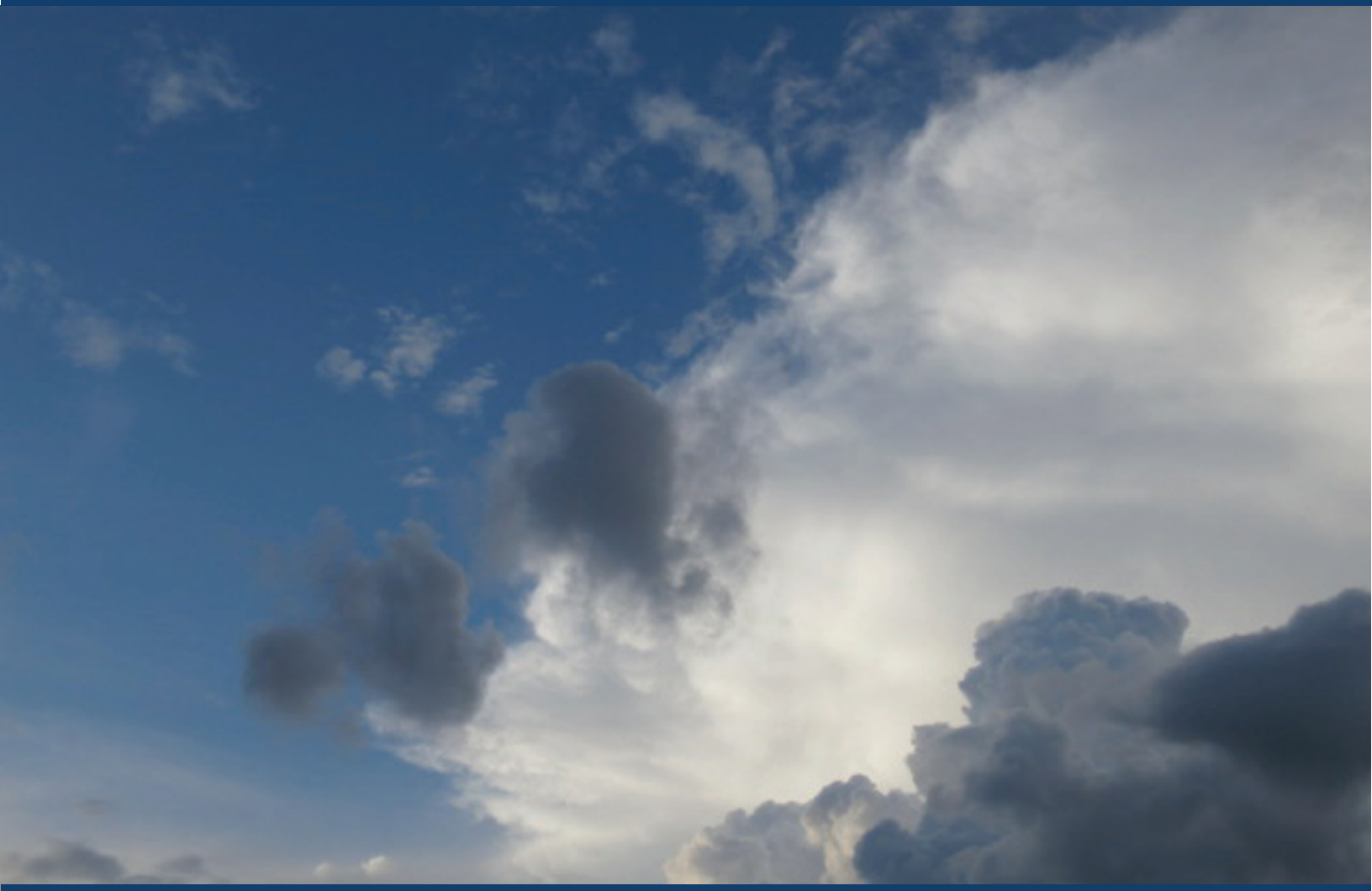
Appendix



ALGONQUIN GAS TRANSMISSION, LLC
CROMWELL COMPRESSOR STATION

VOC RACT COMPLIANCE PLAN

Prepared for:

Algonquin Gas Transmission, LLC
Cromwell Compressor Station
Cromwell, Connecticut

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TRC Project No. 456494.0000.00000

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TABLE OF CONTENTS

TABLES

APPENDICES

Executive Summary

Algonquin Gas Transmission, LLC (Algonquin) owns and operates the Cromwell Compressor Station in Middlesex County, Connecticut (the Facility) that is located within a serious ozone non-attainment area. The Facility is an existing major source of volatile organic compounds (VOC). The Cromwell Compressor Station is permitted to operate under Title V Permit No. 043-0020-TV issued by the Connecticut Department of Energy and Environmental Protection (CTDEEP).

The Facility is subject to the requirements of Regulations of Connecticut State Agencies (RCSA) Section 22a-174-32 – Reasonably Available Control Technology for Volatile Organic Compounds (VOC RACT) due to a 2014 exceedance in potential VOC emissions from non-excludable sources above the 50 ton per year (tpy) threshold found in RCSA 22a-174-32(b)(1)(A) per Consent Order issued to Algonquin on June 9, 2021. Algonquin respectfully requests a permit or order implementing this VOC RACT Alternative Compliance Plan pursuant to RCSA 22a-174-32(e)(1)(D).

The Facility includes the following natural gas-fired turbine-driven compressor units and ancillary equipment:

- Two (2) 4,700-HP Solar Centaur 40 T-4702 turbine-driven compressor units [EU-07, EU-08]
- One (1) 15,900-HP Solar Mars 100-16002 gas turbine-driven compressor unit [EU-9]
- One (1) 7,700-HP Solar Taurus 60-7802 gas turbine-driven compressor unit [EU-10]
- One (1) 6,130-HP Solar Centaur 50-6102 gas turbine-driven compressor unit [EU-11]
- One (1) 1,175-bhp Waukesha VGF48GL emergency generator [EU-16]
- One (1) 0.438-MMBtu/hr Gas Tech natural gas-fired fuel gas heater [EU-17]
- One (1) 2.946-MMBtu/hr Hurst natural gas-fired boiler [EU-21]
- Two (2) 0.385-MMBtu/hr Cameron natural gas-fired fuel gas heaters [EU-22, EU-23]
- Two (2) 0.125-MMBtu/hr Modine space heaters
- One (1) 0.100-MMBtu/hr Modine space heater
- One (1) 0.075-MMBtu/hr Modine space heater
- One (1) 0.030-MMBtu/hr Modine heater
- One (1) 0.036-MMBtu/hr State Industries water heater
- One remote reservoir parts washer
- Five (5) separator/storage vessels
- One (1) 2,940-gallon pipeline condensate tank
- One (1) 1,000-gallon oil storage tank
- One (1) 750-gallon oil storage tank
- One (1) 1,000-gallon oily water storage tank
- One (1) 2,790-gallon coolant storage tank
- One (1) 350-gallon coolant storage tank
- Pipeline condensate, oil and coolant truck loading fugitives
- Fugitive emissions from piping components

- Natural gas venting

Of the VOC emissions sources present at the Facility, certain sources are exempt from the requirement to comply with VOC RACT, as described in the October 20, 2021 proposed compliance plan memorandum.[1] Therefore, this alternative compliance plan does not provide an analysis of the following sources:

- Fuel burning equipment
- Turbine-driven compressor units without catalyst [EU-07, EU-08]
- Turbine-driven compressor units with catalyst [EU-09, EU-10, EU-11]
- Other small combustion sources [EU-16, EU-17, EU-21, EU-22, EU-23, and six (6) small space heaters and a water heater]
- Parts washer
- Truck loading fugitives

Algonquin's alternative compliance plan seeks to:

1) Document how the following sources already comply with RACT through the application of existing operational and design elements that minimize VOC emissions:
   a) Eleven (11) storage vessels/tanks;
   b) Fugitive emissions from piping components;
   c) Natural gas venting from intermittent bleed pneumatic controllers;
   d) Natural gas venting from dry compressor seals on four (4) compressor units [EU-07, EU-09, EU-10, EU-11]; and
   e) Natural gas venting from wet compressor seals on one compressor unit [EU-08], which were replaced with dry seals in 2019.
2) Reduce VOC emissions from the following sources of natural gas venting through system enhancements and by implementing process changes (i.e., best management practices):
   a) A gas-powered starter on one turbine-driven compressor unit [EU-08];
   b) Unit blowdowns; and
   c) Station blowdowns.

