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Filed For: Southwest Gas Corporation

In accordance with NRS Chapter 719,
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by: /s Tashia Garry

By electronically filing the document(s),
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This filing has been electronically filed and deemed to be signed by an authorized
agent or
representative of the signer(s) and
Southwest Gas Corporation

SOUTHWEST GAS CORPORATION

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Annual Rate Adjustment Application of Southwest Gas Corporation for Authority to Adjust the Variable Interest Expense Recovery Mechanism Rates; Unrecovered Gas Cost Expense Rates; System Shrinkage Rates; Imbalance Commodity and Reservation Charges; Renewable Energy Program Rates; General Revenues Adjustment Rates; Conservation and Energy Efficiency Rates; and Mesquite Infrastructure Expansion Rates.

Docket No.: 21-11____

VOLUME 1 of 2

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SOUTHWEST GAS CORPORATION

November 10, 2021

Ms. Trisha Osborne
Assistant Commission Secretary
Public Utilities Commission of Nevada
1150 East William Street
Carson City, NV 89701-3109

Re: Annual Rate Adjustment Application of Southwest Gas Corporation for Authority to Adjust the Variable Interest Expense Recovery Mechanism Rates; Unrecovered Gas Cost Expense Rates; System Shrinkage Rates; Imbalance Commodity and Reservation Charges; Renewable Energy Program Rates; General Revenues Adjustment Rates; Conservation and Energy Efficiency Rates; and Mesquite Infrastructure Expansion Rates

Dear Ms. Osborne:

Southwest Gas Corporation (Southwest Gas or Company) respectfully submits for electronic filing its Annual Rate Adjustment Application.

The entire filing consists of the following:

Volume 1 Transmittal letter, Table of Contents, Application and Exhibits 1 through 5

Volume 2 Exhibit 6, Draft Notice, and Workpapers for Northern & Southern Nevada

An electronic payment in the amount of \$200.00 has been included with the Application for the required filing fee.

Please contact me at (702) 876-7266 with any questions you may have.

Respectfully submitted,

Christopher Brown
Director/Regulation & Energy Efficiency

Enclosure

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Attorneys for Southwest Gas Corporation

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Annual Rate Adjustment Application of
Southwest Gas Corporation for Authority to
Adjust the Variable Interest Expense
Recovery Mechanism Rates; Unrecovered
Gas Cost Expense Rates; System Shrinkage
Rates; Imbalance Commodity and
Reservation Charges; Renewable Energy
Program Rates; General Revenues
Adjustment Rates; Conservation and Energy
Efficiency Rates; and Mesquite Infrastructure
Expansion Rates.

Docket No.: 21-11____

APPLICATION

Pursuant to Nevada Revised Statute (NRS) 704.110, Nevada Administrative Code (NAC) 701B.245, 703.535, 704.116, 704.953 through 704.9718, and all other applicable sections of Chapters 703 and 704 of the NAC, as well as the relevant provisions of its Nevada Gas Tariff No. 7, Southwest Gas Corporation (Southwest Gas or Company) respectfully files its Annual Rate Adjustment (ARA) Application (Application) for authority to establish: (1) the Accumulation of Deferred Interest (ADI) rate in Southern Nevada pursuant to the Variable Interest Expense Recovery (VIER) mechanism; (2) Unrecovered Gas Cost Expense (UGCE) rates; (3) system Shrinkage Rates for transportation customers (Shrinkage Rates); (4) Imbalance Commodity and Reservation Charges used to calculate transportation customer excess imbalance charges; (5) Renewable Energy Program Rates (REPR); (6) General Revenues Adjustment (GRA) rates; (7) Conservation and Energy Efficiency (CEE) rates; and (8) Mesquite Infrastructure Expansion

1 Rates (IERs). Southwest Gas further seeks an order: (i) finding that its gas procurement
2 practices are reasonable; (ii) finding that its gas purchases were reasonable and prudent; (iii)
3 finding that, during the applicable test period¹, the transportation costs it first incurred and its
4 management and performance of its previously contracted resources were both reasonable and
5 prudent; and (iv) finding that the \$123,975 in gas costs related to gas purchases made on behalf
6 of its customers in Mesquite and delivered via the Mesquite Virtual Pipeline were prudent and
7 should be reclassified from FERC Account No. 186² to FERC Account No. 191 for recovery.

8 **1. Introduction**

9 1.1 Southwest Gas is a corporation in good standing under the laws of the state of
10 Nevada. Southwest Gas is a public utility subject to the jurisdiction of the Commission pursuant
11 to Chapter 704 of the Nevada Revised Statutes.

12 1.2 Southwest Gas' corporate offices are located at 8360 South Durango Drive, Las
13 Vegas, Nevada 89113.

14 1.3 Communications regarding this Application should be addressed to:

15
16 Andrew V. Hall, Esq.
17 Associate General Counsel
18 Southwest Gas Corporation
19 P.O. Box 98510
Las Vegas, Nevada 89193-8510
Telephone: (702) 364-3227
E-mail: andrew.hall@swgas.com

Christopher M. Brown
Director/Regulation & Energy Efficiency
Southwest Gas Corporation
P.O. Box 98510
Las Vegas, Nevada 89193-8510
Telephone: (702) 876-7133
E-mail: christopher.brown@swgas.com

20 And regserve@swgas.com

21
22 1.4 Southwest Gas' Application is supported by the prepared direct testimony of the
23 following witnesses:
24

25 ¹ Pursuant to Commission's Order in Docket 20-05028, the Company modified the timing of its ARA application
26 filing to use an accounting test year of October 1 through September 30.¹ Prior to the instant application, the
27 Company used a May 1 through April 30 accounting test period. Consequently, the change in filing timing
between the end of the test period in the Company's last ARA Application (April 30, 2020) and end of the test
period in the instant application (September 30, 2021) creates a seventeenth-month time period (May 1, 2020
through September 30, 2021).

28 ² Reclassified from FERC Account 191 to FERC Account 186 pursuant to the Stipulation and Order in Docket
No. 20-05028.

- Celine Louise R. Apo – Ms. Apo supports the Company's calculation of its system Shrinkage Rate, Imbalance Commodity and Imbalance Reservation Charges, UGCE rate, GRA rates, ADI rate, Southern Nevada Infrastructure Expansion Rate, and the Mesquite Expansion Area Infrastructure Expansion Rate.
- Melissa M. Porch – Ms. Porch supports Southwest Gas' proposed REPR and CEE rates for its Southern Nevada and Northern Nevada rate jurisdictions.
- John R. Olenick - Mr. Olenick supports the Company's assertions that its gas procurement practices are reasonable and that its gas purchases and transportation costs it first incurred and its management and performance of its previously contracted resources were both reasonable and prudent. Mr. Olenick also supports the Company's request to reclassify \$123,975 from FERC Account 186 to FERC Account 191.
- Ryan A. Kimball - Mr. Kimball supports changes in Southwest Gas' VIER calculations.

2. Proposed Rate Adjustments

Prior Year's Quarterly Gas Cost Adjustments and Reasonableness and Prudence of Gas Procurement / Purchases and Transportation Costs

2.1 Southwest Gas' Application for Authority to Implement Quarterly Deferred Energy Accounting Adjustments and to Establish Initial Quarterly Deferred Energy Account Adjustment Rates, filed in accordance with NRS 704.110, was approved by the Commission on or about August 31, 2011.

2.2 Notice of Southwest Gas' quarterly deferred energy accounting adjustment and Advice Letter filings for the past year are on file with the Commission.³ See NRS 704.110(9)(d).

2.3 In accordance with NRS 704.110(9)(d), Southwest Gas requests that the Commission find that its gas procurement practices are reasonable and that its gas purchases were reasonable and prudent, as supported by the prepared direct testimony of Company

³ Southwest Gas' relevant filings within the test period include Docket Nos. 20-08024, 20-11024; 21-02030; 21-05029; and 21-09002.

1 witness John R. Olenick. Southwest Gas also requests the Commission find that during the
2 applicable test period, the transportation costs it first incurred and its management and
3 performance of its previously contracted resources were both reasonable and prudent.

4 Variable Interest Expense Recovery

5 2.4 The Company's VIER mechanism has two components – an average variable
6 interest rate (AVIR) component that is adjusted for changes in the AVIR during the interim period
7 between general rate case proceedings, and an ADI component that amortizes the ADI balance,
8 which results from the difference between the authorized and actual interest expense for the
9 variable rate debt under the VIER mechanism.

10 2.5 Pursuant to NAC 704.210 through 704.222, Southwest Gas seeks authority to
11 implement an ADI rate of (\$0.00648) per therm in Southern Nevada, as it relates to the VIER
12 mechanism.⁴ As set forth in the prepared direct testimony of Company witnesses, Ryan A.
13 Kimball, Southwest Gas is not proposing a change to the AVIR component of the VIER
14 mechanism in this proceeding, as the AVIR will be reset as part of the Company's pending
15 general rate case application (Docket No. 21-09001).

16 2.6 There are no variable interest rate industrial development revenue bonds in
17 Northern Nevada, thus the proposed rate change only affects Southern Nevada rates.

18 Unrecovered Gas Cost Expense Rates

19 2.7 The UGCE mechanism and rates were initially adopted by the Commission in
20 Docket No. 09-04003. Consistent with its Nevada Gas Tariff No. 7, Southwest Gas calculated
21 its UGCE rates by dividing its UGCE test period net gas cost write-offs balance by the total
22 sales volumes (Base Program rate component) and its uncollectible gas cost account balance
23 by the total test period sales volumes (Adjustment rate component), as detailed in the prepared
24 direct testimony of Company witness Celine Louise R. Apo. Based thereon, Southwest Gas
25 seeks authority to implement a UGCE rate of \$0.00437 per therm in Southern Nevada and
26 \$0.00404 per therm in Northern Nevada.

27 _____
28 ⁴ The Commission approved Southwest Gas' request for a VIER mechanism in Docket No. 04-3011. Further,
Southwest Gas applied for and was granted authority to adjust its AVIR and ADI rates pursuant to the VIER
mechanism in Docket No. 12-06013.

1 Shrinkage Rates

2 2.8 In the Company's 2018 ARA proceeding (Docket No. 18-06005), the
3 Commission authorized a change to the methodology for calculating the Company's shrinkage
4 rates. Specifically, the Commission authorized Southwest Gas to calculate shrinkage rates for
5 both Southern Nevada and Northern Nevada using a 0.3 percent shrinkage factor and further
6 ordered the Company to use the imputed 0.3 percent factor for a minimum of three
7 years. Accordingly, Southwest Gas used the 0.3 percent factor for the shrinkage rates that
8 were effective January 1 in 2019, 2020, and 2021. As discussed in the prepared direct
9 testimony of Celine Louise R. Apo, the Company proposes to continue using a 0.3
10 percent shrinkage factor.

11 2.9 The Company calculated its proposed Southern Nevada Shrinkage Rates by first
12 classifying transportation customers as either high or low-pressure service, and then
13 calculating high and low-pressure shrinkage rates. See Order in Docket No. 09-03012. The
14 Company's proposed Northern Nevada Shrinkage Rates were calculated using a recorded
15 three-year average for gas receipts and deliveries. See Order in Docket No. 07-05015.

16 2.10 Consistent with the Company's request to continue using a 0.3
17 percent shrinkage factor, the Company seeks approval of the Shrinkage Rates yielded from
18 the 0.3 percent shrinkage factor calculation in this proceeding. Specifically, the Company
19 seeks to implement a shrinkage rate of \$0.00006 per therm for high pressure service
20 transportation customers in Southern Nevada, and a shrinkage rate of \$0.00214 per therm for
21 low pressure service transportation customers in Southern Nevada. In Northern Nevada, the
22 Company proposes a shrinkage rate of \$0.00145 per therm.

23 Imbalance Commodity and Reservation Charges

24 2.11 In Southern Nevada, Southwest Gas proposes Imbalance Commodity and
25 Reservation Charges of \$0.47609 and \$0.05564 per therm, respectively. In Northern Nevada,
26 the proposed Imbalance Commodity and Reservation Charges are \$0.48191 and \$0.34801 per
27 therm, respectively.

1 Renewable Energy Program Rates

2 2.12 The REPR was authorized by the Commission in Docket No. 12-05039. In
3 accordance with NAC 701B.245, Southwest Gas calculated its proposed REPR by adding the
4 two components identified in NAC 701B.245(2): (1) its anticipated 2022 *Smarter Greener*
5 *Better*® (SGB) Solar Water Heating Program budget divided by the projected therms for the
6 2022 program year (Base Program rate); and (2) its SGB Solar Water Heating Program
7 subaccount of FERC Account No. 182.3 cumulative balance at September 30, 2021 divided
8 by the therm sales for the previous twelve month test (Deferred Program rate), as detailed in
9 the prepared direct testimony of Company witness Melissa M. Porch. Based thereon,
10 Southwest Gas proposes a REPR in Southern Nevada of (\$0.00063) per therm. In Northern
11 Nevada, Southwest Gas proposes a REPR of (\$0.00040) per therm.

12 General Revenues Adjustment Rates

13 2.13 GRA rates are “adjusted annually in an annual application filed pursuant to NAC
14 704.116.” See NAC 704.9718(2) (as amended). Accordingly, Southwest Gas proposes to
15 adjust its GRA rates for each applicable rate schedule in Southern and Northern Nevada in this
16 Application, as supported by the prepared direct testimony of Company witness Celine Louise
17 R. Apo.

18 2.14 Southwest Gas calculated its proposed GRA rates consistent with NAC
19 704.9718(3). For each applicable rate schedule, GRA account balances at the end of the test
20 period were divided by the previous twelve-months’ therms for that schedule.

21 2.15 Southwest Gas proposes the GRA rates reflected in the relevant exhibits to the
22 prepared direct testimony of Company witness Celine Louise R. Apo, for each applicable rate
23 schedule in Southern and Northern Nevada. The proposed GRA rates reflect the difference
24 between the Commission-authorized general revenue per customer and the general revenue
25 per customer realized by Southwest Gas during the test period for the single-family residential,
26 multi-family residential, G-1, G-2, and G-3 general service schedules.

1 Conservation and Energy Efficiency Rates

2 2.16 NAC 704.9714(2), permits Southwest Gas to “recover all just and reasonable
3 costs for implementing substantive conservation and energy efficiency programs included in
4 an application that the Commission has accepted either as part of the gas utility’s annual
5 conservation and energy efficiency plan or as modified in the gas utility’s conservation and
6 energy efficiency plan report.” Specifically, “[t]hese costs may include, without limitation, costs
7 for labor, overhead, materials, incentives paid to customers, advertising, marketing,
8 measurement, verification and evaluation.” See NAC 704.9714(2).

9 2.17 As described in the prepared direct testimony of Company witness Melissa M.
10 Porch, Southwest Gas calculated the Northern and Southern Nevada Deferred Program rates
11 separately by dividing the balances of each jurisdiction’s respective Deferred Program account
12 (FERC Account No. 182.303104) as of September 30, 2021, by the respective rate jurisdiction’s
13 total previous twelve months’ therm sales. Base Program rates for the Southern and Northern
14 rate jurisdictions are calculated separately by dividing each rate jurisdiction’s total CEE costs,
15 as defined in Southwest Gas’ approved 2022 CEE budget², by the respective rate jurisdiction’s
16 projected therm sales. The Deferred Program and Base Program rates are then added
17 together to calculate the total CEE rate applicable to all sales customers.

18 2.18 Based thereon, Southwest Gas proposes CEE rates in Southern Nevada of
19 \$0.00107 per therm for sales customers. In Northern Nevada, Southwest Gas proposes credit
20 CEE rates of (\$0.00056) per therm for sales customers.

21 **3. Mesquite Infrastructure Expansion Rates**

22 3.1 In Docket No. 17-11008, the Commission approved Southwest Gas’ application
23 to expand its service territory pursuant to Senate Bill 151 (2015) (now codified as NRS
24 704.9225) to include Mesquite, Nevada and the surrounding area. The Commission adopted
25 regulations, NAC 704.974 through NAC 704.9758, which allow Southwest Gas to account for
26 the difference between the revenue requirement accrued versus what was collected in its IERs
27 as a deferred cost. Southwest Gas includes this accounting for the Mesquite IERs in its annual
28 ARA filings.

3.2 The Company proposes to adjust the Mesquite IERs as described in the prepared direct testimony of Company witness, Celine Louise R. Apo. The Mesquite IERs are calculated by dividing the cumulative balance in the Southern Nevada and Mesquite IER subaccount of FERC Account No. 182.3 at September 30, 2021, by the applicable therm sales for the twelve-month test period. The Southern Nevada IER includes deferrals calculated by multiplying a 98.5 percent allocation factor by the Revenue Requirement, then dividing that number by the Southern Nevada rate jurisdiction's projected annual therm sales. The Mesquite Expansion Area IER is calculated by multiplying a 1.5 percent allocation factor by the Revenue Requirement⁵, then dividing that number by the projected Mesquite area annual therm sales. The Mesquite Expansion Area IER is calculated by multiplying a 1.5 percent allocation factor by the Revenue Requirement⁷, then dividing that number by the projected Mesquite area annual therm sales. Based on the aforementioned calculations, Southwest Gas proposes a Southern Nevada IER of \$0.00405 and a Mesquite Expansion Area IER of \$0.38058.

4. Overall Effect on Rates

4.1 The overall effect of the proposed rate changes is an increase in annualized revenues of \$4,788,803 or 1 percent in Southern Nevada, and an increase in annualized revenues of \$944,697 or 0.8 percent in Northern Nevada. The average annual, summer, and winter bill impacts for customer rate schedules are reflected in the applicable exhibits to the prepared direct testimony of Company witness Celine Louise R. Apo.

5. Exhibits to Application

5.1 Attached hereto and incorporated by reference herein are the following Exhibits:

- Exhibit 1: Proposed tariff sheets
- Exhibit 2: Existing tariff sheets showing the currently effective rates used in Schedule 1 of Exhibit Nos. ____ (CLA-1) and (CLA-2)
- Exhibit 3: Prepared Direct Testimony of Celine Louise R. Apo
- Exhibit 4: Prepared Direct Testimony of Melissa M. Porch

⁵ The Commission's Order in Docket No. 17-11008 requires the Company to allocate 1.5 percent of the revenue requirement to Mesquite Expansion Area customers and 98.5 percent of the revenue requirement to its tariff-rate customers located in the Southern Nevada rate jurisdiction.

- Exhibit 5: Prepared Direct Testimony of John R. Olenick
- Exhibit 6: Prepared Direct Testimony of Ryan M. Kimball

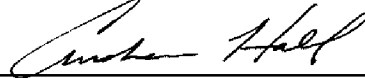
6. Conclusion

6.1 Southwest Gas respectfully requests that the Commission issue an Order:

- a. Finding that its gas procurement practices are reasonable and that its gas purchases were reasonable and prudent;
- b. Finding that during the test period, the transportation costs the Company first incurred and the Company's management and performance of its previously contracted resources were both reasonable and prudent;
- c. Establishing the Company's proposed ADI, UGCE, Shrinkage, REPR, GRA, and CEE rates, Mesquite IERs, and proposed Imbalance Commodity and Reservation Charges as set forth herein;
- d. Finding that the \$123,975 in gas costs related to gas purchases made on behalf of its customers in Mesquite and delivered via the Mesquite Virtual Pipeline were prudent and should be reclassified from FERC Account No. 186 to FERC Account No. 191 for recovery;
- d. Establishing July 1, 2022 as the effective date for the rate changes set forth herein; and
- e. Granting such further relief as the Commission finds just and reasonable based on the requests contained within this filing.

Respectfully submitted this 10th day of November 2021.

SOUTHWEST GAS CORPORATION



Andrew V. Hall, Esq., Bar No. 12762

andrew.hall@swgas.com

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8360 South Durango Drive

Las Vegas, NV 89113

Telephone No. 702.364.3227

Facsimile No. 702.252.7283

Attorneys for Southwest Gas Corporation

1 **CERTIFICATE OF SERVICE**

2 I hereby certify that on the 10th day of November 2021, and pursuant to the rules and regulations
3 of the Public Utilities Commission of Nevada, I served a copy of the foregoing APPLICATION
4 upon all parties identified below by emailing a copy to the following:

5
6 Donald Lomoljo
Public Utilities Commission of Nevada
7 1150 E. William Street
Carson City, NV 89701
8 dlomoljo@puc.nv.gov

Ernest Figueroa
Bureau of Consumer Protection
100 N. Carson Street
Carson City, NV 89701
ewitkoski@ag.nv.gov

9 with a copy to:
10 pucn.sc@puc.nv.gov

with a copy to:
bcpserve@ag.nv.gov


11
12
13
14 
an employee of Southwest Gas Corporation
15
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Exhibit 1

Proposed Tariff Sheets

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

Canceling _____

P.U.C.N. Sheet No. 10P.U.C.N. Sheet No. 10

STATEMENT OF RATES

EFFECTIVE RATES APPLICABLE TO SOUTHERN NEVADA SCHEDULES ^{1/2/}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Infrastructure Expansion Rate ^{7/}	Currently Effective Tariff Rate
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment			
SG-RS	Single-Family Residential Gas Service						
	Basic Service Charge per Month	\$ 10.80					\$ 10.80
	Commodity Charge per Therm:						
	All Usage	\$.37366	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.84483
SG-RM	Multi-Family Residential Gas Service						
	Basic Service Charge per Month	\$ 9.00					\$ 9.00
	Commodity Charge per Therm:						
	All Usage	\$.42337	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.89454
SG-RAC	Air Conditioning Residential Gas Service						
	Basic Service Charge per Month	\$ 10.80					\$ 10.80
	Commodity Charge per Therm:						
	All Usage	\$.09175	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.56292
SG-G1	General Gas Service - 1						
	Basic Service Charge per Month	\$ 25.80					\$ 25.80
	Commodity Charge per Therm:						
	All Usage	\$.41505	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.88622
SG-G2	General Gas Service - 2						
	Basic Service Charge per Month	\$ 160.00					\$ 160.00
	Commodity Charge per Therm:						
	All Usage	\$.11267	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.58384
SG-G3	General Gas Service - 3						
	Basic Service Charge per Month	\$ 350.00					\$ 350.00
	Commodity Charge per Therm:						
	All Usage	\$.11999	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.59116
SG-G4	General Gas Service - 4						
	Basic Service Charge per Month	\$1,000.00					\$1,000.00
	Commodity Charge per Therm:						
	All Usage	\$.01434	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.48551
	Demand Charge ^{5/}	\$.05200					\$.05200

Issued:

Effective:

Advice Letter No.:

Issued by
Amy L. Timperley
Vice President

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

Canceling _____

P.U.C.N. Sheet No. 10AP.U.C.N. Sheet No. 10A

STATEMENT OF RATES

EFFECTIVE RATES APPLICABLE TO SOUTHERN NEVADA SCHEDULES ^{1/2/}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Infrastructure Expansion Rate ^{7/}	Currently Effective Tariff Rate	
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment				
SG-G5	General Gas Service - 5							
	Basic Service Charge per Month	\$1,000.00					\$1,000.00	
	Commodity Charge per Therm:							
	All Usage	\$.00043	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.47160	R
	Demand Charge ^{5/}	\$.00615					\$.00615	
SG-G6	General Gas Service - 6							
	Basic Service Charge per Month	\$1,000.00					\$1,000.00	
	Commodity Charge per Therm:							
	All Usage	\$.00542	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.47659	R
	Demand Charge ^{5/}	\$.03774					\$.03774	
SG-G7	General Gas Service - 7							
	Basic Service Charge per Month	\$1,000.00					\$1,000.00	
	Commodity Charge per Therm:							
	All Usage	\$.01354	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.46943	R
	Demand Charge ^{5/}	\$.03552					\$.03552	
SG-AC	Air Conditioning Gas Service							
	Basic Service Charge per Month	\$ 25.80					\$ 25.80	
	Commodity Charge per Therm:							
	All Usage	\$.10852	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.57969	R
SG-WP	Water Pumping Gas Service							
	Basic Service Charge per Month	\$ 250.00					\$ 250.00	
	Commodity Charge per Therm:							
	All Usage	\$.05287	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.52404	R
SG-EG	Small Electric Generation Gas Service							
	Basic Service Charge per Month		Otherwise Applicable Rate Schedule					
	Commodity Charge per Therm:							
	All Usage	\$ (.00014)	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.47103	R

Issued:

Effective:

Advice Letter No.:

Issued by
Amy L. Timperley
Vice President

SOUTHWEST GAS CORPORATION
P.O. Box 98510
Las Vegas, Nevada 89193-8510
Nevada Gas Tariff No. 7

Canceling _____ P.U.C.N. Sheet No. 11
P.U.C.N. Sheet No. 11

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO SOUTHERN NEVADA SCHEDULES ^{1/2/}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Infrastructure Expansion Rate ^{7/}	Currently Effective Tariff Rate	
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment				
SG-CNG	Gas Service for Compression on Customer's Premises ^{6/}							
	Basic Service Charge per Month	\$ 25.80					\$ 25.80	
	Commodity Charge per Therm:							
	All Usage	\$.14820	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.61937	R
SG-L	Street and Outdoor Lighting Gas Service							
	Commodity Charge per Therm:							
	All Usage	\$.47888	\$.45247	\$.01528	\$ (.00063)	\$.00405	\$.95005	R
SG-OS	Optional Gas Service							
							As specified on Sheet Nos. 48 through 51.	
SG-AS	Alternative Sales Service							
							As specified on Sheet Nos. 52 through 53.	
SG-CGS	Compression Gas Service							
							As specified on Sheet Nos. 47A through 47I	
SG-RNG	Biogas and Renewable Natural Gas Service							
							As specified on Sheet Nos. 53A through 53I	

Issued:

Effective:

Advice Letter No.:

Issued by
Amy L. Timperley
Vice President

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

Canceling _____

P.U.C.N. Sheet No. 11AP.U.C.N. Sheet No. 11A

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO SOUTHERN NEVADA SCHEDULES ^{1/2/}
(Continued)

- 1/ The charges shown above are subject to adjustments for taxes and assessments.
- 2/ Customers taking transportation service will pay the Basic Service Charge, the Delivery Charge per therm excluding the Conservation and Energy Efficiency component, and Demand Charge, if applicable, of the Currently Effective Tariff Rate for each meter included in the transportation service agreement, plus an amount for distribution system shrinkage for all volumes of gas not delivered through a direct connection to one of the Company's upstream interstate pipelines. The high pressure shrinkage rate is \$.00006 per therm, and the low pressure shrinkage rate is \$.00214 per therm. Additionally customers will pay the Southwest Gas Transmission Company (SGTC) Annual Charge Adjustment (ACA) rate of \$.00011 per therm for all scheduled volumes that flow through the SGTC pipeline. The ACA Charge will also apply to applicable traded and imbalance volumes. In addition, the customer will also pay a Transportation Service Charge of \$500.00 per month per individually qualifying premise. For purposes of calculating Payment for Excess Imbalances, the Imbalance Commodity Charge is \$0.47609 per therm and the Imbalance Reservation Charge is \$0.05564 per therm. For customers converting from sales service, an additional amount equal to the currently effective Deferred Energy Accounting Adjustment will be assessed for a period of twelve (12) months.

