Docket R-2022-XXXXXXX

Volume 2

Philadelphia Gas Works

Before The

Pennsylvania Public Utility Commission

Computation of Annual Purchased Gas Costs
For Twelve Months Ending August 31, 2023

66 Pa.C.S. § 1307(f)

Information Submitted Pursuant To:

66 Pa.C.S. §§ 1307(f), 1317, 1318 and
52 Pa. Code § 53.61, et seq.

February 1, 2022

Philadelphia Gas Works 1307(f) - 2022 Prefiling

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Docket No. R-2022-XXXXXXX
Item 53.64(c)(5)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(5) A listing and updating, if necessary, of projections of gas supply and demand provided to the Commission for any purpose—see § 59.67 (relating to formats). In addition, provide an accounting of the difference between reported gas supply available and gas supply deliverable—including storage—from the utility to its customers under various circumstances and time periods.

Response:

Please see the attached document. PGW's next Annual Resource Planning Report (Forms 1 and 2) is due for submission to the Commission on March 1, 2022, and an updated Annual Resource Planning Report is not available at this time.

ANNUAL RESOURCE PLANNING REPORT

Philadelphia Gas Works

Philadelphia, Pennsylvania

March 2021

Forms 1 & 2

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122

ANNUAL RESOURCE PLANNING REPORT
MARCH 2021

Forms 1 & 2

Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Section 59.81

PHILADELPHIA GAS WORKS

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Section 59.81: **General**

Pursuant to Section 59.81 (a), each major jurisdictional gas utility must file an annual resource planning report (ARPR) on or before June 1, 1996 and June 1 of each succeeding year, except Form 1A/2A which filing date is March 1. The report must be submitted to:

Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

One courtesy copy should also be submitted to:

Pennsylvania Public Utility Commission
Conservation, Economics and Energy Planning
P.O. Box 3265
Harrisburg, PA 17105-3265

Also submit one (1) copy to the following:

Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1921

Office of Small Business Advocate
Suite 202, Commerce Building
300 N. Second Street
Harrisburg, PA 17101

Be sure to indicate the name and telephone number of at least one individual at the company who is familiar with the filing and will be available to answer any questions the Commission staff may have. You may also wish to list those individuals who are directly involved in the preparation of the various document components.

Information contained in annual resource planning reports must be utility-specific. The report should follow an outline similar to that which is contained herein, with narrative accompanying the required data. Forms may be modified to accommodate wide columns of numbers and enhance readability, but the general format should be used to maintain consistency.

This information is not generally considered confidential. Utilities are obligated to provide complete information. However, we will treat as confidential those portions of the report designated by the utility as proprietary. If a utility's proprietary claim is challenged, the Commission will direct the utility to file a petition for protective order pursuant to 52 PA Code 5.423.

All questions concerning the reporting requirements for Forms IRP Gas 1A through 9 should be addressed to Pennsylvania Public Utility Commission Bureau of Conservation, Economics and Energy Planning.

Response: Forms 1A, 1B, 2A, 2b, and 2C along with a general discussion of the methodologies, data sources, and assumptions are being submitted to meet the requirements of the March 1 filing.

All questions concerning the ARPR should be directed to Mr. Florian Teme Vice President, Marketing & Gas Planning at 215-684-6463. The following individual is available to answer questions concerning Forms 1 and 2: Ms. Maria Hogan, Director – Gas Planning & Rates at (215) 684-6618.

Section 59.81 **Forms IRP-Gas 1A, and 1B – Annual and Peak Day Demand**

The load growth projections shall reflect the effects of price elasticity, market induced conservation, building and appliance efficiency standards, and the effects of the utility's existing and planned conservation and load management activities.

Response: Please see the attached documentation and forms.

Section 59.81 **Forms IRP-Gas 2A, 2B and 2C - Annual and Peak Day Energy Resources, Transmission and Storage Contracts**

The forecast of energy sources shall indicate sources of all presently available and new supplies which the utility estimates will become available, displayed by component parts.

Response: Please see the attached documentation and forms.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

PHILADELPHIA GAS WORKS
800 WEST MONTGOMERY AVENUE
PHILADELPHIA, PENNSYLVANIA

Annual Resource Planning Summary Report

Filed: March 2021

Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Sections 59.81-59.84

PHILADELPHIA GAS WORKS

2021 Annual Resource Planning Summary Report

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Introduction

By Order entered January 11, 1996, the Pennsylvania Public Utility Commission (PUC) adopted final regulations (52 PA Code §§ 59.81 - 59.84) which set forth revised requirements for filing an Annual Resource Planning Report (the Plan). The Plan submitted represents Philadelphia Gas Works' (PGW or the Company) belief that integrated resource planning (IRP) is a workable approach to utility planning.

This plan summary contains historical data and projections for annual, winter and peak day supply to meet projected customer requirements in a least cost manner, while ensuring adequate and reliable service. It is organized into the following five sections:

I. PGW's Overall Approach to Integrated Resource Planning

II. Supply Forecasting Methodology and Assumptions

III. Demand Forecasting Methodology and Assumptions

IV Design Day Forecasting Methodology and Assumptions

V. PGW Corporate Modeling System

I. PGW's Overall Approach to Integrated Resource Planning

PGW Optimization Standard for Purchasing and Utilizing Gas Supplies

As reasonably anticipated PGW intends on meeting its contractual obligations to supply all of its current firm customers in its service territory on the coldest day, throughout the heating season and throughout the year. Projected customer requirements for design day and design winter conditions form the basis for capacity commitments for pipeline supply, storage, and transportation contracting.

Natural gas supplies are purchased under a portfolio approach with PGW intending to secure the lowest overall price consistent with the corporate goals of reliability and security of supply. In addition, consideration is given to maintaining a diversity of sources and types of supply, coupled with contractual and operational flexibility on both a daily and seasonal basis. Short term purchases from spot market sources are utilized to the maximum degree that they are more economical, available, and transportable.

Natural gas supplies are utilized so as to minimize gas costs subject to reliability constraints. Supply contract obligations are honored and prudent Gas Control operational requirements are assumed. Storage gas is drawn down so as to always maintain an inventory level sufficient for the remaining winter in the event that design temperature conditions should occur in the remaining segment of the winter season. Within the above parameters, priority is given to utilizing the most economical sources of supply first within the context of preserving the capability of meeting seasonal and annual demands rather than the momentary daily requirements. All facilities and sources of supply – flowing, storage and LNG – are available to achieve the intended end, namely, minimizing gas costs subject to reliability constraints.

II. Supply Forecasting Methodology and Assumptions Basic Assumptions

The PGW Gas Supply Policy Committee, comprised of senior corporate management as well as Gas Planning, Gas Control, Gas Supply, and Regulatory departmental management, approved the aforementioned Optimization Standard for Purchasing and Utilizing Gas Supplies (Section I). All natural gas purchases continue to be made in accordance with this standard. Projected sales, revenues and natural gas expenses in this report result from this agreement, particularly in the areas of inventory valuation, priorities of gas selection and interruptible supply availability.

Incorporated into PGW's projections are additional implementation steps involved with developing a cohesive gas supply/demand strategy for the near term and the longer range. These include developing a cost relationship comparison for current resources and a review of current contract terms and alternatives for continuing, extending, modifying or eliminating contracts. In order to achieve this while maintaining a balance between economics and security of supply, the Company uses a portfolio strategy approach. This approach incorporates a menu driven selection of services which allows the Company to choose only those specific services necessary to meet its requirements. This is achieved by taking into consideration transportation capacity rights and then sources of supply are contracted to cover the firm transport rights over differing seasonal obligations.

Operating flexibility is sustained by variations in contract stipulations to permit the system to swing on the most economical gas supplies available while maintaining the ability to supply rapidly fluctuating temperature requirements. Storage facilities are substituted wherever opportunity affords to reduce annual expense for flowing 365 day pipeline service without reducing design day and design winter season delivery capability. Direct control of all storage is paramount to permit PGW to minimize winter costs by injecting lower priced purchases and to cycle storage to balance daily take fluctuations to avoid overrun/balancing charges.

PGW's supply strategy incorporates maintaining full current winter day deliverability with regard to transportation capacity but to convert, where possible, to storage rather than winter flowing contracts to enhance financial and operational flexibility. A variety of longer term supply contracts are necessary to support pipeline transportation capacity because reliance upon best effort spot suppliers to fill wintertime supply requirements to meet firm customers' demands has proven to be an unreliable alternative. As a result, longer-term contracts are utilized to support firm transportation capacity. To accomplish this end, the Company purchases winter supply contracts with daily deliverability equal to approximately 37% of the contractual daily transportation entitlements on its two interstate pipelines with direct connections to PGW's service territory. Additionally, these supply contracts match the contractual entitlements of the two pipelines by sourcing supply in a manner consistent with the pipeline's upstream contractual requirements. In this way, PGW not only helps ensure the security of supply by sourcing the gas from geographically diverse supply regions, but this diversity also allows PGW to take advantage of the pricing basis differential inherent in these supply locations.

These contracts all contain the ability to fix the price for upcoming months as well as to allow the pricing to default to an agreed upon market index when there is no market advantage in fixing a price before the month begins. PGW uses this fixed price option in conjunction with its Gas Cost Rate (GCR) filing (the GCR filing includes pricing based upon the NYMEX) by always attempting to buy under the GCR forecasted prices. Through the matching of the duration supply contracts to a seasonal demand, such as the winter operating season, the firm ratepayers benefit from not paying demand charges year-round.

A second component of PGW's supply portfolio, or a volume equal to 27% of pipeline capacity, is purchased gas based on the daily midpoint price published in "Platt's Gas Daily". These contracts allow for daily change in volumetric take. This allows the Company to effectively shut-off higher priced supply, replacing such supply with daily cheaper spot priced gases. Under assumed normal winter conditions, PGW utilizes WSS storage field in a manner similar to third party supply. Specifically, this storage contract does not contain transportation to the PGW city gate. Therefore, these storages must flow within PGW's contractual upstream capacity rights on TGPL.

Delivery from these fields utilizes approximately 8% of the daily TETCO and TGPL capacity rights to the Philadelphia city gates. These storage fields also act as a physical fixed price to counter winter price conditions since the WACOG usually reflects a winter/summer pricing differential. Additionally, PGW purchases 17% of its supply using day purchases as needed and releases eleven percent (11%) of its capacity to its choice suppliers.

PGW's summer purchasing strategy also incorporates a portfolio approach to the purchase of system supply and storage refill. The GCR filing is again used as a yardstick in purchasing supply for both system supply and storage refill. PGW attempts to always purchase a portion of its supply needs below the projected GCR cost estimate with a portion of the portfolio purchased at default, first-of-the-month pricing. These first of the month pricing option contracts, in most instances, allow PGW to evaluate daily spot prices and provide for a turn-off of first-of-the-month index priced supply in favor of the purchase of more advantageous daily spot purchases.

Operating conditions permitting, the Company enters into the FERC approved capacity release market to offset demand charges it pays for its firm transportation and the incremental off-systems sales market when it is economically advantageous for the firm ratepayer. In both instances, these opportunities are sought only when firm customer needs are satisfied. Additionally, PGW's bundled storages and LNG can be utilized as a substitute for higher price gas supply based on market pricing conditions and the results of PGW's status report. Effectively, the Gas Supply Group is at all times studying the market for any economic advantage it can bring to the firm ratepayer.

III. Demand Forecasting Methodology and Assumptions Basic Assumptions

PGW uses a combination of four basic methods to develop demand projections. They are:

1) Historical Data -- data showing long-term demand trends, conservation and utilization patterns by the various classes of customers -- Residential, Commercial, Industrial and Interruptible.
2) Customer Survey -- Information as gathered by PGW's Marketing Department and used for annual projections by month and year.
3) Relative End Use -- Projections via Marketing methods of customer load sizing by appliance type, maximum input, maximum summer and winter full load hour (FLH) calculations which are used to develop yearly and monthly demand requirements.
4) Judgment -- Experienced opinion as applied to the evaluation of the combination of all data to develop the basic demand requirements.

Customer Demand

The total system-wide demand is a function of the projected gas demand per customer and the anticipated number of customers in each class. In determining customer demand, consideration is given to projecting current customer usage, augmented by significant gains or losses in each of numerous homogeneous groups for the period being projected. The Gas Planning Department attempts to determine for each customer class, the level of demand relating to experienced temperatures and the component of demand that is apparently not affected by changes in temperature. Within each class the summer and winter usage patterns are established from historical records. Summer data provides an insight into each class of customers' non-temperature sensitive load requirements, or baseload, which can be expressed in terms of thousands of cubic feet (Mcf) per day, per customer. Similarly, winter data, after removal of the daily baseload level, provides the temperature sensitive load requirements for each class of customer.

This usage primarily reflects space heating but also includes such other temperature sensitive needs as water heating attributable to colder ground water inlet temperatures and similar process variations. This overall heating requirement can be expressed in terms of the cubic feet of gas utilized per degree of temperature change on a per customer basis for each separate customer classification.

In addition, consideration must be given to the variation of customer utilization patterns for space heating over the year, recognizing the transitional fall start-up of heaters, the deep winter period needs and the tapering off and shut-down which occurs in the spring. These usage patterns taken in conjunction with anticipated customer counts and appropriate temperature patterns form the basis of determining class and total system demands. Due to the inconsistencies of weather and weather forecasting techniques, no attempt is made to predict the specific daily temperatures of the projection period. Instead, PGW has developed a normal monthly temperature pattern by analyzing statistical records of actual temperature patterns over a 20-year period. This pattern reflects 3,931 degree-days annually distributed in a stylized pattern preserving the monthly range of colder to warmer daily temperatures experienced in the January to May period and warmer to colder daily temperatures in the September to December period.

The term "degree days" quantifies the number of degrees of temperature below a base level of 65 degrees Fahrenheit and is used as a tool to measure space heating requirements, i.e. on a day experiencing an average temperature of 40 degrees Fahrenheit, there would be 25 degree days. The annual 3,931 degree days, which are composed of the PGW normal monthly temperature patterns, form the basis of the calculation of the temperature sensitive component of demand. The application of the above described baseload, space heating factors and customer counts, when applied to a calendar based daily temperature pattern, produce a daily calculation of total customer requirements identified as sendout. It should be noted that there is a difference between sendout volume and sales volume. Sendout represents those volumes metered at the city gate to supply customers' requirements while sales are those volumes registered on customer meters. The variation between sendout and sales, after adjustments, is that portion which is lost and unaccounted for in the PGW distribution system.

Sales and sendout differ on a monthly basis in the degree day distribution pattern. For efficiency, meter reading and billing efforts are distributed uniformly over the available number of working days in a month and the majority of PGW customers are divided into 20 individual groups or cycles containing residential, commercial and industrial accounts within a specific geographic area. When these cycle customers are billed each month they reflect meter reading usage not for the calendar month being billed, but for the number of days and temperature pattern of degree-days experienced during their specific interval between meter readings. For example, assume the month of January contained 900 calendar degree-days. The customers in cycle 10 being billed for the month of January might have had meter readings taken on December 15 and again on January 17. Sales billed and reported in the Company records for these customers would reflect the number of days and degree days between these reading dates rather than the 900 degree days of the month. Similarly, cycle 1 customers that might have had meter readings taken on December 1 and January 2 would reflect principally the month of December temperature experience, whereas, cycle 20 customers with meter readings taken possibly December 28 and January 29 would reflect principally the month of January temperature experience.

An average of the 20 cycles (Average Cycle Degree-Days) is used as the temperature pattern upon which to project the volume of sales in the forecast period. Both projections of sales and sendouts represent the full demand for that period from both firm and interruptible customers.

Methodology Used to Develop Monthly Estimates

A trial domestic factor is developed by classes of customers from sales reported for the summer months in the previous year. This average factor is then utilized in the sendout formula with the customer counts for the months of July, August and September. A comparison between what the formula calculates and the actual experienced for those three months is ascertained and the trial domestic (baseload) factors are finalized to replicate the total sendout experienced.

The finalized domestic factors (DOMs) are then utilized in conjunction with the actual sales and customer counts for the months of December, January and February to determine the average Mcf per degree day for each of the individual months for the remaining temperature sensitive load. The results are weighted by degree-days to give an average value which is utilized as a trial value for the heating factor.

The finalized domestic factor and the trial heating factor developed, as such, are then applied in the sendout calculations together with customer counts for the months of December, January and February (the peak winter heating period) to project an estimated sendout for each of these months. The projected sendout is then compared with the actual sendout experienced. Any variation between the projected and actual is adjusted to force the replication of the actual sendout experience thus resulting in the determination of a finalized heating factor.

To project the number of customers for each individual rate class, each rate class of customers are reviewed and accumulated individually. Current customers are ascertained from the number of billings data available from sales and revenue actually experienced immediately prior to the commencement of a model run. Declines are projected for anticipated losses to electric and other fuels, demolitions and transfers to other rates. Direct transfers from a non-heating to a heating account, as a result of a current customer's conversion to gas heat, moves the domestic load to the new category. Projected additional customers are developed by the Marketing Department where staff dealing with individual classes of customers and having the most direct knowledge of conditions within their expertise, project annual load additions which are translated into customer counts based upon typical customer usage for that individual customer class. The approximate month of turn-on is also developed to permit reflection of the effective portion of the load addition within the fiscal period under study. Interruptible class customers, as well as other large special accounts, are detailed individually incorporating expected gains and losses as direct contact and experience has indicated.

The base revenue projections for both firm and interruptible customer groups are derived as the product of the projected sales volumes and the present tariff rate for each individual customer class within each group. The GCR revenue projections are derived as the product of the GCR factor and the projected sales volumes to the firm GCR customers.

IV. Design Day and Design Hour Forecasting Methodology and Assumptions

Each year, a six year estimate of Design Day and Design Hour requirements anticipated under design day and design hour operating conditions is prepared to ensure that adequate resources are under contract and to further ensure that PGW can fulfill its supply obligation for its firm customer requirements on a design day and design hour.

The projected demands for design day are developed utilizing previous winter periods data for all weekdays where the temperature average for the day is 32 degrees Fahrenheit or below. The total sendout for these days as recorded under actual conditions and is reduced to firm sendout by removal of the interruptible load. A computer generated linear regression procedure is utilized to develop a sendout model from actual daily sendouts and degree days, and the process is repeated in a quadratic regression and a cubic regression procedure. From the predicted sendouts in the regression, which are within a reasonable percent of error to the actual sendout, factors are derived to replicate the actual sendouts. The factors derived from this are used to determine the current load requirements for a 0 degrees Fahrenheit day and from this data, the load for a -5 degrees Fahrenheit hour is calculated. PGW's Marketing Department's load projections for present and future years are then applied to these requirements to develop design day and design hour present and future load requirements. This is achieved by the addition of the projected marketing load growth on an annual basis (by day) to the derived base-year design day requirements.

V. PGW Corporate Modeling System

General Description

The Corporate Modeling System is a tool used by PGW management to project sales, revenues and expenses, as well as to examine key planning strategies and evaluate their effects on company operations. The system provides the ability to determine the results of alternate plans and scenarios, while at the same time allowing for responses to "what if" type situations quantifying revenue and expenses. The system combines the power of the computer with the experience of management to develop both short and long range projections based upon experienced historical data for sales and sendout volumes, raw material expenses and revenues. The corporate model system is composed of five separate parts. Each part operates independently but requires substantial external data inputs as well as data output results from one or more of the other parts in the system.

Gas Demand Model

The Gas Demand Model is used to forecast total requirements for gas based upon current customer usage experience with adjustments for projected gains and losses. Input data includes domestic and space heating usage factors, customer counts by rate classifications, temperature patterns and results in projections of sales and sendout volumes. Detail and summary reports include sales and sendout by rate classification. This data is then used by the Gas Supply Model.

Gas Supply Model

The Gas Supply Model is used to dispatch the various supply sources in accordance with contract availability limitations. It develops the necessary balance between supply and demand, which reflects plant fuel and storage injection requirements, as well as customer demands by identifying the availability of interruptible load balancing sales. Detail and summary reports include daily and monthly load requirements, the volumes taken from each source by pipeline contract, storage balances, LNG requirements, etc.

This model is also used to determine natural gas and other raw material costs dispatched. The model tracks the various cost components of each contract – the demand, capacity, commodity, injection and withdrawal charges – providing monthly and annual details and summary information including inventory valuations and expenses for supplemental LNG supplies. This data is then used by the Gas Cost Rate Model.

Gas Cost Rate Model

The Gas Cost Rate Model is used to develop the GCR. This model, in conjunction with the Gas Supply Model, ascribes responsibility for the raw material costs to firm rate classes in accordance with PGW's tariff requirements, and compensates for the Interruptible Revenue Credit, interest, gas transportation Supplier Storage Peaking and migration charges and the previous over or under billing of fuel expenses. The GCR is then used by the Revenue Model.

Revenue Model

The Revenue Model is used to project billed revenue by rate classification in accordance with PGW's rate tariffs. It prepares the net billed revenue, GCR revenues, senior citizen discounts, and cycle billing information all detailed by rate classification. The detail and summary reports provided by this model are directed to the accounting and financial departments for inclusion in various financial reviews.

Summary

The Corporate Modeling System allows PGW management to effectively address supply/demand balancing, supply facilities planning, projected sales, cost, revenues, and sendout volumes. Results assist in the development of PGW's annual Operating Budget, setting of the GCR and planning of supply resources.

The model also provides a Status Report for the evaluation of remaining winter period requirements on both normal and design temperature patterns and the extrapolation of the current year based upon the experience to date and an assumption of temperatures anticipated for the remaining period of the year, this latter acting as a guide for both financial cash flow planning and winter operations.

FORM-IRP-GAS-1A: ANNUAL GAS REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(VOLUMES IN MMcf)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Firm Requirements:						
Retail Residential	34,801	31,576	31,298	33,604	33,160	33,130
Retail Commercial	7,913	7,012	7,302	7,664	7,441	7,396
Retail Industrial	508	399	441	478	415	402
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	1,027	740	1,454	1,135	1,173	1,170
Company Use	262	209	273	248	273	273
Other - Prior Period Adjustment	-	-	-	-	-	-
Subtotal Firm	44,511	39,937	40,768	43,128	42,461	42,370
Interruptible Requirements:						
Retail	205	588	49	65	63	63
Electric Power Generation	-	-	-	-	-	-
Company's Own Plant	57	57	80	103	126	126
Unaccounted For Gas	6	20	11	0	0	0
Subtotal Interruptible	268	664	141	168	189	189
SUBTOTAL FIRM AND INTERRUPTIBLE	44,778	40,601	40,909	43,296	42,650	42,559
Transportation:						
Firm Residential	1,149	1,504	1,748	2,029	1,595	1,594
Firm Commercial	4,605	4,300	4,323	4,638	4,920	4,973
Firm Industrial	402	351	396	431	471	483
Interruptible Residential	-	-	-	-	-	-
Interruptible Commercial	7,350	7,502	7,079	7,038	7,891	7,891
Interruptible Industrial	6,927	5,549	4,939	4,935	6,271	6,271
Other - Non-Utility Power Producers	13,150	12,721	13,340	13,150	13,150	13,150
Subtotal Transportation	33,583	31,927	31,825	32,222	34,298	34,362
TOTAL GAS REQUIREMENTS	78,362	72,528	72,734	75,518	76,949	76,922
Increase (Decrease)	1,534	(5,834)	206	2,784	1,431	(27)
Percent Change (%)	2.00%	-7.44%	0.28%	3.83%	1.89%	-0.03%

FORM-IRP-GAS-1B:PEAK DAY REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(VOLUMES IN MMcf)

	Historical Data		Current Year [2]	Three Year Forecast [1]		
Index Year	-2	-1	0	1	2	3
Actual Year	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Firm Requirements:						
Retail Residential	382	279	418	446	437	437
Retail Commercial	87	62	98	102	98	98
Retail Industrial	6	4	6	6	5	5
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	11	7	19	15	15	15
Company Use	3	2	4	3	4	4
Other	-	-	-	-	-	-
Subtotal Firm	488	353	545	572	560	559
Interruptible Requirements:						
Retail	0.0	0.0	0.2	0.2	0.2	0
Electric Power Generation	-	-	-	-	-	-
Company's Own Plant	0.3	0.3	0.5	0.5	0.6	1
Unaccounted For Gas	0.0	0.0	-	0.0	0.0	0.0
Subtotal Interruptible	0.4	0.4	0.7	0.7	0.8	0.8
SUBTOTAL FIRM AND INTERRUPTIBLE	488	353	546	573	561	560
Transportation:						
Firm Residential	10	12	25	28	27	27
Firm Commercial	33	27	50	53	51	52
Firm Industrial	3	2	4	4	5	5
Interruptible Residential	-	-	-	-	-	-
Interruptible Commercial	51	41	-	-	-	-
Interruptible Industrial	30	17	-	-	-	-
Other - Non-Utility Power Producers	52	51	-	-	-	-
Subtotal Transportation	179	151	78	85	83	84
TOTAL GAS REQUIREMENTS	668	505	624	658	644	644
Increase (Decrease)	(16)	(163)	120	34	(14)	(0)
Percent Change (%)	-2.4%	-24.4%	23.7%	5.4%	-2.1%	-0.1%

(1) Peak Day is forecasted at a 2 degree temperature.

(2) Current Year Peak Day is forecasted at a 5 degree temperature.

FORM-IRP-GAS-2A: ANNUAL/PEAK SUPPLY
TABLE 1: ANNUAL/PEAK SUPPLY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data				Current Year (2)		Three Year Forecast (1)					
Index Year	-2		-1		0		1		2		3	
Actual Year	2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Gas Supply for Sales Service												
Spot Purchases	46,124	134	42,454	152	42,740	268	44,450	239	44,173	267	43,981	266
Storage Withdrawals	10,634	154	9,109	166	9,153	162	15,112	190	14,343	161	14,579	161
LNG Withdrawal	1,914	200	1,141	36	1,575	174	1,910	209	1,708	192	1,799	191
LNG Purchases	-	-	-	-	-	-	-	-	-	-	-	-
Exchanges with other LDCs	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total Gas Supply	58,672	488	52,704	353	53,468	604	61,472	637	60,223	620	60,360	618
Total Transportation Services	33,583	179	31,927	151	31,825	32	32,222	33	34,298	36	34,362	38
TOTAL GAS SUPPLY AND TRANSPORTATION SERVICE	92,256	668	84,631	505	85,293	635	93,694	670	94,522	656	94,722	656
Deductions												
Pipeline: TRANS FUEL	1,073	-	986	-	830	7	949	6	926	8	926	8
Storage: INJ, INJ FUEL, WITHDRAW FUEL, TRANS FUEL	10,526	-	9,384	-	9,924	1	15,188	2	14,817	1	15,034	1
LNG: LIQUE, INJ FUEL, TRANS FUEL	2,295	-	1,733	-	1,805	3	2,040	4	1,830	3	1,841	3
Sales to other LDC's	-	-	-	-	-	-	-	-	-	-	-	-
Total Deductions	13,894	-	12,103	-	12,559	11	18,176	12	17,573	12	17,800	12
NET GAS SUPPLY	78,362	668	72,528	505	72,734	624	75,518	658	76,949	644	76,922	644
BTU	1.036		1.034		1.031		1.031		1.036		1.036	

(1) Peak Day is forecasted at a 2 degree temperature.

(2) Current Year Peak Day is forecasted at a 5 degree temperature.

FORM-IRP-GAS-2B: NATURAL GAS TRANSPORTATION
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in MMcf)

	Historical Data				Current Year		Three Year Forecast					
Index Year	-2		-1		0		1		2		3	
Actual year	2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
City Gate Transportation Contracts:												
Transcontinental Transmission Corp.	3,980	59	3,988	60	4,000	60	4,000	60	3,980	59	3,980	59
Texas Eastern Transmission Corp.	2,240	43	2,242	43	2,248	43	2,248	43	2,248	43	2,248	43
Texas Eastern Transmission Corp.	716	20	-	20	-	20	-	20	-	20	-	20
Transcontinental Transmission Corp.	442	5	443	5	444	5	444	5	444	5	444	5
Total	7,379	127	6,673	127	6,692	128	6,692	128	6,673	127	6,673	127
Upstream Transportation Contracts:												
Transcontinental Transmission Corp.	58,207	159	58,479	160	58,489	160	58,489	160	58,207	159	58,366	159
Texas Eastern Transmission Corp.	26,424	72	26,547	73	26,552	73	26,552	73	26,424	72	26,496	72
Texas Eastern Transmission Corp.	8,393	23	8,432	23	8,434	23	8,434	23	8,393	23	8,416	23
Texas Eastern Transmission Corp.	2,571	17	2,576	17	2,584	17	2,584	17	2,571	17	2,571	17
Texas Eastern Transmission Corp.	2,571	17	2,576	17	2,584	17	2,584	17	2,571	17	2,571	17
Transcontinental Transmission Corp.	171	2	171	2	172	2	172	2	171	2	171	2
Texas Eastern Transmission Corp.	1,762	5	1,770	5	1,775	5	1,770	5	1,762	5	1,766	5
Total	100,099	297	100,553	297	100,589	298	100,584	298	100,099	297	100,359	297
Storage-Related Transportation Contracts:												
Dominion Transmission Inc.	9,058	25	9,100	25	9,102	25	9,102	25	9,058	25	9,083	25
Dominion Transmission Inc.	2,744	8	2,757	8	2,757	8	2,757	8	2,744	8	2,751	8
Total	11,802	32	11,857	32	11,859	32	11,859	32	11,802	32	11,834	32

Conversions at 1036 Btu

FORM-IRP-GAS-2C: NATURAL GAS STORAGE
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in MMcf)

	Historical Data				Current Year		Three Year Forecast					
Index Year	-2		-1		0		1		2		3	
Actual year	2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Transcontinental Transmission Corp.	3,980	59	3,988	60	4,000	60	4,000	60	3,980	59	3,980	59
Dominion Transmission Inc.	3,654	32	3,655	32	3,666	32	3,666	32	3,648	32	3,648	32
Transcontinental Transmission Corp.	3,120	33	3,150	33	3,159	33	3,159	33	3,144	33	3,144	33
Texas Eastern Transmission Corp.	2,409	43	2,410	43	2,417	43	2,417	43	2,406	43	2,406	43
Texas Eastern Transmission Corp.	2,240	20	2,242	20	2,248	20	2,248	20	2,238	20	2,238	20
Transcontinental Transmission Corp.	442	5	443	5	444	5	444	5	442	5	442	5
Total	16,562	277	15,888	193	15,934	193	15,934	194	15,857	193	15,857	193

Forecasted Dth to Mcf Conversions at 1036 BTU.

	Contract Expiration Date [1]
Transcontinental Transmission Corp.	3/31/2024
Dominion Transmission Inc.	3/31/2025
Transcontinental Transmission Corp.	9/30/2021
Texas Eastern Transmission Corp.	4/30/2026
Texas Eastern Transmission Corp.	4/30/2026
Transcontinental Transmission Corp.	4/15/2022

[1] For purposes of this report, contracts that are due to expire are assumed renewed for the forecast years.
[2] Contract terminated in 2016

Docket No. R-2022-XXXXXX
Item 53.64(c)(6)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing, of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) as utility seeking recovery of purchased as costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(6) Each Section l307(f) utility shall file with the Commission a statement of its current fuel procurement practices, detailed information concerning, the staffing and expertise of its fuel procurement personnel, a discussion of its methodology for obtaining a least cost and reliable source of gas supply, including a discussion of any methodologies, assumptions, models or rules of thumb employed in selecting its gas supply, transportation and storage mix, its loss prevention strategy in the event of fraud, nonperformance or interruption of performance, its participation in capacity release and reallocation programs, the impact, if any, upon least cost fuel procurement by constraints imposed by local transportation end users, interruptible service, balancing, storage and dispatching, options, and its strategy for improving its fuel procurement practices in the future and timetable for implementing these changes.

