	150,443	N/A	0.4	0.4	N/A
-	Insignificant NG Heaters, including EU 18	4.8 MMBtu/hr	AP-42 Table 1.4-1	NA	84 lb/MMscf	N/A	44	1.9	1.9	N/A
21	Breakout Tank 140	55,000 bbl	N/A	NA	NA	N/A	N/A	0.0	0.0	N/A
22	34-GEN-4401 MTU Detroit Engine	800 kW	Manufacturer's Data	1.1 lb/hr	NA	10,452	N/A	0.1	4.9	0.001
								1,060.7	1,074.3	266.6

Notes:

- Diesel fuel heating value: 133,925 Btu/gal (HHV)
- Default engine heat rate (Btu/hp-hr): 7,000 Btu/hp-hr
- Default engine heat rate (Btu/kW-hr): 8,749 Btu/kW-hr
- Diesel fuel density: 7.0 lb/gal
- NG heating value: 961 Btu/scf
- Emission rates based on manufacturer's data are documented in permit applications filed by Alyeska for Permits AQ0075CP02 and AQ0075MSS01.
- Emissions for EU ID 12 and 13 based on AQ0075MSS03 TAR, Table 1.
- Total diesel operation allowed for EU 8 and 9 applied equally (500 hr/unit).
- Operation on diesel fuel limited for the following (hr/yr ORL):

EU 8, 9 (combined): 1,000
 EU 10: 500
 EU 12: 240
 EU 14: 600
 EU 15: 300
 EU 22: 200

**Emissions Calculations - PM10/2.5
Pump Station 4**

EU No.	Emitting Unit	Factor Reference	Rating	PM10/2.5 Emission Factor		Operation w/Limits		Potential Emissions (w/ Limits) (tpy)	Unrestricted Emissions (w/o Limits) (tpy)	Estimated Actual Emissions (tpy)
				Diesel	Natural Gas	Diesel (gal/yr)	Natural Gas (MMscf/yr)			
8	34-H-1A Eclipse Therminol Heater	AP-42 Tables 1.4-2/1.3-1	20.6 MMBtu/hr	2 lb/Mgal	7.6 lb/MMscf	76,909	177	0.75	1.35	0.4
9	34-H-1B Eclipse Therminol Heater	AP-42 Tables 1.4-2/1.3-1	20.6 MMBtu/hr	2 lb/Mgal	7.6 lb/MMscf	76,909	177	0.75	1.35	0.1
10	Detroit Diesel 6-71 Firewater Pump	AP-42 Table 3.3-1	190 hp	0.0022 lb/hp-hr	NA	4,965	N/A	0.10	1.83	0.00
12	Siemens Cyclone Turbine Electric Generator	AP-42 Table 3.1-2a	123.5 MMBtu/hr	See PS 4 SR Construction Permit and Application				4.00	4.00	1.9
13	Siemens Cyclone Turbine Electric Generator	AP-42 Table 3.1-2a	123.5 MMBtu/hr	See PS 4 SR Construction Permit and Application				4.00	4.00	0.9
14	Caterpillar 3516B Engine Electric Generator	Manufacturer's Data	2,250 kW	0.55 lb/hr	NA	88,190	N/A	0.17	2.41	0.002
15	UPS Engine Electric Generator	AP-42 Table 3.3-1	65 kW	0.31 lb/MMBtu	NA	1,274	N/A	0.03	0.77	0.001
-	Insignificant Diesel Heaters	AP-42 Table 1.3-1	2.3 MMBtu/hr	2 lb/Mgal	NA	150,443	N/A	0.15	0.15	N/A
-	Insignificant NG Heaters, including EU 18	AP-42 Table 1.4-1	4.8 MMBtu/hr	NA	7.6 lb/MMscf	N/A	44	0.17	0.17	N/A
21	Breakout Tank 140	NA	55,000 bbl	NA	NA	N/A	N/A	0.00	0.00	N/A
22	34-GEN-4401 MTU Detroit Engine	Manufacturer's Data	800 kW	0.09 lb/hr	NA	10,452	N/A	0.01	0.39	0.0
								10.1	16.4	3.3

Notes:

- Diesel fuel heating value: 133,925 Btu/gal (HHV)
- Default engine heat rate (Btu/hp-hr): 7,000 Btu/hp-hr
- Default engine heat rate (Btu/kW-hr): 8,749 Btu/kW-hr
- Diesel fuel density: 7.0 lb/gal
- NG heating value: 961 Btu/scf
- Emission rates based on manufacturer's data are documented in permit applications filed by Alyeska for Permits AQ0075CP02 and AQ0075MSS01.
- Emissions for EU ID 12 and 13 based on AQ0075MSS03 TAR, Table 1.
- Total diesel operation allowed for EU 8 and 9 applied equally (500 hr/unit).
- Operation on diesel fuel limited for the following (hr/yr ORL):
 - EU 8, 9 (combined): 1,000
 - EU 10: 500
 - EU 12: 240
 - EU 14: 600
 - EU 15: 300
 - EU 22: 200

**Emissions Calculations - VOC
Pump Station 4**

EU No.	Emitting Unit	Rating	Factor Reference	VOC Emission Factor		Operation w/Limits		Potential Emissions (w/ Limits) (tpy)	Unrestricted Emissions (w/o Limits) (tpy)	Estimated Actual Emissions (tpy)
				Diesel	Natural Gas	Diesel (gal/yr)	Natural Gas (MMscf/yr)			
8	34-H-1A Eclipse Therminol Heater	20.6 MMBtu/hr	AP-42 Tables 1.4-2/1.3-3	0.34 lb/Mgal	5.5 lb/MMscf	76,909	177	0.5	0.2	0.3
9	34-H-1B Eclipse Therminol Heater	20.6 MMBtu/hr	AP-42 Tables 1.4-2/1.3-3	0.34 lb/Mgal	5.5 lb/MMscf	76,909	177	0.5	0.2	0.04
10	Detroit Diesel 6-71 Firewater Pump	190 hp	AP-42 Table 3.3-1	0.00247 lb/hp-hr	N/A	4,965	N/A	0.1	2.1	0.0
12	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	AP-42 Table 3.1-2a	See PS 4 SR Construction Permit and Application				1.3	1.3	0.6
13	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	AP-42 Table 3.1-2a	See PS 4 SR Construction Permit and Application				1.3	1.3	0.3
14	Caterpillar 3516B Engine Electric Generator	2,250 kW	Manufacturer's Data	0.96 lb/hr	N/A	88,190	N/A	0.3	4.2	0.003
15	UPS Engine Electric Generator	65 kW	AP-42 Table 3.3-1	0.35 lb/MMBtu	N/A	1,274	N/A	0.03	0.9	0.001
-	Insignificant Diesel Heaters	2.3 MMBtu/hr	AP-42 Table 1.3-1	0.34 lb/Mgal	N/A	150,443	N/A	0.03	0.03	NA
-	Insignificant NG Heaters, including EU 18	4.8 MMBtu/hr	AP-42 Table 1.4-2	N/A	5.5 lb/MMscf	N/A	44	0.1	0.1	NA
21	Breakout Tank 140	55,000 bbl	EPA Tanks 4.0	N/A	N/A	N/A	N/A	361	361	25.0
22	34-GEN-4401 MTU Detroit Engine	800 kW	AP-42 Table 3.4-1	0.0819 lb/MMBtu	N/A	10,452	N/A	0.1	2.5	0.0003
								364.9	373.8	26.2