- 3/ Includes the following:

Component/Schedule	SG-RS	SG-RM	SG-RAC	SG-G1	SG-G2	SG-G3	SG-G4	SG-G5
Margin	.39285	.43168	.09659	.36862	.09948	.09860	.01918	.00527
Accumulated Deferred Interest Rate Adjustment	(.00648)	(.00648)	(.00648)	(.00648)	(.00648)	(.00648)	(.00648)	(.00648)
General Revenues Adjustment	(.01435)	(.00347)	.00000	.05127	.01803	.02623	.00000	.00000
Gas Infrastructure Replacement Rate	.00057	.00057	.00057	.00057	.00057	.00057	.00057	.00057
Conservation and Energy Efficiency	.00107	.00107	.00107	.00107	.00107	.00107	.00107	.00107
Total	.37366	.42337	.09175	.41505	.11267	.11999	.01434	.00043

Component/Schedule	SG-G6	SG-G7	SG-AC	SG-WP	SG-EG	SG-CNG	SG-L
Margin	.01026	.01838	.11336	.05771	.00470	.15304	.48372
Accumulated Deferred Interest Rate Adjustment	(.00648)	(.00648)	(.00648)	(.00648)	(.00648)	(.00648)	(.00648)
General Revenues Adjustment	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Gas Infrastructure Replacement Rate	.00057	.00057	.00057	.00057	.00057	.00057	.00057
Conservation and Energy Efficiency	.00107	.00107	.00107	.00107	.00107	.00107	.00107
Total	.00542	.01354	.10852	.05287	(.00014)	.14820	.47888

- 4/ For all rate schedules, the Base Tariff Energy Rate (BTER) includes \$0.00437 per therm for the Unrecovered Gas Cost Expense Base Rate.
- 5/ The total monthly demand charge for Schedule Nos. SG-4, SG-5, SG-6, and SG-7 is equal to the unit rate shown multiplied by the customer's billing determinant.
- 6/ The charges for Schedule No. SG-CNG are subject to adjustments for applicable state and federal taxes on fuel used in motor vehicles.
- 7/ In addition to all other rates in this Statement of Rates, all customers in the Mesquite Expansion Area will pay a rate of \$0.38058. per therm as part of their Infrastructure Expansion Rate.

Issued:

Effective:

Advice Letter No.:

Issued by
 Amy L. Timperley
 Vice President

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

Canceling _____

P.U.C.N. Sheet No. 12P.U.C.N. Sheet No. 12

STATEMENT OF RATES

EFFECTIVE RATES APPLICABLE TO NORTHERN NEVADA SCHEDULES ^{1/2/7}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Currently Effective Tariff Rate
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment		
NG-RS	Single-Family Residential Gas Service					
	Basic Service Charge per Month	\$ 10.80				\$ 10.80
	Commodity Charge per Therm:					
	All Usage	\$.36182	\$.74357	\$.00000	\$ (.00040)	\$ 1.10499
NG-RM	Multi-Family Residential Gas Service					
	Basic Service Charge per Month	\$ 10.80				\$ 10.80
	Commodity Charge per Therm:					
	All Usage	\$.37964	\$.74357	\$.00000	\$ (.00040)	\$ 1.12281
NG-RAC	Air Conditioning Residential Gas Service					
	Basic Service Charge per Month	\$ 10.80				\$ 10.80
	Commodity Charge per Therm:					
	All Usage	\$.46594	\$.74357	\$.00000	\$ (.00040)	\$ 1.20911
NG-G1	General Gas Service - 1					
	Basic Service Charge per Month	\$ 28.80				\$ 28.80
	Commodity Charge per Therm:					
	All Usage	\$.19936	\$.74357	\$.00000	\$ (.00040)	\$.94253
NG-G2	General Gas Service - 2					
	Basic Service Charge per Month	\$ 160.00				\$ 160.00
	Commodity Charge per Therm:					
	All Usage	\$.08205	\$.74357	\$.00000	\$ (.00040)	\$.82522
NG-G3	General Gas Service - 3					
	Basic Service Charge per Month	\$ 350.00				\$ 350.00
	Commodity Charge per Therm:					
	All Usage	\$.06694	\$.74357	\$.00000	\$ (.00040)	\$.81011
NG-G4	General Gas Service - 4					
	Basic Service Charge per Month	\$1,000.00				\$1,000.00
	Commodity Charge per Therm:					
	All Usage	\$.02030	\$.74357	\$.00000	\$ (.00040)	\$.76347
	Demand Charge ^{5/}	\$.03550				\$.03550
NG-G5	General Gas Service - 5					
	Basic Service Charge per Month	\$1,000.00				\$1,000.00
	Commodity Charge per Therm:					
	All Usage	\$.01118	\$.74357	\$.00000	\$ (.00040)	\$.75435
	Demand Charge ^{5/}	\$.03023				\$.03023

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Effective:

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Issued by
Amy L. Timperley
Vice President

SOUTHWEST GAS CORPORATION
P.O. Box 98510
Las Vegas, Nevada 89193-8510
Nevada Gas Tariff No. 7

Canceling _____ P.U.C.N. Sheet No. 13
P.U.C.N. Sheet No. 13

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO NORTHERN NEVADA SCHEDULES ^{1/2/7}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Currently Effective Tariff Rate
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment		
NG-AC	Air Conditioning Gas Service					
	Basic Service Charge per Month	\$ 28.80				\$ 28.80
	Commodity Charge per Therm:					
	All Usage	\$.11017	\$.74357	\$.00000	\$ (.00040)	\$.85334 R
NG-WP	Water Pumping Gas Service					
	Basic Service Charge per Month	\$ 36.00				\$ 36.00
	Commodity Charge per Therm:					
	All Usage	\$.08092	\$.74357	\$.00000	\$ (.00040)	\$.82409 R
NG-EG	Small Electric Generation Gas Service					
	Basic Service Charge per Month	Otherwise Applicable Rate Schedule				
	Commodity Charge per Therm:					
	All Usage	\$.07095	\$.74357	\$.00000	\$ (.00040)	\$.81412 R
NG-CNG	Gas Service for Compression on Customer's Premises ^{5/}					
	Basic Service Charge	\$ 25.80				\$ 25.80
	Commodity Charge per Therm:					
	All Usage	\$.10227	\$.74357	\$.00000	\$ (.00040)	\$.84544 R
NG-L	Street and Outdoor Lighting Gas Service					
	Commodity Charge per Therm:					
	All Usage	\$.49825	\$.74357	\$.00000	\$ (.00040)	\$ 1.24142 R
NG-OS	Optional Gas Service					
		As specified on Sheet Nos. 48 through 51.				
NG-AS	Alternative Sales Service					
		As specified on Sheet Nos. 52 through 53.				
NG-CGS	Compression Gas Service					
		As specified on Sheet Nos. 47A through 47I				
NG-RNG	Biogas and Renewable Natural Gas Service					
		As specified on Sheet Nos. 53A through 53I				

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Issued by
Amy L. Timperley
Vice President

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

Canceling _____

P.U.C.N. Sheet No. 13AP.U.C.N. Sheet No. 13A

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO NORTHERN NEVADA SCHEDULES ^{1/2/7}
(Continued)

- 1/ The charges shown above are subject to adjustments for taxes and assessments.
- 2/ Customers taking transportation service will pay the Basic Service Charge, the Delivery Charge per therm excluding the Conservation and Energy Efficiency component, and Demand Charge, if applicable, of the Currently Effective Tariff Rate for each meter included in the transportation service agreement, plus an amount of \$0.00145 per therm for distribution system shrinkage as defined in Rule No. 1 of this Nevada Gas Tariff for all volumes of gas not delivered through a direct connection to one of the Company's upstream interstate pipelines and a Transportation Service Charge of \$500.00 per month per individually qualifying premise. For purposes of calculating Payment for Excess Imbalances, the Imbalance Commodity Charge is \$0.48191 per therm and the Imbalance Reservation Charge is \$0.47726 per therm. For customers converting from sales service, an additional amount equal to the currently effective Deferred Energy Accounting Adjustment will be assessed for a period of twelve (12) months.

- 3/ Includes the following:

Component/Schedule	NG-RS	NG-RM	NG-RAC	NG-G1	NG-G2	NG-G3	NG-G4
Margin	.32113	.33731	.46384	.18339	.07186	.05785	.01820
General Revenues Adjustment	.03859	.04023	.00000	.01387	.00809	.00699	.00000
Gas Infrastructure Replacement Rate	.00266	.00266	.00266	.00266	.00266	.00266	.00266
Conservation and Energy Efficiency	(.00056)	(.00056)	(.00056)	(.00056)	(.00056)	(.00056)	(.00056)
Total	.36182	.37964	.46594	.19936	.08205	.06694	.02030

Component/Schedule	NG-G5	NG-AC	NG-WP	NG-EG	NG-CNG	NG-L
Margin	.00908	.10807	.07882	.06885	.10017	.49615
General Revenues Adjustment	.00000	.00000	.00000	.00000	.00000	.00000
Gas Infrastructure Replacement Rate	.00266	.00266	.00266	.00266	.00266	.00266
Conservation and Energy Efficiency	(.00056)	(.00056)	(.00056)	(.00056)	(.00056)	(.00056)
Total	.01118	.11017	.08092	.07095	.10227	.49825

- 4/ For all rate schedules, the Base Tariff Energy Rate (BTER) includes \$0.00404 per therm for the Unrecovered Gas Cost Expense Base Rate.
- 5/ The total monthly demand charge for Schedule Nos. NG-4 and NG-G5 is equal to the unit rate shown multiplied by the customer's billing determinant.
- 6/ The charges for Schedule No. NG-CNG are subject to adjustments for applicable state and federal taxes on fuel used in motor vehicles.

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Advice Letter No.:

Issued by
 Amy L. Timperley
 Vice President

Exhibit 2

Existing Tariff Sheets

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

69th Revised P.U.C.N. Sheet No. 10
 Canceling 68th Revised P.U.C.N. Sheet No. 10

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO SOUTHERN NEVADA SCHEDULES ^{1/2/}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Infrastructure Expansion Rate ^{7/}	Currently Effective Tariff Rate
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment			
SG-RS	Single-Family Residential Gas Service						
	Basic Service Charge per Month	\$ 10.80					\$ 10.80
	Commodity Charge per Therm:						
	All Usage	\$.36548	\$.45214	\$.01528	\$.00085	\$.00034	\$.83409
SG-RM	Multi-Family Residential Gas Service						
	Basic Service Charge per Month	\$ 9.00					\$ 9.00
	Commodity Charge per Therm:						
	All Usage	\$.42425	\$.45214	\$.01528	\$.00085	\$.00034	\$.89286
SG-RAC	Air Conditioning Residential Gas Service						
	Basic Service Charge per Month	\$ 10.80					\$ 10.80
	Commodity Charge per Therm:						
	All Usage	\$.09881	\$.45214	\$.01528	\$.00085	\$.00034	\$.56742
SG-G1	General Gas Service - 1						
	Basic Service Charge per Month	\$ 25.80					\$ 25.80
	Commodity Charge per Therm:						
	All Usage	\$.35991	\$.45214	\$.01528	\$.00085	\$.00034	\$.82852
SG-G2	General Gas Service - 2						
	Basic Service Charge per Month	\$ 160.00					\$ 160.00
	Commodity Charge per Therm:						
	All Usage	\$.10598	\$.45214	\$.01528	\$.00085	\$.00034	\$.57459
SG-G3	General Gas Service - 3						
	Basic Service Charge per Month	\$ 350.00					\$ 350.00
	Commodity Charge per Therm:						
	All Usage	\$.10453	\$.45214	\$.01528	\$.00085	\$.00034	\$.57314
SG-G4	General Gas Service - 4						
	Basic Service Charge per Month	\$1,000.00					\$1,000.00
	Commodity Charge per Therm:						
	All Usage	\$.02140	\$.45214	\$.01528	\$.00085	\$.00034	\$.49001
	Demand Charge ^{5/}	\$.05200					\$.05200

Issued:
 August 31, 2021

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 October 1, 2021

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 525

Issued by
 Amy L. Timperley
 Vice President

SOUTHWEST GAS CORPORATION
P.O. Box 98510
Las Vegas, Nevada 89193-8510
Nevada Gas Tariff No. 7

Canceling 6th Revised P.U.C.N. Sheet No. 10A
5th Revised P.U.C.N. Sheet No. 10A

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO SOUTHERN NEVADA SCHEDULES ^{1/2/}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Infrastructure Expansion Rate ^{7/}	Currently Effective Tariff Rate
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment			
SG-G5	General Gas Service - 5						
	Basic Service Charge per Month	\$1,000.00					\$1,000.00
	Commodity Charge per Therm:						
	All Usage	\$.00749	\$.45214	\$.01528	\$.00085	\$.00034	\$.47610
	Demand Charge ^{5/}	\$.00615					\$.00615
SG-G6	General Gas Service - 6						
	Basic Service Charge per Month	\$1,000.00					\$1,000.00
	Commodity Charge per Therm:						
	All Usage	\$.01248	\$.45214	\$.01528	\$.00085	\$.00034	\$.48109
	Demand Charge ^{5/}	\$.03774					\$.03774
SG-G7	General Gas Service - 7						
	Basic Service Charge per Month	\$1,000.00					\$1,000.00
	Commodity Charge per Therm:						
	All Usage	\$.02060	\$.45214	\$.01528	\$.00085	\$.00034	\$.48921
	Demand Charge ^{5/}	\$.03552					\$.03552
SG-AC	Air Conditioning Gas Service						
	Basic Service Charge per Month	\$ 25.80					\$ 25.80
	Commodity Charge per Therm:						
	All Usage	\$.11558	\$.45214	\$.01528	\$.00085	\$.00034	\$.58419
SG-WP	Water Pumping Gas Service						
	Basic Service Charge per Month	\$ 250.00					\$ 250.00
	Commodity Charge per Therm:						
	All Usage	\$.05993	\$.45214	\$.01528	\$.00085	\$.00034	\$.52854
SG-EG	Small Electric Generation Gas Service						
	Basic Service Charge per Month		Otherwise Applicable Rate Schedule				
	Commodity Charge per Therm:						
	All Usage	\$.00692	\$.45214	\$.01528	\$.00085	\$.00034	\$.47553

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Amy L. Timperley
Vice President

SOUTHWEST GAS CORPORATION
P.O. Box 98510
Las Vegas, Nevada 89193-8510
Nevada Gas Tariff No. 7

Canceling 69th Revised P.U.C.N. Sheet No. 11
68th Revised P.U.C.N. Sheet No. 11

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO SOUTHERN NEVADA SCHEDULES ^{1/2/}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Infrastructure Expansion Rate ^{7/}	Currently Effective Tariff Rate
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment			
SG-CNG	Gas Service for Compression on Customer's Premises ^{6/}						
	Basic Service Charge per Month	\$ 25.80					\$ 25.80
	Commodity Charge per Therm:						
	All Usage	\$.15526	\$.45214	\$.01528	\$.00085	\$.00034	\$.62387
SG-L	Street and Outdoor Lighting Gas Service						
	Commodity Charge per Therm:						
	All Usage	\$.48594	\$.45214	\$.01528	\$.00085	\$.00034	\$.95455
SG-OS	Optional Gas Service						
							As specified on Sheet Nos. 48 through 51.
SG-AS	Alternative Sales Service						
							As specified on Sheet Nos. 52 through 53.
SG-CGS	Compression Gas Service						
							As specified on Sheet Nos. 47A through 47I
SG-RNG	Biogas and Renewable Natural Gas Service						
							As specified on Sheet Nos. 53A through 53I

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Amy L. Timperley
Vice President

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

24th Revised P.U.C.N. Sheet No. 11A
23rd Revised P.U.C.N. Sheet No. 11A

Canceling

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO SOUTHERN NEVADA SCHEDULES ^{1/2/}
(Continued)

- ^{1/} The charges shown above are subject to adjustments for taxes and assessments.
- ^{2/} Customers taking transportation service will pay the Basic Service Charge, the Delivery Charge per therm excluding the Conservation and Energy Efficiency component, and Demand Charge, if applicable, of the Currently Effective Tariff Rate for each meter included in the transportation service agreement, plus an amount for distribution system shrinkage for all volumes of gas not delivered through a direct connection to one of the Company's upstream interstate pipelines. The high pressure shrinkage rate is \$.00003 per therm, and the low pressure shrinkage rate is \$.00104 per therm. Additionally customers will pay the Southwest Gas Transmission Company (SGTC) Annual Charge Adjustment (ACA) rate of \$.00011 per therm for all scheduled volumes that flow through the SGTC pipeline. The ACA Charge will also apply to applicable traded and imbalance volumes. In addition, the customer will also pay a Transportation Service Charge of \$500.00 per month per individually qualifying premise. For purposes of calculating Payment for Excess Imbalances, the Imbalance Commodity Charge is \$0.23377 per therm and the Imbalance Reservation Charge is \$0.04273 per therm. For customers converting from sales service, an additional amount equal to the currently effective Deferred Energy Accounting Adjustment will be assessed for a period of twelve (12) months.

- ^{3/} Includes the following:

Component/Schedule	SG-RS	SG-RM	SG-RAC	SG-G1	SG-G2	SG-G3	SG-G4	SG-G5
Margin	.39285	.43168	.09659	.36862	.09948	.09860	.01918	.00527
Accumulated Deferred Interest Rate Adjustment	(.00072)	(.00072)	(.00072)	(.00072)	(.00072)	(.00072)	(.00072)	(.00072)
General Revenues Adjustment	(.02959)	(.00965)	.00000	(.01093)	.00428	.00371	.00000	.00000
Gas Infrastructure Replacement Rate	.00057	.00057	.00057	.00057	.00057	.00057	.00057	.00057
Conservation and Energy Efficiency	.00237	.00237	.00237	.00237	.00237	.00237	.00237	.00237
Total	.36548	.42425	.09881	.35991	.10598	.10453	.02140	.00749

Component/Schedule	SG-G6	SG-G7	SG-AC	SG-WP	SG-EG	SG-CNG	SG-L
Margin	.01026	.01838	.11336	.05771	.00470	.15304	.48372
Accumulated Deferred Interest Rate Adjustment	(.00072)	(.00072)	(.00072)	(.00072)	(.00072)	(.00072)	(.00072)
General Revenues Adjustment	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Gas Infrastructure Replacement Rate	.00057	.00057	.00057	.00057	.00057	.00057	.00057
Conservation and Energy Efficiency	.00237	.00237	.00237	.00237	.00237	.00237	.00237
Total	.01248	.02060	.11558	.05993	.00692	.15526	.48594

- ^{4/} For all rate schedules, the Base Tariff Energy Rate (BTER) includes \$0.00404 per therm for the Unrecovered Gas Cost Expense Base Rate.
- ^{5/} The total monthly demand charge for Schedule Nos. SG-4, SG-5, SG-6, and SG-7 is equal to the unit rate shown multiplied by the customer's billing determinant.
- ^{6/} The charges for Schedule No. SG-CNG are subject to adjustments for applicable state and federal taxes on fuel used in motor vehicles.
- ^{7/} In addition to all other rates in this Statement of Rates, all customers in the Mesquite Expansion Area will pay a rate of \$.11560 per therm as part of their Infrastructure Expansion Rate.

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December 29, 2020

Effective:
January 1, 2021

Advice Letter No.:

Issued by
Justin Lee Brown
Senior Vice President

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

69th Revised P.U.C.N. Sheet No. 12
 Canceling 68th Revised P.U.C.N. Sheet No. 12

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO NORTHERN NEVADA SCHEDULES ^{1/2/7}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost			Renewable Energy Program Rate	Currently Effective Tariff Rate
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment			
NG-RS	Single-Family Residential Gas Service						
	Basic Service Charge per Month	\$ 10.80					\$ 10.80
	Commodity Charge per Therm:						
	All Usage	\$.34698	\$.74159	\$.00000	\$.00017		\$ 1.08874
NG-RM	Multi-Family Residential Gas Service						
	Basic Service Charge per Month	\$ 10.80					\$ 10.80
	Commodity Charge per Therm:						
	All Usage	\$.35952	\$.74159	\$.00000	\$.00017		\$ 1.10128
NG-RAC	Air Conditioning Residential Gas Service						
	Basic Service Charge per Month	\$ 10.80					\$ 10.80
	Commodity Charge per Therm:						
	All Usage	\$.47040	\$.74159	\$.00000	\$.00017		\$ 1.21216
NG-G1	General Gas Service - 1						
	Basic Service Charge per Month	\$ 28.80					\$ 28.80
	Commodity Charge per Therm:						
	All Usage	\$.19942	\$.74159	\$.00000	\$.00017		\$.94118
NG-G2	General Gas Service - 2						
	Basic Service Charge per Month	\$ 160.00					\$ 160.00
	Commodity Charge per Therm:						
	All Usage	\$.08806	\$.74159	\$.00000	\$.00017		\$.82982
NG-G3	General Gas Service - 3						
	Basic Service Charge per Month	\$ 350.00					\$ 350.00
	Commodity Charge per Therm:						
	All Usage	\$.07059	\$.74159	\$.00000	\$.00017		\$.81235
NG-G4	General Gas Service - 4						
	Basic Service Charge per Month	\$1,000.00					\$1,000.00
	Commodity Charge per Therm:						
	All Usage	\$.02476	\$.74159	\$.00000	\$.00017		\$.76652
	Demand Charge ^{5/}	\$.03550					\$.03550
NG-G5	General Gas Service - 5						
	Basic Service Charge per Month	\$1,000.00					\$1,000.00
	Commodity Charge per Therm:						
	All Usage	\$.01564	\$.74159	\$.00000	\$.00017		\$.75740
	Demand Charge ^{5/}	\$.03023					\$.03023

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August 31, 2021

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October 1, 2021

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Issued by
 Amy L. Timperley
 Vice President

SOUTHWEST GAS CORPORATION
P.O. Box 98510
Las Vegas, Nevada 89193-8510
Nevada Gas Tariff No. 7

Canceling 69th Revised P.U.C.N. Sheet No. 13
68th Revised P.U.C.N. Sheet No. 13

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO NORTHERN NEVADA SCHEDULES ^{1/27}

Schedule Number	Description	Delivery Charge ^{3/}	Gas Cost		Renewable Energy Program Rate	Currently Effective Tariff Rate
			Base Tariff Energy Rate ^{4/}	Deferred Energy Account Adjustment		
NG-AC	Air Conditioning Gas Service					
	Basic Service Charge per Month	\$ 28.80				\$ 28.80
	Commodity Charge per Therm:					
	All Usage	\$.11463	\$.74159	\$.00000	\$.00017	\$.85639
NG-WP	Water Pumping Gas Service					
	Basic Service Charge per Month	\$ 36.00				\$ 36.00
	Commodity Charge per Therm:					
	All Usage	\$.08538	\$.74159	\$.00000	\$.00017	\$.82714
NG-EG	Small Electric Generation Gas Service					
	Basic Service Charge per Month	Otherwise Applicable Rate Schedule				
	Commodity Charge per Therm:					
	All Usage	\$.07541	\$.74159	\$.00000	\$.00017	\$.81717
NG-CNG	Gas Service for Compression on Customer's Premises ^{6/}					
	Basic Service Charge	\$ 25.80				\$ 25.80
	Commodity Charge per Therm:					
	All Usage	\$.10673	\$.74159	\$.00000	\$.00017	\$.84849
NG-L	Street and Outdoor Lighting Gas Service					
	Commodity Charge per Therm:					
	All Usage	\$.50271	\$.74159	\$.00000	\$.00017	\$ 1.24447
NG-OS	Optional Gas Service					
		As specified on Sheet Nos. 48 through 51.				
NG-AS	Alternative Sales Service					
		As specified on Sheet Nos. 52 through 53.				
NG-CGS	Compression Gas Service					
		As specified on Sheet Nos. 47A through 47I				
NG-RNG	Biogas and Renewable Natural Gas Service					
		As specified on Sheet Nos. 53A through 53I				

Issued:
August 31, 2021

Effective:
October 1, 2021

Advice Letter No.:
525

Issued by
Amy L. Timperley
Vice President

SOUTHWEST GAS CORPORATION

P.O. Box 98510

Las Vegas, Nevada 89193-8510

Nevada Gas Tariff No. 7

24th Revised P.U.C.N. Sheet No. 13A
 Canceling 23rd Revised P.U.C.N. Sheet No. 13A

STATEMENT OF RATES
EFFECTIVE RATES APPLICABLE TO NORTHERN NEVADA SCHEDULES ^{1/2/}
(Continued)

- 1/ The charges shown above are subject to adjustments for taxes and assessments.
- 2/ Customers taking transportation service will pay the Basic Service Charge, the Delivery Charge per therm excluding the Conservation and Energy Efficiency component, and Demand Charge, if applicable, of the Currently Effective Tariff Rate for each meter included in the transportation service agreement, plus an amount of \$0.00072 per therm for distribution system shrinkage as defined in Rule No. 1 of this Nevada Gas Tariff for all volumes of gas not delivered through a direct connection to one of the Company's upstream interstate pipelines and a Transportation Service Charge of \$500.00 per month per individually qualifying premise. For purposes of calculating Payment for Excess Imbalances, the Imbalance Commodity Charge is \$0.23863 per therm and the Imbalance Reservation Charge is \$0.35094 per therm. For customers converting from sales service, an additional amount equal to the currently effective Deferred Energy Accounting Adjustment will be assessed for a period of twelve (12) months.

- 3/ Includes the following:

Component/Schedule	NG-RS	NG-RM	NG-RAC	NG-G1	NG-G2	NG-G3	NG-G4
Margin	.32113	.33731	.46384	.18339	.07186	.05785	.01820
General Revenues Adjustment	.01929	.01565	.00000	.00947	.00964	.00618	.00000
Gas Infrastructure Replacement Rate	.00266	.00266	.00266	.00266	.00266	.00266	.00266
Conservation and Energy Efficiency	.00390	.00390	.00390	.00390	.00390	.00390	.00390
Total	.34698	.35952	.47040	.19942	.08806	.07059	.02476

Component/Schedule	NG-G5	NG-AC	NG-WP	NG-EG	NG-CNG	NG-L
Margin	.00908	.10807	.07882	.06885	.10017	.49615
General Revenues Adjustment	.00000	.00000	.00000	.00000	.00000	.00000
Gas Infrastructure Replacement Rate	.00266	.00266	.00266	.00266	.00266	.00266
Conservation and Energy Efficiency	.00390	.00390	.00390	.00390	.00390	.00390
Total	.01564	.11463	.08538	.07541	.10673	.50271

- 4/ For all rate schedules, the Base Tariff Energy Rate (BTER) includes \$0.00206 per therm for the Unrecovered Gas Cost Expense Base Rate.
- 5/ The total monthly demand charge for Schedule Nos. NG-4 and NG-G5 is equal to the unit rate shown multiplied by the customer's billing determinant.
- 6/ The charges for Schedule No. NG-CNG are subject to adjustments for applicable state and federal taxes on fuel used in motor vehicles.

Issued:
December 29, 2020

Effective:
January 1, 2021

Advice Letter No.:

Issued by
Justin Lee Brown
Senior Vice President

Exhibit 3
Prepared Direct Testimony
Celine Louise R. Apo

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
DOCKET NO. 21-11____

PREPARED DIRECT TESTIMONY
OF
CELINE LOUISE R. APO

ON BEHALF OF
SOUTHWEST GAS CORPORATION

NOVEMBER 10, 2021

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Prepared Direct Testimony
of
Celine Louise R. Apo

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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Direct Testimony
of
Celine Louise R. Apo

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Celine Louise R. Apo. My business address is 8360 South Durango Drive, Las Vegas, Nevada 89113.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or Company) in the Regulation and Energy Efficiency department. My title is Supervisor.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have previously testified before the Public Utilities Commission of Nevada (Commission). I have also provided written testimony to the California Public Utilities Commission.

