Statement of Basis
Draft Greenhouse Gas Prevention of Significant Deterioration Preconstruction Permit
for Targa Midstream Services LLC, Mont Belvieu Plant

Permit Number: PSD-TX-101616-GHG

November 2013

This document serves as the Statement of Basis (SOB) for the above-referenced draft permit, as required by 40 CFR § 124.7. This document sets forth the legal and factual basis for the draft permit conditions and provides references to the statutory or regulatory provisions, including provisions under 40 CFR § 52.21, that would apply if the permit is finalized. This document is intended for use by all parties interested in the permit.

I. Executive Summary

On March 20, 2012, Targa Midstream Services LLC, Mont Belvieu Plant submitted to EPA Region 6 a Prevention of Significant Deterioration (PSD) permit application for Greenhouse Gas (GHG) emissions to authorize a major modification at an existing major stationary source of criteria pollutants. Targa submitted revised BACT analyses and response to incompleteness determination on November 8, 2012, additional information related to carbon capture sequestration on November 29, 2012, as well as revised emissions calculations on November 30, 2012. In connection with the same proposed modification, Targa submitted a minor New Source Review permit application for non-GHG pollutants to the Texas Commission on Environmental Quality (TCEQ) on March 21, 2012. The project at the Mont Belvieu Plant proposes to construct the new fractionation train (Train 5) to separate natural gas liquid (NGL) feed into separate ethane, propane, butane(s) and gasoline fractions at the existing natural gas fractionating plant. After reviewing the application, EPA Region 6 has prepared the following Statement of Basis (SOB) and draft air permit to authorize construction of air emissions sources at the Targa Mont Belvieu Plant.

This SOB documents the information and analysis EPA used to support the decisions EPA made in drafting the air permit. It includes a description of the proposed facility, the applicable air permit requirements and an analysis showing how the applicant complied with the requirements.

EPA Region 6 concludes that Targa's application is complete and provides the necessary information to demonstrate that the proposed project meets the applicable air permit regulations. EPA's conclusions rely upon information provided in the permit application, supplemental information requested by EPA and provided by Targa, and EPA's own technical analysis. EPA is making all this information available as part of the public record.

II. Applicant

Targa Midstream Services LLC – Mont Belvieu Plant
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Mont Belvieu, TX 77523

Contact:
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Targa Midstream Services LLC
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III. Permitting Authority

On May 3, 2011, EPA published a federal implementation plan that makes EPA Region 6 the PSD permitting authority for the pollutant GHGs. 75 FR 25178 (promulgating 40 CFR § 52.2305).

The GHG PSD Permitting Authority for the State of Texas is:

EPA, Region 6
1445 Ross Avenue
Dallas, TX 75202

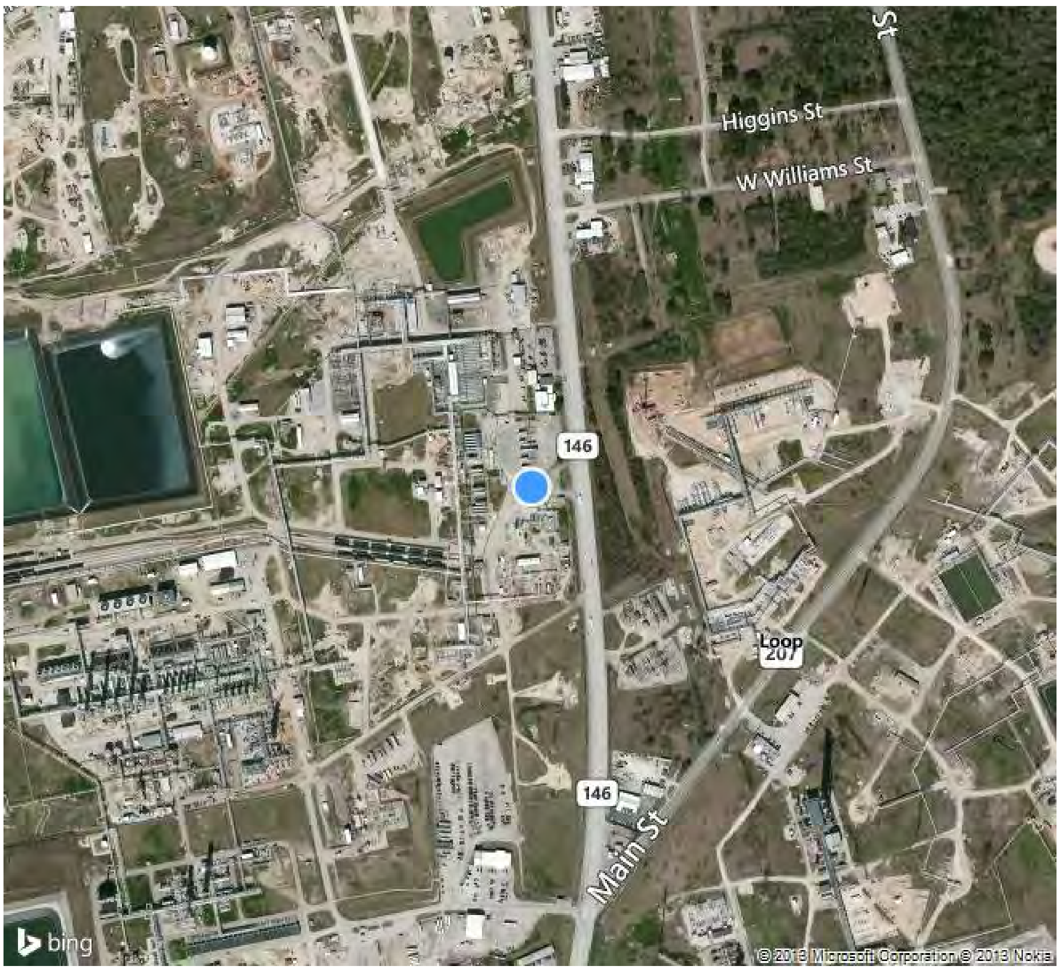
The EPA, Region 6 Permit Writer is:
Kyndall Cox
Air Permitting Section (6PD-R)
(214) 665-8567

IV. Facility Location

The Targa Midstream Services LLC – Mont Belvieu Plant is located in Chambers County, Texas, and this area is currently designated moderate "nonattainment" for Ozone. The nearest Class 1 area is Breton Sound in Louisiana, which is located well over 100 miles from the site. The geographic coordinates of the facility are as follows:

Latitude: 29˚ 50' 31"
Longitude: -94˚ 53' 44"

Below, Figure 1 illustrates the proposed facility location for this draft permit.



V. Applicability of Prevention of Significant Deterioration (PSD) Regulations

EPA concludes Targa's application is subject to PSD review for the pollutant GHGs, because the project would lead to an emissions increase of GHGs for a facility as described at 40 CFR § 52.21(b)(49)(v). The facility is an existing major stationary source (as well as a source with a PTE that equals or exceeds 100,000 TPY CO_2e and 100/250TPY GHG mass basis), and the planned modification has a GHG emissions increase (and net emissions increase) that equals or exceeds 75,000 TPY CO_2e (and 0 TPY GHG mass basis). Targa calculated a CO_2e emissions increase of approximately 165,863 tpy. EPA Region 6 implements a GHG PSD FIP for Texas under the provisions of 40 CFR § 52.21 (except paragraph (a)(1)). See 40 CFR § 52.2305.