Response:

I. Current Strategy

PGW’s current strategy for meeting the system's supply Requirements is a portfolio approach. The Company's supply portfolio is split into four categories. First, the Company enters baseload supply contracts, which account for approximately thirty-seven percent (37%) of PGW's daily firm transportation entitlements on both Enbridge’s Texas Eastern (formerly Spectra Energy Gas Transmission and Williams’ Transco Gas Pipelines.

The Enbridge and Williams' pipelines are the only interstate pipeline facilities with physical connections to the PGW service territory. These supply contracts also recognize pipeline receipt and delivery rights. By sourcing supply in this manner, PGW not only ensures security of supply from the pipelines, but also can take advantage of varying basis differentiated pricing in the market. These contracts all contain the ability to set the price for upcoming months, or to have the pricing default to an agreed upon market index.

Second, an additional twenty-seven percent (27 %) is priced at the "gas daily mid-point" for each day of usage. These contracts allow for daily changes in volume. The operational flexibility of these contracts allows the company to increase or decrease gas supply to meet variations in send out requirements.

Third, the company utilizes one (1) pipeline storage services, as an additional source of supply. This storage service does not contain bundled transportation and therefore are moved to the city gates within PGW's firm interstate pipeline capacity. This service represents eight percent (8 %) of supply at a fixed price. The Company will again attempt to release capacity for year periods totaling 33,000 dekatherms as it did last year. If this proves less economic for the ratepayer, the Company will release these capacities for the winter and summer season separately. These capacity releases have twenty-four-hour recall rights. If the need arises, PGW can recall this capacity and use its unbundled storage to fill the TGPL portion 10,000 dekatherms and depend on market-based prices to fill the TETCO portion 23,000 dekatherms. The Company also releases firm capacity to its firm choice suppliers on a monthly basis based upon the suppliers' firm pool size.

Additionally, PGW utilizes bundled storage and LNG to meet operational requirements and to accomplish other cost saving initiatives. Specifically, once design winter sendout requirements are met, the company may utilize bundled storage and LNG inventories to displace higher priced supply based on the current market conditions. PGW uses a portfolio approach to address system supply and storage refill in the traditional non-peak season. The Gas Supply area uses the GCR filing as a template to purchase gas volumes for both system supply and storage refill below the projected cost, when possible. However, some proportion of the supply will always be subject to spot market pricing, either daily or monthly due, to the constant need to purchase gas to meet sendout variations that are inherent in a residential firm heating load. PGW

seeks to recoup demand charges for its firm transportation through the FERC approved capacity release mechanisms.

The Company also enters into the incremental off systems sales market to generate additional revenue when it is economically advantageous to do so. At all times the Company is studying the market for any economic advantage that can be derived in support of the firm ratepayer.

II. Overview of Gas Supply Section

The Gas Supply Section of Gas Management is comprised of four departments: Gas Supply, Gas Transportation, Gas Accounting and Gas Control. The Gas Supply Section is responsible for ensuring that there is always an adequate supply of natural gas available to meet the requirements of PGW's over 490,000 firm customers. The Gas Supply Section accomplishes this through continuous interaction with various departments within PGW.

The staff of the Gas Supply Section is expected to maintain an in-depth working knowledge of all facets of the natural gas supply markets. The staff members of the four departments are required to maintain a working knowledge of PGW's natural gas contracts and facilities for the purpose of ensuring the safe and efficient operation of the distribution system, in accordance with company procedures, and in compliance with federal, state, and local regulations.

III. Organization and Staffing

Director of Gas Transportation and Gas Control: This person has a five year history working in the Gas Supply area and a five-year history in Gas Processing for PGW. This individual also has a background working in the Oil and Petrochemical industries. This individual has a BS in Chemical Engineer and MBA as well as having a background in natural gas accounting, allocation and confirmation experience under the first stages of FERC Order 636, and its effect on supply portfolio management.

This individual and the staffs of the departments that report to him interact continuously and provide 24/7 coverage in all situations pertaining to the gas supply portfolio and operation of the natural gas facilities. This is done in conjunction with the Gas Supply Committee, as well as everyday meetings with the VP of Gas Management and the other direct reports of the VP of Gas Management. The following departments report directly to this

individual: Gas Supply, Gas Control, Gas Accounting, and Gas Transportation.

Manager, Gas Supply: This person has more than ten years' experience in the utility industry. At PGW, she has six years' experience in gas supply, tariff rates and federal regulatory areas. She has held leadership position representing LDC groups in the pipeline rate case and other proceedings. She holds a B.S. from the Wharton School of the University of Pennsylvania and a PhD in economics. She has completed course work in rates and management. The administrators of Gas Supply and Retail Choice report directly to the manager of gas supply.

Administrator, Gas Supply: this person has eighteen years of experience in the gas supply area. This individual has an MBA in International Business and BBA with a concentration in Management Information Systems, in addition to having an extensive background in the area of gas purchasing. Reporting to this individual are the gas accountants, gas coordinators and gas buyers.

Manager, Gas Control: This person has over ten years in the oil & gas area, is responsible for the day-to-day management of the city distribution grid and daily confirmation of each day's gas volumes. He manages the gas control department on a 24/7 basis. The manager has completed the course work for a BS degree and has extensive experience in the Distribution Department's Pressure Control and Network Analysis area.

Docket No. R-2022-XXXXXXX
Item 53.64(c)(7)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(7) A list of off-system sales, including transportation, storage, or capacity releases by the utility at less than the weighted average price of gas, or at less than the original contract cost of transportation, storage, or capacity supplied to the utility for its own customers.

Response:

The attached schedules list off-system sales, capacity release, and asset management for the period of January 1, 2021 to December 31, 2021.

Schedule 1 – reflects all off-system sales margins for the period January 1, 2021 to December 31, 2021.

Schedule 2 – would reflect any off-system sales transactions that were done at less than the weighted average price of gas. The schedule is blank because none of the deals match the criteria.

Schedule 3 – illustrates all capacity release deals.

Schedule 4 – reflects individual capacity release transactions that were done at less than the weighted average cost of capacity.

Schedule 1
Item 53.64(c)(7)

Philadelphia Gas Works
Pennsylvania Public Utilities Commission
52 Pa. Code §53.61, et seq.
For the Twelve Months Ending December 31, 2021

Off-System Sales			
MONTH	Total Revenue	Ratepayer Margin	Total Credit
Jan-21	$83,497	$14,398	$78,698
Feb-21	$466,225	$288,165	$370,170
Mar-21	$0	$0	$0
Apr-21	$0	$0	$0
May-21	$0	$0	$0
Jun-21	$0	$0	$0
Jul-21	$0	$0	$0
Aug-21	$0	$0	$0
Sep-21	$0	$0	$0
Oct-21	$0	$0	$0
Nov-21	$0	$0	$0
Dec-21	$0	$0	$0

Docket No. R-01XXX

Item 53.64 (c)(7)
Schedule 2

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.
For the Twelve Months Ending December 31, 2021

Item 53.64 (c)(7)

Off system sales at less than WACOG. Identify as Schedule II.

Response:

No deals were enacted under the weighted average cost of gas.

Philadelphia Gas Works
Pennsylvania Public Utilities Commission
52 Pa. Code §53.61, et seq.
For the Twelve Months Ending December 31, 2021

Schedule 3
Item 53.64(c)(7)

	Capacity Release		
	Total	Total	
	TGPL	TETCO	Total
MONTH	Credits	Credits	Credits
Jan-21	$ 521,192	$ 856,582	$ 1,377,775
Feb-21	$ 468,441	$ 767,850	$ 1,236,291
Mar-21	$ 519,344	$ 850,918	$ 1,370,262
Apr-21	$ 341,353	$ 387,504	$ 728,857
May-21	$ 331,205	$ 454,643	$ 785,848
Jun-21	$ 319,569	$ 494,375	$ 813,945
Jul-21	$ 321,590	$ 501,802	$ 823,392
Aug-21	$ 317,816	$ 491,037	$ 808,853
Sep-21	$ 310,862	$ 397,077	$ 707,939
Oct-21	$ 314,523	$ 317,311	$ 631,833
Nov-21	$ 756,705	$ 1,192,891	$ 1,949,596
Dec-21	$ 800,815	$ 1,251,555	$ 2,052,370
TOTAL	$ 5,323,415	$ 7,963,545	$ 13,286,960

Philadelphia Gas Works **Schedule 4**
Pennsylvania Public Utilities Commission **Page 1 of 12**
52 Pa. Code §53.61, et seq. **Item 53.64(c)(7)**
For the Twelve Months Ending December 31, 2021

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
January-21	TETCO	STX - M3	N	2,170	$ 1,228.84	$ 0.5663	$ 1,228.84	EDF Trading
	TETCO	STX - M3	N	21,297	$ 12,059.53	$ 0.5663	$ 12,059.53	Sprague
	TETCO	STX - M3	N	496	$ 281.96	$ 0.5685	$ 281.96	Residents
	TETCO	STX - M3	N	372	$ 212.84	$ 0.5722	$ 212.84	Eligo Energy
	TETCO	STX - M3	N	217	$ 122.34	$ 0.5638	$ 122.34	Median Energy
	TETCO	STX - M3	N	4,340	$ 2,457.67	$ 0.5663	$ 2,457.67	Josco Energy
	TETCO	STX - M3	N	24,118	$ 13,655.35	$ 0.5662	$ 13,655.35	Energy Plus
	TETCO	STX - M3	N	589	$ 335.17	$ 0.5690	$ 335.17	Energy Plus
	TETCO	STX - M3	N	48,949	$ 27,720.47	$ 0.5663	$ 27,720.47	SFE Energy
	TETCO	STX - M3	N	20,739	$ 11,745.71	$ 0.5664	$ 11,745.71	Vista Energy
	TETCO	STX - M3	N	12,865	$ 7,287.92	$ 0.5665	$ 7,287.92	Marathon Power
	TETCO	STX - M3	N	7,967	$ 4,511.01	$ 0.5662	$ 4,511.01	Atlantic Energy
	TETCO	STX - M3	N	1,953	$ 1,106.48	$ 0.5666	$ 1,106.48	American Power
	TETCO	STX - M3	N	2,325	$ 1,319.33	$ 0.5675	$ 1,319.33	Greenlight
	TETCO	STX - M3	N	5,177	$ 2,931.09	$ 0.5662	$ 2,931.09	Statewise
	TETCO	STX - M3	N	217	$ 122.34	$ 0.5638	$ 122.34	Elevation Energy
	TETCO	STX - M3	N	217	$ 122.34	$ 0.5638	$ 122.34	South Bay
	TETCO	STX - M3	N	1,209	$ 686.26	$ 0.5676	$ 686.26	Alpha Gas
	TETCO	STX - M3	N	4,712	$ 2,670.50	$ 0.5667	$ 2,670.50	Shipley
	TETCO	STX - M3	N	4,526	$ 2,564.07	$ 0.5665	$ 2,564.07	Park Power
	TETCO	STX - M3	N	102,362	$ 57,967.74	$ 0.5663	$ 57,967.74	Exelon
	TETCO	STX - M3	N	589	$ 335.17	$ 0.5690	$ 335.17	Nordic Energy
	TETCO	STX - M3	N	10,230	$ 5,793.05	$ 0.5663	$ 5,793.05	WGL Energy
	TETCO	STX - M3	N	14,136	$ 8,006.03	$ 0.5664	$ 8,006.03	Palmco
	TETCO	STX - M3	N	79,794	$ 45,184.66	$ 0.5663	$ 45,184.66	Direct Energy
	TETCO	STX - M3	N	4,495	$ 2,548.14	$ 0.5669	$ 2,548.14	MPower
	TETCO	STX - M3	N	126,170	$ 71,447.56	$ 0.5663	$ 71,447.56	UGI Energy
	TETCO	STX - M3	N	4,743	$ 2,686.41	$ 0.5664	$ 2,686.41	CIMA Energy
	TETCO	STX - M3	N	93,000	$ 77,655.00	$ 0.8350	$ 77,655.00	Vitol
	TETCO	STX - M3	N	486,948	$ 491,817.48	$ 1.0100	$ 491,817.48	Spotlight Energy
				1,086,922			$ 856,582.46	
	TRANSCO	2-6	N	217	$ 118.73	$ 0.54714	$ 118.73	Median Energy
	TRANSCO	2-6	N	217	$ 118.73	$ 0.54714	$ 118.73	South Bay
	TRANSCO	2-6	N	217	$ 118.73	$ 0.54714	$ 118.73	Elevation Energy
	TRANSCO	2-6	N	403	$ 220.41	$ 0.54692	$ 220.41	Eligo Energy
	TRANSCO	2-6	N	496	$ 271.25	$ 0.54688	$ 271.25	Residents
	TRANSCO	2-6	N	620	$ 339.14	$ 0.54700	$ 339.14	Energy Plus
	TRANSCO	2-6	N	620	$ 339.14	$ 0.54700	$ 339.14	Nordic Energy
	TRANSCO	2-6	N	1,209	$ 660.92	$ 0.54667	$ 660.92	Alpha Gas
	TRANSCO	2-6	N	1,953	$ 1,068.26	$ 0.54698	$ 1,068.26	American Power
	TRANSCO	2-6	N	2,201	$ 1,203.73	$ 0.54690	$ 1,203.73	EDF Trading
	TRANSCO	2-6	N	2,356	$ 1,288.36	$ 0.54684	$ 1,288.36	Greenlight
	TRANSCO	2-6	N	4,340	$ 2,373.36	$ 0.54686	$ 2,373.36	Josco Energy
	TRANSCO	2-6	N	4,495	$ 2,457.99	$ 0.54683	$ 2,457.99	MPower
	TRANSCO	2-6	N	4,557	$ 2,491.78	$ 0.54680	$ 2,491.78	Park Power
	TRANSCO	2-6	N	4,743	$ 2,593.46	$ 0.54680	$ 2,593.46	CIMA Energy
	TRANSCO	2-6	N	4,743	$ 2,593.46	$ 0.54680	$ 2,593.46	Shipley
	TRANSCO	2-6	N	5,208	$ 2,848.28	$ 0.54690	$ 2,848.28	Statewise
	TRANSCO	2-6	N	7,967	$ 4,356.74	$ 0.54685	$ 4,356.74	Atlantic Energy
	TRANSCO	2-6	N	10,230	$ 5,594.26	$ 0.54685	$ 5,594.26	WGL Energy
	TRANSCO	2-6	N	12,865	$ 7,035.45	$ 0.54687	$ 7,035.45	Marathon Power
	TRANSCO	2-6	N	14,136	$ 7,730.16	$ 0.54684	$ 7,730.16	Palmco
	TRANSCO	2-6	N	20,739	$ 11,341.04	$ 0.54685	$ 11,341.04	Vista Energy
	TRANSCO	2-6	N	21,297	$ 11,646.08	$ 0.54684	$ 11,646.08	Sprague
	TRANSCO	2-6	N	24,118	$ 13,188.95	$ 0.54685	$ 13,188.95	Energy Plus
	TRANSCO	2-6	N	48,949	$ 26,767.57	$ 0.54685	$ 26,767.57	SFE Energy
	TRANSCO	2-6	N	79,825	$ 43,652.34	$ 0.54685	$ 43,652.34	Direct Energy
	TRANSCO	2-6	N	102,393	$ 55,993.75	$ 0.54685	$ 55,993.75	Exelon
	TRANSCO	2-6	N	126,170	$ 68,996.08	$ 0.54685	$ 68,996.08	UGI Energy
	TRANSCO	3-6	N	310,000	$ 243,784.00	$ 0.78640	$ 243,784.00	Castleton Commodities
	TRANSCO	1-3	N	263,500	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	775,000	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	775,000	$ -	$ -	$ -	Tioga LNG LLC
				2,630,784			$ 521,192.15	

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
February-21	TETCO	STX - M3	N	2,072	$ 1,157.17	$ 0.5585	$ 1,157.17	EDF Trading
	TETCO	STX - M3	N	19,208	$ 10,737.28	$ 0.5590	$ 10,737.28	Sprague
	TETCO	STX - M3	N	840	$ 469.52	$ 0.5590	$ 469.52	Residents
	TETCO	STX - M3	N	616	$ 346.28	$ 0.5621	$ 346.28	Eligo Energy
	TETCO	STX - M3	N	168	$ 94.88	$ 0.5648	$ 94.88	Median Energy
	TETCO	STX - M3	N	3,808	$ 2,129.45	$ 0.5592	$ 2,129.45	Josco Energy
	TETCO	STX - M3	N	22,372	$ 12,506.31	$ 0.5590	$ 12,506.31	Energy Plus
	TETCO	STX - M3	N	532	$ 298.83	$ 0.5617	$ 298.83	Energy Plus
	TETCO	STX - M3	N	43,764	$ 24,462.39	$ 0.5590	$ 24,462.39	SFE Energy
	TETCO	STX - M3	N	18,564	$ 10,376.84	$ 0.5590	$ 10,376.84	Vista Energy
	TETCO	STX - M3	N	10,612	$ 5,933.06	$ 0.5591	$ 5,933.06	Marathon Power
	TETCO	STX - M3	N	7,168	$ 4,007.53	$ 0.5591	$ 4,007.53	Atlantic Energy
	TETCO	STX - M3	N	1,792	$ 1,000.67	$ 0.5584	$ 1,000.67	American Power
	TETCO	STX - M3	N	1,988	$ 1,109.71	$ 0.5582	$ 1,109.71	Greenlight
	TETCO	STX - M3	N	4,564	$ 2,551.54	$ 0.5591	$ 2,551.54	Statewise
	TETCO	STX - M3	N	252	$ 142.34	$ 0.5648	$ 142.34	Elevation Energy
	TETCO	STX - M3	N	196	$ 109.07	$ 0.5565	$ 109.07	South Bay
	TETCO	STX - M3	N	1,064	$ 592.75	$ 0.5571	$ 592.75	Alpha Gas
	TETCO	STX - M3	N	4,256	$ 2,380.86	$ 0.5594	$ 2,380.86	Shipley
	TETCO	STX - M3	N	3,976	$ 2,224.35	$ 0.5594	$ 2,224.35	Park Power
	TETCO	STX - M3	N	90,272	$ 50,456.57	$ 0.5589	$ 50,456.57	Exelon
	TETCO	STX - M3	N	560	$ 313.01	$ 0.5589	$ 313.01	Nordic Energy
	TETCO	STX - M3	N	9,044	$ 5,055.63	$ 0.5590	$ 5,055.63	WGL Energy
	TETCO	STX - M3	N	12,460	$ 6,966.98	$ 0.5591	$ 6,966.98	Palmco
	TETCO	STX - M3	N	71,792	$ 40,127.17	$ 0.5589	$ 40,127.17	Direct Energy
	TETCO	STX - M3	N	3,892	$ 2,176.92	$ 0.5593	$ 2,176.92	MPower
	TETCO	STX - M3	N	113,428	$ 63,399.09	$ 0.5589	$ 63,399.09	UGI Energy
	TETCO	STX - M3	N	4,228	$ 2,361.75	$ 0.5586	$ 2,361.75	CIMA Energy
	TETCO	STX - M3	N	84,000	$ 70,140.00	$ 0.8350	$ 70,140.00	Vitol
	TETCO	STX - M3	N	439,824	$ 444,222.24	$ 1.0100	$ 444,222.24	Spotlight Energy
				977,312			$ 767,850.19	
	TRANSCO	2-6	N	196	$ 107.24	$ 0.54714	$ 107.24	Median Energy
	TRANSCO	2-6	N	196	$ 107.24	$ 0.54714	$ 107.24	South Bay
	TRANSCO	2-6	N	252	$ 137.76	$ 0.54667	$ 137.76	Elevation Energy
	TRANSCO	2-6	N	644	$ 352.24	$ 0.54696	$ 352.24	Eligo Energy
	TRANSCO	2-6	N	868	$ 474.60	$ 0.54677	$ 474.60	Residents
	TRANSCO	2-6	N	560	$ 306.32	$ 0.54700	$ 306.32	Energy Plus
	TRANSCO	2-6	N	560	$ 306.32	$ 0.54700	$ 306.32	Nordic Energy
	TRANSCO	2-6	N	1,092	$ 596.96	$ 0.54667	$ 596.96	Alpha Gas
	TRANSCO	2-6	N	1,820	$ 995.40	$ 0.54692	$ 995.40	American Power
	TRANSCO	2-6	N	2,072	$ 1,133.16	$ 0.54689	$ 1,133.16	EDF Trading
	TRANSCO	2-6	N	1,988	$ 1,087.24	$ 0.54690	$ 1,087.24	Greenlight
	TRANSCO	2-6	N	3,836	$ 2,097.76	$ 0.54686	$ 2,097.76	Josco Energy
	TRANSCO	2-6	N	3,892	$ 2,128.28	$ 0.54683	$ 2,128.28	MPower
	TRANSCO	2-6	N	3,976	$ 2,174.20	$ 0.54683	$ 2,174.20	Park Power
	TRANSCO	2-6	N	4,228	$ 2,311.96	$ 0.54682	$ 2,311.96	CIMA Energy
	TRANSCO	2-6	N	4,284	$ 2,342.48	$ 0.54680	$ 2,342.48	Shipley
	TRANSCO	2-6	N	4,592	$ 2,511.04	$ 0.54683	$ 2,511.04	Statewise
	TRANSCO	2-6	N	7,168	$ 3,919.72	$ 0.54684	$ 3,919.72	Atlantic Energy
	TRANSCO	2-6	N	9,044	$ 4,945.64	$ 0.54684	$ 4,945.64	WGL Energy
	TRANSCO	2-6	N	10,640	$ 5,818.40	$ 0.54684	$ 5,818.40	Marathon Power
	TRANSCO	2-6	N	12,488	$ 6,828.92	$ 0.54684	$ 6,828.92	Palmco
	TRANSCO	2-6	N	18,564	$ 10,151.68	$ 0.54685	$ 10,151.68	Vista Energy
	TRANSCO	2-6	N	19,236	$ 10,519.04	$ 0.54684	$ 10,519.04	Sprague
	TRANSCO	2-6	N	22,400	$ 12,249.44	$ 0.54685	$ 12,249.44	Energy Plus
	TRANSCO	2-6	N	43,792	$ 23,947.56	$ 0.54685	$ 23,947.56	SFE Energy
	TRANSCO	2-6	N	71,820	$ 39,274.76	$ 0.54685	$ 39,274.76	Direct Energy
	TRANSCO	2-6	N	90,300	$ 49,380.52	$ 0.54685	$ 49,380.52	Exelon
	TRANSCO	2-6	N	113,456	$ 62,043.24	$ 0.54685	$ 62,043.24	UGI Energy
	TRANSCO	3-6	N	280,000	$ 220,192.00	$ 0.78640	$ 220,192.00	Castleton Commodities
	TRANSCO	1-3	N	238,000	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	700,000	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	700,000	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	105,000	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	90,000	$ -	$ -	$ -	Tioga LNG LLC
				2,566,964			$ 468,441.12	

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
March-21	TETCO	STX - M3	N	2,387	$ 1,333.66	$ 0.5587	$ 1,333.66	EDF Trading
	TETCO	STX - M3	N	21,266	$ 11,887.72	$ 0.5590	$ 11,887.72	Sprague
	TETCO	STX - M3	N	1,209	$ 677.40	$ 0.5603	$ 677.40	Residents
	TETCO	STX - M3	N	1,860	$ 1,039.65	$ 0.5590	$ 1,039.65	Eligo Energy
	TETCO	STX - M3	N	186	$ 105.05	$ 0.5648	$ 105.05	Median Energy
	TETCO	STX - M3	N	4,154	$ 2,320.80	$ 0.5587	$ 2,320.80	Josco Energy
	TETCO	STX - M3	N	25,296	$ 14,140.30	$ 0.5590	$ 14,140.30	Energy Plus
	TETCO	STX - M3	N	682	$ 383.39	$ 0.5622	$ 383.39	Energy Plus
	TETCO	STX - M3	N	48,267	$ 26,978.30	$ 0.5589	$ 26,978.30	SFE Energy
	TETCO	STX - M3	N	20,212	$ 11,299.69	$ 0.5591	$ 11,299.69	Vista Energy
	TETCO	STX - M3	N	11,749	$ 6,568.73	$ 0.5591	$ 6,568.73	Marathon Power
	TETCO	STX - M3	N	7,905	$ 4,421.22	$ 0.5593	$ 4,421.22	Atlantic Energy
	TETCO	STX - M3	N	2,015	$ 1,129.00	$ 0.5603	$ 1,129.00	American Power
	TETCO	STX - M3	N	2,139	$ 1,197.23	$ 0.5597	$ 1,197.23	Greenlight
	TETCO	STX - M3	N	4,960	$ 2,772.39	$ 0.5589	$ 2,772.39	Statewise
	TETCO	STX - M3	N	248	$ 136.44	$ 0.5502	$ 136.44	Elevation Energy
	TETCO	STX - M3	N	217	$ 120.76	$ 0.5565	$ 120.76	South Bay
	TETCO	STX - M3	N	1,116	$ 624.88	$ 0.5599	$ 624.88	Alpha Gas
	TETCO	STX - M3	N	4,712	$ 2,635.96	$ 0.5594	$ 2,635.96	Shipley
	TETCO	STX - M3	N	4,247	$ 2,373.32	$ 0.5588	$ 2,373.32	Park Power
	TETCO	STX - M3	N	100,719	$ 56,298.52	$ 0.5590	$ 56,298.52	Exelon
	TETCO	STX - M3	N	713	$ 399.09	$ 0.5597	$ 399.09	Nordic Energy
	TETCO	STX - M3	N	10,013	$ 5,597.32	$ 0.5590	$ 5,597.32	WGL Energy
	TETCO	STX - M3	N	13,547	$ 7,571.55	$ 0.5589	$ 7,571.55	Palmco
	TETCO	STX - M3	N	79,484	$ 44,426.49	$ 0.5589	$ 44,426.49	Direct Energy
	TETCO	STX - M3	N	4,278	$ 2,389.02	$ 0.5584	$ 2,389.02	MPower
	TETCO	STX - M3	N	125,240	$ 70,002.89	$ 0.5589	$ 70,002.89	UGI Energy
	TETCO	STX - M3	N	4,681	$ 2,614.82	$ 0.5586	$ 2,614.82	CIMA Energy
	TETCO	STX - M3	N	93,000	$ 77,655.00	$ 0.8350	$ 77,655.00	Vitol
	TETCO	STX - M3	N	486,948	$ 491,817.48	$ 1.0100	$ 491,817.48	Spotlight Energy
				1,083,450			$ 850,918.07	
	TRANSCO	2-6	N	217	$ 118.73	$ 0.54714	$ 118.73	Median Energy
	TRANSCO	2-6	N	248	$ 135.47	$ 0.54625	$ 135.47	South Bay
	TRANSCO	2-6	N	279	$ 152.52	$ 0.54667	$ 152.52	Elevation Energy
	TRANSCO	2-6	N	1,860	$ 1,017.42	$ 0.54700	$ 1,017.42	Eligo Energy
	TRANSCO	2-6	N	1,240	$ 677.97	$ 0.54675	$ 677.97	Residents
	TRANSCO	2-6	N	682	$ 372.93	$ 0.54682	$ 372.93	Energy Plus
	TRANSCO	2-6	N	744	$ 406.72	$ 0.54667	$ 406.72	Nordic Energy
	TRANSCO	2-6	N	1,147	$ 627.13	$ 0.54676	$ 627.13	Alpha Gas
	TRANSCO	2-6	N	2,046	$ 1,119.10	$ 0.54697	$ 1,119.10	American Power
	TRANSCO	2-6	N	2,418	$ 1,322.46	$ 0.54692	$ 1,322.46	EDF Trading
	TRANSCO	2-6	N	2,139	$ 1,169.94	$ 0.54696	$ 1,169.94	Greenlight
	TRANSCO	2-6	N	4,185	$ 2,288.42	$ 0.54681	$ 2,288.42	Josco Energy
	TRANSCO	2-6	N	4,309	$ 2,356.31	$ 0.54683	$ 2,356.31	MPower
	TRANSCO	2-6	N	4,247	$ 2,322.52	$ 0.54686	$ 2,322.52	Park Power
	TRANSCO	2-6	N	4,681	$ 2,559.67	$ 0.54682	$ 2,559.67	CIMA Energy
	TRANSCO	2-6	N	4,712	$ 2,576.72	$ 0.54684	$ 2,576.72	Shipley
	TRANSCO	2-6	N	4,960	$ 2,712.19	$ 0.54681	$ 2,712.19	Statewise
	TRANSCO	2-6	N	7,936	$ 4,339.69	$ 0.54684	$ 4,339.69	Atlantic Energy
	TRANSCO	2-6	N	10,013	$ 5,475.53	$ 0.54684	$ 5,475.53	WGL Energy
	TRANSCO	2-6	N	11,780	$ 6,441.80	$ 0.54684	$ 6,441.80	Marathon Power
	TRANSCO	2-6	N	13,547	$ 7,408.07	$ 0.54684	$ 7,408.07	Palmco
	TRANSCO	2-6	N	20,212	$ 11,053.05	$ 0.54686	$ 11,053.05	Vista Energy
	TRANSCO	2-6	N	21,266	$ 11,629.34	$ 0.54685	$ 11,629.34	Sprague
	TRANSCO	2-6	N	25,296	$ 13,833.13	$ 0.54685	$ 13,833.13	Energy Plus
	TRANSCO	2-6	N	48,267	$ 26,394.95	$ 0.54685	$ 26,394.95	SFE Energy
	TRANSCO	2-6	N	79,484	$ 43,465.72	$ 0.54685	$ 43,465.72	Direct Energy
	TRANSCO	2-6	N	100,719	$ 55,078.01	$ 0.54685	$ 55,078.01	Exelon
	TRANSCO	2-6	N	125,271	$ 68,504.42	$ 0.54685	$ 68,504.42	UGI Energy
	TRANSCO	3-6	N	310,000	$ 243,784.00	$ 0.78640	$ 243,784.00	Castleton Commodities
	TRANSCO	1-3	N	263,500	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	775,000	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	775,000	$ -	$ -	$ -	Tioga LNG LLC
				2,627,405			$ 519,343.93	