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 The purpose of my prepared direct testimony is to sponsor the Company's system Shrinkage Rates, Imbalance Commodity and Imbalance Reservation Charges, Unrecovered Gas Cost Expense (UGCE) rate, General Revenue Adjustment (GRA), Accumulation of Deferred Interest Rate (ADIR), and

1 Infrastructure Expansion Rate adjustments for its Southern Nevada and
2 Northern Nevada rate jurisdictions to be established effective July 1, 2022,
3 including supporting schedules and workpapers. Moreover, I support the overall
4 ARA rate impacts, which include the Renewable Energy Program Rates (REPR)
5 and Conservation and Energy Efficiency (CEE) rates addressed in the prepared
6 direct testimony of Company witness Melissa M. Porch.

7 **Q. 6 Please summarize your prepared direct testimony.**

8 **A. 6** My prepared direct testimony consists of the following key issues:

- 9 • *The system Shrinkage Rates applicable to Southern Nevada and Northern*
10 *Nevada transportation customers;*
- 11 • *Adjustments to the Imbalance Commodity and Reservation Charges for*
12 *Southern Nevada and Northern Nevada;*
- 13 • *Adjustments to the UGCE rates for Southern Nevada and Northern*
14 *Nevada;*
- 15 • *Adjustments to the rate schedules subject to the General Revenues*
16 *Adjustment for Southern Nevada and Northern Nevada;*
- 17 • *Adjustment to the Variable Interest Expense Recovery mechanism for*
18 *Southern Nevada; and,*
- 19 • *Adjustments to the Southern Nevada Infrastructure Expansion Rate and*
20 *the Mesquite Expansion Area Infrastructure Expansion Rate.*

II. SUMMARY OF RATE PROPOSALS

Q. 7 Please summarize Southwest Gas' rate proposals.

A. 7 Southwest Gas' proposed rate changes for Southern Nevada and Northern Nevada are summarized in the following tables.

SOUTHERN NEVADA		
Description	Current Rate	Proposed Rate
High Pressure Shrinkage Rate	\$0.00003	\$0.00006
Low Pressure Shrinkage Rate	\$0.00104	\$0.00214
Imbalance Commodity Charge	\$0.23377	\$0.47609
Imbalance Reservation Charge	\$0.04273	\$0.05564
Unrecovered Gas Cost Expense Rate	\$0.00404	\$0.00437
General Revenues Adjustment Rate	1	1
Average Variable Interest Rate	\$0.00000	\$0.00000
Accumulation of Deferred Interest Rate	(\$0.00072)	(\$0.00648)
Southern Nevada Infrastructure Expansion Rate (IER)	\$0.00034	\$0.00405
Mesquite Expansion Area IER	\$0.11560	\$0.38058
Renewable Energy Program Rate ²	\$0.00085	(\$0.00063)
Conservation & Energy Efficiency Rate ^{2,3}	\$0.00237	\$0.00107

NORTHERN NEVADA		
Description	Current Rate	Proposed Rate
Shrinkage Rate	\$0.00072	\$0.00145
Imbalance Commodity Charge	\$0.23863	\$0.48191
Imbalance Reservation Charge	\$0.35094	\$0.47726
Unrecovered Gas Cost Expense Rate	\$0.00206	\$0.00404
General Revenues Adjustment Rate	1	1
Renewable Energy Program Rate Rate ²	\$0.00017	(\$0.00040)
Conservation & Energy Efficiency Rate ^{2,3}	\$0.00390	(\$0.00056)

The overall effect of these proposed rate changes is an increase in annualized revenues of \$4,788,803 or 1 percent in Southern Nevada, and an increase in

¹ A separate GRA rate is calculated for each applicable rate schedule. The current and proposed rates for Southern Nevada and Northern Nevada are reflected on Schedule No.5, Sheet 1 of Exhibit Nos. __ (CLA-1) and (CLA-2), respectively.

² Adjustments to the REPR and CEE rates is sponsored by Company witness Melissa M. Porch.

³ CEE rate applicable to sales customers.

1 annualized revenues of \$944,697 or 0.8 percent in Northern Nevada. Detail as
2 to how these rates were developed is provided in Schedule 1, Sheets 1 and 2 of
3 Exhibit Nos.____ (CLA-1) and (CLA-2), respectively.

4 **Q. 8 Has Southwest Gas calculated average annual, summer and winter**
5 **customer bill impacts resulting from the proposed rate changes?**

6 A. 8 Yes. Southwest Gas calculated average seasonal bill impacts that include the
7 proposed rate changes for the Single-Family Residential (SG/NG-RS), Multi-
8 Family Residential (SG/NG-RM), General Gas Service-1 (SG/NG-G1), General
9 Gas Service-2 (SG/NG-G2), and General Gas Service-3 (SG/NG-G3) rate
10 schedules for Southern Nevada and Northern Nevada, as reflected in Schedule
11 1, Sheets 3 through 7 of Exhibit Nos.____ (CLA-1) and (CLA-2), respectively.

12 **Q. 9 What test period was used to calculate the proposed rate changes?**

13 A. 9 Pursuant to the Commission's Order in Docket 20-05028, the Company modified
14 the timing of its ARA application filing to use an accounting test year of October
15 1 through September 30.⁴ Prior to the instant application, the Company used a
16 May 1 through April 30 accounting test period. Consequently, the change in filing
17 timing between the end of the test period in the Company's last ARA Application
18 (April 30, 2020) and end of the test period in the instant application (September
19 30, 2021) creates a seventeenth-month time period (May 1, 2020 through
20 September 30, 2021).

21 **Q. 10 Does the change in ARA filing timing modify the length of the ARA test year**
22 **considered to develop rates?**

23 A. 10 No. Although the full seventeen-month time period is considered in the
24

25 ⁴ ¶ 16 of the Commission's final order in Docket No. 20-05028 dated October 29, 2020.

1 applicable account balances from which rates are derived and in the applicable
2 gas and transportation costs supported in the prepared direct testimony of
3 Company witness John R. Olenick, twelve months of quantities (therms) are
4 used in the instant application to calculate rates to ensure adequate rate
5 recovery. Southwest Gas used the twelve-month period covering October 2020
6 through September 2021 to calculate the proposed rate changes in this
7 proceeding. Using the total quantities over the seventeen-month period would
8 result in rates that would not adequately recover costs over the twelve-month
9 period from the time the rates from the instant docket would become effective
10 (July 1, 2022), and the rates for the Company's next ARA application would be
11 effective (July 1, 2023).

12 **III. SYSTEM SHRINKAGE RATES**

13 **Q. 11 What is shrinkage?**

14 A. 11 Shrinkage, also referred to as "lost and unaccounted for gas," is the difference
15 between the gas quantities the Company accepts into its distribution system and
16 the gas quantities delivered to the Company's customers through its distribution
17 system.

18 **Q. 12 What are shrinkage rates?**

19 A. 12 Southwest Gas' shrinkage rates recover from transportation customers the cost
20 of lost and unaccounted for gas quantities that result when the Company delivers
21 gas supplies on those customers' behalf through its distribution system.
22 Shrinkage rates are not separately applied to the Company's sales customers
23 because the lost and unaccounted for quantities for those customers' gas
24 deliveries are recovered in the gas cost component of the Company's commodity
25 sales rate.

1 **Q. 13 Please describe the methodology currently in place to calculate the**
2 **shrinkage rates.**

3 A. 13 In Docket No. 18-06005, the Commission approved Southwest Gas' proposal to
4 calculate shrinkage rates for both Southern Nevada and Northern Nevada using
5 a 0.3 percent shrinkage factor and further ordered the Company to use the
6 imputed 0.3 percent factor for a minimum of three years. Southwest Gas used
7 the 0.3 percent factor for the shrinkage rates that were effective January 1 in
8 2019, 2020, and 2021. The Company proposes to continue using a 0.3 percent
9 shrinkage factor.

10 **Q. 14 Is the Company proposing any changes to its shrinkage rate calculation**
11 **methodology?**

12 A. 14 No. Southwest Gas proposes to continue using a 0.3 percent shrinkage rate in
13 the instant docket. These calculations result in a high pressure shrinkage rate of
14 \$0.00006 and a low pressure shrinkage rate of \$0.00214 for Southern Nevada,⁵
15 and a shrinkage rate of \$0.00145 for Northern Nevada,⁶ as shown in Schedule
16 2, Sheet 1 of Exhibit Nos. _ (CLA-1) and (CLA-2), respectively.

17 **IV. TRANSPORTATION IMBALANCE CHARGES**

18 **Q. 15 Please describe Southwest Gas' transportation Imbalance Charges.**

19 A. 15 Southwest Gas' transportation Imbalance Commodity and Reservation Charges
20 (collectively, Imbalance Charges) are designed to ensure the Company's sales
21 customers are fairly compensated by transportation customers when those
22

23 ⁵ Pursuant to the Commission's Order in Docket No. 09-03012, Southwest Gas' shrinkage rates in
24 Southern Nevada first classify transportation customers as either high or low pressure service, and then
use the test period for recorded gas receipts and deliveries to calculate high and low pressure shrinkage
rates.

25 ⁶ Pursuant to the Commission's Order in Docket No. 07-05015, a single shrinkage rate is calculated for
Northern Nevada using a recorded three-year average for gas receipts and deliveries.

customers consume more or less gas than they schedule on the Company's distribution system, as set forth in Southwest Gas' Nevada Gas Tariff No. 7, Section 6.9 of Schedule No. ST-1/NT-1. The Imbalance Charges consist of both the Imbalance Commodity and Reservation charge components.

Q. 16 What are the proposed transportation Imbalance Charges?

A. 16 For Southern Nevada, Southwest Gas proposes an Imbalance Commodity Charge of \$0.47609 per therm and an Imbalance Reservation Charge of \$0.05564 per therm. For Northern Nevada, Southwest Gas proposes an Imbalance Commodity Charge of \$0.48191 per therm and an Imbalance Reservation Charge of \$0.47726 per therm. Southwest Gas' Imbalance Charge calculations are shown in Schedule 3, Sheets 1 and 2 of Exhibit Nos.__(CLA-1) and (CLA-2).

V. COMPLIANCE WITH DOCKET NO. 18-08016

Q. 17 Did the Company provide quarterly cost tracking information for imbalance charges pursuant to the Commission Order in Docket No. 18-08016?

A. 17 Yes. Southwest Gas included the results of the quarterly cost tracking for imbalance charges in its quarterly Base Tariff Energy Rate and Deferred Energy Accounting Adjustment filings made on May 29, 2020; August 31, 2020; November 30, 2020; February 26, 2021; May 28, 2021; and August 31, 2021. Please refer to Exhibit No.__(JRO-8) to the prepared direct testimony of Company witness John R. Olenick for a summary of those costs.

Q. 18 How does the Company propose to assign and deal with costs identified in those quarterly filings?

A. 18 Southwest Gas proposes to assign and deal with noncompliance and imbalance charges identified through the required quarterly cost tracking in the manner

described in Schedule No. ST-1/NT-1 Sections 6.9.c.5 and 7.6 of the Company's Nevada Gas Tariff No. 7. Both tariff sections require that charges received or paid by the Company be credited or debited to Account No. 191.

VI. UNRECOVERED GAS COST EXPENSE RATES

Q. 19 What is the purpose of the UGCE provision?

A. 19 The UGCE provision, approved by the Commission in Docket No. 09-04003, applies to all gas sales service schedules and allows Southwest Gas to recover its actual unrecovered bad debt expense associated with gas costs.

Q. 20 Please provide an overview of the UGCE rate calculation.

A. 20 Consistent with the Company's Nevada Gas Tariff No. 7, Sheet No. 90, Southwest Gas first calculated its UGCE rates by dividing its test period net gas cost write-offs by the total sales volumes from the test period to determine the UGCE Base Program rate component. Second, Southwest Gas divided its test period UGCE deferral ending balance by the total sales volumes from the test period to determine the UGCE Adjustment rate component. The Base Program and Adjustment rates were added together for a total UGCE rate.

Q. 21 What are the proposed UGCE rates?

A. 21 Southwest Gas proposes a UGCE rate of \$0.00437 per therm in Southern Nevada, and a UGCE rate of \$0.00404 per therm in Northern Nevada. The calculation of the UGCE rates for Southern Nevada and Northern Nevada sales customers and the resulting changes in annualized revenues are shown in Schedule 4, Sheet 1 of Exhibit Nos. __ (CLA-1) and (CLA-2), respectively.

VII. GENERAL REVENUES ADJUSTMENT RATES

Q. 22 Please provide a general description of the GRA.

A. 22 Southwest Gas' GRA ensures that the Company collects the Commission-authorized level of margin per customer irrespective of actual sales. GRA rates are based on the GRA account balances associated with rate schedules SG/NG-RS, SG/NG-RM, SG/NG-G1, SG/NG-G2 and SG/NG-G3, all of which are subject to the GRA⁷.

Q. 23 Please provide an overview of the GRA calculation.

A. 23 Consistent with NAC 704.9718(3), Southwest Gas calculated the GRA rates for each applicable rate schedule by dividing the GRA account balances at the end of the test period by the test period therms for that rate schedule. The resulting GRA rate changes for Southern Nevada and Northern Nevada are shown in Schedule 5, Sheet 1 of Exhibit Nos. __ (CLA-1) and (CLA-2), respectively.

Q. 24 What were the GRA account balances as of September 30, 2021?

A. 24 As of September 30, 2021, the GRA cumulative account balances for Southern Nevada and Northern Nevada reflect an over-collection of \$1,208,129 and an under-collection of \$2,686,886, respectively.

Q. 25 What are the overall effects of the GRA rate changes in Southern Nevada and Northern Nevada?

A. 25 The annualized impact of the GRA rate changes are shown in Schedule 5, Sheet 1 of Exhibit Nos. __ (CLA-1) and (CLA-2). In Southern Nevada, the annualized impact is an increase of \$7,289,411 and in Northern Nevada, the annualized impact is an increase of \$1,253,490.

⁷ Southwest Gas proposed to include rate schedule SG/NG-G4 in the GRA mechanism in the Company's pending general rate case filing (Docket No. 21-09001).

VIII. VARIABLE INTEREST EXPENSE RECOVERY (VIER)

Q. 26 Please describe the VIER mechanism.

A. 26 The VIER mechanism adjusts Southwest Gas' Southern Nevada rates pursuant to NAC 704.217 for changes occurring in the Average Variable Interest Rate (AVIR) during the test period, and to amortize the Accumulated Deferred Interest (ADI) balance. Changes in the AVIR affect Southwest Gas' authorized margin and are incorporated in the calculation of the authorized margin per customer used in the Company's GRA provision. The VIER calculations are discussed more fully in the prepared direct testimony of Company witness Ryan A. Kimball.

Q. 27 Please provide a brief explanation of the VEIR change.

A. 27 The change in the VIER is a result of the Company's request to adjust its variable interest expense pursuant to NAC 704.217. The VIER mechanism contains two components, the ADI and the AVIR.

The Company is only proposing a change to the ADI component of the VIER, with no proposed change to the AVIR component of the VIER in this filing. The AVIR component will be re-established through the Company's General Rate Case (GRC) Application filed with the Commission under Docket No. 21-09001.

A discussion of the changes in the VIER is included in the prepared direct testimony of Company witness Ryan A. Kimball. Schedule No. 6, Sheets 1 and 2 of Exhibit No.__(CLA-1) sets forth the calculated change in the Southern Nevada VIER related to the ADI component of the VIER mechanism. The proposed net change in the VIER is a decrease of \$0.00576 per therm. The change results in an annual revenue decrease of \$3,381,024 for the Southern Nevada rate jurisdiction.

IX. MESQUITE INFRASTRUCTURE EXPANSION RATES (IERs)

Q. 28 Please describe the Mesquite IERs.

A. 28 The Mesquite IERs is the alternative cost recovery mechanism authorized by the Commission in Docket No. 17-11008 to recover the costs associated with the Mesquite Expansion Project. The Mesquite IERs consists of two rates-one rate that applies to all tariff rate customers located in the Company's Southern Nevada rate jurisdiction (Southern Nevada IER), and one rate that applies to only those customers in the Mesquite Expansion Area (Mesquite Expansion Area IER).

Q. 29 Is the Company proposing to adjust the Mesquite IERs in the instant docket?

A. 29 Yes. The Company proposes to adjust the Mesquite IERs to reflect the cumulative deferred revenue requirement associated with the Mesquite facilities that have been placed in service through August 31, 2021, in the amount of \$2,379,893 and \$34,023 for the Southern Nevada and Mesquite IER subaccounts, respectively.

Q. 30 What are the proposed Mesquite IERs?

A. 30 The Southern Nevada IER is \$0.00405 and the Mesquite Expansion Area IER is \$0.38058. The resulting changes in annualized revenues are shown in Schedule 7, Sheet 1 of Exhibit Nos. __ (CLA-1).

Q. 31 Please provide an overview of the Mesquite IERs calculations.

A. 31 The Mesquite IERs are calculated by dividing the cumulative balance in the Southern Nevada and Mesquite IER subaccount of FERC Account No. 182.3 at September 30, 2021, by the applicable therm sales for the twelve-month test period. The Southern Nevada IER includes deferrals calculated by

1 multiplying a 98.5 percent allocation factor by the Revenue Requirement, then
2 dividing that number by the Southern Nevada rate jurisdiction's projected annual
3 therm sales. The Mesquite Expansion Area IER is calculated by multiplying a
4 1.5 percent allocation factor by the Revenue Requirement⁸, then dividing that
5 number by the projected Mesquite Expansion Area annual therm sales.

6 **Q. 32 If the Mesquite Expansion Projects are approved for inclusion in rate base**
7 **and general rates as part of the Company's GRC filing, why does**
8 **Southwest Gas need to continue recovery of the Mesquite IERs?**

9 A. 32 Rate base and general rates resulting from the Company's GRC will include plant
10 in service, including Mesquite Expansion Projects, through the twelve-month
11 period ended May 31, 2021 (Test Year) and any subsequent updates that will
12 occur through the end of the November 30, 2021 certification period. However,
13 the general rates established through the GRC will not include the Mesquite
14 Expansion Project's deferred revenue requirement through that same time-
15 period. Consequently, the Mesquite IERs must be updated in the instant docket
16 to recover that deferred revenue requirement.

17 **Q. 33 Will the inclusion of the Mesquite Expansion Project into rate base and**
18 **general rates together with the Mesquite IERs result in double recovery for**
19 **Southwest Gas?**

20 A. 33 No. The Mesquite IERs recover the revenue requirement deferrals made on
21 plant that is not included in base rates. The deferrals on the plant included in
22 rate base in the Company's pending GRC will cease after rates are effective.
23

24 ⁸ The Commission's Order in Docket No. 17-11008 requires the Company to allocate 1.5 percent of the
25 revenue requirement to Mesquite Expansion Area customers and 98.5 percent of the revenue requirement
to its tariff-rate customers located in the Southern Nevada rate jurisdiction.

Consequently, no double recovery will take place.

Q. 34 Did the Company include in the instant docket a status report for the Mesquite Expansion Project as required by Section 20 of LCB File No. R116-15 (Regulations)?

A. 34 No. The Mesquite Expansion Project annual status report is not filed as part of the instant docket. Southwest Gas filed the Mesquite Expansion Project 2020 Status Report separately under Docket No. 20-12028 consistent with the requirements set forth in the Regulations.

Q. 35 Does this conclude your prepared direct testimony in this matter?

A. 35 Yes.

SUMMARY OF QUALIFICATIONS CELINE LOUISE R. APO

I graduated from the University of Nevada Las Vegas with a Bachelor of Science in Business Administration; Accounting in 2009.

From 2010 to present, I have been employed by Southwest Gas Corporation (Company), initially as an Analyst I in the State Regulatory Affairs department. I was subsequently promoted to Analyst II/Energy Efficiency in 2012, Senior Analyst/Energy Efficiency in 2015, and Administrator/Energy Efficiency in 2017. My responsibilities included supporting the development, implementation, promotion, and reporting of the Company's conservation and energy efficiency (CEE) and low income programs in Arizona, California, and Nevada.

In May 2018, I transitioned to my current position as Supervisor in the Regulation and Energy Efficiency department, where I continued to oversee the development, implementation, promotion, and reporting of the Company's CEE and low income programs. I was also responsible for assisting and reviewing various regulatory filings and projects for the Company's Arizona, California, and Nevada rate jurisdictions. In May 2021, my responsibilities shifted from CEE and low income program oversight to additional regulatory and rate filings and projects, including reviewing rate filings and projections; reviewing rate changes in the Company's billing system; preparing and reviewing components of the Company's annual budget; updating cost of service and rate design models; overseeing tariff administration; overseeing regulatory noticing; and training department staff.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
PROPOSED ANNUALIZED CHANGE IN RATES AND REVENUES BY RATE SCHEDULE
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Rate Schedule (b)	Annual Number of Bills (1) (c)	Basic Service Charge (2) (d)	Annual Volumes (Therms) (1) (e)	Currently Effective Rates (2) (f)	UGCE (3) (g)	REPR (4) (h)	GRA (5) (i)	CEE (6) (j)	VIER (7) (k)	Southern Nevada EIR (8) (l)	Total Change (m)	Proposed Rates (n)	Present (o)	Proposed (p)	Change (q)	Percent Change (r)	Line No.	
																				1
1	Single-Family Residential Gas Service	SG-RS	6,453,001	\$ 10.80	276,102,049	\$ 0.83375	\$ 0.00033	\$ (0.00148)	\$ 0.01524	\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ 0.01074	\$ 0.84449	\$ 69,692,411	\$ 69,692,411	\$ 230,200,083	\$ 233,165,419	1	
2	All Usage																		2	
3	Total														\$ 299,892,494	\$ 302,857,830	\$ 2,965,336	0.99%	3	
																				4
4	Multi-Family Residential Gas Service	SG-RM	1,525,950	\$ 9.00	35,036,900	\$ 0.89252	\$ 0.00033	\$ (0.00148)	\$ 0.00618	\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ 0.00168	\$ 0.89420	\$ 13,733,550	\$ 13,733,550	\$ 31,271,134	\$ 31,329,996	4	
5	All Usage														\$ 45,004,684	\$ 45,063,546	\$ 58,862	0.13%	5	
6	Total																		6	
																				7
7	Air Conditioning Residential Gas Service	SG-RAC	192	\$ 10.80	164,014	\$ 0.56708	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.56258	\$ 2,074	\$ 2,074	\$ 93,009	\$ 92,271	7	
8	All Usage														\$ 95,083	\$ 94,345	\$ (738)	(0.78%)	8	
9	Total																		9	
																				10
10	General Gas Service - 1	SG-G1	241,060	\$ 25.80	26,771,765	\$ 0.82818	\$ 0.00033	\$ (0.00148)	\$ 0.06220	\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ 0.05770	\$ 0.88588	\$ 6,219,348	\$ 6,219,348	\$ 22,171,840	\$ 23,716,571	10	
11	All Usage														\$ 28,391,188	\$ 29,935,919	\$ 1,544,731	5.44%	11	
12	Total																		12	
																				13
13	General Gas Service - 2	SG-G2	41,224	\$ 160.00	51,770,688	\$ 0.57425	\$ 0.00033	\$ (0.00148)	\$ 0.01375	\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ 0.00925	\$ 0.58350	\$ 6,595,840	\$ 6,595,840	\$ 29,729,318	\$ 30,208,196	13	
14	Sales - Commodity														60,403	66,313			14	
15	Transportation - Commodity														\$ 36,385,561	\$ 36,870,350	\$ 484,789	1.33%	15	
16	Total																		16	
																				17
17	General Gas Service - 3	SG-G3	3,478	\$ 350.00	19,276,123	\$ 0.57280	\$ 0.00033	\$ (0.00148)	\$ 0.02252	\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ 0.01802	\$ 0.59082	\$ 1,217,300	\$ 1,217,300	\$ 11,041,363	\$ 11,388,719	17	
18	Sales - Commodity														210,356	249,135			18	
19	Transportation - Commodity														\$ 12,469,019	\$ 12,855,154	\$ 386,135	3.10%	19	
20	Total																		20	
																				21
21	General Gas Service - 4	SG-G4	2,195	\$ 1,000.00	31,375,565	\$ 0.48967	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.48517	\$ 2,195,000	\$ 2,195,000	\$ 15,363,673	\$ 15,222,483	21	
22	Sales - Commodity														2,312,573	1,901,940			22	
23	Transportation - Commodity														9,894,136	9,894,136			23	
24	Demand														\$ 29,765,362	\$ 29,213,559	\$ (551,823)	(1.85%)	24	
25	Total																		25	
																				26
26	General Gas Service - 6	SG-G6	20	\$ 1,000.00	20,780,070	\$ 0.48075		\$ (0.00148)			\$ (0.00576)	\$ 0.00371	\$ (0.00353)	\$ 0.47722	\$ 20,000	\$ 20,000	\$ 9,990,019	\$ 9,916,665	26	
27	Transportation - Commodity														1,066,428	1,066,428			27	
28	Demand														\$ 11,076,446	\$ 11,003,093	\$ (73,354)	(0.66%)	28	
29	Total																		29	
																				30
30	Air Conditioning Gas Service														\$ 0	\$ 0	\$ 0	\$ 0	30	
31	General Gas Service - 1	SG-AC	48	\$ 0.00	16,752	\$ 0.58385	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.57935	\$ 9,781	\$ 9,705	\$ 4,875	\$ 4,875	31	
32	(Seasonal) Summer														4,901	4,875			32	
33	Winter																		33	
34	General Gas Service - 2		24	\$ 0.00	25,392	\$ 0.58385	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.57935	\$ 0	\$ 0	\$ 14,711	\$ 14,711	34	
35	(Seasonal) Summer														5,520	5,476			35	
36	Winter														619	619			36	
37	Air Conditioning Gas Service		24	\$ 25.80	9,612	\$ 0.57425	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.56975	\$ 0	\$ 0	\$ 0	\$ 0	37	
38	(2nd Meter Cooling)		108	\$ 0.00	214,629	\$ 0.58385	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.57935	\$ 125,311	\$ 124,345	\$ (966)	(0.78%)	38	
39	All Usage														\$ 160,957	\$ 159,732	\$ (225)	(0.14%)	39	

[1] Workpapers (CLA-1), Sheets 3, 8 and 11.
[2] Southwest Gas, Statement of Rates, Sheets 10 - 11A, effective October 1, 2021.
[3] Exhibit No. (CLA-1), Schedule 4, Sheet 1.
[4] Exhibit No. (MMP-1), Schedule 1, Sheet 1.
[5] Exhibit No. (CLA-1), Schedule 5, Sheet 1.
[6] Exhibit No. (MMP-1), Schedule 2, Sheet 1.
[7] Exhibit No. (CLA-1), Schedule 6, Sheet 1.
[8] Exhibit No. (CLA-1), Schedule 7, Sheet 1.

SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
PROPOSED ANNUALIZED CHANGE IN RATES AND REVENUES BY RATE SCHEDULE
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021

Line No.	Description (a)	Rate Schedule (b)	Annual Number of Bills (1) (c)	Basic Service Charge (2) (d)	Annual Volumes (Therms) (1) (e)	Currently Effective Rates (2) (f)	UGCE (3) (g)	REPR (4) (h)	GRA (5) (i)	CEE (6) (j)	VIER (7) (k)	Southern Nevada EIR (8) (l)	Total Change (m)	Proposed Tariff Rates (n)	Present (o)	Proposed (p)	Change (q)	Percent Change (r)	Line No.
40	Water Pumping Gas Service	SG-WP	12	\$ 250.00											\$ 3,000	\$ 3,000			40
41	All Usage				573,230	\$ 0.52820	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.52370	\$ 302,780	\$ 300,201			41
42	Total														\$ 305,780	\$ 303,201	\$ (2,580)	(0.84%)	42
43	Small Electric Generation Gas	SG-EG	29	\$ 1,000.00											\$ 29,000	\$ 29,000			43
44	Service				5,444,750	\$ 0.00540		\$ (0.00148)		\$ (0.00576)		\$ 0.00371	\$ (0.00353)	\$ 0.00187	\$ 29,402	\$ 10,182			44
45	Transportation - Commodity														\$ 58,402	\$ 39,182	\$ (19,220)	(32.91%)	45
46	Gas Service for Compression on Customer's Premises	SG-CNG	31	\$ 25.80											\$ 800	\$ 800			46
47	Non-Residential BSC		0	\$ 10.80											0	0			47
48	Residential BSC				194,280	\$ 0.62353	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.61903	\$ 121,139	\$ 120,265			48
49	All Usage														\$ 121,939	\$ 121,065	\$ (874)	(0.72%)	49
50	Street and Outdoor Lighting	SG-L	5,868												\$ 262,129	\$ 260,893			50
51	Gas Service				274,708	\$ 0.95421	\$ 0.00033	\$ (0.00148)		\$ (0.00130)	\$ (0.00576)	\$ 0.00371	\$ (0.00450)	\$ 0.94971	\$ 262,129	\$ 260,893	\$ (1,236)	(0.47%)	51
52	All Usage														\$ 452,912,618	\$ 457,774,774	\$ 4,788,803	1.06%	52
53	Total Sales and Full Margin Transportation		8,273,264		586,983,385										\$ 25,989,425	\$ 25,989,425	\$ 0	0.00%	53
54	Negotiated Contract Customers		132		425,885,140										\$ 478,902,043	\$ 483,764,199	\$ 4,788,803	1.00%	54
55	Total Sales and Applicable Transportation		8,273,396		1,012,868,525										\$ 478,902,043	\$ 483,764,199	\$ 4,788,803	1.00%	55

[1] Worksheets (CLA-1), Sheets 3, 8 and 11.
[2] Southwest Gas, Statement of Rates, Sheets 10 - 11A, effective October 1, 2021.
[3] Exhibit No. (CLA-1), Schedule 4, Sheet 1.
[4] Exhibit No. (MMP-1), Schedule 1, Sheet 1.
[5] Exhibit No. (CLA-1), Schedule 5, Sheet 1.
[6] Exhibit No. (MMP-1), Schedule 2, Sheet 1.
[7] Exhibit No. (CLA-1), Schedule 6, Sheet 1.
[8] Exhibit No. (CLA-1), Schedule 7, Sheet 1.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
TYPICAL BILL COMPARISON
SINGLE-FAMILY RESIDENTIAL GAS SERVICE
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms)	Current Average Bill [2]	Proposed Average Bill	Increase/ (Decrease)	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	
1	20	\$ 27.48	\$ 27.69	\$ 0.21	0.76%	1
2	43	46.65	47.11	0.46	0.99%	2
3	66	65.83	66.54	0.71	1.08%	3
	<u>Average Seasonal Usage [1]</u>					
4	Summer	20				4
5	Annual	43				5
6	Winter	66				6
		Currently Effective Tariff Rates [2]	Proposed Rates			
7	Basic Service Charge	\$ 10.80	\$ 10.80			7
8	Commodity Charge All Usage	\$ 0.83375	\$ 0.84449			8

[1] Workpapers (CLA-1), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 10 - 11A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
TYPICAL BILL COMPARISON
MULTI-FAMILY RESIDENTIAL GAS SERVICE
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms)	Current Average Bill [2]	Proposed Average Bill	Increase/ (Decrease)	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	
1	15	\$ 22.39	\$ 22.41	\$ 0.02	0.09%	1
2	23	29.53	29.57	0.04	0.14%	2
3	31	36.67	36.72	0.05	0.14%	3
	<u>Average Seasonal Usage [1]</u>					
4	Summer	15				4
5	Annual	23				5
6	Winter	31				6
		Currently Effective Tariff Rates [2]	Proposed Rates			
7	Basic Service Charge	\$ 9.00	\$ 9.00			7
8	Commodity Charge All Usage	\$ 0.89252	\$ 0.89420			8

[1] Workpapers (CLA-1), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 10 - 11A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
TYPICAL BILL COMPARISON
GENERAL GAS SERVICE - 1
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms)	Current Average Bill [2]	Proposed Average Bill	Increase/ (Decrease)	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	
1	73	\$ 86.26	\$ 90.47	\$ 4.21	4.88%	1
2	111	117.73	124.13	6.40	5.44%	2
3	149	149.20	157.80	8.60	5.76%	3
	<u>Average Seasonal Usage [1]</u>					
4	Summer	73				4
5	Annual	111				5
6	Winter	149				6
		Currently Effective Tariff Rates [2]	Proposed Rates			
7	Basic Service Charge	\$ 25.80	\$ 25.80			7
	Commodity Charge					
8	All Usage	\$ 0.82818	\$ 0.88588			8

[1] Workpapers (CLA-1), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 10 - 11A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
TYPICAL BILL COMPARISON
GENERAL GAS SERVICE - 2
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms) (a)	Current Average Bill [2] (b)	Proposed Average Bill (c)	Increase/ (Decrease) (d)	Percent (e)	Line No.
1	943	\$ 701.52	\$ 710.24	\$ 8.72	1.24%	1
2	1,261	884.13	895.79	11.66	1.32%	2
3	1,572	1,062.72	1,077.26	14.54	1.37%	3
Average Seasonal Usage [1]						
4	Summer	943				4
5	Annual	1,261				5
6	Winter	1,572				6
Currently Effective Tariff Rates [2] Proposed Rates						
7	Basic Service Charge	\$ 160.00	\$ 160.00			7
8	Commodity Charge All Usage	\$ 0.57425	\$ 0.58350			8

[1] Workpapers (CLA-1), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 10 - 11A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
TYPICAL BILL COMPARISON
GENERAL GAS SERVICE - 3
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms) (a)	Current Average Bill [2] (b)	Proposed Average Bill (c)	Increase/ (Decrease) (d)	Percent (e)	Line No.
1	4,450	\$ 2,898.96	\$ 2,979.15	\$ 80.19	2.77%	1
2	6,133	3,862.98	3,973.50	110.52	2.86%	2
3	7,756	4,792.64	4,932.40	139.76	2.92%	3
	<u>Average Seasonal Usage [1]</u>					
4	Summer	4,450				4
5	Annual	6,133				5
6	Winter	7,756				6
		Currently Effective Tariff Rates [2]	Proposed Rates			
7	Basic Service Charge	\$ 350.00	\$ 350.00			7
	Commodity Charge					
8	All Usage	\$ 0.57280	\$ 0.59082			8

[1] Workpapers (CLA-1), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 10 - 11A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
SHRINKAGE RATE CALCULATION USING 0.3 PERCENT SHRINKAGE FACTOR
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Percent (c)	Line No.
1	Total LUFG Volumes [1]	2,239,200		1
2	Proposed Imbalance Commodity Charge per Therm [2]	\$ 0.47609		2
3	Total LUFG Cost (Ln 1 x Ln 2)	\$ 1,066,061		3
4	Distribution Pipelines & Srvcs 125 psig & greater (miles) [3]	556	4.27%	4
5	Distribution Pipelines & Srvcs less than 125 psig (miles) [3]	12,463	95.73%	5
6	Total Distribution Pipelines and Services	13,019	100.00%	6
7	Total Sales and Transportation Volumes [1]	1,012,868,525		7
8	Less: Contractually Exempt Volumes [1]	268,707,680		8
9	Total Volumes Subject to Shrinkage	744,160,845		9
10	High Pressure Transportation Volumes Subject to Shrinkage [4]	252,493,656	33.93%	10
11	Low Pressure Transportation Volumes Subject to Shrinkage [4]	49,855,564	6.70%	11
12	Sales Volumes [5]	441,811,625	59.37%	12
13	Total Volumes Subject to Shrinkage	744,160,845	100.00%	13
14	Allocation of High Pressure Shrinkage Costs	\$ 45,549		14
15	Total Volumes Subject to Shrinkage (Ln 9)	744,160,845		15
16	Calculated High Pressure Shrinkage Rate per Therm	\$ 0.00006		16
17	Proposed High Pressure Shrinkage Rate per Therm	\$ 0.00006		17
18	Less: Current High Pressure Shrinkage Rate per Therm	0.00003		18
19	Increase/(Decrease)	\$ 0.00003		19
20	Allocation of Low Pressure Shrinkage Costs	\$ 1,020,511		20
21	Total Sales and Low Pressure Shrinkage Therms (Ln 11 + Ln 12)	491,667,189		21
22	Low Pressure Shrinkage Costs per Therm	\$ 0.00208		22
23	Calculated Low Pressure Shrinkage Rate per Therm (Ln 16 + Ln 22)	\$ 0.00214		23
24	Proposed Low Pressure Shrinkage Rate per Therm	\$ 0.00214		24
25	Less: Current Low Pressure Shrinkage Rate per Therm	0.00104		25
26	Increase/(Decrease)	\$ 0.00110		26

[1] Workpapers (CLA-1), Sheet 5.

[2] Exhibit No. ____ (CLA-1), Schedule 3, Sheet 1.

[3] Workpapers (CLA-1), Sheet 6.

[4] Workpapers (CLA-1), Sheet 7.

[5] Workpapers (CLA-1), Sheet 3.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
IMBALANCE COMMODITY CHARGE CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
1	Commodity Cost of Gas [1]	\$ 210,017,249	1
	<u>Pipeline Variable Transportation Charges to the City Gate</u>		
2	Kern River Pipeline [2]	218,159	2
3	Transwestern Pipeline [3]	0	3
4	El Paso Pipeline [4]	17,063	4
5	RLC-Pipe Commodity [5]	62,893	5
6	Southwest Gas Transmission Company [6]	25,022	6
7	Total Pipeline Variable Transportation Costs	\$ 323,137	7
8	Total Commodity and Variable Transportation Costs (Ln 1 + Ln 7)	210,340,386	8
9	Sales Volumes [7]	441,811,625	9
10	Proposed Imbalance Commodity Charge per Therm (Ln 8 / Ln 9)	\$ 0.47609	10
11	Less: Current Imbalance Commodity Charge per Therm	0.23377	11
12	Increase/(Decrease)	\$ 0.24232	12

[1] Exhibit No. __ (JRO-6), Sheet 2, Lns 5, 18, 19 and 20.

[2] Exhibit No. __ (JRO-6), Sheet 2, Ln 6.

[3] Exhibit No. __ (JRO-6), Sheet 2, Ln 7.

[4] Exhibit No. __ (JRO-6), Sheet 2, Ln 8.

[5] Exhibit No. __ (JRO-6), Sheet 2, Ln 9.

[6] Exhibit No. __ (JRO-6), Sheet 2, Ln 10.

[7] Workpapers (CLA-1), Sheet 3.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
IMBALANCE RESERVATION CHARGE CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Pipeline Reservation Charges</u>		
1	Kern River Pipeline [1]	\$ 21,886,945	1
2	El Paso Pipeline [2]	2,129,175	2
3	RLC - PIPE Reservation [3]	96,116	3
4	Southwest Gas Transmission Company [4]	469,464	4
5	Total Pipeline Reservation Charges	<u>\$ 24,581,700</u>	5
6	Sales Volumes [5]	<u>441,811,625</u>	6
7	Proposed Imbalance Reservation Charge per Therm (Ln 5 / Ln 6)	\$ 0.05564	7
8	Less: Current Imbalance Reservation Charge per Therm	<u>0.04273</u>	8
9	Increase/(Decrease)	<u><u>\$ 0.01291</u></u>	9

[1] Exhibit No.__(JRO-6), Sheet 2, Ln 12.

[2] Exhibit No.__(JRO-6), Sheet 2, Ln 13.

[3] Exhibit No.__(JRO-6), Sheet 2, Ln 14. This is a recurring charge related to the Mesquite Virtual Pipeline. There is a fixed and variable component, so the amount will change each month.

[4] Exhibit No.__(JRO-6), Sheet 2, Ln 15.

[5] Workpapers (CLA-2), Sheet 3.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
UNRECOVERED GAS COST EXPENSE (UGCE) RATE CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Base Program Rate Component</u>		
1	UGCE Write-off Balance Net Recoveries	\$ 1,033,000	1
2	Sales Volumes [1]	<u>441,811,625</u>	2
3	UGCE Base Rate Component per Therm (Ln 1 / Ln 2)	<u>\$ 0.00234</u>	3
	<u>Adjustment Rate Component</u>		
4	UGCE Deferral Account Balance	\$ 896,485	4
5	UGCE Adjustment Rate Component per Therm (Ln 4 / Ln 2)	<u>0.00203</u>	5
6	Proposed UGCE Rate per Therm (Ln 3 + Ln 5)	\$ 0.00437	6
7	Less: Current UGCE Rate per Therm	<u>0.00404</u>	7
8	Increase/(Decrease)	<u>\$ 0.00033</u>	8
9	Annualized Impact	<u><u>\$ 145,798</u></u>	9

[1] Workpapers (CLA-1), Sheet 3.

SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
GENERAL REVENUES ADJUSTMENT (GRA) RATE CALCULATIONS
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021

Line No.	Description (a)	Rate Schedule (b)	Account Balance (c)	Volumes [1] (d)	Proposed GRA Rate (per therm) (e) (c)/(d)	Current GRA Rate (per therm) (f)	Change in GRA (per therm) (g) (e)-(f)	Annualized Impact (h) (d)*(g)	Line No.
1	Single-Family Residential Gas Service	SG-RS	\$ (3,962,524)	276,102,049	\$ (0.01435)	\$ (0.02959)	\$ 0.01524	\$ 4,207,795	1
2	Multi-Family Residential Gas Service	SG-RM	(121,404)	35,036,900	(0.00347)	(0.00965)	0.00618	216,528	2
3	General Gas Service - 1	SG-G1	1,372,510	26,771,765	0.05127	(0.01093)	0.06220	1,665,204	3
4	General Gas Service - 2	SG-G2	944,107	52,348,933	0.01803	0.00428	0.01375	719,798	4
5	General Gas Service - 3	SG-G3	559,181	21,318,214	0.02623	0.00371	0.02252	480,086	5
6	Total		<u>\$ (1,208,129)</u>					<u>\$ 7,289,411</u>	6

[1] Exhibit No. ____ (CLA-1), Schedule 1, Sheet 1.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
VARIABLE INTEREST EXPENSE RECOVERY (VIER) MECHANISM CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Net Change in Average Variable Interest Rate (AVIR)</u>		
1	AVIR (New) - September 30, 2021	N/A	1
2	AVIR (Prior) - April 30, 2020	N/A	2
3	Authorized Rate Base (RB)	N/A	3
4	Billing Units (BU) - Therms	N/A	4
5	Net Change [(Ln 1 - Ln 2) x Ln 3 / Ln 4]	N/A	5
	<u>Net Change in Accumulated Deferred Interest (ADI) [1]</u>		
6	ADI (New) - September 30, 2021 [2]	\$ (3,686,211)	6
7	ADI (Prior) - April 30, 2020 [4]	(318,406)	7
8	BU (New) - Therms [3]	586,983,385	8
9	BU (Prior) - Therms [4]	609,448,450	9
10	Net Change [Ln 6 / Ln 8 - Ln 7 / Ln 9]	\$ (0.00576)	10
11	Proposed Net Change (Ln 5 + Ln 10)	\$ (0.00576)	11
12	Annual AVIR Rate - Increase/(Decrease)	0	12
13	Annual ADI Amortization - Increase/(Decrease)	(3,381,024)	13
14	Total Annual Rate - Increase/(Decrease)	\$ (3,381,024)	14

[1] NAC 704.217 - Application to recover deferred variable interest expenses. The AVIR component will be re-established through the Company's General Rate Case Application currently on file with the Commission under Docket No. 21-09001.

[2] Exhibit No. ____ (RAK-1), Sheet 1, Col (g), Ln 12.

[3] Workpapers (CLA-1), Sheets 3 and 7.

[4] Docket No. 20-05028, Exhibit No. ____ (CMB-1), Schedule 8, Sheet 1, Lns 6 and 8.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
VARIABLE INTEREST EXPENSE RECOVERY (VIER) MECHANISM BY COMPONENT
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Average Variable Interest Rate (AVIR) Component</u>		
1	Current AVIR Rate	\$ 0	1
2	2021 Proposed AVIR Change [1]	<u>0.00000</u>	2
3	Total AVIR	<u>\$ 0.00000</u>	3
	<u>Accumulated Deferred Interest (ADI) Component</u>		
4	Current ADI Rate [2]	\$ (0.00072)	4
5	2021 Proposed ADI Change [1]	<u>(0.00576)</u>	5
6	Total ADI	<u>\$ (0.00648)</u>	6
7	Cumulative VIER Rate (Ln 3 + Ln 6)	<u><u>\$ (0.00648)</u></u>	7

[1] Exhibit No. ____ (CLA-1), Schedule 6, Sheet 1.

[2] Southwest Gas Statement of Rates, Sheet 11A, effective January 1, 2021.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
MESQUITE INFRASTRUCTURE EXPANSION RATES**

Line No.	Description (a)	Amounts (b)	Line No.
	<u>Southern Nevada IER</u>		
1	Mesquite IE Deferral Account Balance - SNV	\$ 2,379,893	1
2	Annual Sales & Full Margin Therms [1]	<u>586,983,385</u>	2
3	Rate Per Therm [Line 1 / Line 2]	\$ 0.00405	3
4	Less: Current Southern NV IER	<u>0.00034</u>	4
5	Increase/(Decrease)	0.00371	5
6	Annualized Impact	\$ 2,177,708	6
	<u>Mesquite Expansion Area IER</u>		
7	Mesquite IE Deferral Account Balance - Mesquite Only	\$ 34,023	7
8	Annual Therms for Mesquite [2]	<u>89,399</u>	8
9	Rate Per Therm [Line 4 / Line 5]	\$ 0.38058	9
10	Less: Current Mesquite Expansion Area IER	<u>0.11560</u>	10
11	Increase/(Decrease)	0.26498	11
12	Annualized Impact	\$ 23,689	12

[1] Workpapers (CLA-1), Sheet 3 and 11.

SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
PROPOSED ANNUALIZED CHANGE IN RATES AND REVENUES BY RATE SCHEDULE
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021

Line No.	Description (a)	Rate Schedule (b)	Annual Number of Bills (1) (c)	Basic Service Charge (2) (d)	Annual Volumes (Therms) (1) (e)	Currently Effective Rates (2) (f)	UGCE (3) (g)	REPR (4) (h)	GRA (5) (i)	CEE (6) (j)	Total Change (k)	Proposed Tariff Rates (l)	Total Revenue			Line No.
													Present (m)	Proposed (n)	Change (o)	Percent Change (p)
1	Single-Family Residential Gas Service	NG-RS	895,355	\$ 10.80	54,493,874	\$ 1.08874	\$ 0.00198	\$ (0.00057)	\$ 0.01930	\$ (0.00446)	\$ 0.01625	\$ 1.10499	\$ 9,669,834	\$ 9,669,834	\$	1
2	All Usage												\$ 59,323,660	\$ 60,215,186	\$ 891,526	1.5%
3	Total												\$ 68,993,494	\$ 69,885,020	\$ 891,526	1.28%
4	Multi-Family Residential Gas Service	NG-RM	199,299	\$ 10.80	6,735,135	\$ 1.10128	\$ 0.00198	\$ (0.00057)	\$ 0.02458	\$ (0.00446)	\$ 0.02153	\$ 1.12281	\$ 2,152,429	\$ 2,152,429	\$	4
5	All Usage												\$ 7,417,269	\$ 7,562,277	\$ 145,007	1.95%
6	Total												\$ 9,569,699	\$ 9,714,706	\$ 145,007	1.52%
7	Air Conditioning Residential Gas Service	NG-RAC	36	\$ 10.80	1,889	\$ 1.21216	\$ 0.00198	\$ (0.00057)		\$ (0.00446)	\$ (0.00305)	\$ 1.20911	\$ 389	\$ 389	\$	7
8	All Usage												\$ 2,290	\$ 2,284	\$ (6)	(0.22%)
9	Total												\$ 2,679	\$ 2,673	\$ (6)	(0.22%)
10	General Gas Service - 1	NG-G1	94,738	\$ 28.80	11,402,941	\$ 0.94118	\$ 0.00198	\$ (0.00057)	\$ 0.00440	\$ (0.00446)	\$ 0.00135	\$ 0.94253	\$ 2,728,454	\$ 2,728,454	\$	10
11	Sales - Commodity				212,783	\$ 0.19569			\$ 0.00440		\$ 0.00383	\$ 0.19562	\$ 10,732,220	\$ 10,741,614	\$ 9,394	0.09%
12	Transportation - Commodity												\$ 41,640	\$ 42,454	\$ 814	1.95%
13	Total												\$ 13,502,314	\$ 13,518,523	\$ 16,209	0.12%
14	General Gas Service - 2	NG-G2	9,836	\$ 160.00	12,282,639	\$ 0.82982	\$ 0.00198	\$ (0.00057)	\$ (0.00155)	\$ (0.00446)	\$ (0.00460)	\$ 0.82522	\$ 1,573,760	\$ 1,573,760	\$	14
15	Sales - Commodity				782,299	\$ 0.08433			\$ (0.00155)		\$ (0.00212)	\$ 0.08221	\$ 10,192,379	\$ 10,136,879	\$ (55,500)	(0.54%)
16	Transportation - Commodity												\$ 66,971	\$ 64,313	\$ (2,658)	(3.98%)
17	Total												\$ 11,832,111	\$ 11,773,952	\$ (58,159)	(0.49%)
18	General Gas Service - 3	NG-G3	952	\$ 350.00	5,634,352	\$ 0.81235	\$ 0.00198	\$ (0.00057)	\$ 0.00081	\$ (0.00446)	\$ (0.00224)	\$ 0.81011	\$ 333,200	\$ 333,200	\$	18
19	Sales - Commodity				770,504	\$ 0.06686			\$ 0.00081		\$ 0.00024	\$ 0.06710	\$ 4,739,536	\$ 4,726,467	\$ (13,069)	(0.28%)
20	Transportation - Commodity												\$ 51,516	\$ 51,701	\$ 185	0.36%
21	Total												\$ 5,124,252	\$ 5,111,368	\$ (12,884)	(0.25%)
22	General Gas Service - 4	NG-G4	398	\$ 1,000.00	6,586,998	\$ 0.76652	\$ 0.00198	\$ (0.00057)		\$ (0.00446)	\$ (0.00305)	\$ 0.76347	\$ 398,000	\$ 398,000	\$	22
23	Sales - Commodity				18,452,784	\$ 0.02103					\$ (0.00057)	\$ 0.02046	\$ 5,049,066	\$ 5,028,975	\$ (20,091)	(0.40%)
24	Transportation - Commodity				38,797,476	\$ 0.03550					\$ (0.00057)	\$ 0.03550	\$ 388,062	\$ 377,544	\$ (10,518)	(2.71%)
25	Demand												\$ 1,377,310	\$ 1,377,310	\$	25
26	Total												\$ 7,212,438	\$ 7,181,830	\$ (30,608)	(0.42%)
27	Air Conditioning Gas Service	NG-AC	12	\$ 28.80	4,781	\$ 0.85639	\$ 0.00198	\$ (0.00057)		\$ (0.00446)	\$ (0.00305)	\$ 0.85334	\$ 346	\$ 346	\$	27
28	All Usage												\$ 4,084	\$ 4,080	\$ (4)	(0.10%)
29	Total												\$ 4,440	\$ 4,425	\$ (15)	(0.34%)
30	Water Pumping Gas Service	NG-WP	22	\$ 36.00	2,412	\$ 0.82714	\$ 0.00198	\$ (0.00057)		\$ (0.00446)	\$ (0.00305)	\$ 0.82409	\$ 792	\$ 792	\$	30
31	All Usage												\$ 1,995	\$ 1,988	\$ (7)	(0.35%)
32	Total												\$ 2,787	\$ 2,780	\$ (7)	(0.25%)

[1] Worksheets (CL-2), Sheets 3, 6 and 7.
[2] Southwest Gas, Statement of Rates, Sheets 12 - 13A, effective October 1, 2021.
[3] Exhibit No. (CL-2), Schedule 4, Sheet 1.
[4] Exhibit No. (MMP-2), Schedule 1, Sheet 1.
[5] Exhibit No. (CL-2), Schedule 5, Sheet 1.
[6] Exhibit No. (MMP-2), Schedule 2, Sheet 1.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
PROPOSED ANNUALIZED CHANGE IN RATES AND REVENUES BY RATE SCHEDULE
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Rate Schedule (b)	Annual Number of Bills (1) (c)	Basic Service Charge (2) (d)	Annual Volumes (Therms) (1) (e)	Currently Effective Rates (2) (f)	UGCE (3) (g)	REPR (4) (h)	GRA (5) (i)	CEE (6) (j)	Total Change (k)	Proposed Tariff Rates (l)	Present (m)	Proposed (n)	Change (o)	Percent Change (p)	Line No.
33	Small Electric Generation Gas Service																
34	General Gas Service - 1 (NG-EG)	NG-EG	36	\$ 28.80									\$ 1,037	\$ 1,037			33
35	General Gas Service - 2 (NG-EG)		12	\$ 160.00									1,920	1,920			34
36	All Usage				102,576	\$ 0.81717	\$ 0.00198	\$ (0.00057)		\$ (0.00446)	\$ (0.00305)	\$ 0.81412	83,822	83,309			35
	Total												\$ 86,779	\$ 86,486	\$ (313)	(0.36%)	36
	Gas Service for Compression on Customer's Premises																
37	Non-Residential BSC	NG-CNG	12	\$ 25.80	643	\$ 0.84849	\$ 0.00198	\$ (0.00057)		\$ (0.00446)	\$ (0.00305)	\$ 0.84544	\$ 310	\$ 310			37
38	All Usage												546	544			38
39	Total												\$ 856	\$ 853	\$ (2)	(0.23%)	39
40	Street and Outdoor Lighting Gas Service	NG-L	372		16,516	\$ 1.24447	\$ 0.00198	\$ (0.00057)		\$ (0.00446)	\$ (0.00305)	\$ 1.24142	\$ 20,554	\$ 20,503			40
41	All Usage												\$ 20,554	\$ 20,503	\$ (50)	(0.24%)	41
42	Total												\$ 116,368,401	\$ 117,303,099	\$ 944,697	0.81%	42
43	Total Sales and Full Margin Transportation		1,201,080		117,683,126												43
44	Negotiated Contract Customers		19		27,362,730								1,109,573	1,109,573	0	0.00%	44
45	Total Sales and Applicable Transportation		1,201,099		145,045,856								\$ 117,467,974	\$ 118,412,672	\$ 944,697	0.80%	45

