8-4432-00085

INERGY MIDSTREAM, LLC

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May 20, 2010

Peter Lent
Regional Permit Administrator
NYSDEC Region 8
6274 East Avon-Lima Road
Avon, NY 14414-9519

RE: Minor Facility Registration Application
Inergy, LP – Watkins Glen Propane/Butane Storage Facility

Dear Mr. Lent,

Inergy, LP (Inergy) is submitting this minor facility registration application to the New York State Department of Environmental Conservation (NYSDEC). Inergy is proposing to develop, own, and operate a propane and butane storage facility, the Watkins Glen Propane/Butane Storage Facility (Watkins Glen Storage Facility), to be located off of State Route 14A near Watkins Glen in Schuyler County, New York.

The Watkins Glen Storage Facility will be a minor source of emission with respect to the Title V operating permit program (6 NYCRR Part 201-6), and potential emissions from the facility are less than 50 percent of the major source threshold for all pollutants. Therefore, the Watkins Glen Storage Facility is subject to the requirements of 6 NYCRR 201-4, which regulates Minor Facility Registrations.

If you have any questions or comments about the information included in this submittal, please contact Michael Ballenger, Trinity Consultants, at (407) 514-2632.

Sincerely,

Barry Cigich

Barry Cigich
Vice President of Operations and Engineering

Enclosure

cc: Michael Ballenger, Trinity Consultants

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MINOR FACILITY REGISTRATION
FINGER LAKES LPG STORAGE, LLC ▪ WATKINS GLEN STORAGE FACILITY

SCHUYLER COUNTY, NEW YORK

TRINITY CONSULTANTS
4767 New Broad Street
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MAY 2010

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Trinity Consultants

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1. INTRODUCTION

Finger Lakes LPG Storage, LLC (Finger Lakes LPG Storage) proposes to develop, own, and operate a propane and butane storage facility, the Watkins Glen Propane/Butane Storage Facility (Watkins Glen Storage Facility), to be located off of State Route 14A near Watkins Glen in Schuyler County, New York. The terminal at the Watkins Glen Storage Facility will be comprised of five (5) 30,000 gallon propane/butane storage tanks, a molecular sieve dehydrator, propane-fired heater, seven (7) electric compressors, four (4) high pressure pumps, three (3) can pumps, a control building, railcar unloading area, and truck loading/unloading area.

1.1 PROPOSED TERMINAL OPERATIONS

Terminal operations at the Watkins Glen Storage Facility will consist of propane and butane storage and loading/unloading of tanker trucks and rail cars. Propane/butane that is received will be transferred to pressurized tanks for storage. It is anticipated that upon completion, the facility will have 150,000 gallons of propane/butane storage capacity in pressurized storage tanks. It is estimated that the facility will be able to load propane or butane at approximately 1,400 gallons per minute (gpm), 2,000 barrels per hour, and 1,500,000 barrels of propane and 500,000 barrels of butane will be cycled per year.

The Watkins Glen Storage Facility will consist of five (5) 30,000 gallon storage tanks. Three (3) tanks will store propane, and the remaining two (2) tanks will store butane. The facility will have four (4) high pressure pumps, each driven by electric motors rated at 700 horsepower (hp) with a flowrate of 550 gpm, and three (3) electric pumps each with a rating of 40 hp at 1,770 revolutions per minute (rpm), capable of handling 750 gpm. Additionally, six (6) Corken 891-107B 45 hp electric compressors and one (1) Corken 291-107 compressor will be located at the facility. Finger Lakes LPG Storage has determined that this specific equipment is exempt from air permitting.

In addition to the storage and handling equipment at the terminal, the Watkins Glen Storage Facility will also include a Q.B. Johnson Manufacturing propane dryer to remove moisture in preparation for delivery. The propane dryer is a skid-mounted molecular sieve dehydrator, consisting of vertically-oriented pressure vessels (beds). Two beds are used such that one is always available for absorbing moisture from propane being prepared for delivery, while the other bed is being regenerated. The wet propane will be dried and recovered for delivery. The dehydration process itself will not exhaust propane to the atmosphere.

During regeneration, a 13 million British thermal units per hour (MMBtu/hr) direct-fired heater will be used to heat the molecular sieve material in the bed being regenerated and drive moisture out of the desiccant so that it can be re-used. The 13MMBtu/hr heater does not meet the exemptions delineated in 6 NYCRR Part 201-3. As such, Finger Lakes LPG Storage is submitting this Minor Facility Registration to the New York State Department of Environmental Conservation (NYSDEC) for the propane-fired heater proposed at the Watkins Glen Storage Facility.

1.2 SALT CAVERN STORAGE

In addition to the equipment described above for terminal operations of the Watkins Glen Storage Facility, Finger Lakes LPG Storage is also proposing to install a flare to control releases of propane from the salt caverns. When propane is pumped into the underground salt cavern, brine is displaced into holding ponds. When the salt caverns are finished being loaded and reach capacity, some propane may be displaced in addition to the last amount of brine from the cavern. The flare will be utilized to control this infrequent release of the propane from a filled salt cavern. As each of the two (2) salt caverns will likely only be filled to capacity a maximum of once per year, the flare will only be utilized to control these potential releases of propane twice per year. The flare pilot will use either a natural gas or propane fuel supply of approximately 20 standard cubic feet per hour (scfh).

