

**TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT No. 99685**

I. INTRODUCTION

This Class II permit is for the continued operation of Enterprise Products Operating LLC's Adamana LPG Terminal. Permit No. 99685 renews and supersedes Permit No. 73431. The facility's potential to emit (PTE) for volatile organic compounds (VOCs), without controls or operating limitations, is greater than the significance levels identified in Arizona Administrative Code (A.A.C.) R18-2-101.130. The facility has voluntarily accepted an emission limitation of 90 tons per year (tpy) of VOCs. Since the facility will stay below major source thresholds, a synthetic minor permit is required in accordance with A.A.C. R18-2-302.B.2.a.

A. Company Information

Facility Name: Enterprise Products — Adamana LPG Terminal
Mailing Address: P.O. Box 4324, Houston, Texas 77210
Facility Location: 113 County Road 7156, Holbrook, Arizona 86025

B. Attainment Classification

The facility is located in Navajo County which is an attainment area with respect to all criteria air pollutants.

II. PROCESS DESCRIPTION

A. Process Equipment

The Adamana LPG Terminal was constructed in 1973. It stores two (2) million barrels per year of liquid propane and butane products, referred to as liquid petroleum gas (LPG). Tank truck and/or railcars unload LPG into pressurized bullet tanks using electric compressors. The facility experiences 5,800 total loading and unloading events per year (Equipment ID: 2). From the bullet tanks, the LPG is pumped to be stored into underground salt caverns located at the facility, displacing brine from the caverns. Brine is sent to a degasification process once it is removed from a cavern to vaporize any remaining LPG from the brine. The vaporized product is sent to the brine degasser flare (Equipment ID: 1) with a maximum rating of 25,000 pounds per hour (lb/hr), including the pilot gas. Once degasification is complete, the brine is stored in ponds at the facility until it is needed in the caverns.

To withdraw product, brine is injected into the caverns to displace the LPG. The LPG product then moves through a desiccant bed to remove any water and is loaded into tank trucks and/or railcars (Equipment ID: 2) to be transported from the facility. The desiccant bed is then flushed with pressurized LPG to capture any

water from the bed, and a sight glass is used to monitor the removal of water from the bed. The pressurized product, along with any water that is captured from the bed, is emitted from the bed. The facility flare (Equipment ID: 8) is used to control emissions from the desiccant dryers (Equipment IDs: D-100-A, D-100-B). The facility flare handles a maximum of 2,195 lb/hr of gas with a 32 standard cubic feet per hour (scf/hr) pilot.

There are three (3) horizontal fixed roof storage tanks permitted and located at the facility. One 1,000-gallon tank stores gasoline (Equipment ID: 5), one 320-gallon tank stores diesel (Equipment ID: 6), and one 1,160-gallon tank stores used oil (Equipment ID: 7). The process flow diagram for this facility is provided in Section C.