Notes:

- Diesel fuel heating value: 133,925 Btu/gal (HHV)
- Default engine heat rate (Btu/hp-hr): 7,000 Btu/hp-hr
- Default engine heat rate (Btu/kW-hr): 8,749 Btu/kW-hr
- Diesel fuel density: 7.0 lb/gal
- NG heating value: 961 Btu/scf
- Emission rates based on manufacturer's data are documented in permit applications filed by Alyeska for Permits AQ0075CP02 and AQ0075MSS01.
- Emissions for EU ID 12 and 13 based on AQ0075MSS03 TAR, Table 1.
- Total diesel operation allowed for EU 8 and 9 applied equally (500 hr/unit).
- Operation on diesel fuel limited for the following (hr/yr ORL):

EU 8, 9 (combined): 1,000
 EU 10: 500
 EU 12: 240
 EU 14: 600
 EU 15: 300
 EU 22: 200

**Emissions Calculations - SO₂
Pump Station 4**

EU No.	Emitting Unit	Rating	Factor Reference	SO ₂ Emission Factor		Operation w/Limits		Potential Emissions (w/ Limits) (tpy)	Unrestricted Emissions (w/o Limits) (tpy)	Estimated Actual Emissions (tpy)
				Diesel	Natural Gas	Diesel (gal/yr)	Natural Gas (MMscf/yr)			
8	34-H-1A Eclipse Therminol Heater	20.6 MMBtu/hr	Mass Balance	0.2 wt% S	150 ppm H ₂ S	76,909	177	3.3	18.9	0.3
9	34-H-1B Eclipse Therminol Heater	20.6 MMBtu/hr	Mass Balance	0.2 wt% S	150 ppm H ₂ S	76,909	177	3.3	18.9	0.04
10	Detroit Diesel 6-71 Firewater Pump	190 hp	Mass Balance	0.2 wt% S	NA	4,965	N/A	0.1	1.2	0.0
12	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	Mass Balance	0.2 wt% S	See PS-4 SR Permit & Application			4.5	4.5	1.7
13	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	Mass Balance	NA	See PS-4 SR Permit & Application			4.5	4.5	1.0
14	Caterpillar 3516B Engine Electric Generator	2,250 kW	Mass Balance	0.2 wt% S	N/A	88,190	N/A	1.0	18.0	1.3
15	UPS Engine Electric Generator	65 kW	Mass Balance	0.2 wt% S	N/A	1,274	N/A	0.02	0.5	0.0004
-	Insignificant Diesel Heaters	2.3 MMBtu/hr	AP-42 Table 1.3-1	0.2 wt% S	N/A	150,443	N/A	2.1	2.1	N/A
-	Insignificant NG Heaters, including EU 18	4.8 MMBtu/hr	AP-42 Table 1.4-1	NA	150 ppm H ₂ S	N/A	44	0.6	0.6	N/A
21	Breakout Tank 140	55,000 bbl	NA	NA	N/A	N/A	N/A	N/A	N/A	N/A
22	34-GEN-4401 MTU Detroit Engine	800 kW	Mass Balance	0.2 wt% S	N/A	10,452	N/A	0.1	6.4	0.001
								19.6	75.6	4.3

Notes:

- Diesel fuel heating value: 133,925 Btu/gal (HHV)
- Default engine heat rate (Btu/hp-hr): 7,000 Btu/hp-hr
- Default engine heat rate (Btu/kW-hr): 8,749 Btu/kW-hr
- Diesel fuel density: 7.0 lb/gal
- NG heating value: 961 Btu/scf
- Emission rates based on manufacturer's data are documented in permit applications filed by Alyeska for Permits AQ0075CP02 and AQ0075MSS01.
- Emissions for EU ID 12 and 13 based on AQ0075MSS03 TAR, Table 1.
- Total diesel operation allowed for EU 8 and 9 applied equally (500 hr/unit).
- Operation on diesel fuel limited for the following (hr/yr ORL):
 - EU 8, 9 (combined): 1,000
 - EU 10: 500
 - EU 12: 240
 - EU 14: 600
 - EU 15: 300
 - EU 22: 200

**Emissions Calculations - N₂O CO₂e
Pump Station 4**

EU No.	Emitting Unit	Rating	Factor Reference	N ₂ O-CO ₂ e Emission Factor		Annual Operation w/Limits		Potential Emissions (w/ Limits) (tpy)	Unrestricted Emissions (w/o Limits) (tpy)	Estimated Actual Emissions (tpy)
				Diesel (lb/MMBTU)	Natural Gas (lb/MMBTU)	Diesel (MMBTu/yr)	Natural Gas (MMBTu/yr)			
8	34-H-1A Eclipse Therminol Heater	20.6 MMBtu/hr	40 CFR 98, Table C-2	0.394	0.066	10,300	170,156	7.6	35.5	1.7
9	34-H-1B Eclipse Therminol Heater	20.6 MMBtu/hr	40 CFR 98, Table C-2	0.394	0.066	10,300	170,156	7.6	35.5	2.5
10	Detroit Diesel 6-71 Firewater Pump	190 hp	40 CFR 98, Table C-2	0.394	0.066	665	N/A	0.1	2.3	0.0
12	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	40 CFR 98, Table C-2	0.394	0.066	29,640	1,052,220	40.4	213.0	17
13	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	40 CFR 98, Table C-2	0.394	0.066	N/A	1,081,860	35.5	35.5	22
14	Caterpillar 3516B Engine Electric Generator	2,250 kW	40 CFR 98, Table C-2	0.394	0.066	11,811	N/A	2.3	34.0	0.03
15	UPS Engine Electric Generator	65 kW	40 CFR 98, Table C-2	0.394	0.066	171	N/A	0.03	1.0	0.001
-	Insignificant Diesel Heaters	2.3 MMBtu/hr	40 CFR 98, Table C-2	0.394	0.066	20,148	N/A	4.0	4.0	N/A
-	Insignificant NG Heaters, including EU 18	4.8 MMBtu/hr	40 CFR 98, Table C-2	0.394	0.066	N/A	42,425	1.4	1.4	N/A
21	Breakout Tank 140	55,000 bbl	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22	34-GEN-4401 MTU Detroit Engine	800 kW	40 CFR 98, Table C-2	0.394	0.066	1,400	N/A	0.3	12.1	0.003
								99.2	374.3	43.4

Notes:

- Maximum fuel use rates for all units estimated based on manufacturer's fuel or heat input rates, and permit operating limits where applicable.
- Diesel fuel heating value: 133,925 Btu/gal (HHV)
- Default engine heat rate: 7,000 Btu/hp-hr
- Cat 3516B engine heat rate: 8,749 Btu/kW-hr
- Diesel fuel density: 7.0 lb/gal
- NG heating value: 961 Btu/scf
- EU 12 allowed 240 hours
- Total diesel operation allowed for EU 8 and 9 applied equally (500 hr/unit). EU 8, 9 (combined): 1,000 hr/yr ORL
- Operation on diesel fuel limited for the following:
 - EU 10: 500 hr/yr ORL
 - EU 12: 240 hr/yr ORL
 - EU 14: 600 hr/yr ORL
 - EU 15: 300 hr/yr ORL
 - EU 22: 200 hr/yr ORL