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M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
April-21	TETCO	STX - M3	N	240	$ 132.04	$ 0.5502	$ 132.04	Elevation Energy
	TETCO	STX - M3	N	2,400	$ 1,341.48	$ 0.5590	$ 1,341.48	EDF Trading
	TETCO	STX - M3	N	19,440	$ 10,863.87	$ 0.5588	$ 10,863.87	Vista Energy
	TETCO	STX - M3	N	3,960	$ 2,215.55	$ 0.5595	$ 2,215.55	Josco Energy
	TETCO	STX - M3	N	180	$ 101.66	$ 0.5648	$ 101.66	Median Energy
	TETCO	STX - M3	N	1,140	$ 635.09	$ 0.5571	$ 635.09	Residents
	TETCO	STX - M3	N	3,990	$ 2,230.75	$ 0.5591	$ 2,230.75	Park Power
	TETCO	STX - M3	N	12,600	$ 7,042.77	$ 0.5590	$ 7,042.77	Palmco
	TETCO	STX - M3	N	840	$ 467.41	$ 0.5564	$ 467.41	Nordic Energy
	TETCO	STX - M3	N	4,560	$ 2,550.93	$ 0.5594	$ 2,550.93	Shipley
	TETCO	STX - M3	N	270	$ 152.51	$ 0.5649	$ 152.51	South Bay
	TETCO	STX - M3	N	780	$ 437.04	$ 0.5603	$ 437.04	Energy Plus
	TETCO	STX - M3	N	46,440	$ 25,955.52	$ 0.5589	$ 25,955.52	SFE Energy
	TETCO	STX - M3	N	4,740	$ 2,647.32	$ 0.5585	$ 2,647.32	Statewise
	TETCO	STX - M3	N	20,460	$ 11,438.23	$ 0.5591	$ 11,438.23	Sprague
	TETCO	STX - M3	N	79,410	$ 44,385.70	$ 0.5589	$ 44,385.70	Direct Energy
	TETCO	STX - M3	N	25,110	$ 14,034.72	$ 0.5589	$ 14,034.72	Energy Plus
	TETCO	STX - M3	N	9,390	$ 5,249.07	$ 0.5590	$ 5,249.07	WGL Energy
	TETCO	STX - M3	N	1,050	$ 589.54	$ 0.5615	$ 589.54	Alpha Gas
	TETCO	STX - M3	N	94,050	$ 52,571.89	$ 0.5590	$ 52,571.89	Exelon
	TETCO	STX - M3	N	2,400	$ 1,341.48	$ 0.5590	$ 1,341.48	American Power
	TETCO	STX - M3	N	7,500	$ 4,192.13	$ 0.5590	$ 4,192.13	Atlantic Energy
	TETCO	STX - M3	N	1,950	$ 1,092.60	$ 0.5603	$ 1,092.60	Greenlight
	TETCO	STX - M3	N	123,540	$ 69,050.58	$ 0.5589	$ 69,050.58	UGI Energy
	TETCO	STX - M3	N	4,200	$ 2,347.59	$ 0.5590	$ 2,347.59	CIMA Energy
	TETCO	STX - M3	N	4,140	$ 2,311.94	$ 0.5584	$ 2,311.94	MPower
	TETCO	STX - M3	N	11,370	$ 6,356.85	$ 0.5591	$ 6,356.85	Marathon Power
	TETCO	STX - M3	N	2,340	$ 1,305.83	$ 0.5580	$ 1,305.83	Eligo Energy
	TETCO	STX - M3	N	471,240	$ 23,562.00	$ 0.0500	$ 23,562.00	Vitol
	TETCO	STX - M3	N	90,000	$ 4,500.00	$ 0.0500	$ 4,500.00	Vitol
	TETCO	WLA - M3	N	540,000	$ 43,200.00	$ 0.0800	$ 43,200.00	Vitol
	TETCO	WLA - M3	N	540,000	$ 43,200.00	$ 0.0800	$ 43,200.00	Vitol
				2,129,730			$ 387,504.09	
	TRANSCO	2-6	N	210	$ 114.60	$ 0.54571	$ 114.60	Median Energy
	TRANSCO	2-6	N	240	$ 131.10	$ 0.54625	$ 131.10	Elevation Energy
	TRANSCO	2-6	N	270	$ 147.30	$ 0.54556	$ 147.30	South Bay
	TRANSCO	2-6	N	780	$ 425.70	$ 0.54577	$ 425.70	Energy Plus
	TRANSCO	2-6	N	870	$ 474.90	$ 0.54586	$ 474.90	Nordic Energy
	TRANSCO	2-6	N	1,050	$ 573.00	$ 0.54571	$ 573.00	Alpha Gas
	TRANSCO	2-6	N	1,170	$ 638.70	$ 0.54590	$ 638.70	Residents
	TRANSCO	2-6	N	1,980	$ 1,081.20	$ 0.54606	$ 1,081.20	Greenlight
	TRANSCO	2-6	N	2,370	$ 1,293.90	$ 0.54595	$ 1,293.90	Eligo Energy
	TRANSCO	2-6	N	2,400	$ 1,310.40	$ 0.54600	$ 1,310.40	EDF Trading
	TRANSCO	2-6	N	2,400	$ 1,310.40	$ 0.54600	$ 1,310.40	American Power
	TRANSCO	2-6	N	3,960	$ 2,161.80	$ 0.54591	$ 2,161.80	Josco Energy
	TRANSCO	2-6	N	3,990	$ 2,178.30	$ 0.54594	$ 2,178.30	Park Power
	TRANSCO	2-6	N	4,170	$ 2,276.70	$ 0.54597	$ 2,276.70	MPower
	TRANSCO	2-6	N	4,200	$ 2,293.20	$ 0.54600	$ 2,293.20	CIMA Energy
	TRANSCO	2-6	N	4,590	$ 2,505.90	$ 0.54595	$ 2,505.90	Shipley
	TRANSCO	2-6	N	4,770	$ 2,604.30	$ 0.54597	$ 2,604.30	Statewise
	TRANSCO	2-6	N	7,530	$ 4,111.20	$ 0.54598	$ 4,111.20	Atlantic Energy
	TRANSCO	2-6	N	9,420	$ 5,142.60	$ 0.54592	$ 5,142.60	WGL Energy
	TRANSCO	2-6	N	11,400	$ 6,223.80	$ 0.54595	$ 6,223.80	Marathon Power
	TRANSCO	2-6	N	12,630	$ 6,895.50	$ 0.54596	$ 6,895.50	Palmco
	TRANSCO	2-6	N	19,470	$ 10,629.60	$ 0.54595	$ 10,629.60	Vista Energy
	TRANSCO	2-6	N	20,490	$ 11,186.70	$ 0.54596	$ 11,186.70	Sprague
	TRANSCO	2-6	N	25,110	$ 13,708.80	$ 0.54595	$ 13,708.80	Energy Plus
	TRANSCO	2-6	N	46,470	$ 25,370.40	$ 0.54595	$ 25,370.40	SFE Energy
	TRANSCO	2-6	N	79,410	$ 43,353.90	$ 0.54595	$ 43,353.90	Direct Energy
	TRANSCO	2-6	N	94,050	$ 51,346.50	$ 0.54595	$ 51,346.50	Exelon
	TRANSCO	2-6	N	123,570	$ 67,462.80	$ 0.54595	$ 67,462.80	UGI Energy
	TRANSCO	1-3	N	300,000	$ 7,200.00	$ 0.02400	$ 7,200.00	Mercuria Energy
	TRANSCO	1-3	N	300,000	$ 8,400.00	$ 0.02800	$ 8,400.00	Conocophilips Company
	TRANSCO	2-3	N	150,000	$ 3,600.00	$ 0.02400	$ 3,600.00	Nextera Energy
	TRANSCO	2-3	N	300,000	$ 7,200.00	$ 0.02400	$ 7,200.00	Nextera Energy
	TRANSCO	3-6	N	600,000	$ 24,000.00	$ 0.04000	$ 24,000.00	Pacific Summit
	TRANSCO	3-6	N	600,000	$ 24,000.00	$ 0.04000	$ 24,000.00	Pacific Summit
				2,738,970			$ 341,353.20	

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M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
May-21	TETCO	STX - M3	N	19,220	$ 10,743.02	$ 0.5590	$ 10,743.02	Vista Energy
	TETCO	STX - M3	N	94,333	$ 52,727.98	$ 0.5590	$ 52,727.98	Exelon
	TETCO	STX - M3	N	4,557	$ 2,546.58	$ 0.5588	$ 2,546.58	Shipley
	TETCO	STX - M3	N	2,542	$ 1,423.02	$ 0.5598	$ 1,423.02	EDF Trading
	TETCO	STX - M3	N	46,903	$ 26,216.98	$ 0.5590	$ 26,216.98	SFE Energy
	TETCO	STX - M3	N	4,650	$ 2,599.14	$ 0.5590	$ 2,599.14	Statewise
	TETCO	STX - M3	N	3,906	$ 2,184.34	$ 0.5592	$ 2,184.34	Josco Energy
	TETCO	STX - M3	N	7,626	$ 4,263.63	$ 0.5591	$ 4,263.63	Atlantic Energy
	TETCO	STX - M3	N	20,925	$ 11,693.32	$ 0.5588	$ 11,693.32	Sprague
	TETCO	STX - M3	N	9,455	$ 5,282.16	$ 0.5587	$ 5,282.16	WGL Energy
	TETCO	STX - M3	N	82,770	$ 46,264.30	$ 0.5590	$ 46,264.30	Direct Energy
	TETCO	STX - M3	N	4,061	$ 2,268.26	$ 0.5585	$ 2,268.26	Park Power
	TETCO	STX - M3	N	1,271	$ 708.79	$ 0.5577	$ 708.79	Residents
	TETCO	STX - M3	N	155	$ 83.91	$ 0.5414	$ 83.91	Median Energy
	TETCO	STX - M3	N	806	$ 451.59	$ 0.5603	$ 451.59	Energy Plus
	TETCO	STX - M3	N	26,164	$ 14,623.28	$ 0.5589	$ 14,623.28	Energy Plus
	TETCO	STX - M3	N	12,772	$ 7,141.10	$ 0.5591	$ 7,141.10	Palmco
	TETCO	STX - M3	N	1,767	$ 992.56	$ 0.5617	$ 992.56	Greenlight
	TETCO	STX - M3	N	217	$ 120.76	$ 0.5565	$ 120.76	Elevation Energy
	TETCO	STX - M3	N	2,852	$ 1,596.31	$ 0.5597	$ 1,596.31	American Power
	TETCO	STX - M3	N	11,098	$ 6,201.06	$ 0.5588	$ 6,201.06	Marathon Power
	TETCO	STX - M3	N	279	$ 157.57	$ 0.5648	$ 157.57	South Bay
	TETCO	STX - M3	N	4,154	$ 2,320.80	$ 0.5587	$ 2,320.80	MPower
	TETCO	STX - M3	N	1,891	$ 1,055.34	$ 0.5581	$ 1,055.34	Nordic Energy
	TETCO	STX - M3	N	1,054	$ 593.50	$ 0.5631	$ 593.50	Alpha Gas
	TETCO	STX - M3	N	2,976	$ 1,664.53	$ 0.5593	$ 1,664.53	Eligo Energy
	TETCO	STX - M3	N	92,907	$ 51,929.83	$ 0.5589	$ 51,929.83	UGI Energy
	TETCO	STX - M3	N	4,092	$ 2,289.41	$ 0.5595	$ 2,289.41	CIMA Energy
	TETCO	STX - M3	N	486,948	$ 24,347.40	$ 0.0500	$ 24,347.40	Vitol
	TETCO	STX - M3	N	93,000	$ 4,650.00	$ 0.0500	$ 4,650.00	Vitol
	TETCO	WLA - M3	N	558,000	$ 82,751.42	$ 0.1483	$ 82,751.42	Grays Ferry
	TETCO	WLA - M3	N	558,000	$ 82,751.42	$ 0.1483	$ 82,751.42	Grays Ferry
				2,161,351			$ 454,643.31	
	TRANSCO	2-6	N	186	$ 101.68	$ 0.54667	$ 101.68	Median Energy
	TRANSCO	2-6	N	217	$ 118.42	$ 0.54571	$ 118.42	Elevation Energy
	TRANSCO	2-6	N	310	$ 169.26	$ 0.54600	$ 169.26	South Bay
	TRANSCO	2-6	N	806	$ 439.89	$ 0.54577	$ 439.89	Energy Plus
	TRANSCO	2-6	N	1,054	$ 575.36	$ 0.54588	$ 575.36	Alpha Gas
	TRANSCO	2-6	N	1,271	$ 693.78	$ 0.54585	$ 693.78	Residents
	TRANSCO	2-6	N	1,798	$ 981.77	$ 0.54603	$ 981.77	Greenlight
	TRANSCO	2-6	N	1,922	$ 1,049.35	$ 0.54597	$ 1,049.35	Nordic Energy
	TRANSCO	2-6	N	2,542	$ 1,387.87	$ 0.54598	$ 1,387.87	EDF Trading
	TRANSCO	2-6	N	2,852	$ 1,557.13	$ 0.54598	$ 1,557.13	American Power
	TRANSCO	2-6	N	3,007	$ 1,641.76	$ 0.54598	$ 1,641.76	Eligo Energy
	TRANSCO	2-6	N	3,906	$ 2,132.49	$ 0.54595	$ 2,132.49	Josco Energy
	TRANSCO	2-6	N	4,061	$ 2,217.12	$ 0.54595	$ 2,217.12	Park Power
	TRANSCO	2-6	N	4,123	$ 2,250.91	$ 0.54594	$ 2,250.91	CIMA Energy
	TRANSCO	2-6	N	4,185	$ 2,284.70	$ 0.54593	$ 2,284.70	MPower
	TRANSCO	2-6	N	4,557	$ 2,488.06	$ 0.54599	$ 2,488.06	Shipley
	TRANSCO	2-6	N	4,650	$ 2,538.90	$ 0.54600	$ 2,538.90	Statewise
	TRANSCO	2-6	N	7,626	$ 4,163.61	$ 0.54598	$ 4,163.61	Atlantic Energy
	TRANSCO	2-6	N	9,455	$ 5,161.81	$ 0.54593	$ 5,161.81	WGL Energy
	TRANSCO	2-6	N	11,129	$ 6,076.00	$ 0.54596	$ 6,076.00	Marathon Power
	TRANSCO	2-6	N	12,803	$ 6,989.88	$ 0.54596	$ 6,989.88	Palmco
	TRANSCO	2-6	N	19,251	$ 10,510.24	$ 0.54596	$ 10,510.24	Vista Energy
	TRANSCO	2-6	N	20,956	$ 11,440.86	$ 0.54595	$ 11,440.86	Sprague
	TRANSCO	2-6	N	26,164	$ 14,284.18	$ 0.54595	$ 14,284.18	Energy Plus
	TRANSCO	2-6	N	46,903	$ 25,606.93	$ 0.54596	$ 25,606.93	SFE Energy
	TRANSCO	2-6	N	82,801	$ 45,205.13	$ 0.54595	$ 45,205.13	Direct Energy
	TRANSCO	2-6	N	92,938	$ 50,739.56	$ 0.54595	$ 50,739.56	UGI Energy
	TRANSCO	2-6	N	94,364	$ 51,517.97	$ 0.54595	$ 51,517.97	Exelon
	TRANSCO	1-3	N	310,000	$ 7,440.00	$ 0.02400	$ 7,440.00	Mercuria Energy
	TRANSCO	1-3	N	310,000	$ 8,680.00	$ 0.02800	$ 8,680.00	Conocophilips Company
	TRANSCO	2-3	N	155,000	$ 3,720.00	$ 0.02400	$ 3,720.00	Nextera Energy
	TRANSCO	2-3	N	310,000	$ 7,440.00	$ 0.02400	$ 7,440.00	Nextera Energy
	TRANSCO	3-6	N	620,000	$ 24,800.00	$ 0.04000	$ 24,800.00	Pacific Summit
	TRANSCO	3-6	N	620,000	$ 24,800.00	$ 0.04000	$ 24,800.00	Pacific Summit
				2,790,837			$ 331,204.62	

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
June-21	TETCO	STX - M3	N	11,460	$ 6,407.68	$ 0.5591	$ 6,407.68	WGL Energy
	TETCO	STX - M3	N	90,510	$ 50,595.32	$ 0.5590	$ 50,595.32	Exelon
	TETCO	STX - M3	N	4,140	$ 2,311.94	$ 0.5584	$ 2,311.94	Shipley
	TETCO	STX - M3	N	25,380	$ 14,187.20	$ 0.5590	$ 14,187.20	Energy Plus
	TETCO	STX - M3	N	2,490	$ 1,392.33	$ 0.5592	$ 1,392.33	EDF Trading
	TETCO	STX - M3	N	17,670	$ 9,878.24	$ 0.5590	$ 9,878.24	Vista Energy
	TETCO	STX - M3	N	20,190	$ 11,285.74	$ 0.5590	$ 11,285.74	Sprague
	TETCO	STX - M3	N	810	$ 452.23	$ 0.5583	$ 452.23	Energy Plus
	TETCO	STX - M3	N	10,140	$ 5,665.64	$ 0.5587	$ 5,665.64	Marathon Power
	TETCO	STX - M3	N	11,430	$ 6,387.22	$ 0.5588	$ 6,387.22	Palmco
	TETCO	STX - M3	N	3,750	$ 2,093.45	$ 0.5583	$ 2,093.45	Park Power
	TETCO	STX - M3	N	150	$ 81.22	$ 0.5415	$ 81.22	Median Energy
	TETCO	STX - M3	N	3,510	$ 1,961.40	$ 0.5588	$ 1,961.40	Josco Energy
	TETCO	STX - M3	N	43,530	$ 24,329.53	$ 0.5589	$ 24,329.53	SFE Energy
	TETCO	STX - M3	N	4,290	$ 2,398.43	$ 0.5591	$ 2,398.43	Statewise
	TETCO	STX - M3	N	7,860	$ 4,395.46	$ 0.5592	$ 4,395.46	American Power
	TETCO	STX - M3	N	270	$ 152.51	$ 0.5649	$ 152.51	New Wave Energy
	TETCO	STX - M3	N	270	$ 152.51	$ 0.5649	$ 152.51	South Bay
	TETCO	STX - M3	N	990	$ 553.90	$ 0.5595	$ 553.90	Alpha Gas
	TETCO	STX - M3	N	7,140	$ 3,994.06	$ 0.5594	$ 3,994.06	Atlantic Energy
	TETCO	STX - M3	N	1,530	$ 858.89	$ 0.5614	$ 858.89	Greenlight
	TETCO	STX - M3	N	180	$ 101.66	$ 0.5648	$ 101.66	Elevation Energy
	TETCO	STX - M3	N	78,480	$ 43,867.46	$ 0.5590	$ 43,867.46	Direct Energy
	TETCO	STX - M3	N	88,320	$ 49,365.41	$ 0.5589	$ 49,365.41	UGI Energy
	TETCO	STX - M3	N	1,230	$ 685.93	$ 0.5577	$ 685.93	Residents
	TETCO	STX - M3	N	3,840	$ 2,144.26	$ 0.5584	$ 2,144.26	MPower
	TETCO	STX - M3	N	2,160	$ 1,209.44	$ 0.5599	$ 1,209.44	Nordic Energy
	TETCO	STX - M3	N	3,840	$ 2,144.26	$ 0.5584	$ 2,144.26	CIMA Energy
	TETCO	STX - M3	N	3,030	$ 1,692.05	$ 0.5584	$ 1,692.05	Eligo Energy
	TETCO	STX - M3	N	471,240	$ 23,562.00	$ 0.0500	$ 23,562.00	Vitol
	TETCO	STX - M3	N	90,000	$ 4,500.00	$ 0.0500	$ 4,500.00	Vitol
	TETCO	WLA - M3	N	540,000	$ 107,784.00	$ 0.1996	$ 107,784.00	Grays Ferry
	TETCO	WLA - M3	N	540,000	$ 107,784.00	$ 0.1996	$ 107,784.00	Grays Ferry
				2,089,830			$ 494,375.37	
	TRANSCO	2-6	N	180	$ 98.40	$ 0.54667	$ 98.40	Median Energy
	TRANSCO	2-6	N	180	$ 98.40	$ 0.54667	$ 98.40	Elevation Energy
	TRANSCO	2-6	N	270	$ 147.30	$ 0.54556	$ 147.30	South Bay
	TRANSCO	2-6	N	270	$ 147.30	$ 0.54556	$ 147.30	New Wave Energy
	TRANSCO	2-6	N	810	$ 442.20	$ 0.54593	$ 442.20	Energy Plus
	TRANSCO	2-6	N	1,020	$ 556.80	$ 0.54588	$ 556.80	Alpha Gas
	TRANSCO	2-6	N	1,230	$ 671.40	$ 0.54585	$ 671.40	Residents
	TRANSCO	2-6	N	1,560	$ 851.70	$ 0.54596	$ 851.70	Greenlight
	TRANSCO	2-6	N	2,190	$ 1,195.80	$ 0.54603	$ 1,195.80	Nordic Energy
	TRANSCO	2-6	N	2,490	$ 1,359.30	$ 0.54590	$ 1,359.30	EDF Trading
	TRANSCO	2-6	N	3,060	$ 1,670.70	$ 0.54598	$ 1,670.70	Eligo Energy
	TRANSCO	2-6	N	3,510	$ 1,916.10	$ 0.54590	$ 1,916.10	Josco Energy
	TRANSCO	2-6	N	3,780	$ 2,063.70	$ 0.54595	$ 2,063.70	Park Power
	TRANSCO	2-6	N	3,870	$ 2,112.60	$ 0.54589	$ 2,112.60	CIMA Energy
	TRANSCO	2-6	N	3,870	$ 2,112.60	$ 0.54589	$ 2,112.60	MPower
	TRANSCO	2-6	N	4,170	$ 2,276.70	$ 0.54597	$ 2,276.70	Shipley
	TRANSCO	2-6	N	4,320	$ 2,358.60	$ 0.54597	$ 2,358.60	Statewise
	TRANSCO	2-6	N	7,140	$ 3,898.20	$ 0.54597	$ 3,898.20	Atlantic Energy
	TRANSCO	2-6	N	7,890	$ 4,307.70	$ 0.54597	$ 4,307.70	American Power
	TRANSCO	2-6	N	10,170	$ 5,552.40	$ 0.54596	$ 5,552.40	Marathon Power
	TRANSCO	2-6	N	11,430	$ 6,240.30	$ 0.54596	$ 6,240.30	Palmco
	TRANSCO	2-6	N	11,490	$ 6,273.00	$ 0.54595	$ 6,273.00	WGL Energy
	TRANSCO	2-6	N	17,700	$ 9,663.30	$ 0.54595	$ 9,663.30	Vista Energy
	TRANSCO	2-6	N	20,190	$ 11,022.60	$ 0.54594	$ 11,022.60	Sprague
	TRANSCO	2-6	N	25,410	$ 13,872.60	$ 0.54595	$ 13,872.60	Energy Plus
	TRANSCO	2-6	N	43,530	$ 23,765.10	$ 0.54595	$ 23,765.10	SFE Energy
	TRANSCO	2-6	N	78,510	$ 42,862.50	$ 0.54595	$ 42,862.50	Direct Energy
	TRANSCO	2-6	N	88,320	$ 48,218.10	$ 0.54595	$ 48,218.10	UGI Energy
	TRANSCO	2-6	N	90,510	$ 49,413.90	$ 0.54595	$ 49,413.90	Exelon
	TRANSCO	1-3	N	300,000	$ 7,200.00	$ 0.02400	$ 7,200.00	Mercuria Energy
	TRANSCO	1-3	N	300,000	$ 8,400.00	$ 0.02800	$ 8,400.00	Conocophilips Company
	TRANSCO	2-3	N	150,000	$ 3,600.00	$ 0.02400	$ 3,600.00	Nextera Energy
	TRANSCO	2-3	N	300,000	$ 7,200.00	$ 0.02400	$ 7,200.00	Nextera Energy
	TRANSCO	3-6	N	600,000	$ 24,000.00	$ 0.04000	$ 24,000.00	Pacific Summit
	TRANSCO	3-6	N	600,000	$ 24,000.00	$ 0.04000	$ 24,000.00	Pacific Summit
				2,699,070			$ 319,569.30	

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
July-21	TETCO	STX - M3	N	17,298	$ 9,666.55	$ 0.5588	$ 9,666.55	Vista Energy
	TETCO	STX - M3	N	81,313	$ 45,450.45	$ 0.5590	$ 45,450.45	Direct Energy
	TETCO	STX - M3	N	279	$ 166.69	$ 0.5975	$ 166.69	New Wave Energy
	TETCO	STX - M3	N	155	$ 89.36	$ 0.5765	$ 89.36	Elevation Energy
	TETCO	STX - M3	N	3,689	$ 2,063.59	$ 0.5594	$ 2,063.59	Park Power
	TETCO	STX - M3	N	2,511	$ 1,401.90	$ 0.5583	$ 1,401.90	EDF Trading
	TETCO	STX - M3	N	42,563	$ 23,791.13	$ 0.5590	$ 23,791.13	SFE Energy
	TETCO	STX - M3	N	4,092	$ 2,289.41	$ 0.5595	$ 2,289.41	Statewise
	TETCO	STX - M3	N	8,494	$ 4,746.64	$ 0.5588	$ 4,746.64	American Power
	TETCO	STX - M3	N	11,036	$ 6,169.67	$ 0.5590	$ 6,169.67	Palmco
	TETCO	STX - M3	N	7,068	$ 3,948.47	$ 0.5586	$ 3,948.47	Atlantic Energy
	TETCO	STX - M3	N	91,791	$ 51,304.95	$ 0.5589	$ 51,304.95	Exelon
	TETCO	STX - M3	N	17,763	$ 9,929.18	$ 0.5590	$ 9,929.18	Sprague
	TETCO	STX - M3	N	2,418	$ 1,349.37	$ 0.5581	$ 1,349.37	Nordic Energy
	TETCO	STX - M3	N	961	$ 535.52	$ 0.5573	$ 535.52	Alpha Gas
	TETCO	STX - M3	N	248	$ 136.44	$ 0.5502	$ 136.44	South Bay
	TETCO	STX - M3	N	26,877	$ 15,022.35	$ 0.5589	$ 15,022.35	Energy Plus
	TETCO	STX - M3	N	961	$ 535.52	$ 0.5573	$ 535.52	Energy Plus
	TETCO	STX - M3	N	1,674	$ 934.61	$ 0.5583	$ 934.61	Greenlight
	TETCO	STX - M3	N	5,797	$ 3,239.69	$ 0.5589	$ 3,239.69	Marathon Power
	TETCO	STX - M3	N	3,782	$ 2,116.13	$ 0.5595	$ 2,116.13	MPower
	TETCO	STX - M3	N	3,782	$ 2,116.13	$ 0.5595	$ 2,116.13	CIMA Energy
	TETCO	STX - M3	N	14,322	$ 8,007.45	$ 0.5591	$ 8,007.45	WGL Energy
	TETCO	STX - M3	N	87,451	$ 48,879.11	$ 0.5589	$ 48,879.11	UGI Energy
	TETCO	STX - M3	N	4,061	$ 2,268.26	$ 0.5585	$ 2,268.26	Shipley
	TETCO	STX - M3	N	3,317	$ 1,853.50	$ 0.5588	$ 1,853.50	Josco Energy
	TETCO	STX - M3	N	186	$ 105.05	$ 0.5648	$ 105.05	Median Energy
	TETCO	STX - M3	N	1,178	$ 656.27	$ 0.5571	$ 656.27	Residents
	TETCO	STX - M3	N	93	$ 52.00	$ 0.5591	$ 52.00	Eligo Energy
	TETCO	STX - M3	N	2,790	$ 1,560.01	$ 0.5591	$ 1,560.01	Eligo Energy
	TETCO	STX - M3	N	486,948	$ 24,347.40	$ 0.0500	$ 24,347.40	Vitol
	TETCO	STX - M3	N	93,000	$ 4,650.00	$ 0.0500	$ 4,650.00	Vitol
	TETCO	WLA - M3	N	558,000	$ 111,209.37	$ 0.1993	$ 111,209.37	Grays Ferry
	TETCO	WLA - M3	N	558,000	$ 111,209.37	$ 0.1993	$ 111,209.37	Grays Ferry
				2,143,898			$ 501,801.54	
	TRANSCO	2-6	N	155	$ 84.63	$ 0.54600	$ 84.63	Elevation Energy
	TRANSCO	2-6	N	217	$ 118.42	$ 0.54571	$ 118.42	Median Energy
	TRANSCO	2-6	N	248	$ 135.47	$ 0.54625	$ 135.47	South Bay
	TRANSCO	2-6	N	310	$ 169.26	$ 0.54600	$ 169.26	New Wave Energy
	TRANSCO	2-6	N	961	$ 524.52	$ 0.54581	$ 524.52	Alpha Gas
	TRANSCO	2-6	N	961	$ 524.52	$ 0.54581	$ 524.52	Energy Plus
	TRANSCO	2-6	N	1,209	$ 659.99	$ 0.54590	$ 659.99	Residents
	TRANSCO	2-6	N	1,674	$ 914.19	$ 0.54611	$ 914.19	Greenlight
	TRANSCO	2-6	N	2,418	$ 1,320.29	$ 0.54603	$ 1,320.29	Nordic Energy
	TRANSCO	2-6	N	2,542	$ 1,387.87	$ 0.54598	$ 1,387.87	EDF Trading
	TRANSCO	2-6	N	2,790	$ 1,523.10	$ 0.54591	$ 1,523.10	Eligo Energy
	TRANSCO	2-6	N	3,348	$ 1,827.76	$ 0.54593	$ 1,827.76	Josco Energy
	TRANSCO	2-6	N	3,720	$ 2,030.81	$ 0.54592	$ 2,030.81	Park Power
	TRANSCO	2-6	N	3,813	$ 2,081.65	$ 0.54593	$ 2,081.65	MPower
	TRANSCO	2-6	N	3,813	$ 2,081.65	$ 0.54593	$ 2,081.65	CIMA Energy
	TRANSCO	2-6	N	4,061	$ 2,217.12	$ 0.54595	$ 2,217.12	Shipley
	TRANSCO	2-6	N	4,092	$ 2,233.86	$ 0.54591	$ 2,233.86	Statewise
	TRANSCO	2-6	N	5,797	$ 3,164.79	$ 0.54594	$ 3,164.79	Marathon Power
	TRANSCO	2-6	N	7,099	$ 3,875.93	$ 0.54598	$ 3,875.93	Atlantic Energy
	TRANSCO	2-6	N	8,494	$ 4,637.29	$ 0.54595	$ 4,637.29	American Power
	TRANSCO	2-6	N	11,036	$ 6,025.16	$ 0.54596	$ 6,025.16	Palmco
	TRANSCO	2-6	N	14,353	$ 7,835.87	$ 0.54594	$ 7,835.87	WGL Energy
	TRANSCO	2-6	N	17,298	$ 9,443.84	$ 0.54595	$ 9,443.84	Vista Energy
	TRANSCO	2-6	N	17,794	$ 9,714.47	$ 0.54594	$ 9,714.47	Sprague
	TRANSCO	2-6	N	26,877	$ 14,673.54	$ 0.54595	$ 14,673.54	Energy Plus
	TRANSCO	2-6	N	42,563	$ 23,237.29	$ 0.54595	$ 23,237.29	SFE Energy
	TRANSCO	2-6	N	81,344	$ 44,409.67	$ 0.54595	$ 44,409.67	Direct Energy
	TRANSCO	2-6	N	87,451	$ 47,743.72	$ 0.54595	$ 47,743.72	UGI Energy
	TRANSCO	2-6	N	91,791	$ 50,113.36	$ 0.54595	$ 50,113.36	Exelon
	TRANSCO	1-3	N	310,000	$ 7,440.00	$ 0.02400	$ 7,440.00	Mercuria Energy
	TRANSCO	1-3	N	310,000	$ 8,680.00	$ 0.02800	$ 8,680.00	Conocophilips Company
	TRANSCO	2-3	N	155,000	$ 3,720.00	$ 0.02400	$ 3,720.00	Nextera Energy
	TRANSCO	2-3	N	310,000	$ 7,440.00	$ 0.02400	$ 7,440.00	Nextera Energy
	TRANSCO	3-6	N	620,000	$ 24,800.00	$ 0.04000	$ 24,800.00	Pacific Summit
	TRANSCO	3-6	N	620,000	$ 24,800.00	$ 0.04000	$ 24,800.00	Pacific Summit
				2,773,229			$ 321,590.04	