In evaluating this permit application, EPA Region 6 considers the policies and practices reflected in the EPA document entitled "PSD and Title V Permitting Guidance for Greenhouse Gases" (March 2011). Consistent with that guidance, we have neither required the applicant to model or conduct ambient monitoring for GHGs, nor have we required any assessment of impacts of GHGs in the context of the additional impacts analysis or Class I area provisions. Instead, EPA has determined that compliance with the BACT analysis is the best technique that can be employed at present to satisfy the additional impacts analysis and Class I area requirements of the rules related to GHGs. The applicant submitted an analysis to meet the requirements of 40 CFR §52.21(o), as it may otherwise apply to the project.

TCEQ already recognizes the facility as an existing major stationary source, and therefore remains responsible for ensuring that the modification otherwise complies with applicable PSD requirements for non-GHG pollutants. [1] TCEQ issued permit #101616 for the non-GHG pollutants on March 11, 2013. Under the limits of this minor NSR permit, there will not be net significant increases of regulated NSR pollutants other than GHGs in conjunction with the project.

VI. Project Description

Targa Midstream Services plans to build a new fractionation train (Train 5) at the existing Mont Belvieu Plant. The feed consists of mixed NGLs (which is a mixture of ethane, propane, butane, heavier hydrocarbons, carbon dioxide (CO_2), and small amounts of hydrogen sulfide (H_2S)). The feed is sent to the deethanizer to separate ethane. The overhead gases off the deethanizer will be treated in the amine unit to remove the non-hydrocarbon waste gases (CO_2 and H_2S). Then water is removed from the ethane in the TEG dehydration unit. The heavier fraction from the deethanizer is fed to the depropanizer to separate propane product. The heavier fraction of the depropanizer is further fed to the debutanizer to separate the mixed butane product from natural

[1] *See* EPA, Question and Answer Document: Issuing Permits for Sources with Dual PSD Permitting Authorities, April 19, 2011, http://www.epa.gov/nsr/ghgdocs/ghgissuedualpermitting.pdf

gasoline. The butane product is then sent through the deisobutanizer to separate normal and iso-butane. The proposed fractionation train is designed to handle 100,000 barrels per day (BPD) of inlet liquid. The actual production rates will fluctuate based on customer demand and inlet composition. Targa estimates the average volume of liquid products based on an inlet of 100,000 BPD to be: 50,000 BPD ethane; 22,000 BPD propane; 5,000 BPD iso-butane; 12,000 BPD butane; and 11,000 BPD natural gasoline. All the specification NGL products are transported from the fractionation plant by pipelines.

Targa will utilize two new hot oil heaters for process heat as part of this project. The heaters [Emission Point Numbers (EPN): F-07 and F-08] are natural gas-fired heaters with a higher heating value (HHV) design capacity of 144.45 million British thermal units per hour (MMBtu/hr) each. The new heaters are equipped with low-NO_x burners and selective catalytic reduction (SCR) systems.

Further, Amine Unit 4 [Facility Identification Number (FIN): AU-4] includes an absorber, regenerator, and flash drum. In the absorber, an amine solution absorbs CO_2 and H_2S from a fractionated ethane gas stream to produce a treated ethane stream with lower CO_2 content and no H_2S. These non-hydrocarbon contaminants (CO_2 and H_2S) are in solution with the rich amine solution. The rich amine is then routed to a regenerator that separates the non-hydrocarbon contaminants from the amine solution to produce regenerated (lean) amine that can be reused in the absorber. Emissions from the amine still vent are routed to the regenerative thermal oxidizer (EPN RTO-5) for primary control, and to the flare (EPN FLR-5) for secondary control when the RTO is down for maintenance. The amine flash gas vent is routed to the fuel system during normal operations. Treated gas is sent to a new TEG dehydration unit for removal of moisture/water. The TEG Dehydration Unit (FIN TEG-2) uses TEG to remove water or water vapor present in the ethane gas stream and includes a flash tank. The TEG Dehydrator will be equipped with 2 (two) vapor recovery units (VRUs) to capture 100% of the generated emissions during normal operations. Emissions from the glycol unit regenerator from startup are routed to the flare (EPN FLR-5) for control. There are no direct emissions to the atmosphere from the Amine Unit or the TEG Dehydrator.

A new cooling tower is required to provide for the fractionation process cooling. Cooling Tower 9 (EPN FUG-CT-9) is a mechanically induced draft, counterflow cooling tower. The cooling tower is designed to recirculate 44,322 gallons per minute (gpm) water. The cooling tower will not generate GHG emissions. New fugitive emissions (EPN FUG-FRAC5) from piping and equipment associated with the proposed project are accounted for via the number of valves, flanges, and other connections.

VII. General Format of the BACT Analysis

EPA conducted the BACT analyses as suggested in EPA's *PSD and Title V Permitting Guidance for Greenhouse Gases* (March 2011), which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below.

(1) Identify all potentially available control options;
(2) Eliminate technically infeasible control options;
(3) Rank remaining control technologies;
(4) Evaluate the most effective controls and document the results; and
(5) Select BACT.

VIII. Applicable Emission Units and BACT Discussion

The majority of the contribution of GHGs associated with the project is from combustion sources (i.e., regenerative thermal oxidizer, hot oil heater, and flare)[2]. The site has some fugitive emissions from piping components which contribute a minor amount of GHGs, estimated at 2.32 tpy of the project's total CO_2e emissions of approximately 165,863 tpy. Stationary combustion sources primarily emit CO_2, and small amounts of N_2O and CH_4. The following devices are subject to this GHG PSD permit:

- Hot Oil Heaters (EPNs: F-07 and F-08)
- Amine Unit Vent (AU-4)
- TEG Dehydrator (TEG-2)
- Regenerative Thermal Oxidizer (EPNs: RTO-5 and RTO5-MSS)
- Flare (EPNs: FLR-5 and FLR5-MSS)
- Process Fugitives (EPN: FUG-FRAC5)

IX. Hot Oil Heaters (EPNs: F-07 and F-08)

Targa's Mont Belvieu Plant Train 5 will have two natural gas-fired hot oil heaters (EPNs: F-07 and F-08). The hot oil heaters provide heat to the amine regenerator's closed loop system and each have a maximum rated capacity of 144.45 MMBtu/hr. The hot oil heaters will combust natural gas resulting in emissions of CO_2, CH_4, and N_2O. EPA has reviewed Targa's BACT analysis for the hot oil heaters, which has been incorporated into this Statement of Basis, and also provides its own analysis in setting forth BACT for this proposed permit as summarized below.

[2] GHG emissions from the thermal oxidizer include both the CO_2 produced from combustion of VOC and CH_4, and the CO_2 contained in the waste gas that arrives from the amine regenerator.

Step 1 – Identification of Potential Control Technologies for GHGs

- *Carbon Capture Sequestration (CCS)* – CCS is an available add-on control technology that is applicable for all of the site's affected combustion units.
- *Low Carbon Fuel Selection* – Fuels vary in the amount of carbon per Btu, which in turn affects the quantity of CO_2 emissions generated per unit of heat input.
- *Good Combustion, Operating and Maintenance Practices* – The formation of GHGs can be controlled by proper operation and using good combustion techniques.
- *Oxygen Trim Controls* – Monitors for oxygen and intake flow can help to optimize combustion efficiency, as excess air in the combustion chamber may lead to inefficient combustion and increased emissions.
- *Fuel Gas Pre-heater / Air Pre-heater* – Preheating the fuel stream reduces the heating load, increases the thermal efficiency, thereby reducing emissions.
- *Efficient Heater Design* – Good heater design to maximize thermal efficiency.
- *Heat Integration* **–** Use of process-to-process cross heat exchangers to recover heat and reduce the overall energy use at the plant.
- *Periodic Tune-up* – Periodically tune-up heaters to maintain optimal thermal efficiency.