**Emissions Calculations - CH₄ CO₂e
Pump Station 4**

EU No.	Emitting Unit	Rating	Factor Reference	CH ₄ -CO ₂ e Emission Factor		Operation w/Limits		Potential Emissions (w/ Limits) (tpy)	Unrestricted Emissions (w/o Limits) (tpy)	Estimated Actual Emissions (tpy)
				Diesel (lb/MMBTU)	Natural Gas (lb/MMBTU)	Diesel (MMBtu/yr)	Natural Gas (MMBtu/yr)			
8	34-H-1A Eclipse Therminol Heater	20.6 MMBtu/hr	40 CFR 98, Table C-2	0.165	0.055	10,300	170,156	5.5	14.9	1.4
9	34-H-1B Eclipse Therminol Heater	20.6 MMBtu/hr	40 CFR 98, Table C-2	0.165	0.055	10,300	170,156	5.5	14.9	2.1
10	Detroit Diesel 6-71 Firewater Pump	190 hp	40 CFR 98, Table C-2	0.165	0.055	665	N/A	0.05	1.0	0.00
12	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	40 CFR 98, Table C-2	0.165	0.055	29,640	1,052,220	31.4	89.4	14
13	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	40 CFR 98, Table C-2	0.165	0.055	N/A	1,081,860	29.8	29.79	18
14	Caterpillar 3516B Engine Electric Generator	2,250 kW	40 CFR 98, Table C-2	0.165	0.055	11,811	N/A	1.0	14.2	0.01
15	UPS Engine Electric Generator	65 kW	40 CFR 98, Table C-2	0.165	0.055	171	N/A	0.01	0.4	0.001
-	Insignificant Diesel Heaters	2.3 MMBtu/hr	40 CFR 98, Table C-2	0.165	0.055	20,148	N/A	1.7	1.7	N/A
-	Insignificant NG Heaters, including EU 18	4.8 MMBtu/hr	40 CFR 98, Table C-2	0.165	0.055	N/A	42,425	1.2	1.2	N/A
21	Breakout Tank 140	55,000 bbl	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22	34-GEN-4401 MTU Detroit Engine	800 kW	40 CFR 98, Table C-2	0.165	0.055	1,400	N/A	0.1	5.1	0.001
								76.3	172.5	36.3

Notes:

- Maximum fuel use rates for all units estimated based on manufacturer's fuel or heat input rates, and permit operating limits where applicable.
- Diesel fuel heating value: 133,925 Btu/gal (HHV)
- Default engine heat rate: 7,000 Btu/hp-hr
- Cat 3516B engine heat rate: 8,749 Btu/kW-hr
- Diesel fuel density: 7.0 lb/gal
- NG heating value: 961 Btu/scf
- EU 12 allowed 240 hours
- Total diesel operation allowed for EU 8 and 9 applied equally (500 hr/unit). EU 8, 9 (combined): 1,000 hr/yr ORL
- Operation on diesel fuel limited for the following:
 - EU 10: 500 hr/yr ORL
 - EU 12: 240 hr/yr ORL
 - EU 14: 600 hr/yr ORL
 - EU 15: 300 hr/yr ORL
 - EU 22: 200 hr/yr ORL

**Emissions Calculations - CO₂
Pump Station 4**

EU No.	Emitting Unit	Rating	Factor Reference	CO ₂ Emission Factor		Operation w/Limits		Potential Emissions (w/ Limits) (tpy)	Unrestricted Emissions (w/o Limits) (tpy)	Estimated Actual Emissions (tpy)
				Diesel (lb/MMBTU)	Natural Gas (lb/MMBTU)	Diesel (MMBTU/yr)	Natural Gas (MMBTU/yr)			
8	34-H-1A Eclipse Therminol Heater	20.6 MMBtu/hr	40 CFR 98, Table C-2	161	117	10,300	170,156	10,774	14,558	3,032
9	34-H-1B Eclipse Therminol Heater	20.6 MMBtu/hr	40 CFR 98, Table C-2	161	117	10,300	170,156	10,774	14,558	4,498
10	Detroit Diesel 6-71 Firewater Pump	190 hp	40 CFR 98, Table C-2	161	117	665	N/A	54	940	0
12	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	40 CFR 98, Table C-2	161	117	29,640	1,052,220	63,879	87,276	30,618
13	Siemens Cyclone Turbine Electric Generator	123.5 MMBtu/hr	40 CFR 98, Table C-2	161	117	N/A	1,081,860	63,220	63,220	38,771
14	Caterpillar 3516B Engine Electric Generator	2,250 kW	40 CFR 98, Table C-2	161	117	11,811	N/A	953	13,911	11
15	UPS Engine Electric Generator	65 kW	40 CFR 98, Table C-2	161	117	171	N/A	14	402	1
-	Insignificant Diesel Heaters	2.3 MMBtu/hr	40 CFR 98, Table C-2	161	117	20,148	N/A	1,625	1,625	N/A
-	Insignificant NG Heaters, including EU 18	4.8 MMBtu/hr	40 CFR 98, Table C-2	161	117	N/A	42,425	2,479	2,479	N/A
21	Breakout Tank 140	55,000 bbl	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
22	34-GEN-4401 MTU Detroit Engine	800 kW	40 CFR 98, Table C-2	161	117	1,400	N/A	113	4,946	1
								153,884	203,914	76,933

Notes:

- Maximum fuel use rates for all units estimated based on manufacturer's fuel or heat input rates, and permit operating limits where applicable.
- Diesel fuel heating value: 133,925 Btu/gal (HHV)
- Default engine heat rate: 7,000 Btu/hp-hr
- Cat 3516B engine heat rate: 8,749 Btu/kW-hr
- Diesel fuel density: 7.0 lb/gal
- NG heating value: 961 Btu/scf
- EU 12 allowed 240 hours
- Total diesel operation allowed for EU 8 and 9 applied equally (500 hr/unit). EU 8, 9 (combined): 1,000 hr/yr ORL
- Operation on diesel fuel limited for the following:
 - EU 10: 500 hr/yr ORL
 - EU 12: 240 hr/yr ORL
 - EU 14: 600 hr/yr ORL
 - EU 15: 300 hr/yr ORL
 - EU 22: 200 hr/yr ORL