This alternative compliance plan demonstrates that the facility has already implemented practices for the eleven (11) storage vessels/tanks, fugitive emissions from piping components, the pneumatic controllers, and the compressor seals (Items 1(a) – (e) above) that meet 40 CFR Part 60, Subpart OOOOa - *Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015* (NSPS OOOOa) or are consistent with the current *2016 U.S. Environmental Protection Agency* (USEPA) *Control Techniques Guidelines* (CTGs) *for the Oil and Natural Gas Industry*. Therefore,

[1] AGT Cromwell Volatile Organic Compounds (VOC) Reasonably Available Control Technology (RACT) Consent Order Compliance Plan Memorandum provided to CTDEEP on October 20, 2021 via email.

VOC emissions from the eleven (11) storage vessels/tanks, the piping components, the pneumatic controllers, and the compressor seals meet the VOC RACT requirements.

The alternative compliance plan also demonstrates, as presented in the equipment tables in Attachment B, that further enforceable reductions of VOC emissions through system enhancements and best management practices for vented emissions from the gas-powered starter, as well as unit and station blowdowns, will achieve the level of control required by the VOC RACT rule without the need to demonstrate technological or economic feasibility.

1.0 Introduction

Algonquin Gas Transmission, LLC (Algonquin) owns and operates the Cromwell Compressor Station in Middlesex County, Connecticut (the Facility), which is a serious ozone non-attainment area. The Facility is an existing major source of volatile organic compounds (VOC). The Cromwell Compressor Station is permitted to operate under Title V Permit No. 043-0020-TV issued by the Connecticut Department of Energy and Environmental Protection (CTDEEP).

The Facility is subject to the requirements of Regulations of Connecticut State Agencies (RCSA) Section 22a-174-32 – Reasonably Available Control Technology for Volatile Organic Compounds (VOC RACT) due to a 2014 exceedance in potential VOC emissions from non-excludable sources above the 50 ton per year (tpy) threshold found in RCSA 22a-174-32(b)(1)(A), as described in the Consent Order issued to Algonquin on June 9, 2021. Algonquin seeks to comply with VOC RACT by a permit or order implementing an alternative compliance plan pursuant to RCSA 22a-174-32(e)(1)(D).

According to the VOC RACT rule, an alternative compliance plan may be implemented by the owner/operator through a permit or order issued by the Commissioner when it is demonstrated that compliance with subdivisions (e)(1)(A) through (C) of the VOC RACT rule is not technologically or economically feasible. Though Algonquin will achieve a level of control comparable to that required in subdivisions (e)(1)(A) and (e)(2) of the VOC RACT rule, this alternative compliance plan is proposing to do so through methods other than those listed in subdivisions (e)(1)(A) through (C).

Algonquin proposes to implement system enhancements and best management practices, to achieve an overall 86 percent (%) reduction in allowable VOC emissions from natural gas venting from the wet compressor seals and gas-powered starter on unit EU-08, as well as unit and station blowdowns. For the remaining non-excludable sources of VOC (the storage vessels/tanks, fugitive emissions from piping components, and natural gas venting from intermittent bleed pneumatic controllers and from dry compressor seals on compressor units EU-07, EU-09, EU-10, and EU-11), which currently meet federal New Source Performance Standards (NSPS) or U.S. Environmental Protection Agency (USEPA) Control Techniques Guidelines (CTGs), Algonquin asserts that emissions from these sources meet VOC RACT. As such, this alternative compliance plan does not include any additional analysis of the technological or economic feasibility of additional controls for those sources.

As presented in the equipment table in Attachment B, reductions in allowable VOC emissions from natural gas venting are calculated from a 58.2 tpy baseline. This baseline was established in the last New Source Review application Algonquin submitted to CTDEEP in 2017 for the replacement of six reciprocating engines with two new gas-fired turbine-driven compressor units.[2] The wet compressor seals on compressor unit EU-08 were replaced with dry seals in 2019. Therefore, the reduction in VOC emissions resulting from their replacement is included in the overall reduction in VOC emissions from the 2017 baseline year.
In accordance with RCSA 22a-174-32(e)(6), the information required under subdivisions (d)(2) and (d)(6) of the VOC RACT rule is addressed through this plan as well as the attached CTDEEP-

[2] Attachment F of Application Nos. 201709518 and 201709538, received by CTDEEP on November 3, 2017, with New Premises Total Emissions of 87.3 tpy VOC.

provided forms and associated tables of equipment and emissions found in Attachments A and B, respectively.

2.0 Implementation Schedule

Algonquin proposes to implement the alternative compliance plan in three phases. Phase I would be implemented within 6 months of final approval of this alternative compliance plan and result in an approximate 24.1 tpy reduction in allowable VOC emissions. The VOC emissions reductions will be achieved by implementing system enhancements and process changes to reduce VOC emissions from unit blowdowns on three compressor units [EU-08, EU-10, EU-11], and also includes the reduction in VOC emissions resulting from the replacement of the wet seals with dry seals on compressor unit EU-08.

Phase I also documents those sources at the Facility that already comply with RACT through the application of existing operational and design elements that minimize VOC emissions and are used to comply with of 40 CFR Part 60, Subpart OOOOa - *Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015* (NSPS OOOOa) or are consistent with the *2016 USEPA CTGs for the Oil and Natural Gas Industry (2016 CTGs)*.

Phase II would be implemented by the end of the first full construction season that commences at least 6 months following approval of this alternative compliance plan, and focuses on additional system enhancements and process changes to further reduce VOC emissions from natural gas venting. Phase II would result in an approximate additional 17.3 tpy reduction in allowable VOC emissions, from phase one levels. Algonquin proposes to achieve these reductions by implementing system enhancements and process changes to limit VOC emissions from natural gas venting from station blowdowns and through the replacement of the gas-powered starter on unit EU-08.

Phase III would be implemented by the end of the first full construction season that commences following Phase II and would further reduce VOC emissions by an additional 8.5 tpy from natural gas venting. Algonquin proposes to achieve these reductions by implementing system enhancements and process changes to reduce VOC emissions from unit blowdowns on the remaining two compressor units [EU-07, EU-09] and station blowdowns.

3.0 Alternative Compliance Plan

3.1 Fuel Burning Equipment

Fuel burning equipment is exempt from analysis under RCSA 22a-174-32(b)(4).

3.2 Fugitive Emissions Sources

3.2.1 *Parts Washer & Truck Loading*

The parts washer at the Facility has intermittent use and complies with RCSA 22a-174-20(l) for cold cleaning degreasers, as applicable, therefore the parts washer meets RACT for VOC.

Truck loading emissions do not need to implement RACT as potential emissions of VOC are less than 0.01 tpy.

3.2.2 *Storage Vessels/Tanks*

There are eleven (11) storage vessels/tanks located at the Facility, with combined potential VOC emissions of 1.16 tpy. The *2016 USEPA CTG for the Oil and Natural Gas Industry* recommends additional controls for tanks in the natural gas transmission industry segment with potential VOC emissions equal to or greater than 6 tpy. Additional controls for tanks with potential VOC emissions less than 6 tpy are not recommended to meet RACT. Because an enforceable limit of 1.16 tpy VOC from the eleven (11) storage vessels located at the Facility meets RACT for VOC, no enhancements or work practice changes are proposed for these sources.

3.2.3 *Fugitive Emissions from Piping Components*

Throughout the Facility, there are numerous piping components in natural gas service, heavy oil service, and pipeline liquids service with the potential for fugitive emissions of VOC. The collection of fugitive emissions components at the Facility is subject to the leak detection and repair (LDAR) program requirements of NSPS OOOOa. The LDAR requirements of NSPS OOOOa are also consistent with the *2016 USEPA CTG for the Oil and Natural Gas Industry* for fugitive emission components at facilities in the oil and natural gas production and processing segments. The NSPS OOOOa quarterly LDAR requirements currently in the Title V permit achieve an approximate 80% reduction[3] in fugitive VOC emissions from piping components and meet RACT. Therefore, no enhancements or work practice changes are proposed for these sources.

3.3 Vented Emissions Sources

Vented emissions of natural gas occur at the Facility from routine operation of equipment and maintenance activities. Certain sources of vented emissions at the Facility already comply with RACT by meeting NSPS OOOOa. Other sources of vented emissions will require system

[3] U.S. Environmental Protection Agency. *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources*. *Background Technical Support Document for the Final New Source Performance Standards, 40 CFR Part 60, Subpart OOOOa*. May 2016. Docket ID EPA-HQ-OAR-2010-0505-7631.

enhancements and best management practices to be implemented. The plan for RACT for these sources is discussed below.