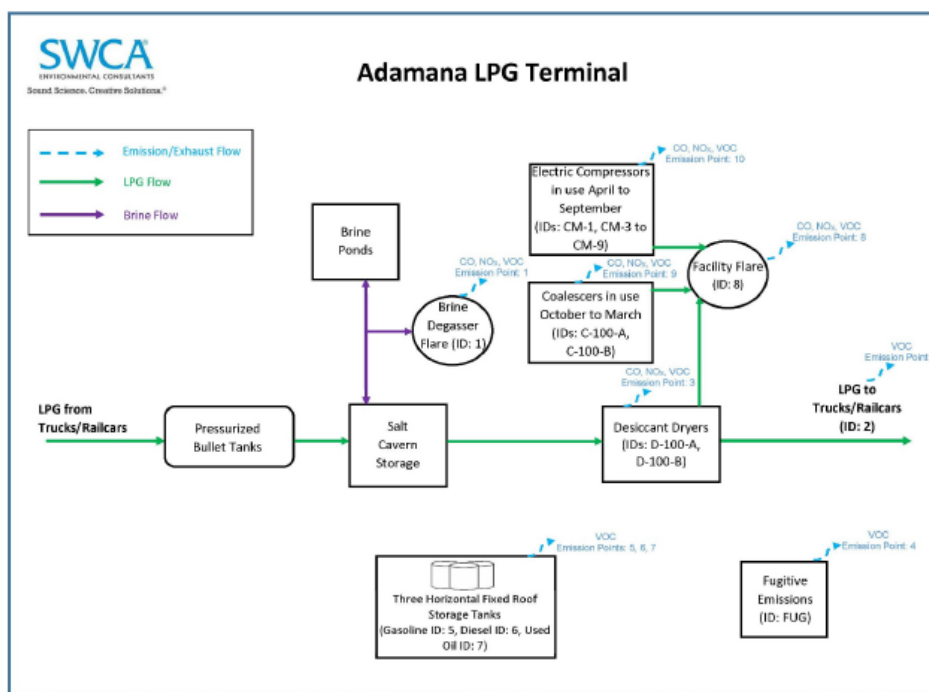
The flare also controls two (2) coalescers (Equipment ID: C-100-A, C-100-B), three (3) 300-gallon electric vapor recovery compressors (Equipment IDs: CM 2,3,4), and four (4) 200-gallon electric vapor recovery compressors (Equipment IDs: CM 5,6,7,9). The coalescers are typically used in October through March, the out-haul season, for about 50% of the time as the desiccant dryers. The compressors are typically used from April to October, during the in-haul season, and are operated 3 to 4 times per day. Typically, only 5 of the compressors are operated at any given time, although the number of compressors in use is not limited by the permit.

B. Control Devices

This facility has two (2) air-assisted flares to control VOC emissions:

1. The degasser flare is utilized to control VOC emissions from the brine degasser with 98% control efficiency.
2. The facility flare is utilized to control VOC emissions during blowdown from the desiccant dryer, electric compressors and coalescers with 98% control efficiency.

C. Process Flow Diagram



III. COMPLIANCE HISTORY

This facility received two (2) full inspections during the previous permit term. Two excess emissions were identified during this time.. These resulted in two (2) Notice of Violations (NOVs) with Case ID Numbers 187532 and 193170. After the facility returned to compliance, the NOVs were closed on May 18, 2020 and September, 21, 2020. Lastly, four (4) annual compliance certifications were reviewed by ADEQ.

IV. EMISSIONS

The facility's potential to emit (PTE) from the storage tanks was updated using the *Compilation of Air Pollutant Emissions Factors from Stationary Sources (AP-42)* Chapter 7 for Organic Liquid Storage Tanks. In addition, emissions factors from the facility were used for unloading and loading as well as for the handling of refinery grade butane and butane/pentane products.

The facility's PTE is provided in Table 1:

Table 1: Potential to Emit (tpy)

Pollutant	Previous PTE	Change in PTE (tpy)	Current PTE (tpy)	Permitting Exemption Threshold (tpy)	Minor NSR Triggered?
NO _x	1.50	0.00	1.50	20	No

CO	5.80	0.00	5.80	50	No
VOCs	16.80	+0.21	16.59	20	No

V. MINOR NEW SOURCE REVIEW (NSR)

There is a slight increase in emissions and thus, minor NSR is not triggered as shown in Table 1.

VI. VOLUNTARILY ACCEPTED EMISSION LIMITATIONS AND STANDARDS

The facility accepted a voluntary emission limitation to stay below 90 tons per year of VOC emissions during Permit No.73431 which was issued on January 25, 2019.

VII. APPLICABLE REGULATIONS

Table 2 identifies applicable regulations and why each one applies. The table also contains a discussion of any regulations that are exempt.

Table 2: Applicable Regulations

Unit	Control	Rule	Discussion
Degasser	Flare	A.A.C R18-2-730	The degasser is subject to Standards of Performance for Unclassified Sources.
Coalescers, Compressors and Desiccant Dryers	Flare	A.A.C R18-2-730	The coalescers, compressors and desiccant dryers are subject to Standards of Performance for Unclassified Sources.
Gasoline Storage Tank	N/A	A.A.C. R18-2-710	The gasoline storage tank is subject to Standards of Performance for Existing Storage Vessels for Petroleum Liquids.
Gasoline Dispensing Facility	N/A	40 CFR 63, Subpart CCCCC	The gasoline dispensing facility is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Gasoline Dispensing Facilities.