The ensuing sections of the Minor Facility Registration address the following topics:

- Section 2 summarizes potential air emissions from the new facility;
- Section 3 details the regulatory applicability analysis for the proposed facility;
- Appendix A contains a plot plan identifying the proposed facility layout;
- Appendix B includes the NYSDEC Air Facility Registration form (version dated 7/29/96); and
- Appendix C presents detailed facility emission calculations.

2. PROPOSED FACILITY EMISSIONS

This section summarizes the potential air emissions and calculation methodology for operation of the Watkins Glen Storage Facility.

As shown in the calculations presented below, the facility will be a minor source for both New Source Review (NSR) and Title V as potential emissions of criteria pollutants and hazardous air pollutants (HAP) are below their corresponding major source thresholds. Furthermore, the facility-wide potential to emit will not exceed 50 percent of the major source threshold for all pollutants to qualify for Minor Facility Registration.

2.1 WATKINS GLEN PROPANE/BUTANE STORAGE FACILITY OPERATIONS

Fugitive emissions of propane and butane, both volatile organic compounds (VOC), may result from the atmospheric release of residual material in the loading arms after tank loading. Loading emissions from these sources have been calculated based on the dimensions of the loading arms, conservatively high pressure after depressurizing during post-tank loading, and the number of loadings per calendar year. Minor emissions of propane/butane may also result as fugitive emissions from piping components and equipment maintenance, startup, and shutdown. Leak emissions from this source have also been calculated taking into account the number of fugitive emission points (valves, connectors, and pumps/compressors) and through the use of emission factors derived from the U.S. Environmental Protection Agency (EPA) *Protocol for Equipment Leak Emission Estimates.*

In addition to the fugitive releases, air emissions from the combustion of propane in the 13 MMBtu/hr heater have been calculated based on U.S. EPA AP-42 factors. Combustion emission factors from AP-42 have also been used in the estimates of emissions from the operation of the flare (assuming use of natural gas for the pilot fuel gas).

The calculation methodology utilized to estimate air emissions from these sources is summarized below. Detailed calculations, including the capacities of the emission units and the operating basis (e.g., number of hours operated per year, etc.), are included in Appendix C.

2.1.1 PROPANE/BUTANE LOADING/UNLOADING

Emissions of VOC from loading/unloading operations were quantified using the following equations:

$$VOC\ (tpy) = \frac{moles\ of\ propane}{loading}\ x\ propane/butane\ MW\ x \frac{Loadings}{year} x\ \frac{1\ ton}{2{,}000\ lb}$$

$$VOC\ (tpy) = 2.39E-03\ \frac{mol}{load}\ x\ \frac{58.12 lbs}{mol}\ x\ 98{,}112 \frac{Loadings}{year} x\ \frac{1\ ton}{2{,}000\ lb}$$

$$VOC\ (tpy) = 6.81\ tpy$$

where

$$\frac{Lb\ moles}{loading} = \frac{loading\ pressure\ (atm)\ x\ loading\ arm\ volume\ (ft^3)}{loading\ arm\ temperature\ (R)\ x\ 0.73(\frac{atm\ ft^3}{lb\ moles\ R})}$$

$$\frac{Lb\ moles}{loading} = \frac{17\ (atm)\ x\ 0.052\ (ft^3)}{507\ (R)\ x\ 0.73(\frac{atm\ ft^3}{lb\ moles\ R})}$$

$$\frac{Lb\ moles}{loading} = 2.39E-03\frac{mol}{load}$$

These estimates of VOC emissions from loading/unloading assume all loading is of butane, as butane's higher molecular weight results in a more conservative emissions estimate. Furthermore, the maximum number of loads per year assumes that the maximum short term rate is sustained continuously over the year.[1] This very conservative throughput is utilized for the purposes of this calculation only to demonstrate that unrestricted emissions from this activity are minor even under unrestricted operation. It should be noted that the Watkins Glen facility is only expected to load approximately 10,000 trucks per year.

2.1.2 FUGITIVE RELEASES FROM PIPING COMPONENTS

Emissions may also occur as a result of fugitive releases from piping components. An estimation of the fugitive emissions was quantified using emission factors from the U.S. EPA *Protocol for Equipment Leak Emission Estimates* for marketing terminals.[2] An example calculation for valves is shown below:

$$VOC\ (tpy) = Emission\ Factor\left(\frac{\frac{kg}{hr}}{source}\right) x \left(\frac{2.20462\ lb}{kg}\right) x\ Num.Valves\ x\ Hours\ of\ Operation\left(\frac{hr}{yr}\right) x \left(\frac{1\ ton}{2{,}000\ lb}\right)$$

$$VOC\ (tpy) = 1.30E-05\left(\frac{\frac{kg}{hr}}{source}\right) x \left(\frac{2.20462\ lb}{kg}\right) x\ 550\ x\ 8{,}760\left(\frac{hr}{yr}\right) x \left(\frac{1\ ton}{2{,}000\ lb}\right)$$

$$= 0.07\ tpy$$

2.1.3 PROPANE-FIRED HEATER

Potential emissions for the 13 MMBtu/hr propane-fired heater were based on AP-42 Chapter 1.5, *Liquefied Petroleum Gas Combustion* (July 2008). Note that the emissions calculations based on fuel consumption utilized an average heating value of propane as estimated for the facility based on AP-42, or 91.5 MMBtu/1,000 gallons. Potential emissions for the heater were conservatively based on unrestricted operation (8,760 hours per year at

[1] For calculating the maximum number of loadings, it is assumed that the average rail car has a capacity of 30,000 gallons, and the average truck has a capacity of 10,000 gallons.