Step 2 – Elimination of Technically Infeasible Alternatives

All options identified in Step 1 are considered technically feasible for this project,[3] except oxygen trim controls and air/fuel preheating. Oxygen trim controls can be used on forced draft heaters that monitor stack oxygen concentration and automatically adjust the inlet air at the burner for optimum efficiency. Targa is proposing to use induced draft heaters that do not have automatic control of air flow into the burners, making oxygen trim controls infeasible.

Targa considered several variables in the heater design to determine if an air pre-heater could be utilized to improve overall heater performance, including inlet process temperature, stack flue gas outlet temperature, and fuel efficiency. The hot oil heaters designed for Targa's Train 5 do not include pre-heaters because the flue gas temperature off the heater is low, which would result in operational issues associated with condensation and corrosion of a pre-heater. Also, the low flue gas exit temperature does not provide enough heat to economically justify an air preheat system. Targa found that the heater design specification in conjunction with the inlet process temperature and low flue gas exit temperature provides high fuel efficiency without the need for an air pre-heater. EPA agrees with Targa's assessment (subject to consideration of public comment).

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[3] Based on the information provided by Targa and reviewed by EPA for this BACT analysis, while there are some portions of CCS that may be technically infeasible for this project, EPA has determined that overall Carbon Capture and Storage (CCS) technology is technologically feasible at this source.

Carbon Capture and Storage (CCS)

Carbon capture and storage is an available GHG control technology for "facilities emitting CO_2 in large amounts, including fossil fuel-fired power plants, and for industrial facilities with high-purity CO_2 streams (e.g., hydrogen production, ammonia production, natural gas processing, ethanol production, ethylene oxide production, cement production, and iron and steel manufacturing)."[4] CCS systems involve the use of adsorption or absorption processes to remove CO_2 from flue gas, with subsequent desorption to produce a concentrated CO_2 stream. The three main capture technologies for CCS are pre-combustion capture, post-combustion capture, and oxyfuel combustion (IPCC, 2005). Of these approaches, pre-combustion capture is applicable primarily to gasification plants, where solid fuel such as coal is converted into gaseous components by applying heat under pressure in the presence of steam and oxygen (U.S. Department of Energy, 2011). At this time, oxyfuel combustion has not yet reached a commercial stage of deployment for gas turbine applications and still requires the development of oxy-fuel combustors and other components with higher temperature tolerances (IPCC, 2005). Accordingly, pre-combustion capture and oxyfuel combustion are not considered available control options for this proposed facility; the third approach, post-combustion capture, is applicable to heaters.

With respect to post-combustion capture, a number of methods may potentially be used for separating the CO_2 from the exhaust gas stream, including adsorption, physical absorption, chemical absorption, cryogenic separation, and membrane separation (Wang et al., 2011). Once CO_2 is captured from the flue gas, the captured CO_2 is compressed to 100 atmospheres (atm) or higher for ease of transport (usually by pipeline). The CO_2 would then be transported to an appropriate location for underground injection into a suitable geological storage reservoir, such as a deep saline aquifer or depleted coal seam, or used in crude oil production for enhanced oil recovery (EOR). There is a large body of ongoing research and field studies focused on developing better understanding of the science and technologies for CO_2 storage.[5]

Step 3 – Ranking of Remaining Technologies Based on Effectiveness

- CO_2 capture and storage (up to 90%),
- Use of Low Carbon Fuels (28%),
- Heater design (up to 10%),
- Periodic tune-up (1-10%),

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[4] U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, *PSD and Title V Permitting Guidance for Greenhouse Gases*, March 2011, <http:/www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf> (March 2011).

[5] U.S. Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory *Carbon Sequestration Program: Technology Program Plan*, <http://www.netl.doe.gov/technologies/carbon_seq/refshelf/2011_Sequestration_Program_Plan.pdf>, February 2011

- Good combustion, operating and maintenance practices (not quantifiable),
- Heat integration (does not directly improve heater efficiency).

CO_2 capture and storage is capable of achieving up to 90% reduction of CO_2 emissions and is considered the most effective control method. Fuels used in industrial process and power generation are typically coal, fuel oil, natural gas, and process fuel gas. Natural gas is the lowest carbon fuel available for use in the proposed heaters. Good heater design, periodic tune-ups, and good operating practices are all considered effective and have a range of efficiency improvements which cannot be directly quantified; therefore, the above ranking is approximate only (and, since these control measures are not mutually exclusive, ranking is of limited significance in any case). The estimated efficiencies were obtained from the most recent ENERGY STAR guide (2008)[6], which addressed improvements to existing energy systems as well as new equipment.

Step 4 – Evaluation of Control Technologies in Order of Most Effective to Least Effective, with Consideration of Economic, Energy, and Environmental Impacts

<u>Carbon Capture and Sequestration</u>

Targa developed a cost analysis for CCS that provides a basis for eliminating the technology as a control option in this step of the BACT process based on economic costs, logistical viability, and environmental impacts. The recovery and purification of CO_2 from the amine unit would necessitate additional processing with energy and environmental tradeoffs to achieve the concentration of CO_2 necessary for effective sequestration. The additional process equipment to separate, capture, compress, and transfer the CO_2 stream would require extra energy and generate additional air emissions of both criteria and GHG pollutants.

Targa's assessment also included an analysis of the feasibility of transferring the captured CO_2 to an active injection well in or around Chambers County, Texas. The Texas Railroad Commission (RRC) website[7] provides details on registered wells and permitted fluids for injection. Targa identified the nearest CO_2 injection well to be within 25 miles of the facility. Targa further found CCS logistically prohibitive due to the technical, economic and environmental challenges related to the additional equipment that would be required to process the stream for injection. Targa used the March 2010 National Energy Technology Laboratory (NETL) document *Quality Guidelines for Energy System Studies Estimating Carbon Dioxide Transport and Storage Costs DOE/NETL-*

[6] Energy Efficiency Improvement and Cost Saving Opportunities for the Petrochemical Industry: An ENERGY STAR Guide for Energy and Plant Managers (Environmental Energy Technologies Division, University of California, sponsored by USEPA, June 2008)
[7] http://www.rrc.state.tx.us/data/online/gis/index.php

2010/1447[8] to estimate the cost associated with the approximately 22,000 horsepower compression system (5 Caterpillar 3616 engines) needed to compress heater exhaust for CO_2 separation in the amine process pipeline, amine treatment to separate CO_2 from the hot oil heater's exhaust stream, dehydration unit to remove water from the CO_2 stream after the amine process, and an additional 22,000 horsepower for compression of the CO_2 stream to pipeline pressure (5 Caterpillar 3616 engines). In this analysis, the total annual cost for the additional processing associated with CCS would be $15,000,000 per year over the 10-year expected life of the equipment. The annualized cost of CCS would result in at least a 35% increase in the project's cost without CCS of $42,190,000 per year over twenty years. Targa projects that the resultant CO_2 emissions from the CCS equipment would be 201,000 tpy, which would effectively double the project's proposed emissions, largely negating the benefits of carbon capture and sequestration. EPA Region 6 reviewed Targa's CCS cost estimate and believes (subject to consideration of public comment) it adequately demonstrates that both the costs and environmental trade-offs associated with a CCS control for this project are prohibitive in relation to the overall cost and efficiency of the project without CCS. These initial conclusions apply to use of CCS to control CO_2 emissions from the remaining emitting units as well (i.e. the RTO, flare, and fugitive emission sources).