[1] Workpapers (CLA-2), Sheets 3, 6 and 7.
[2] Southwest Gas, Statement of Rates, Sheets 12 - 13A, effective October 1, 2021.
[3] Exhibit No. (CLA-2), Schedule 4, Sheet 1.
[4] Exhibit No. (MMP-2), Schedule 1, Sheet 1.
[5] Exhibit No. (CLA-2), Schedule 5, Sheet 1.
[6] Exhibit No. (MMP-2), Schedule 2, Sheet 1.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
TYPICAL BILL COMPARISON
SINGLE-FAMILY RESIDENTIAL GAS SERVICE
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms) (a)	Current Average Bill [2] (b)	Proposed Average Bill (c)	Increase/ (Decrease) (d)	Percent (e)	Line No.
1	22	\$ 34.75	\$ 35.11	\$ 0.36	1.04%	1
2	61	77.21	78.20	0.99	1.28%	2
3	99	118.59	120.19	1.60	1.35%	3
Average Seasonal Usage [1]						
4	Summer	22				4
5	Annual	61				5
6	Winter	99				6
Currently Effective Tariff Rates [2]						
7	Basic Service Charge	\$ 10.80	\$ 10.80			7
8	Commodity Charge All Usage	\$ 1.08874	\$ 1.10499			8

[1] Workpapers (CLA-2), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 12 - 13A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
TYPICAL BILL COMPARISON
MULTI-FAMILY RESIDENTIAL GAS SERVICE
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms)	Current Average Bill [2]	Proposed Average Bill	Increase/ (Decrease)	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	
1	14	\$ 26.22	\$ 26.52	\$ 0.30	1.14%	1
2	34	48.24	48.98	0.74	1.53%	2
3	53	69.17	70.31	1.14	1.65%	3
	<u>Average Seasonal Usage [1]</u>					
4	Summer	14				4
5	Annual	34				5
6	Winter	53				6
		Currently Effective Tariff Rates [2]	Proposed Rates			
7	Basic Service Charge	\$ 10.80	\$ 10.80			7
8	Commodity Charge All Usage	\$ 1.10128	\$ 1.12281			8

[1] Workpapers (CLA-2), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 12 - 13A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
TYPICAL BILL COMPARISON
GENERAL GAS SERVICE - 1
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms) (a)	Current Average Bill [2] (b)	Proposed Average Bill (c)	Increase/ (Decrease) (d)	Percent (e)	Line No.
1	39	\$ 65.51	\$ 65.56	\$ 0.05	0.08%	1
2	122	143.62	143.79	0.17	0.12%	2
3	204	220.80	221.08	0.28	0.13%	3
	<u>Average Seasonal Usage [1]</u>					
4	Summer	39				4
5	Annual	122				5
6	Winter	204				6
		Currently Effective Tariff Rates [2]	Proposed Rates			
7	Basic Service Charge	\$ 28.80	\$ 28.80			7
8	Commodity Charge All Usage	\$ 0.94118	\$ 0.94253			8

[1] Workpapers (CLA-2), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 12 - 13A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
TYPICAL BILL COMPARISON
GENERAL GAS SERVICE - 2
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms)	Current Average Bill [2]	Proposed Average Bill	Increase/ (Decrease)	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	
1	617	\$ 672.00	\$ 669.16	\$ (2.84)	(0.42%)	1
2	1,310	1,247.06	1,241.04	(6.02)	(0.48%)	2
3	2,002	1,821.30	1,812.09	(9.21)	(0.51%)	3
	<u>Average Seasonal Usage [1]</u>					
4	Summer	617				4
5	Annual	1,310				5
6	Winter	2,002				6
		Currently Effective Tariff Rates [2]	Proposed Rates			
7	Basic Service Charge	\$ 160.00	\$ 160.00			7
8	Commodity Charge All Usage	\$ 0.82982	\$ 0.82522			8

[1] Workpapers (CLA-2), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 12 - 13A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
TYPICAL BILL COMPARISON
GENERAL GAS SERVICE - 3
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Monthly Consumption (Therms)	Current Average Bill [2]	Proposed Average Bill	Increase/ (Decrease)	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	
1	5,262	\$ 4,624.59	\$ 4,612.80	\$ (11.79)	(0.25%)	1
2	7,320	6,296.40	6,280.01	(16.39)	(0.26%)	2
3	9,343	7,939.79	7,918.86	(20.93)	(0.26%)	3
	<u>Average Seasonal Usage [1]</u>					
4	Summer	5,262				4
5	Annual	7,320				5
6	Winter	9,343				6
		Currently Effective Tariff Rates [2]	Proposed Rates			
7	Basic Service Charge	\$ 350.00	\$ 350.00			7
8	Commodity Charge All Usage	\$ 0.81235	\$ 0.81011			8

[1] Workpapers (CLA-2), Sheet 4.

[2] Southwest Gas, Statement of Rates, Sheets 12 - 13A, effective October 1, 2021.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
SHRINKAGE RATE CALCULATION USING 0.3 PERCENT SHRINKAGE FACTOR
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
1	Total LUFG Volumes [1]	351,353	1
2	Proposed Imbalance Commodity Charge per Therm [2]	\$ 0.48191	2
3	Total LUFG Cost (Ln 1 x Ln 2)	\$ 169,321	3
4	Total Sales and Transportation Volumes [1]	145,044,936	4
5	Less: Contractually Exempt Volumes [1]	28,278,620	5
6	Total Volumes Subject to Shrinkage	116,766,316	6
7	Calculated Shrinkage Rate per Therm (Ln 3 / Ln 6)	\$ 0.00145	7
8	Proposed Shrinkage Rate per Therm	\$ 0.00145	8
9	Less: Current Shrinkage Rate per Therm	0.00072	9
10	Increase/(Decrease)	\$ 0.00073	10

[1] Workpapers (CLA-2), Sheet 5.

[2] Exhibit No. ____ (CLA-2), Schedule 3, Sheet 1.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
IMBALANCE COMMODITY CHARGE CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
1	Commodity Cost of Gas [1]	\$ 46,626,349	1
	<u>Volumetric Transportation Charges</u>		
2	Northwest Pipeline [2]	57,765	2
3	Tuscarora Pipeline [3]	3,696	3
4	Ruby Pipeline [4]	267,931	4
5	Paiute Pipeline [5]	13,666	5
6	Total Volumetric Transportation Charges	\$ 343,058	6
7	Total Commodity and Volumetric Transportation Costs (Ln 1 + Ln 6)	46,969,407	7
8	Sales Volumes [6]	97,464,756	8
9	Proposed Imbalance Commodity Charge per Therm (Ln 7 / Ln 8)	\$ 0.48191	9
10	Less: Current Imbalance Commodity Charge per Therm	0.23863	10
11	Increase/(Decrease)	\$ 0.24328	11

[1] Exhibit No.__(JRO-6), Sheet 1, Lns 4, 8, 12, 13 and 14.

[2] Exhibit No.__(JRO-6), Sheet 1, Ln 5.

[3] Exhibit No.__(JRO-6), Sheet 1, Ln 6.

[4] Exhibit No.__(JRO-6), Sheet 1, Ln 7.

[5] Exhibit No.__(JRO-6), Sheet 1, Ln 10.

[6] Workpapers (CLA-2), Sheet 3.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
IMBALANCE RESERVATION CHARGE CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Pipeline Reservation Charges</u>		
1	Northwest Pipeline [1]	\$ 11,771,677	1
2	Tuscarora Pipeline [2]	2,249,364	2
3	Ruby Pipeline [3]	425,359	3
4	Paiute Pipeline [4]	32,069,425	4
5	Total Pipeline Reservation Charges	<u>\$ 46,515,825</u>	5
6	Sales Volumes [5]	<u>97,464,756</u>	6
7	Proposed Imbalance Reservation Charge per Therm (Ln 5 / Ln 6)	\$ 0.47726	7
8	Less: Current Imbalance Reservation Charge per Therm	<u>0.35094</u>	8
9	Increase/(Decrease)	<u><u>\$ 0.12632</u></u>	9

[1] Exhibit No.__(JRO-6), Sheet 1, Ln 16.

[2] Exhibit No.__(JRO-6), Sheet 1, Ln 17.

[3] Exhibit No.__(JRO-6), Sheet 1, Ln 18.

[4] Exhibit No.__(JRO-6), Sheet 1, Lns 19 through 30.

[5] Workpapers (CLA-2), Sheet 3.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
UNRECOVERED GAS COST EXPENSE (UGCE) RATE CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Base Program Rate Component</u>		
1	UGCE Write-off Balance Net Recoveries	\$ 234,855	1
2	Sales Volumes [1]	<u>97,464,756</u>	2
3	UGCE Base Rate Component per Therm (Ln 1 / Ln 2)	<u>\$ 0.00241</u>	3
	<u>Adjustment Rate Component</u>		
4	UGCE Deferral Account Balance	\$ 159,138	4
5	UGCE Adjustment Rate Component per Therm (Ln 4 / Ln 2)	<u>0.00163</u>	5
6	Proposed UGCE Rate per Therm (Ln 3 + Ln 5)	\$ 0.00404	6
7	Less: Current UGCE Rate per Therm	<u>0.00206</u>	7
8	Increase/(Decrease)	<u>\$ 0.00198</u>	8
9	Annualized Impact	<u><u>\$ 192,980</u></u>	9

[1] Workpapers (CLA-2), Sheet 3.

SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
GENERAL REVENUES ADJUSTMENT (GRA) RATE CALCULATIONS
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021

Line No.	Description (a)	Rate Schedule (b)	Account Balance (c)	Volumes [1] (d)	Proposed GRA Rate (per therm) (e) (c)/(d)	Current GRA Rate (per therm) (f)	Change in GRA (per therm) (g) (e)-(f)	Annualized Impact (h) (d)*(g)	Line No.
1	Single-Family Residential Gas Service	NG-RS	\$ 2,102,873	54,493,874	0.03859	\$ 0.01929	\$ 0.01930	\$ 1,051,732	1
2	Multi-Family Residential Gas Service	NG-RM	270,931	6,735,135	0.04023	0.01565	0.02458	165,550	2
3	General Gas Service - 1	NG-G1	161,133	11,615,724	0.01387	0.00947	0.00440	51,109	3
4	General Gas Service - 2	NG-G2	105,759	13,064,938	0.00809	0.00964	(0.00155)	(20,251)	4
5	General Gas Service - 3	NG-G3	46,190	6,604,856	0.00699	0.00618	0.00081	5,350	5
6	Total		<u>\$ 2,686,886</u>					<u>\$ 1,253,490</u>	6

[1] Exhibit No. ____ (CLA-2), Schedule 1, Sheet 1.

AFFIRMATION

STATE OF NEVADA)

: ss.

COUNTY OF CLARK)

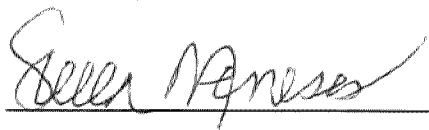
Celine Louise R. Apo being first duly sworn, deposes and says:

That I am the person identified in the Prepared Direct Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by or under my direction; that the answers and information set forth therein are true to the best of my own knowledge and belief.



Celine Louise R. Apo

Signed and sworn to before me on
this 8th day of November, 2021.



Notary Public

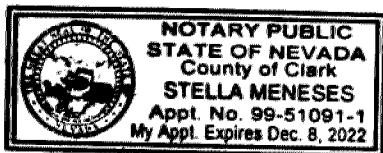


Exhibit 4
Prepared Direct Testimony
Melissa M. Porch

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
DOCKET NO. 21-11____

PREPARED DIRECT TESTIMONY
OF
MELISSA M. PORCH

ON BEHALF OF
SOUTHWEST GAS CORPORATION

NOVEMBER 10, 2021

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of
Prepared Direct Testimony
of
Melissa M. Porch

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II. RENEWABLE ENERGY PROGRAM RATES	2
III. CONSERVATION & ENERGY EFFICIENCY RATES	3
IV. CONCLUSION	4

Appendix A – Summary of Qualifications of Melissa M. Porch

Exhibit No.__(MMP-1)

Exhibit No.__(MMP-2)

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Direct Testimony
of
Melissa M. Porch

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Melissa M. Porch, and my business address is 8360 South Durango Drive, Las Vegas, Nevada 89113.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or Company) in the Regulation and Energy Efficiency Department. My title is Senior Analyst.

Q. 3 Please summarize your educational background and relevant business experience?

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have previously provided written testimony before the Public Utilities Commission of Nevada (PUCN or Commission) and the California Public Utilities Commission.

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I sponsor Southwest Gas' proposed Renewable Energy Program Rates (REPR) and Conservation and Energy Efficiency (CEE) rates for its Southern Nevada and Northern Nevada rate jurisdictions, to be established effective July 1, 2022, including supporting schedules and workpapers.

1 **Q. 6 Why is the Company's Annual Rate Adjustment (ARA) application filing**
2 **timing different than in previous ARA applications?**

3 A. 6 Pursuant to Commission's Order in Docket 20-05028, the Company modified the
4 timing of its ARA application filing to use an accounting test year of October 1
5 through September 30.¹ Prior to the instant application, the Company used a May
6 1 through April 30 accounting test period. Consequently, the change in filing
7 timing between the end of the test period in the Company's last ARA Application
8 (April 30, 2020) and end of the test period in the instant application (September
9 30, 2021) creates a seventeenth-month time period (May 1, 2020 through
10 September 30, 2021).

11 **Q. 7 Please summarize your prepared direct testimony.**

12 A. 7 My prepared direct testimony consists of the following key issues:

- 13 • The REPR applicable to Southern Nevada and Northern Nevada sales and
- 14 full margin transportation customers; and,
- 15 • The CEE applicable to Southern Nevada and Northern Nevada sales
- 16 customers.

17 **II. RENEWABLE ENERGY PROGRAM RATES**

18 **Q. 8 Please provide a general description of the REPR.**

19 A. 8 The REPR allows Southwest Gas to recover the incurred and projected costs from
20 deferred balances associated with its *Smarter Greener Better*® Solar Water
21 Heating Program (Solar Thermal Program) from all sales and full margin
22 transportation customers.

23 **Q. 9 Please provide an overview of the REPR calculation.**

24 A. 9 Southwest Gas calculated the REPR in accordance with Chapter 701B.245 of the
25 Nevada Administrative Code (NAC). First, Southwest Gas divided the cumulative
26 balance in its Solar Thermal Program subaccount of FERC Account No. 182.3 at

27 ¹ ¶ 16 of the Commission's final order in Docket No. 20-05028 dated October 29, 2020.

1 September 30, 2021, by the therm sales for the test period to calculate the
2 Deferred Program rate. Second, Southwest Gas divided the total costs in its
3 approved 2022 Solar Thermal Program annual plan² by the projected therms for
4 the 2022 program year to determine the Base Program rate. The Deferred
5 Program and Base Program rates were added together to calculate the total
6 REPR per therm.

7 **Q. 10 What are the proposed REPR amounts?**

8 A. 10 The Company proposes a REPR rate of -(\$0.00063) per therm in Southern
9 Nevada and a REPR rate of -(\$0.00040) in Northern Nevada. The calculation of
10 the REPR for Southern and Northern Nevada are shown in Schedule 5 of Exhibit
11 Nos.__(MMP-1) and (MMP-2), respectively. Resulting changes in the annualized
12 revenues are provided in Exhibit Nos.__(CLA-1) and (CLA-2) included in the
13 prepared direct testimony of Company witness Celine L. Apo.

14 **III. CONSERVATION & ENERGY EFFICIENCY RATES**

15 **Q. 11 What is the purpose of the CEE mechanism?**

16 A. 11 The CEE mechanism allows Southwest Gas to recover its costs for implementing
17 its *Smarter Greener Better*® CEE programs, including, but not limited to, costs for
18 labor, overhead, materials, incentives paid to customers, advertising, marketing,
19 measurement, verification, and evaluation, consistent with NAC 704.9714.

20 **Q. 12 Did Southwest Gas make any changes to its CEE rate calculation**
21 **methodology since its Annual Rate Adjustment filed under Docket No. 20-**
22 **05028?**

23 A. 12 No.

24
25
26
27 ² Southwest Gas' 2022 Solar Thermal Program budget of \$100,000 was approved in Docket No.
21-07023.

1 **Q. 13 Please provide an overview of the CEE rate calculation.**

2 A. 13 The Southern and Northern Nevada Deferred Program rates are calculated
3 separately by dividing the balances of each jurisdiction's respective Deferred
4 Program account (FERC Account No. 182.303104) as of September 30, 2021, by
5 the respective rate jurisdiction's total therm sales during the previous twelve-
6 month period. Base Program rates for the Southern and Northern Nevada rate
7 jurisdictions are calculated separately by dividing each rate jurisdiction's total CEE
8 costs, as defined in Southwest Gas' approved 2022 CEE budget³, by the
9 respective rate jurisdiction's projected therm sales. The Base Program rate is
10 applicable to all sales customers per the Commission's Order in Docket No. 15-
11 04037. The Deferred Program and Base Program rates are then added together
12 to calculate the total CEE rate applicable to all sales customers.

13 **Q. 14 What are the proposed CEE rates?**

14 A. 14 The CEE rates applicable to sales customers are \$0.00107 per therm in Southern
15 Nevada and -(\$0.00056) per therm in Northern Nevada. The calculation of the
16 CEE rates for Southern Nevada and Northern Nevada are included in Schedule
17 7 of Exhibit Nos.__(MMP-1) and (MMP-2), respectively. Resulting changes in the
18 annualized revenues are provided in Exhibit Nos.__(CLA-1) and (CLA-2) included
19 in the prepared direct testimony of Company witness Celine L. Apo.

20 **IV. CONCLUSION**

21 **Q. 15 Does this conclude your prepared direct testimony?**

22 A. 15 Yes.

27 ³ Southwest Gas' 2022 CEE budget of \$1,355,421 was approved in Docket No. 21-05001.

SUMMARY OF QUALIFICATIONS MELISSA M. PORCH

I graduated from The University of Toledo with a Master of Arts degree in Economics in 2014. I presented my graduate research, “Using Time Horizon Cheap Talk and Inferred Valuation Method to Reduce Hypothetical Bias in Contingent Valuation”, at the 2014 Midwest Economics Association conference in Evanston, Illinois.

From 2014 to 2019, I was employed by Tesla and held several positions overseeing solar photovoltaic and battery storage products across the United States. My most recent positions were Supervisor of Utility Relations and Associate Manager of Incentives. My responsibilities included leadership, data analysis, operational guidance, and utility relations for Tesla’s interconnection and rebate processes.

From February 2019 to present, I have been employed by Southwest Gas Corporation (Company), initially as an Analyst II in the Regulation and Energy Efficiency department. In May 2021, I was promoted to my current position as Senior Analyst. My responsibilities include the design, implementation, promotion, and reporting of the Company’s conservation and energy efficiency (CEE) and low income programs for its Arizona, California, and Nevada rate jurisdictions.

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
RENEWABLE ENERGY PROGRAM RATE (REPR) CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Deferred Program Rate Component</u>		
1	REPR Account Balance	\$ (457,422)	1
2	Sales and Full Margin Transportation Volumes [1]	<u>586,983,385</u>	2
3	REPR Deferred Program Rate per Therm (Ln 1 / Ln 2)	<u>\$ (0.00078)</u>	3
	<u>Base Program Rate Component</u>		
4	2022 Solar Thermal Budget [2]	\$ 87,000	4
5	Sales and Full Margin Transportation Budget Volumes	<u>594,354,764</u>	5
6	REPR Base Program Rate per Therm (Ln 4 / Ln 5)	<u>\$ 0.00015</u>	6
7	Proposed REPR per Therm (Ln 3 + Ln 6)	\$ (0.00063)	7
8	Less: Current REPR per Therm	<u>0.00085</u>	8
9	Increase/(Decrease)	<u>\$ (0.00148)</u>	9
10	Annualized Impact	<u><u>\$ (868,735)</u></u>	10

[1] Workpapers (CLA-1), Sheets 3 and 11.

[2] Southern Nevada is 87% of the 2022 NV Solar Thermal Budget

**SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
CONSERVATION AND ENERGY EFFICIENCY (CEE) RATE CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Deferred Program Rate Component</u>		
1	CEE Deferred Ending Balance (FERC Acct. No. 182303104)	\$ (690,239)	1
2	Sales Volumes [1]	<u>441,811,625</u>	2
3	CEE Deferred Program Rate per Therm (Ln 1 / Ln 2)	<u>\$ (0.00156)</u>	3
	<u>Base Program Rate Component</u>		
4	2022 CEE Programs Budget [2]	\$ 1,147,611	4
5	Sales Budget Volumes	<u>435,741,007</u>	5
6	CEE Base Program Rate per Therm (Ln 4 / Ln 5)	<u>\$ 0.00263</u>	6
7	Proposed CEE Sales Rate per Therm (Ln 3 + Ln 6)	\$ 0.00107	7
8	Less: Current CEE Sales Rate per Therm	<u>0.00237</u>	8
9	Increase/(Decrease)	<u>\$ (0.00130)</u>	9
10	Annualized Impact CEE Sales Rate per Therm	<u><u>\$ (574,355)</u></u>	10

[1] Workpapers (CLA-1), Sheet 3.

[2] 2022 Conservation and Energy Efficiency Plan budget as approved in Docket No. 21-05001 for Southern Nevada.

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
RENEWABLE ENERGY PROGRAM RATE (REPR) CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Deferred Program Rate Component</u>		
1	REPR Account Balance	\$ (59,695)	1
2	Sales and Full Margin Transportation Volumes [1]	<u>117,683,126</u>	2
3	REPR Deferred Program Rate per Therm (Ln 1 / Ln 2)	<u>\$ (0.00051)</u>	3
	<u>Base Program Rate Component</u>		
4	2022 Solar Thermal Budget [2]	\$ 13,000	4
5	Sales and Full Margin Transportation Budget Volumes	<u>119,258,826</u>	5
6	REPR Base Program Rate per Therm (Ln 4 / Ln 5)	<u>\$ 0.00011</u>	6
7	Proposed REPR per Therm (Ln 3 + Ln 6)	\$ (0.00040)	7
8	Less: Current REPR per Therm	<u>0.00017</u>	8
9	Increase/(Decrease)	<u>\$ (0.00057)</u>	9
10	Annualized Impact	<u><u>\$ (67,079)</u></u>	10

[1] Workpapers (CLA-2), Sheets 3 and 7.

[2] Northern Nevada is 13% of the 2022 NV Solar Thermal Budget

**SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
CONSERVATION AND ENERGY EFFICIENCY (CEE) RATE CALCULATION
SEVENTEEN MONTHS ENDED SEPTEMBER 30, 2021**

Line No.	Description (a)	Amount (b)	Line No.
	<u>Deferred Program Rate Component</u>		
1	CEE Deferred Ending Balance (FERC Acct. No. 182303104)	\$ (257,341)	1
2	Sales Volumes [1]	<u>97,464,756</u>	2
3	CEE Deferred Program Rate per Therm (Ln 4 / Ln 5)	<u>\$ (0.00264)</u>	3
	<u>Base Program Rate Component</u>		
4	2022 CEE Programs Budget [2]	\$ 207,810	4
5	Sales Budget Volumes	<u>100,007,221</u>	5
6	CEE Base Program Rate per Therm (Ln 7 / Ln 8)	<u>\$ 0.00208</u>	6
7	Proposed CEE Sales Rate per Therm (Ln 3 + Ln 6 + Ln 9)	\$ (0.00056)	7
8	Less: Current CEE Sales Rate per Therm	<u>0.00390</u>	8
9	Increase/(Decrease)	<u>\$ (0.00446)</u>	9
10	Annualized Impact CEE Sales Rate per Therm	<u><u>\$ (434,693)</u></u>	10

[1] Workpapers (CLA-2), Sheet 3.

[2] 2022 Conservation and Energy Efficiency Plan budget as approved in
Docket No. 21-05001 for Northern Nevada.

AFFIRMATION

STATE OF NEVADA)

: ss.

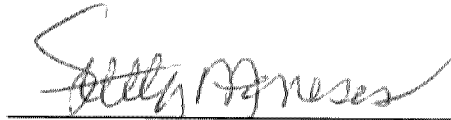
COUNTY OF CLARK)

I, Melissa M. Porch being first duly sworn, deposes and says:

That I am the person identified in the Prepared Direct Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by or under my direction; that the answers and information set forth therein are true to the best of my own knowledge and belief.


Melissa M. Porch

Signed and sworn to before me on
this 8th day of November, 2021.



Notary Public

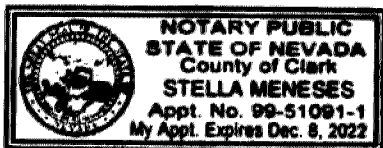


Exhibit 5
Prepared Direct Testimony
John R. Olenick

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
Docket No. 21-11____

PREPARED DIRECT TESTIMONY
OF
JOHN R. OLENICK

ON BEHALF OF
SOUTHWEST GAS CORPORATION

November 10, 2021

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of
Prepared Direct Testimony
of
John R. Olenick

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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Direct Testimony
of
John R. Olenick

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is John R. Olenick. My business address is 8350 South Durango Drive,
Las Vegas, Nevada 89113.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or Company) in
the Gas Supply department. My title is Director/Gas Supply.

**Q. 3 Please summarize your educational background and relevant business
experience.**

A. 3 My educational background and relevant business experience are summarized in
Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have previously provided testimony before the Public Utilities Commission
of Nevada (PUCN or Commission), the Arizona Corporation Commission, and the
California Public Utilities Commission.

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I sponsor the Company's assertion that the gas purchases made, and
transportation costs incurred, during the April 2020 through August 2021,
seventeen-month period (Covered Period), were reasonable and prudent and
address other areas specific to the Company's gas and transportation costs
incurred during the Covered Period.

1 **Q. 6 Why is the Covered Period seventeen months and not the usual twelve**
2 **months used in previous Annual Rate Adjustment (ARA) proceedings?**

3 A. 6 Paragraph 24 of the Stipulation that settled the Company's last ARA proceeding in
4 Docket No. 20-05028 provided that beginning in 2021 Southwest Gas would file
5 its ARA applications on or before November 15th of each year. Since this is the
6 first ARA application filed after the agreed upon change in the filing date, the
7 Covered Period has been lengthened to cover the entire period since the last ARA
8 application which had a covered period for the twelve months ended March 31,
9 2020. The Company's future ARA applications will once again utilize a twelve-
10 month covered period that begins with gas flows on September 1 and ends with
11 gas flows on August 31 of the following year.

12 **Q. 7 Please summarize your prepared direct testimony.**

13 A. 7 My prepared direct testimony addresses the following key points:

- 14 • The reasonableness of the Company's gas acquisition policies,
15 processes, and procedures, including;
 - 16 ○ Changes to the Company's gas purchase policies, processes, or
17 procedures;
 - 18 ○ The factors Southwest Gas considers when determining the
19 level of Volatility Mitigation Program purchases;
 - 20 ○ Baseload Supply Program purchases;
 - 21 ○ Derivative transactions, other than Fixed-for-Floating-index
22 Swaps, considered by Southwest Gas;
 - 23 ○ Upstream interstate resource transactions; and
 - 24 ○ The Mesquite Virtual Pipeline;
- 25 • Cost tracking pursuant to the Commission's order in Docket No. 18-
26 08016;
- 27 • The Company's gas purchase and transportation costs incurred during

the Covered Period including costs incurred during February 2021; and,

- The reasonableness of the Company's gas purchase policies, processes and procedures and the prudence of the gas supplies and transportation purchased during the Covered Period.

II. GAS ACQUISITION POLICY, PROCESSES AND PROCEDURES

Q. 8 Please summarize the Company's gas acquisition policy in place for the Covered Period.

A. 8 During the Covered Period, Southwest Gas endeavored to acquire the best-cost gas supply portfolio considering price, reliability, flexibility, and protection from short-term market volatility, while providing security of supply to meet the gas supply requirements of its sales customers.