[2] U.S. EPA *Protocol for Equipment Leak Emission Estimates*. EPA-453/R-95-017. November 1995. http://www.epa.gov/ttnchie1/efdocs/equiplks.pdf. Marketing Terminals - Gas (pg 2-14).

full capacity), although actual operation of the heater will likely be approximately eight months per year.

2.1.4 FLARE OPERATION DURING UPSET CONDITIONS

Estimated emissions for the flare were based on the consumption of 20 scfh of natural gas for the pilot, as well as an estimate of the maximum flowrate of propane released from the caverns when filled (assumed the facility design loading rate of 1,400 gpm). It should be noted that the propane will only be released to the flare when one of the caverns is filled, and loading into the cavern will be stopped as soon as possible thereafter. As such, the duration that propane will be routed to the flare is expected to be very short. For this analysis, it has conservatively been estimated that propane will be routed to the flare for up to 10 minutes in duration, up to twice per year (once for each cavern).

Emissions factors for the fuel gas combustion of natural gas were based on AP-42 Chapter 1.4, *Natural Gas Combustion* (July 1998). As well, emission factors for the combustion of propane released from the caverns were based on AP-42 Chapter 1.5, *Liquefied Petroleum Gas Combustion* (July 2008).

Estimated facility-wide potential emission rates for all operations (both non-exempt and exempt emissions units) are summarized in Table 2-1. All emission rates are below 50 percent of the Title V and NSR thresholds. Therefore, the facility is classified as a minor source and qualifies for a Minor Facility Registration.

TABLE 2-1. FACILITY-WIDE POTENTIAL EMISSIONS

Pollutant	Potential Facility Emissions (tpy)	50% of the Major Source Threshold (tpy)
CO	4.78	50
NO_X	8.28	50
PM_{10}	0.45	50
$PM_{2.5}$	0.45	50
SO_2	0.03	50
VOC	7.83	25

3. AIR QUALITY REGULATORY REQUIREMENTS

This section discusses the air quality regulations that are potentially applicable to the proposed project. A review of each federal and state air quality regulation contained in Title 40, Code of Federal Regulations (40 CFR) and Title 6, Chapter III of the NY Environment Codified Regulations was performed. Those air quality regulations that may affect the proposed project are discussed below.

Applicability of the following federal regulatory programs is addressed:

- Prevention of Significant Deterioration (PSD)
- Nonattainment New Source Review (NNSR)
- New Source Performance Standards (NSPS)
- National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- Federal Title V Operation Permit Program
- New York State Implementation Plan (SIP)

3.1 PREVENTION OF SIGNIFICANT DETERIORATION

The 1977 Amendments to the Clean Air Act (CAA) established the PSD program, which is designed to protect air quality in areas where existing ambient air concentrations of criteria pollutants are less than or equal to their respective National Ambient Air Quality Standards (NAAQS) (unclassifiable / attainment areas).

Schuyler County is considered in attainment with the NAAQS for criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), and particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), with the exception of oxides of nitrogen (NO_x) and VOC, because the county is part of the Ozone Transport Region (OTR).

The requirements of the PSD regulations apply to new major stationary sources and major modifications. For the purposes of determining the applicability of the PSD program, a "major stationary source" is defined in 40 CFR §51.166(b)(1) as any source type belonging to a list of 28 source categories which emits or has the potential to emit 100 tons per year (tpy) or more of any pollutant subject to regulation under the Act, or any other source type which emits or has the potential to emit such pollutants in amounts equal to or greater than 250 tpy.

Under PSD permitting rules, fugitive emissions must be included in a comparison against these major source thresholds if the facility is listed specifically in the categories detailed in 40 CFR §52.21(b)(1)(iii). Propane and butane storage and transfer is not on the list of 28 categories detailed in 40 CFR §52.21, therefore fugitive emissions need not be included in a comparison against these major source thresholds.

However, even if fugitive emissions were included, the PSD program will not apply to the facility, as potential emissions, as shown in Table 2-1 are well below the major source thresholds.