Low Carbon Fuel Selection

Firing a low carbon fuel reduces the CO_2 production from combustion, and consequently is lower emitting than virtually all other fossil fuels. Natural gas is the lowest carbon fuel available for use in the proposed heaters. Natural gas is a very clean burning fuel with respect to criteria pollutants and thus has minimal environmental impact compared to other fuels.

Heater Design

New heaters can be designed with efficient burners, increased heat transfer efficiency to the hot oil streams, state-of-the-art refractory and insulation materials in the heater walls, floor, and other surfaces to minimize heat loss and increase overall thermal efficiency.

Periodic Tune-up

Periodic tune-ups of the heaters include:

- Preventative maintenance check of fuel gas flow meters annually,
- Preventative maintenance check of oxygen control analyzers quarterly,
- Cleaning of burner tips on an as-needed basis, and

[8] See *Quality Guidelines for Energy System Studies Estimating Carbon Dioxide Transport and Storage Costs* available at http://www.netl.doe.gov/energy-analyses/pubs/QGESStransport.pdf

- Cleaning of convection section tubes on an as-needed basis.

These activities insure maximum thermal efficiency is maintained; however, it is not possible to quantify an efficiency improvement, although convection cleaning has shown improvements in the 0.5 to 1.5% range, and routine and proper maintenance can theoretically recover up to 10% of the efficiency lost over time to age.

Proper Operation and Good Combustion Practices

Proper operation involves providing the proper air-to-fuel ratio, residence time, temperature, and combustion zone turbulence essential to maintain low GHG emissions. Good combustion techniques include: operator practices; maintenance knowledge; and proper maintenance and tune-up of the heaters at least annually per the manufacturer's specifications.

Heat Integration

Rather than increasing heater efficiency, the technology reduces potential GHG emissions by reducing the required heater duty (fuel firing rate), which can substantially reduce overall plant energy requirements.

Step 5 – Selection of BACT

To date, BACT limits for GHGs emitted by other similar facilities are summarized in the table below:

Company / Location	Process Description	Control Device	BACT Emission Limit / Requirements	Year Issued	Reference
Enterprise Products Operating LLC, Eagleford Fractionation and DIB Units Mont Belvieu, TX	NGL Fractionation 2 Hot Oil Heaters (140 MMBtu/hr each) 2 Regenerant Heaters (28.5 MMBtu/hr each)	Energy Efficiency/ Good Design & Combustion Practices	Hot Oil Heaters have a minimum thermal efficiency of 85% on a 12-month rolling basis. Regenerant heaters with good combustion practices.	2012	PSD-TX-1286-GHG

Company / Location	Process Description	Control Device	BACT Emission Limit / Requirements	Year Issued	Reference
Energy Transfer Partners, Lone Star NGL Mont Belvieu, TX	NGL Fractionation 2 Hot Oil Heaters (270 MMBtu/hr each) 2 Regenerant Heaters (46 MMBtu/hr each)	Energy Efficiency/ Good Design & Combustion Practices	Hot Oil Heaters - 7.6 lb CO_2/bbl of NGL processed per heater. Regenerator Heaters - 1.3 lbs CO_2/bbl of NGL processed per heater. 365-day rolling average.	2012	PSD-TX-93813-GHG
ONEOK Hydrocarbon LP, Mont Belvieu NGL Fractionation Plant Mont Belvieu, TX	NGL Fractionation 3 Hot Oil Heaters (154 MMBtu/hr each)	Energy Efficiency/ Good Design & Combustion Practices	Hot Oil Heaters - 14.25 lb CO_2/bbl of Y-grade NGL processed for all 3 heaters combined.	2013	PSD-TX-106921-GHG
KM Liquids Terminals, Galena Park Terminal Galena Park, TX	2 Hot Oil Heaters (247 MMBtu/hr each)	Energy Efficiency/ Good Design & Combustion Practices	Hot Oil Heaters have a minimum thermal efficiency of 85% on a 12-month rolling basis.	2013	PSD-TX-101199-GHG
DCP Midstream, Jefferson County NGL Fractionation Plant Beaumont, TX	2 Hot Oil Heaters (179 MMBtu/hr each)	Energy Efficiency/ Good Design & Combustion Practices	Hot Oil Heaters have a minimum thermal efficiency of 85% on a 12-month rolling basis.	2013*	PSD-TX-110557-GHG

* Permit issued on October 17, 2013, but does not become effective for 30 days unless a petition for review is properly and timely filed with the EPA's Environmental Appeals Board (EAB).

The BACT determinations for all the above-referenced facilities apply to natural gas liquids (NGL) fractionation. Targa Mont Belvieu and Energy Transfer Partners - Lone Star NGL produce similarly higher grade of propane (+95%) for export purposes, which require higher heat duties than the Enterprise facility. Similar to ONEOK's proposed design, the heat for the regeneration process is provided by the hot oil system with no separate regeneration heaters. Both Energy Transfer Partners - Lone Star NGL facility and ONEOK Mont Belvieu NGL plant proposed output-based limits. The two hot oil heaters at the Lone Star NGL facility each have a heat input rate of 270 MMBtu/hr and an output-based BACT limit of 7.6 lb CO_2/bbl of NGL processed. The three hot oil heaters proposed by ONEOK have a heat input rate of 154 MMBtu/hr each for a combined heat input rate of 462 MMBtu/hr and a combined BACT limit of 14.25 lb CO_2/bbl of Y-grade NGL processed with an exhaust temperature limit for each heater. Targa is proposing to install two hot oil heaters with 144.45 MMBtu/hr rating for Train 5 each with a proposed output-based BACT limit of 4.06 lb CO_2/bbl of NGL processed. Targa's proposed BACT is based on the feed composition and processing rate that is projected for Train 5. This BACT limit only applies to the firing of natural gas in the hot oil heater burners. EPA Region 6 analyzed the 4.06 lb CO_2/bbl of NGL processed BACT limit proposed by the applicant and has determined it is consistent with other BACT determinations for similar units and consequently a reasonable estimation of BACT.

The following specific BACT practices are proposed by Targa for the hot oil heaters:

- *Heater design* – The hot oil heaters and regeneration heaters shall be designed to achieve high thermal efficiencies.
- *Heater design* – Burner design improves the mixing of fuel, creating a more efficient heat transfer.
- *Periodic Tune-up* – Clean burner tips and convection tubes as needed, but to occur no less frequently than every 12 months.
- *Low carbon fuel usage* – Targa fire only pipeline quality natural gas, which results in 28% less CO_2 production than fuel oils.
- *Proper Operation and Good Combustion Practices* – Proper operation involves providing the proper air-to-fuel ratio, residence time, temperature, and combustion zone turbulence essential to maintain low GHG emissions. Good combustion techniques include: operator practices; maintenance knowledge; and maintenance practices.
- *Heat Integration* – Use of heat recovery from the hot oil heaters in heat exchangers.

<u>BACT Limits and Compliance:</u>

Each hot oil heater (EPNs: F-07 and F-08) will have an annual GHG emission limit of 74,027 tons CO_2e per year based on a 365-day rolling average. Each heater will also have an output based BACT limit of 4.06 lbs CO_2/barrel (bbl) per day of natural gas liquids processed.