3.3.1 *Pneumatic Controllers*

Pneumatic controllers are used to operate valves that regulate pressure, flow, temperature and liquid levels (USEPA, 2016). Some pneumatic controllers are actuated by pressurized natural gas (i.e., natural-gas driven). Natural-gas driven pneumatic controllers come in different designs that can vent natural gas on a continuous, intermittent, or zero-bleed basis. The facility only uses intermittent bleed natural gas actuated pneumatic controllers. These controllers only vent when actuated. Intermittent bleed natural gas actuated pneumatic controllers are a compliance alternative to low-bleed continuous bleed pneumatic controllers in NSPS OOOOa and therefore meet RACT for these sources of VOC emissions. Therefore, no enhancements or work practice changes are proposed for these sources.

3.3.2 *Compressor Seals*

Centrifugal compressors are equipped with seals around the compressor shaft to prevent natural gas from escaping between the shaft and the compressor case. These seals can either be wet seals or dry seals. Wet seals result in higher natural gas leakage than dry seals. The two (2) oldest compressor units [EU-07, EU-08] at the Facility were installed with wet seals in 1985, but have since been upgraded to dry seal systems.[4] The three (3) newest compressor units at the Facility [EU-09, EU-10, EU-11] were installed with dry seal systems. Dry seals are a compliance alternative to installing additional controls for wet seals (see NSPS OOOOa) and achieve a 95% reduction in VOC emissions compared to wet seals (USEPA, 2016). Properly operating dry seals represent RACT for these sources of VOC emissions. Therefore, no additional enhancements or work practice changes are proposed for these sources.

3.3.3 *Combustion Turbine Starters*

Some natural gas-fired turbines are started by expanding high-pressure gas across the turbine. Only one of the turbine-driven compressor units at the Facility [EU-08] has a gas-powered starter, all others are equipped with electric starters. The budgetary estimate to replace the gas-powered starter with an electric starter on unit EU-08 is $200,000. The gas-powered starter will be replaced with an electric starter in Phase II, which will result in 100% control of VOC emissions from this source and is determined to be RACT.

3.3.4 *Unit Blowdowns*

Unit blowdowns are when natural gas is released from the compressor case to reduce the pressure in the unit when it is not operating. Prior to restarting the unit, air is purged from the system, which results in a small release of natural gas. Following a normal shutdown, unit blowdowns occur after a set time period based on unit conditions. Enhancements to the dry gas seal systems will be made to allow for compressors to remain pressurized when not operating.

[4] The wet seals on unit EU-08 were replaced with dry seals in 2019, after the baseline year, and are therefore accounted for in the Phase I reduction in allowable VOC emissions from natural gas venting presented in the equipment table in Attachment B.

Phase I will require the manufacturer to review the systems and programming changes at a budgetary estimate of approximately $20,000 on the three (3) compressor units that currently have the hardware system capable of this feature [EU-08, EU-10, EU-11].

In Phase III, a budgetary estimate of $900,000 in enhancements will be made to the dry gas seal systems on the remaining two (2) compressor units [EU-07 and EU-09] to provide the capability for extended pressurized holds.

The installation of these enhancements and implementation of the best management practice of pressurized holds is proposed as RACT for the five (5) compressor unit blowdown sources.

3.3.5 *Station Blowdowns*

Vented emissions from station blowdowns periodically arise when performing required maintenance on equipment at the Facility. Station blowdowns are usually the result of maintenance activities that require the compressor station (or parts of it) to be depressurized for a safe working environment. In Phase II, best management practices and facility enhancements will be implemented to reduce emissions from station blowdowns.

Best management practices will include, but not be limited to, minimizing the length of pipe that needs to be vented using isolation valves, and coordinating scheduling of maintenance activities to minimize station blowdowns. Algonquin proposes to also make facility modifications to enhance the ability to deploy the use of recompression equipment. This equipment is designed to remove pressurized natural gas from a section of station piping where maintenance is planned to occur and inject it into another section of the compressor station. In most cases, recompression is successful in reducing the pressure of the natural gas in the station piping down to approximately 50 pounds per square inch. In doing so, a much smaller amount of gas is released to atmosphere than if it were to be released at operating pressure. The budgetary estimate for the recompression equipment and service is $25,000 per station blowdown event.

There will be some station blowdown scenarios where recompression will not be feasible. Algonquin therefore proposes the use of recompression to the extent feasible and the implementation of best management practices including, but not limited to, minimizing the length of pipe that needs to be vented using isolation valves and coordinating scheduling of maintenance activities to minimize station blowdowns, as RACT for this source.

4.0 Vented Emissions Reductions

As presented in Table 4.1 below, the implementation of Phase I of this alternative compliance plan will result in a reduction in vented emissions of approximately 24.1 tpy in allowable VOC emissions, achieving a 41.4% reduction from the baseline vented emissions levels. Implementation of Phase II of the plan will result in a reduction of an additional 17.3 tpy in allowable VOC emissions from vented emissions, achieving an overall reduction of 41.1 tpy, or 71.1%, from the baseline vented emissions levels. A reduction of an additional 8.5 tpy in allowable VOC emissions from vented emissions will result from implementation of Phase III, achieving an overall reduction of 49.9 tpy, or 85.7%, from the baseline vented emissions levels when the plan is fully implemented.

Table 4.1: Vented VOC Emissions Reductions by Phase

	Allowable Vented Emissions (tpy)	Reduction from Baseline (tpy)	Percent Reduction from Baseline
2017 Baseline Emissions	58.2	n/a	n/a
Phase I	34.1	(24.1)	41.4%
Phase II	16.8	(41.4)	71.1%
Phase III	8.3	**(49.9)**	**85.7%**

5.0 Compliance Plan Summary

VOC Emission Source	Proposed VOC RACT	Reduction in Allowable VOC Emissions
Fuel Burning Equipment		None proposed
Natural Gas-Fired Turbine-Driven Compressor Units	N/A – Exempt per RCSA 22a-174-32(b)(4)	
Natural Gas-Fired Emergency Generator	N/A – Exempt per RCSA 22a-174-32(b)(4)	
Natural Gas-Fired Heaters/Boiler	N/A – Exempt per RCSA 22a-174-32(b)(4)	
Fugitive Emissions Sources		None Proposed
Parts Washer	N/A – Subject to RCSA 22a-174-20(l)	
Truck Loading Fugitives	N/A – De minimis	
Storage Vessels/Tanks	PTE < 6 tpy VOC threshold of 2016 USEPA CTG – Enforceable limit of 1.16 tpy on combined potential emissions of VOC from the storage vessels is RACT.	
Piping Component Fugitives	NSPS OOOOa quarterly LDAR requirement for collection of fugitive components is RACT (80% control).	

VOC Emission Source	Proposed VOC RACT	Reduction in Allowable VOC Emissions
Vented Emissions Sources		Phase I – 24.1 tpy Phase II – 17.3 tpy Phase III – 8.5 tpy Total – 49.9 tpy
Pneumatic Controllers	Use of intermittent bleed pneumatic controllers as NSPS OOOOa compliance alternative to low bleed pneumatic controllers is RACT.	
Centrifugal Compressor Seals	Use of dry seals as NSPS OOOOa compliance alternative to control of wet seals is RACT (95% control).	
Gas-Powered Starters	Use of electric-powered starters is RACT.	
Unit Blowdowns	Equipment enhancements and implementation of the best management practice of pressurized holds is RACT.	
Station Blowdowns	Equipment enhancements, use of recompression to the extent feasible, and the implementation of best management practices including, but not limited to, minimizing the length of pipe that needs to be vented using isolation valves and coordinating scheduling of maintenance activities to minimize station blowdowns is RACT.	

6.0 RACT Analysis

6.1 RACT Methodology

RACT is defined as, "The lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" [44 FR 53762, September 17, 1979; RCSA 22a-174-1(98)]. The VOC RACT methodology for the Facility using the procedure is described below.

1. Identify the available control methods. These will be based on review of the EPA RACT/ BACT/ LAER Clearinghouse, *Control Techniques Guidelines for the Oil and Natural Gas Industry* (EPA-453/B-16-001, October 2016) ("*2016 USEPA CTG for the Oil and Natural Gas Industry*,"), Connecticut's BACT Database, and EPA's Natural Gas STAR Program[5].
2. Evaluate the technical feasibility of each identified control method and associated emission rate and eliminate any which are technologically unfeasible.
3. Rank the technologically feasible methods from most to least effective.
4. Starting at the top, evaluate the cost effectiveness (dollars per ton of emissions avoided) of technologically feasible methods. If a method is determined to be cost effective, it will be chosen as RACT, and process concluded.