3.2 NONATTAINMENT NEW SOURCE REVIEW

The NNSR program requires new major sources and major modifications at sites located in areas that are not in attainment for one or more of the pollutants for which the site is major to conduct emissions netting, obtain emissions offsets and comply with the lowest attainable emission rate (LAER) applicable to the particular type of source. While the facility is located in an area designated as ozone attainment, it is regulated as a nonattainment area due to its inclusion in the OTR.[3] Regulated precursors for ozone are VOC and NO_x. Therefore, the emission thresholds that define whether a facility is a major source, and whether a particular modification is subject to NNSR permitting, may be lower for NO_x and VOC.[4] Specifically, the NNSR thresholds for new major stationary sources are 100 tpy for NO_x and 50 tpy for VOC.[5] The facility-wide potential to emit is below 50 tpy for VOC and below 100 tpy for NO_x. Therefore, the proposed facility is not subject to NNSR requirements.

3.3 NEW SOURCE PERFORMANCE STANDARDS

NSPS requires new, reconfigured, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology as specified in the applicable provisions. Moreover, any source subject to an NSPS is also subject to the general provisions of 40 CFR Part 60 Subpart A, except as noted. The following summarizes the applicability to appropriate NSPS for the proposed equipment:

3.3.1 NSPS SUBPART DC – STANDARDS OF PERFORMANCE FOR SMALL INDUSTRIAL-COMMERCIAL-INSTITUTIONAL STEAM GENERATING UNITS

Steam generating units installed after June 9, 1989 with rated capacities greater than or equal to 10 MMBtu/hr but less than or equal to 100 MMBtu/hr (heat input) are potentially subject to this regulation. As defined in 40 CFR §60.41c, a steam generating unit "means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium." The proposed heater at the Watkins Glen Storage Facility will have a maximum heat input greater than 10 MMBtu/hr (the unit will be rated at 13 MMBtu/hr). While the heater is an affected facility under this subpart, because the unit will combust only propane and will have a rated heat input below 30 MMBtu/hr, it is not subject to either the SO_2 or PM emissions standards.

The only requirements applicable to the heater under Subpart Dc are reporting and recordkeeping requirements per 40 CFR §60.48c. In accordance with §60.48c(a) and §60.7,

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[3] 40 CFR §81.333.

[4] Although NO_X is regulated as an ozone precursor, the site location is in a county considered attainment with respect to NO_2 individually; thus, both nonattainment NSR and PSD permitting requirements can potentially be triggered for NO_X.

[5] NY Regulations Title 6, Chapter III, Subchapter A, Part 201-2.1(21), Major Stationary Source.

Finger Lakes LPG Storage will submit a notification of the date of construction of the heater, as well as a notification of the date of actual startup. In addition, Finger Lakes LPG Storage will maintain records of the amount of fuel combusted each calendar month, in accordance with §60.48c(g)(2).

3.3.2 NSPS Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels

NSPS Subpart Kb establishes performance standards for volatile organic liquid storage tanks constructed, reconstructed, or modified after July 23, 1984. However, this subpart does not apply to storage vessels designed to operate in excess of 204.9 kPa (29.72 pounds per square inch) and without emissions to the atmosphere. The storage tanks at the facility will be designed to operate at a vapor pressure greater than this threshold and will therefore not be subject to Subpart Kb.

3.3.3 NSPS Subpart KKK - Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants

This subpart covers compressors and process units in VOC service at onshore natural gas processing plants. A natural gas processing plant means any processing site engaged in the extraction of natural gas from field gas and/or the fractionation of mixed natural gas liquids to natural gas products.[6] The proposed Watkins Glen Storage Facility will store and transfer propane and butane, and will not extract natural gas from field gas nor engage in the extraction of mixed natural gas liquids. As such, the proposed facility is not subject to this NSPS.

3.4 National Emission Standards for Hazardous Air Pollutants

NESHAP are emission standards for hazardous air pollutants and are generally only applicable to major sources of HAP or specifically designated area sources. Part 61 NESHAP standards are defined for specific pollutants while Part 63 NESHAP are for Source Categories where allowable emission limits are established on the basis of a Maximum Achievable Control Technology (MACT) determination for a particular major source. A HAP major source is defined as having potential emissions in excess of 25 tpy for total HAP and/or potential emissions in excess of 10 tpy for any individual HAP. An area source is defined as any source that is not a HAP major source. NESHAP apply to sources in specifically regulated industrial source categories (CAA Section 112(d)) or on a case-by-case basis (Section 112(g)) for facilities not regulated as a specific industrial source type.

Based on the type of facility being proposed (propane/butane storage), there are no applicable 40 CFR Part 61 regulations.

The following sections evaluate applicability to relevant 40 CFR Part 63 standards:

[6] 40 CFR §60.631.

3.4.1 NESHAP SUBPART HH – NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM OIL AND NATURAL GAS PRODUCTION FACILITIES

Subpart HH is applicable to those facilities that have dehydration units and are classified as natural gas production facilities. The operations at the Watkins Glen Storage Facility are limited to the storage of propane/butane only (not production). Because the facility does not meet the definition of a natural gas production facility per 40 CFR §63.761, the requirements of this subpart do not apply.

3.4.2 NESHAP SUBPART HHH – NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM NATURAL GAS TRANSMISSION AND STORAGE FACILITIES

As with Subpart HH, Subpart HHH is applicable to those facilities that are considered a major source for HAP. Since the proposed facility is not major for HAP, this subpart is not applicable.