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
August-21	TETCO	STX - M3	N	2,480	$ 1,386.20	$ 0.5590	$ 1,386.20	EDF Trading
	TETCO	STX - M3	N	16,740	$ 9,356.82	$ 0.5589	$ 9,356.82	Vista Energy
	TETCO	STX - M3	N	2,542	$ 1,423.02	$ 0.5598	$ 1,423.02	Nordic Energy
	TETCO	STX - M3	N	3,100	$ 1,732.74	$ 0.5589	$ 1,732.74	Josco Energy
	TETCO	STX - M3	N	496	$ 278.33	$ 0.5611	$ 278.33	Median Energy
	TETCO	STX - M3	N	2,573	$ 1,438.72	$ 0.5592	$ 1,438.72	Eligo Energy
	TETCO	STX - M3	N	1,271	$ 708.79	$ 0.5577	$ 708.79	Residents
	TETCO	STX - M3	N	155	$ 89.36	$ 0.5765	$ 89.36	Elevation Energy
	TETCO	STX - M3	N	27,466	$ 15,353.20	$ 0.5590	$ 15,353.20	Energy Plus
	TETCO	STX - M3	N	992	$ 556.67	$ 0.5612	$ 556.67	Energy Plus
	TETCO	STX - M3	N	3,596	$ 2,011.08	$ 0.5593	$ 2,011.08	Park Power
	TETCO	STX - M3	N	41,075	$ 22,961.58	$ 0.5590	$ 22,961.58	SFE Energy
	TETCO	STX - M3	N	3,813	$ 2,131.83	$ 0.5591	$ 2,131.83	Statewise
	TETCO	STX - M3	N	14,446	$ 8,075.67	$ 0.5590	$ 8,075.67	WGL Energy
	TETCO	STX - M3	N	3,906	$ 2,184.34	$ 0.5592	$ 2,184.34	Shipley
	TETCO	STX - M3	N	868	$ 482.98	$ 0.5564	$ 482.98	Alpha Gas
	TETCO	STX - M3	N	279	$ 157.57	$ 0.5648	$ 157.57	South Bay
	TETCO	STX - M3	N	10,323	$ 5,770.59	$ 0.5590	$ 5,770.59	Palmco
	TETCO	STX - M3	N	8,587	$ 4,799.15	$ 0.5589	$ 4,799.15	American Power
	TETCO	STX - M3	N	7,037	$ 3,932.78	$ 0.5589	$ 3,932.78	Atlantic Energy
	TETCO	STX - M3	N	1,581	$ 882.07	$ 0.5579	$ 882.07	Greenlight
	TETCO	STX - M3	N	17,019	$ 9,514.40	$ 0.5590	$ 9,514.40	Sprague
	TETCO	STX - M3	N	89,714	$ 50,144.55	$ 0.5589	$ 50,144.55	Exelon
	TETCO	STX - M3	N	6,386	$ 3,570.54	$ 0.5591	$ 3,570.54	Marathon Power
	TETCO	STX - M3	N	217	$ 120.76	$ 0.5565	$ 120.76	New Wave Energy
	TETCO	STX - M3	N	82,026	$ 45,849.51	$ 0.5590	$ 45,849.51	Direct Energy
	TETCO	STX - M3	N	3,689	$ 2,063.59	$ 0.5594	$ 2,063.59	CIMA Energy
	TETCO	STX - M3	N	84,971	$ 47,492.91	$ 0.5589	$ 47,492.91	UGI Energy
	TETCO	STX - M3	N	3,503	$ 1,958.55	$ 0.5591	$ 1,958.55	MPower
	TETCO	STX - M3	N	486,948	$ 24,347.40	$ 0.0500	$ 24,347.40	Vitol
	TETCO	STX - M3	N	93,000	$ 4,650.00	$ 0.0500	$ 4,650.00	Vitol
	TETCO	WLA - M3	N	558,000	$ 107,805.60	$ 0.1932	$ 107,805.60	Grays Ferry
	TETCO	WLA - M3	N	558,000	$ 107,805.60	$ 0.1932	$ 107,805.60	Grays Ferry
				2,136,799			$ 491,036.90	
	TRANSCO	2-6	N	155	$ 84.63	$ 0.54600	$ 84.63	Elevation Energy
	TRANSCO	2-6	N	248	$ 135.47	$ 0.54625	$ 135.47	New Wave Energy
	TRANSCO	2-6	N	310	$ 169.26	$ 0.54600	$ 169.26	South Bay
	TRANSCO	2-6	N	496	$ 270.63	$ 0.54563	$ 270.63	Median Energy
	TRANSCO	2-6	N	868	$ 473.68	$ 0.54571	$ 473.68	Alpha Gas
	TRANSCO	2-6	N	1,023	$ 558.31	$ 0.54576	$ 558.31	Energy Plus
	TRANSCO	2-6	N	1,302	$ 710.83	$ 0.54595	$ 710.83	Residents
	TRANSCO	2-6	N	1,581	$ 863.35	$ 0.54608	$ 863.35	Greenlight
	TRANSCO	2-6	N	2,511	$ 1,370.82	$ 0.54593	$ 1,370.82	EDF Trading
	TRANSCO	2-6	N	2,542	$ 1,387.87	$ 0.54598	$ 1,387.87	Nordic Energy
	TRANSCO	2-6	N	2,573	$ 1,404.61	$ 0.54590	$ 1,404.61	Eligo Energy
	TRANSCO	2-6	N	3,131	$ 1,709.34	$ 0.54594	$ 1,709.34	Josco Energy
	TRANSCO	2-6	N	3,534	$ 1,929.44	$ 0.54596	$ 1,929.44	MPower
	TRANSCO	2-6	N	3,596	$ 1,963.23	$ 0.54595	$ 1,963.23	Park Power
	TRANSCO	2-6	N	3,689	$ 2,013.76	$ 0.54588	$ 2,013.76	CIMA Energy
	TRANSCO	2-6	N	3,844	$ 2,098.39	$ 0.54589	$ 2,098.39	Statewise
	TRANSCO	2-6	N	3,906	$ 2,132.49	$ 0.54595	$ 2,132.49	Shipley
	TRANSCO	2-6	N	6,417	$ 3,503.31	$ 0.54594	$ 3,503.31	Marathon Power
	TRANSCO	2-6	N	7,037	$ 3,841.83	$ 0.54595	$ 3,841.83	Atlantic Energy
	TRANSCO	2-6	N	8,587	$ 4,688.13	$ 0.54596	$ 4,688.13	American Power
	TRANSCO	2-6	N	10,323	$ 5,635.80	$ 0.54595	$ 5,635.80	Palmco
	TRANSCO	2-6	N	14,446	$ 7,886.71	$ 0.54594	$ 7,886.71	WGL Energy
	TRANSCO	2-6	N	16,771	$ 9,156.16	$ 0.54595	$ 9,156.16	Vista Energy
	TRANSCO	2-6	N	17,050	$ 9,308.37	$ 0.54595	$ 9,308.37	Sprague
	TRANSCO	2-6	N	27,497	$ 15,012.06	$ 0.54595	$ 15,012.06	Energy Plus
	TRANSCO	2-6	N	41,075	$ 22,425.09	$ 0.54595	$ 22,425.09	SFE Energy
	TRANSCO	2-6	N	82,057	$ 44,799.03	$ 0.54595	$ 44,799.03	Direct Energy
	TRANSCO	2-6	N	85,002	$ 46,406.69	$ 0.54595	$ 46,406.69	UGI Energy
	TRANSCO	2-6	N	89,745	$ 48,996.43	$ 0.54595	$ 48,996.43	Exelon
	TRANSCO	1-3	N	310,000	$ 7,440.00	$ 0.02400	$ 7,440.00	Mercuria Energy
	TRANSCO	1-3	N	310,000	$ 8,680.00	$ 0.02800	$ 8,680.00	Conocophilips Company
	TRANSCO	2-3	N	155,000	$ 3,720.00	$ 0.02400	$ 3,720.00	Nextera Energy
	TRANSCO	2-3	N	310,000	$ 7,440.00	$ 0.02400	$ 7,440.00	Nextera Energy
	TRANSCO	3-6	N	620,000	$ 24,800.00	$ 0.04000	$ 24,800.00	Pacific Summit
	TRANSCO	3-6	N	620,000	$ 24,800.00	$ 0.04000	$ 24,800.00	Pacific Summit
				2,766,316			$ 317,815.72	

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
September-21	TETCO	STX - M3	N	3,630	$ 2,030.58	$ 0.5594	$ 2,030.58	Statewise
	TETCO	STX - M3	N	15,630	$ 8,748.42	$ 0.5597	$ 8,748.42	Vista Energy
	TETCO	STX - M3	N	150	$ 86.61	$ 0.5774	$ 86.61	Elevation Energy
	TETCO	STX - M3	N	39,270	$ 21,985.71	$ 0.5599	$ 21,985.71	SFE Energy
	TETCO	STX - M3	N	5,760	$ 3,226.67	$ 0.5602	$ 3,226.67	Marathon Power
	TETCO	STX - M3	N	9,750	$ 5,460.88	$ 0.5601	$ 5,460.88	Palmco
	TETCO	STX - M3	N	3,630	$ 2,030.58	$ 0.5594	$ 2,030.58	Park Power
	TETCO	STX - M3	N	2,400	$ 1,343.57	$ 0.5598	$ 1,343.57	EDF Trading
	TETCO	STX - M3	N	78,510	$ 43,950.96	$ 0.5598	$ 43,950.96	Direct Energy
	TETCO	STX - M3	N	210	$ 117.05	$ 0.5574	$ 117.05	New Wave Energy
	TETCO	STX - M3	N	2,280	$ 1,277.44	$ 0.5603	$ 1,277.44	Nordic Energy
	TETCO	STX - M3	N	27,960	$ 15,654.68	$ 0.5599	$ 15,654.68	Energy Plus
	TETCO	STX - M3	N	960	$ 539.54	$ 0.5620	$ 539.54	Energy Plus
	TETCO	STX - M3	N	750	$ 422.50	$ 0.5633	$ 422.50	Alpha Gas
	TETCO	STX - M3	N	8,430	$ 4,717.71	$ 0.5596	$ 4,717.71	American Power
	TETCO	STX - M3	N	6,780	$ 3,796.63	$ 0.5600	$ 3,796.63	Atlantic Energy
	TETCO	STX - M3	N	3,720	$ 2,081.48	$ 0.5595	$ 2,081.48	Shipley
	TETCO	STX - M3	N	2,820	$ 1,577.64	$ 0.5594	$ 1,577.64	Josco Energy
	TETCO	STX - M3	N	1,470	$ 824.52	$ 0.5609	$ 824.52	Residents
	TETCO	STX - M3	N	2,160	$ 1,211.32	$ 0.5608	$ 1,211.32	Eligo Energy
	TETCO	STX - M3	N	570	$ 320.68	$ 0.5626	$ 320.68	Median Energy
	TETCO	STX - M3	N	1,410	$ 788.83	$ 0.5595	$ 788.83	Greenlight
	TETCO	STX - M3	N	85,650	$ 47,951.22	$ 0.5599	$ 47,951.22	Exelon
	TETCO	STX - M3	N	13,800	$ 7,725.52	$ 0.5598	$ 7,725.52	WGL Energy
	TETCO	STX - M3	N	15,870	$ 8,885.92	$ 0.5599	$ 8,885.92	Sprague
	TETCO	STX - M3	N	270	$ 152.73	$ 0.5657	$ 152.73	South Bay
	TETCO	STX - M3	N	3,420	$ 1,913.53	$ 0.5595	$ 1,913.53	CIMA Energy
	TETCO	STX - M3	N	81,090	$ 45,396.34	$ 0.5598	$ 45,396.34	UGI Energy
	TETCO	STX - M3	N	3,300	$ 1,847.40	$ 0.5598	$ 1,847.40	MPower
	TETCO	STX - M3	N	471,240	$ 23,562.00	$ 0.0500	$ 23,562.00	Vitol
	TETCO	STX - M3	N	90,000	$ 4,500.00	$ 0.0500	$ 4,500.00	Vitol
	TETCO	WLA - M3	N	540,000	$ 66,474.02	$ 0.1231	$ 66,474.02	Grays Ferry
	TETCO	WLA - M3	N	540,000	$ 66,474.02	$ 0.1231	$ 66,474.02	Grays Ferry
				2,062,890			$ 397,076.70	
	TRANSCO	2-6	N	180	$ 98.40	$ 0.54667	$ 98.40	Elevation Energy
	TRANSCO	2-6	N	240	$ 131.10	$ 0.54625	$ 131.10	New Wave Energy
	TRANSCO	2-6	N	300	$ 163.80	$ 0.54600	$ 163.80	South Bay
	TRANSCO	2-6	N	600	$ 327.60	$ 0.54600	$ 327.60	Median Energy
	TRANSCO	2-6	N	750	$ 409.50	$ 0.54600	$ 409.50	Alpha Gas
	TRANSCO	2-6	N	990	$ 540.30	$ 0.54576	$ 540.30	Energy Plus
	TRANSCO	2-6	N	1,410	$ 769.80	$ 0.54596	$ 769.80	Greenlight
	TRANSCO	2-6	N	1,470	$ 802.80	$ 0.54612	$ 802.80	Residents
	TRANSCO	2-6	N	2,190	$ 1,195.80	$ 0.54603	$ 1,195.80	Eligo Energy
	TRANSCO	2-6	N	2,310	$ 1,261.20	$ 0.54597	$ 1,261.20	Nordic Energy
	TRANSCO	2-6	N	2,430	$ 1,326.60	$ 0.54593	$ 1,326.60	EDF Trading
	TRANSCO	2-6	N	2,820	$ 1,539.60	$ 0.54596	$ 1,539.60	Josco Energy
	TRANSCO	2-6	N	3,330	$ 1,818.00	$ 0.54595	$ 1,818.00	MPower
	TRANSCO	2-6	N	3,450	$ 1,883.40	$ 0.54591	$ 1,883.40	CIMA Energy
	TRANSCO	2-6	N	3,630	$ 1,981.80	$ 0.54595	$ 1,981.80	Park Power
	TRANSCO	2-6	N	3,630	$ 1,981.80	$ 0.54595	$ 1,981.80	Statewise
	TRANSCO	2-6	N	3,750	$ 2,047.20	$ 0.54592	$ 2,047.20	Shipley
	TRANSCO	2-6	N	5,760	$ 3,144.60	$ 0.54594	$ 3,144.60	Marathon Power
	TRANSCO	2-6	N	6,810	$ 3,717.90	$ 0.54595	$ 3,717.90	Atlantic Energy
	TRANSCO	2-6	N	8,430	$ 4,602.30	$ 0.54594	$ 4,602.30	American Power
	TRANSCO	2-6	N	9,750	$ 5,323.20	$ 0.54597	$ 5,323.20	Palmco
	TRANSCO	2-6	N	13,830	$ 7,550.40	$ 0.54594	$ 7,550.40	WGL Energy
	TRANSCO	2-6	N	15,660	$ 8,549.70	$ 0.54596	$ 8,549.70	Vista Energy
	TRANSCO	2-6	N	15,900	$ 8,680.80	$ 0.54596	$ 8,680.80	Sprague
	TRANSCO	2-6	N	27,960	$ 15,264.60	$ 0.54594	$ 15,264.60	Energy Plus
	TRANSCO	2-6	N	39,270	$ 21,439.20	$ 0.54594	$ 21,439.20	SFE Energy
	TRANSCO	2-6	N	78,510	$ 42,862.50	$ 0.54595	$ 42,862.50	Direct Energy
	TRANSCO	2-6	N	81,090	$ 44,271.30	$ 0.54595	$ 44,271.30	UGI Energy
	TRANSCO	2-6	N	85,680	$ 46,776.90	$ 0.54595	$ 46,776.90	Exelon
	TRANSCO	1-3	N	300,000	$ 7,200.00	$ 0.02400	$ 7,200.00	Mercuria Energy
	TRANSCO	1-3	N	300,000	$ 8,400.00	$ 0.02800	$ 8,400.00	Conocophilips Company
	TRANSCO	2-3	N	150,000	$ 3,600.00	$ 0.02400	$ 3,600.00	Nextera Energy
	TRANSCO	2-3	N	300,000	$ 7,200.00	$ 0.02400	$ 7,200.00	Nextera Energy
	TRANSCO	3-6	N	300,000	$ 6,000.00	$ 0.02000	$ 6,000.00	UET
	TRANSCO	3-6	N	600,000	$ 24,000.00	$ 0.04000	$ 24,000.00	Pacific Summit
	TRANSCO	3-6	N	600,000	$ 24,000.00	$ 0.04000	$ 24,000.00	Pacific Summit
				2,972,130			$ 310,862.10	

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
October-21	TETCO	STX - M3	N	3,751	$ 2,098.26	$ 0.5594	$ 2,098.26	Shipley
	TETCO	STX - M3	N	34,379	$ 19,247.68	$ 0.5599	$ 19,247.68	Direct Energy
	TETCO	STX - M3	N	80,817	$ 45,242.42	$ 0.5598	$ 45,242.42	Direct Energy
	TETCO	STX - M3	N	12,834	$ 7,183.65	$ 0.5597	$ 7,183.65	Sprague
	TETCO	STX - M3	N	15,438	$ 8,640.33	$ 0.5597	$ 8,640.33	Vista Energy
	TETCO	STX - M3	N	9,610	$ 5,379.89	$ 0.5598	$ 5,379.89	Palmco
	TETCO	STX - M3	N	3,565	$ 1,998.47	$ 0.5606	$ 1,998.47	Park Power
	TETCO	STX - M3	N	961	$ 536.36	$ 0.5581	$ 536.36	Direct Energy
	TETCO	STX - M3	N	8,308	$ 4,648.80	$ 0.5596	$ 4,648.80	American Power
	TETCO	STX - M3	N	7,068	$ 3,954.62	$ 0.5595	$ 3,954.62	Atlantic Energy
	TETCO	STX - M3	N	83,049	$ 46,494.12	$ 0.5598	$ 46,494.12	Exelon
	TETCO	STX - M3	N	155	$ 89.48	$ 0.5773	$ 89.48	Carbonbetter
	TETCO	STX - M3	N	1,364	$ 762.50	$ 0.5590	$ 762.50	Greenlight
	TETCO	STX - M3	N	279	$ 157.81	$ 0.5656	$ 157.81	South Bay
	TETCO	STX - M3	N	682	$ 383.97	$ 0.5630	$ 383.97	Alpha Gas
	TETCO	STX - M3	N	1,643	$ 920.33	$ 0.5602	$ 920.33	Residents
	TETCO	STX - M3	N	2,046	$ 1,146.48	$ 0.5604	$ 1,146.48	Eligo Energy
	TETCO	STX - M3	N	558	$ 310.20	$ 0.5559	$ 310.20	Median Energy
	TETCO	STX - M3	N	2,759	$ 1,546.17	$ 0.5604	$ 1,546.17	Josco Energy
	TETCO	STX - M3	N	13,981	$ 7,825.21	$ 0.5597	$ 7,825.21	WGL Energy
	TETCO	STX - M3	N	39,184	$ 21,934.91	$ 0.5598	$ 21,934.91	SFE Energy
	TETCO	STX - M3	N	3,782	$ 2,119.42	$ 0.5604	$ 2,119.42	Statewise
	TETCO	STX - M3	N	2,449	$ 1,372.63	$ 0.5605	$ 1,372.63	MPower
	TETCO	STX - M3	N	4,247	$ 2,377.01	$ 0.5597	$ 2,377.01	Marathon Power
	TETCO	STX - M3	N	2,232	$ 1,251.71	$ 0.5608	$ 1,251.71	Nordic Energy
	TETCO	STX - M3	N	2,604	$ 1,456.68	$ 0.5594	$ 1,456.68	EDF Trading
	TETCO	STX - M3	N	82,119	$ 45,973.50	$ 0.5598	$ 45,973.50	UGI Energy
	TETCO	STX - M3	N	3,224	$ 1,803.76	$ 0.5595	$ 1,803.76	CIMA Energy
	TETCO	STX - M3	N	217	$ 120.93	$ 0.5573	$ 120.93	New Wave Energy
	TETCO	STX - M3	N	486,948	$ 24,347.40	$ 0.0500	$ 24,347.40	Vitol
	TETCO	STX - M3	N	93,000	$ 4,650.00	$ 0.0500	$ 4,650.00	Vitol
	TETCO	WLA - M3	N	558,000	$ 17,298.00	$ 0.0310	$ 17,298.00	Twin Eagle
	TETCO	WLA - M3	N	558,000	$ 34,038.00	$ 0.0610	$ 34,038.00	Castleton Commodities
				2,119,253			$ 317,310.70	
	TRANSCO	2-6	N	186	$ 101.68	$ 0.54667	$ 101.68	Elevation Energy
	TRANSCO	2-6	N	248	$ 135.47	$ 0.54625	$ 135.47	New Wave Energy
	TRANSCO	2-6	N	310	$ 169.26	$ 0.54600	$ 169.26	South Bay
	TRANSCO	2-6	N	589	$ 321.47	$ 0.54579	$ 321.47	Median Energy
	TRANSCO	2-6	N	682	$ 372.31	$ 0.54591	$ 372.31	Alpha Gas
	TRANSCO	2-6	N	992	$ 541.57	$ 0.54594	$ 541.57	Direct Energy
	TRANSCO	2-6	N	1,364	$ 744.62	$ 0.54591	$ 744.62	Greenlight
	TRANSCO	2-6	N	1,674	$ 914.19	$ 0.54611	$ 914.19	Residents
	TRANSCO	2-6	N	2,077	$ 1,133.98	$ 0.54597	$ 1,133.98	Eligo Energy
	TRANSCO	2-6	N	2,232	$ 1,218.61	$ 0.54597	$ 1,218.61	Nordic Energy
	TRANSCO	2-6	N	2,480	$ 1,354.08	$ 0.54600	$ 1,354.08	MPower
	TRANSCO	2-6	N	2,635	$ 1,438.71	$ 0.54600	$ 1,438.71	EDF Trading
	TRANSCO	2-6	N	2,790	$ 1,523.34	$ 0.54600	$ 1,523.34	Josco Energy
	TRANSCO	2-6	N	3,255	$ 1,776.92	$ 0.54590	$ 1,776.92	CIMA Energy
	TRANSCO	2-6	N	3,565	$ 1,946.18	$ 0.54591	$ 1,946.18	Park Power
	TRANSCO	2-6	N	3,782	$ 2,064.60	$ 0.54590	$ 2,064.60	Statewise
	TRANSCO	2-6	N	3,782	$ 2,064.60	$ 0.54590	$ 2,064.60	Shipley
	TRANSCO	2-6	N	4,278	$ 2,335.85	$ 0.54601	$ 2,335.85	Marathon Power
	TRANSCO	2-6	N	7,068	$ 3,858.88	$ 0.54596	$ 3,858.88	Atlantic Energy
	TRANSCO	2-6	N	8,339	$ 4,552.66	$ 0.54595	$ 4,552.66	American Power
	TRANSCO	2-6	N	9,641	$ 5,263.49	$ 0.54595	$ 5,263.49	Palmco
	TRANSCO	2-6	N	12,834	$ 7,006.93	$ 0.54597	$ 7,006.93	Sprague
	TRANSCO	2-6	N	14,012	$ 7,649.87	$ 0.54595	$ 7,649.87	WGL Energy
	TRANSCO	2-6	N	15,438	$ 8,428.28	$ 0.54594	$ 8,428.28	Vista Energy
	TRANSCO	2-6	N	34,410	$ 18,786.00	$ 0.54595	$ 18,786.00	Direct Energy
	TRANSCO	2-6	N	39,215	$ 21,409.53	$ 0.54595	$ 21,409.53	SFE Energy
	TRANSCO	2-6	N	80,848	$ 44,139.04	$ 0.54595	$ 44,139.04	Direct Energy
	TRANSCO	2-6	N	82,150	$ 44,849.87	$ 0.54595	$ 44,849.87	UGI Energy
	TRANSCO	2-6	N	83,049	$ 45,340.60	$ 0.54595	$ 45,340.60	Exelon
	TRANSCO	1-3	N	310,000	$ 7,440.00	$ 0.02400	$ 7,440.00	Mercuria Energy
	TRANSCO	1-3	N	310,000	$ 8,680.00	$ 0.02800	$ 8,680.00	Conocophilips Company
	TRANSCO	2-3	N	155,000	$ 3,720.00	$ 0.02400	$ 3,720.00	Nextera Energy
	TRANSCO	2-3	N	310,000	$ 7,440.00	$ 0.02400	$ 7,440.00	Nextera Energy
	TRANSCO	3-6	N	310,000	$ 6,200.00	$ 0.02000	$ 6,200.00	UET
	TRANSCO	3-6	N	620,000	$ 24,800.00	$ 0.04000	$ 24,800.00	Pacific Summit
	TRANSCO	3-6	N	620,000	$ 24,800.00	$ 0.04000	$ 24,800.00	Pacific Summit
				3,058,925			$ 314,522.59	

Philadelphia Gas Works **Schedule 4**
Pennsylvania Public Utilities Commission **Page 11 of 12**
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For the Twelve Months Ending December 31, 2021

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
November-21	TETCO	STX - M3	N	81,690	$ 45,732.23	$ 0.5598	$ 45,732.23	Direct Energy
	TETCO	STX - M3	N	34,590	$ 19,364.70	$ 0.5598	$ 19,364.70	Direct Energy
	TETCO	STX - M3	N	18,480	$ 10,346.53	$ 0.5599	$ 10,346.53	Sprague
	TETCO	STX - M3	N	15,210	$ 8,514.35	$ 0.5598	$ 8,514.35	Vista Energy
	TETCO	STX - M3	N	1,080	$ 605.67	$ 0.5608	$ 605.67	Direct Energy
	TETCO	STX - M3	N	240	$ 132.25	$ 0.5510	$ 132.25	New Wave Energy
	TETCO	STX - M3	N	9,540	$ 5,338.58	$ 0.5596	$ 5,338.58	Palmco
	TETCO	STX - M3	N	3,720	$ 2,081.48	$ 0.5595	$ 2,081.48	Park Power
	TETCO	STX - M3	N	39,570	$ 22,153.66	$ 0.5599	$ 22,153.66	SFE Energy
	TETCO	STX - M3	N	14,460	$ 8,097.11	$ 0.5600	$ 8,097.11	WGL Energy
	TETCO	STX - M3	N	3,810	$ 2,132.40	$ 0.5597	$ 2,132.40	Statewise
	TETCO	STX - M3	N	87,840	$ 49,172.48	$ 0.5598	$ 49,172.48	Exelon
	TETCO	STX - M3	N	2,280	$ 1,277.44	$ 0.5603	$ 1,277.44	Nordic Energy
	TETCO	STX - M3	N	240	$ 132.25	$ 0.5510	$ 132.25	Carbonbetter
	TETCO	STX - M3	N	4,110	$ 2,300.35	$ 0.5597	$ 2,300.35	Marathon Power
	TETCO	STX - M3	N	7,050	$ 3,949.37	$ 0.5602	$ 3,949.37	Atlantic Energy
	TETCO	STX - M3	N	4,320	$ 2,417.36	$ 0.5596	$ 2,417.36	American Power
	TETCO	STX - M3	N	1,410	$ 788.83	$ 0.5595	$ 788.83	Greenlight
	TETCO	STX - M3	N	75,120	$ 42,052.63	$ 0.5598	$ 42,052.63	UGI Energy
	TETCO	STX - M3	N	60	$ 35.70	$ 0.5950	$ 35.70	Spring
	TETCO	STX - M3	N	2,610	$ 1,460.61	$ 0.5596	$ 1,460.61	Residents
	TETCO	STX - M3	N	2,160	$ 1,211.32	$ 0.5608	$ 1,211.32	Eligo Energy
	TETCO	STX - M3	N	390	$ 218.86	$ 0.5612	$ 218.86	Median Energy
	TETCO	STX - M3	N	2,640	$ 1,475.82	$ 0.5590	$ 1,475.82	Josco Energy
	TETCO	STX - M3	N	2,460	$ 1,379.27	$ 0.5607	$ 1,379.27	EDF Trading
	TETCO	STX - M3	N	3,390	$ 1,898.32	$ 0.5600	$ 1,898.32	Shipley
	TETCO	STX - M3	N	3,780	$ 2,117.17	$ 0.5601	$ 2,117.17	MPower
	TETCO	STX - M3	N	270	$ 152.73	$ 0.5657	$ 152.73	South Bay
	TETCO	STX - M3	N	690	$ 386.81	$ 0.5606	$ 386.81	Alpha Gas
	TETCO	STX - M3	N	2,850	$ 1,598.12	$ 0.5607	$ 1,598.12	CIMA Energy
	TETCO	STX - M3	N	90,000	$ 157,500.00	$ 1.7500	$ 157,500.00	Castleton Commodities
	TETCO	STX - M3	N	471,240	$ 796,866.84	$ 1.6910	$ 796,866.84	Castleton Commodities
				987,300			$ 1,192,891.24	
	TRANSCO	2-6	N	30	$ 16.50	$ 0.55000	$ 16.50	Clearview Electric
	TRANSCO	2-6	N	90	$ 49.20	$ 0.54667	$ 49.20	Spring
	TRANSCO	2-6	N	270	$ 147.30	$ 0.54556	$ 147.30	Elevation Energy
	TRANSCO	2-6	N	270	$ 147.30	$ 0.54556	$ 147.30	New Wave Energy
	TRANSCO	2-6	N	300	$ 163.80	$ 0.54600	$ 163.80	South Bay
	TRANSCO	2-6	N	420	$ 229.20	$ 0.54571	$ 229.20	Median Energy
	TRANSCO	2-6	N	720	$ 393.00	$ 0.54583	$ 393.00	Alpha Gas
	TRANSCO	2-6	N	1,080	$ 589.50	$ 0.54583	$ 589.50	Direct Energy
	TRANSCO	2-6	N	1,440	$ 786.30	$ 0.54604	$ 786.30	Greenlight
	TRANSCO	2-6	N	2,190	$ 1,195.80	$ 0.54603	$ 1,195.80	Eligo Energy
	TRANSCO	2-6	N	2,310	$ 1,261.20	$ 0.54597	$ 1,261.20	Nordic Energy
	TRANSCO	2-6	N	2,460	$ 1,343.10	$ 0.54598	$ 1,343.10	EDF Trading
	TRANSCO	2-6	N	2,610	$ 1,425.00	$ 0.54598	$ 1,425.00	Residents
	TRANSCO	2-6	N	2,670	$ 1,457.70	$ 0.54596	$ 1,457.70	Josco Energy
	TRANSCO	2-6	N	2,880	$ 1,572.30	$ 0.54594	$ 1,572.30	CIMA Energy
	TRANSCO	2-6	N	3,390	$ 1,850.70	$ 0.54593	$ 1,850.70	Shipley
	TRANSCO	2-6	N	3,750	$ 2,047.20	$ 0.54592	$ 2,047.20	Park Power
	TRANSCO	2-6	N	3,780	$ 2,063.70	$ 0.54595	$ 2,063.70	MPower
	TRANSCO	2-6	N	3,810	$ 2,079.90	$ 0.54591	$ 2,079.90	Statewise
	TRANSCO	2-6	N	4,110	$ 2,244.00	$ 0.54599	$ 2,244.00	Marathon Power
	TRANSCO	2-6	N	4,320	$ 2,358.60	$ 0.54597	$ 2,358.60	American Power
	TRANSCO	2-6	N	7,080	$ 3,865.50	$ 0.54597	$ 3,865.50	Atlantic Energy
	TRANSCO	2-6	N	9,570	$ 5,224.80	$ 0.54596	$ 5,224.80	Palmco
	TRANSCO	2-6	N	14,460	$ 7,894.20	$ 0.54593	$ 7,894.20	WGL Energy
	TRANSCO	2-6	N	14,940	$ 8,156.40	$ 0.54594	$ 8,156.40	Vista Energy
	TRANSCO	2-6	N	18,510	$ 10,105.50	$ 0.54595	$ 10,105.50	Sprague
	TRANSCO	2-6	N	34,590	$ 18,884.40	$ 0.54595	$ 18,884.40	Direct Energy
	TRANSCO	2-6	N	39,570	$ 21,603.30	$ 0.54595	$ 21,603.30	SFE Energy
	TRANSCO	2-6	N	75,120	$ 41,011.80	$ 0.54595	$ 41,011.80	UGI Energy
	TRANSCO	2-6	N	81,720	$ 44,615.10	$ 0.54595	$ 44,615.10	Direct Energy
	TRANSCO	2-6	N	87,870	$ 47,972.70	$ 0.54595	$ 47,972.70	Exelon
	TRANSCO	1-3	N	150,000	$ 5,475.00	$ 0.03650	$ 5,475.00	Nextera Energy
	TRANSCO	2-3	N	150,000	$ 5,475.00	$ 0.03650	$ 5,475.00	Nextera Energy
	TRANSCO	3-6	N	300,000	$ 513,000.00	$ 1.71000	$ 513,000.00	Vitol
	TRANSCO	3-6	N	2,250,000	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	750,000	$ -	$ -	$ -	Tioga LNG LLC
				4,026,330			$ 756,705.00	