**Summary of Estimated Assessable Potential HAP Emissions
TAPS Pump Station 4**

Hazardous Air Pollutant	HAP Emissions by Unit Category (tons per year)					Total HAP Emissions
	Breakout Tank	NG/Diesel Turbines	Diesel Engines	NG/Diesel Heaters	Fugitives	
Acetaldehyde	---	4.33E-02	5.23E-03	1.71E-01	---	0.219
Acrolein	---	6.92E-03	6.31E-04	---	---	0.008
Benzene	1.52E+00	1.30E-02	6.37E-03	5.02E-04	1.66E-01	1.703
Biphenyl	---	8.06E-02	---	---	---	0.081
1,3 Butadiene	0.00E+00	4.65E-04	2.67E-04	7.93E-02	0.00E+00	0.080
Ethyl Benzene	1.05E-01	3.46E-02	---	8.11E-02	9.00E-02	0.311
Formaldehyde	---	7.68E-01	8.05E-03	1.95E-02	---	0.796
N-Hexane	7.38E+00	3.67E-01	---	4.37E-01	5.15E-01	8.695
Butoxyethanol	---	---	---	---	---	0.000
Hydrochloric Acid	---	---	---	---	---	0.000
Isopropylbenzene	1.35E-02	---	---	---	2.25E-02	0.036
Methanol	---	---	---	2.23E-01	---	0.223
Napthalene	2.95E-02	1.41E-03	5.79E-04	2.23E-04	7.20E-02	0.104
Phosporous	---	1.59E-02	---	---	---	0.016
Phenol	---	2.69E-02	---	2.48E-05	---	0.027
Polycyclic Organic Matter	---	2.38E-03	1.15E-03	2.69E-04	---	0.004
Propionaldehyde	---	2.11E-01	---	---	---	0.211
Propylene oxide	---	3.14E-02	---	---	---	0.031
Styrene	---	---	---	7.64E-02	---	0.076
1,1,1-Trichloroethane	---	---	---	1.78E-05	---	0.000
2,2,4 Trimethylpentane	0.00E+00	3.92E-01	---	8.80E-02	0.00E+00	0.480
2,3,7,8-Tetrachlorodibenzo-p-dioxin	---	---	---	---	---	0.000
Toluene	1.23E+00	1.41E-01	2.79E-03	1.24E-03	4.79E-01	1.857
Xylenes	4.46E-01	6.92E-02	1.94E-03	8.11E-02	4.28E-01	1.025
Arsenic Compounds	---	1.46E-04	---	8.66E-05	---	0.000
Beryllium Compounds	---	2.44E-05	---	3.30E-05	---	0.000
Cadmium Compounds	---	4.88E-05	---	2.85E-04	---	0.000
Chromium Compounds	---	2.00E-03	---	3.54E-04	---	0.002
Cobalt Compounds	---	3.90E-04	---	1.95E-05	---	0.000
Lead Compounds	---	8.30E-04	---	2.04E-04	---	0.001
Manganese Compounds	---	4.27E-03	---	1.48E-04	---	0.004
Mercury Compounds	---	6.59E-04	---	9.04E-05	---	0.001
Nickel Compounds	---	1.49E-03	---	5.17E-04	---	0.002
Selenium Compounds	---	7.32E-05	---	1.57E-04	---	0.000
Total - Unit Category/Source	10.7	2.2	0.03	1.26	1.8	16.0

Notes:

1. Breakout tank HAP emissions are based on a crude breakout flow rate of 1,675,000 bbl/yr.
See HAP tonnage ORLs under AQC Permit AQ0075CPT03 that cap individual and aggregate HAP emissions from this emitting unit.
2. Emissions from all units except the breakout tank are unrestricted potential emissions based on full time or permitted operation.
3. See individual emissions unit category emissions calculations for details on methodology and assumptions.

Estimating Procedure for Determining HAP Content of Crude Storage Tank Vapors

I. Sample Description/Comments

1. PS 1 discharge stream sample
2. Sample Date: 10/31/02
3. Sample ID: L1-021031-06
4. Core Laboratories data includes crude molecular weight and component wt% values.

II. Determine Component Mole Fractions in Liquid Crude

Methodology Assumptions/Comments:

1. The component mole fraction in crude is determined from component weight fraction and component molecular weight by assuming a mass of 1,000 lb of crude (see AP-42 Section 7.1.5).
2. The component molecular weight of Decanes+ is equal to the value required for the sum of all molecular weights to be equal to the Core Laboratories measured crude molecular weight of: 232 lb/lb-mole

Liquid Crude Analysis Data		Calculate Component Mole Fraction in Crude			
Component i	Component Weight Fraction in Crude (wt%/100) Z_{Li}	Component Molecular Weight M_i	Total Moles of Crude (sum Z_{Li}/M_i x 1000) x_T	Component Mole Fraction in Crude ($Z_{Li}/M_i/x_T$) x_i	Crude Molecular Weight (sum M_i*x_i) M_T
Methane	0	16	0.0000	0.0000	0.000
Ethane	0.0002	30	0.0067	0.0015	0.046
Propane	0.003	44	0.0680	0.0158	0.696
Isobutane	0.0044	58	0.0757	0.0176	1.021
N-Butane	0.0152	58	0.2615	0.0607	3.529
1,3 Butadiene	0	54	0.0000	0.0000	0.000
Isopentane	0.0088	72	0.1220	0.0283	2.043
N-Pentane	0.0127	72	0.1760	0.0409	2.948
N-Hexane	0.0104	86	0.1206	0.0280	2.414
Hexanes	0.0118	84	0.1405	0.0326	2.739
Benzene	0.0033	78	0.0423	0.0098	0.766
Heptanes	0.0392	97	0.4041	0.0938	9.100
2,2,4 Trimethylpentane	0	114	0.0000	0.0000	0.000
Toluene	0.0084	92	0.0912	0.0212	1.950
Octanes	0.0464	111	0.4180	0.0970	10.771
Ethyl Benzene	0.002	106	0.0188	0.0044	0.464
Xylenes	0.0095	106	0.0896	0.0208	2.205
Isopropylbenzene	0.0005	120	0.0042	0.0010	0.116
Nonanes	0.031	123	0.2520	0.0585	7.196
Naphthalene	0.0016	128	0.0125	0.0029	0.371
Decanes+	0.7916	395	2.0041	0.4652	183.761
SUM $Z_{Li} / x_T / x_i / M_T$	1.00		4.3078	1.00	232

Note:

1. Molecular weight values for component groups such as octanes are estimates from Core Laboratories.

Estimating Procedure for Determining HAP Content of Crude Storage Tank Vapors

III. Determine Component Vapor Pressure at Given Crude Temperature

Methodology Assumptions/Comments:

1. Clausius-Clapeyron equation provides relationship between temperature and vapor pressure:

$$\log P_2/P_1 = H_v/2.303R*(T_2-T_1/T_2T_1)$$

where R = Universal Gas Constant = 8.31448 J/g-mole·K = 3.58 Btu/lb-mole·K
 H_v = Heat of Vaporization = see table below

2. Let P₁ be known component vapor pressure at known temperature T₁ = 100 F (311 K),
 and P₂ be unknown component vapor pressure at given crude temperature T₂ (shown below).

3. PS 4 crude (and vapor) constant temperature (P₂) of: 99 F 310 K
 Based on average crude temperature at PS 4 during peak flow year 1995.