3.4.3 NESHAP SUBPART DDDDD AND SUBPART JJJJJJ– NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS

On July 30, 2007, the Court of Appeals for the District of Columbia Circuit issued a mandate vacating and remanding 40 CFR Part 63, Subpart DDDDD (U.S. EPA's Boiler MACT Rule). The requirements of this rule are therefore not currently enforceable.

Recently, on April 29, 2010, EPA proposed a new Boiler MACT Rule for major sources of HAP, as well as a complementary rule for area sources – National Emission Standards for Hazardous Air Pollutants from Area Sources: Industrial, Commercial, and Institutional Boilers (40 CFR 63 Subpart JJJJJJ).[7] Because the Watkins Glen Storage Facility will be an area source, this rule is potentially applicable to the proposed small propane-fired industrial process heater. However, the proposed area source rule does not include a subcategory for propane-fired boilers or process heaters, noting:

> *Natural gas-fired area source boilers do not emit any of the urban HAP identified above. Therefore, regulation of gas-fired area source boilers is not necessary to meet the 90 percent requirement under section 112(c)(3) for these HAP. For the reason stated above, pursuant to section 112(c)(3) of the CAA, we are proposing emission standards for the above mentioned HAP for area source boilers fired by coal, oil, and wood, but not standards for boilers fired by natural gas.*[8]

While the final rule could be different, it is not expected that the proposed propane-fired heater will be subject to Subpart JJJJJJ, as currently proposed..

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[7] The proposed rule has not yet been published in the federal register.

[8] Preamble to the proposed National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers, pages 25-26, April 29, 2010. The proposed definition of "Natural gas" includes liquid petroleum gas, under §63.11237. Referenced at http://www.epa.gov/airquality/combustion/docs/boilerarearule20100429.pdf

3.5 TITLE V OPERATION PERMIT PROGRAM

40 CFR Parts 70 and 71 establish the federal Title V operating program. New York has incorporated provisions of this federal program in its state regulation, Title 6, Chapter III, Subchapter A, Part 201-6. This proposed facility will not exceed Title V thresholds for any pollutant and thus will not be considered a Title V facility.

3.6 CHEMICAL ACCIDENT PREVENTION

Subpart B of 40 CFR 68 outlines requirements for risk management prevention plans pursuant to Section 112(r) of the Clean Air Act. Applicability to this subpart is determined based on the type and quantity of the chemicals stored at the Watkins Glen Storage Facility. Because the facility will store greater than 10,000 pounds of propane in bulk for sale, other than to end users, it will be subject to Part 68 requirements and will require a Risk Management Plan (RMP).

The RMP consists of a hazard assessment that includes an off-site consequence analysis, five-year accident history, prevention program, and emergency response program. Finger Lakes LPG Storage will prepare and submit an RMP in a separate submittal.

3.7 NEW YORK STATE AIR QUALITY REQUIREMENTS

3.7.1 GENERAL PROVISIONS – 6 NYCRR PART 200

The Watkins Glen Storage Facility is subject to the general provisions under 6 NYCRR §200 including definitions and general requirements.

3.7.2 PERMITS AND CERTIFICATES - 6 NYCRR PART 201

As shown in the emissions calculations in Section 2 of this report, the facility will be a minor source of emissions with respect to the Title V operating permit program (6 NYCRR Part 201-6). Therefore, the Watkins Glen Storage Facility is subject to the requirements of 6 NYCRR 201-4, which regulates Minor Facility Registration.

According to 6 NYCRR 201-4.1(5):

> *...any stationary source which has annual actual emissions of any regulated air contaminant that do not exceed the appropriate threshold in section 201-7.3(e) of this Part, regardless of the facility's potential to emit for that contaminant...*

is required to register with the Department.

The Watkins Glen Storage Facility falls under section 201-7.3(e)(1), a stationary source that does not emit more than 50 percent of the major stationary source thresholds for regulated air pollutants in every 12-month period.

TABLE 3-1. EMISSION THRESHOLDS

Pollutant	Major Source Threshold (tpy)	50% of Major Source Threshold (tpy)
PM_{10}	100	50
$PM_{2.5}$	100	50
SO_2	100	50
NO_x	100	50
CO	500	50
VOC	50	25
Total HAP	25	12.5
Individual HAP	10	5

As a result, this Minor Facility Registration is being submitted for the non-exempt units at the Watkins Glen Storage Facility (the propane-fired 13 MMBtu/hr heater). The other activities at the facility will be exempt.

3.7.3 EXEMPTIONS AND TRIVIAL ACTIVITIES - 6 NYCRR PART 201-3

The following are Exempt Activities, and no permit or registration in New York is required pursuant to 6 NYCRR §201-3.

Part 201-3.2(c)(22) specifically exempts pressurized fixed roof tanks which are capable of maintaining a working pressure at all times, such as the five 30,000 gallon propane and butane storage tanks located at the proposed Watkins Glen Storage Facility. In addition, Part 201-3.3(c)(94) exempts emissions of "simple asphyxiants including methane and propane." Butane is also a simple asphyxiant, and can be included as part of this exemption.[9] As such the fugitive emissions of propane and butane from the proposed facility are exempt from permitting under 6 NYCRR Part 201.