Targa will demonstrate compliance with the CO_2 limits for the heaters using the emission factors for natural gas from 40 CFR Part 98 Subpart C, Table C-2. The equation for estimating CO_2 emissions as specified in 40 CFR 98.33(a)(3)(iii) is as follows:

$$CO_2 = \frac{44}{12} * Fuel * CC * \frac{MW}{MVC} * 0.001 * 1.102311$$

Where:

CO_2 = Annual CO_2 mass emissions from combustion of natural gas (short tons)

Fuel = Annual volume of the gaseous fuel combusted (scf). The volume of fuel combusted must be measured directly, using fuel flow meters calibrated according to §98.3(i).
CC = Annual average carbon content of the gaseous fuel (kg C per kg of fuel). The annual average carbon content shall be determined using the same procedures as specified for HHV at §98.33(a)(2)(ii).
MW = Annual average molecular weight of the gaseous fuel (kg/kg-mole). The annual average molecular weight shall be determined using the same procedure as specified for HHV at §98.33(a)(2)(ii).
MVC = Molar volume conversion factor at standard conditions, as defined in §98.6.
44/12 = Ratio of molecular weights, CO_2 to carbon.
0.001 = Conversion of kg to metric tons.
1.102311 = Conversion of metric tons to short tons.

The proposed permit also includes an alternative compliance demonstration method, in which Targa may install, calibrate, and operate a CO_2 Continuous Emission Monitoring System (CEMS) and volumetric stack gas flow monitoring system with an automated data acquisition and handling system for measuring and recording CO_2 emissions.

The emission limits associated with CH_4 and N_2O are calculated based on emission factors provided in 40 CFR Part 98, Table C-2 and the actual heat input (HHV). Comparatively, the emissions from CO_2 contribute the greatest (greater than 99%) to the overall emissions from the heaters and; therefore, additional analysis is not required for CH_4 and N_2O. To calculate the CO_2e emissions, the draft permit requires calculation of the emissions based on the procedures and Global Warming Potentials (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1. Records of the calculations would be required to be kept to demonstrate compliance with the emission limits on a 365-day average, rolling daily.

X. Amine Unit (EPN: AU-4)

The amine unit in Train 5 of the Mont Belvieu Plant will be used to absorb CO_2 from a fractionated ethane gas stream to produce a treated gas stream with lower CO_2 content. Because the amine unit is designed to remove CO_2 from the fractionated gas stream, the generation of CO_2 is inherent to the process, and a reduction of the CO_2 emissions by process changes would reduce the process efficiency. This would result in more CO_2 in the ethane and natural gas liquids that would eventually be emitted.

Step 1 – Identification of Potential Control Technologies

- *Carbon Capture Sequestration (CCS)* – CCS is an available add-on control technology that is applicable for all of the site's affected combustion units.
- *Flare* – A flare could be used to control emissions from the amine unit vent stream.
- *Regenerative Thermal Oxidizer* – A regenerative thermal oxidizer (RTO) could be used to control emissions from the amine unit vent stream.
- *Condenser* – A condenser could provide supplemental emissions control by reducing the temperature of the still column vent vapors on the amine unit vent stream.
- *Proper Design and Operation* – Proper design and operation results in more efficient operation and lower emissions.
- *Use of Tank Flash Gas Recovery System* – Flash tanks are used to recycle off-gases.

Step 2 – Elimination of Technically Infeasible Alternatives

All options listed in Step 1 are considered technically feasible, except for CCS. CCS is being eliminated based on the previous discussion in Section IX.

Step 3 – Ranking of Remaining Technologies Based on Effectiveness

- Proper Design and Operation (1% - 10%)
- Condenser (<0.25%)
- Use of Tank Flash Gas Recovery Systems (<0.25%)
- Regenerative Thermal Oxidizer
- Flare

The use of a regenerative thermal oxidizer (RTO) and a flare both reduce the methane emissions, but result in increased CO_2 emissions due to acid gas combustion and pilot gas combustion in the flare.

Step 4 – Evaluation of Control Technologies in Order of Most Effective to Least Effective with Consideration of Economic, Energy, and Environmental Impacts

<u>Proper Design and Operation</u>

The amine unit will be new equipment installed on site. The new equipment is energy efficient. The equipment will operate at a minimum circulation rate with consistent amine concentrations. By minimizing the circulation rate, the equipment avoids pulling out additional VOCs and GHGs in both the amine and glycol streams, which would increase VOC and GHG emissions into the atmosphere.

Condenser

Condensers provide supplemental emissions control by reducing the temperature of the still column vent vapors on the amine unit to condense water and VOCs, including CH_4. The condensed liquids are then collected for further treatment or disposal. The reduction efficiency of the condensers is variable and depends on the type of condenser and composition of the waste gas, ranging from 50-98% of the CH_4 in the waste gas stream.

Use of Tank Flash Gas Recovery Systems

The amine unit will be equipped with a flash tank. The flash tank will be used to recycle off-gases formed as the pressure of the rich amine stream drops to remove lighter compounds in the stream prior to entering the reboiler. These off-gases are recycled back into the plant for fuel, instead of venting to the atmosphere or combustion device. The use of a flash tank increases the effectiveness of other downstream control devices.

Regenerative Thermal Oxidizer

A regenerative thermal oxidizer (RTO) will be utilized by Targa to control stripped amine acid gases from the amine unit. An RTO has a high efficiency heat recovery. This allows the facility to recover heat from the exhaust stream, reducing the overall heat input of the plant.

Flare

Targa proposes to route the amine vent stream to the flare for control during downtime of the RTO for maintenance for up to 152 hours per year.

Step 5 – Selection of BACT

The following BACT practices are proposed for the Amine Unit vent stream:

- Regenerative Thermal Oxidizer (RTO-5) for the amine unit still vent (AU-4);
- Flare for amine still vent during RTO maintenance downtime (FLR-5);
- Proper design and operation;
- Use of tank flash gas recovery systems; and
- Use of a condenser.

The amine unit vent stream will be controlled by the RTO. During periods when the RTO will be out of service due to maintenance (estimated at a maximum of 152 hrs/yr), the amine unit vent stream will be vented to the flare (FLR-5). The emissions from control of the amine unit vent stream by the regenerative thermal oxidizer are covered under Section XII. The emissions from control of the amine unit vent stream by the flare are covered under Section XIII. The amine unit does not emit GHGs directly to the atmosphere.

XI. TEG Dehydrator (EPN: TEG-2)

The TEG dehydration unit will be used to remove water or water vapor present in the ethane gas stream to produce a treated gas stream with lower water content to meet product specifications.

Step 1 – Identification of Potential Control Technologies

- *Carbon Capture Sequestration (CCS)* – CCS is an available add-on control technology that is applicable for all of the site's affected combustion units.
- *Flare* – A flare could be used to control emissions from the dehydrator vent stream.
- *Regenerative Thermal Oxidizer* – A regenerative thermal oxidizer (RTO) could be used to control emissions from the dehydrator vent stream.
- *Condenser* – A condenser could provide supplemental emissions control by reducing the temperature of the still column vent vapors on the TEG dehydration unit.
- *Proper Design and Operation* – Proper design and operation results in more efficient operation and lower emissions.
- *Use of Tank Flash Gas Recovery System* – Flash tanks are used to recycle off-gases.
- *Vapor Recovery Unit* – A vapor recovery unit (VRU) could be used to control emissions from the TEG dehydrator vent stream.

Step 2 – Elimination of Technically Infeasible Alternatives

All options listed in Step 1 are considered technically feasible, except for CCS. CCS is being eliminated based on the previous discussion in Section IX.

Step 3 – Ranking of Remaining Technologies Based on Effectiveness

- Vapor Recovery Unit (100%)
- Proper Design and Operation (1% - 10%)
- Condenser (<0.25%)
- Use of Tank Flash Gas Recovery Systems (<0.25%)
- Regenerative Thermal Oxidizer
- Flare

A Vapor Recovery Unit (VRU) would be the highest level of control at 100%. The use of a regenerative thermal oxidizer (RTO) and a flare both reduce the methane emissions, but result in increased CO_2 emissions due to acid gas combustion, supplemental fuel, and pilot gas combustion in the flare.