Component Physical Properties			Component Vapor Pressure at Crude Temperature			
Component i	Component Vapor Pressure at 100F (psia) P ₁	Component Heat of Vaporization (Btu/lb-mole) H _v	Component Heat of Vaporization/ Gas Constant H _v /2.303R	Calculate (T ₂ -T ₁)/T ₂ T ₁	Calculate Inverse Log of (H _v /2.303R)* (T ₂ -T ₁)/T ₂ T ₁	Component Vapor Pressure at Crude Temperature (psia) P ₂
Methane	5000	3520	426.9	-0.000006	0.994	4972
Ethane	800	6349	770.1	-0.000006	0.990	792
Propane	189	8071	978.9	-0.000006	0.987	186
Isobutane	72.6	9136	1108.2	-0.000006	0.985	71.5
N-Butane	51.7	9642	1169.5	-0.000006	0.985	50.9
1,3 Butadiene	59.5	10025	1215.9	-0.000006	0.984	58.5
Isopentane	20.4	10613	1287.3	-0.000006	0.983	20.1
N-Pentane	15.6	11082	1344.2	-0.000006	0.982	15.3
N-Hexane	4.96	12404	1504.5	-0.000006	0.980	4.86
Hexanes	10	12500	1516.1	-0.000006	0.980	9.80
Benzene	3.22	13215	1602.8	-0.000006	0.979	3.15
Heptanes	3.5	13500	1637.4	-0.000006	0.978	3.42
2,2,4 Trimethylpentane	1.70	14000	1698.1	-0.000006	0.978	1.66
Toluene	1.03	14263	1730.0	-0.000006	0.977	1.01
Octanes	1	14500	1758.7	-0.000006	0.977	0.98
Ethyl Benzene	0.37	15288	1854.3	-0.000006	0.976	0.36
Xylenes	0.33	16000	1940.6	-0.000006	0.975	0.32
Isopropylbenzene	0.19	16136	1957.1	-0.000006	0.974	0.19
Nonanes	0.40	16500	2001.3	-0.000006	0.974	0.39
Naphthalene	0.13	16700	2025.5	-0.000006	0.973	0.13
Decanes+	0.1	47282	5734.7	-0.000006	0.927	0.09

Notes:

1. Heat of Vaporization and vapor pressure of pure components from GPSA Engineering Data Book, Volume II, Section 23.
2. Vapor pressure values for component groups such as octanes are estimates from Core Laboratories.
3. Heat of Vaporization values for component groups are estimates based on values for individual components within the group.

Estimating Procedure for Determining HAP Content of Crude Storage Tank Vapors

IV. Determine Component Partial Pressure and Mole Fraction in Crude Vapor

Methodology Assumptions/Comments:

1. Conservatively assume C1-C10 hydrocarbons and HAPs are only species present in vapor phase due to dramatic dropoff in component vapor pressure as component molecular weight increases.
2. For speciation purposes, assume crude vapor pressure (P_{VA}) equal to sum of component partial pressures indicated below. This assumption ignores CO_2 present in crude and is conservative because it results in vapor mole fractions of listed components (including HAPs) being overstated.
3. Component partial pressure is equal to the component mole fraction in the liquid crude multiplied by the component vapor pressure at the given crude temperature:

$$P_i = P_2 * x_i$$

4. The component mole fraction in the crude vapor is then equal to the component partial pressure divided by the overall crude vapor pressure:

$$y_i = P_i / P_{VA}$$

Component i	Calculation of Component Partial Pressure and Mole Fraction in Vapor			
	Component Vapor Pressure at Crude Temperature (psia) P_2	Component Mole Fraction in Crude ($Z_{Li}/M_i/x_T$) x_i	Component Partial Pressure at Crude Temperature ($P_2 * x_i$) P_i	Component Mole Fraction in Vapor (P_i/P_{VA}) y_i
Methane	4972	0.0000	0.000	0.0000
Ethane	792	0.0015	1.223	0.1142
Propane	186	0.0158	2.940	0.2747
Isobutane	71.5	0.0176	1.257	0.1174
N-Butane	50.9	0.0607	3.090	0.2887
1,3 Butadiene	58.5	0.0000	0.000	0.0000
Isopentane	20.1	0.0283	0.569	0.0531
N-Pentane	15.3	0.0409	0.626	0.0585
N-Hexane	4.86	0.0280	0.136	0.0127
Hexanes	9.80	0.0326	0.320	0.0299
Benzene	3.15	0.0098	0.031	0.0029
Heptanes	3.42	0.0938	0.321	0.0300
2,2,4 Trimethylpentane	1.66	0.0000	0.000	0.0000
Toluene	1.01	0.0212	0.021	0.0020
Octanes	0.98	0.0970	0.095	0.0089
Ethyl Benzene	0.36	0.0044	0.002	0.0001
Xylenes	0.32	0.0208	0.007	0.0006
Isopropylbenzene	0.19	0.0010	0.000	0.0000
Nonanes	0.39	0.0585	0.023	0.0021
Naphthalene	0.13	0.0029	0.000	0.0000
Decanes+	0.09	0.4652	0.043	0.0040
P_{VA} / y_i SUM			10.7	1.00

Estimating Procedure for Determining HAP Content of Crude Storage Tank Vapors

V. Determine Component Weight Fractions in Crude Vapor

1. Component weight fraction in the vapor is determined in two steps. First, the overall vapor molecular weight is determined by summing the product of the molecular weight and vapor mole fraction for each component:

$$M_V = \sum (M_i \cdot y_i)$$

2. Then, the component weight fraction is determined by dividing the product of the molecular weight and vapor mole fraction for each component by the overall vapor molecular weight:

$$Z_{Vi} = (M_i \cdot y_i) / M_V$$

Component Physical Properties		Calculation of Component Weight Fraction in Vapor		
Component i	Component Molecular Weight M_i	Component Mole Fraction in Vapor (P_i/P_{VA}) y_i	Calculate Vapor Molecular Weight ($\sum M_i \cdot y_i$) M_V	Component Weight Fraction in Vapor ($M_i \cdot y_i / M_V$) Z_{Vi}
Methane	16	0.0000	0.00	0.0000
Ethane	30	0.1142	3.43	0.0602
Propane	44	0.2747	12.11	0.2123
Isobutane	58	0.1174	6.83	0.1196
N-Butane	58	0.2887	16.78	0.2941
1,3 Butadiene	54	0.0000	0.00	0.0000
Isopentane	72	0.0531	3.83	0.0672
N-Pentane	72	0.0585	4.22	0.0740
N-Hexane	86	0.0127	1.10	0.0192
Hexanes	84	0.0299	2.51	0.0440
Benzene	78	0.0029	0.23	0.0040
Heptanes	97	0.0300	2.91	0.0510
2,2,4 Trimethylpentane	114	0.0000	0.00	0.0000
Toluene	92	0.0020	0.18	0.0032
Octanes	111	0.0089	0.98	0.0172
Ethyl Benzene	106	0.0001	0.02	0.0003
Xylenes	106	0.0006	0.07	0.0012
Isopropylbenzene	120	0.0000	0.00	0.0000
Nonanes	123	0.0021	0.26	0.0046
Naphthalene	128	0.0000	0.00	0.0001
Decanes+	395	0.0040	1.59	0.0279
y_i SUM / M_V / Z_{Vi} SUM		1.00	57.1	1.00

**Estimated Potential HAP Emissions - Breakout Tank
Pump Station 4**

1. The TOC emissions (losses) are determined from EPA's TANKS 4.0 program.
Individual component emission rates (losses) are then determined using the vapor phase weight fractions previously determined for each component.

$$L_{Ti} = (Z_{vi})(L_T)$$

2. Based on a maximum flow of crude to the breakout tank of: 1,675,000 bbl/yr
70,350,000 gal/yr
The total TOC losses from the breakout tank are: 767,531 lb/yr
384 tpy