Furthermore, Part 201-3.2(c)(1) exempts stationary combustion installations with a maximum rated heat input capacity less than 10 MMBtu/hr burning fossil fuels. The pilot for the flare will meet this exemption.

3.7.4 GENERAL PROHIBITIONS - 6 NYCRR PART 211

The Watkins Glen Storage Facility is subject to 6 NYCRR 211.2 and 211.3, which stipulates the following requirements for air pollution and visible emissions, respectively:

> *§211.2 No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the*

[9] Simple asphyxiants are physiologically inert gases that act by displacing oxygen. Propane and butane are both non-toxic simple asphyxiants (i.e., propane and butane are physiologically inert gases that act by displacing oxygen).

comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

§211.3 Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

3.7.5 GENERAL PROCESS EMISSIONS SOURCES - 6 NYCRR PART 212

Each registered source is subject to the provisions of 6 NYCRR Part 212. Specifically, the new equipment is subject to §212.6(a), which limits opacity emissions from each operation as follows:

No person will cause or allow emissions having an average opacity during any six consecutive minutes of 20 percent or greater from any process emission source, except only the emission of uncombined water.

3.7.6 STATIONARY COMBUSTION INSTALLATIONS - 6 NYCRR PART 227

The stationary combustion installation (13 MMBtu/hr heater) proposed as part of the Watkins Glen Storage Facility will be subject to §227. Since the combustion unit will have a heat input capacity below 50 MMBtu/hr, the heater will only be subject to the opacity requirements as described under §227-1.3.:

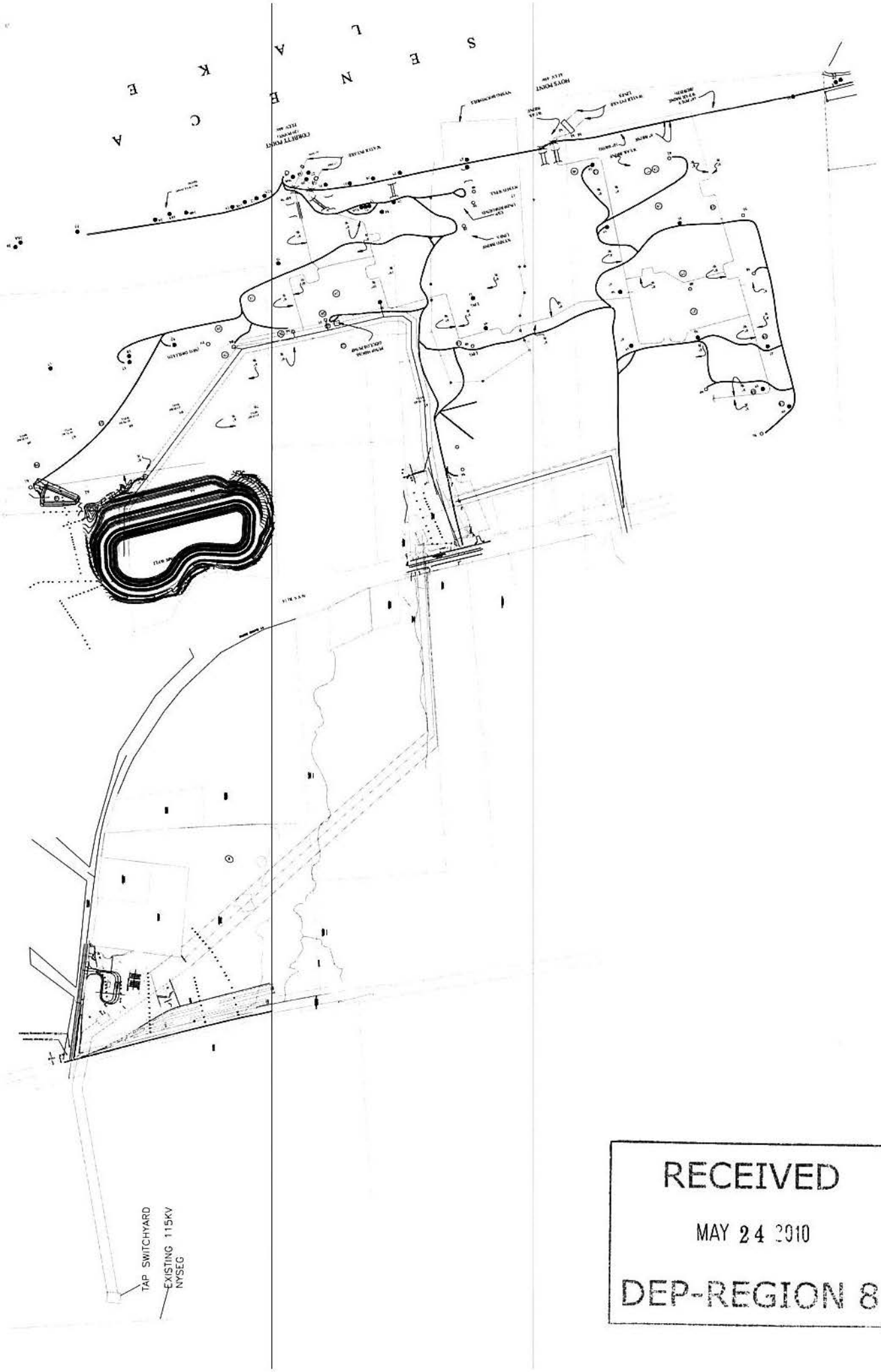
§227-1.3 (a) No person shall operate a stationary combustion installation which exhibits greater than 20 percent opacity (six minute average), except for one six-minute period per hour of not more than 27 percent opacity.