6.2 Identify the Available Control Methods

6.2.1 *RBLC*

Table 5.1 summarizes the results of a search of the RBLC for "Natural Gas/Gasoline Processing Plants" and "Other Petroleum / Natural Gas Production & Refining Sources Fugitive VOC Emissions". Note that the CT BACT Database does not contain determinations for vented VOC emissions sources similar to the Facility. The control methods listed for VOC emissions include the following:

- Fugitive emissions from piping components
  - Leak Detection and Repair (LDAR) repair program in accordance with 40 CFR 60 Subpart OOOO and/or state guidelines.
  - Proper piping design.
- Compressor seals
  - Mechanical seals or equivalent for pumps and compressors in service with a VOC vapor pressure of 1.5 pounds per square inch (psi) or larger.

[5] https://www.epa.gov/natural-gas-star-program Accessed November 2021.

6.2.2 *EPA RACT Guidelines*

The EPA RACT Guidelines recommends the following as VOC RACT:

- Storage vessels/tanks
  - Reduce emissions from condensate storage vessels with a potential to emit (PTE) greater than 6 tpy of VOC by 95 percent.
  - Demonstrate (based on 12 consecutive months of uncontrolled actual emissions) and maintain at less than 4 tpy uncontrolled actual VOC emissions from storage vessels with a PTE greater than or equal to 6 tpy.
  - Capture VOC emissions from a storage vessel when using a control device or other control measure (such as routing to a process).
- Pneumatic controllers
  - A natural gas bleed rate less than or equal to 6 standard cubic feet per hour (scfh) for each natural gas-driven pneumatic controller, unless there are functional needs including, but not limited to response time, safety and positive actuation, requiring a greater rate.[6]
- Compressor seals
  - Use a wet seal gas degassing system to capture and direct gas leakage to a combustion device that achieves a 95 percent reduction of VOC.
  - Replace centrifugal compressors wet seals with dry seals.

6.2.3 *EPA Natural Gas STAR Program*

The Natural Gas STAR Program recommends the following:

- Fugitive emissions from piping components
  - Directed inspection and maintenance at compressor stations.[7]
- Pneumatic controllers
  - Replacing high-bleed devices with low-bleed devices (bleed rate less than 6 scfh).[8]
  - Converting natural gas-powered pneumatic controls to compressed instrument air.[9]

[6] EPA Guidelines do not consider intermittent controllers use to be a technically practical control option for all continuous bleed controllers.
[7] https://www.epa.gov/sites/default/files/2016-06/documents/ll_dimcompstat.pdf Accessed November 2021.
[8] *Options for Reducing Methane Emissions from Pneumatic Devices in the Natural Gas Industry* https://www.epa.gov/sites/default/files/2016-06/documents/ll_pneumatics.pdf Accessed November 2021.
[9] *Convert Gas Pneumatic Controls to Instrument Air* https://www.epa.gov/sites/default/files/2016-06/documents/ll_instrument_air.pdf Accessed November 2021.

- Converting natural gas-powered pneumatic controls to mechanical controls.[10]

- Compressor seals
  - Replacing wet seals with dry seals in centrifugal compressors.[11]
  - Using wet seal degassing recovery system for centrifugal compressors (capable of achieving up to a 95% reduction of VOC emissions).[12]
- Combustion turbine starters
  - Replace combustion turbine natural gas-powered starters with air or nitrogen-powered starters.[13]
  - Replace combustion turbine natural gas-powered with starters electric.[14]
- Unit blowdowns
  - Alter unit blowdown practices.
  - Injecting blowdown gas into low pressure mains or fuel gas system.[15]
  - Reducing natural gas venting with fewer compressor engine startups.[16]
- Station blowdowns[17]
  - Alter station blowdown practices.
  - Moving fire gates valves in to minimize blowdown volumes.

6.2.4 *Other Methods*

- Intermittent bleed natural gas actuated pneumatic controllers.
- Indefinite pressurized holds of unit blowdown natural gas releases.
- Capture and injection into low pressure mains or fuel gas system of unit blowdown natural gas releases.
- Capture and recompression of station blowdown natural gas releases.

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[10] Partner Reported Opportunities Fact Sheet No. 301 *Convert Pneumatics to Mechanical Controls* https://www.epa.gov/sites/default/files/2016-06/documents/convertpneumaticstomechanicalcontrols.pdf Accessed November 2021.

[11] *Replacing Wet Seals with Dry Seals in Centrifugal Compressors* https://www.epa.gov/sites/default/files/2016-06/documents/ll_wetseals.pdf Accessed November 2021.

[12] https://www.epa.gov/sites/default/files/2016-06/documents/capturemethanefromcentrifugalcompressionsealoildegassing.pdf Accessed November 2021.

[13] Partner Reported Opportunities Fact Sheet No. 101 https://www.epa.gov/sites/default/files/2016-06/documents/replacegas.pdf Accessed November 2021.

[14] Partner Reported Opportunities Fact Sheet No. 105 https://www.epa.gov/sites/default/files/2016-06/documents/installelectricstarters.pdf Accessed November 2021.

[15] Partner Reported Opportunities Fact Sheet No. 401 https://www.epa.gov/sites/default/files/2016-06/documents/injectblowdowngas.pdf Accessed November 2021

[16] Partner Reported Opportunities Fact Sheet No. 102 *Reduce Natural Gas Venting with Fewer Compressor Engine Startups & Improved Engine Ignition* https://www.epa.gov/sites/default/files/2016-06/documents/capturemethanefromcentrifugalcompressionsealoildegassing.pdf Accessed November 2021.

[17] Partner Reported Opportunities Fact Sheet No. 908 https://www.epa.gov/sites/default/files/2016-06/documents/redesignblowdownsystems.pdf Accessed November 2021

- Capture and recompression of storage tank/vessel gas releases.

6.3 Evaluate Control Methods

6.3.1 *Fugitive Emissions Sources*

6.3.1.1 Storage Vessels/Tanks

- Capturing VOC emissions from a storage vessel using a control device or other control measure (such as routing to a process) is technically feasible.
- Reducing emissions from condensate storage vessels with a PTE greater than 6 tpy of VOC by 95 percent is not applicable to the Facility. The storage vessels have PTE much less than 6 tpy VOC.
- Maintaining, at less than 4 tpy, uncontrolled actual VOC emissions from storage vessels with a PTE greater than or equal to 6 tpy is not applicable to the facility. The storage vessels have PTE much less than 6 tpy VOC.

The only technically feasible control method for the Facility's storage vessels and tanks is capturing VOC emissions from a storage vessel using a control device or other control measure (such as routing to a process). The *2016 USEPA CTG for the Oil and Natural Gas Industry* found capture and control measures to be cost effective only for tanks with potential VOC emissions equal to or greater than 6 tpy. Because the combined potential VOC emissions of the eleven (11) storage vessels/tanks falls well below 6 tpy, an enforceable limit of 1.16 tpy VOC from these storage vessels meets RACT for VOC.

6.3.1.2 Fugitive Emissions from Piping Components

- Proper design is technically feasible for the Facility's piping components.
- Directed inspection and maintenance are technically feasible for the Facility's piping components.
- LDAR repair program is technically feasible for the Facility's piping components.

The technically feasible control methods for the Facility's piping components are ranked as follows:

1. Proper design.
2. Directed inspection and maintenance.
3. LDAR repair program.

The collection of fugitive emissions components[18] at the Facility is subject to the LDAR program requirements of NSPS OOOOa. The LDAR requirements of NSPS OOOOa are also consistent with the 2016 USEPA CTG for the Oil and Natural Gas Industry for fugitive emission components at facilities in the oil and natural gas production and processing

[18] As defined in §60.5430a.

segments. VOC RACT for the Facility's piping components include proper design, directed inspection and maintenance, and an LDAR repair program. The NSPS OOOOa quarterly LDAR requirements currently in the Title V permit meet RACT for fugitive VOC emissions from piping components. These limit the Facility's piping component VOC emissions to 9.87 tpy, as presented in the table in Attachment B.

6.3.2 *Vented Emissions Sources*

6.3.2.1 Pneumatic Controllers

- Converting natural gas-powered pneumatic controls to compressed instrument air is potentially technically feasible for the Facility's pneumatic controls.
- Converting natural gas-powered pneumatic controls to mechanical controls is potentially technically feasible for the Facility's pneumatic controls.
- Intermittent bleed natural gas actuated pneumatic controllers are technically feasible for the Facility's pneumatic controls.
- A natural gas bleed rate less than or equal to 6 scfh for each pneumatic controller is technically feasible for the Facility's pneumatic controls.