Step 4 – Evaluation of Control Technologies in Order of Most Effective to Least Effective with Consideration of Economic, Energy, and Environmental Impacts

Vapor Recovery Unit (VRU)

Targa proposes to install 2 electric vapor recovery units (VRU) compressors on the TEG dehydrator regeneration still vent to compress and route the vapors to the fuel system.

Proper Design and Operation

The TEG dehydration unit will be new equipment installed on site. The new equipment is energy efficient. The equipment will operate at a minimum circulation rate with consistent glycol concentrations. By minimizing the circulation rate, the equipment avoids pulling out additional VOCs and GHGs in the glycol streams, which would increase VOC and GHG emissions into the atmosphere.

Condenser

Condensers provide supplemental emissions control by reducing the temperature of the still column vent vapors on the TEG dehydration unit to condense water and VOCs, including CH_4. The condensed liquids are then collected for further treatment or disposal. The reduction efficiency of the condensers is variable and depends on the type of condenser and composition of the waste gas, ranging from 50-98% of the CH_4 in the waste gas stream.

Use of Tank Flash Gas Recovery Systems

The TEG dehydration unit will be equipped with a flash tank. The flash tank will be used to recycle off-gases formed as the pressure of the rich glycol stream drops to remove lighter compounds in the stream prior to entering the reboiler. These off-gases are recycled back into the plant for reprocessing, instead of venting to the atmosphere or combustion device. The use of a flash tank increases the effectiveness of other downstream control devices.

Regenerative Thermal Oxidizer

There will be no normal process vent streams routed to control with the installation of a redundant VRU system. Since venting to a control device will only occur during upset conditions, a flare is the better control device.

Flare

Targa proposes to route the TEG dehydrator vent stream to the flare for control during upset conditions when the VRU would not be able to handle the sudden large volume of gases.

Step 5 – Selection of BACT

The following BACT practices are proposed for the TEG Dehydrator vent streams:

- 2 Vapor Recovery Units for the TEG dehydrator still vent (TEG-2);
- Flare (FLR-5) for TEG dehydrator still vent (TEG-2) during startup and upset conditions;
- Proper design and operation;
- Use of tank flash gas recovery systems; and
- Use of a condenser.

The TEG dehydration unit will be equipped with 2 VRUs. The VRUs will compress the TEG dehydrator vent exhaust gases and route the vapor to the fuel system. There will not be any GHG emissions associated with the VRU. However, the TEG dehydrator vent stream will be routed to the flare for control during startup and upset conditions. The emissions from control of the TEG dehydrator vent stream by the flare are covered under Section XIII.

XII. Regenerative Thermal Oxidizer (EPNs: RTO-5 and RTO5-MSS)

Targa's Mont Belvieu Plant Train 5 will be equipped with one regenerative thermal oxidizer (EPN RTO-5) to control emissions from the amine unit, specifically the amine treater vent (AU-4). The amine unit is designed to remove CO_2 from the fractionated gas stream and the generation of CO_2 is inherent to the process. The amine treater vent stream will be routed to the RTO for control, except during periods when the RTO is out of service for maintenance. RTO-5 will utilize a gas-fired burner system during startup.

Step 1 – Identification of Potential Control Technologies

- *Carbon Capture Sequestration (CCS)* – CCS is an available add-on control technology that is applicable for all of the site's affected combustion units.
- *Proper RTO Design* – Good RTO design includes flow measurement and monitoring/control of waste gas heating values, both of which can improve the destruction efficiency of VOCs and CH_4 entrained in the waste streams.
- *Low Carbon Fuel Selection* – Fuels vary in the amount of carbon per Btu, which in turn affects the quantity of CO_2 emissions generated per unit of heat input.

- *Good Combustion, Operating and Maintenance Practices* – The formation of GHGs can be controlled by proper operation and using good combustion techniques.

Step 2 – Elimination of Technically Infeasible Alternatives

All options listed in Step 1 are considered technically feasible, except for CCS. CCS is being eliminated based on the previous discussion in Section IX.

Step 3 – Ranking of Remaining Technologies Based on Effectiveness[9]

- Proper RTO design (up to 15%)
- Good combustion, operation, maintenance practices (up to 10%)
- Use of low carbon fuels (unquantifiable due to intermittent fuel use)

Virtually all GHG emissions result from the combustion of stripped amine gas in the RTO. RTO design specifications can produce improvements in efficiency up to 15%. Good work practices (e.g., good combustion, operation and maintenance practices) and using low carbon fuels during start up can both minimize GHG emissions from fuel combustion.

Step 4 – Evaluation of Control Technologies in Order of Most Effective to Least Effective with Consideration of Economic, Energy and Environmental Impacts

<u>Proper RTO design</u>

Targa has proposed an RTO with heat recovery to increase the unit's heating efficiency. Supplemental natural gas will not be needed to maintain proper temperature in the RTO.

<u>Good combustion, operation, and maintenance practices</u>

Proper operation and good combustion practices for the RTO include monitoring and analysis of waste gas flow rate, monitoring temperature in the combustion chamber, and periodic maintenance.

<u>Low carbon fuel selection</u>

Natural gas is the lowest carbon fuel available for use in the proposed RTO. Natural gas is a clean burning fuel with respect to criteria pollutants and thus has minimal environmental impact compared to other fuels.

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[9] These technologies are not mutually exclusive, and are not listed in order of effectiveness since all are expected to all be applied.

Step 5 – Selection of BACT

The following BACT practices are proposed for the RTO:

- *Proper RTO design* – Targa will be utilizing a regenerative thermal oxidizer with 99.0% DRE for methane (CH_4).
- *Good combustion, operation, and maintenance practices* – Periodic maintenance will help preserve the efficiency of the RTO. Temperature and flow rate monitoring will ensure proper operation of the RTO.
- *Use of low carbon fuels (during start up)* – Targa shall combust pipeline quality natural gas during RTO start up.

BACT for the regenerative thermal oxidizers will be good combustion and operating practices. Use of these practices corresponds with a permit limit of 10,882 tpy CO_2e for EPN RTO-5. The draft permit requires maintenance and work practice limits on the number and duration of RTO shutdown events for maintenance not to exceed twelve (12) events or 152 hours per year for the RTO. Compliance shall be determined by the monthly calculation of GHG emissions using equation W-3 consistent with 40 CFR Part 98, Subpart W [98.233(d)(2)].

XIII. Flare (EPNs: FLR-5 and FLR5-MSS)

Targa has proposed a 40 CFR § 60.18 compliant flare (FLR-5) for the Mont Belvieu Plant Train 5. Stripped dehydrator waste gases from the TEG Dehydrator flash gas vent will be routed to the fuel supply by VRU for primary control and will be routed to the flare during startup, upsets, or issues with the unit (such as high flash tank liquid level) that would preclude using the TEG flash tank vapors as fuel. The amine unit (AU-4) will vent to the flare for control during RTO (primary control for the amine unit) downtime. The flare will also be used to destroy off-gas produced in emergency situations and during planned MSS activities.

Step 1 – Identification of Potential Control Technologies for GHGs

- *Carbon Capture Sequestration (CCS)* – CCS is an available add-on control technology that is applicable for all of the site's affected combustion units.
- *Low Carbon Fuel Selection* – Use of natural gas, which represents the available pilot fuel type with the lowest carbon intensity on heat input basis.
- *Flare Gas Recovery* – A flare gas recovery compressor system can be used to recover flared gas to the fuel gas system.
- *Good Combustion, Operating and Maintenance Practices* – Good combustion practices improve flare efficiency and include proper orientation, maintenance, and tune-up of the flare at least annually.