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
December-21	TETCO	STX - M3	N	248	$ 136.50	$ 0.5504	$ 136.50	New Wave Energy
	TETCO	STX - M3	N	4,526	$ 2,531.58	$ 0.5593	$ 2,531.58	American Power
	TETCO	STX - M3	N	1,116	$ 625.04	$ 0.5601	$ 625.04	Direct Energy
	TETCO	STX - M3	N	2,139	$ 1,197.54	$ 0.5599	$ 1,197.54	Eligo Energy
	TETCO	STX - M3	N	3,224	$ 1,801.45	$ 0.5588	$ 1,801.45	Residents
	TETCO	STX - M3	N	62	$ 36.83	$ 0.5940	$ 36.83	Spring
	TETCO	STX - M3	N	341	$ 189.02	$ 0.5543	$ 189.02	Median Energy
	TETCO	STX - M3	N	3,658	$ 2,043.00	$ 0.5585	$ 2,043.00	Park Power
	TETCO	STX - M3	N	9,734	$ 5,441.20	$ 0.5590	$ 5,441.20	Palmco
	TETCO	STX - M3	N	15,376	$ 8,597.82	$ 0.5592	$ 8,597.82	Vista Energy
	TETCO	STX - M3	N	2,697	$ 1,507.35	$ 0.5589	$ 1,507.35	Josco Energy
	TETCO	STX - M3	N	37,386	$ 20,903.60	$ 0.5591	$ 20,903.60	Direct Energy
	TETCO	STX - M3	N	7,471	$ 4,175.42	$ 0.5589	$ 4,175.42	Atlantic Energy
	TETCO	STX - M3	N	83,979	$ 46,954.29	$ 0.5591	$ 46,954.29	Direct Energy
	TETCO	STX - M3	N	1,395	$ 782.66	$ 0.5610	$ 782.66	Greenlight
	TETCO	STX - M3	N	90,954	$ 50,851.29	$ 0.5591	$ 50,851.29	Exelon
	TETCO	STX - M3	N	19,375	$ 10,835.29	$ 0.5592	$ 10,835.29	Sprague
	TETCO	STX - M3	N	15,221	$ 8,508.44	$ 0.5590	$ 8,508.44	WGL Energy
	TETCO	STX - M3	N	3,441	$ 1,922.24	$ 0.5586	$ 1,922.24	Shipley
	TETCO	STX - M3	N	42,036	$ 23,503.42	$ 0.5591	$ 23,503.42	SFE Energy
	TETCO	STX - M3	N	4,123	$ 2,305.71	$ 0.5592	$ 2,305.71	Statewise
	TETCO	STX - M3	N	279	$ 157.62	$ 0.5649	$ 157.62	Carbonbetter
	TETCO	STX - M3	N	4,309	$ 2,410.79	$ 0.5595	$ 2,410.79	Marathon Power
	TETCO	STX - M3	N	2,294	$ 1,281.50	$ 0.5586	$ 1,281.50	Nordic Energy
	TETCO	STX - M3	N	108,128	$ 60,452.20	$ 0.5591	$ 60,452.20	UGI Energy
	TETCO	STX - M3	N	2,511	$ 1,402.27	$ 0.5585	$ 1,402.27	EDF Trading
	TETCO	STX - M3	N	713	$ 399.17	$ 0.5598	$ 399.17	Alpha Gas
	TETCO	STX - M3	N	279	$ 157.62	$ 0.5649	$ 157.62	South Bay
	TETCO	STX - M3	N	4,681	$ 2,615.52	$ 0.5588	$ 2,615.52	MPower
	TETCO	STX - M3	N	2,945	$ 1,649.26	$ 0.5600	$ 1,649.26	CIMA Energy
	TETCO	STX - M3	N	93,000	$ 162,750.00	$ 1.7500	$ 162,750.00	Castleton Commodities
	TETCO	STX - M3	N	486,948	$ 823,429.07	$ 1.6910	$ 823,429.07	Castleton Commodities
				1,054,589			$ 1,251,554.71	
	TRANSCO	2-6	N	31	$ 17.05	$ 0.55000	$ 17.05	Clearview Electric
	TRANSCO	2-6	N	93	$ 50.84	$ 0.54667	$ 50.84	Spring
	TRANSCO	2-6	N	279	$ 152.21	$ 0.54556	$ 152.21	New Wave Energy
	TRANSCO	2-6	N	279	$ 152.21	$ 0.54556	$ 152.21	Carbonbetter
	TRANSCO	2-6	N	310	$ 169.26	$ 0.54600	$ 169.26	South Bay
	TRANSCO	2-6	N	341	$ 186.00	$ 0.54545	$ 186.00	Median Energy
	TRANSCO	2-6	N	744	$ 406.10	$ 0.54583	$ 406.10	Alpha Gas
	TRANSCO	2-6	N	1,116	$ 609.15	$ 0.54583	$ 609.15	Direct Energy
	TRANSCO	2-6	N	1,426	$ 778.72	$ 0.54609	$ 778.72	Greenlight
	TRANSCO	2-6	N	2,139	$ 1,167.77	$ 0.54594	$ 1,167.77	Eligo Energy
	TRANSCO	2-6	N	2,325	$ 1,269.45	$ 0.54600	$ 1,269.45	Nordic Energy
	TRANSCO	2-6	N	2,542	$ 1,387.87	$ 0.54598	$ 1,387.87	EDF Trading
	TRANSCO	2-6	N	2,697	$ 1,472.50	$ 0.54598	$ 1,472.50	Josco Energy
	TRANSCO	2-6	N	2,976	$ 1,624.71	$ 0.54594	$ 1,624.71	CIMA Energy
	TRANSCO	2-6	N	3,255	$ 1,776.92	$ 0.54590	$ 1,776.92	Residents
	TRANSCO	2-6	N	3,472	$ 1,895.34	$ 0.54589	$ 1,895.34	Shipley
	TRANSCO	2-6	N	3,689	$ 2,013.76	$ 0.54588	$ 2,013.76	Park Power
	TRANSCO	2-6	N	4,123	$ 2,250.91	$ 0.54594	$ 2,250.91	Statewise
	TRANSCO	2-6	N	4,340	$ 2,369.64	$ 0.54600	$ 2,369.64	Marathon Power
	TRANSCO	2-6	N	4,526	$ 2,471.01	$ 0.54596	$ 2,471.01	American Power
	TRANSCO	2-6	N	4,681	$ 2,555.64	$ 0.54596	$ 2,555.64	MPower
	TRANSCO	2-6	N	7,502	$ 4,095.72	$ 0.54595	$ 4,095.72	Atlantic Energy
	TRANSCO	2-6	N	9,734	$ 5,314.02	$ 0.54592	$ 5,314.02	Palmco
	TRANSCO	2-6	N	15,221	$ 8,309.86	$ 0.54595	$ 8,309.86	WGL Energy
	TRANSCO	2-6	N	15,376	$ 8,394.49	$ 0.54595	$ 8,394.49	Vista Energy
	TRANSCO	2-6	N	19,375	$ 10,577.82	$ 0.54595	$ 10,577.82	Sprague
	TRANSCO	2-6	N	37,386	$ 20,410.71	$ 0.54595	$ 20,410.71	Direct Energy
	TRANSCO	2-6	N	42,067	$ 22,966.35	$ 0.54595	$ 22,966.35	SFE Energy
	TRANSCO	2-6	N	83,979	$ 45,848.38	$ 0.54595	$ 45,848.38	Direct Energy
	TRANSCO	2-6	N	90,985	$ 49,673.16	$ 0.54595	$ 49,673.16	Exelon
	TRANSCO	2-6	N	108,128	$ 59,032.37	$ 0.54595	$ 59,032.37	UGI Energy
	TRANSCO	1-3	N	155,000	$ 5,657.50	$ 0.03650	$ 5,657.50	Nextera Energy
	TRANSCO	2-3	N	155,000	$ 5,657.50	$ 0.03650	$ 5,657.50	Nextera Energy
	TRANSCO	3-6	N	310,000	$ 530,100.00	$ 1.71000	$ 530,100.00	Vitol
	TRANSCO	3-6	N	2,325,000	$ -	$ -	$ -	Tioga LNG LLC
	TRANSCO	3-6	N	775,000	$ -	$ -	$ -	Tioga LNG LLC
				4,195,137			$ 800,814.94	

Docket No. R-2022-XXXXXXX
Item 53.64(c)(8)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(8) A list of agreements to transport gas by the utility through its system, for other utilities, pipelines or jurisdictional customers including the quantity and price of the transportation.

Response:

Please see the attached list of gas transportation agreements for PGW's jurisdictional customers. PGW has no transportation agreements with other utilities or pipeline customers.

Philadelphia Gas Works
January 2021 - December 2021

MTR NBR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL CCF	MDQ (DTH)	MDQ (MCF)
1594769	-	-	-	-	-	207	-	-	-	-	-	-	207	461	446
1611015	-	-	2,997	28,736	49,640	45,587	40,380	34,698	56,250	49,554	51,670	24,129	383,642	750	725
1611016	1,277,709	1,070,819	1,052,458	1,218,742	1,080,167	1,093,433	-	2,275,563	1,115,780	1,231,390	1,259,300	1,059,555	13,734,916	17,957	17,367
1621317	404,259	399,174	354,267	256,228	294,911	193,669	294,053	182,200	257,004	285,043	309,931	297,219	3,527,958	2,650	2,563
1658878	44,830	47,557	27,513	9,741	1,197	-	-	-	-	187	32,036	38,612	201,674	733	709
1658879	11,187	11,108	6,538	2,813	579	310	248	444	744	1,805	6,475	8,649	50,900	269	260
1658883	44,772	44,083	23,808	5,813	166	-	-	14	-	41	30,402	21,141	170,240	521	504
1658884	59,824	72,642	33,988	11,689	-	310	103	827	1,344	10,002	18,523	70,748	280,000	1,400	1,354
1658885	207	103	5,392	310	310	27,383	40,263	57,269	2,273	413	517	2,280	136,721	1,311	1,268
1658886	-	-	-	-	-	-	-	-	-	-	-	-	-	1,311	1,268
1685273	-	-	-	9,679	2,076	1,370	1,245	1,023	1,205	1,589	14,471	16,838	49,495	355	343
1685277	29,934	31,172	11,731	1,313	21	-	-	-	-	21	13,958	14,714	102,864	417	403
1685278	34,649	33,777	20,573	10,281	4,937	2,197	2,372	2,140	2,032	3,438	18,923	23,531	158,850	703	680
1685280	52,107	34,847	48,145	63,511	64,761	56,671	52,132	45,817	52,612	52,221	47,555	63,191	633,569	650	629
1701736	207	207	-	-	103	-	-	-	-	-	-	-	517	30,000	29,014
1701737	104	104	-	-	159,774	1,551	620	19,543	-	-	-	-	181,694	30,000	29,014
1722906	21,879	21,888	19,765	12,491	-	-	-	-	-	1,648	12,200	15,943	105,813	340	329
1723873	4,717	4,024	2,463	1,202	148	-	-	-	-	151	2,799	2,625	18,127	120	116
1723876	9,404	9,181	5,640	2,965	958	-	-	-	-	-	-	-	28,148	241	233
1723898	43,859	51,709	26,322	6,620	-	-	-	-	-	1,753	32,579	37,808	200,650	601	581
1723901	48,411	43,316	26,137	12,448	-	-	-	-	-	7,027	32,311	32,009	201,659	355	343
1724001	14,569	24,311	14,084	5,750	723	-	-	-	-	1,507	12,518	19,223	92,685	503	486
1724008	43,308	36,538	37,340	28,714	27,255	28,703	30,522	25,952	29,401	21,897	35,799	39,277	384,706	418	404
1724010	19,923	20,272	21,675	18,531	18,593	19,769	18,837	20,841	20,562	21,513	23,638	21,553	245,706	495	479
1724011	13,063	11,409	6,664	827	-	-	-	-	-	310	5,421	4,507	42,201	469	454
1724230	11,170	11,273	7,400	4,449	2,733	2,268	2,209	2,295	2,364	-	10,158	8,066	64,386	346	335
1724240	10,021	12,614	7,074	2,617	-	-	-	-	4	144	6,896	6,176	45,547	231	223
1724851	86,883	86,422	77,064	58,719	51,602	43,633	41,734	38,941	43,642	51,799	71,344	76,960	728,742	731	706
1724852	102,538	102,069	90,944	70,091	61,530	51,594	49,068	45,655	51,709	61,602	85,095	91,564	863,459	731	706
1724853	44,848	43,159	21,690	6,295	-	-	-	-	110	220	22,318	29,981	168,623	541	523
1724854	163,553	53,989	44,324	40,419	45,188	41,356	42,556	85,118	93,490	97,721	94,493	86,694	888,899	1,046	1,012
1724856	24,570	26,012	19,376	9,203	-	-	-	-	-	-	32,649	21,340	133,150	927	897
1756663	70,679	69,585	39,140	16,948	1,895	-	-	-	14	469	34,182	45,175	278,087	316	306
1756664	44,789	37,782	23,764	10,929	1,859	-	-	-	-	-	23,867	28,612	171,601	341	330
1771898	8,398	-	11,287	21,293	36,590	66,257	34,388	74,071	92,855	46,659	21,078	26,726	439,601	750	725
1771899	-	-	-	-	-	-	-	-	-	-	-	-	-	1,355	1,310
1786008	367,956	344,963	298,508	231,665	199,365	152,611	143,996	142,859	154,505	182,431	262,627	295,097	2,776,580	2,318	2,242
1786009	342,554	320,922	277,689	215,539	185,819	142,582	133,769	132,322	143,129	169,120	244,015	274,484	2,581,944	2,317	2,241
1806076	63,143	58,340	38,956	23,057	13,753	12,821	12,189	12,293	12,720	13,415	41,162	45,784	347,633	840	812
1806077	73,923	72,225	65,146	23,465	1,862	1,344	1,756	1,033	1,034	413	46,227	-	288,427	151	146
1806079	20,436	19,495	9,946	5,303	913	-	-	-	443	2,403	11,091	13,232	83,261	605	585
1806080	13,759	9,171	8,743	5,893	4,747	2,224	-	-	-	1,969	9,100	10,151	65,757	277	268
1806092	114,961	36,770	42,109	36,439	36,521	41,502	31,677	32,341	32,310	32,507	36,421	37,878	511,436	21	20
1826561	7,750	8,193	6,091	3,753	1,975	757	667	654	705	1,373	5,040	5,924	42,882	31	30
1826616	6,928	6,436	4,332	2,763	880	-	-	-	-	1,335	5,209	6,036	33,919	87	84

1826674	21,301	21,411	18,593	18,381	16,474	17,590	15,729	15,503	14,459	15,035	18,992	20,418	213,887	114	110
1884506	19,583	20,749	12,407	2,275	45	-	-	-	-	785	5,371	6,669	67,884	245	237
1884510	28,527	27,691	19,232	11,439	5,480	4,820	4,188	3,905	4,653	6,294	18,025	22,025	156,281	676	654
1884573	33,591	33,367	21,758	6,929	103	-	-	-	103	-	19,650	23,203	138,704	368	356
1884576	29,655	29,704	21,584	15,711	10,244	-	-	-	-	6,366	20,497	23,829	157,590	301	291
1884577	42,467	38,540	22,123	12,787	100	-	-	-	-	1,614	27,034	29,647	174,314	240	232
1884579	7,620	7,585	6,463	2,078	-	-	-	-	-	10	1,407	5,863	31,027	202	195
1906623	8,308	8,073	6,581	4,037	2,391	1,240	1,244	1,262	1,319	2,042	6,774	7,380	50,650	362	350
1906625	9,048	8,666	9,062	7,181	5,640	6,805	5,811	1,851	109	22	1,287	1,706	57,189	30	29
1906628	10,480	12,077	5,735	2,265	446	-	-	-	-	732	7,538	6,562	45,834	9	9
1906630	6,949	7,225	3,879	2,187	106	-	-	-	-	-	3,878	6,651	30,875	215	208
1909300	2,055,256	2,010,841	1,397,932	3,577,623	552,657	421,913	1,750,734	551,826	1,012,473	835,498	1,035,594	1,992,164	17,194,512	-	-
1909301	12,969,614	11,930,966	11,334,097	2,444,309	6,640,628	9,797,024	9,443,304	10,537,266	5,590,918	7,628,638	11,594,483	12,102,628	112,013,874	-	-
1909334	13,203	6,810	5,607	4,044	3,386	2,599	2,499	1,333	2,304	2,728	4,191	4,870	53,574	130	126
1909351	7,482	7,067	4,541	2,339	12	1	4	3	2	674	4,355	4,889	31,369	110	106
1921575	18,997	16,471	9,494	3,935	-	-	-	-	-	70	7,519	6,793	63,279	160	155
1921578	8,904	7,095	5,509	1,530	590	1,015	2,177	1,977	2,559	2,737	5,474	4,745	44,313	183	177
1921700	33,432	37,455	27,207	12,990	-	-	-	11	23	2,090	38,451	53,881	205,541	831	804
1921701	34,958	32,383	22,968	14,540	13,474	12,931	12,499	12,621	12,558	13,423	24,541	26,816	233,713	504	487
1921703	36,329	33,895	24,845	15,076	10	-	-	-	-	4,021	26,906	30,121	171,204	345	334
1954681	59,199	53,883	39,779	28,226	23,060	22,333	22,106	22,209	23,269	25,487	38,570	42,263	400,385	907	877
1954683	34,526	32,020	17,723	4,962	6,204	4,652	7,337	13,326	10,859	13,724	27,715	35,839	208,887	728	704
1954684	67,890	66,184	42,597	22,295	138	-	-	-	-	2,211	41,962	49,653	292,930	1,565	1,514
1986382	34,961	31,913	11,383	4,532	4	-	-	-	-	-	10,745	21,187	114,725	547	529
1986388	6,649	6,687	4,106	1,617	-	-	-	-	-	141	4,151	4,593	27,944	400	387
1987272	12,963	12,784	9,024	2,082	-	-	-	-	-	-	7,081	8,220	52,153	307	297
1987495	10,554	10,702	12,075	10,850	10,606	11,528	5,355	12,209	11,695	12,177	12,330	12,233	132,313	313	303
1987496	14,661	14,807	10,497	2,595	651	-	-	-	-	1,052	12,164	15,723	72,150	263	254
1987500	54,609	48,332	12,252	-	-	-	-	-	-	-	10,549	24,715	150,457	432	418
1987633	4,466	4,376	3,036	264	-	-	-	-	-	2	2,788	3,168	18,101	348	337
1987683	1,413	1,364	779	133	-	-	-	-	-	10	1,108	1,465	6,272	348	337
1987743	2,135	2,038	1,508	1,021	-	-	-	3	2	126	1,412	1,607	9,853	414	400
1987777	7,565	6,908	7,831	6,749	6,372	6,556	5,301	5,877	6,318	7,214	7,731	8,342	82,763	202	195
1987786	15,014	9,248	7,420	4,509	-	-	-	-	-	7	3,776	6,407	46,381	212	205
1987797	10,573	10,555	10,305	7,744	6,740	6,455	5,724	6,616	7,098	7,601	10,173	10,892	100,476	281	272
1987801	29,410	28,121	19,810	12,674	10,000	19,143	21,846	20,718	13,575	7,617	18,777	21,023	222,714	1,774	1,716
1987803	60,822	56,115	48,928	48,286	60,690	79,165	94,500	94,865	69,728	61,868	42,753	47,435	765,155	456	441
1987805	12,997	12,203	7,398	3,403	215	188	197	159	195	1,288	7,093	9,423	54,759	237	229
1987812	13,852	13,067	8,921	5,231	589	-	-	-	-	52	10,538	13,643	65,892	272	263
1987814	471,320	473,240	525,419	511,232	528,001	504,937	451,440	494,707	485,734	503,775	513,077	317,465	5,780,347	3,432	3,319
1987815	78,855	72,011	57,010	33,638	23,815	19,244	19,919	19,365	21,049	22,933	55,383	60,471	483,692	2,169	2,098
1989421	17,620	21,449	11,219	1,250	-	-	-	-	-	80	12,827	12,759	77,206	251	243
1989426	28,476	26,836	18,267	9,490	2,859	2,365	2,340	2,374	2,506	4,806	18,446	22,151	140,918	320	309
1989428	62,368	60,868	52,179	41,165	31,527	24,242	22,531	22,876	26,580	32,645	53,735	59,055	489,771	720	696
2012845	19,357	14,834	11,236	7,902	5,853	6,166	4,979	1,926	33	-	-	-	72,286	804	778
2012851	2,976	2,858	2,334	1,247	62	49	41	165	376	705	2,302	2,451	15,566	49	47
2012853	3,835	4,178	3,359	2,087	228	115	101	213	430	875	2,877	2,907	21,205	39	38
2012857	3,289	3,086	2,403	1,560	156	44	80	215	364	476	2,346	2,492	16,510	39	38
2012880	14,839	13,848	11,858	9,300	9,202	6,277	6,024	5,914	6,437	8,135	10,675	11,689	114,199	104	101
2023712	3,767	-	-	-	-	-	-	-	-	-	-	-	3,767	98	95

2023812	12,008	11,796	8,409	6,146	2,202	1,946	1,808	1,882	1,916	-	10,171	9,679	67,963	131	127
2023825	6,338	6,029	3,041	1,230	135	109	104	101	116	136	3,801	5,524	26,665	76	74
2023831	2,689	2,785	2,903	1,861	2,316	2,202	2,293	2,038	2,522	3,528	3,128	3,683	31,949	132	128
2023840	6,122	5,730	4,176	2,983	1,302	610	508	487	529	1,515	4,261	4,907	33,132	112	108
2023947	8,975	8,770	6,966	5,073	3,853	3,805	3,696	3,461	3,560	4,630	7,505	7,201	67,495	325	314
2023948	19,312	18,106	13,675	9,132	2,518	2,275	2,129	2,273	2,386	6,675	14,455	15,366	108,299	360	348
2023952	23,422	27,927	10,265	6,181	5,966	4,642	4,855	3,429	3,537	4,045	5,076	5,510	104,855	549	531
2023953	75,074	71,585	57,739	52,791	38,483	27,109	26,825	25,202	28,337	32,057	57,721	63,540	556,463	576	557
2023955	34,137	36,838	21,565	9,762	2,953	-	-	-	-	-	24,894	28,764	158,914	320	310
2023958	27,350	28,305	19,839	1,523	-	692	-	-	-	4,832	24,232	30,236	137,011	523	506
2023960	25,406	26,361	26,350	22,282	18,964	19,658	18,115	19,776	20,492	20,176	20,897	22,609	261,086	1,362	1,317
2024285	7,349	6,877	5,166	3,551	2,004	19	104	532	579	1,443	4,896	5,418	37,938	15	15
2024290	9,113	8,819	6,043	3,410	-	2,269	506	507	542	1,308	6,319	7,114	45,951	15	15
2024299	6,545	6,104	4,109	2,457	1,314	499	450	452	524	1,277	4,062	4,785	32,580	15	15
2024307	12,466	12,112	6,067	1,598	-	-	-	-	-	318	5,831	8,492	46,883	111	107
2024367	7,864	7,160	4,254	1,472	-	-	-	-	-	128	2,804	4,141	27,822	888	859
2024389	5,212	5,142	3,605	2,191	128	-	-	-	8	527	3,928	4,426	25,166	312	302
2024604	5,657	5,009	6,056	6,495	6,658	-	13,006	6,777	7,784	8,954	6,693	5,773	78,860	78	75
2024644	7,787	7,628	6,131	4,515	1,138	980	894	894	932	-	6,589	5,439	42,928	480	464
2024645	10,800	12,519	10,316	6,561	1,423	1,221	1,147	698	197	3,398	9,020	9,337	66,634	289	279
2024648	26,032	24,760	19,841	-	32,337	15,496	14,644	-	14,672	29,470	20,918	23,368	221,538	394	381
2024675	1,001	880	875	694	637	533	425	443	467	516	605	699	7,776	140	135
2024683	23,345	22,638	18,747	8,790	2,177	1,768	1,633	1,642	1,845	7,316	18,149	20,882	128,931	291	281
2024684	6,144	5,783	2,812	1,459	-	-	-	1	4	465	5,094	4,599	26,362	211	204
2024694	19,477	17,977	9,140	2,825	-	-	-	-	-	470	7,216	10,285	67,390	245	237
2024698	8,375	7,964	5,863	3,850	777	-	-	-	-	613	4,625	5,703	37,770	272	263
2024702	22,935	21,211	14,188	7,991	679	-	-	-	-	-	19,102	22,439	108,544	573	554
2024703	21,554	20,786	15,969	3,818	-	-	-	-	18	4,132	18,055	18,425	102,756	1,252	1,211
2024704	12,892	12,656	7,011	3,251	243	-	-	-	1	3	6,270	9,122	51,449	257	249
2024705	18,001	16,881	11,477	6,871	3,379	3,174	2,985	3,281	3,517	3,874	9,844	12,846	96,128	278	269
2024706	8,006	7,293	5,210	1,629	-	-	-	-	-	13	4,900	4,069	31,120	240	232
2024712	16,498	16,536	6,872	1,706	-	-	-	-	-	-	7,601	11,141	60,354	235	227
2024714	10,756	11,528	6,952	65	-	-	-	-	1	1,285	6,384	7,069	44,040	167	162
2024715	34,068	30,912	23,407	6,632	-	-	-	-	-	2,264	17,985	30,541	145,809	410	397
2024719	5,154	6,489	3,696	1,962	1,475	-	2,545	2,401	1,937	2,211	5,277	6,651	39,800	170	164
2024851	16,737	14,675	9,098	3,775	1,013	-	-	-	-	516	9,723	10,588	66,124	100	97
2024992	1,614	1,528	918	339	-	-	-	-	-	-	826	969	6,195	400	387
2025049	6,287	5,730	4,277	3,068	2,724	2,127	2,126	2,044	1,761	2,977	4,449	3,347	40,918	65	63
2025099	7,810	7,700	3,329	973	-	-	-	-	-	43	3,118	4,800	27,773	400	387
2025107	10,840	10,459	7,160	1,326	-	-	-	-	-	-	5,950	8,236	43,971	209	202
2025139	12,352	-	10,893	-	-	-	-	-	-	-	-	-	23,245	90	87
2025146	-	14,968	-	4,403	1,429	-	-	-	-	-	3,158	4,598	28,556	270	261
2025149	4,256	4,422	2,387	2,161	2,873	2,568	2,361	2,136	2,640	2,955	3,009	2,829	34,599	336	325
2025150	9,435	8,755	5,375	2,067	-	-	-	-	-	1,095	7,622	8,200	42,548	115	111
2025156	7,448	7,202	3,892	1,923	55	-	-	-	17	107	3,060	4,461	28,164	120	116
2025158	10,703	11,184	7,587	2,050	1	1	-	1	2	280	6,936	9,903	48,649	171	165
2025166	5,041	5,175	2,679	836	65	-	-	-	1	137	2,307	2,969	19,210	254	246
2025172	6,689	7,193	-	4,173	1,315	-	-	-	-	-	2,901	4,093	26,364	208	201
2025174	4,470	4,448	3,559	2,593	2,367	1,903	-	1,877	-	-	-	-	21,217	254	246
2025178	15,876	14,851	12,398	9,343	6,045	4,472	5,893	5,172	6,382	8,440	11,504	13,981	114,358	296	286