Unit	Control	Rule	Discussion
Fugitive Dust	Water Trucks, Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	These standards are applicable to non-point sources at the facility.
Abrasive Blasting	Wet Blasting, Dust Collectors and Other Approved Methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	These standards are applicable to any spray painting operation.
Demolition/Renovation	N/A	A.A.C. R18-2-1101.A.12	This standard is applicable to any asbestos related demolition or renovation operations.

VIII. PREVIOUS PERMIT REVISIONS AND CONDITIONS

A. Previous Permit Revisions

Table 3 provides a description of the permit revisions made during the previous permit term.

Table 3: Permit Revisions to Permit No. 73431

Permit Revision No.	Permit Revision Type	Brief Description
98298	Facility Change without a Permit Revision	The facility replaced three (3) vapor recovery compressors and removed one (1) vapor recovery compressor.

B. Changes to Current Renewal

Table 4 addresses the changes made to the sections and conditions from Permit No. 73431:

Table 4: Previous Permit Conditions

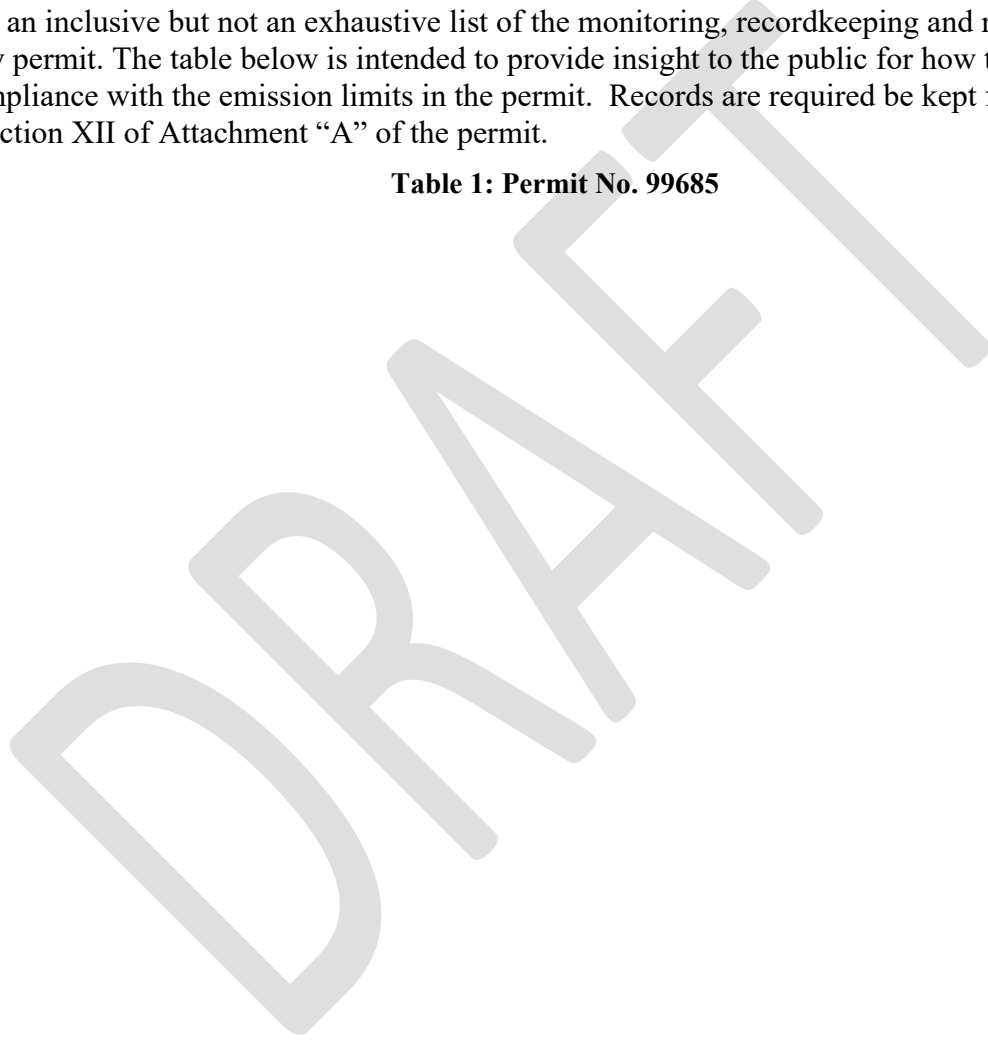
Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "A"		X		General Provisions: Revised to represent the most recent template language.
Att. "B" Section I		X		Facility Wide Requirements: Revised to represent the most recent template language.
Att. "B" Section V		X		Fugitive Dust Requirements: Revised to represent the most recent template language.
Att. "B" Section VI		X		Other Periodic Activities: Revised to represent the most recent template language.
Att. "C"		X		Equipment List: Revised to reflect the most recent equipment operating at the facility.