§227-1.3 (b) Compliance with the opacity standard may be determined by:
(1) conducting observations in accordance with Reference Method 9;
(2) evaluating Continuous Opacity Monitoring System (COMS) records and reports; and/or
(3) considering any other credible evidence.

Under §227, the Watkins Glen Storage Facility is not subject to requirements of §227-2.–Reasonably Available Control Technology (RACT) for NO_X since it is a minor source of NO_X as discussed previously.

3.7.7 PETROLEUM AND VOLATILE ORGANIC LIQUID STORAGE AND TRANSFER– 6 NYCRR PART 229

As noted in §229.1(f)(1), pressurized fixed roof tanks which are capable of maintaining a working pressure at all times, such as the propane and butane storage tanks at the proposed Watkins Glen Storage Facility are not subject to the regulations included under this part.



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APPENDIX B – NYSDEC AIR FACILITY REGISTRATION FORM

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New York State Department of Environmental Conservation
Air Facility Registration

DEC ID
8-4432-00085

Owner/Firm

Taxpayer ID: 2 0 3 1 4 3 7 9 6

Name: Finger Lakes LPG Storage, LLC			
Street Address: 2 Brush Creek Blvd, Suite 200			
City / Town / Village: Kansas City	State or Province: Missouri	Country: USA	Zip: 64112

Owner/Firm Contact

Name: Mike Armstrong	Phone No. (607) 689-0993 ext 315

Facility

Name: Watkins Glen Propane/Butane Storage Facility	
Location Address: 3881 State Route 14A	
☐ City / ☐ Town / ☒ Village: Watkins Glen	Zip: 14891

Facility Information

Total Number of Emission Points: 1 non-exempt emission unit ☐ Cap by Rule

Description

Operations at the Watkins Glen Storage Facility will consist of propane and butane storage and loading/unloading of tanker trucks and railcars. It is anticipated that upon completion, the facility will have 150,000 gallons of propane/butane storage capacity. It is estimated that the facility will be able to load propane or butane at approximately 1,400 gallons per minute, 2,000 barrels per hour, and 1,500,000 barrels of propane and 500,000 barrels of butane will be cycled per year.

Standard Industrial Classification Codes

5171					

HAP CAS Numbers

50-00-0	91-20-3	108-88-3	- -	- -	- -
71-43-2	110-54-3	- -	- -	- -	- -

Applicable Federal and New York State Requirements (Part Nos.)

40 CFR 60 Subpart Dc	6 NYCRR 201-4	6 NYCRR 212			
40 CFR 68	6 NYCRR 211	6 NYCRR 227			

Certification

I certify that this facility will be operated in conformance with all provisions of existing regulations.

Responsible Official: Barry Cigich	Title: V.P. Operations and Engineering
Signature: Barry Cigich	Date: 5 / 20 / 2010

7/29/96

APPENDIX C – DETAILED FACILITY EMISSIONS CALCULATIONS

Terminal Operations at the Watkings Glen Propane/Butane Storage Facility Input:

	Input	Comments
Number of Tank Loadings per Year	24,528	Conservative estimate based on max short term loading rate and average rail car size of 30,000 gallons
Number of Truck Loadings per Year	73,584	Conservative estimate based on max short term loading rate and average truck size of 10,000 gallons
Pressure gauge reading (psig)	250	Max working pressure of storage tanks, actual pressure will be lower
Pressure gauge reading (atm)	17.011	
Temperature at Max Pressure (F)	125.000	250 psi at 125 F, max design of tanks
Loading Temperature (F)	47.5	NCDC website - Elmira, NY avg. annual temp.
Loading Temperature (R)	507.17	Emissions calculations based on this conservative temperature for denser gas
Number of Valves	550	Grand Total valve count design estimate
Number of Fittings and Connectors	741	Total flange connections design estimate
Number of Pumps/Compressors	14	Electric: four 700 hp high pressure pumps, three 40 hp pumps, six 45 hp compressors, 1 Corken 291-107 compressor
Heater (MMBtu/hr)	13	Max heat input design of propane-fired heater

Fugitive Emissions from Loading

	Value	Comment
Loading Arm volume (ft^3)	0.052	Each of the five (5) tanks has three (3) connectors, each with a volume of 0.052 ft^3.
Lb moles/Loading	2.39E-03	See equations below
VOC Emissions (tpy)	6.81	See equations below

Loading VOC Emission Equations:

VOC (tons/yr) = *moles of propane/loading x MW x* $\frac{\text{loadings/year}}{\text{2000 lb/ton}}$