2026737	9,909	7,895	5,034	4,984	-	-	-	-	-	-	4,178	3,855	35,856	231	223
2026766	12,739	11,762	7,287	4,003	309	-	-	-	-	-	-	-	36,101	89	86
2026784	8,712	7,539	6,048	4,464	2,482	545	513	525	575	-	6,868	7,748	46,018	72	70
2026819	21,980	18,759	20,551	19,848	19,056	16,836	16,851	13,697	16,524	20,056	9,303	15,300	208,762	67	65
2026820	19,596	17,864	18,730	16,902	16,991	15,405	14,495	15,243	16,472	17,462	18,094	18,669	205,922	60	58
2026838	17,375	17,151	10,734	-	-	1,651	4	2	2	910	9,206	10,349	67,385	72	70
2026849	4,595	4,652	3,911	2,811	162	-	-	-	11	877	4,937	5,891	27,848	242	234
2026874	4,124	3,859	2,569	1,337	297	-	-	-	-	367	2,488	3,192	18,234	54	52
2027160	8,259	-	7,996	-	-	-	-	-	-	-	-	-	16,255	75	73
2027243	16,586	17,710	15,981	13,796	12,113	10,819	11,703	11,774	12,420	12,684	16,014	18,531	170,131	69	67
2027375	24,035	22,274	16,723	11,270	6,455	3,772	3,176	3,143	3,550	5,359	15,483	17,793	133,033	189	183
2027381	4,962	4,650	4,241	3,104	907	884	-	1,648	781	852	3,755	4,183	29,966	402	389
2027383	11,522	9,816	5,343	2,294	165	-	-	-	-	-	6,296	7,353	42,790	54	52
2027386	7,351	6,022	8,791	4,464	2,609	3,076	3,560	2,653	3,621	1,814	3,219	5,474	52,653	141	136
2027387	17,289	15,751	12,915	9,032	9,017	5,717	6,303	5,777	6,134	6,898	11,685	11,936	118,454	224	217
2027392	9,246	8,966	8,339	6,405	5,448	3,815	3,395	3,926	4,048	4,326	6,849	7,539	72,303	576	557
2027401	8,281	7,823	6,389	4,102	3,737	4,289	2,073	3,918	2,742	2,860	5,322	5,946	57,483	50	48
2027402	9,991	9,390	7,564	4,825	4,221	5,077	2,274	4,814	3,289	3,485	6,348	7,019	68,297	50	48
2027403	21,010	19,747	13,447	8,615	5,012	2,901	2,719	2,845	3,275	5,039	13,468	16,573	114,651	250	242
2027406	36,636	35,374	37,016	30,652	26,607	29,461	27,640	30,621	28,738	31,801	41,601	39,462	395,610	600	580
2027423	5,265	4,739	3,582	1,658	137	-	-	-	-	744	4,525	6,327	26,975	86	83
2027430	4,969	4,634	4,250	3,100	908	882	-	1,685	737	855	3,757	4,174	29,952	402	389
2027433	7,765	7,290	4,167	3,152	-	-	1	-	-	-	4,488	5,538	32,401	144	139
2027434	6,948	6,810	3,748	2,900	-	-	1	-	-	-	4,192	5,110	29,709	144	139
2027443	19,114	18,298	12,692	7,528	5,360	3,345	2,977	3,146	3,935	5,617	13,562	16,227	111,802	180	174
2027454	8,979	9,401	7,054	4,540	-	-	-	-	-	-	-	-	29,974	187	181
2027464	16,546	14,063	10,772	2,611	-	-	-	-	-	1,994	10,309	12,028	68,322	200	193
2027476	6,427	6,823	6,938	6,254	5,344	3,775	3,545	4,474	5,271	6,624	8,308	10,671	74,454	144	139
2027483	15,072	16,801	11,290	4,892	406	1	-	-	-	926	11,056	12,577	73,021	192	186
2027484	10,460	10,519	6,731	2,130	-	-	-	-	-	89	6,680	8,460	45,069	232	224
2027485	37,584	35,286	25,876	8,510	2,969	2,578	2,846	2,262	2,452	4,963	26,063	30,905	182,294	392	379
2027494	22,953	22,086	15,945	7,709	136	-	-	-	-	906	15,248	16,916	101,900	100	97
2027498	39,775	39,366	36,492	34,600	35,185	34,422	33,466	33,716	28,581	31,668	47,963	42,871	438,105	168	162
2027510	7,495	7,641	9,787	7,706	8,584	9,185	8,223	8,644	8,968	10,413	9,859	9,060	105,565	235	227
2027520	15,356	14,948	9,512	4,270	-	-	-	-	-	-	13,808	12,112	70,006	927	897
2027524	31,366	29,837	-	35,516	11,162	21,096	24,007	22,760	15,222	8,818	20,624	22,811	243,220	1,774	1,716
2027527	8,657	8,869	4,330	1,378	698	109	257	60	345	1,554	3,173	6,123	35,553	240	232
2027529	55,713	56,630	38,168	21,876	8,979	6,928	6,432	6,444	8,000	11,142	34,941	44,244	299,496	706	683
2027531	16,636	15,973	9,793	5,104	2,320	319	18	-	79	1,999	10,699	13,356	76,295	294	284
2027533	14,730	14,260	9,111	4,836	2,253	-	-	-	-	1,126	10,342	11,569	68,228	185	179
2027536	8,377	10,644	5,912	1,186	-	-	-	-	-	79	5,066	4,080	35,345	83	80
2027544	31,654	30,447	31,807	26,331	22,650	25,084	23,548	26,356	24,754	27,553	35,773	33,936	339,893	600	580
2027560	3,650	3,571	2,403	1,540	738	516	551	752	1,090	1,468	2,596	2,780	21,656	8	8
2027563	5,591	6,803	3,610	621	-	-	-	-	-	21	5,034	4,419	26,100	75	73
2027581	14,926	14,107	9,298	3,912	-	-	-	-	-	797	9,942	9,467	62,448	360	348
2027583	35,834	32,572	36,399	35,160	37,733	36,272	35,304	36,439	33,790	34,602	33,417	33,835	421,358	725	701
2027589	12,793	11,137	4,162	1,011	-	-	-	-	-	233	5,499	7,414	42,250	130	126
2027599	11,904	9,511	8,310	4,845	3,305	2,610	2,726	2,911	3,637	4,748	9,049	8,588	72,143	228	221
2027605	4,182	4,194	2,411	2,059	553	-	-	-	-	442	3,040	3,957	20,837	145	140
2027612	3,542	3,572	2,037	1,757	468	-	-	-	-	379	2,575	3,387	17,716	211	204

2027620	16,578	15,836	12,662	8,696	2,630	-	3	1	18	33	11,195	12,915	80,566	235	227
2027635	4,948	4,767	4,098	3,958	4,287	5,081	5,462	5,609	4,972	4,827	3,898	5,075	56,981	154	149
2027641	15,339	16,513	9,757	3,673	-	-	-	-	-	-	7,936	11,408	64,626	186	180
2035210	2,450	-	2,119	-	-	-	-	-	-	-	-	-	4,569	132	128
2035356	2,120	2,406	1,592	666	151	-	-	-	-	225	1,382	1,591	10,133	41	40
2035366	2,933	-	2,529	-	-	-	-	-	-	-	-	-	5,462	132	128
2035408	2,052	-	1,782	-	-	-	-	-	-	-	-	-	3,834	255	247
2035554	4,517	4,170	3,150	1,974	612	500	448	439	502	922	2,990	3,411	23,635	48	46
2035694	1,681	1,654	1,203	537	100	-	-	-	-	1	1,176	1,451	7,801	348	337
2035839	8,806	7,289	5,414	3,156	1,497	1,256	1,320	1,394	1,486	2,317	3,936	4,575	42,447	156	151
2035943	5,233	5,519	3,485	2,042	1,603	2,704	3,015	3,359	2,607	2,773	3,260	3,791	39,390	72	70
2035967	3,420	4,087	5,286	6,006	6,249	6,389	6,502	7,081	6,998	6,456	6,654	6,880	72,007	168	162
2035975	10,693	10,206	11,036	9,113	8,256	7,497	6,769	6,483	6,975	8,217	9,505	10,128	104,878	174	168
2035986	4,541	3,887	3,634	2,717	2,604	2,517	2,256	2,445	2,206	2,284	2,921	3,096	35,108	126	122
2036046	3,788	3,399	1,662	1,181	-	-	-	3	-	-	2,556	3,287	15,877	414	400
2036145	10,545	10,057	6,556	1,014	-	-	-	-	-	149	5,810	5,582	39,712	163	158
2036147	5,548	6,186	2,733	1,743	646	16	6	-	94	429	3,616	3,799	24,817	223	216
2036151	10,310	9,553	6,241	2,382	-	-	-	-	-	-	6,536	7,847	42,869	72	70
2036167	15,512	14,664	9,161	3,744	124	-	-	-	-	2,077	12,465	12,755	70,501	626	605
2036180	35,623	34,662	32,107	29,293	24,207	21,537	21,163	22,538	16,852	27,014	32,200	33,300	330,497	748	723
2036185	27,248	21,108	11,184	41	-	424	496	-	1,137	1,053	13,470	23,772	99,934	341	330
2036186	102,021	101,055	57,196	24,719	-	-	-	-	-	1,476	58,278	73,329	418,072	2,087	2,018
2036189	20,669	18,250	9,561	5,254	-	-	-	-	43	249	9,524	15,887	79,438	397	384
2036191	20,603	30,252	18,002	6,920	15,511	18,676	11,950	63,871	12,212	43,255	25,236	14,939	281,426	2,203	2,131
2036192	50,118	53,421	44,377	37,372	37,107	31,289	32,641	35,132	43,896	44,906	45,958	49,649	505,867	2,317	2,241
2036193	-	40,945	10,361	4,240	207	-	-	-	-	206	10,758	12,221	78,937	598	578
2036194	366,240	294,806	349,027	349,068	349,406	357,087	368,817	334,456	316,410	369,937	308,550	351,652	4,115,456	2,365	2,287
2036195	39,816	38,444	18,034	4,860	-	-	-	-	-	413	18,311	18,439	138,317	701	678
2064820	4,520	4,110	2,980	1,454	276	-	-	-	-	382	2,336	2,288	18,345	58	56
2064880	3,511	3,466	3,841	3,640	3,283	2,872	3,112	3,038	3,233	3,330	4,510	4,412	42,247	90	87
2064920	11,265	12,450	15,772	6,841	6,365	5,492	5,194	3,197	188	-	-	-	66,764	804	778
2064954	11,681	11,274	10,280	8,859	8,207	7,679	6,911	7,142	7,725	8,306	10,571	11,504	110,137	300	290
2064957	6,247	6,044	5,852	5,119	4,572	4,197	3,994	4,183	4,270	4,684	6,001	6,333	61,495	291	281
2064973	164,914	157,218	144,857	123,968	105,789	80,720	79,829	78,880	83,819	94,333	131,501	142,991	1,388,820	420	406
2064974	28,753	26,697	12,644	4,302	10	-	-	-	-	753	11,678	15,187	100,024	417	403
2064975	12,255	14,537	16,985	16,155	16,738	17,608	18,508	17,580	20,009	20,278	20,879	21,432	212,965	250	242
2064976	20,787	18,269	15,133	7,599	-	-	-	-	-	-	13,162	15,661	90,611	377	365
2064977	9,829	8,436	6,755	4,560	1,239	-	-	-	10	-	7,312	7,997	46,137	229	221
2064978	92,670	-	48,745	120,201	82,879	81,469	49,254	69,958	87,696	64,175	74,724	68,981	840,752	2,400	2,321
2064979	26,376	23,727	11,658	3,878	11,918	21,598	138	3,878	16,895	27,356	40,684	5,826	193,932	1,400	1,354
2064980	82,713	67,401	44,261	12,370	-	-	-	-	-	2,312	46,496	61,074	316,627	1,269	1,227
2064981	-	-	-	-	-	207	-	-	-	-	-	-	207	2,317	2,241
2064982	784,454	777,383	600,793	436,264	344,555	274,831	258,552	266,815	297,118	364,139	562,514	620,244	5,587,662	2,317	2,241
2070242	2,534	2,405	1,452	1,066	21	-	-	-	-	258	1,545	1,834	11,114	64	62
2070249	3,019	2,845	1,962	1,108	23	-	-	-	-	213	1,568	1,932	12,670	64	62
2070260	2,842	2,698	1,862	1,099	30	-	-	-	-	353	1,716	1,968	12,567	64	62
2070271	3,083	2,888	2,320	1,299	-	-	-	-	-	566	2,132	2,603	14,891	64	62
2090400	295,083	301,536	237,839	183,918	155,935	205,621	294,968	124,881	203,847	154,578	233,070	286,714	2,677,991	2,650	2,563
2115136	10,654	9,336	6,105	1,273	-	-	-	-	-	46	5,584	6,442	39,439	202	195
2115137	15,838	17,856	10,816	3,670	1	-	-	-	-	-	9,612	18,308	76,101	452	437

2115141	5,575	5,936	3,987	828	-	-	1	6	19	428	4,184	3,913	24,877	212	205
2115143	11,570	14,159	5,579	1,928	-	-	2	-	-	-	4,678	7,970	45,886	797	771
2115434	867	877	504	211	27	-	-	-	-	5	384	538	3,412	348	337
2115543	5,469	5,267	3,336	1,724	704	-	-	-	-	359	3,006	3,614	23,479	98	95
2115588	8,100	8,607	6,148	4,582	1,976	1,600	3,141	1,795	2,012	2,021	6,110	7,029	53,121	385	372
2115589	7,217	7,677	5,639	4,346	1,856	1,646	1,583	1,679	1,889	1,912	5,673	6,436	47,553	385	372
2115593	13,743	14,919	11,395	7,100	5,275	6,154	4,106	5,245	4,843	5,433	9,483	9,854	97,550	388	375
2115831	38,773	31,689	21,155	6,523	-	-	-	-	-	1,656	12,020	23,314	135,130	2,203	2,131
2115832	16,745	14,580	6,777	3,464	341	10	-	-	-	134	6,373	7,904	56,328	69	67
2115833	11,789	10,476	5,654	2,032	337	-	-	-	-	-	-	-	30,288	270	261
2115837	25,100	21,474	20,519	17,134	14,101	8,864	8,956	10,216	11,122	14,198	19,587	21,766	193,036	240	232
2115838	301,308	93,787	107,246	89,035	88,681	91,078	85,475	87,191	89,018	90,892	93,642	92,720	1,310,074	21	20
2115841	46,858	46,676	50,249	41,971	37,173	34,711	31,948	30,962	32,495	34,996	36,494	39,610	464,144	1,093	1,057
2115842	12,096	8,997	5,585	1,825	206	-	-	1	24	130	4,829	4,541	38,234	278	269
2115844	56,790	56,366	62,920	54,443	48,155	45,958	44,669	43,566	44,129	45,548	46,126	49,480	598,150	1,851	1,790
2115901	649	617	395	214	59	8	-	-	-	-	374	444	2,760	348	337
2116004	4,813	4,813	2,583	1,071	311	-	-	-	-	367	2,906	3,312	20,177	38	37
2116016	3,723	3,619	2,157	1,057	211	-	-	-	-	2	2,619	3,074	16,461	43	42
2116023	2,113	2,723	1,703	1,673	1,584	1,344	1,624	712	1,038	1,151	1,856	2,281	19,804	414	400
2116148	9,673	9,026	6,351	3,908	2,337	1,096	888	775	972	3,322	8,096	8,845	55,288	523	506
2116149	9,289	10,114	5,232	713	-	-	-	-	-	10	5,224	5,636	36,218	242	234
2116150	13,634	13,067	8,301	-	-	-	-	-	-	31	9,474	11,383	55,890	302	292
2116151	20,175	28,412	23,683	9,641	2,551	684	-	110	-	1,983	11,055	10,577	108,872	396	383
2116152	12,586	10,798	12,500	869	-	-	-	-	-	413	6,826	3,927	47,919	161	156
2116153	26,231	25,139	18,531	13,656	12,710	10,671	7,614	8,316	9,111	11,412	19,172	21,803	184,366	628	607
2116154	10,097	9,542	11,890	10,294	8,972	9,626	4,964	9,832	83	-	-	-	75,299	1,252	1,211
2116156	15,424	13,806	8,961	4,956	3,531	3,322	3,527	3,804	3,559	3,758	10,747	12,497	87,892	883	854
2116157	50,937	47,292	47,434	42,332	36,047	27,224	27,703	26,888	25,503	31,606	42,027	41,720	446,711	432	418
2116158	45,162	41,737	33,625	18,812	-	-	-	-	-	2,960	36,374	39,082	217,752	714	691
2116159	27,422	30,412	21,352	13,093	-	-	-	-	-	2,187	23,447	24,653	142,565	424	410
2116161	170,339	152,015	-	179,674	-	-	-	-	1,653	-	42,957	153,709	700,347	1,225	1,185
2116162	176,568	157,298	146,037	119,295	105,886	95,224	104,225	100,401	96,384	105,974	132,963	138,797	1,479,052	2,549	2,465
2116171	33,717	34,061	25,237	17,598	-	-	-	-	21	1,124	20,816	26,589	159,162	626	605
2116174	60,965	61,242	45,998	32,878	104	-	-	-	-	2,680	38,881	48,786	291,534	626	605
2123295	4,622	4,839	4,032	2,082	1,196	3,784	5,507	5,473	5,076	5,361	5,081	5,165	52,219	22	21
2123460	8,007	6,783	3,954	1,559	-	-	-	-	-	44	2,992	3,560	26,899	135	131
2123463	5,169	5,254	3,289	2,617	2,561	1,610	1,405	1,450	1,731	2,101	2,860	3,275	33,320	119	115
2123467	6,903	6,228	5,177	3,031	1,218	585	-	1,069	588	1,292	4,684	5,755	36,530	80	77
2123484	4,757	4,790	3,000	2,392	2,338	1,426	1,225	1,264	1,494	1,859	2,629	3,034	30,208	119	115
2123489	12,197	13,972	6,912	3,644	511	1	1	-	44	1,294	6,350	4,393	49,318	225	218
2123490	9,179	8,165	4,713	2,195	2,399	2,787	3,379	1,584	2,856	1,848	3,230	3,045	45,379	400	387
2123495	13,747	13,052	9,655	7,262	5,089	3,143	3,285	4,090	3,330	4,340	10,463	11,487	88,944	139	134
2123504	26,863	29,455	22,622	11,556	4,884	3,209	2,476	2,541	2,676	3,066	13,478	19,457	142,283	322	311
2123509	22,813	24,620	10,839	2,528	2	2	2	7	1	1	8,757	15,433	85,008	252	244
2123510	9,726	8,803	5,603	728	-	-	-	-	-	182	7,078	7,029	39,149	173	167
2123512	23,017	19,337	16,328	7,072	2,916	1,582	2,107	2,500	3,133	6,200	18,374	18,634	121,200	414	400
2123513	23,919	21,044	12,580	4,167	620	-	10	10	72	1,228	12,899	15,238	91,787	374	362
2123514	17,362	16,033	4,827	-	-	-	-	890	2,220	2,473	-	-	43,807	804	778
2123515	15,395	16,563	8,535	188	423	153	176	985	2,408	3,681	14,686	-	63,192	804	778
2123516	22,115	20,207	15,134	8,818	2,306	1,747	1,363	1,498	1,841	4,848	12,461	14,470	106,808	360	348

2123517	28,273	27,346	21,039	13,718	5,346	2,729	1,384	1,435	2,109	3,013	20,135	25,045	151,572	180	174
2123519	-	-	-	-	4,684	-	-	-	-	-	-	-	4,684	240	232
2123520	19,185	15,086	13,785	6,408	-	-	-	43	-	283	9,086	25,063	88,939	322	311
2123521	24,133	23,906	17,247	4,331	6,711	10,424	15,505	16,499	14,693	12,699	18,483	17,159	181,788	351	339
2123522	6,119	-	2,818	-	-	-	-	-	-	-	-	-	8,937	226	219
2123523	8,749	9,853	6,124	2,110	-	-	-	-	-	93	6,227	5,936	39,092	782	756
2123525	19,079	21,488	10,791	-	-	-	-	10	-	-	18,317	26,610	96,296	81	78
2123526	7,396	6,310	3,509	928	-	-	-	-	-	-	-	-	18,143	452	437
2123527	19,336	17,480	10,510	952	-	-	-	-	10	526	10,966	11,365	71,144	454	439
2123528	25,858	26,112	27,655	14,855	1,095	-	-	-	31	-	26,445	24,009	146,060	336	325
2132737	51,541	48,574	42,463	24,447	14,997	12,278	14,553	11,835	10,543	18,651	35,866	44,416	330,163	697	674
2132738	53,602	51,707	44,125	34,424	34,648	88,402	94,102	88,920	88,732	33,124	43,633	46,507	701,928	300	290
2132941	4,853	1,489	6,991	6,805	6,292	5,838	6,179	5,967	6,230	7,053	7,271	7,388	72,355	750	725
2132966	6,427	6,010	4,337	2,795	1,336	751	669	672	735	1,009	4,566	4,900	34,207	43	42
2133043	4,205	4,387	-	-	-	-	-	-	-	-	-	-	8,592	148	143
2133065	11,098	11,197	6,754	451	-	-	-	-	-	324	4,112	9,012	42,948	131	127
2133071	20,976	19,922	14,089	9,328	6,196	3,921	3,371	3,422	3,873	5,932	13,735	16,685	121,449	250	242
2133093	34,761	34,364	24,413	12,751	1	1	1	-	1	-	24,440	25,250	155,984	150	145
2133386	1,219	-	-	-	-	-	-	-	-	-	-	-	1,219	98	95
2155650	9,124	9,007	6,132	3,644	1,626	100	-	14	123	-	6,108	5,279	41,157	113	109
2157680	66,916	62,993	50,482	41,942	35,030	26,443	26,556	26,971	27,972	37,165	55,237	49,235	506,943	267	258
2157683	102,712	47,948	56,148	52,106	46,950	42,072	39,470	39,300	37,870	37,540	38,585	41,866	582,566	1,465	1,417
2157685	38,964	37,968	24,575	15,655	3,516	2,978	2,789	2,810	3,051	7,530	26,690	21,949	188,472	496	480
2157686	15,905	14,280	5,856	2,192	-	-	-	-	-	753	7,611	8,773	55,370	314	304
2157687	34,006	33,344	22,858	15,115	5,725	-	-	-	-	6,269	24,527	27,311	169,154	240	232
2157690	10,935	11,432	6,216	2,768	662	-	11	-	11	928	9,796	11,407	54,166	494	478
2157693	13,156	13,895	7,689	2,193	227	-	-	-	-	-	7,117	7,987	52,264	172	166
2157694	15,335	15,410	8,714	3,431	-	-	-	-	-	-	5,795	9,137	57,822	383	370
2157695	32,801	30,735	17,165	7,448	23	-	-	-	-	1,113	20,722	23,687	133,695	31	30
2157696	48,969	47,926	38,172	26,777	16,056	11,952	11,094	11,414	12,317	15,599	33,823	38,759	312,858	417	403
2157697	36,692	34,859	32,793	24,305	14,401	9,409	9,214	9,938	12,286	17,448	27,567	32,948	261,859	720	696
2157699	57,059	52,036	32,198	8,171	278	-	-	-	-	1,519	25,080	33,424	209,766	1,269	1,227
2157700	71,538	67,250	66,285	52,825	46,532	34,637	32,225	35,842	35,988	44,576	64,415	72,193	624,307	803	777
2157702	34,845	28,445	23,300	20,763	20,769	18,275	19,087	19,502	20,910	23,350	26,444	27,462	283,151	43	42
2171219	97,047	96,371	69,613	44,350	20,884	16,543	4,963	724	9,827	9,588	67,217	74,268	511,395	1,424	1,377
2171220	54,560	48,840	38,145	24,634	20,489	21,874	20,192	21,017	21,876	23,904	39,310	41,750	376,590	407	394
2171221	22,699	22,222	21,933	19,486	19,294	15,979	14,882	15,333	15,264	20,188	20,205	22,754	230,239	150	145
2171222	14,898	12,943	6,093	1,251	196	-	-	-	62	186	4,479	7,448	47,556	157	152
2171227	12,992	11,914	6,199	3,827	72	-	-	-	-	72	3,878	6,164	45,118	92	89
2171228	54,121	54,505	44,748	32,254	30,297	25,125	22,311	27,580	31,025	35,805	44,565	49,097	451,433	400	387
2171229	27,925	25,616	18,095	7,831	1,740	-	-	-	-	760	15,123	13,405	110,495	888	859
2171230	-	58,873	23,410	11,273	-	-	-	-	-	2,681	24,833	45,263	166,332	614	594
2171231	61,169	59,894	53,964	42,694	34,841	24,711	28,200	27,787	22,339	23,835	44,252	46,404	470,093	994	961
2171232	36,288	30,983	20,106	5,895	-	-	-	-	-	1,959	21,718	25,379	142,328	255	247
2171233	37,637	35,853	24,036	16,440	10,444	7,651	7,851	5,576	4,964	8,667	21,924	31,384	212,426	120	116
2171234	91,347	94,349	87,232	71,286	66,596	50,117	39,832	41,492	42,511	47,112	70,744	80,718	783,337	123	119
2171235	37,324	36,054	29,738	10,856	104	207	-	-	-	103	13,028	18,543	145,957	412	398
2188211	14,998	14,186	8,035	4,180	961	-	-	-	11	1,504	9,025	10,068	62,969	162	157
2188212	-	-	-	-	-	-	-	-	-	-	12,854	17,152	30,006	302	292
2188213	6,678	6,020	3,575	1,571	-	-	-	-	-	217	3,661	3,481	25,203	223	216

2188214	21,646	21,959	17,984	13,704	7,409	2,677	1,044	782	4,232	9,603	16,882	18,170	136,092	172	166
2188215	35,594	34,479	19,201	7,014	47	-	-	-	-	457	17,651	20,346	134,788	346	335
2188218	19,067	17,022	8,212	1,171	-	-	-	-	-	2,621	8,711	11,540	68,345	264	255
2188219	48,532	45,087	34,279	22,745	15,355	13,421	11,031	11,248	-	28,504	40,709	44,478	315,391	419	405
2188222	38,496	36,683	30,693	13,111	5,521	2,254	1,436	1,498	2,161	10,519	27,596	32,472	202,439	611	591
2188223	53,505	48,536	34,540	20,516	10,995	429	-	-	-	10,192	26,971	31,069	236,754	286	277
2188225	17,978	16,248	14,366	10,876	4,177	3,588	3,461	3,347	3,682	3,746	12,544	13,683	107,693	419	405
2188227	19,273	17,104	8,907	4,059	-	-	-	-	11	1,160	12,435	14,557	77,506	336	325
2198739	12,796	12,200	5,811	1,810	413	-	18	26	-	441	7,587	5,058	46,160	240	232
2198741	60,009	54,703	55,817	39,388	35,449	54,527	8,189	61,384	1,309	-	-	56	370,830	254	246
2198752	9,415	9,912	5,756	2,845	-	-	-	-	-	-	6,191	7,391	41,510	232	224
2198753	6,584	6,771	5,001	3,138	544	-	-	-	-	364	3,684	4,751	30,837	197	191
2198756	10,139	9,083	4,237	923	-	-	-	-	-	-	4,505	7,330	36,217	234	226
2211319	18,148	16,089	15,338	14,233	13,945	20,840	19,447	21,929	19,510	14,495	15,414	12,345	201,733	34	33
2211334	16,433	20,946	23,280	13,950	7,434	1,125	3,898	5,574	11,109	11,521	10,335	19,794	145,401	449	434
2211338	78,458	-	161,673	88,045	90,128	77,016	86,491	83,812	60,149	76,391	68,762	74,906	945,831	1,268	1,226
2211341	13,627	13,478	9,463	3,759	-	-	-	-	-	23	10,736	11,649	62,736	956	925
2227843	54,722	43,795	41,130	50,661	41,655	41,652	46,825	48,895	63,905	56,538	51,890	39,046	580,715	17,957	17,367
2227846	50,014	40,003	37,742	46,298	37,968	37,457	41,904	43,990	58,505	50,939	46,620	35,002	526,443	17,957	17,367
2227850	25,536	25,662	17,409	6,415	-	-	-	-	-	35	13,276	26,214	114,546	956	925
2239836	12,297	7,887	5,556	1,013	-	10	-	-	-	279	2,347	3,563	32,952	340	329
2239838	16,599	17,077	11,843	8,871	4,766	3,908	3,780	3,801	4,126	4,973	13,847	15,982	109,574	313	303
2239839	22,176	21,150	15,109	-	8,303	21	-	10	-	1,651	16,237	17,991	102,648	120	116
2239840	114,093	121,471	78,314	44,759	-	-	-	-	-	23,967	65,817	76,038	524,458	2,191	2,119
2239841	67,885	59,524	60,606	50,384	45,084	34,958	32,901	33,746	33,443	32,193	49,981	57,196	557,901	1,043	1,009
2239845	46,261	43,470	43,601	39,341	36,782	36,819	38,996	38,409	36,869	32,887	33,448	39,566	466,449	517	500
2245126	64,598	60,289	40,224	20,995	-	-	-	-	-	9,486	42,796	51,472	289,859	859	831
2245129	13,188	12,952	8,892	2,998	41	-	-	-	62	1,361	6,782	8,494	54,772	377	365
2245170	10,813	9,390	6,374	672	-	-	-	-	93	372	4,854	4,299	36,866	304	294
2245376	13,142	12,052	9,496	4,156	2,842	1,842	1,501	1,457	2,002	2,928	9,581	11,166	72,164	204	197
2250841	56,571	55,545	32,228	9,530	2,860	2,208	2,173	2,460	2,253	2,347	25,758	30,838	224,772	490	474
2250842	25,577	24,207	14,861	6,887	21	-	-	-	-	2,382	17,931	20,727	112,593	209	202
2250843	14,785	14,466	12,232	8,601	5,344	1,861	1,673	1,508	-	4,276	10,217	13,237	88,200	266	257
2250845	12,094	13,028	5,904	1,219	-	-	-	-	32	971	8,620	7,358	49,225	281	272
2250846	7,931	7,544	4,912	1,769	-	-	-	-	-	82	5,482	5,241	32,961	213	206
2250849	24,863	23,698	17,578	-	-	5,844	-	-	-	2,622	26,414	28,084	129,104	522	505
2250849	24,863	23,698	17,578	-	-	5,844	-	-	-	2,622	26,414	28,084	129,104	522	505
2250850	40,386	10	10	-	-	-	-	-	-	10	-	-	40,417	582	563
2250851	5,454	13,668	4,860	1,696	155	-	-	10	10	21	3,455	3,595	32,923	152	147
2250853	35,817	34,688	-	25,250	-	-	-	-	-	-	-	-	95,756	748	723
2250854	80,042	77,242	55,376	33,044	-	-	-	-	-	12	53,279	64,028	363,024	784	758
2250855	34,474	31,844	15,534	2,896	-	-	-	-	10	-	13,656	19,577	117,991	843	815
2250857	54,824	54,007	37,019	22,449	5,621	4,870	4,600	4,225	5,301	14,157	35,121	41,152	283,346	479	463
2250858	12,110	11,761	7,490	4,394	867	-	-	-	-	753	8,532	10,223	56,131	272	263
2250859	19,295	17,976	11,650	7,341	6,753	4,253	3,444	4,249	4,602	5,362	11,815	13,457	110,198	346	335
2250860	14,594	13,408	10,678	7,972	6,331	5,537	5,585	5,705	5,037	6,014	10,485	11,866	103,212	375	363
2250862	51,505	49,076	30,565	15,704	-	-	-	-	-	-	1,605	70,192	218,647	663	641
2250863	77,452	76,659	51,550	29,193	12,614	7,538	7,032	6,140	6,364	14,411	45,127	52,795	386,874	173	167
2250864	14,041	15,416	7,449	-	-	-	-	-	-	-	8,297	10,742	55,945	591	572
2250865	83,784	95,542	80,688	62,646	52,425	42,806	40,905	41,833	48,916	52,625	72,585	79,445	754,202	1,325	1,281

2253387	14,938	71,086	3,081	263	153	18,125	36,600	56,575	23,273	57,351	35,972	10,265	327,681	1,639	1,585
2253388	11,964	57,043	2,581	221	125	14,389	27,494	42,089	17,441	43,254	27,616	7,907	252,125	1,639	1,585
2261092	27,103	25,617	14,988	9,872	8,017	4,511	4,018	4,235	4,646	6,281	15,644	18,966	143,898	647	626
2269417	18,766	17,693	18,141	14,361	14,237	14,716	14,675	15,578	13,578	11,780	14,494	14,823	182,843	178	172
2269419	25,033	23,400	24,006	18,876	19,001	19,530	19,787	20,976	18,295	15,890	19,256	19,527	243,577	280	271
2269422	21,640	21,722	17,161	9,933	8,964	7,956	8,890	9,160	9,468	9,873	15,837	18,863	159,465	1,325	1,281
2269427	10,675	10,963	4,160	819	-	-	-	-	-	-	3,495	4,158	34,269	269	260
2282358	11,023	-	-	13,935	1,644	1,355	1,065	883	1,158	1,500	3,957	9,380	45,900	210	203
2282358	11,023	-	-	10,073	1,644	1,355	1,065	883	1,158	1,500	3,957	9,380	42,039	96	93
2282382	11,042	11,388	7,554	3,184	242	-	-	1	-	583	6,654	7,639	48,287	163	158
2284988	1,495,088	1,260,569	1,252,523	1,432,013	1,289,429	1,301,078	-	2,761,721	1,353,786	1,437,359	1,469,754	1,252,066	16,305,385	17,957	17,367
2290189	9,255	11,532	-	7,327	3,191	-	1	-	-	-	81	6,977	38,366	209	202
2290191	43,427	41,512	32,598	26,004	21,739	11,414	22,716	10,375	23,538	26,188	29,316	30,710	319,537	480	464
2290193	12,334	10,852	7,428	5,003	5	3	4	4	4	1,048	8,270	10,646	55,602	383	370
2290197	98,355	91,138	92,830	91,922	87,667	88,759	93,738	92,729	96,516	91,762	97,228	99,610	1,122,254	1,151	1,113
2290202	50,138	50,506	54,436	46,115	47,894	36,729	20,862	36,959	40,531	44,356	45,169	38,522	512,217	503	486
2290203	-	-	-	-	10	72	-	-	4,622	20,936	-	-	25,641	1,424	1,377
2290204	24,169	24,766	14,687	775	825	-	-	-	-	-	12,007	21,440	98,669	461	446
2290205	31,609	30,339	17,528	10,835	1,086	-	-	-	-	-	20,058	20,911	132,366	544	526
2290206	15,822	16,290	8,684	3,175	41	-	-	-	-	-	7,261	9,281	60,554	280	271
2290211	43,898	43,977	33,437	17,471	5,718	4,973	4,751	4,700	4,974	13,027	30,535	34,481	241,945	1,046	1,012
2290212	23,329	22,974	10,159	1,946	-	-	-	-	-	-	11,768	17,909	88,085	384	371
2290213	33,173	36,445	24,087	6,460	408	-	-	11	-	628	19,812	23,133	144,157	472	456
2290214	17,243	16,331	19,407	17,509	14,349	14,071	12,828	13,716	14,405	15,056	18,346	18,004	191,264	626	605
2290218	31,385	31,305	20,596	13,575	8,428	5,625	5,877	3,458	1,944	3,095	20,093	23,266	168,646	1,424	1,377
2290220	49,807	47,687	39,686	19,589	14,736	12,086	12,841	10,660	8,584	10,566	36,899	51,458	314,598	507	490
2291727	6,726	6,854	6,407	5,333	5,114	4,732	4,370	4,499	4,135	4,106	5,153	6,150	63,580	391	378
2294698	58,550	56,449	42,497	23,023	11,513	8,757	8,873	11,343	8,671	8,465	29,585	1,648	269,374	524	507
2294826	12,844	16,376	13,725	2,539	-	-	-	-	-	110	7,512	13,165	66,272	524	507
2297254	-	-	13,969	4,762	5,031	4,946	4,743	5,487	4,552	4,506	5,328	4,307	57,632	132	128
2311892	4,245	2,921	2,636	2,461	2,188	1,123	729	-	1,844	1,227	1,791	3,797	24,961	73	71
2311918	-	-	-	-	-	-	-	-	-	-	-	6,031	6,031	234	226

Docket No. R-2022-XXXXXXX
Item 53.64(c)(9)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(9) A schedule depicting historic monthly end-user transportation through-put by customer. Each customer or account shall be identified solely by a unique alphanumeric code, the key to which may be provided subject to § 5.423 (relating to orders to limit availability of proprietary information).