Q. 9 How did the Company's gas supply policy and the resulting gas supply portfolio help keep gas costs at reasonable levels during the Covered Period?

A. 9 The Company's gas supply policies combine the firm portion of its supply portfolio with monthly and daily spot market purchases to help keep gas costs reasonable. To build the firm part of its gas supply portfolio, Southwest Gas used multiple competitive solicitations through which the Company purchased cost-competitive gas supplies. Those firm purchases were supplemented with market priced daily and monthly spot market purchases.

Q. 10 What measures did the Company use to help ensure the availability of a flexible and reliable supply of natural gas to its sales customers during the Covered Period?

A. 10 To ensure availability of a reliable gas supply, the Company procured firm upstream interstate transportation capacity, firm bundled delivered gas supplies, and firm gas supplies purchased in the production basins, to meet its forecasted

winter design-day requirements. To provide flexibility, the Company completed firm peaking transactions for the November 2020 through March 2021 portion of the Covered Period that permit varying daily quantities used to better match purchases with sales customers' forecasted demand. Also, during the Covered Period, daily and monthly spot market purchases supplement firm supply and provided additional flexibility.

Q. 11 What does the Company consider to be short-term customer rate volatility?

A. 11 Short-term customer rate volatility is represented by the quarterly changes to the combination of the Base Tariff Energy Rate (BTER) and Deferred Energy Accounting Adjustment (DEAA) rates charged to the Company's customers.

Q. 12 How did the Company address short-term customer rate volatility during the Covered Period?

A. 12 The Company addressed short-term customer rate volatility during the Covered Period through the quarterly adjustments made to the BTER and DEAA rate mechanisms. Southwest Gas has relied on these mechanisms since 2013 to address short-term customer rate volatility and the Company's analyses, which were shared with the Commission's Regulatory Operations Staff (Staff) and Bureau of Consumer Protection (BCP), showed those mechanisms continue to be effective at reducing short-term customer rate volatility.

III. CHANGES TO GAS PURCHASE POLICIES, PROCESSES, OR PROCEDURES

Q. 13 Did Southwest Gas make any substantive changes to its gas purchase policies, processes, or procedures during the Covered Period that modify the way it purchases gas supplies for its Nevada service territories?

A. 13 Yes. The Company made various changes to the Gas Purchases & Transportation Portfolio Selection Procedures and Gas Purchasing and Nomination Procedures. The updated document and procedures are contained in Exhibit No.__(JRO-1) and Exhibit No.__(JRO-2) contains a redline version to the previous document and

procedures. In addition, The Company implemented the Nevada Gas Supply Policy Statement, which is included as Exhibit No.__(JRO-3). The Company also follows the Nevada Gas Supply Strategies and Criteria, which was not modified during the Covered Period. A copy of that document is included as Exhibit No.__(JRO-4).

Q. 14 Please summarize the changes made to the Gas Purchases & Transportation Portfolio Selection Procedure and Gas Purchasing and Nomination Procedures which are highlighted on Exhibit No.__(JRO-2) and the rationale for those changes.

A. 14 The changes highlighted in Exhibit No.__(JRO-2) provide additional steps that the Company's personnel should follow when determining the quantity and purchase location for monthly or daily spot purchases.

In February 2021, extreme cold weather gripped the central part of the United States. This cold weather event, commonly referred to as winter storm Uri, led to gas supply shortages and outages in Texas and caused a significant increase in daily natural gas spot market prices throughout the United States. Daily spot market natural gas prices for the areas where Southwest Gas routinely purchases gas supplies for its Nevada customers rose from slightly over \$2.60/Dth at the beginning of February 2021 to prices that exceeded \$160.00/Dth on February 17, 2021. After winter storm Uri concluded, prices fell quickly, back to well under \$3.00/Dth by February 25, 2021. In my experience, these price increases were unprecedented -- I personally had never seen daily gas prices that high in the Rocky Mountain production regions in the almost 30 years since the Federal Energy Regulatory Commission deregulated natural gas prices. On March 24, 2021, Southwest Gas personnel briefed Regulatory Operations Staff of the Commission (Staff) and the Bureau of Consumer Protection (BCP) on winter storm Uri and the impact the high daily market prices had on the Company's gas

1 purchase costs for February 2021 and how those costs translated into higher
2 BTER/DEAA rates.

3 Given the extreme volatility in the daily market price for gas supplies caused
4 by winter storm Uri, the changes referenced on Exhibit No.__(JRO-2) were made
5 to help Southwest Gas personnel identify potential critical weather events or
6 market pricing anomalies that could lead to supply disruptions or daily gas price
7 increases, such as much of the United States experienced during winter storm Uri.
8 These changes may provide the ability to avoid some of the potential gas cost
9 increases that would accompany a future extreme weather event like Uri and more
10 importantly should assist in identifying the potential for such an event sooner and
11 to better allocate the Company's upstream resources to minimize the risk that a
12 supply failure would create the need to curtail customer load.

13 Southwest Gas believes that these procedure and process changes are
14 reasonable and prudent and may help to 1) identify market anomalies and critical
15 weather events; 2) prepare for those conditions; and 3) reduce the potential for
16 supply disruptions.

17 **IV. VOLATILITY MITIGATION PROGRAM (VMP) PURCHASE LEVEL**

18 **Q. 15 What is the purpose of the Nevada VMP?**

19 A. 15 The primary purpose of the Nevada VMP has always been to mitigate the short-
20 term volatility in customers' rates. Prior to changes in the Company's gas cost
21 recovery ratemaking provisions (e.g., the implementation of quarterly BTER and
22 DEAA adjustments), the Nevada VMP was the method Southwest Gas used to
23 mitigate customer rate volatility.

24 **Q. 16 Did Southwest Gas make any Nevada VMP purchases during the Covered**
25 **Period?**

26 A. 16 No. Southwest Gas suspended purchases under the VMP in early 2013 and
27 Nevada VMP purchases have since remained suspended.

1 **Q. 17 What is the Nevada VMP purchase level for periods beyond the Covered**
2 **Period?**

3 A. 17 Unless the Company reinstates Nevada VMP purchases, the Nevada VMP
4 purchase level will remain at zero percent for periods beyond the Covered Period.

5 **Q. 18 If the Nevada VMP purchase level remains at zero percent, what is Southwest**
6 **Gas' strategy to mitigate the volatility in customers' rates going forward?**

7 A. 18 The Company will continue to rely on the quarterly adjustments to the BTER and
8 the DEAA, which have been shown to provide short-term customer rate volatility
9 mitigation. Southwest Gas continues to analyze, on a quarterly basis, the
10 customer rate volatility mitigation effects of these gas cost recovery rate
11 mechanisms and discusses the results of those analyses with Staff and the BCP.

12 **Q. 19 Is there a process through which Southwest Gas could lift the suspension**
13 **of the Nevada VMP?**

14 A. 19 Yes. The Commission's Orders in Docket Nos. 13-06006 and 19-06006 require
15 Southwest Gas to review certain natural gas market fundamentals at least
16 quarterly and decide whether to continue the suspension of Nevada VMP
17 purchases or to lift that suspension. Once the Company makes that decision, it is
18 required to notify Staff and the BCP of its decision and required to meet with Staff
19 and the BCP biannually to discuss natural gas market fundamentals, as well as
20 the decision either to continue the suspension of further Nevada VMP purchases
21 or to resume those purchases.

22 **Q. 20 Did Southwest Gas perform the quarterly natural gas market fundamental**
23 **assessments during the Covered Period?**

24 A. 20 Yes. The Company completed those quarterly assessments from the second
25 quarter of 2019 through the first quarter of 2020. Based on those assessments,
26 Southwest Gas decided each quarter to continue the suspension of the Nevada
27 VMP. Exhibit No.__(JRO-5) documents the quarterly market assessments as well

as documentation of the Company's quarterly decisions applicable to this Covered Period.

Q. 21 Did Southwest Gas meet at least biannually during the Covered Period with Staff and the BCP to discuss natural gas market fundamentals and present its decisions in compliance with the relevant directive in the Commission's Orders in Dockets No. 13-06006 and 19-06003?

A. 21 Yes. On June 30, 2020, December 15, 2020, and August 11, 2021, Southwest Gas met with Staff and BCP and presented an assessment of market fundamentals, including a discussion of current gas storage levels, forward prices of various basins, rig counts, and other relevant information. In addition, on October 1, 2020 and March 25, 2021, Southwest Gas forwarded a Gas Market Fundamentals Review document to Staff and BCP for their review.

Q. 22 Did either Staff or the BCP object to Southwest Gas' decisions to continue the suspension of Nevada VMP purchases at any time during the Covered Period?

A. 22 No.

Q. 23 If Southwest Gas purchased VMP supplies for gas that flowed during the Covered Period, would the gas cost increase that occurred during winter storm Uri have been reduced?

A. 23 No. The gas cost increase experienced during winter storm Uri was directly related to increases in the daily market prices for gas. The daily gas purchase quantity made during winter storm Uri at those high daily prices would have been the same with or without the suspension of VMP purchases. This is because the quantity of gas supplies the Company previously baseloaded under the VMP are essentially the same quantities the Company now baseloads and purchased under the Baseload Supply Plan (BSP). As explained below, those BSP purchases were made at first of the month prices, which were well below the high daily market

prices the Company needed to purchase during winter storm Uri to meet daily demands above the baseloaded BSP quantities. Consequently, if the Company had made VMP purchases during February 2021 instead of BSP purchases, the quantity of daily gas purchases, and the price paid for those daily gas purchases, would have been essentially equal to what occurred.

V. BASELOAD SUPPLY PROGRAM (BSP)

Q. 24 Please explain the purpose of the BSP.

A. 24 The BSP identifies and secures firm first of month indexed-price baseload contracts that increase supply reliability and supplier diversity and reduce the risk of index premiums “blowing out” by making purchases periodically during the year preceding the start of a portfolio period. A portfolio period begins November 1st of any year and continues through October 31st of the following year. The Company makes BSP purchases in the same or similar quantity to purchases previously made under the VMP. The major difference between VMP and BSP purchases is that BSP pricing is at first of month indexed-prices, while VMP purchases were at fixed-prices (or a combination of a Fixed-for-Floating-index Swaps (FFS) and a first of month indexed-price purchase).

Q. 25 How do BSP purchases increase supply reliability?

A. 25 BSP purchases increase supply reliability in the same manner as VMP purchases — both are firm baseload purchases that include liquidated damages for supplier non-performance.

Q. 26 Why is increasing supplier diversity important?

A. 26 Having a portfolio that includes a diverse group of gas suppliers reduces the risk that the non-performance or failure of one of those gas suppliers would create a gas supply shortage or increase gas costs through the need to purchase higher priced replacement supplies, when compared to a portfolio that includes a single or few gas suppliers.

1 **Q. 27 How does the BSP increase supplier diversity?**

2 A. 27 The BSP increases supplier diversity by breaking the total quantity of required
3 baseload supplies into smaller quantities and purchasing those smaller quantities
4 through a competitive bidding process over a period of months, rather than
5 purchasing the full quantity of required baseload supplies all at once. This process
6 provides each of the Company's gas suppliers multiple opportunities to participate
7 in the bidding and increases the likelihood that the Company will select multiple
8 suppliers to fulfill its BSP requirements. This process also creates competition
9 between the Company's suppliers which helps to minimize gas purchase costs.

10 **Q. 28 How does the BSP reduce the risk of index premiums "blowing out"?**

11 A. 28 The Company's experience is that index premiums can vary from month-to-month
12 and from year-to-year based on changes in the supply/demand balance in the
13 geographic region where gas supplies are being purchased. By breaking down
14 the total quantity of required baseload supplies into smaller quantities and
15 purchasing those smaller quantities through a competitive bidding process over a
16 period of months, as is done through the BSP, the Company ensures that it has
17 multiple looks at the market and the associated index premiums. Therefore, there
18 is a reduced risk of making all those smaller purchases during a period of index
19 premium "blow out," when compared to making the required baseload purchases
20 at one point in time.

21 **Q. 29 Does the Company believe the BSP is a reasonable program for purchasing**
22 **a portion of the first of month indexed-price firm gas supplies that are**
23 **included in the Nevada gas supply portfolios?**

24 A. 29 Yes.

25 **Q. 30 Did the BSP provide any other benefits during the Covered Period?**

26 A. 30 Yes. During winter storm Uri, daily gas prices increased to over \$160/Dth. Given
27 that the BSP gas supply prices were based on first of the month index prices, the

price paid for the BSP supplies remained at the lower first of the month prices, which were under \$3/Dth. Consequently, first of the month priced BSP supplies helped to keep the overall cost of gas supplies during winter storm Uri lower than if the Company had solely relied on daily priced gas supplies.

Q. 31 Did the BSP supplies prove to be reliable during winter storm Uri?

A. 31 Yes. Southwest Gas experienced very few cuts in supplies for its Nevada customers during winter storm Uri and during the remainder of the Covered Period. As a result, Nevada customers were never in jeopardy of being curtailed during that period of extreme cold in the central United States.

VI. OTHER DERIVATIVE TRANSACTIONS

Q. 32 If Southwest Gas determines that further Nevada VMP purchases are required, would the Company consider derivative transactions other than the FFS transactions it previously utilized when making VMP purchases?

A. 32 No. Southwest Gas has not identified any additional desirable derivative transactions. Consequently, should the Company reinstate Nevada VMP purchases, there are no plans to expand the use of financial transactions beyond FFS transactions. Per the stipulation in Docket No. 06-05018, Southwest Gas will hold a workshop with Staff, the BCP, and any other parties to that docket, if conditions change and other types of derivative transactions become desirable.

VII. UPSTREAM INTERSTATE RESOURCES

Q. 33 Were there any substantive modifications to the Company's upstream interstate pipeline contracts that took effect during the Covered Period for its southern Nevada service territory?

A. 33 No.

Q. 34 Did Southwest Gas procure any incremental upstream interstate resources during the Covered Period for its southern Nevada service territory?

A. 34 Yes. In October 2019, southern Nevada experienced cold weather starting on

October 27th and extending through October 30th. It is my understanding that prior to this cold weather, the October extreme heating degree day (HDD) for southern Nevada was 19.0 but on October 30, 2019 a 20.5 HDD was recorded for southern Nevada.¹ In 2020, the Company's Demand Planning group updated its long-range forecast utilizing the new extreme October 2019 weather. This forecast update increased the October extreme peak day requirement by almost 100,000 Dth/day, which was well above the then current available upstream resources (i.e. a combination of interstate capacity and delivered gas supplies) that Southwest Gas had under contract. As a result of this October shortfall in upstream resources, Southwest Gas issued a request for proposal (RFP) for bundled delivered peaking supplies. Southwest Gas received multiple responses to that RFP and it completed multiple short-term bundled delivered peaking supply transactions, as summarized in the table below.

<u>Supplier</u>	<u>Exhibit No.</u>	<u>October 2020</u> (Dth/day)	<u>October 2021</u> (Dth/day)	<u>October 2022</u> (Dth/day)
Hartree	19-93-SNV	18,500	19,500	0
Encarnacion	19-94-SNV	30,000	30,000	30,000
Direct Energy	19-95-SNV	20,000	20,000	0
CIMA	19-96-SNV	20,000	20,000	20,000
CIMA	19-97-SNV	10,000	10,000	10,000
	Total	98,500	99,500	60,000

These contracted bundled delivered peaking supplies are reasonable and prudent transactions that meet the newly identified October extreme peak day requirement over the short-term. However, additional RFPs will be required as the

¹ See Southwest Gas Corporation's Comments in Response to Procedural Order No. 3, PUCN Docket No. 19-12019, April 14, 2021, 12:6 – 9.

contracted transactions only fully cover the October extreme peak day demand through October 2021 and only partially cover the October 2022 extreme peak day demand.

Q. 35 Did the Company enter any new upstream interstate pipeline contracts during the Covered Period for its northern Nevada service territory?

A. 35 Yes. For the northern Nevada service territory, the Company completed a new transportation service agreement (TSA) with Tuscarora (TSA 385_01). The start date of that TSA began November 1, 2021, so obligations under this new TSA and the associated costs are not included in this ARA application but will be considered in future Southwest Gas ARA proceedings.

Q. 36 Did Southwest Gas procure any incremental upstream interstate resources from Great Basin during the Covered Period?

A. 36 No.

Q. 37 Other than the Tuscarora TSA you previously mentioned, did Southwest Gas procure any upstream interstate resources on pipelines other than Great Basin during the Covered Period for its northern Nevada service territory?

A. 37 Yes. The Company entered into multiple agreements with Ruby Pipeline (Ruby) for short term, firm, seasonally shaped transportation service. The following table summarizes these Ruby TSAs.

<u>Ruby TSA</u>	<u>Dth/Day</u>	<u>Start Date</u>	<u>End Date</u>	<u>Rate</u>
217025	21,000	04/01/2020	04/30/2020	\$1.5208/Dth/Month
217027	5,000	05/01/2020	05/31/2020	\$1.5208/Dth/Month
217028	2,000	06/01/2020	06/30/2020	\$1.5208/Dth/Month
217029	2,500	09/01/2020	09/30/2020	\$1.5208/Dth/Month
217030	19,500	10/01/2020	10/31/2020	\$1.5208/Dth/Month

217532	15,600	11/1/2020	03/31/2021	\$1.8250/Dth/Month
217529	31,600	12/1/2020	02/28/2021	\$1.8250/Dth/Month
218322	15,000	04/1/2021	04/30/2021	\$1.5208/Dth/Month
218323	3,000	05/1/2021	05/31/2021	\$1.5208/Dth/Month
218327	2,000	06/1/2021	06/30/2021	\$1.5208/Dth/Month

The Company's northern California service territory also transferred a portion of its Great Basin capacity along the North Tahoe Lateral to Southwest Gas' northern Nevada service territory. For November 2019 through October 2020, the transfer was 210 Dth/day (gross). And for November 2020 through October 2021, the transfer was 343 Dth/day (gross).

Southwest Gas' northern Nevada service territory needed the additional capacity from these transfers because its capacity rights on Great Basin's North Lake Tahoe Lateral are insufficient to serve the forecasted extreme weather demands along that lateral. This transfer of available capacity from the Company's northern California service territory is a reasonable, prudent, and less expensive alternative to expanding Great Basin's North Lake Tahoe Lateral.

Q. 38 Why did Southwest Gas contract for Ruby transportation service during the Covered Period?

A. 38 The Company acquired short-term, firm, seasonally shaped Ruby transportation service referenced in the above table to replace the 41,535 Dth/day of NWPL capacity that it released for November 1, 2019 through October 31, 2021 and to meet the customers served in Elko off Great Basin's Adobe lateral.

1 **Q. 39 Was the Company's decision to release 41,535 Dth/day of NWPL capacity for**
2 **November 2019 through October 2021 and acquire replacement short-term,**
3 **firm, seasonally shaped Ruby capacity reasonable and prudent?**

4 A. 39 Yes. Releasing 41,535 Dth/day of year-around NWPL capacity at a \$0.28/Dth/day
5 rate for November 2019 through October 2020 and \$0.18/Dth/day for November
6 2020 through October 2021 and replacing that capacity with short-term, firm,
7 seasonally shaped Ruby capacity at either a \$0.05/Dth/day (\$1.5208/Dth/Month)
8 or a \$0.06/Dth/day (\$1.8250/Dth/Month) rate was the best-cost alternative
9 compared to not releasing the NWPL capacity and not acquiring the Ruby capacity.

10 **Q. 40 Were all the upstream resources that had costs recorded during the Covered**
11 **Period for Southwest Gas' Nevada service territories reasonable and**
12 **prudent?**

13 A. 40 Yes. The upstream resources, both interstate capacity and bundled delivered
14 supply arrangements, were needed to meet current or future forecasted customer
15 design-day requirements, consistent with the reliability and security of supply
16 portions of the Company's gas acquisition policy and were reasonable and
17 prudent. The Company's 2021 Nevada Annual Resource Planning Informational
18 Report (Report) filed with the Commission in June 2021 contains additional
19 information concerning interstate pipeline resources. Further, Section F of the
20 Report includes information related to the Company's plans to acquire upstream
21 resources in sufficient quantities to meet future growth during periods beyond the
22 Covered Period.

23 **VIII. MESQUITE VIRTUAL PIPELINE (MVP)**

24 **Q. 41 Did the Company serve Mesquite customers using a "virtual pipeline" during**
25 **the Covered Period?**

26 A. 41 Yes. In January 2019, a third-party Compressed Natural Gas (CNG) supplier
27 began providing service into the Company's Mesquite distribution system, known

as the “Mesquite Virtual Pipeline” or “MVP.” In February 2019, Southwest Gas began serving the Mesquite area with natural gas service. The Company served all Mesquite area customers from the beginning of the Covered Period until December 2020 utilizing the MVP.

Q. 42 When did Southwest Gas discontinue the use of the MVP to serve Mesquite customers?

A. 42 The Company discontinued the use of the MVP, on or about December 6, 2020, when construction of the pipeline and the interconnection to Kern River Gas Transmission was complete. Since that date, all gas supplies serving Mesquite customers have been delivered via the new Approach Main and the Mesquite Tap Site with Kern River Gas Transmission.

Q. 43 Did Southwest Gas incur any gas costs related to the MVP during the Covered Period?

A. 43 Yes. The costs associated with the MVP are shown on Exhibit No.__(JRO-6) in the lines labeled: “Purchases into Rawhide”; “RLC-PIPE Commodity”; and, “RLC-PIPE Reservation”. Rawhide was the supplier chosen from the competitive RFP process discussed in the prepared direct testimony of Company witness Christopher M. Brown in the Company’s 2019 ARA proceeding (Docket No. 19-06003). During the Covered Period the total gas costs related to the MVP were \$224,175.

Q. 44 Did the Stipulation in Docket No. 20-05028, the Company’s last ARA application, address any of the costs associated with the MVP?

A. 44 Yes. Paragraph 25 of the Stipulation in Docket No. 20-05028 provided that \$123,975 of the \$262,687 that was incurred for gas commodity and transportation during the previous covered period through the MVP should be reclassified from FERC Account No. 191 (Unrecovered Purchased Gas Costs) to FERC Account No. 186 (Miscellaneous Deferred Debits). The amount remaining in Account No.

191, \$138,712, was approved as set forth in the Stipulation.

The Stipulation provided that “Southwest Gas may request reclassification of the \$123,975 to FERC Account 191 in the Company’s 2021 Annual Rate Adjustment application based on an evaluation of the number of residential homes built in Mesquite and piped for natural gas.”

Q. 45 Has Southwest Gas performed “an evaluation of the number of residential homes built in Mesquite and piped for natural gas?”

A. 45 Yes. Exhibit No.__(JRO-7) charts the growth in the number of residential homes built in Mesquite and are piped for natural gas beginning in April 2020 and continuing through September 2021. Exhibit No.__(JRO-7) shows that when the Company discontinued use of the MVP on December 6, 2020, there were over seventy Mesquite residential customers being served by the MVP.

Q. 46 Were the \$123,975 in gas supply costs that were reclassified to FERC Account No. 186 reasonable and prudently incurred?

A. 46 Yes. As Exhibit No.__(JRO-7) shows, the number of residential homes built in Mesquite and piped for natural gas have consistently increased over time and the MVP was required to serve those residential customers as well as the commercial customers that were connected to the distribution system shortly after the MVP went into operation. The costs associated with the MVP during the Covered Period, as well as the \$123,975 that was previously reclassified, were reasonable and prudently incurred to serve Mesquite customers that ultimately used the gas supplies delivered through the MVP. Consequently, Southwest Gas requests that the \$123,975 be reclassified from FERC Account No. 186 back to FERC Account No. 191 to facilitate full recovery of the cost incurred on behalf of its customers in Mesquite.

1 **Q. 47 Was the Company's decision to contract with a supplier to provide the MVP**
2 **service during the Covered Period and the costs associated with the MVP**
3 **during the Covered Period reasonable and prudent?**

4 A. 47 Yes. Since Rawhide was selected through a competitive RFP process and was
5 the best-cost available supplier, the decision to contract with Rawhide for the MVP
6 pipeline service was reasonable and prudent. In addition, the MVP costs incurred
7 during the Covered Period were required to serve the customer growth in
8 Mesquite that occurred during the Covered Period, so those costs are reasonable
9 and prudent.

10 **IX. COST TRACKING PURSUANT TO COMMISSION ORDER IN DOCKET NO. 18-08016**

11 **Q. 48 Did Southwest Gas complete the quarterly imbalance charge cost tracking**
12 **required pursuant to the Commission Order in Docket No. 18-08016?**

13 A. 48 Yes. Southwest Gas tracked the costs referenced in ordering paragraphs 3 and
14 4 of the Commission Order in Docket No. 18-08016. The Company's quarterly
15 BTER and DEAA filing (quarterly BTER/DEAA filings) made on May 29, 2020,
16 August 31, 2020, November 30, 2020, February 26, 2021, May 28, 2021, and
17 September 31, 2021 included the results of that cost tracking in an identifiable
18 separate section in those filings. Exhibit No.__(JRO-8) summarizes the results of
19 the cost tracking included in those filings for the Covered Period.

20 **Q. 49 Does Southwest Gas have a proposal on how to assign and deal with the**
21 **costs identified in those filings?**

22 A. 49 Southwest Gas proposes to assign and deal with the noncompliance and
23 imbalance charges identified through the quarterly cost tracking requirements in
24 the manner specified in Schedule No. ST-1/NT-1 Section 6.9.c.5 and Section 7.6,
25 which require that charges received or paid by the Company be credited or
26 debited to Account No. 191, Unrecovered Purchased Gas Costs.

1 **Q. 50 Why does Southwest Gas propose to assign and deal with those identified**
2 **costs in that manner?**

3 A. 50 First, that is the manner the Company's Commission-approved Tariff states that
4 the costs should be treated. Second, Exhibit No.__(JRO-8) does not show that
5 any costs were shifted from the transportation customers to the sales customers
6 during the Covered Period. The total noncompliance and imbalances charges
7 collected by the Company during the Covered Period from transportation
8 customers was greater than the estimated cost of late-cycle gas supply that
9 Southwest Gas purchased that could possibly be attributed to transportation
10 customers' imbalance activities. Consequently, there is no need modify the
11 treatment of the identified costs from that prescribed in the Company's tariff which
12 provide a reasonable and prudent Commission-approved method for treatment of
13 the identified costs.

14 **Q. 51 Did the imbalance and noncompliance provisions of Schedule No. ST-1/NT-**
15 **1 function as anticipated during the Covered Period?**

16 A. 51 Yes. The imbalance and noncompliance provisions of Schedule No. ST-1/NT-1
17 functioned as deterrents to transportation customers creating excessive daily and
18 monthly imbalances between scheduled quantities and actual usage by creating
19 a disincentive to create excessive imbalances.

20 **X. GAS COSTS AND SUPPLY ACQUISITION FOR THE COVERED PERIOD**

21 **Q. 52 What gas cost information are you submitting with this testimony?**

22 A. 52 Exhibit No.__(JRO-6) consists of two summary "Actual Gas Purchases" sheets,
23 one for southern Nevada and one for northern Nevada, which show the cost
24 details, by type of cost, for the Covered Period. Exhibit No.__(JRO-6) itemizes all
25 gas purchase costs, upstream pipeline charges, capacity release credits and other
26 credits and adjustments for each jurisdiction.
27

Q. 53 What information is contained in Exhibit No.__(JRO-1)?

A. 53 Exhibit No.__(JRO-1) describes the Company's portfolio selection procedures, daily acquisition functions, and gas acquisition policy statement. It provides a detailed view of the gas supply acquisition functions.