Lb moles/loading = $\frac{\text{pipe pressure (atmosphere) x pipe volume (ft3)}}{\text{pipe temperature (R) x 0.73 (atmospheres ft}^3\text{ / lb moles R)}}$

	MW	
Propane	44.097	
Butane	58.12	worst case - assume all material loaded is butane for max potential emissions

Fugitive Emissions from Piping, Compressors, and Conectors:

Fugitive Source	Emission Factor[1] (kg/hr/source)	Emission Factor (lb/hr/source)	Quantity	VOC Emissions (tpy)
Valves	1.30E-05	2.87E-05	550	0.069
Others (including compressors)	1.20E-04	2.65E-04	14	0.016
Fittings and Connectors	4.20E-05	9.26E-05	741	0.301
			TOTAL:	0.386

1. US EPA protocol for Equipment Leak Estimates, Marketing Terminals - Gas (http://www.epa.gov/ttnchie1/efdocs/equiplks.pdf - pg 2-14)
Total fugitive losses of propane and/or butane are VOC.

Propane-Fired Heater

Max Heat Input	13 MMBtu/hr
Propane Heating Value	91.5 MMBtu/Mgal
Maximum Operation	8,760 hrs/yr
Estimated Sulfur Content	0.5 gr S/100 ft^3

Operating Emissions For Propane-Fired Heater

Pollutant	Emission Factor	Reference	Emissions (tpy)
CO	7.5 lb/Mgal	1	4.67
NO_X	13 lb/Mgal	1	8.09
PM_{10}	0.7 lb/Mgal	1,2	0.44
$PM_{2.5}$	0.7 lb/Mgal	1,2	0.44
SO_2	0.05 lb/Mgal	1	0.03
VOC	1 lb/Mgal	1,3	0.62

1. Emission factors from US EPA AP-42 Table 1.5-1 (July 2008).
2. All PM is assumed less than 1 micron diameter (similar to natural gas combustion).
3. VOC emissions conservatively estimated from the factor for TOC.

Flare - Fuel Gas

Pilot Fuel Gas	20 scfh
Pilot Operation	8,760 hrs/yr

Fuel Gas Combustion Emissions for the Flare

Pollutant	Emission Factor	Reference	(lb/hr)	Emissions (tpy)
CO	84 lb/MMscf	1	1.7E-03	7.4E-03
NO_X	100 lb/MMscf	1	2.0E-03	8.8E-03
PM_{10}	7.6 lb/MMscf	2	1.5E-04	6.7E-04
$PM_{2.5}$	7.6 lb/MMscf	2	1.5E-04	6.7E-04
SO_2	0.60 lb/MMscf	2	1.2E-05	5.3E-05
VOC	5.50 lb/MMscf	2	1.1E-04	4.8E-04
Benzene	2.1E-03 lb/MMscf	3	4.2E-08	1.8E-07
Formaldehyde	7.5E-02 lb/MMscf	3	1.5E-06	6.6E-06
Hexane, n-	1.8 lb/MMscf	3	3.6E-05	1.6E-04
Methylnaphthalene (2-)	2.4E-05 lb/MMscf	3	4.8E-10	2.1E-09
Naphthalene	6.1E-04 lb/MMscf	3	1.2E-08	5.3E-08
Pyrene	5.0E-06 lb/MMscf	3	1.0E-10	4.4E-10
Toluene	3.4E-03 lb/MMscf	3	6.8E-08	3.0E-07

1. Emission factors from US EPA AP-42 Table 1.4-1 (July 1998).
2. Emission factors from US EPA AP-42 Table 1.4-2 (July 1998).
   All PM is assumed less than 1 micron diameter.
3. Emission factors from US EPA AP-42 Table 1.4-3 (July 1998).

Flare - Propane Control

Estimated Propane Flow	1,400 gpm
Estimated Sulfur in Propane	0.5 gr S/100 ft^3
Estimated Duration of Release	10 minutes/event
Estimated Events per Year	2 events/yr

Estimate of Propane Combustion Emissions for the Flare

Pollutant	Emission Factor	Reference	(lb/event)	Emissions (tpy)
CO	7.5 lb/Mgal	1	105.00	1.1E-01
NO_X	13 lb/Mgal	1	182.00	1.8E-01
PM_{10}	0.7 lb/Mgal	1,2	9.80	9.8E-03
$PM_{2.5}$	0.7 lb/Mgal	1,2	9.80	9.8E-03
SO_2	0.05 lb/Mgal	1	0.70	7.0E-04
VOC	1 lb/Mgal	1,3	14.00	1.4E-02

1. Emission factors from US EPA AP-42 Table 1.5-1 (July 2008).
2. All PM is assumed less than 1 micron diameter (similar to natural gas combustion).
3. VOC emissions conservatively estimated from the factor for TOC.

Potential Emissions for the Watkins Glen Propane/Butane Storage Facility

Pollutant	Potential Facility Emissions (tpy)	50% of the Major Source Threshold (tpy)
CO	4.78	50
NO_X	8.28	50
PM_{10}	0.45	50
$PM_{2.5}$	0.45	50
SO_2	0.03	50
VOC	7.83	25