The technically feasible control methods for the Facility's pneumatic controllers are ranked as follows:

1. Intermittent bleed natural gas actuated pneumatic controllers.
2. A natural gas bleed rate less than or equal to 6 scfh for each pneumatic controller.

The facility only uses intermittent bleed natural gas actuated pneumatic controllers. These controllers only vent when actuated and because they are a compliance alternative to low-bleed continuous bleed pneumatic controllers in NSPS OOOOa, they meet RACT for these sources of VOC emissions.

6.3.2.2 Compressor Seals

- Using a mechanical seal system is not technically feasible for the Facility's centrifugal compressors and is less effective than a dry seal system.
- Using dry seals is technically feasible for the Facility's centrifugal compressors and is capable of achieving VOC emissions 95% lower than a typical wet seal system.
- Using a wet seal degassing recovery system is not technically feasible for the Facility's centrifugal compressors because the Facility does not have any compressors with wet seals.

The only technically feasible control for the Facility's compressor seals is using a dry seal system. The two (2) oldest compressor units [EU-07, EU-08] at the Facility were installed with wet seals in 1985 but have since been upgraded to dry seal systems. The three (3) newest compressor units at the Facility [EU-09, EU-10, EU-11] were installed with dry seal systems. Dry seals are a compliance alternative to control of wet seals in NSPS OOOOa

and achieve a 95% reduction in VOC emissions compared to wet seals (USEPA, 2016). Properly operating dry seals represent RACT for these sources of VOC emissions.

6.3.2.3 Combustion Turbine Starters

- One of the Facility's combustion turbines is equipped with a natural gas-powered pneumatic starter system, which is scheduled to be replaced with an electric-powered starter system in Phase II.
- It is technically feasible to install a compressed air or nitrogen powered starter system on the Facility's single remaining combustion turbine that uses a natural gas-powered starter. However, a compressed air or nitrogen powered system is no more effective than using an electric-powered starter system.

Using an electric-powered starter system for the Facility's combustion turbine meets VOC RACT by eliminating emissions from this source. Replacement of the single remaining natural gas-powered starter system on unit EU-08 with an electric powered system is scheduled to occur in Phase II. This will eliminate the Facility's VOC emissions from this source type.

6.3.2.4 Unit Blowdowns

- Capture of unit blowdown natural gas and releasing the captured gas into low pressure mains or a fuel gas system is potentially technically feasible.
- Altering unit blowdown practices and reducing the frequency of unit blowdowns is technically feasible.
- Indefinite pressurized hold on unit blowdowns is potentially technically feasible.

The technically feasible control methods for the Facility's unit blowdowns are ranked as follows:

1. Alter shutdown practices.

2. Indefinite pressurized hold on unit blowdowns.

3. Capture of unit blowdown natural gas and release into low pressure mains or the fuel gas system.

As an alternative to capture and control, enhancements to the dry gas seal systems will allow the natural gas to be held within the compressor case (i.e., pressurized holds) following a normal shutdown. Phase I will require a manufacturer to review the systems and program changes on the three (3) compressor units that currently have the hardware system capable of this feature [EU-08, EU-10, EU-11].

In Phase III, enhancements will be made to the dry gas seal systems on the remaining two (2) compressor units [EU-07 and EU-09] to provide the capability for extended pressurized holds.

The installation of these enhancements and implementation of the best management practice of pressurized holds is proposed as RACT for the five (5) compressor unit blowdown sources.

6.3.2.5 Station Blowdowns

- Capture and recompression of station blowdown natural gas releases is potentially technically feasible for some events.
- Altering station blowdown practices is potentially technically feasible.
- During a real or simulated emergency, a fire gate valve is closed to stop the flow of gas into the compressor station. The volume of gas between the valves is then vented to the atmosphere through the Emergency Shutdown (ESD) stack. Moving the Facility's fire gate is not technically feasible.

The potentially technically feasible control methods for station blowdowns are ranked as follows:

1. Altering station blowdown practices.
2. Capture and recompression of station blowdown natural gas releases, where feasible.

In Phase II, best management practices to minimize emissions from station blowdowns will be implemented, and facility enhancements will be made to enhance the ability to deploy the use of recompression equipment.

There will be some station blowdown scenarios where recompression will not be feasible, therefore, Algonquin proposes the use of recompression to the extent feasible and the implementation of best management practices including, but not limited to, minimizing the length of pipe that needs to be vented using isolation valves and coordinating scheduling of maintenance activities to minimize station blowdowns, as RACT for this source.

Table 6.1: RBLC Search for Natural Gas/Gasoline Processing Plants and Other Petroleum / Natural Gas Production & Refining Sources Fugitive VOC Emissions
[Process Types = 50.002 and 50.999] [01/01/2011 – 10/13/2021]

RBLCID	Facility Name	Permit Issuance Date	Process Name	Process Type	Pollutant	Control Method Description	Emission Limit 1	Emission Limit 2
LA-0257	Sabine Pass LNG Terminal	12/06/2011	Fugitive Emissions	50.999	VOC	Mechanical seals or equivalent for pumps and compressors that serve VOC with vapor pressure of 1.5 psia and above	5.03 lb/hr	17.21 ton/yr
OK-0148	Buffalo Creek Processing Plant	09/12/2012	Fugitive Equipment Leaks (Natural Gas Plant)	50.002	VOC	Leak detection and repair (LDAR) program		
OK-0153	Rose Valley Plant	03/01/2013	Fugitive Equipment	50.999	VOC	LDAR in compliance with NSPS OOOO		
TX-0722	Organic Chemical Manufacturing	03/14/2014	Fugitives	50.999	VOC	28 LAER[1] LDAR program with that addition of quarterly connector monitoring for fugitive components associated with the project.		
LA-0331	Calcasieu Pass LNG Project	09/21/2018	Fugitive Equipment Leaks	50.002	VOC	Proper piping design and compliance with LAC 33:III.2111.	5 ton/yr	
OK-0148	Buffalo Creek Processing Plant	09/12/2012	Fugitive Equipment Leaks (Natural Gas Plant)	50.002	VOC	LDAR		
TX-0723	Natural Gas Liquids Processing Plant	11/21/2014	Fugitives	50.002	VOC	Piping, valves, pumps, compressors, and other fittings will be subject to a leak detection and repair program with some directed to flare control as minor vents. 28 LAER[1] will be implemented.		
TX-0849	Mont Belvieu	10/16/2018	Fugitives	50.002	VOC	28 VHP LAER [1]		

1. https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/fugitive-guidance.pdf

Table 6.2: Proposed VOC RACT

Source	Proposed RACT Technology	Proposed RACT VOC Emission Limitation (tpy)
Fugitive Emissions Sources		
Parts Washer	Subject to RCSA 22a-174-20(l)	0.41
Truck Loading Fugitives	De minimis	0.01
Storage vessels/tanks	PTE < 6 tpy VOC threshold of 2016 USEPA CTG. Enforceable limit on combined potential emissions of VOC from the storage vessels is RACT.	1.16
Piping components	NSPS OOOOa quarterly LDAR requirement for collection of fugitive components is RACT (80% control).	9.87
Vented Emissions Sources		
Pneumatic controllers	Use of intermittent bleed pneumatic controllers as NSPS OOOOa compliance alternative to low-bleed pneumatic controllers is RACT.	8.3
Compressor seals	Use of dry seals as NSPS OOOOa compliance alternative to control of wet seals is RACT (95% control).	
Combustion turbine starters	Use of electric-powered starters is RACT.	
Unit blowdowns	Equipment enhancements and implementation of the best management practice of pressurized holds is RACT.	
Station blowdowns	Equipment enhancements, use of recompression to the extent feasible, and the implementation of best management practices including, but not limited to, minimizing the length of pipe that needs to be vented using isolation valves and coordinating scheduling of maintenance activities to minimize station blowdowns is RACT.	

Attachment A: VOC RACT Applicability and Compliance Plan Form

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Air Management—Compliance and Field Operations
79 Elm Street
Hartford, Connecticut 06106-5127

VOC RACT Applicability and Compliance Plan

General Instructions: (1) Provide complete information in the blanks below and check all applicable boxes.