Response:

Please see the schedule attached to the response to 53.64(c)(8), Tab #7, which also provides the monthly end-user transportation through-put by customer.

Docket No. R-2022-XXXXXXX
Item 53.64(c)(10)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(10) A schematic system map, locating and identifying by name, the pressure and capacity of all interstate or intrastate transmission pipeline connections, compressor stations, utility transmission or distribution mains 6 inches or larger in size, storage facilities, including maximum daily injection and withdrawal rates, production fields, and each individual supply or transportation customer which represents 5% or more of total system throughput in a month. Each customer or account shall be identified solely by a unique alphanumeric code, the key to which may be provided subject to § 5.423.

Response:

Following the lead of the industry, as well as federal policy guidelines regarding the security of information relating to energy transmission sites, PGW will no longer provide this data to the general public. However, upon request PGW will provide this information to the Commission and will also provide access to this information at a PGW facility of the Company's choosing, upon written request, to parties to this proceeding that have legitimate business reasons to view this information.

Docket No. R-2022-XXXXXXX
Item 53.64(c)(11)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(11) If any rate structure or rate allocation changes are to be proposed, a detailed explanation of each proposal, reasons therefore, number of customers affected, net effect on each customer class, and how the change relates to or is justified by changes in gas costs proposed in the Section 1307(f) tariff filing. Explain how gas supply, transportation and storage capacity costs are allocated to customers which are primarily nonheating, interruptible or transportation customers.

Response:

PGW is not proposing any rate structure or rate allocation changes in the instant proceeding, therefore, no testimony or schedules have been provided in this pre-filing to support such changes.

PGW will provide testimony regarding gas procurement policies, strategies and the GCR calculation in its 1307(f) March 1, 2022 filing.

Docket No. R-2022-XXXXXXX
Item 53.64(c)(12)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68(relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(12) A schedule depicting the most recent 5-year consecutive 3-day peak data by customer class (or other historic peak day data used for system planning), daily volumetric throughput by customer class (including end-user transportation throughput), gas interruptions and high, low and average temperature during each day.

Response:

Schedule 1 – Three-day peak for FY 16-17 through FY 20-21.

Schedule 2 – Identifies a listing of gas interruptions for FY 15-17 through FY 20-21, their duration and the high, low and average temperatures for each day that the interruption was in effect.

53.64 (c)(12)
Schedule 1

3 DAY PEAK ANALYSIS

Winter Peak Season	Date	Average Temp.	Hi Temp.	Low Temp.	Total Sendout (mcfs)	Firm Sendout	Cogen Sendout	LBS Sendout	BPS Sendout	GTS Sendout	IT Sendout	GRAYS FERRY Sendout (mcfs)
2016- 2017	Jan 7	21	25	17	496,220	432,581	11	0	0	3,905	59,723	47,798
2016 - 2017	Jan 8	21	27	18	528,423	461,794	11	0	0	3,791	62,827	46,303
2016- 2017	Jan 9	24	31	19	519,336	449,862	11	0	0	3,709	65,754	46,508
2017- 2018	Jan 5	15	19	10	625,642	547,239	44	0	0	0	78,359	20,030
2017 - 2018	Jan 6	13	16	8	639,043	565,130	44	0	0	0	73,869	36,380
2017- 2018	Jan 7	20	27	9	582,222	516,455	44	0	0	0	65,723	38,850
2018 - 2019	Jan 30	16	37	7	584,172	500,209	43.1	0	0	0	83,920	53,916
2018 - 2019	Jan 31	17	20	11	609,241	522,948	43.1	0	0	0	86,250	47,420
2018 - 2019	Feb 1	18	25	15	586,904	503,748	42.9	0	0	0	83,113	52,759
2019- 2020	Dec 18	31	42	23	435,785	322,677	45	0	0	0	60,743	52,320
2019- 2020	Dec 19	30	33	25	461,382	347,519	45	0	0	0	62,461	51,357
2019- 2020	Dec 20	33	37	29	417,993	362,084	45	0	0	0	55,864	51,897
2020- 2021	Jan 28	29	36	25	455,995	345,353	45	0	0	0	58,817	51,780
2020- 2021	Jan 29	26	31	22	495,584	380,273	45	0	0	0	60,228	55,038
2020- 2021	Jan 30	32	36	27	426,177	320,212	45	0	0	0	53,336	52,584

53.64 (c)(12)
Schedule 2

GAS INTERRUPTIONS

Winter Peak Season	Date	Average Temp.	Hi Temp.	Low Temp.	Total Sendout (mcfs)	Firm Sendout	Cogen Sendout	LBS Sendout	BPS Sendout	GTS Sendout	IT Sendout	GRAYS FERRY Sendout (mcfs)

No interruptions occurred between September 1, 2010 and January 1, 2022

Docket No. R-2022-XXXXXXX
Item 53.64(c)(13)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(13) Identification and support for any peak day methodology used to project future gas demands and studies supporting the validity of the methodology.

Response:

Please see the attached Peak Day analysis. Also attached to Item 53.64(c)(14) is *Siemans Peak Day Regression Model Review* dated January 14, 2019, which supports PGW's peak day methodology.

Peak Day Analysis

PGW performs a peak day analysis on an annual basis to determine its projected sendout requirements during peak conditions. Essentially this process is completed by collecting sendout and average temperature data for all days where the temperature is at or below 32 degrees Fahrenheit, excluding holidays and weekends. All interruptible transportation volumes are removed from total sendout to arrive at firm sendout on a daily basis.

Common statistical practices warrant that no less than thirty (30) data points be utilized in the analysis to ensure its integrity. For this analysis, PGW has utilized data from the period winter of FY 17-18 through FY 20-21 which would reflect the most current consumption behaviors of its customers. This period yielded 46 data points where the average temperature was at or below 32 degrees Fahrenheit.

Degree days are calculated by subtracting the average daily temperature from sixty-five (65).

A standard linear regression was performed on the data using the calculated degree-days and the actual firm daily sendout information. Additionally, in order to confirm the accuracy of the analysis, and to smooth the charting of the data, a quadratic and a cubic regression analysis were also completed.

A resulting R^2 (Correlation Coefficient) indicates a 77.2 % correlation between firm sendout and degree-days. The multiple regression correlation co-efficient, R^2, is a measure of the proportion of variability explained by, or due to the regression (linear relationship) in a sample of paired data. It is a number between zero and one and a value close to zero suggests a poor model.

To verify the level of confidence we can ascribe to the model, we developed the attached Linear Regression Confidence Level Table. Essentially, this table compares the actual versus projected sendout to determine the level of variance expressed as a standard deviation. A standard deviation represents the positive square root of the variance where the variance simply represents the dispersion about the mean. In this analysis the sample standard deviation is 32,764 MCF.

The sample loses one degree of freedom for each estimated parameter. Thus, with a sample of 100 paired values and two estimated parameters (one for the constant and one for the coefficient of “degree days”), there are 100-2=98 degrees of freedom. In this analysis we had 46 data points and there were 44 Degrees of Freedom.

Finally, based upon the models developed, it can be determined that the company’s projected peak day sendout should be set at 696,298 MCF per day at 0 degree Fahrenheit. This calculation is performed using the X Coefficient (i.e. slope) multiplied by the number of degree days and adding the Constant (Y Intercept).

Winter 18-21 Data for Daily Temperatures <= 32 Degrees Fahrenheit

W/O Holidays, Weekends

Day	Date	Daily Temp	Degree Days X	X^2	X^3	Actual Firm Sendout (Mcf)	Firm Sendout Per DD (Mcf)	Linear Projected Firm Sendout (Mcf)	Quadratic Projected Firm Sendout (Mcf)	Cubic Projected Firm Sendout (Mcf)
Wednesday	12/13/2017	31	34	1,156	39,304	356,549	10,487	363,787	363,462	363,604
Thursday	12/14/2017	31	34	1,156	39,304	354,093	10,415	363,787	363,462	363,604
Friday	12/15/2017	28	37	1,369	50,653	375,049	10,136	395,965	397,454	398,159
Tuesday	12/26/2017	29	36	1,296	46,656	373,407	10,372	385,239	386,251	386,975
Wednesday	12/27/2017	23	42	1,764	74,088	436,899	10,402	449,596	451,545	450,741
Thursday	12/28/2017	19	46	2,116	97,336	475,927	10,346	492,501	492,513	491,291
Friday	12/29/2017	22	43	1,849	79,507	451,955	10,511	460,322	461,979	460,880
Tuesday	1/2/2018	23	42	1,764	74,088	481,485	11,464	449,596	451,545	450,741
Wednesday	1/3/2018	28	37	1,369	50,653	412,195	11,140	395,965	397,454	398,159
Thursday	1/4/2018	21	44	1,936	85,184	490,882	11,156	471,048	472,285	470,990
Friday	1/5/2018	15	50	2,500	125,000	544,956	10,899	535,405	531,433	533,378
Monday	1/15/2018	31	34	1,156	39,304	394,810	11,612	363,787	363,462	363,604
Wednesday	1/17/2018	26	39	1,521	59,319	411,626	10,555	417,418	419,474	419,736
Thursday	1/18/2018	32	33	1,089	35,937	379,044	11,486	353,061	351,876	351,335
Tuesday	1/30/2018	30	35	1,225	42,875	383,370	10,953	374,513	374,921	375,470
Wednesday	1/31/2018	32	33	1,089	35,937	358,262	10,856	353,061	351,876	351,335
Friday	2/2/2018	25	40	1,600	64,000	418,656	10,466	428,144	430,293	430,211
Monday	2/5/2018	32	33	1,089	35,937	344,431	10,437	353,061	351,876	351,335
Thursday	2/8/2018	31	34	1,156	39,304	354,509	10,427	363,787	363,462	363,604
Thursday	12/20/2018	32	33	1,089	35,937	201,788	6,115	353,061	351,876	351,335
Friday	1/11/2019	30	35	1,225	42,875	373,059	10,659	374,513	374,921	375,470
Monday	1/14/2019	32	33	1,089	35,937	359,888	10,906	353,061	351,876	351,335
Tuesday	1/22/2019	32	33	1,089	35,937	411,860	12,481	353,061	351,876	351,335
Monday	1/28/2019	31	34	1,156	39,304	359,583	10,576	363,787	363,462	363,604
Wednesday	1/30/2019	16	49	2,401	117,649	500,210	10,208	524,679	521,895	522,566
Thursday	1/31/2019	17	48	2,304	110,592	522,949	10,895	513,953	512,229	511,976
Friday	2/1/2019	18	47	2,209	103,823	503,750	10,718	503,227	502,435	501,565
Monday	3/4/2019	32	33	1,089	35,937	344,300	10,433	353,061	351,876	351,335
Tuesday	3/5/2019	28	37	1,369	50,653	374,021	10,109	395,965	397,454	398,159
Wednesday	3/6/2019	26	39	1,521	59,319	424,011	10,872	417,418	419,474	419,736
Wednesday	12/18/2019	31	34	1,156	39,304	374,998	11,029	363,787	363,462	363,604
Thursday	12/19/2019	30	35	1,225	42,875	398,878	11,397	374,513	374,921	375,470
Friday	1/17/2020	30	35	1,225	42,875	376,010	10,743	374,513	374,921	375,470
Monday	1/20/2020	30	35	1,225	42,875	392,770	11,222	374,513	374,921	375,470
Tuesday	1/21/2020	30	35	1,225	42,875	368,945	10,541	374,513	374,921	375,470
Friday	2/14/2020	28	37	1,369	50,653	379,882	10,267	395,965	397,454	398,159
Wednesday	12/16/2020	32	33	1,089	35,937	350,544	10,623	353,061	351,876	351,335
Thursday	12/17/2020	32	33	1,089	35,937	340,535	10,319	353,061	351,876	351,335
Friday	12/18/2020	31	34	1,156	39,304	351,024	10,324	363,787	363,462	363,604
Thursday	1/28/2021	29	36	1,296	46,656	397,132	11,031	385,239	386,251	386,975
Friday	1/29/2021	26	39	1,521	59,319	435,311	11,162	417,418	419,474	419,736
Monday	2/8/2021	31	34	1,156	39,304	369,099	10,856	363,787	363,462	363,604
Thursday	2/11/2021	31	34	1,156	39,304	372,372	10,952	363,787	363,462	363,604
Friday	2/12/2021	32	33	1,089	35,937	382,510	11,591	353,061	351,876	351,335
Wednesday	2/17/2021	32	33	1,089	35,937	361,205	10,946	353,061	351,876	351,335
Thursday	2/18/2021	31	34	1,156	39,304	378,931	11,145	363,787	363,462	363,604
			65	4,225	274,625	395,732	10,701	696,298	659,135	750,333
			Count	46						

Firm Sendout Projection Based Data From 18-21
Data for Daily Temperatures <= 32 Degrees Fahrenheit

R Squared	Change	Student's T	Degrees of Freedom	Critical Value	@ 97.5% Significant
0.772051	0.772051	12.20762	44	2.013	Yes
0.772586	0.000535	0.317994	43	2.017	No
0.772707	0.000121	0.149699	42	2.018	No

Degrees of Freedom	44	43	42
97.5% Significance Level	2.013	2.017	2.018
95.0% Significance Level	1.68	1.681	1.682

LinearProjection at Zero Degrees Fahrenheit 696297.6 Mcf
Linear Projection at 15 Degrees Fahrenheit 535405.3 Mcf

Student's T = Square Root[(Increase * Degrees of Freedom)/(1 - R Squared)]

Linear SO = Constant + (X * X Coefficient)

Quadratic SO = Constant + (X * X Coeff) + (X1u2 * X1u2 Coeff)

Cubic SO = Constant + (X * X Coeff) + (X1u2 * X1u2 Coeff) + (X1u3 * X1u3 Coeff)

Linear Regression Confidence Level Table

Count	Degree Days X	Firm Sendout (Mcf) Y	Projected Linear Firm Sendout (Mcf) Ŷdc	Difference Actual Versus Projected Y - Yc	Actual Versus Projected Squared (Y - Yc)²	(Degree Days - Xm) X - Xm	(Degree Days - Xm) Squared (X - Xm)²	sdyc	t*sdyc	Lower Acc Lower	Upper Acc Ŷdc∓ t*sdydc	"- 1 SD" Lower	"+ 1 SD" Ŷdc∓ sdydc	"- 2 SD" Lower	"+ 2 SD" Ŷdc∓ 2sdydc
1	33	379,044	353,061	25,983	675,136,406	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
2	33	358,262	353,061	5,201	27,055,322	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
3	33	344,431	353,061	(8,629)	74,468,010	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
4	33	201,788	353,061	(151,273)	22,883,474,565	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
5	33	359,888	353,061	6,828	46,618,879	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
6	33	411,860	353,061	58,800	3,457,416,706	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
7	33	344,300	353,061	(8,761)	76,748,429	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
8	33	350,544	353,061	(2,516)	6,332,078	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
9	33	340,535	353,061	(12,526)	156,895,509	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
10	33	382,510	353,061	29,449	867,269,073	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
11	33	361,205	353,061	8,145	66,335,159	(4)	16	5,483	11,036	342,024	364,097	325,043	381,078	297,026	409,095
12	34	356,549	363,787	(7,238)	52,384,710	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
13	34	354,093	363,787	(9,694)	93,966,813	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
14	34	394,810	363,787	31,024	962,461,464	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
15	34	354,509	363,787	(9,278)	86,077,239	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
16	34	359,583	363,787	(4,203)	17,668,201	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
17	34	374,998	363,787	11,212	125,697,870	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
18	34	351,024	363,787	(12,763)	162,892,575	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
19	34	369,099	363,787	5,313	28,222,804	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
20	34	372,372	363,787	8,586	73,711,277	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
21	34	378,931	363,787	15,144	229,345,901	(3)	9	4,969	10,002	353,785	373,789	335,770	391,804	307,753	419,821
22	35	383,370	374,513	8,857	78,453,139	(2)	4	4,567	9,194	365,319	383,707	346,496	402,530	318,479	430,547
23	35	373,059	374,513	(1,454)	2,112,703	(2)	4	4,567	9,194	365,319	383,707	346,496	402,530	318,479	430,547
24	35	398,878	374,513	24,365	593,652,248	(2)	4	4,567	9,194	365,319	383,707	346,496	402,530	318,479	430,547
25	35	376,010	374,513	1,497	2,240,811	(2)	4	4,567	9,194	365,319	383,707	346,496	402,530	318,479	430,547
26	35	392,770	374,513	18,257	333,312,446	(2)	4	4,567	9,194	365,319	383,707	346,496	402,530	318,479	430,547
27	35	368,945	374,513	(5,568)	30,997,749	(2)	4	4,567	9,194	365,319	383,707	346,496	402,530	318,479	430,547
28	36	373,407	385,239	(11,832)	139,994,265	(1)	1	4,310	8,677	376,562	393,916	357,222	413,256	329,205	441,273
29	36	397,132	385,239	11,893	141,453,866	(1)	1	4,310	8,677	376,562	393,916	357,222	413,256	329,205	441,273
30	37	375,049	395,965	(20,917)	437,501,783	0	0	4,224	8,502	387,463	404,468	367,948	423,982	339,931	451,999
31	37	412,195	395,965	16,230	263,411,434	0	0	4,224	8,502	387,463	404,468	367,948	423,982	339,931	451,999
32	37	374,021	395,965	(21,944)	481,550,092	0	0	4,224	8,502	387,463	404,468	367,948	423,982	339,931	451,999
33	37	379,882	395,965	(16,083)	258,660,885	0	0	4,224	8,502	387,463	404,468	367,948	423,982	339,931	451,999
34	39	411,626	417,418	(5,792)	33,543,389	2	4	4,582	9,224	408,194	426,641	389,400	445,435	361,383	473,452
35	39	424,011	417,418	6,593	43,473,380	2	4	4,582	9,224	408,194	426,641	389,400	445,435	361,383	473,452
36	39	435,311	417,418	17,893	320,159,776	2	4	4,582	9,224	408,194	426,641	389,400	445,435	361,383	473,452
37	40	418,656	428,144	(9,487)	90,008,996	3	9	4,989	10,043	418,101	438,186	400,127	456,161	372,110	484,178
38	42	436,899	449,596	(12,697)	161,203,994	5	25	6,108	12,296	437,300	461,892	421,579	477,613	393,562	505,630
39	42	481,485	449,596	31,889	1,016,894,703	5	25	6,108	12,296	437,300	461,892	421,579	477,613	393,562	505,630
40	43	451,955	460,322	(8,368)	70,015,059	6	36	6,770	13,628	446,694	473,950	432,305	488,339	404,288	516,356
41	44	490,882	471,048	19,834	393,384,958	7	49	7,477	15,051	455,997	486,099	443,031	499,065	415,014	527,082
42	46	475,927	492,501	(16,573)	274,668,685	9	81	8,982	18,081	474,420	510,581	464,484	520,518	436,466	548,535
43	47	503,750	503,227	523	273,426	10	100	9,766	19,659	483,568	522,886	475,210	531,244	447,193	559,261
44	48	522,949	513,953	8,996	80,935,817	11	121	10,565	21,268	492,685	535,221	485,936	541,970	457,919	569,987
45	49	500,210	524,679	(24,469)	598,718,470	12	145	11,376	22,900	501,779	547,579	496,662	552,696	468,645	580,713
46	50	544,956	535,405	9,550	91,209,699	13	170	12,196	24,551	510,854	559,956	507,388	563,422	479,371	591,439
	65		696,298	(696,298)	484,830,376,431	28	785	24,981	50,286	646,011	746,584	668,281	724,315	640,263	752,332
Tot/Avg	**37**	**395,732**	**395,732**		**36,108,010,763**		**1,063**								

t = 2.01

Xm = 37

Population Variance= **784,956,756**

		Upper Range	Lower Range
Population Standard Deviation of Regression = 28,017	**1s**	423,749	367,715
	2s	451,766	339,698

Standard error of sendout projection **28,647**

T-factor **2.01**

(T factor) * (Std error of projection) 57,666

Regression Results

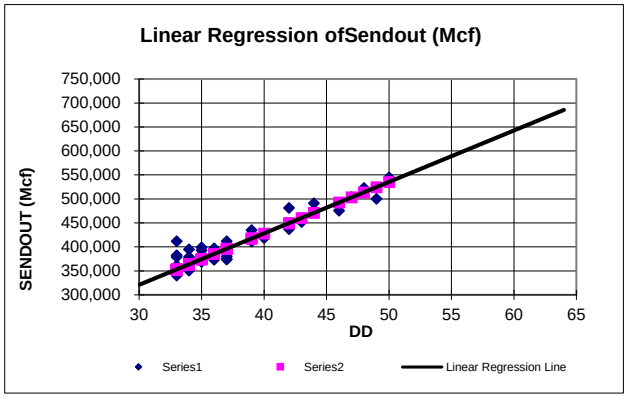
Winter 18-21

Based On Data for Daily Temperatures <= 32 Degrees Fahrenheit

Regression Output:		**Quadratic**			**Cubic**			
Regression Output:		Regression Output:			Regression Output:			
Constant	(903)	Constant		(102,312)	Constant		(551,907)	
Std Err of Y Est	32,764	Std Err of Y Est		320,617	Std Err of Y Est		3,020,781	
R Squared	0.7721	R Squared		1	R Squared		1	
No. of Observations	46	No. of Observations		46	No. of Observations		46	
Degrees of Freedom	44	Degrees of Freedom		43	Degrees of Freedom		42	
			X	X^2		X	X^2	X^3
X Coefficient(s)	10,726	X Coefficient(s)	15875.9901	(64)	X Coefficient(s)	49,807	(909)	7
Std Err of Coef.	879	Std Err of Coef.	16219.0637	201	Std Err of Coef.	227,252	5,646	46

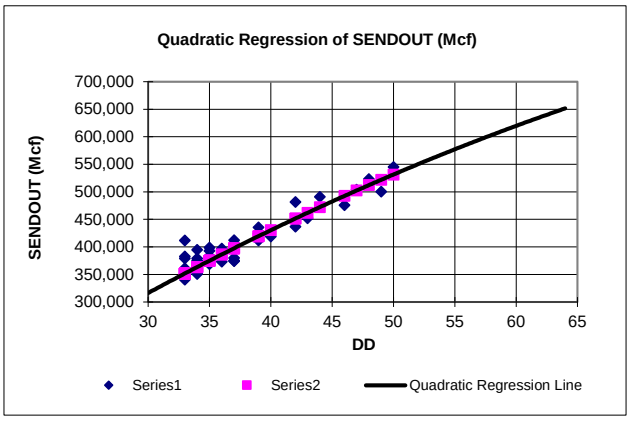
Zero Degree Temp Sendout		696,298	659,135	750,333
DD	65			

Regression Chart Analysis
Based Upon Data For Temperatures Of <=32 Degrees F.
Winters 18-21



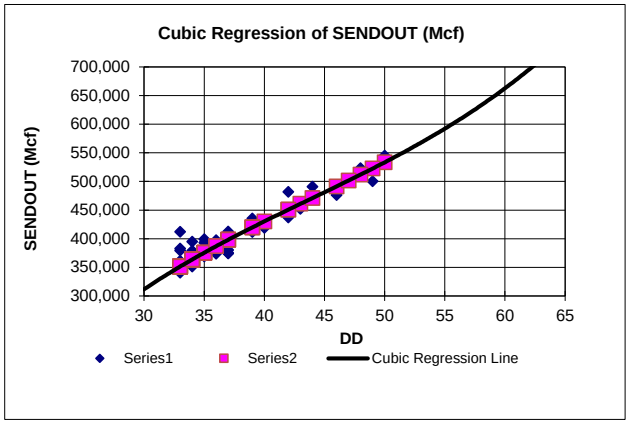
Linear Regression Output

Constant		(903)
Std. Error of Y Estimate		32,764
R Squared		0.772
Number of Observations		46
Degrees of Freedom		44
	X	
X Coefficient	10726	
Std. Err. Of Coefficeint	879	



Quadratic Regression Output

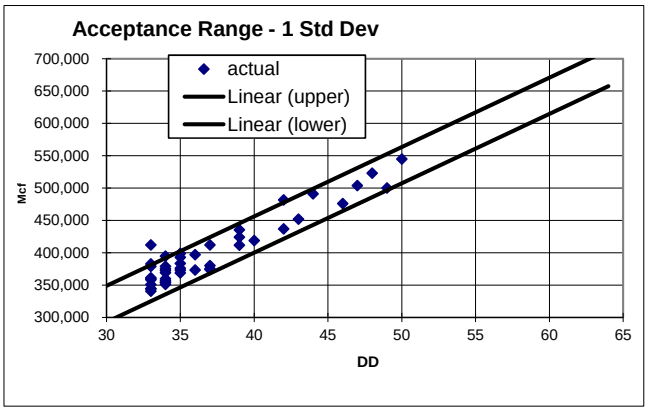
Constant		(102,312)
Std. Error of Y Estimate		320,617
R Squared		0.773
Number of Observations		46
Degrees of Freedom		43
	X	**X ^ 2**
X Coefficient	15,876	(64)
Std. Err. Of Coefficeint	16,219	201



Cubic Regression Output

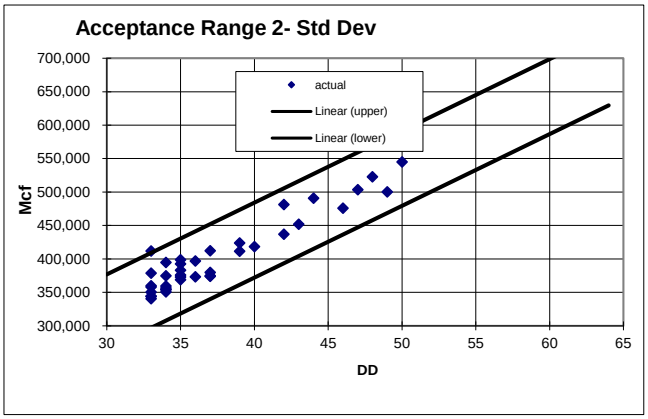
Constant		(551,907)	
Std. Error of Y Estimate		3,020,781	
R Squared		0.773	
Number of Observations		46	
Degrees of Freedom		42	
	X	**X ^ 2**	**X ^ 3**
X Coefficient	49807	(909)	7
Std. Err. Of Coefficeint	227252	5646	46

Regression Chart Analysis SDS 5
Based Upon Data For Temperatures Of <=32 Degrees F. 6 of 6
Winters 18-21



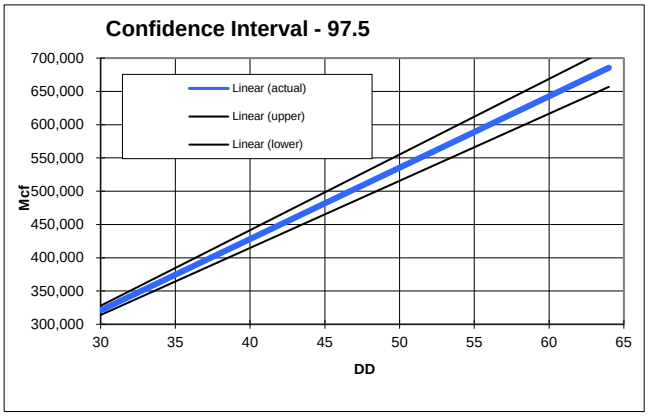
Acceptance Range @ 1 Standard Deviation

Regression Squared	784,956,756
Regression	28,017
Upper Range 1sd	423,749
Lower Range 1sd	367,715



Acceptance Range @ 2 Standard Deviation

Regression Squared	784,956,756
Regression	28,017
Upper Range 2sd	451,766
Lower Range 2sd	339,698



Confidence Interval: 97.5%

Regression Squared	784,956,756
Standard error of sendout projection	28,647
X Mean	37
T Distribution	2.01

Docket No. R-2022-XXXXXX
Item 53.64(c)(14)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(c)

Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(14) Analysis and data demonstrating, on an historic and projected future basis, the minimum gas entitlements needed to provide reliable and uninterrupted service to priority one customers during peak periods.