Calculation of Component Emission Rates (Losses)					
Component i	Component Weight Fraction in Vapor Z_{vi}	TOC Losses (from TANKS) L_T	Component Emission Rate/Loss L_{Ti}	Total HAP Emission Rate/Losses L_{HAP}	
Methane	0.0000	384	0.00	N/A	
Ethane	0.0602	384	23.10	N/A	
Propane	0.2123	384	81.48	N/A	
Isobutane	0.1196	384	45.91	N/A	
N-Butane	0.2941	384	112.86	N/A	
1,3 Butadiene	0.0000	384	0.00	0.00	
Isopentane	0.0672	384	25.79	N/A	
N-Pentane	0.0740	384	28.39	N/A	
N-Hexane	0.0192	384	7.38	7.38	
Hexanes	0.0440	384	16.87	N/A	
Benzene	0.0040	384	1.52	1.52	
Heptanes	0.0510	384	19.58	N/A	
2,2,4 Trimethylpentane	0.0000	384	0.00	0.00	
Toluene	0.0032	384	1.23	1.23	
Octanes	0.0172	384	6.61	N/A	
Ethyl Benzene	0.0003	384	0.11	0.11	
Xylenes	0.0012	384	0.45	0.45	
Isopropylbenzene	0.0000	384	0.01	0.01	
Nonanes	0.0046	384	1.76	N/A	
Naphthalene	0.0001	384	0.03	0.03	
Decanes+	0.0279	384	10.70	N/A	
L_{Ti} SUM / L_{HAP} SUM			384	10.7	

**Estimated Potential HAP Emissions - NG-Fired Turbines
Pump Station 4**

All NG-Fired Turbines

**Maximum Total Heat Input: 247 MMBtu/hr
2,163,720 MMBtu/yr**

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations		Factor
No.	CAS No.	Chemical Name	Emission Factor	Estimated Emissions	Reference
9	106990	1,3-Butadiene	4.30E-07 lb/MMBtu	4.65E-04 tpy	EPA
14	540841	2,2,4-Trimethylpentane	3.62E-04 lb/MMBtu	3.92E-01 tpy	GRI Field
35	75070	Acetaldehyde	4.00E-05 lb/MMBtu	4.33E-02 tpy	EPA
39	107028	Acrolein	6.40E-06 lb/MMBtu	6.92E-03 tpy	EPA
46	N/A	Arsenic Compounds	1.35E-07 lb/MMBtu	1.46E-04 tpy	GRI Field
48	71432	Benzene	1.20E-05 lb/MMBtu	1.30E-02 tpy	EPA
52	N/A	Beryllium Compounds	2.26E-08 lb/MMBtu	2.44E-05 tpy	GRI Field
54	92524	Biphenyl	7.45E-05 lb/MMBtu	8.06E-02 tpy	GRI Field
58	N/A	Cadmium Compounds	4.51E-08 lb/MMBtu	4.88E-05 tpy	GRI Field
75	N/A	Chromium Compounds	1.85E-06 lb/MMBtu	2.00E-03 tpy	GRI Field
76	N/A	Cobalt Compounds	3.61E-07 lb/MMBtu	3.90E-04 tpy	GRI Field
99	100414	Ethyl benzene	3.20E-05 lb/MMBtu	3.46E-02 tpy	EPA
109	5000	Formaldehyde	7.10E-04 lb/MMBtu	7.68E-01 tpy	EPA
118	110543	N-Hexane	3.40E-04 lb/MMBtu	3.67E-01 tpy	GRI Field
124	N/A	Lead Compounds	7.67E-07 lb/MMBtu	8.30E-04 tpy	GRI Field
127	N/A	Manganese Compounds	3.95E-06 lb/MMBtu	4.27E-03 tpy	GRI Field
128	N/A	Mercury Compounds	6.09E-07 lb/MMBtu	6.59E-04 tpy	GRI Field
145	91203	Naphthalene	1.30E-06 lb/MMBtu	1.41E-03 tpy	EPA
146	N/A	Nickel Compounds	1.38E-06 lb/MMBtu	1.49E-03 tpy	GRI Field
156	108952	Phenol	2.48E-05 lb/MMBtu	2.69E-02 tpy	GRI Field
158	7723140	Phosphorus	1.47E-05 lb/MMBtu	1.59E-02 tpy	GRI Field
162	N/A	Polycyclic Organic Matter	2.20E-06 lb/MMBtu	2.38E-03 tpy	EPA
164	123386	Propionaldehyde	1.95E-04 lb/MMBtu	2.11E-01 tpy	GRI Field
167	75569	Propylene oxide	2.90E-05 lb/MMBtu	3.14E-02 tpy	EPA
171	N/A	Selenium Compounds	6.77E-08 lb/MMBtu	7.32E-05 tpy	GRI Field
176	108883	Toluene	1.30E-04 lb/MMBtu	1.41E-01 tpy	EPA
185	1330207	Xylenes	6.40E-05 lb/MMBtu	6.92E-02 tpy	EPA
Total HAP Emissions				2.2 tpy	

Notes/Comments:

- Reference: AP-42, Tables 3.1-3 and 3.1-4, and GRI Field Data from GRI-HAPCalc 3.01. AP-42 factors have been given preference.
- Total turbine heat input based on full-time operation of the following:

	<u>Output</u>	<u>Heat Input</u>
Siemens Cyclone Turbine Generator	12,900 kW	124 MMBtu/hr
		1,081,860 MMBtu/yr
Siemens Cyclone Turbine Generator	12,900 kW	124 MMBtu/hr
		1,081,860 MMBtu/yr
TOTALS		247 MMBtu/hr
		2,163,720 MMBtu/yr

- Emissions are based on NG firing because distillate firing is restricted by the permit and NG turbines emit more HAPs based on available emission factors.
- Measured heat content (HHV) of gas is 960 Btu/scf.
- Per turbine heat input is the average of the monthly values indicated in Table 2-15 of the PS 4 Strategic Reconfiguration Construction Permit Application.

**Estimated Potential HAP Emissions - Diesel-Fired Engines
Pump Station 4**

Maximum Total Heat Input: 13,647 MMBtu/yr

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	
No.	CAS No.	Chemical Name	Emission Factor	Estimated Emissions
1	75070	Acetaldehyde	7.67E-04 lb/MMBtu	5.23E-03 tpy
6	107028	Acrolein	9.25E-05 lb/MMBtu	6.31E-04 tpy
15	71432	Benzene	9.33E-04 lb/MMBtu	6.37E-03 tpy
23	106990	1,3-Butadiene	3.91E-05 lb/MMBtu	2.67E-04 tpy
87	5000	Formaldehyde	1.18E-03 lb/MMBtu	8.05E-03 tpy
119	91203	Naphthalene	8.48E-05 lb/MMBtu	5.79E-04 tpy
152	108883	Toluene	4.09E-04 lb/MMBtu	2.79E-03 tpy
169	1330207	Xylenes (isomers and mixture)	2.85E-04 lb/MMBtu	1.94E-03 tpy
187	N/A	Polycyclic Organic Matter	1.68E-04 lb/MMBtu	1.15E-03 tpy
			TOTAL HAP Emissions	0.03 tpy

Notes/Comments:

- Reference: AP-42, Table 3.3-2.
- Total fuel use based on permit-limited operation of the following:

	<u>Output</u>	<u>Heat Input</u>
RICE (Caterpillar 3516B) Operational Limit - 600 hr/yr	2250 kW	18.8 MMBtu/hr 11,297 MMBtu/yr
RICE (UPS) Operational Limit - 300 hr/yr	65 kW	0.61 MMBtu/hr 183 MMBtu/yr
RICE (Detroit Diesel 6-71 Firewater Pump) Operation - 500 hr/yr	190 hp	1.33 MMBtu/hr 665 MMBtu/yr
34-GEN-4401 MTU Detroit Engine Operational Limit - 200 hr/yr	800 kW	7.51 MMBtu/hr 1,502 MMBtu/yr
	TOTAL	13,647 MMBtu/yr

- Engine outputs, heat rates, and operational restrictions from Section 2.2.3 of PS 4 Strategic Reconfiguration Construction Permit Application.
- Heat input values based on a diesel fuel heat content of 133,925 Btu/gal, and a fuel consumption rate of 0.341lb/hp-hr (Cat 3516B) and a heat consumption rate of 7,000 Btu/hp-hr (other engines).
- Annual heat input values reflect proposed operational restrictions indicated for each unit.