- *Good Flare Design* – Good flare design can be employed to destroy large fractions of the flare gas. Manufactures of flares and flare tips have worked to assure high reliability and destruction efficiencies. Good flare design includes pilot flame monitoring, flow measurement, blower controls, and monitoring/control of waste gas heating value.
- *Limited Vent Gas Release to Flare* – Minimizing the number and duration of MSS activities and therefore limiting vent gases routed to the flare to help reduce emissions due to MSS activities.

Step 2 – Elimination of Technically Infeasible Alternatives

All options in Step 1 are considered technically feasible except flare gas recovery and CCS. The heat input of the process gas sent to the flare is so low, supplemental fuel will be mixed with the dehydrator waste streams to bring the heating value of the combusted gas up to 300 Btu/scf as required by 40 CFR §60.18. Targa's application eliminated flare gas recovery from consideration due to energy efficiency concerns. The only continuous stream routed to the flare is from the TEG dehydration unit, which is smaller than streams typically recovered in flare gas recovery systems. More energy would be required to recover the stream than the heating value of the resulting stream produced. This rationale is persuasive. CCS is being eliminated based on the previous discussion in Section IX.

Step 3 – Ranking of Remaining Technologies Based on Effectiveness

- Use of Low Carbon Fuels (28%),
- Good Flare Design (1 – 15%),
- Good Combustion, Operation & Maintenance Practices (1 – 10%)
- Flare Minimization (unquantifiable)

Step 4 – Evaluation of Control Technologies in Order of Most Effective to Least Effective, with Consideration of Economic, Energy, and Environmental Impacts

There are no negative environmental impacts associated with any proposed control options and they all are utilizable. Fuel selection, flare minimization, proper design, and good operation and combustion practices for the flare are all potentially equally effective. Further evaluation is unnecessary because each of these technologies is being proposed for use at the project. The proposed BACT limit reflects that all of these control measures will be utilized.

Step 5 – Selection of BACT

Targa proposes to use all of the above-stated control technologies to minimize GHG emissions from flaring at the proposed facility. EPA is proposing the following specific BACT practices for the flare:

- *Fuel Selection* – Targa will utilize pipeline quality natural gas in the pilots of the flare.
- *Flare Design* – The flare shall be designed and operated in accordance with 40 CFR 60.18 including specifications of minimum heating value of the waste gas, maximum tip velocity and pilot flame monitoring.
- *Proper Operation and Good Combustion Practices* – The formation of GHGs can be controlled by proper operation and using good combustion practices. Poor flare combustion efficiencies lead to higher methane emissions and higher overall GHG emissions. Targa will monitor the waste gas composition monthly, and will have air assisted combustion allowing for improved flare gas combustion control and minimizing periods of poor combustion. Periodic maintenance will help maintain the efficiency of the flare.
- *Flare Minimization* **–** Targa proposes to limit MSS activities and flaring events to minimize GHG emissions from this source.

Use of these practices corresponds with a permit limit of 1,089 tpy CO_2e for the EPN FLR-5 flare. Flare emissions from scheduled maintenance, startup and shutdown (MSS) activities represent less than 1% of total CO_2e emissions from Mont Belvieu Train 5. Targa Mont Belvieu shall record the time, date, fuel heat input (HHV) in MMBTU/hr, and duration of each startup and shutdown event. Records of all emission limit calculations and startup/shutdown events shall be kept on-site for a period of five (5) years.

XIV. Process Fugitives (EPNs: FUG-FRAC5 and ATM-MSS)

Hydrocarbon emissions from leaking piping components (process fugitives) associated with the proposed project include methane, a GHG. The additional methane emissions from process fugitives (EPN FUG-FRAC5) have been conservatively estimated to be 2.32 tpy as CO_2e. GHG emissions from maintenance, startup, and shut-down activities occur from degassing process vessels and equipment. The GHG emissions (EPN ATM-MSS) are primarily methane and have been estimated to be 1.68 tpy as CO_2e. Methane emissions from fugitives and MSS activities account for a very small portion (<< 0.01%) of the project's total CO_2e emissions.

Step 1 – Identification of Potential Control Technologies for GHGs

The only identified control technology for CO_2e process fugitive emissions is use of a leak detection and repair (LDAR) program. LDAR programs vary in stringency as needed for control of VOC emissions; however, due to the negligible amount of GHG emissions from fugitives, LDAR programs would not be considered for control of GHG emissions alone. As such, evaluating the relative effectiveness of different LDAR programs is not warranted.

Step 2 – Elimination of Technically Infeasible Alternatives

LDAR programs are a technically feasible option for controlling process fugitive GHG emissions.

Step 3 – Ranking of Remaining Technologies Based on Effectiveness

As stated in Section XII, Step 1, this evaluation does not compare the effectiveness of different levels of LDAR programs.

Step 4 – Evaluation of Control Technologies in Order of Most Effective to Least Effective, with Consideration of Economic, Energy, and Environmental Impacts

Although technically feasible, use of an LDAR program to control the negligible amount of GHG emissions that occur as process fugitives is clearly cost prohibitive. However, if an LDAR program is being implemented for VOC control purposes, it will also result in effective control of the small amount of GHG emissions from the same piping components. Targa proposes to implement TCEQ's 28VHP[10] LDAR program at the Mont Belvieu Plant Train 5 to minimize process fugitive VOC emissions at the plant, which will result in incidental control of GHG emissions.

Step 5 – Selection of BACT

EPA concurs with Targa's assessment that using the TCEQ 28VHP LDAR program is an appropriate control of GHG emissions. Targa also identified and proposed the use of air-driven pneumatic controllers as BACT for fugitives as well as audio/visual/olfactory monitoring between instrumented checks and tandem seals equipped with alarms to alert personnel when the first seal begins to leak. EPA determines that the TCEQ 28VHP work practice standard for fugitives for control of CH_4 emissions is BACT. A numerical limit for control of these negligible GHG emissions is not proposed.

[10] The boilerplate special conditions for the TCEQ 28VHP LDAR program can be found at http://www.tceq.state.tx.us/assets/public/permitting/air/Guidance/NewSourceReview/bpc_rev28vhp.pdf. These conditions are included in the TCEQ issued NSR permit.

XV. Endangered Species Act (ESA)

Pursuant to Section 7(a)(2) of the Endangered Species Act (ESA) (16 U.S.C. 1536) and its implementing regulations at 50 CFR Part 402, EPA is required to insure that any action authorized, funded, or carried out by EPA is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species or result in the destruction or adverse modification of such species' designated critical habitat.

To meet the requirements of Section 7, EPA is relying on a Biological Assessment (BA) prepared by the applicant and adopted by EPA.

A draft BA has identified nine (9) species listed as federally endangered or threatened in Chambers County, Texas:

Federally Listed Species for Chambers County by the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS) and the Texas Parks and Wildlife Department (TPWD)	**Scientific Name**
Birds	
Piping Plover	*Charadrius melodus*
Fish	
Smalltooth Sawfish	*Pristis pectinata*
Mammals	
Red Wolf Louisiana Black Bear	*Canis rufus* *Ursus americanus luteolus*
Reptiles	
Green Sea Turtle Kemp's Ridley Sea Turtle Leatherback Sea Turtle Loggerhead Sea Turtle Atlantic Hawksbill Sea Turtle	*Chelonia mydas* *Lepidochelys kempii* *Dermochelys coriacea* *Caretta caretta* *Eretmochelys imbricata*

EPA has determined that issuance of the proposed permit will have no effect on any of the nine listed species, as there are no records of occurrence, no designated critical habitat, nor potential suitable habitat for any of these species within the action area.