(2) VOC RACT Compliance Plans should be returned to the following address:

Administrative Enforcement Unit
Attn: Supervisor
Bureau of Air Management
Department of Environmental Protection
79 Elm Street, 5th Floor
Hartford, CT 06106-5127

Part A: General Information

1. Corporate Owner of Premises:	Algonquin Gas Transmission, LLC					
2. Premises Name:	Cromwell Compressor Station					
3. Mailing Address:	Street:	5400 Westheimer Court				
	City/Town:	Houston	State:	TX	Zip:	77056
4. Premises Address:	Street:	252 Shunpike Road				
	City/Town:	Cromwell	State:	CT	Zip:	06416
5. Contact Person:	Name:	Phillip Wiendenfeld, P.E.				
	Phone:	713-627-6608				
	Fax:	n/a				
	Email:	phillip.wiedenfeld@enbridge.com				

Part B: Applicability

1. The premises identified above is subject to RACT as set forth in R.C.S.A. § 22a-174-32 because after subtracting the VOC emitting sources identified in R.C.S.A. §22a-174-32(b)(3)(A) through (E) it:

   - ☑ A. has potential VOC emissions of 50 tons or more per calendar year and is located in a serious ozone nonattainment area

   - ☐ B. has potential VOC emissions of 25 tons or more per calendar year and is located in a severe ozone nonattainment area

□ C. is a wood furniture manufacturing operation[1] with potential VOC emissions of 25 tons or more per calendar year

□ D. is an aerospace manufacturing and rework operation[2] with potential VOC emissions of 25 tons or more per calendar year

□ 2. The premises is subject to R.C.S.A. § 22a-174-32, but is not subject to the RACT requirements of R.C.S.A. § 22a-174-32 after subtracting the VOC emissions from the sources that are exempt under R.C.S.A. § 22a-174-32(b)(3) **and** the owner or operator agrees to describe each and every VOC-emitting equipment at the premises and comply with the requirements of R.C.S.A. §§ 22a-174-32(d)(2)(B), 22a-174-32 (f) and 22a-174-32 (g).

➢ **If Box B.2 is checked, complete only columns 1 and 2 of Table 2 in Part D.1, sign the certification in Part E and return this VOC RACT Compliance Plan to the Department.**

Part C: Intended RACT Method

1. The owner or operator of the premises believes the premises is subject to the RACT requirements of R.C.S.A. § 22a-174-32 and the owner or operator of the premises intends to comply with R.C.S.A. § 22a-174-32, by using the following RACT method/methods (if the owner or operator intends to use more than one RACT method, the owner or operator must check each pertinent RACT method and provide all necessary information in Part D):

□ A. Installation and operation of a system to capture and control VOCs (*See* R.C.S.A. § 22a-174-32(e)(1)(A) and (e)(2))

□ B. Implementation of a program for reformulation or process change to reduce VOC use and VOC emissions (*See* R.C.S.A. § 22a-174-32(e)(1)(B) and (e)(3))

□ C. Use of alternative emission reductions or emission reduction credits (*See* R.C.S.A. § 22a-174-32(e)(1)(C) and (e)(5))

☑ D. Implementation of an alternative compliance plan (*See* R.C.S.A. § 22a-174-32(e)(1)(D) and (e)(6)) **** (e)(5) was changed to (e)(6) in this option as the regulation was changes after this form was produced.***

□ E. Applying for and obtaining an individual permit, general permit or order to limit VOC emissions in lieu of implementing RACT (*See* R.C.S.A. § 22a-174-32(c))

□ F. Implementing a recommended or final Control Techniques Guideline (CTG) and obtain a permit or order from the Commissioner (*See* R.C.S.A. § 22a-174-32(d)(7))

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[1] "Wood furniture manufacturing operations" means the finishing, cleaning and wash off operations associated with the production of wood furniture, or wood furniture components.

[2] "Aerospace manufacturing and rework operations" means the production or repair of aerospace vehicles or components thereof under any of the following Standard Industrial Classification Codes: 3720, 3721, 3724, 3728, 3760, 3761, 3764, 3769, 4512, 4581, or 9711.

- **If box A., B., C., D., and/or E. in Part C.1 is checked, complete Tables 1 and 2 in Part D.1 and the other applicable portions of Part D, sign the certification in Part E and return this VOC RACT Compliance Plan to the Department.**

- **If box F. of Part C.1 is checked, sign the certification in Part E and return this VOC RACT Compliance Plan to the Department.**

Part D: Compliance Plan Specific Requirements

D.1. General Requirement—R.C.S.A. ə 22a-174-32(d)(2) through (6) specifies information that must be submitted if the owner or operator of the premises is subject to the RACT requirements of R.C.S.A. § 22a-174-32. Complete Tables 1 and 2 of this Part if you checked at least one of the intended RACT method boxes A-D, or F in Part C.1 on the preceding page. Complete Tables 2 and 3 of this Part if you checked box E in Part C.1 on the preceding page.

***Important*—VOC emitting equipment identified in R.C.S.A. §22a-174-33(g)(3) (excluding aerosol spray cans that are used as part of an operation) does not need to be included in Table 2.**

Table 1—Detailed Description of the RACT Method/Methods Owner or Operator Intends to Implement (see R.C.S.A. ə22a-174-32(d)(2)(A))
Separate or additional sheets may be used. The description provided in this Table should be more detailed than the information provided in Part C.1. Keep in mind, however, that detailed information for each RACT method employed will also be required in the following sections.
Please see attached narrative, Executive Summary.

(Continue to Table 2)

Part D.1: General Requirements (cont'd)

Table 2—Description, Max. Rated Capacity, and Potential Emissions of Each Piece of VOC Emitting Equipment (see R.C.S.A. ə22a-174-32(d)(2)(B-D))			
Emissions unit or equipment number (if any)	**Description of VOC emitting equipment (including make, model, serial number)**	**Maximum rated capacity/hr**	**Potential emissions of VOC (tons/yr)**
	Please see Attachment B Table.		

Continue and complete the other applicable portions of Part D.

D.1. Eligibility information for obtaining an individual permit, general permit, or order in lieu of implementing RACT (See R.C.S.A. §22a-174-32(c))

Table 3. Documentation of Actual VOC Emissions

List the total actual VOC emissions from the premises for each calendar year, or portion thereof, after December 31, 1995 in accordance with R.C.S.A. §22a-174-32(c)(2).

Year	Actual VOC Emissions (TPY)
1996	**N/A**
1997	
1998	
1999	
2000	
2001	
2002	
2003	
2004	
2005	
2006	
2007	
2008	
2009	
2010	

D.2. RACT Method Descriptions

a. Control and Capture

If you have checked box A in Part C.1 and intend to implement a capture and control RACT method, complete Table 4 and attach additional pages if necessary.

Table 4—Detailed Description and Installation Schedule of System to Capture and Control (see R.C.S.A. э22a-174-32(d)(3))

Emissions Unit or Equipment Number (if any)	Detailed Description of System to Capture and Control (Please provide descriptions, makes, models, capture efficiencies, destruction efficiencies, etc. of equipment)	Installation Schedule
N/A		

Proceed to Part E: Certification **OR** continue and complete the applicable portions of Part D if additional RACT methods will be implemented.

D.2. RACT Method Descriptions (cont'd)

b. Reformulation or Process Change—If your checked box B in Part C.1 (program of reformulation or process change) provide the information requested in Tables 5a and 5b. Separate or additional sheets may be attached to identify coating information or proposed process changes. Unless stated otherwise, the owner or operator should complete Tables 5a and 5b using information for each coating "as applied."

Table 5a—Record of Coatings Used During the Baseline Year (1990 or other year as determined by the Commissioner) (see R.C.S.A. ə22a-174-32(d)(4)(A))

Name and address of the coating manufacturer or coating component manufacturer	Coating name and identification number	Coating density (lb/gal)	% VOC content by weight	% water and % exempt VOC content by weight	Solids content by: % volume and weight (lbs)	Amount of each coating used in gallons	Total amount of diluent used for each coating in lbs. & gallons	VOC viscosity in lbs. VOC/lbs. solid or kg VOC/kg solid
N/A								

Weighted arithmetic mean of the VOC content of all coatings used at the premises during the baseline year_____(lb VOC/gal solid)

Table 5b—Record of Coatings Used During the Previous Calendar Year (Prior to RACT Implementation) (see R.C.S.A. ə22a-174-32(d)(4)(A))								
Name and address of the coating manufacturer or coating component manufacturer	**Coating name and identification number**	**Coating density (lb/gal)**	**% VOC content by weight**	**% water and % exempt VOC content by weight**	**Solids content by: % volume and weight (lbs)**	**Amount of each coating used in gallons**	**Total amount of diluent used for each coating in lbs. & gallons**	**VOC viscosity in lbs. VOC/ lbs. solid or kg VOC/ kg solid**
N/A								

Weighted arithmetic mean of the VOC content of all coatings used at the premises during the previous calendar year_____(lb VOC/gal solid)

Table 6—Record of Proposed Coatings to Demonstrate RACT Compliance (see R.C.S.A. ə22a-174-32(d)(4)(C))								
Name and address of the coating manufacturer or coating component manufacturer	**Coating name and identification number**	**Coating Density (lb/gal)**	**% VOC content by weight**	**% Water and % exempt VOC content by weight**	**Solids content by % volume and weight in (lbs)**	**Total amount of diluent used in lbs. & gallons**	**VOC viscosity in lbs. VOC/ lbs. solid or kg VOC/ kg solid**	**VOC Content in lbs. VOC/ gal. solid**
N/A								

Proceed to Part E: Certification **OR** continue and complete the applicable portions of Part D if additional RACT methods will be implemented.