**Estimated Potential HAP Emissions - NG-Fired (dual) Heaters
Pump Station 4**

Total Input Rating: 52.9 MMBtu/hr
Maximum Total Heat Input: 463,141 MMBtu/yr

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations		Factor
No.	CAS No.	Chemical Name	Emission Factor	Estimated Emissions	Reference
9	106990	1,3-Butadiene	3.42E-04 lb/MMBtu	7.93E-02 tpy	GRI Field
14	540841	2,2,4-Trimethylpentane	3.80E-04 lb/MMBtu	8.80E-02 tpy	GRI Field
35	75070	Acetaldehyde	7.38E-04 lb/MMBtu	1.71E-01 tpy	GRI Field
46	N/A	Arsenic Compounds	2.00E-07 lb/MMBtu	4.63E-05 tpy	EPA
48	71432	Benzene	2.10E-06 lb/MMBtu	4.86E-04 tpy	EPA
52	N/A	Beryllium Compounds	1.20E-08 lb/MMBtu	2.78E-06 tpy	EPA
54	92524	Biphenyl	4.73E-07 lb/MMBtu	1.10E-04 tpy	GRI Field
58	N/A	Cadmium Compounds	1.10E-06 lb/MMBtu	2.55E-04 tpy	EPA
75	N/A	Chromium Compounds	1.40E-06 lb/MMBtu	3.24E-04 tpy	EPA
76	N/A	Cobalt Compounds	8.40E-08 lb/MMBtu	1.95E-05 tpy	EPA
99	100414	Ethyl benzene	3.50E-04 lb/MMBtu	8.10E-02 tpy	GRI Field
109	5000	Formaldehyde	7.35E-05 lb/MMBtu	1.70E-02 tpy	EPA
118	110543	N-Hexane	1.80E-03 lb/MMBtu	4.17E-01 tpy	EPA
124	N/A	Lead Compounds	4.90E-07 lb/MMBtu	1.14E-04 tpy	EPA
127	N/A	Manganese Compounds	3.80E-07 lb/MMBtu	8.80E-05 tpy	EPA
128	N/A	Mercury Compounds	2.60E-07 lb/MMBtu	6.02E-05 tpy	EPA
129	67561	Methanol	9.64E-04 lb/MMBtu	2.23E-01 tpy	GRI Field
145	91203	Naphthalene	5.98E-07 lb/MMBtu	1.38E-04 tpy	EPA
146	N/A	Nickel Compounds	2.10E-06 lb/MMBtu	4.86E-04 tpy	EPA
156	108952	Phenol	1.07E-07 lb/MMBtu	2.48E-05 tpy	GRI Field
162	N/A	Polycyclic Organic Matter	8.82E-08 lb/MMBtu	2.04E-05 tpy	EPA
171	N/A	Selenium Compounds	2.40E-08 lb/MMBtu	5.56E-06 tpy	EPA
172	100425	Styrene	3.30E-04 lb/MMBtu	7.64E-02 tpy	GRI Field
176	108883	Toluene	3.33E-06 lb/MMBtu	7.72E-04 tpy	EPA
185	1330207	Xylenes (isomers and mixture)	3.50E-04 lb/MMBtu	8.10E-02 tpy	GRI Field
Total HAP Emissions				1.24 tpy	

Notes/Comments:

- Reference: AP-42, Tables 1.4-2, 1.4-3, and 1.4-4 and GRI Field Data GRI-HAPCalc 3.01. EPA factors have been given preference.
- The emission factors for all individual compounds listed in Table 1.4-3 that are identified as polycyclic organic matter (POM) have been summed and represented as the POM emission factor.
- GRI HAPCalc emission factors for 2,2,4 Trimethylpentane, ethylbenzene, hexane, styrene, and xylenes have been corrected per letter from GRI to UNOCAL dated October 17, 2002.
- Total heater fuel use based on full time operation of the following:
 - (30) Insignificant Heaters 11.7 MMBtu/hr total heat input
 - (2) Eclipse Therminol Heaters (EUs 8 and 9) rated at 20.6 MMBtu/hr.
- Emissions are based on NG firing if distillate firing is restricted by the permit and NG heaters emit more HAPs based on available emission factors.

**Estimated Potential HAP Emissions - Diesel Fired Heaters
Pump Station 4**

Maximum Total Fuel Use: 150 Mgal/yr
Maximum Total Heat Input: 0.02 10¹² Btu/yr

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations	
No.	CAS No.	Chemical Name	Emission Factor	Estimated Emissions
46	N/A	Arsenic Compounds	4.0 lb/10 ¹² Btu	4.030E-05 tpy
48	71432	Benzene	2.14E-04 lb/Mgal	1.610E-05 tpy
52	N/A	Beryllium Compounds	3 lb/10 ¹² Btu	3.022E-05 tpy
58	N/A	Cadmium Compounds	3 lb/10 ¹² Btu	3.022E-05 tpy
75	N/A	Chromium Compounds	3 lb/10 ¹² Btu	3.022E-05 tpy
99	100414	Ethyl benzene	6.36E-05 lb/Mgal	4.784E-06 tpy
109	5000	Formaldehyde	3.30E-02 lb/Mgal	2.482E-03 tpy
118	110543	Hexane	0.269 lb/Mgal	2.025E-02 tpy
124	N/A	Lead Compounds	9 lb/10 ¹² Btu	9.067E-05 tpy
127	N/A	Manganese Compounds	6 lb/10 ¹² Btu	6.044E-05 tpy
128	N/A	Mercury Compounds	3 lb/10 ¹² Btu	3.022E-05 tpy
132	71556	Methyl chloroform (1,1,1-Trichloroethane)	2.36E-04 lb/Mgal	1.775E-05 tpy
145	91203	Naphthalene	1.13E-03 lb/Mgal	8.500E-05 tpy
146	N/A	Nickel Compounds	3 lb/10 ¹² Btu	3.022E-05 tpy
162	N/A	Polycyclic Organic Matter	0.0033 lb/Mgal	2.482E-04 tpy
171	N/A	Selenium Compounds	15 lb/10 ¹² Btu	1.511E-04 tpy
176	108883	Toluene	6.20E-03 lb/Mgal	4.664E-04 tpy
185	1330207	Xylenes (isomers and mixture)	1.09E-04 lb/Mgal	8.199E-06 tpy
			Total HAP Emissions	0.02 tpy

Notes/Comments:

- Reference: AP-42, Tables 1.3-8, 1.3-9, and 1.3-10.
- Assume diesel fuel heat content of 133,925 Btu/gal.
- Total heater fuel use based on full time operation of the following:
(6) Insignificant Units

2.3 MMBtu/hr (total input)
Total Potential Fuel Use 150,443 gal/yr

**Estimated Potential HAP Emissions from Piping Fugitives - Light Liquid Service
Pump Station 4**

1. Assume that the TOC emissions (losses) are determined from emission factors in Protocol for Equipment Leak Estimates, EPA-453-95-017, November 1995.
2. Based on this protocol, and a TAPs facilities fugitive emissions study conducted by Alyeska in 1998, the potential TOC emissions for PS 4 are estimated to be:
45 tpy (Light Liquid Service)
3. Conservatively assuming that the light liquid piping leaks are all associated with crude, the individual component emission rates (losses) are then determined using the crude liquid phase weight fractions as determined by Core Laboratories.