Q. 54 What information is contained in Exhibit No.__(JRO-3)?

A. 54 Exhibit No.__(JRO-3) contains the Nevada Gas Supply Policy Statement that outlines the high-level policies supporting the Company's Nevada gas procurement efforts.

Q. 55 What information is contained in Exhibit No.__(JRO-4)?

A. 55 Exhibit No.__(JRO-4) contains the specific gas supply strategies and criteria for each Nevada jurisdiction.

Q. 56 Did the Company experience any out of the ordinary events during the Covered Period that affected gas prices?

A. 56 Yes. As previously mentioned, winter storm Uri caused a significant increase in the daily market prices in February 2021. Exhibit No.__(JRO-9) shows the daily market prices for February 2021 Rocky Mountain supplies and illustrates the dramatic increase in daily gas prices that occurred between February 12, 2021 and February 19, 2021. The increase in daily gas prices caused both northern and southern Nevada gas supply costs for February 2021 to increase well above the costs in the other months of the Covered Period. On March 24, 2021, Southwest Gas personnel met with Staff and BCP and discussed the increase in February 2021 daily gas prices and the impact those increased costs would have on the BTER/DEAA rates charged to customers. Exhibit No.__(JRO-10) includes a copy of the presentation from that March 24, 2021 meeting.

Q. 57 Were the northern and southern Nevada gas purchases made during February 2021 reasonable and prudent?

A. 57 Yes. Although the daily market prices during February 12, 2021 through February

1 19, 2021 were higher than previously experienced, the Company needed to
2 purchase those gas supplies to meet its customers' gas requirements.

3 For southern Nevada, where Southwest Gas does not have any access to
4 storage services, Southwest Gas needs to purchase the quantity of supplies
5 between the baseloaded quantity (generally procured pursuant to the BSP during
6 February) and the forecasted customer demand in the daily markets at daily
7 market prices. If Southwest Gas had not purchased those high-priced supplies,
8 there would not have been enough gas supplies available to meet the Company's
9 obligation to serve its southern Nevada customers and there would have been a
10 very high likelihood of customer curtailments in southern Nevada.

11 For northern Nevada, Southwest Gas does have access to the LNG storage
12 service provided by Great Basin Gas Transmission Company. If Southwest Gas
13 had not purchased gas at the high daily market prices, it either would have curtailed
14 customer demand or vaporized a significant amount of the inventory from the LNG
15 facility. However, the LNG facility is not meant to be used as a method for
16 minimizing gas costs through the seasonal variability in gas prices.² The LNG
17 facility is meant to be used for peak-shaving or during supply disruptions that
18 threaten supply curtailments downstream of the LNG facility. Thus, Southwest
19 Gas had to weigh the high market prices against risk of depleting the inventory in
20 the LNG tank and not having sufficient inventory available to serve future demands
21 above available upstream interstate resource levels. As a result of the Company's
22 assessments, it prudently vaporized about 15,000 Dth during winter storm Uri.

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27 ² See Exhibit No.__(JRO-3), Nevada Gas Supply Policy Statement, p. 3 ¶ 5.c.

1 **XI. CONCLUSION**

2 **Q. 58 Were the Company's gas supply purchases and transportation purchases**
3 **and costs incurred during the Covered Period made pursuant to the**
4 **Company's policies, processes, and procedures in place at the time of**
5 **purchase?**

6 A. 58 Yes. The Company made the gas supply purchases and utilized the transportation
7 contracts in place during the Covered Period pursuant to the policies, processes,
8 and procedures in place at the time of each purchase.

9 **Q. 59 Does the combination of your prepared direct testimony and exhibits provide**
10 **an affirmative demonstration of the reasonableness and prudence of the gas**
11 **supply purchases and transportation purchases and costs incurred during**
12 **the Covered Period?**

13 A. 59 Yes. Prudent and reasonable gas supply and transportation acquisition for any
14 utility consists of a policy, a process, and procedures that are appropriate for that
15 utility, followed by adherence to the process and procedures to meet the goals set
16 forth in the policy.

17 The Portfolio Selection Procedures and Gas Acquisition Policy Statement
18 (Procedures and Statement), Exhibit No.__(JRO-1), provides a detailed view of
19 the many steps that are appropriate for Southwest Gas to use in the creation of a
20 reasonable and prudently acquired gas supply portfolio for its customers. The
21 Procedures and Statement set forth the responsibilities of the various parties and
22 departments in completing those steps for all categories of supply purchases, on
23 an annual, monthly, and daily basis.

24 Exhibit No.__(JRO-3) sets forth the high-level policy followed by the
25 Company when purchasing gas supplies and upstream resources for northern
26 Nevada and southern Nevada.

27 Exhibit No.__(JRO-4) provides the Nevada jurisdiction specific gas

1 purchase strategies and criteria and provides further support that the Company
2 has a reasonable set of policies and procedures in place to guide gas procurement
3 for the Nevada jurisdiction.

4 Finally, the Report filed with the Commission in June 2021 sets forth the
5 Company's upstream resource portfolio and shows how the Company needs those
6 resources to meet current and future customer design-day demands, furthering the
7 reliability and security of supply portions of the Company's gas acquisition policy.

8 Southwest Gas purchased its gas supply, procured upstream transportation
9 resources, and managed and performed under its previously contracted for
10 transportation resources during the Covered Period pursuant to the process and
11 procedures set forth in Exhibit Nos.__(JRO-1) and (JRO-4), and with the
12 information and knowledge available at the time purchases were made. The
13 upstream transportation capacity in place during the Covered Period is essential
14 for meeting current and future customer design-day demands. Further, the
15 purchases for the Covered Period were consistent with this Commission's
16 previously issued directives and orders. Consequently, the purchases and costs
17 for the Covered Period are reasonable and prudent.

18 **Q. 60 Does this conclude your prepared direct testimony?**

19 **A. 60** Yes.
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SUMMARY OF QUALIFICATIONS

JOHN R. OLENICK

I hold a Bachelor of Science degree in Chemistry from the University of Nevada Las Vegas and a Juris Doctorate degree from the Williams S. Boyd School of Law, University of Nevada Las Vegas. I am licensed to practice law in the State of Nevada, the United State District Court for the District of Nevada, and the United States Court of Appeals for the Ninth Circuit.

I first worked for Southwest Gas Corporation between February 1988 and June 1993. During that period I held the positions of Gas Dispatch Technician, Regulatory Analyst, and Gas Control Technician. My primary responsibilities during this period included the control and monitoring of the Southern Nevada natural gas distribution and transmission systems; analyzing gas supply and transportation contracts using linear optimization models, summarizing results, and recommending least cost alternatives; and, the daily and monthly administration of tariffs related to the transportation of customer secured gas supplies.

In June 1993 I began work at Nevada Power Company where I held the positions of Fuels Analyst and Manager Gas & Oil Procurement. My primary responsibilities included the daily purchasing and scheduling of Nevada Power Company's natural gas fuel requirements, soliciting, negotiating, and contracting for gas supply and transportation resources for Nevada Power Company's natural gas and oil related fuel requirements; and, the administration of gas and oil supply and transportation contracts.

After leaving Nevada Power in November 1999, I entered law school. Starting in January 2002, I was employed by Ryan Marks Johnson & Todd, first as a law clerk where my responsibilities included drafting motions, oppositions, discovery requests and answers, researching legal issues, and drafting memorandum summarizing research and recommendations. After graduation and passing the Nevada Bar exam, I was promoted to Associate Attorney and my responsibilities included defending residential construction subcontractors in lawsuits involving construction defect claims.

In January 2005, I started at Morris Pickering & Peterson where I defended business entities in litigation concerning real estate escrow transactions, multifamily residential financing agreements, personal injury claims, products liability, and contract disputes.

In May 2007 I returned to work at Southwest Gas Corporation where I previously held the positions of Manager/Gas Purchases & Transportation and Senior Manager/Gas Purchases & Transportation. In February 2014, I was promoted to Director/Gas Supply. My responsibilities include soliciting, negotiating, and contracting for the gas supply and transportation resources required to meet the needs of the Southwest Gas Corporation's core customers. I am also responsible for nominations and confirmations of gas supplies on upstream interstate pipelines and the confirmation of all gas supplies at the delivery points into Southwest Gas Corporation's distribution system and the scheduling of those supplies to the Company's customers. Finally, I have responsibility for the support of the Gas Transaction System that Southwest Gas Company uses to track gas purchases, transportation capacity, nominations, confirmations, scheduled quantities, and the settlement of gas procurement transactions.

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Limits and Controls

Southwest's Gas Purchases & Transportation (GP&T) personnel (Administrator, Sr. Analyst, and Manager), as well as the Director/Gas Supply, are authorized to enter into specific gas supply transactions based upon the authority outlined in this document or the Gas Purchasing Authorization and Limits document. With regard to one month or less spot purchases, although each of the authorized personnel are assigned a specific service territory(ies) and generally only purchase gas supplies for the assigned service territory(ies), authorized personnel may complete purchases for any of the Company's service territories. Authorized personnel shall forward any questions concerning the authority to enter into a specific transaction to management or senior management prior to entering into such transaction to ensure authorized personnel do not exceed authority levels. Authorized personnel may not enter into unauthorized gas supply transactions without the approval of management or senior management.

Solicitation of Firm Term Bids

1. GP&T consults with Gas Resources Planning (GRP) to identify the input variables required by the computer model or other analyses GRP will use in the upcoming portfolio evaluation process.
2. In consideration of GRP modeling and other analytical needs, requisite non-modeled contractual details, and concerns for respondent understandability, GP&T fashions a solicitation designed to maximize the quantity, quality, and diversity of proposals received and Southwest's ability to evaluate such proposals effectively.
3. The firm term solicitation requests index-based supply pricing.
4. GRP attempts to evaluate all responsive term proposals received. The primary tool used for evaluating the proposals is a computer-based optimization modeling program. If GRP cannot model a proposal as submitted, GRP will use other available tools to evaluate such proposals. In cases where a supplier submits a proposal with attributes that GRP cannot enter into the model, a surrogate may be used that conforms to the parameters outlined in the bid solicitation guidelines, subject to any model design limitations.
5. If proposals that appear incomplete, unclear, internally inconsistent, or not within the scope of the solicitation, GP&T will seek supplier clarification. Southwest removes proposals that suppliers cannot sufficiently clarify for evaluation from further consideration. GRP and GP&T will maintain appropriate documentation as to the

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reason(s) when a proposal is removed from evaluation.

Evaluation of Firm Term Supplies

1. Preparation for Evaluation
 - a) Evaluation Engineers from GRP create a new model set-up for each rate jurisdiction that requires modeling. Space is set-aside in the model for existing and future fixed-price contract commitments procured through the VMP or APSP programs. The minimum daily quantities are dependent on each rate jurisdiction's needs. However, the minimum daily quantities are subject to revision at any time during the analysis to reflect changing market conditions and experienced management judgment.
 - b) Southwest's interactive bid program creates a database that contains the electronic bid forms submitted by suppliers.
 - c) Evaluation Engineers review bids for clarity and convert price statements into modeling equation coefficients. GRP returns any bids that appear incomplete, unclear, or internally inconsistent to GP&T for clarification, as noted above. Any proposal that GP&T cannot sufficiently clarify for evaluation will be removed from further consideration.
 - d) All bids accepted for consideration will be sorted by rate jurisdiction, term, and type to facilitate modeling.
 - e) Special cases will receive appropriate treatment.
2. At this point, GP&T and GRP presents all offers or surrogates for management and senior management review and an iterative selection and negotiation process begins to identify and secure the best cost portfolio considering price, reliability, and resource mix.
3. Modeling identifies the lowest cost portfolio components from the available bids, based upon portfolio requirements.
 - a) GRP uses demand forecasts developed by the Demand Planning department in the modeling, with minor exceptions as deemed necessary to meet supply reliability goals.

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- b) GRP bases monthly price levels for modeling on forward market conditions with adjustments necessary for specific location or seasonal decision support.
- 4. The Vice President/Gas Resources is authorized to accept offers for inclusion in the portfolio based upon model results and qualitative considerations with and without negotiated improvement.
- 5. Southwest shall keep a list of attendees that are present during meetings where the Vice President/Gas Resources selects and approves Firm Term Supplies for inclusion in the portfolio.
- 6. GRP converts supplies already contracted and bids authorized during the evaluation process to "existing" status in its models. The iterative selection process then continues until Southwest contracts for sufficient gas supplies to meet requirements for each jurisdiction.

VMP and APSP Solicitation Overview

Apart from the Firm Term Supplies, Southwest may request fixed-price proposals for inclusion in the portfolio as part of the Nevada Volatility Mitigation Program (VMP), the California VMP, and Arizona Price Stability Program (APSP), collectively "Volatility Mitigation Purchases." Similar programs may be conducted for Southwest's other rate jurisdictions as management deems appropriate. Volatility Mitigation Purchases are programmatic hedges designed to mitigate the volatility in gas supply prices that Southwest's customers experience when Southwest passes prudently incurred gas costs along to its customers. In late 2013, Southwest suspended Nevada VMP purchases and reviews that decision quarterly. Should Southwest reinstate Nevada VMP purchases, it will utilize the processes and procedures outlined in this document in making those purchases.

Volatility Mitigation Purchases involve periodic solicitations and purchases for various future purchase periods. GP&T and GRP, with Senior Management input, jointly determine the dates for issuing the solicitations and the Volatility Mitigation Purchases plan outlines expected volumes for the next two portfolio years. The scope of the fixed-price Volatility Mitigation Purchase solicitations is limited when compared to the general firm term bid solicitation. Southwest narrowly tailored the structure of Volatility Mitigation Purchase solicitations to minimize evaluation and acceptance response times and permit respondent suppliers to minimize risk, therefore encouraging participation. Further, Southwest designs the Volatility Mitigation Purchase solicitations to allow direct competition between fixed-price physical gas supplies and financial fixed-for-floating index swaps that provide the same level of volatility

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mitigation.

GP&T creates solicitations for fixed-price physical gas supplies, indexed-price physical gas supplies, and financial fixed-for-floating index swaps specific to each jurisdiction and delivery period, and distributes such to physical gas and financial product suppliers. These solicitations identify market areas, receipt locations, purchase periods, and applicable indexes for indexed-price physical gas supplies and financial fixed-for-floating index swaps, as well as setting forth the response date and time deadlines. Southwest shall keep a list of attendees that are present during the solicitation process meetings where the Vice President/Gas Resources selects and approves Volatility Mitigation supplies for inclusion in the portfolio. Upon receipt of offers, Southwest ranks those offers by price and contracts for the best-price supplies to meet the Volatility Mitigation Purchase requirements. The Vice President/Gas Resources is authorized to accept the best-priced supply option for inclusion in the portfolio.

Baseload Supply Program (BSP) Overview

The purpose of the BSP is to identify and secure firm first of month indexed-price baseload contracts that increase supply reliability and supplier diversity and reduce the risk of index premiums “blowing out” by making purchases periodically during the year preceding the start of a particular Portfolio Period. Southwest solicits BSP proposals for Northern and Southern Nevada and Arizona service territories. The Company typically schedules solicitations every three to six weeks throughout the year until the projected baseload requirements are met. The Vice President/Gas Resources is authorized to approve BSP purchases up to limits set forth in the Gas Purchasing Authorization and Limits document. Should Southwest reinstate Nevada VMP purchases or Arizona APSP purchases, the level of BSP purchases will be adjusted to prevent a situation where base loaded gas supplies exceed minimum forecasted demands.

During a BSP solicitation, Southwest receives physical indexed-price offers via instant messaging (IM) and requests that suppliers hold their offer open for five minutes. Once Southwest receives all of the offers, the five-minute window begins and the most attractive offer is identified. When Southwest selects an offer, the Gas Buyer contacts the supplier via a recorded phone line and verbally confirms each purchase.

Monthly/Daily Spot Purchases (One month or less)

1. GP&T determines monthly spot gas (baseload for no more than one month) purchase requirements for each service territory prior to the first of each month. The forecasted

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minimum day for the month for which GP&T is purchasing monthly supplies is the starting point to determine the monthly spot gas purchase requirement for each service territory. GP&T subtracts the total available baseload supplies (Volatility Mitigation Purchases and Firm Term Portfolio Purchases) from the forecasted minimum day to determine the gross monthly spot purchase requirement. With the exception of the Southern California service territory, the gross monthly spot purchase requirement for each service territory will be zero for the winter months (November through March) because available baseload supplies should equal the forecasted minimum day. After considering economic, contractual, and operational considerations, GP&T then adjusts the gross monthly spot purchase requirement to determine the monthly spot purchase requirement. Authorized personnel may contract for supplies selected to meet the monthly spot purchase requirement for each service territory.

2. GP&T issues a solicitation outlining monthly spot purchase requirements to suppliers. This solicitation identifies the market areas, receipt locations, and purchase periods, as well as setting forth the response date and time deadlines. When GP&T receives the offers from suppliers, GP&T sorts those offers by jurisdiction and ranks the offers by price. GP&T compares the best prices to those prices available on internet trading platform(s). GP&T contracts for the best price supply available to meet the projected purchase requirements. GRP personnel act as an independent observer/participant for the monthly spot gas purchase process.
3. GP&T determines, on a daily basis, the daily spot gas purchase requirements for each jurisdiction based on economic, contractual, and operational considerations. GP&T then gathers market intelligence through communications with prospective suppliers, monitoring internet trading platform(s), and reviewing other industry pricing information to determine daily marketplace price parameters. GP&T continues to monitor market price fluctuations throughout the daily trading period and modifies offer acceptance threshold levels based on these market fluctuations. GP&T reviews available firm term contract supplies/prices and determines what, if any, opportunities are available to flex firm term contract volumes up or down based on prevailing spot market prices. GP&T reviews daily system demand forecast and monitors for upcoming anomalies in weather that could cause potential supply disruptions due to operational constraints. GP&T continues this iterative process until daily spot purchase requirements for each service territory are met. Authorized personnel may contract for

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daily spot market supplies to meet the daily spot market requirement, as determined below through the Daily Purchase and Nomination Procedures.

Daily Purchase and Nomination Procedures

The following constitutes a general procedure for acquiring and nominating gas supplies for each nomination and scheduling cycle. GP&T follows these steps after the previously detailed Firm Term Supplies, firm fixed-price Volatility Mitigation Purchases, and monthly spot supplies have been contracted and are available for nomination.

1. Survey current spot market prices. Identify pricing anomalies beyond standard market timing issues and research why the anomalies are occurring. At that time, the GP&T team will determine the best approach to mitigate the cost of unexpected price fluctuations resulting from these anomalies. Modify offer acceptance threshold based on these market fluctuations.
2. Review daily system demand forecast from the GasDay forecasting service for the assigned service territory. The daily forecast is the starting point for determining an authorized personnel's authority to purchase daily supplies. The GasDay forecast is available on demand at: <https://gasdayswgas.azurewebsites.net/login.html>. Assess the daily system demand forecast for reasonability and adjust expected demand as deemed necessary based on recent performance.
3. Review the available firm term and baseload supplies Southwest currently has contracted for each service territory.
4. Monitor for upcoming critical weather events which could cause operational constraints leading to supply disruptions. When a critical weather event is identified, the GP&T team will determine the best strategy to adjust for the potential operational constraints. Make necessary daily system demand forecast adjustments to account for potential supply disruptions for critical weather events identified.
5. Review pipeline imbalance activity to determine if a deviation from Gas Control's daily system demand forecast is necessary or desired to counteract any imbalance trends.
6. Determine if any further deviation from Gas Control's daily system demand forecast is necessary to accommodate any requests or demands for action communicated from upstream pipelines or to comply with pipeline balancing tariffs.

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7. Review available upstream pipeline capacity availability for the flow day for which supplies are being purchased.
8. Review past nomination activity and results.
 - a) Review most recent pipeline scheduling reports to identify any instances of nonperformance on nominated supplies.
 - b) In cases of nonperformance, identify the cause of the nonperformance.
 - c) Determine if it is necessary or desirable to have the involved supplier re-nominate the shortfall.
 - d) If re-nomination is desirable, contact supplier to make re-nomination arrangements.
 - e) Enter re-nominations into internal nomination systems.
 - f) Review pipeline reports for results of any prior re-nomination attempts.
 - g) If re-nomination efforts were partially unsuccessful, repeat Steps 6(c) through 6(f), as appropriate.
9. Determine estimated daily spot gas requirements in light of the preceding steps. Authorized personnel may contract for daily spot market supplies to meet the requirements so determined for each assigned service territory.
10. Gather market intelligence by receiving calls from and making calls to prospective suppliers and monitoring electronic messaging, internet trading platform(s), and other industry pricing information to determine daily price parameters available in the marketplace.
11. Monitor market price fluctuations throughout the daily trading period and modify offer acceptance threshold based on these market fluctuations.
12. Review available firm term contract supplies/prices and determine what, if any, nomination changes from prior day should be made in consideration of opportunities to

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flex firm term contract volumes up or down based on prevailing spot market prices. authorized personnel are authorized to activate firm term supplies, up to the maximum available contract quantity, to meet the daily requirements of each service territory that is in excess of the baseload supplies.

13. Modify daily spot purchase requirement arrived at in Step 7 based on price observations made in Steps 8, 9, 10, and 11.
14. Enter daily nomination information in internal systems. Generate interstate nomination upload files, upload nomination files to each upstream interstate pipeline, and verify the nominations in the upstream interstate pipelines' scheduling systems. For upstream intrastate nominations, advise Gas Scheduling of the availability of the nomination information for further processing.
15. Print required transaction confirmations, review for accuracy, and sign.
16. Provide signed transaction confirmations to Analyst for further processing.
17. Review any transaction confirmation letters independently sent by supply representatives for accuracy, and follow up with supplier on errors.
18. Repeat all steps, as required, for each gas day's successive nomination and scheduling cycles.

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Limits and Controls

Southwest's Gas Purchases & Transportation (GP&T) personnel (Administrator, Sr. Analyst, and Manager), as well as the ~~Directory~~Director/Gas Supply, are authorized to enter into specific gas supply transactions based upon the authority outlined in this document or the Gas Purchasing Authorization and Limits document. With regard to one month or less spot purchases, although each of the authorized personnel are assigned a specific service territory(ies) and generally only purchase gas supplies for the assigned service territory(ies), authorized personnel may complete purchases for any of the Company's service territories. Authorized personnel shall forward any questions concerning the authority to enter into a specific transaction to management or senior management prior to entering into such transaction to ensure authorized personnel do not exceed authority levels. Authorized personnel may not enter into unauthorized gas supply transactions without the approval of management or senior management.

Solicitation of Firm Term Bids

1. GP&T consults with Gas Resources Planning (GRP) to identify the input variables required by the computer model or other analyses GRP will use in the upcoming portfolio evaluation process.
2. In consideration of GRP modeling and other analytical needs, requisite non-modeled contractual details, and concerns for respondent understandability, GP&T fashions a solicitation designed to maximize the quantity, quality, and diversity of proposals received and Southwest's ability to evaluate such proposals effectively.
3. The firm term solicitation requests index-based supply pricing.
4. GRP attempts to evaluate all responsive term proposals received. The primary tool used for evaluating the proposals is a computer-based optimization modeling program. If GRP cannot model a proposal as submitted, GRP will use other available tools to evaluate such proposals. In cases where a supplier submits a proposal with attributes that GRP cannot enter into the model, a surrogate may be used that conforms to the parameters outlined in the bid solicitation guidelines, subject to any model design limitations.
5. If proposals that appear incomplete, unclear, internally inconsistent, or not within the scope of the solicitation, GP&T will seek supplier clarification. Southwest removes proposals that suppliers cannot sufficiently clarify for evaluation from further

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consideration. GRP and GP&T will maintain appropriate documentation as to the reason(s) when a proposal is removed from evaluation.

Evaluation of Firm Term Supplies

1. Preparation for Evaluation
 - a) Evaluation Engineers from GRP create a new model set-up for each rate jurisdiction that requires modeling. Space is set-aside in the model for existing and future fixed-price contract commitments procured through the VMP or APSP programs. The minimum daily quantities are dependent on each rate jurisdiction's needs. However, the minimum daily quantities are subject to revision at any time during the analysis to reflect changing market conditions and experienced management judgment.
 - b) Southwest's interactive bid program creates a database that contains the electronic bid forms submitted by suppliers.
 - c) Evaluation Engineers review bids for clarity and convert price statements into modeling equation coefficients. GRP returns any bids that appear incomplete, unclear, or internally inconsistent to GP&T for clarification, as noted above. Any proposal that GP&T cannot sufficiently clarify for evaluation will be removed from further consideration.
 - d) All bids accepted for consideration will be sorted by rate jurisdiction, term, and type to facilitate modeling.
 - e) Special cases will receive appropriate treatment.
2. At this point, GP&T and GRP presents all offers or surrogates for management and senior management review and an iterative selection and negotiation process begins to identify and secure the best cost portfolio considering price, reliability, and resource mix.
3. Modeling identifies the lowest cost portfolio components from the available bids, based upon portfolio requirements.
 - a) GRP uses demand forecasts developed by the Demand Planning department in the modeling, with minor exceptions as deemed necessary to meet supply

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reliability goals.

- b) GRP bases monthly price levels for modeling on forward market conditions with adjustments necessary for specific location or seasonal decision support.
- 4. The Vice President/Gas Resources is authorized to accept offers for inclusion in the portfolio based upon model results and qualitative considerations with and without negotiated improvement.
- 5. Southwest shall keep a list of attendees that are present during meetings where the Vice President/Gas Resources selects and approves Firm Term Supplies for inclusion in the portfolio.
- 6. GRP converts supplies already contracted and bids authorized during the evaluation process to "existing" status in its models. The iterative selection process then continues until Southwest contracts for sufficient gas supplies to meet requirements for each jurisdiction.

VMP and APSP Solicitation Overview

Apart from the Firm Term Supplies, Southwest may request fixed-price proposals for inclusion in the portfolio as part of the Nevada Volatility Mitigation Program (VMP), the California VMP, and Arizona Price Stability Program (APSP), collectively "Volatility Mitigation Purchases." Similar programs may be conducted for Southwest's other rate jurisdictions as management deems appropriate. Volatility Mitigation Purchases are programmatic hedges designed to mitigate the volatility in gas supply prices that Southwest's customers experience when Southwest passes prudently incurred gas costs along to its customers. In late 2013, Southwest suspended Nevada VMP purchases and reviews that decision quarterly. Should Southwest reinstate Nevada VMP purchases, it will utilize the processes and procedures outlined in this document in making those purchases.

Volatility Mitigation Purchases involve periodic solicitations and purchases for various future purchase periods. GP&T and GRP, with Senior Management input, jointly determine the dates for issuing the solicitations and the Volatility Mitigation Purchases plan outlines expected volumes for the next two portfolio years. The scope of the fixed-price Volatility Mitigation Purchase solicitations is limited when compared to the general firm term bid solicitation. Southwest narrowly tailored the structure of Volatility Mitigation Purchase solicitations to minimize evaluation and acceptance response times and permit respondent suppliers to

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minimize risk, therefore encouraging participation. Further, Southwest designs the Volatility Mitigation Purchase solicitations to allow direct competition between fixed-price physical gas supplies and financial fixed-for-floating index swaps that provide the same level of volatility mitigation.