D.2. RACT Method Descriptions (cont'd)

c. Alternative Emission Reductions or Emission Reduction Credits

If you checked box C in Part C.1 and intend to implement the RACT method of alternative emission reductions or emission reduction credit, see R.C.S.A. § 22a-174-20(cc), complete Table 7 and attach additional pages if necessary.

Section 22a-174-20(cc): Alternative emission reductions.

(cc) Alternative emission reductions.

(cc)(1) The owner or "operator" of a "stationary source" subject to the provisions of subsections (m) through (v) inclusive and (ee) may submit for the consideration of the "Commissioner" an alternative emission reduction plan which would achieve the same net "emission" reduction as the owner or "operator" would achieve by having each emission source comply with the prescribed "emission limitations" provided in these regulations. Approval of the alternative plan is discretionary with the "Commissioner," but at a minimum, the owner or "operator" of the "stationary source" must demonstrate that:

(A) by means of an approved material balance or acceptable emission test, sufficient reductions in "volatile organic compound" "emissions" will be obtained by controlling other existing emission sources of similar "volatile organic compounds" within the "stationary source" to the extent necessary to compensate for all excess "emissions" which result from one or more emission sources not achieving the prescribed "emission limitation." This demonstration must be submitted in writing and must include:

(i) A description of the emission source or "sources" which will not comply with the prescribed "emission limitations";

(ii) Pounds per hour of "volatile organic compounds" emitted which are in excess of permissible "emissions" for each emission source;

(iii) A description of each emission source and the related control systems if any, for those emission sources within the "stationary source" where "emissions" will be decreased to compensate for excess "emissions" from each emission source;

(iv) Pounds per hour of "volatile organic compounds", for each emission source both before and after the improvement or installation of any applicable control system, or any physical or operational changes at the facility to reduce "emissions" and the date on which these reductions will be achieved; and

(v) A description of the procedures and methods used to determine the "emissions" of "volatile organic compounds"; and

(B) The alternative emission reduction plan does not include decreases in "emissions" resulting from requirements of other applicable "air pollution" regulations. The alternative emission reduction plan may include decreases in "emissions" accomplished through installation or improvement of a control system or through

physical or operational changes at the "stationary source" such as increased transfer efficiencies;

(C) The alternative emission reduction plan does not include provisions for the trade off of any "volatile organic compound" such as benzene which the "Administrator" or "Commissioner" has determined to be a hazardous material;

(D) The alternative emission plan does not delay or defer the compliance deadlines for any emission source or "sources"; and

(E) The alternative emission plan meets all the requirements of the "Emissions Trading Policy Statement" of the U.S. Environmental Protection Agency as specified in the December 4, 1986 Federal Register (51FR 43814).

(cc)(2) The implementation of an alternative emission reduction plan instead of compliance with the "emissions limitation" prescribed in subsections (m) through (v) inclusive and (ee) must be expressly approved by the "Commissioner" through the issuance of an order in accordance with the provisions of section 22a-174-12 and approved by the "Administrator" in accordance with the provisions of 42 U.S.C. 7401-7642. After approval, any "emissions" in excess of those established for each emission source under the plan will be a violation of these regulations.

(cc)(3) Where it can be shown to the satisfaction of the "Commissioner" that an emission source cannot be controlled to comply with subsections (m) through (v) inclusive and (ee) of this section for reasons of technological and economic feasibility, the "Commissioner" may by permit accept a lesser degree of control upon the submission of satisfactory evidence that the "stationary source" owner has applied "Reasonably Available Control Technology" and has a plan to develop the technologies necessary to comply with the above subsections and such action is approved by the "administrator" in accordance with the provisions of 42 U.S.C. 7401-7642.

Table 7- Alternative Emission Reductions or Emission Reduction Credits (see R.C.S.A. ∋22a-174-32(e)(1)(C))	
Description of the emission source or sources which will not comply with the prescribed emission limitations	**N/A**
Pounds per hour of VOCs emitted which are in excess of permissible emissions for each emission source	
Description of each emission source and the related control systems if any, for those emission sources within the stationary source where emissions will be decreased to compensate for excess emissions from each emission source	
Pounds per hour of VOCs, for each emission source both before and after the improvement or installation of any applicable control system, or any physical or operational changes at the facility to reduce emissions and the date on which these reductions will be achieved	
Description of the procedures and methods used to determine the emissions of VOCs	

Proceed to Part E: Certification **OR** continue and complete the applicable portions of Part D if additional RACT methods will be implemented.

D.2. RACT Method Descriptions (cont'd)

d. Alternative Compliance Plans

If you checked box D in Part C.1 and request the Department's authorization to implement an alternative compliance plan as the appropriate RACT method to comply with R.C.S.A. § 22a-174-32, in addition to completing Part D.1 and applicable provisions of Part D.2, if any, you must submit and certify, as part of this VOC RACT Compliance Form, an alternative compliance plan for the Commissioner's approval or denial. Such alternative compliance plan must meet the requirements of R.C.S.A. § 22a-174-32(d)(6).

e. Limiting the Premises Potential VOC Emissions in Lieu of Installing RACT

If you checked box E in Part C.1 and in lieu of installing RACT, you request the Department issue you an order, individual permit or general permit to limit potential VOC emissions at the premises below the relevant applicability threshold of R.C.S.A. § 22a-174-32(b), in addition to completing Table 2 in Part D.1, you must submit and certify, as part of this VOC RACT Compliance Form, an eligibility demonstration, Table 3 of Part D.1, for the Commissioner's approval or denial. Such eligibility demonstration must meet the requirements of R.C.S.A. § 22a-174-32(c).

Attach the eligibility demonstration, Tables 2 and 3 of D.1, and proceed to Part E: Certification

Part E: Certification

The document preparer, premises owner, and premises operator must all sign the following certification:

I have personally examined and am familiar with the information submitted in this compliance plan and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under § 22a-175 of the Connecticut General Statutes, under § 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute.

12/20/2021
Signature of Document Preparer — Date

Dana Lowes-Hobson
Name of Document Preparer (Please print)

Project Manager
Title of Document Preparer

12/17/2021
Signature of Owner — Date

Roy Taylor
Name of Owner (Please print)