Calculation of Component Emission Rates (Losses) - Light Liquids					
Component	Component Weight Fraction in Crude (wt%/100)	Total Light Liquid Fugitive Losses (tpy)	Light TOC	Component Emission Rate/Loss (tpy)	Total HAP Light Liquid Fugitive Emissions/ Losses (tpy)
Methane	0	45		0.0	N/A
Ethane	0.0002	45		0.01	N/A
Propane	0.003	45		0.1	N/A
Isobutane	0.0044	45		0.2	N/A
N-Butane	0.0152	45		0.7	N/A
1,3 Butadiene	0	45		0.0	0.00
Isopentane	0.0088	45		0.4	N/A
N-Pentane	0.0127	45		0.6	N/A
N-Hexane	0.0104	45		0.5	0.47
Hexanes	0.0118	45		0.5	N/A
Benzene	0.0033	45		0.1	0.15
Heptanes	0.0392	45		1.8	N/A
2,2,4 Trimethylpentane	0	45		0.0	0.00
Toluene	0.0084	45		0.4	0.38
Octanes	0.0464	45		2.1	N/A
Ethyl Benzene	0.002	45		0.1	0.09
Xylenes	0.0095	45		0.4	0.43
Isopropylbenzene	0.0005	45		0.02	0.02
Nonanes	0.031	45		1.4	N/A
Naphthalene	0.0016	45		0.07	0.07
Decanes+	0.7916	45		35.6	N/A
SUM / TOTAL	1.0			45	1.6

**Estimated Potential HAP Emissions from Piping Fugitives - Gas/Vapor Service
Pump Station 4**

1. Assume that the TOC emissions (losses) are determined from emission factors in Protocol for Equipment Leak Estimates, EPA-453-95-017, November 1995.
2. Based on this protocol, and a TAPs facilities fugitive emissions study conducted by Alyeska in 1998, the potential TOC emissions for PS 4 are estimated to be:
176 tpy (Gas/Vapor Service)
3. Assuming that the gas/vapor piping leaks are all associated with fuel gas, the individual component emission rates (losses) are then determined using the weight fractions previously calculated.

Calculation of Component Emission Rates (Losses) - Gas/Vapor Service					
Component	Component Weight Fraction in Fuel Gas	Normalized Component Weight Fraction in Fuel Gas	Total Gas/Vapor TOC Fugitive Losses (tpy)	Component Emission Rate/Loss (tpy)	Total HAP Fuel Gas Fugitive Emissions/Losses (tpy)
Methane	0.56826	0.77321	176	136.1	N/A
Ethane	0.07875	0.10715	176	18.9	N/A
Propane	0.04214	0.05734	176	10.1	N/A
Isobutane	0.03578	0.04869	176	8.6	N/A
N-Butane	0.00614	0.00836	176	1.5	N/A
1,3 Butadiene	0.00000	0.00000	176	0.00	0.00
Isopentane	0.00099	0.00135	176	0.24	N/A
N-Pentane	0.00099	0.00135	176	0.24	N/A
N-Hexane	0.00020	0.00027	176	0.05	0.05
Hexanes+	0.00118	0.00161	176	0.28	N/A
Benzene	0.00007	0.00010	176	0.02	0.02
2,2,4 Trimethylpentane	0.00000	0.00000	176	0.00	0.00
Toluene	0.00042	0.00058	176	0.10	0.10
Ethyl Benzene	0.00000	0.00000	176	0.00	0.00
Xylenes	0.00000	0.00000	176	0.00	0.00
Isopropylbenzene	0.00000	0.00000	176	0.00	0.00
Napthalene	0.00000	0.00000	176	0.00	0.00
SUM / TOTAL	0.73	1.0		176	0.2

Notes:

1. The component weight fractions in the fuel gas were normalized to eliminate the non-organic components N₂ and CO₂.

Form Series E

Form E1
Stationary Source Wide Applicable Requirements

FORM E1
Stationary Source-Wide Applicable Requirements

Permit Number: AQ0075TVP03

Stationary Source-Wide Applicable Requirements (attach additional sheets as needed):

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Used to Determine Compliance
AQ0075TVP03, Condition 18	Permit AQ0075CPT02	Ambient Air Quality Protection/Fuel Sulfur	Fuel Gas: 150 ppmv H ₂ S Diesel Fuel: 0.2 wt% S	Yes	Permit AQ0075TVP03, Conditions 18.1-18.2
AQ0075TVP03, Condition 40	40 C.F.R. 61, Subparts A & M, & Appendix A	Asbestos NESHAP	Standard for the removal/ demolition of ACM.	Yes	Compliance based upon reasonable inquiry, except during projects to which the standard applies. Refer to rule for applicable MR&R.
AQ0075TVP03, Condition 48	40 C.F.R. 82, Subparts F, G and H	Refrigerant Recycling and Disposal, Halon Prohibitions	Standard for recycling and emission reduction of refrigerants; prohibitions.	Yes	Compliance based upon reasonable inquiry, except during projects to which the standard applies. Refer to rule for applicable MR&R.
AQ0075TVP03, Condition 49	40 C.F.R. 63.1(b), 63.5(b)(4), 63.6(c)(1), & 63.10(b)(3)	NESHAPs Applicability Determinations	Recordkeeping	Yes	Compliance based upon reasonable inquiry.
AQ0075TVP03, Condition 58	18 AAC 50.045(a)	Dilution	Prohibition	Yes	Compliance based upon reasonable inquiry.
AQ0075TVP03, Condition 59	18 AAC 50.045(d)	Reasonable Precautions to Prevent Fugitive Dust	Work Practice	Yes	Permit AQ0075TVP03, Conditions 59.1-59.2

FORM E1
Stationary Source-Wide Applicable Requirements

Permit and Condition Number	Applicable Requirement Citation ¹	Parameter/Pollutant	Limit/Standard/Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Used to Determine Compliance
AQ0075TVP03, Condition 60	18 AAC 50.055(g)	Stack Injection	Prohibition	Yes	Compliance based upon reasonable inquiry.
AQ0075TVP03, Condition 61	18 AAC 50.110	Air Pollution Prohibited	Prohibition	Yes	Permit AQ0075TVP03, Conditions 61.1-61.5
AQ0075TVP03, Condition 62	18 AAC 50.235(a)	Technology-Based Emission Standard	Work Practice	Yes	Compliance based upon reasonable inquiry.
AQ0075TVP03, Condition 63	18 AAC 50.065	Open Burning	Work Practice	Yes	Permit AQ0075TVP03, Conditions 63.1-63.2

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]