Response:

Attached is the *Siemans Peak Day Regression Model Review* dated January 14, 2019.

SIEMENS
Ingenuity for life

MEMO TO: **PHILADELPHIA GAS WORK (PGW)**

FROM: Holt Bradshaw, Amit Gohil

DATE: 1/14/2019

SUBJECT: PGW'S PEAK DAY REGRESSION MODEL REVIEW

This memorandum describes Siemens' assessment of the PGWs peak day regression analysis, and an evaluation of the regression models developed by PGW.

Executive Summary

We carried out the evaluation of the three regression models provided by PGW in two steps – the first step was the preliminary (or intuitive) evaluation; and the second step was the more rigorous evaluation to test the statistical validity of the regression parameters and the overall model. We also carried out an independent regression analysis using MS Excel based on the weather and send out data provided by PGW and verified the completeness and accuracy of the regression parameters and the associated statistical results for each of the three regression models developed by PGW.

We also believe that the selection of the zero degree day condition for planning purposes is prudent given that the probability of the actual system send out exceeding the capacity as predicted by the zero degree day condition is extremely low (once in 80 years).

In our preliminary evaluation, we concluded that the Linear model confirms the intuitive positive relationship between severity of weather, as measured by HDDs, and natural gas demand. It also explains over 75% of the historical variability observed in peak send outs. Adding polynomials of higher orders to the liner model does not improve the "goodness of fit" as measured by Adjusted R^2. So, we conclude that the Linear model is preferred based on our preliminary evaluation.

Next, we conducted tests for statistical significance of the regression coefficients and the overall regression model. The Linear, Quadratic, and Cubic regression models that PGW developed are progressively nested. While comparing nested models, where an additional independent variable is added to the regression model, the t-test performs better than the overall F-test. The t-tests indicated that the regression coefficients of independent variables such as HDD^2 and HDD^3 (see Table 1) in the Quadratic and Cubic models cannot be statistically claimed to be different from zero.

A good, parsimonious regression model is preferred over complicated models with multiple independent variables, especially when these variables do not add to the explanatory or predictive value of the model. In the light of the statistical tests, we recommend that PGW use the Linear regression model specified in Table 1.

In summary, after our evaluation of PGW's regression models, we conclude that the Linear Model developed by PGW is fit for the purpose it is required to serve, which is to reliably predict the peak requirements that PGW's system should be prepared to serve during a design winter scenario.

PGW's Peak Day Analysis

PGW performs a peak day analysis on an annual basis to determine its projected send out requirements during peak conditions. Essentially this process is completed by collecting send out and average temperature data for all days where the temperature is at or below 32 degrees Fahrenheit, excluding holidays and weekends. All interruptible transportation volumes are removed from total send out to arrive at firm send out on a daily basis.

For this analysis, PGW utilized data from the period winter of FY 15-16 through FY 18-19 which would reflect the most current consumption behaviors of its customers. This period yielded 51 data points where the average temperature was at or below 32 degrees Fahrenheit. A standard linear regression was performed on the data using the calculated Heating Degree-Days (HDDs) and the actual firm daily send out information. Additionally, in order to confirm the accuracy of the analysis, and to smooth the charting of the data, a Quadratic and a Cubic regression analysis were also completed. The resulting models are presented in the following table.

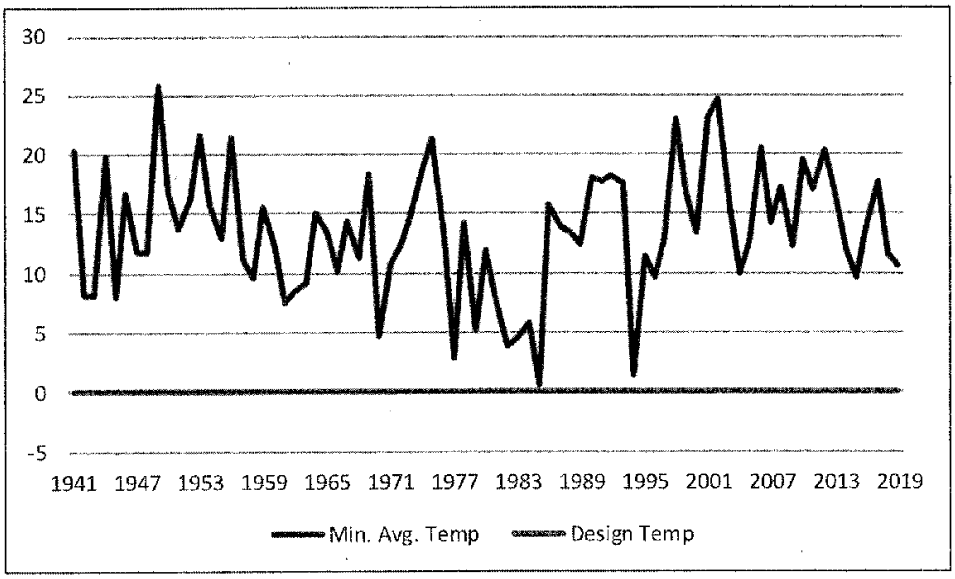
Table 1: PGW's Regression Models

Linear	$y = -20{,}428.25 + 11{,}020.93\,x$	where y = actual firm send out in Mcf; $x = HDD$; $x^2 = HDD^2$; and $x^3 = HDD^3$
Quadratic	$y = -17{,}841.06 + 10{,}889.99\,x + 1.63\,x^2$	
Cubic	$y = -302{,}369.81 + 32{,}332.30\,x - 531.69\,x^2 + 4.38\,x^3$	

Source: PGW

PGW performs its capacity planning using the "Design Day" methodology, which assumes that peak demand for planning purposes occurs on the day(s) when the average daily temperature is 0 degree Fahrenheit - this is equivalent to a winter day with 65 heating degree days (HDDs). As can be seen from Exhibit 1, the probability of meeting design day conditions remains approximately once in 80 years based on the data from National Oceanic and Atmospheric Administration (NOAA). This probability may even be lower given the historical data only consider data from the past 80 years. Selection of such a low probability event, to determine the largest amount of gas that PGW must deliver to meet system requirements and maintain system integrity, is prudent in our opinion.

Exhibit 1: Coldest Days in Philadelphia By Year



Source: National Climatic Data Center (NCDC), National Oceanic and Atmospheric Administration (NOAA)

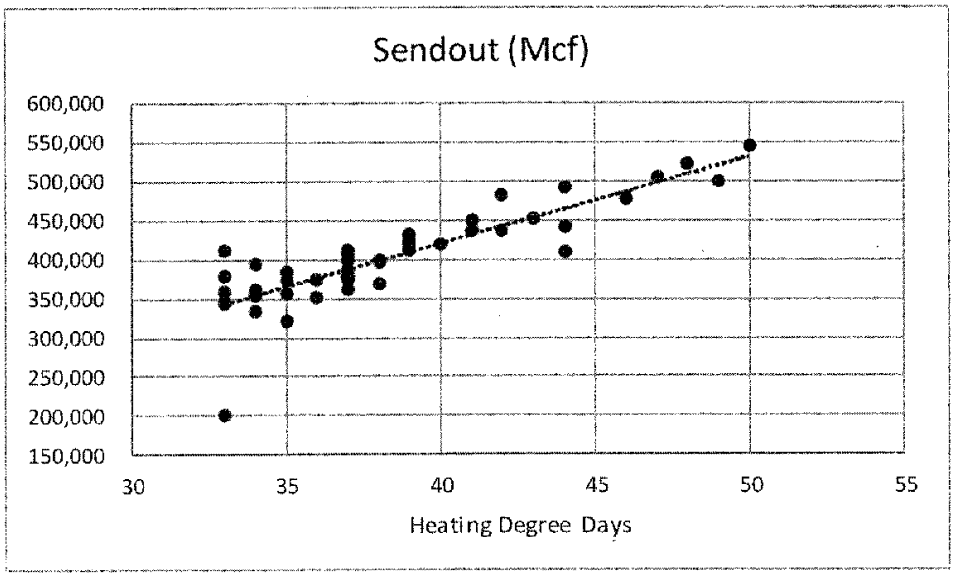
In the following sections, we review the underlying methodology of PGW's Linear, Quadratic, and Cubic models, evaluate their relative statistical significance and present our observations and recommendations.

We carry out the evaluation of the regression model in two steps – the first step is the preliminary (or sometimes referred to as intuitive) evaluation; and the second step is the more rigorous evaluation to test the statistical validity of the regression parameters and the overall model.

Preliminary Evaluation

In our preliminary evaluation, we are testing if the dependent variable can be intuitively explained by the independent variable(s) considered in the regression model(s). In the Peak Day Analysis, PGW's actual firm send out on the peak day is the explained (or dependent) variable, whereas the HDDs representing the number of degrees that a day's average temperature is below 65° Fahrenheit, which is the temperature below which buildings need to be heated, is the independent variable. The scatter plot presented in Exhibit 2 provides reasonable visual evidence of a linear relationship between the 2 variables. In addition to the linear relationship, PGW has considered a quadratic and cubic relationship between the firm send out and HDDs.

Exhibit 2: Scatter Plot



Source: PGW

In our preliminary evaluation, we also examine the Coefficient of Determination or commonly known as the R^2. For the Quadratic and Cubic models, we use the R^2 adjusted for the number of terms in the model. The R^2 or the Adjusted R^2 measures the percentage of variation in the dependent variable that can be explained by the variation in the independent variables in the regression model. We also examine the magnitude and sign of each regression coefficient and the results are presented in the table below.

Table 2: Preliminary Evaluation Results

Regression Model	% Variation Explained	Effect on Explained Variable
Linear	75.44 % of variation in send out explained by *HDDs*	Send out positively affected by *HDD*
Quadratic	74.41 % of variation in send out explained by a combination of *HDD*, and HDD^2 variables	Send out positively affected by *HDD* and HDD^2 variables
Cubic	73.88 % of variation in send out explained by a combination of *HDD*, HDD^2, and HDD^3 variables	Send out positively affected by *HDD*, negatively affected by HDD^2, and positively affected by HDD^3 variables

Source: PGW

As can be seen from Table 2, adding polynomials of higher orders to the regression equation does not improve the "goodness of fit" as measured by Adjusted R^2. The Linear model confirms the intuitive positive relationship between severity of weather, as measured by HDDs, and

natural gas load. It also explains a large portion of the historical variability observed in peak send outs, so it is the preferred model based on our preliminary evaluation.

Next, we perform a more rigorous statistical evaluation of the 3 models.

Statistical Evaluation

Testing for Statistical Significance of Slope Coefficients

The second step in our evaluation is to test for statistical significance of the coefficients of the independent variables in the regression models. It should be noted that the regression analysis only provides point estimates of these regression coefficients, so it becomes important to statistically test how representative are these of the true coefficients. This is achieved by computing confidence intervals for the regression coefficients and conducting hypothesis testing using p-values.

Confidence Intervals

To determine whether the independent variable(s) truly have an effect on the explained variable, we find a confidence interval around the point estimates of each of the coefficients of the independent variables in the regression. If the confidence interval contains 0, then we have significant statistical evidence to believe that the independent variable in question has no effect on the dependent variable. The 97.5% confidence intervals displayed in Table 3 are calculated using:

$$(point\ estimate) \pm (t - critical\ value) \times (standard\ error)$$

with n-k degrees of freedom, where k is the number of parameters that are being estimated (number of regression coefficients in this case).

Table 3: Confidence Intervals Surrounding the Regression Coefficients

Model	HDD		HDD^2		HDD^3	
	Lower Endpoint	Upper Endpoint	Lower Endpoint	Upper Endpoint	Lower Endpoint	Upper Endpoint
Linear	8,943.68	13,098.19	N/A	N/A	N/A	N/A
Quadratic	-23,964.40	45,744.39	-431.44	434.70	N/A	N/A
Cubic	-455,118.95	519,783.54	-12,631.93	11,568.55	-94.86	103.61

Source: PGW

As can be clearly seen from Table 3, with 97.5% confidence, we cannot rule out that the coefficients of the independent variables in the Quadratic and Cubic models will not assume a value of 0. In this instance, only the Linear model has a statistically significant coefficient which is not zero. We can be 97.5% confident, that using the Linear model a unit increase in HDD will lead to an increase in send out ranging between 8,944 and13,098 Mcf.

Hypothesis Testing

In addition to the confidence intervals, we also use Hypothesis Testing to determine whether the independent variable(s) truly have an effect on the explained variable. If there is no relationship between these variables, the coefficients of the independent variables will be 0 and vice versa. In order to statistically test the relationship, we construct a hypothesis as follows:

Determine if there is overwhelming evidence at the 0.05 significance level ($\alpha = 0.05$) of a linear relationship between the peak day send out and the HDDs observed on that day (or HDD^2 or HDD^3).

$$H_0: \beta_i = 0$$
$$H_\alpha: \beta_i \neq 0$$
$$\alpha = 0.05$$

We will use a *t*-test with n-k degrees of freedom, where k is the number of parameters that are being estimated (number of regression coefficients in this case). Our sample test statistic is given in the "t Stat" column in Table 4. We will use the p-value method to test the above hypothesis. The P-value is the probability of observing a test statistic more extreme than what was observed during the regression analysis assuming that the null hypothesis is true. Thus, at a 0.05 significance level, if the p-value is less than 0.05, we reject the null hypothesis H_0 that $\beta_i = 0$.

Table 4: Hypothesis Testing Results

	HDD		HDD^2		HDD^3	
Model	**t Stat**	**P-value**	**t Stat**	**P-value**	**t Stat**	**P-value**
Linear	12.27	1.4915E-16	N/A	N/A	N/A	N/A
Quadratic	0.72	0.47	0.01	0.99	N/A	N/A
Cubic	0.15	0.88	-0.10	0.92	0.10	0.92

Source: PGW

From the p-values in Table 4, it is evident that at 0.05 significance level we cannot reject the null hypothesis that the coefficient of HDD^2 and HDD^3 in the Quadratic and Cubic models is zero. Only the HDD coefficient in the Linear model can be concluded to be non-zero at the 0.05 significance level.

Overall Test of Significance of the Regression Model

The F-test of overall significance indicates whether the given linear regression model provides a better fit to the data than a model that contains no independent variables (i.e. an "intercept-only" model). The p-values for all the three models are significantly lower than the 0.05 significance level and indicate that all the three models are statistically significant.

It should be noted that the Linear, Quadratic, and Cubic models that PGW has considered are progressively nested – the Linear model is nested within Quadratic and Cubic; the Quadratic model is nested within the Cubic model. While comparing nested models, where an additional independent variable is added to the regression model to test if the more complex model has a better fit of the given data, the t-test performs better than the overall F-test. As we discussed

earlier, the F-test assesses the overall significance of all the regression coefficients jointly, whereas the t-test examines each coefficient individually.

As we saw in the previous section, the t-tests have indicated that the regression coefficients of independent variables such as HDD^2 and HDD^3 cannot be statistically claimed to different from zero. It is always recommended that a good, parsimonious regression model is preferred over complicated models with multiple independent variables, especially when these variables do not add to the explanatory or predictive value of the model. In the light of the t-tests, we recommend that PGW use the Linear model specified in Table 1.

Summary

As noted above, our preliminary evaluation concluded that the Linear model explains over 75% of the historical variability observed in peak send outs. Further, we noted that adding polynomials of higher orders to the liner model does not improve the "goodness of fit" as measured by Adjusted R^2.

In our second analysis, we tested the statistical significance of the regression coefficients and model using the t-tests. The t-tests revealed that the regression coefficients of independent variables in the Quadratic and Cubic models cannot be statistically claimed to be different from zero. Since the analysis indicates that adding variable would not improve the statistical results, we recommend that PGW continue to use the Linear regression model specified in Table 1.

Docket No. R-2022-XXXXXXX
Item 53.64(i)(1)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.64(i)

Utilities shall comply with the following:

(1) Thirty days prior to the filing of a tariff reflecting increases or decreases in purchased gas expenses, gas utilities under 66 Pa.C.S. § 1307(f) recovering expenses under that section shall file a statement for the 12-month period ending 2 months prior to the filing date under 66 Pa.C.S.§ 1307(f) as published in accordance with subsection(b) which shall specify:

(i) The total revenues received under 66 Pa.C.S. § 1307(a), (b) or (f), including fuel revenues received, whether shown on the bill as 66 Pa.C.S.§ 1307(f) as published in accordance with subsection (b) which shall specify:

(ii) The total gas expenses incurred.

(iii) The difference between the amounts in sub paragraphs (I) and (ii).

(iv) Evidence explaining how actual costs incurred differ from the costs allowed under subparagraph (ii).

(v) How these costs are consistent with a least cost fuel procurement policy, as required by 66 Pa.C.S. § 1318 (relating to determination of just and reasonable natural gas rates).

Response:

Please see attached schedules. Additionally, please refer to Item 53.64(c)(6) for a detailed discussion regarding the Company's least cost fuel procurement policy.

CALENDAR YEAR 2021
PHILADELPHIA GAS WORKS
C-FACTOR RECONCILIATION

MONTH		NET COST OF FUEL 1 ($)	TOTAL GCR REVENUE BILLED 2 ($)	C FACTOR % of GCR 3	C FACTOR REVENUE BILLED 4 = (2 * 3) ($)	LOAD BALANCING REVENUE 5 ($)	LNG SALES GCR BILLED REVENUE 6 ($)	TOTAL C FACTOR REVENUE BILLED 7 = (4 + 5 + 6) ($)	NATURAL GAS REFUNDS 8 ($)	OVER/ (UNDER) RECOVERY 9 = (7 + 8 - 1) ($)
JANUARY	**2021**	23,415,553	29,079,951	116.5%	33,875,226	191,164	0	34,066,390	345	10,651,182
FEBRUARY		28,072,641	33,042,725	116.5%	38,491,461	188,745	0	38,680,206	0	10,607,564
MARCH		17,592,429	21,431,495	112.9%	24,194,676	187,954	0	24,382,630	0	6,790,201
APRIL		9,700,932	11,327,434	108.9%	12,335,855	190,035	11,218	12,537,108	42,490	2,878,666
MAY		8,862,196	6,128,595	108.9%	6,674,191	188,468	0	6,862,659	0	(1,999,536)
JUNE		8,195,424	3,972,840	107.1%	4,254,885	170,996	0	4,425,880	2,983	(3,766,561)
JULY		9,472,273	3,301,308	105.3%	3,477,840	183,508	0	3,661,348	2,981	(5,807,944)
AUGUST		7,901,509	3,085,905	105.3%	3,250,919	184,520	0	3,435,438	0	(4,466,070)
SEPTEMBER		9,370,138	3,980,567	107.5%	4,278,667	183,531	0	4,462,198	0	(4,907,940)
OCTOBER		13,088,803	5,014,637	109.1%	5,468,829	207,616	0	5,676,445	14,453	(7,397,904)
NOVEMBER		28,807,921	14,188,678	109.1%	15,473,795	212,570	0	15,686,365	113,192	(13,008,364)
DECEMBER		30,545,364	31,177,480	107.5%	33,518,262	178,011	0	33,696,273	0	3,150,909
Total		195,025,183	165,731,614		185,294,606	2,267,117	11,218	187,572,941	176,445	(7,275,797)

STATEMENT OF RECONCILIATION
UNIVERSAL SERVICES & ENERGY CONSERVATION SURCHARGE
CALENDAR YEAR 2021

Month		USC Applicable Volumes	USC Charge	USC Revenue Billed	USC Expenses	Monthly Over/(Under) Recovery	Cumulative Over/(Under) Recovery
December 2020							$2,720,208
January 2021	Actual	8,475,222	$ 1.9266	$ 16,328,363	$ 14,947,154	$ 1,381,209	$4,101,417
February	Actual	9,661,701	$ 1.9266	$ 18,614,234	$ 17,407,087	$ 1,207,147	$5,308,564
March	Actual	6,692,744	$ 1.7529	$ 11,731,711	$ 11,728,382	$ 3,328	$5,311,893
April	Actual	3,713,582	$ 1.5792	$ 5,864,489	$ 6,892,201	$ (1,027,712)	$4,284,180
May	Actual	2,008,720	$ 1.5792	$ 3,172,170	$ 2,725,708	$ 446,462	$4,730,642
June	Actual	1,318,939	$ 1.4901	$ 1,965,351	$ 895,079	$ 1,070,272	$5,800,914
July	Actual	1,080,750	$ 1.4010	$ 1,514,131	$ 231,944	$ 1,282,186	$7,083,100
August	Actual	1,022,120	$ 1.4010	$ 1,431,990	$ 778,975	$ 653,015	$7,736,115
September	Actual	1,084,185	$ 1.4927	$ 1,618,363	$ 985,593	$ 632,769	$8,368,884
October	Actual	1,230,794	$ 1.5844	$ 1,950,070	$ 1,978,816	$ (28,746)	$8,340,138
November	Actual	3,348,003	$ 1.5844	$ 5,304,576	$ 6,528,336	$ (1,223,761)	$7,116,378
December	Actual	6,220,739	$ 1.6684	$ 10,378,371	$ 12,788,359	$ (2,409,989)	$4,706,389

USC Expenses	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Total
ELIRP Expense	$ 852,537	$ 1,594,894	$ 815,596	$ 894,995	$ 766,962	$ 689,406	$ 761,514	$ 1,171,693	$ (1,970)	$ 1,039,826	$ 840,986	$ 868,967	$ 10,295,406
ELIRP Labor	$ 8,136	$ 6,584	$ 6,667	$ 9,436	$ 6,686	$ 6,686	$ 8,357	$ 7,765	$ 6,084	$ 7,361	$ 7,681	$ 8,592	$ 90,035
Concervation Incentive Credit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CRP Discount	$ 12,742,126	$ 14,514,248	$ 9,456,313	$ 4,625,538	$ 934,412	$ (784,693)	$ (1,376,321)	$ (1,473,083)	$ (1,198,272)	$ (403,005)	$ 4,063,623	$ 10,378,568	$ 51,479,454
CRP Forgiveness	$ 898,374	$ 812,943	$ 1,120,746	$ 1,159,265	$ 910,362	$ 913,383	$ 782,897	$ 1,018,140	$ 2,120,890	$ 1,261,234	$ 1,433,164	$ 1,197,706	$ 13,629,103
Senior Citizen Discount	$ 445,981	$ 478,418	$ 329,060	$ 202,967	$ 107,286	$ 70,298	$ 55,497	$ 54,461	$ 58,862	$ 73,400	$ 182,882	$ 334,527	$ 2,393,639
Bad Debt Expense Offset*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 14,947,154	$ 17,407,087	$ 11,728,382	$ 6,892,201	$ 2,725,708	$ 895,079	$ 231,944	$ 778,975	$ 985,593	$ 1,978,816	$ 6,528,336	$ 12,788,359	$ 77,887,637

CRP Participation												
Rate Case Participation Rate	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Actual Participation Rate*	57,022	57,618	58,549	59,298	60,066	60,941	61,279	61,507	60,498	60,137	59,281	53,466
CRP Under(Over) Participation	22,978	22,382	21,451	20,702	19,934	19,059	18,721	18,493	19,502	19,863	20,719	26,534

Average Shortfall Per CRP Participant												
CRP Discount	$ 12,742,126	$ 14,514,248	$ 9,456,313	$ 4,625,538	$ 934,412	$ (784,693)	$ (1,376,321)	$ (1,473,083)	$ (1,198,272)	$ (403,005)	$ 4,063,623	$ 10,378,568
Actual Participation Rate	57,022	57,618	58,549	59,298	60,066	60,941	61,279	61,507	60,498	60,137	59,281	53,466
Average Shorfall per CRP Participant	$ 223	$ 252	$ 162	$ 78	$ 16	$ (13)	$ (22)	$ (24)	$ (20)	$ (7)	$ 69	$ 194
Shortfall*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bad Debt Expense Offset* 5.75%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

*Bad Debt Expense Offset Applicable When Actual CRP Participation Exceeds 80,000

Docket No. R-2022-XXXXXXX
Item 53.65(1)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.65(1)

The costs of the affiliated gas, transportation or storage as compared to the average market price of other gas, transportation or storage and the price of other sources of gas, transportation and storage.

Response:

PGW has no affiliates, see response to 53.64(c)(1) for price of gas, transportation and storage.

Docket No. R-2022-XXXXXXX
Item 53.65(2)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.65(2)

Estimates of the quantity of gas, transportation or storage available to the utility from all sources.

Response:

PGW has no affiliates and provided is a summary of all transport and storage.

Docket No. R-2022-XXXXXXX
Item 53.65(3)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.65(3)

Efforts made by the utility to obtain gas, transportation or storage from nonaffiliated interests.

Response:

PGW has no affiliates, therefore, all gas purchases were made from non-affiliated interests. Also, see the response to 53.64(c)(6) outlining PGW's current least cost fuel procurement practices.

Docket No. R-2022-XXXXXXX
Item 53.65(4)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.65(4)

The specific reasons why the utility has purchased gas, transportation or storage from an affiliated interest and demonstration that the purchases are consistent with a least cost fuel procurement policy.

Response:

PGW has no affiliates, therefore, all gas purchases were made from non-affiliated interests. Also, see the response to 53.64(c)(6) outlining PGW's current least cost fuel procurement practices.

Docket No. R-2022-XXXXXXX
Item 53.65(5)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 53.65(5)

The sources and amounts of gas, transportation or storage, which have been withheld from the market by the utility or, affiliated interest and the reasons why the gas, transportation or storage has been withheld?

Response:

PGW has no affiliates.

PGW operates two LNG Peak shaving facilities with a total usable storage capacity of 3.9 Bcf, 18.63 percent of PGW's total storage capacity. When pipeline and underground storage deliveries are insufficient to meet sendout requirements, LNG storage withdrawals will be considered. These LNG storage withdrawals are based upon incremental costs, weather forecasts, inventory balances, distribution system requirements, and other variables such as plant maintenance and operating requirements all of which can influence the vaporization and liquefaction rates of PGW's LNG facilities.

PGW used a total of 1,081,801 Mcf of LNG to meet city sendout requirements during fiscal year 2020.

Docket No. R-2022-XXXXXXX
Item 1317(a)(1)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(a)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(1) The utility's participation in rate proceedings before the Federal Energy Regulatory Commission which affect the utility's gas costs.

Response:

Please refer to Item 53.64(c)(4) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1317(a)(2)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(a)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(2) The utility's efforts to negotiate favorable contracts with gas suppliers and to renegotiate existing contracts with gas suppliers or take legal actions necessary to relieve the utility from existing contract terms which are or may be adverse to the interests of the utility's ratepayers.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1317(a)(3)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(a)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(3) The utility's efforts to secure lower cost gas supplies both within and outside of the Commonwealth, including the use of transportation arrangements with pipelines and other gas distribution companies.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1317(a)(4)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(a)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(4) The sources and amounts of all gas supplies which have been withheld or have been caused to be withheld from the market by the utility and the reasons why such gas is not to be utilized.

Response:

Please refer to Item 53.65(5) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1317(b)(1)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(b)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection(a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(1) Efforts made by the utility to obtain gas supplies from nonaffiliated interests.

Response:

Please refer to Item 53.65(3) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1317(b)(2)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(b)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection(a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(2) The specific reasons why the utility has purchased gas supplies from an affiliated interest and demonstration that such purchases are consistent with a least cost fuel procurement policy.

Response:

Please refer to Item 53.65(4) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1317(b)(3)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(b)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection(a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(3) The sources and amounts of all gas supplies which have been withheld from the market by the utility or any affiliated interest and the reasons why such gas is not being utilized.

Response:

Please refer to Item 53.65(5) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1317(c)(1)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(c)

Reliability plans.--As part of its filing under section 1307(f) or if it is not required to make such a filing on an annual basis, a natural gas distribution company, as defined in section 2202 (relating to definitions), shall file a proposed reliability plan with the commission which shall, at a minimum, identify the following:

(1) The projected peak day and seasonal requirements of the firm customers utilizing the distribution system of the natural gas distribution company during the 12-month projected period specified in section 1307(f)(1). Where operationally required, the design peak day requirements shall be specified for discrete segments of each natural gas distribution system.

Response:

Please refer to Item 53.64(c)(13) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1317(c)(2)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(c)

Reliability plans.--As part of its filing under section 1307(f) or if it is not required to make such a filing on an annual basis, a natural gas distribution company, as defined in section 2202 (relating to definitions), shall file a proposed reliability plan with the commission which shall, at a minimum, identify the following:

(2) The transportation capacity, storage, peaking or on-system production that ensures deliverability of the natural gas supplies necessary to meet such projected period peak day and seasonal requirements.

Response:

PGW does not maintain a specific document entitled a Reliability Plan, however, all of the components that would be contained in such a document are prepared by PGW and are contained in this filing in Items 53.64(c)(1), 53.64(c)(3), 53.64(c)(5), 53.64(c)(6), 53.64(c)(10), 53.64(c)(12), 53.64(c)(13), 53.64(c)(14), 53.65(2) and 53.65(5).

Docket No. R-2022-XXXXXXX
Item 1317(d)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1317(d)

Supply plans.--As part of its filing under section 1307(f), a natural gas distribution company shall file a proposed plan with the commission for acquisition or receipt of natural gas supplies.

Response:

Please refer to Item 53.64(c)(1) and 53.65(2) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1318(a)(1)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1318(a)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of $40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(1) The utility has fully and vigorously represented the interests of its ratepayers in proceedings before the Federal Energy Regulatory Commission.

Response:

Please refer to Item 53.64(c)(4) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1318(a)(2)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1318(a)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of $40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(2) The utility has taken all prudent steps necessary to negotiate favorable gas supply contracts and to relieve the utility from terms in existing contracts with its gas suppliers which are or may be adverse to the interests of the utility's ratepayers.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1318(a)(3)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1318(a)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of $40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(3) The utility has taken all prudent steps necessary to obtain lower cost gas supplies on both short-term and long-term bases both within and outside the Commonwealth, including the use of gas transportation arrangements with pipelines and other distribution companies.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1318(a)(4)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1318(a)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of $40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(4) The utility has not withheld from the market or caused to be withheld from the market any gas supplies which should have been utilized as part of a least cost fuel procurement policy.

Response:

Please refer to Item 53.65(5) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1318(b)(1)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1318(b)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(1) That the utility has fully and vigorously attempted to obtain less costly gas supplies on both short-term and long-term bases from nonaffiliated interests.

Response:

Please refer to Item 53.65(3) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1318(b)(2)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1318(b)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(2) That each contract for the purchase of gas from its affiliated interest is consistent with a least cost fuel procurement policy.

Response:

Please refer to Item 53.65(4) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1318(b)(3)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1318(b)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(3) That neither the utility nor its affiliated interest has withheld from the market any gas supplies which should have been utilized as part of a least cost fuel procurement policy.

Response:

Please refer to Item 53.65(5) contained in this filing.

Docket No. R-2022-XXXXXXX
Item 1318(c)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 Pa. Code § 53.61, et seq.

Item 1318(c)

Shut-in gas; special rule.--In determining whether a gas utility has purchased the least costly natural gas available, the commission shall consider as available to the utility any gas supplies that reasonably could have been brought to market during the relevant period but which were voluntarily withheld from the market by the utility or an affiliated interest of the utility.

Response:

Please refer to Item 53.65(5) contained in this filing.