12/17/2021
Signature of Operator — Date

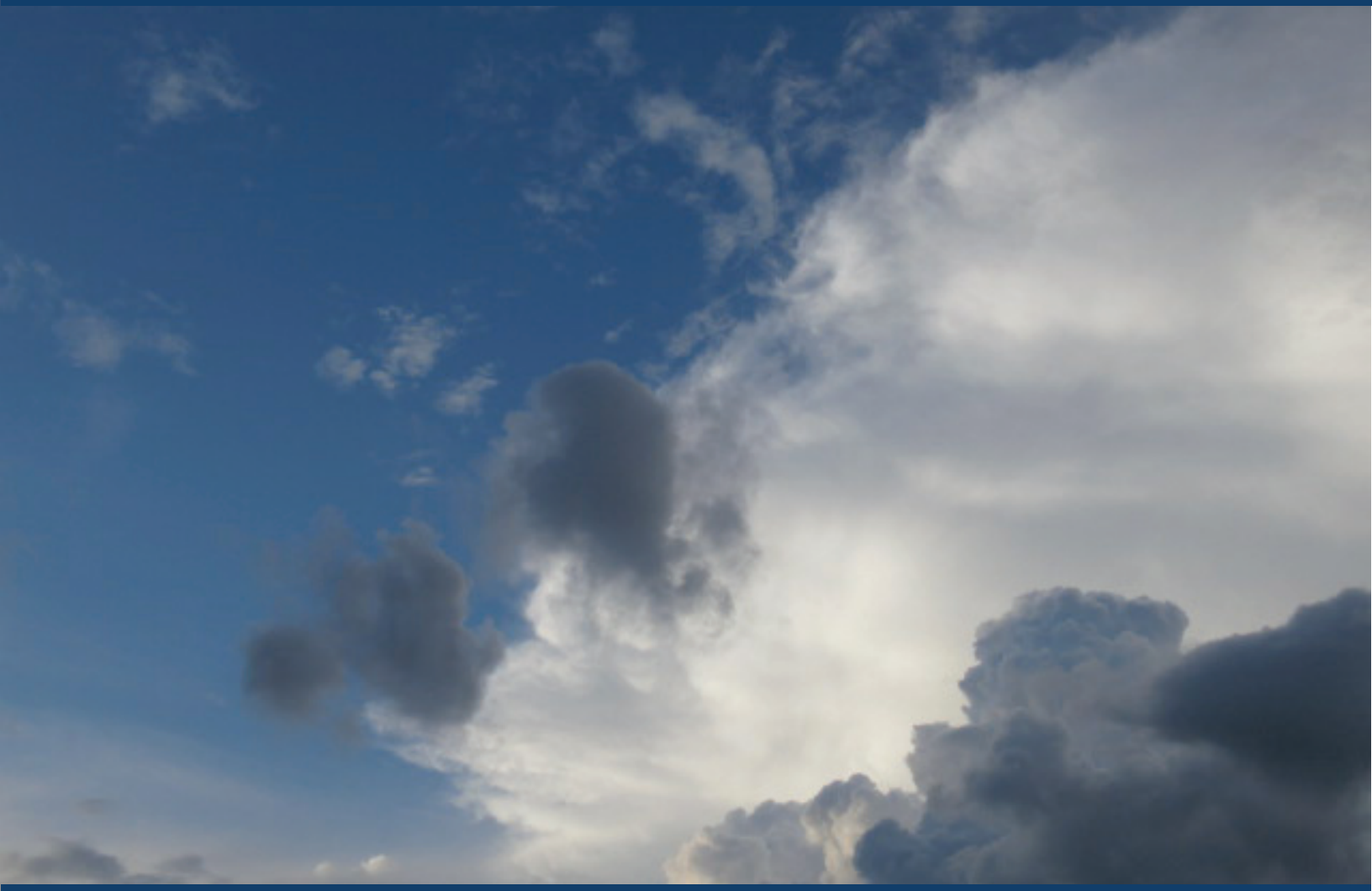
Roy Taylor
Name of Operator (Please Print)

Attachment B: Equipment Table with Maximum Rated Capacity and Proposed Allowable Emissions

Cromwell Compressor Station
VOC Emitting Equipment Inventory

Source Description	AGT ID	NSR Permit No. or Regulation	Current Maximum Rated Capacity/hr or equivalent	Future Maximum Rated Capacity/hr or equivalent	Maximum Rated Capacity Units	Current Allowable VOC Emissions (TPY)	Future Allowable VOC Emissions (TPY)	Emission Category and RACT method
Fuel Burning Equipment								
Solar Centaur 40-T4702 Natural Gas Combustion Turbine	CROM Unit 7	043-0005	4,700	4,700	bhp	1.5	1.5	
Solar Centaur 40-T4702 Natural Gas Combustion Turbine	CROM Unit 8	043-0006	4,700	4,700	bhp	1.5	1.5	
Solar Centaur Mars 100-16002 Natural Gas Combustion Turbine	CROM Unit 9	043-0031	15,900	15,900	bhp	3.6	3.6	
Solar Centaur 50-6102 Natural Gas Combustion Turbine	CROM Unit 10	043-0036	6,130	6,130	bhp	2.5	2.5	
Solar Taurus 60-7802 Natural Gas Combustion Turbine	CROM Unit 11	043-0035	7,700	7,700	bhp	2.6	2.6	
Waukesha VGF48GL Emergency Generator	CROM ENGEN 04	RCSA §22a-174-3b(e)	1,175	1,175	bhp	0.7	0.7	
Boilers/Heaters	CROM BLR 01		2.946	2.946	MMBTU/hr (input)	0.1306	0.1306	
Boilers/Heaters	CROM SHTR 01		0.125	0.125	MMBTU/hr (input)	4.39E-03	4.39E-03	**Excludable** Exempt from RACT per RCSA 22a-174-32(b)(4).
Boilers/Heaters	CROM SHTR 02		0.125	0.125	MMBTU/hr (input)	4.39E-03	4.39E-03	
Boilers/Heaters	CROM SHTR 03		0.075	0.075	MMBTU/hr (input)	2.64E-03	2.64E-03	
Boilers/Heaters	CROM SHTR 04		0.100	0.100	MMBTU/hr (input)	3.51E-03	3.51E-03	
Boilers/Heaters	CROM SHTR 05		0.030	0.030	MMBTU/hr (input)	1.05E-03	1.05E-03	
Boilers/Heaters	CROM WHTR 01		0.036	0.036	MMBTU/hr (input)	1.25E-03	1.25E-03	
Boilers/Heaters	CROM GHTR 03		0.438	0.438	MMBTU/hr (input)	6.61E-02	6.61E-02	
Boilers/Heaters	CROM GHTR 04		0.385	0.385	MMBTU/hr (input)	6.02E-02	6.02E-02	
Boilers/Heaters	CROM GHTR 05		0.385	0.385	MMBTU/hr (input)	6.02E-02	6.02E-02	
Fugitive Emissions Sources								
Parts Washer	CROM PW		N/A	N/A	N/A	0.41	0.41	**Non-Excludable** RACT is compliance with RCSA 22a-174-20(l).
Truck Loading Area	CROM TL PL		150	150	gpm	7.09E-03	7.09E-03	
Truck Loading Area	CROM TL OIL		150	150	gpm	2.23E-04	2.23E-04	**Non-Excludable** Exempt from RACT as emissions of VOC are de minimis.
Truck Loading Area	CROM TL OW		150	150	gpm	1.73E-04	1.73E-04	
Truck Loading Area	CROM TL EC		150	150	gpm	4.82E-05	4.82E-05	
Separator Vessel	CROM TK V1C1		217.5	217.5	gal (accumulation)	7.59E-02	7.59E-02	
Separator Vessel	CROM TK V1C2		217.5	217.5	gal (accumulation)	7.59E-02	7.59E-02	
Separator Vessel	CROM TK V1C3		217.5	217.5	gal (accumulation)	7.59E-02	7.59E-02	
Separator Vessel	CROM TK V2A		217.5	217.5	gal (accumulation)	9.06E-02	9.06E-02	
Separator Vessel	CROM TK V2B		217.5	217.5	gal (accumulation)	3.94E-01	3.94E-01	**Non-Excludable** RACT is enforceable limit of 1.16 tpy on combined potential emissions from storage vessels.
Storage Tank	CROM TK V5		2940	2940	gal	4.39E-01	4.39E-01	
Storage Tank	CROM TK OIL1		750	750	gal	1.95E-03	1.95E-03	
Storage Tank	CROM TK OIL2		1000	1000	gal	2.60E-03	2.60E-03	
Storage Tank	CROM TK OW1		1000	1000	gal	3.78E-03	3.78E-03	
Storage Tank	CROM TK EC1		2790	2790	gal	9.25E-04	9.25E-04	
Storage Tank	CROM TK EC2		350	350	gal	1.16E-04	1.16E-04	
Piping Components	CROM PC		N/A	N/A	N/A	9.87	9.87	**Non-Excludable** RACT is NSPS OOOOa quarterly LDAR requirement for collection of fugitive components (80% control).
Vented Emissions*	CROM GR		104,645,600	14,926,000	scf/yr	58.2	8.3	**Non-Excludable** Pneumatic Controllers - RACT is use of intermittent bleed pneumatic controllers as NSPS OOOOa compliance alternative to low bleed pneumatic controllers. Centrifugal Compressor Seals - RACT is use of dry seals as NSPS OOOOa compliance alternative to control of wet seals (95% control) Gas-Powered Starters - RACT is use of electric-powered starters; Unit Blowdowns - RACT is equipment enhancements and best management practices of pressurized holds. Station Blowdowns - RACT is equipment enhancement, use of recompression to the extent feasible, and the implementation of best management practices including, but not limited to, minimizing the length of pipe that needs to be vented using isolation valves and coordinating scheduling of maintenance activities to minimize station blowdowns.
				Total "Excludable" Sources		12.8	12.8	**"Excludable"** emissions of VOC per RCSA 22a-174-32(b)(3)(D).
				Total "Non-Excludable" Sources		69.6	19.7	**"Non-Excludable"** emissions of VOC calculated in accordance with RCSA 22a-174-32(b)(3).
				Allowable Emissions Reductions from Vented Sources (%)		n/a	85.7	

*Includes 68 intermitent bleed pnuematic actuators.



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