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IX. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Table 5 contains an inclusive but not an exhaustive list of the monitoring, recordkeeping and reporting requirements prescribed by the air quality permit. The table below is intended to provide insight to the public for how the facility is required to demonstrate compliance with the emission limits in the permit. Records are required be kept for a minimum of five (5) years as outlined in Section XII of Attachment “A” of the permit.

Table 1: Permit No. 99685



Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Degasser, Coalescers, Compressors, Desiccant Dryers and its Associated Flares	VOCs PM	2.31 lbs/hr 20% Opacity	Monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame. Conduct a performance test to determine VOC concentration in the brine solution at the inlet and outlet of the degasser.	Conduct quarterly survey of visible emissions emanating from the flare when in operation using EPA Reference Method 22.	Record and report to the Director the results of any sampling analysis for VOC emissions from the brine degasser flare. Keep records of the name of observer, date and time of observation. The results of the observation shall be logged every five (5) minutes.
Gasoline Storage Tank	N/A	N/A	N/A	Maintain a file, of the typical Reid vapor pressure of gasoline stored and of dates of storage.	N/A
Gasoline Dispensing Facility	VOCs	N/A	Monitor throughput of gasoline as to not exceed 10,000 gallons per month.	Maintain records of monthly throughput of gasoline.	N/A
Fugitive Dust	PM	40% Opacity	Conduct a monthly survey of visible emissions.	Record of the dates and types of dust control measures employed, and if applicable, the results of any observations, and any corrective action taken to lower the opacity of any excess emissions.	N/A

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Abrasive Blasting	PM	20% Opacity	Conduct a survey of visible emissions (if applicable).	Record the date, duration and pollution control measures of any abrasive blasting project.	N/A
Spray Painting	VOCs	20% Opacity Control 96% of the Overspray	Conduct a survey of visible emissions (if applicable).	Maintain records of the date, duration, quantity of paint used, any applicable MSDS, and pollution control measures of any spray painting project.	N/A
Demolition/Renovation	Asbestos		N/A	Maintain records of all asbestos related demolition or renovation projects including the “NESHAP Notification for Renovation and Demolition Activities” form and all supporting documents.	N/A

X. ENVIRONMENTAL JUSTICE ANALYSIS

The Environmental Protection Agency (EPA) defines Environmental Justice (EJ) to include the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices. The goal of completing an EJ assessment in permitting is to provide an opportunity for overburdened populations or communities to allow for meaningful participation in the permitting process. Overburdened is used to describe the minority, low-income, tribal and indigenous populations or communities that potentially experience disproportionate environmental harms and risks due to exposures or cumulative impacts or greater vulnerability to environmental hazards.

There is a slight increase in emissions and thus, it will not result in any additional impacts.

XI. LEARNING SITE EVALUATION

In accordance with ADEQ’s Environmental Permits and Approvals near Learning Sites Policy, ADEQ is required to conduct an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools in the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

This renewal will not result in an increase in emissions above permitting exemption thresholds and thus, it is exempt from a learning sites evaluation.

XII. LIST OF ABBREVIATIONS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
A.R.S.	Arizona Revised Statutes
CFR	Code of Federal Regulations
CO	Carbon Monoxide
EPA	Environmental Protection Agency
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM ₁₀	Particulate Matter less than 10 µm nominal aerodynamic diameter
PM _{2.5}	Particulate Matter less than 2.5 µm nominal aerodynamic diameter
PTE	Potential to Emit
TPY	Tons per Year
VOCs	Volatile Organic Compound
yr	Year