Because of EPA's "no effect" determination, no further consultation with the USFWS and NMFS is needed.

Any interested party is welcome to bring particular concerns or information to our attention regarding this project's potential effect on listed species. The final draft biological assessment can be found at EPA's Region 6 Air Permits website at http://yosemite.epa.gov/r6/Apermit.nsf/AirP.

XVI. National Historic Preservation Act (NHPA)

Section 106 of the NHPA requires EPA to consider the effects of this permit action on properties eligible for inclusion in the National Register of Historic Places. To make this determination, EPA relied on a cultural resource report prepared by Deep East Texas Archaeological Consultants ("DETAC") on behalf of Raven submitted on January 22, 2013.

For purposes of the NHPA review, the Area of Potential Effect (APE) was determined to be approximately 30.8 acres of land that includes the construction footprint of an existing natural gas liquid fractionation facility. DETAC conducted a field survey of the property and a desktop review on the archaeological background and historical records within a 1-mile radius area of potential effect (APE) which included a review of the Texas Historical Commission's online Texas Archaeological Site Atlas (TASA) and the National Park Service's National Register of Historic Places (NRHP). Based on the desktop review, three previous cultural surveys were made within a 1-mile radius of the APE. Five historic or archaeological sites were identified from those reports, all of which are outside of the APE.

Based on the results of the field survey within the APE, that included shovel testing, no archaeological resources were found. Based on the results of the desktop survey, no archaeological resources or historic structures were found within the APE. Based on the desktop review, two cemeteries were found within 1 mile from the project area that are potentially eligible for listing on the National Register; however, both sites are outside the APE and neither site will be impacted visually or otherwise due to the construction and operation of the proposed project.

EPA Region 6 determines issuance of the permit to Targa will not affect properties on or potentially eligible for listing on the National Register. Although there is a historic structure with in the APE, it is not eligible for listing on the NRHP properties, and a potential for the location of archaeological resources is low within the construction footprint itself.

On April 19, 2013, EPA sent letters to Indian tribes identified by the Texas Historical Commission as having historical interests in Texas to inquire if any of the tribes have historical interest in the particular location of the project and to inquire whether any of the tribes wished to consult with EPA in the Section 106 process. EPA received no requests from any tribe to consult on this proposed permit. EPA will provide a copy of the report to the State Historic Preservation Officer for consultation and concurrence with its determination. Any interested party is welcome to bring particular concerns or information to our attention regarding this project's potential effect on historic properties. A copy of the report may be found at http://yosemite.epa.gov/r6/Apermit.nsf/AirP.

XVII. Environmental Justice (EJ)

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive branch policy on environmental justice. Based on this Executive Order, the EPA's Environmental Appeals Board (EAB) has held that environmental justice issues must be considered in connection with the issuance of federal Prevention of Significant Deterioration (PSD) permits issued by EPA Regional Offices [See, e.g., *In re Prairie State Generating Company*, 13 E.A.D. 1, 123 (EAB 2006); *In re Knauf Fiber Glass*, Gmbh, 8 E.A.D. 121, 174-75 (EAB 1999)]. This permitting action, if finalized, authorizes emissions of GHG, controlled by what we have determined is the Best Available Control Technology for those emissions. It does not select environmental controls for any other pollutants. Unlike the criteria pollutants for which EPA has historically issued PSD permits, there is no National Ambient Air Quality Standard (NAAQS) for GHGs. The global climate-change inducing effects of GHG emissions, according to the "Endangerment and Cause or Contribute Finding", are far-reaching and multi-dimensional (75 FR 66497). Climate change modeling and evaluations of risks and impacts are typically conducted for changes in emissions that are orders of magnitude larger than the emissions from individual projects that might be analyzed in PSD permit reviews. Quantifying the exact impacts attributable to a specific GHG source obtaining a permit in specific places and points would not be possible [PSD and Title V Permitting Guidance for GHGs at 48]. Thus, we conclude it would not be meaningful to evaluate impacts of GHG emissions on a local community in the context of a single permit. Accordingly, we have determined an environmental justice analysis is not necessary for the permitting record.

XVIII. Conclusion and Proposed Action

Based on the information supplied by Targa, our review of the analyses contained in the TCEQ New Source Review Application and the GHG Permit Application, and our independent evaluation of the information contained in the Administrative Record, it is our initial determination that the proposed facility would employ BACT for GHGs under the terms contained in the draft permit. Therefore, EPA is proposing to issue Targa a PSD permit for GHGs for the Mont Belvieu Train 5, subject to the PSD conditions specified therein. This permit is subject to review and comments. A final decision on issuance of the permit will be made by EPA after considering comments received during the public comment period.

APPENDIX - Annual Emission Limits

Annual emissions, in tons per year (TPY) on a 12-month rolling average basis shall not exceed the following:

Table 1. Facility Emission Limits[1]

FIN	EPN	Description	GHG Mass Basis		TPY CO_2e[2,3]	BACT Requirements
				TPY[2]		
F-07	F-07	Hot Oil Heater	CO_2	73,954	74,027	4.06 lb CO_2/bbl NGL processed. See permit condition III.A.2.a.
			CH_4	1.39		
			N_2O	0.14		
F-08	F-08	Hot Oil Heater	CO_2	73,954	74,027	4.06 lb CO_2/bbl NGL processed. See permit condition III.A.2.b.
			CH_4	1.39		
			N_2O	0.14		
RTO-5, RT5-MSS	RTO-5, RTO5-MSS	Regenerative Thermal Oxidizer	CO_2	10,882	10,882	Good combustion practices and annual compliance testing. See permit condition III.B.1.
			CH_4	0.01		
			N_2O	Negligible[4]		
TEG-2, FLR-5, FLR5-MSS	FLR-5, FLR5-MSS	Flare	CO_2	1,301	1,301	Good combustion practices and annual compliance testing. See permit condition III.C.1.
			CH_4	0.07		
			N_2O	Negligible[4]		
FUG-FRAC-5	FUG-FRAC-5	Plant-wide Fugitive Components	CO_2	No Numerical Limit Established[5]	No Numerical Limit Established[5]	Implementation of LDAR Program. See permit condition III.D.1.
			CH_4	No Numerical Limit Established[5]		
ATM-MSS	ATM-MSS	MSS Emissions to Atmosphere	CH_4	No Numerical Limit Established[6]	No Numerical Limit Established[6]	Implementation of LDAR Program. See permit condition III.D.2.
Totals[7]			**CO_2**	**160,091**	**160,241**	
			CH_4	**3.05**		
			N_2O	**0.28**		

1. Compliance with the annual emission limits (tons per year) is based on a 12-month rolling average basis.
2. The TPY emission limits specified in this table are not to be exceeded for this facility and include emissions from the facility during all operations and include MSS activities.
3. Global Warming Potentials (GWP): CH_4 = 21, N_2O = 310
4. All values indicated as negligible are less than 0.01 TPY with appropriate rounding.
5. Fugitive process emissions are estimated to be 0.01 TPY CO_2, 0.11 TPY CH_4, and 2.32 TPY CO_2e.
6. MSS emissions to the atmosphere are estimated to be 0.08 TPY CH_4 and 1.68 TPY CO_2e.
7. The total emissions for CH_4 and CO_2e include the PTE for process fugitive emissions of CH_4. These totals are given for informational purposes only and do not constitute emission limits.