GP&T creates solicitations for fixed-price physical gas supplies, indexed-price physical gas supplies, and financial fixed-for-floating index swaps specific to each jurisdiction and delivery period, and distributes such to physical gas and financial product suppliers. These solicitations identify market areas, receipt locations, purchase periods, and applicable indexes for indexed-price physical gas supplies and financial fixed-for-floating index swaps, as well as setting forth the response date and time deadlines. Southwest shall keep a list of attendees that are present during the solicitation process meetings where the Vice President/Gas Resources selects and approves Volatility Mitigation supplies for inclusion in the portfolio. Upon receipt of offers, Southwest ranks those offers by price and contracts for the best-price supplies to meet the Volatility Mitigation Purchase requirements. The Vice President/Gas Resources is authorized to accept the best-priced supply option for inclusion in the portfolio.

Baseload Supply Program (BSP) Overview

The purpose of the BSP is to identify and secure firm first of month indexed-price baseload contracts that increase supply reliability and supplier diversity and reduce the risk of index premiums “blowing out” by making purchases periodically during the year preceding the start of a particular Portfolio Period. Southwest solicits BSP proposals for Northern and Southern Nevada and Arizona service territories. The Company typically schedules solicitations every three to six weeks throughout the year until the projected baseload requirements are met. The Vice President/Gas Resources is authorized to approve BSP purchases up to limits set forth in the Gas Purchasing Authorization and Limits document. Should Southwest reinstate Nevada VMP purchases or Arizona APSP purchases, the level of BSP purchases will be adjusted to prevent a situation where base loaded gas supplies exceed minimum forecasted demands.

During a BSP solicitation, Southwest receives physical indexed-price offers via instant messaging (IM) and requests that suppliers hold their offer open for five minutes. Once Southwest receives all of the offers, the five-minute window begins and the most attractive offer is identified. When Southwest selects an offer, the Gas Buyer contacts the supplier via a recorded phone line and verbally confirms each purchase.

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Monthly/Daily Spot Purchases (One month or less)

1. GP&T determines monthly spot gas (baseload for no more than one month) purchase requirements for each service territory prior to the first of each month. The forecasted minimum day for the month for which GP&T is purchasing monthly supplies is the starting point to determine the monthly spot gas purchase requirement for each service territory. GP&T subtracts the total available baseload supplies (Volatility Mitigation Purchases and Firm Term Portfolio Purchases) from the forecasted minimum day to determine the gross monthly spot purchase requirement. With the exception of the Southern California service territory, the gross monthly spot purchase requirement for each service territory will be zero for the winter months (November through March) because available baseload supplies should equal the forecasted minimum day. After considering economic, contractual, and operational considerations, GP&T then adjusts the gross monthly spot purchase requirement to determine the monthly spot purchase requirement. Authorized personnel may contract for supplies selected to meet the monthly spot purchase requirement for each service territory.
2. GP&T issues a solicitation outlining monthly spot purchase requirements to suppliers. This solicitation identifies the market areas, receipt locations, and purchase periods, as well as setting forth the response date and time deadlines. When GP&T receives the offers from suppliers, GP&T sorts those offers by jurisdiction and ranks the offers by price. GP&T compares the best prices to those prices available on internet trading platform(s). GP&T contracts for the best price supply available to meet the projected purchase requirements. GRP personnel act as an independent observer/participant for the monthly spot gas purchase process.
3. GP&T determines, on a daily basis, the daily spot gas purchase requirements for each jurisdiction based on economic, contractual, and operational considerations. GP&T then gathers market intelligence through communications with prospective suppliers, monitoring internet trading platform(s), and reviewing other industry pricing information to determine daily marketplace price parameters. GP&T continues to monitor market price fluctuations throughout the daily trading period and modifies offer acceptance threshold levels based on these market fluctuations. GP&T reviews available firm term contract supplies/prices and determines what, if any, opportunities are available to flex firm term contract volumes up or down based on prevailing spot market prices. GP&T reviews daily system demand forecast and monitors for upcoming anomalies in weather that could cause potential supply disruptions due to operational constraints. GP&T continues this iterative process until daily spot purchase requirements

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for each service territory are met. Authorized personnel may contract for

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daily spot market supplies to meet the daily spot market requirement, as determined below through the Daily Purchase and Nomination Procedures.

Daily Purchase and Nomination Procedures

The following constitutes a general procedure for acquiring and nominating gas supplies for each nomination and scheduling cycle. GP&T follows these steps after the previously detailed Firm Term Supplies, firm fixed-price Volatility Mitigation Purchases, and monthly spot supplies have been contracted and are available for nomination.

1. Survey current spot market prices. Identify pricing anomalies beyond standard market timing issues and research why the anomalies are occurring. At that time, the GP&T team will determine the best approach to mitigate the cost of unexpected price fluctuations resulting from these anomalies. Modify offer acceptance threshold based on these market fluctuations.
2. Review daily system demand forecast from the GasDay forecasting service for the assigned service territory. The daily forecast is the starting point for determining an authorized personnel's authority to purchase daily supplies. The GasDay forecast is available on demand at: <https://gasdayswgas.azurewebsites.net/login.html>. Assess the daily system demand forecast for reasonability and adjust expected demand as deemed necessary based on recent performance.
3. Review the available firm term and baseload supplies Southwest currently has contracted for each service territory.
4. Monitor for upcoming critical weather events which could cause operational constraints leading to supply disruptions. When a critical weather event is identified, the GP&T team will determine the best strategy to adjust for the potential operational constraints. Make necessary daily system demand forecast adjustments to account for potential supply disruptions for critical weather events identified.
- 4.5. Review pipeline imbalance activity to determine if a deviation from Gas Control's daily system demand forecast is necessary or desired to counteract any imbalance trends.
- 5.6. Determine if any further deviation from Gas Control's daily system demand forecast is necessary to accommodate any requests or demands for action communicated from

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upstream pipelines or to comply with pipeline balancing tariffs.

~~6.~~7. Review available upstream pipeline capacity availability for the flow day for which supplies are being purchased.

~~7.~~8. Review past nomination activity and results.

- a) Review most recent pipeline scheduling reports to identify any instances of nonperformance on nominated supplies.
- b) In cases of nonperformance, identify the cause of the nonperformance.
- c) Determine if it is necessary or desirable to have the involved supplier re-nominate the shortfall.
- d) If re-nomination is desirable, contact supplier to make re-nomination arrangements.
- e) Enter re-nominations into internal nomination systems.
- f) Review pipeline reports for results of any prior re-nomination attempts.
- g) If re-nomination efforts were partially unsuccessful, repeat Steps 6(c) through 6(f), as appropriate.

~~8.~~9. Determine estimated daily spot gas requirements in light of the preceding steps. Authorized personnel may contract for daily spot market supplies to meet the requirements so determined for each assigned service territory.

~~9.~~10. Gather market intelligence by receiving calls from and making calls to prospective suppliers and monitoring electronic messaging, internet trading platform(s), and other industry pricing information to determine daily price parameters available in the marketplace.

~~10.~~11. Monitor market price fluctuations throughout the daily trading period and modify offer acceptance threshold based on these market fluctuations.

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- ~~11.~~12. Review available firm term contract supplies/prices and determine what, if any, nomination changes from prior day should be made in consideration of opportunities to flex firm term contract volumes up or down based on prevailing spot market prices. authorized personnel are authorized to activate firm term supplies, up to the maximum available contract quantity, to meet the daily requirements of each service territory that is in excess of the baseload supplies.
- ~~12.~~13. Modify daily spot purchase requirement arrived at in Step 7 based on price observations made in Steps 8, 9, 10, and ~~10~~11.
- ~~13.~~14. Enter daily nomination information in internal systems. Generate interstate nomination upload files, upload nomination files to each upstream interstate pipeline, and verify the nominations in the upstream interstate pipelines' scheduling systems. For upstream intrastate nominations, advise Gas Scheduling of the availability of the nomination information for further processing.
- ~~14.~~15. Print required transaction confirmations, review for accuracy, and sign.
- ~~15.~~16. Provide signed transaction confirmations to Analyst for further processing.
- ~~16.~~17. Review any transaction confirmation letters independently sent by supply representatives for accuracy, and follow up with supplier on errors.
- ~~17.~~18. Repeat all steps, as required, for each gas day's successive nomination and scheduling cycles.



MEMORANDUM

To: File

From: Randy Gabe

Date: February 1, 2021

Subject: Nevada Gas Supply Policy Statement

This memorandum memorializes Southwest Gas Corporation's (Southwest Gas or Company) Gas Supply Policy for southern and northern Nevada. The scope of this policy includes the acquisition of gas supplies and the utilization of available storage resources.

Southwest Gas endeavors to acquire the best-cost portfolio considering price, reliability, flexibility, and protection from short-term market volatility, while still providing and securing supply to meet sales customer demands. Balancing these factors against the costs of competing resource alternatives determines the ever-changing "mix" (flexible and non-flexible, index and fixed-price, with and without interstate capacity, short-term, mid-term, and long-term) of the supply portfolio. The Company's portfolio includes spot market purchases (one month or less) term (firm, terms greater than one month but usually one year or less, including Baseload Supply Program (BSP) purchases), and possible firm volatility mitigation purchases. While most of the term contracts are annual or seasonal, Southwest Gas also considers longer-term alternatives.

Background:

As a result of the Order dated September 4, 1997 in Docket No. 97-6004, primarily "Commission's Decision" paragraph 58 and the subsequent Order dated November 26, 1997 in Docket Nos. 97-6004, 97-6005, and 97-2005, primarily "Commission's Decision" paragraphs 76, 79, 80, 81, 84, 86, 88 and "Order" item 8, Southwest Gas modified its System Supply Gas Acquisition Policy Statement for Nevada to include fixed-price contracts as part of a Volatility Mitigation Program (VMP). In 2008, Southwest Gas began soliciting for fixed-for-floating swaps as part of the VMP.

In late 2013, after consultation with personnel from the Public Utilities Commission of Nevada (PUCN) Staff and Bureau of Consumer Protection (BCP), Southwest Gas suspended VMP purchases for southern and northern Nevada. Pursuant to the Stipulation and Agreement in Docket No. 13-06006, the Company quarterly evaluates its hedging strategy and informs the PUCN Staff and the BCP of its hedging strategy decisions. Beginning with the 2014/2015 portfolio year, Southwest Gas replaced the VMP with the BSP.

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Southern Nevada Policy:

1. Southwest Gas purchases a portion of its Southern Nevada requirements through the BSP. BSP purchase prices are based on First of the Month (FOM) indexes. Solicitations for BSP purchases take place periodically up to one year in advance of flow.
2. Prior to each gas year (a gas year starts November 1st), Southwest Gas solicits for term index priced gas supply contracts (term portfolio solicitation). Through the term portfolio solicitation, the Company purchases peaking gas supplies needed to meet extreme peak day demands from November through March. The Company may also purchase other term gas supplies (e.g. baseload) during the term portfolio solicitation. Southwest Gas utilizes a portfolio optimization model when analyzing gas supply offers to endeavor to minimize costs. Typically, prices for peaking supply contracts purchased through the term solicitation will be based on daily indices.
3. Southwest Gas may also purchase other term supplies (i.e. purchases greater than one month). Additional term supply purchases may be baseload or peaking purchases, depending upon forecasted requirements, and are generally completed through solicitation processes to help ensure those purchases are made at then-current market prices.
4. Required gas supplies not purchased in the BSP, term portfolio, or other term solicitation will be purchased on the spot market. These spot purchases may occur during any month. To the extent possible, monthly baseload spot supplies will be purchased at prices based on FOM indexes and any spot purchases of less than one month in duration will be purchased at prices based on daily indexes.

Northern Nevada Policy:

1. Southwest Gas purchases a portion of its Northern Nevada requirements through the BSP. BSP purchase prices are based on FOM indexes. Solicitations for BSP purchases take place periodically up to one year in advance of flow.
2. Prior to each gas year, Southwest Gas conducts a term portfolio solicitation. Through the term portfolio solicitation, the Company purchases peaking gas supplies needed to meet extreme peak day demands from November through March. The Company may also purchase other term gas supplies (e.g. baseload) during the term portfolio solicitation. Southwest Gas utilizes a portfolio optimization model when analyzing gas supply offers to endeavor to minimize costs. Typically, prices for peaking supply contracts purchased through the term solicitation will be based on daily indices.
3. Southwest Gas may also purchase other term supplies (i.e. purchases greater

than one month). Additional term supply purchases may be baseload or peaking purchases, depending upon forecasted requirements, and are generally completed through solicitation processes to help ensure those purchases are made at then-current market prices.

4. Required gas supplies not purchased in the BSP, term portfolio, or other term solicitation will be purchased on the spot market. These spot purchases may occur during any month. To the extent possible, monthly baseload spot supplies will be purchased at prices based on FOM indexes and any spot purchases of less than one month in duration will be purchased at prices based on daily indexes.
5. Southwest Gas manages the use of its LNG storage service subject to the following guidelines:
 - a. Southwest Gas will endeavor to fill its LNG storage service to capacity prior to November 1 each year. Normal LNG boil off may result in slightly lower inventories on November 1. Each year, Southwest Gas will work with Paiute Pipeline Company (Paiute) to schedule LNG injections with consideration of economic goals and operational constraints.
 - b. Paiute may require liquefaction or vaporization to accommodate operating conditions of its LNG facilities (i.e. vaporization followed by liquefaction to correct weathering of the LNG in Paiute's tank). Given the critical nature such activities may have on maintaining the availability of the LNG service to provide reliable service to the Company's customers, the Company should coordinate with Paiute to: 1) verify the need for such activities; and, 2) endeavor to schedule such activities during periods that help to reduce the effect to the Company's gas supply portfolio.
 - c. LNG may be withdrawn at any time to meet changes in customer demands or upon request from Paiute during critical operating conditions other than as described in (b). LNG withdrawals will be limited to these uses and to normal boil-off. Due to the high variable cost of cycling LNG and the need to reserve inventories for reliability, Southwest Gas will not attempt to realize economic gain from seasonal price differentials.
 - d. Southwest Gas will perform an analysis during the term portfolio process described in (2) to determine if additional firm resources should be acquired to reserve LNG resources and avoid materially reducing LNG inventory levels during November or March. Such analysis will be repeated before the start of the winter season and additional firm resources may be acquired, if necessary, to meet customer demands under a best-cost portfolio.

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Cc: John Olenick
Eric Rost
Steve Williams
Laura Spurlock

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Gas Acquisition Policy Statement

Southwest endeavors to acquire the best-cost gas portfolio considering price, reliability, flexibility, and protection from short-term market volatility, while still providing security of supply to meet sales customer demands.

Southwest's portfolio of gas supplies includes acquisitions the Company identifies and selects pursuant to four programs:

"Volatility Mitigation Program" (VMP) – Firm contracts providing fixed-price supplies that Southwest acquires periodically throughout the year to mitigate short-term market price volatility. As of fall 2013, Southwest suspended further purchases under the VMP, will quarterly review this decision and inform the Public Utilities Commission Staff (PUCN Staff) and the Nevada Bureau of Consumer Protection (BCP) of the Company's decision.

"Baseload Supply Program" – (BSP) – Firm first of month indexed-price baseload contracts that increase supply reliability and supplier diversity and reduce the risk of index premiums "blowing out" by making purchases periodically during the year preceding the start of a particular Portfolio Period. A "Portfolio Period" is the period that starts on any particular November 1st and concludes on the following October 31st.

"Term Purchases" – Traditional firm contract supplies that Southwest usually selects during an annual solicitation. Proposals, or bids, for term purchases Southwest evaluates using a cost optimization model. This portion of the portfolio provides most of the flexible firm supplies that Southwest must have available for reliable service to its sales customers. Term Purchases generally have prices based on a market index.

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“Spot Purchases” – The short-term (one month or less) interruptible contract supplies, selected monthly and intra-monthly, that are integral to the “least cost dispatch” efforts. Spot purchases are made to fill daily requirements and/or in lieu of higher cost firm purchases. Spot Purchases have either fixed or index-based pricing.

Starting in February 2008, Southwest incorporated financial fixed-for-floating swaps into the VMP as a competitive alternative to fixed-price contracts. When the Company combines a financial fixed-for-floating swap with a purchase of firm index-priced gas, it achieves the same price mitigation as it previously achieved purchasing firm physical fixed-price gas supplies. Southwest fixed the price of indexed-price physical gas supplies through the use of fixed-for-floating swap transactions with supplies that began flowing on November 1, 2008, for the 2008/2009 Portfolio Period and this method was used in each successive Portfolio Period through the 2014/2015 Portfolio Period. However, pursuant to the suspension of Nevada VMP purchases in late 2013, the Company suspended the future acquisition of financial fixed-for-floating swaps and fixed-for-floating swap transactions have not been used for Portfolio Periods beyond the 2014/2015 Portfolio Period. The Company will revisit this decision concurrently with the quarterly review of its decision on VMP purchases.

Limits and Controls

Southwest’s Gas Purchases & Transportation (GP&T) personnel (Administrator, Sr. Analyst, and Manager), as well as the Director/Gas Supply, are authorized to enter into specific gas supply transactions based upon the authority outlined in this document, the Portfolio Selection Procedure document, or the Gas Purchasing Authorization and Limits document. With regard to one month or less spot purchases, although each of the authorized personnel are assigned specific service territory(ies) and generally only purchase gas supplies for the assigned service territory(ies), each authorized personnel are authorized to complete purchases for any of the Company’s service territories. Authorized personnel shall forward any

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questions concerning the authority to enter into a specific transaction to management or senior management prior to entering into such transaction to ensure authorized personnel do not exceed authority levels. Authorized personnel may not enter into gas supply transactions not authorized by this document, the Portfolio Selection Procedure document, or the Gas Purchasing Authorization and Limits document, without the approval of the Vice President/Gas Resources. This document, the Portfolio Selection Procedures document, and the Gas Purchasing Authorization and Limits document authorize the Vice President/Gas Resources to enter into these specific transactions.

Strategies and Criteria

Southwest endeavors to acquire the best-cost gas portfolio considering price, reliability, flexibility, and protection from short-term market volatility while still providing security of supply to meet sales customer demands. Balancing these factors against the costs of competing gas resource alternatives determines the ever-changing "mix" (flexible and non-flexible, index and fixed-price, with and without interstate capacity, short-term, mid-term, and long-term) of Southwest's supply portfolio. Southwest's "portfolio" has evolved to include spot market purchases (interruptible, one month or less), term (firm, generally one year or less), and firm volatility mitigation or baseload first of month indexed-price purchases. While most of the term contracts are annual or seasonal, Southwest also considers longer-term alternatives.

As mentioned above, Southwest identifies and selects a portfolio of gas supplies under four programs:

"Volatility Mitigation Program" (VMP) – Firm contracts providing fixed-price supplies that Southwest acquires periodically throughout the year to mitigate short-term market price volatility. As of Fall 2013, Southwest suspended further purchases under the VMP and will quarterly review this decision.

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“Baseload Supply Program” – (BSP) – Firm first of month indexed-price baseload contracts that increase supply reliability and supplier diversity and reduce the risk of index premiums “blowing out” by making purchases periodically during the year preceding the start of a particular Portfolio Period.

“Term Purchases” – Traditional firm contract supplies that Southwest usually selects during an annual solicitation. The Company evaluates proposals, or bids, for term purchases using a cost optimization model. This portion of the portfolio provides most of the flexible firm supplies that Southwest must have available to reliably meet its sales customers' peak-day demands. Term Purchases regularly have prices based on a market index.

“Spot Purchases” – The short-term (one month or less) interruptible contract supplies, selected monthly and intra-monthly, that are integral to the “least cost dispatch” efforts. Spot purchases are made to fill daily requirements and/or in lieu of higher cost firm supply alternatives. Spot Purchases have either fixed or index-based pricing.

Volatility Mitigation Program

The purpose of the VMP is to identify and secure contracts that will contribute to the mitigation of short-term market price volatility. The Company suspended Nevada VMP purchases in late 2013. Portfolio periods of 2015/2016 and beyond will not include any VMP purchases unless the Company reinstitutes Nevada VMP purchases. The Company will quarterly evaluate its gas hedging strategy and will meet with BCP and PUCN Staff at least quarterly to discuss gas market fundamentals and inform the BCP and the PUCN Staff of the Company's hedging decision.

For the VMP purchases made prior to the suspension of the program, the Gas Purchasing Authorization and Limits document authorized the Vice President/Gas Resources to approve VMP purchases up to limits set forth in that document. Southwest

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H:\Nevada\2021 ARA\Policies and procedures\Nevada specific\FINAL 05092017 update Nevada system supply gas acquisition.docx

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solicited volatility mitigation proposals for both Northern and Southern Nevada. Southwest typically scheduled solicitations every three to six weeks throughout the year. In any solicitation, one or both of the Nevada jurisdictions may have been involved, depending on the amount of volatility mitigation purchases already in the portfolio for each jurisdiction.

Southwest incorporated financial fixed-for-floating swaps into the VMP for gas supplies that start flowing November 1, 2008, for the 2008/2009 Portfolio Period and were incorporated into all portfolios between then and the suspension of the Nevada VMP purchases in late 2013. These financial transactions competed directly with, and were an alternative to, firm fixed-price physical transactions. The combination of a financial fixed-for-floating swap and a purchase of a firm index-priced gas supply achieves the same price volatility mitigation Southwest previously achieved purchasing firm fixed-price physical gas supplies.

Southwest received the physical fixed-price offers, physical indexed-price, and fixed-for-floating index swap offers via Instant Messaging (IM) and requested that suppliers hold their offer open for five minutes. This period was required to allow the supplier the capability of offering the lowest possible price (i.e., minimum premium for the risk taken on by the seller between the time the supplier makes the offer and an accepted offer is hedged) and provided Southwest with sufficient time to determine the most attractive offer.

Once Southwest received all of the offers for financial and physical supply alternatives, the five-minute window began and GP&T personnel identified the most attractive offer. In comparing financial and physical offers, Southwest used any premium or discount to the index identified by the physical indexed-price offer to adjust the fixed-for-floating index swap offer, making a direct comparison with the physical fixed-price offer possible.

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Southwest then identified the most attractive offer. If Southwest selected an offer, the Gas Buyer contacted the supplier via a recorded phone line and verbally confirmed each purchase. Southwest solicited offers from suppliers with sufficient time before the close of the futures trading to provide the supplier time to hedge their sales before the end of the trading period for that day.

This procedure permitted the direct competition of firm fixed-price physical gas supply offers with fixed-for-floating index swap offers. This procedure ensured that Southwest continues to procure the "best-cost" supply alternative currently available at the time of purchase to construct the supply "portfolio." Should Southwest reinstate Nevada VMP purchases, the Company will follow this procedure when making those VMP purchases.

Baseload Supply Program (BSP)

The purpose of the BSP is to identify and secure firm first of month indexed-price baseload contracts that increase supply reliability and supplier diversity and reduce the risk of index premiums "blowing out" by making purchases periodically during the year preceding the start of a particular Portfolio Period. BSP purchases effectively replaced the Nevada VMP purchases in both the Northern and Southern Nevada Portfolios for the 2015/2015 Portfolio Period and beyond. Should Southwest reinstate Nevada VMP purchases, it will reduce BSP purchases to ensure that it does not purchase base load supplies in excess of its needs.

Southwest solicits BSP proposals for both Northern and Southern Nevada. The Company typically schedules solicitations every three to six weeks throughout the year until meeting the projected baseload requirements. The Vice President/Gas Resources is authorized to approve BSP purchases up to limits set forth in the Gas Purchasing Authorization and Limits document.

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During a BSP solicitation, Southwest receives physical indexed-price offers via instant messaging (IM) and requests that suppliers hold their offer open for five minutes. Once Southwest receives all of the offers, the five-minute window begins and the most attractive offer is identified. When Southwest selects an offer, the Gas Buyer contacts the supplier via a recorded phone line and verbally confirms each purchase.

Term Purchases

Southwest normally solicits proposals from potential suppliers through an annual process held each spring. The Vice President/Gas Resources is authorized to approve Term Purchases up to limits set forth in the Gas Purchasing Authorization and Limits document.

The annual solicitation outlines the Company's supply needs for a 12-month period beginning the following November 1, which marks the beginning of the Company's traditional Portfolio Period. The Company will also consider long-term proposals, which may span multiple Portfolio Periods. Southwest considers all bona fide proposals that it can practically implement and selects the most economically favorable proposals, which the Company adds to the existing supply portfolio, creating the supply "mix."

The Company confirms existing purchase obligations (primarily from the VMP, the BSP, or a prior multi-year Term Portfolio purchase) before it evaluates firm indexed-price supplies. All responsive offers are included among the supply alternatives. Southwest estimates the forward market conditions, including spot market reference prices, for use in evaluating the supply alternatives. This menu of supply alternatives, which includes spot purchases as well as the firm supply proposals, forms the base from which the Company determines the best-cost mix of supplies.

In addition, transportation costs relevant to the various supply proposals are verified and modeled. Any changes in the logistics of transporting the supply alternatives to market must also be determined, considered, and modeled. Further,

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Southwest examines the parameters for the distribution system operations to ensure the supply portfolio is consistent with system operational requirements.

The Company uses a computer model to optimize the supply alternatives. Fluctuating daily forecast demands, which are model inputs, define the flexibility required in the portfolio. Contract term, commodity price, demand charges, peaking and swing capabilities, charges for not taking natural gas (gas inventory charge, or GIC), and transportation costs are among the cost factors that are optimized by the model. Outside of the model and prior to selecting specific offers, the selection committee considers the following qualitative factors: reliability; geographic and supplier diversity; authorizations to negotiate/accept; revisions to offers; baseload supply requirements; and opportunities to monetize unused capacity. Model parameters are modified accordingly, given information available at the time, to best represent conditions expected during the upcoming Portfolio Period.

The Company identifies supply sources selected as part of the optimized best-cost mix, but not already authorized or under contract. Additional model runs continue whenever contract terms are finalized or additional information becomes available, until the portfolio serves all forecasted demands. This iterative process is necessary for evaluating the impact of completed contracts and changing offers on the remaining supply alternatives.

Spot Purchases

1. Monthly

Subject to review of anticipated demands and available Term, VMP, and BSP purchases, Southwest may acquire monthly baseload supplies from the spot market. Southwest can purchase such supplies either at a fixed or index-related price. Southwest may solicit offers or may purchase supplies via the Intercontinental Exchange (ICE) internet-based trading platform. Bid requests, when deemed necessary, are solicited via e-mail to an extensive list of prospective suppliers, typically during the week before the

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first of each month. Suppliers send responses via Instant Messaging (IM), Southwest's Gas Buyers review and compare such responses with those available on the ICE, and contact the supplier with the best-cost supply. Southwest completes purchase arrangements, if any, early enough to make nominations to the respective pipeline(s) for first of the month delivery. GP&T personnel confirm purchase details with suppliers via recorded phone line and facsimile. Authorized personnel may approve Spot Purchases of one-month or less in duration up to limits set forth in the Gas Purchasing Authorization and Limits document.

2. Daily

Southwest utilizes several methods and sources to monitor daily spot market prices. In the event it is determined that daily spot market supplies are required or desired, Southwest strives to obtain the best price(s) available by canvassing the marketplace. Gas Buyers maintain direct contact with spot market suppliers, using a process that includes telephone calls and Instant Messaging (IM) originating from both Southwest's Gas Buyers and supplier marketing representatives. In addition to the traditional direct contact process, Southwest's Gas Buyers employ the ICE internet-based trading platform. This platform provides real time next day and same day prices for points on the pipeline grid where Southwest is active in acquiring spot supplies. The direct contact with suppliers and monitoring of the ICE is required to stay abreast of price fluctuations in the market, potential loss of spot supplies, and other factors that may either impair or facilitate acquisition of daily supplies. GP&T personnel generally conduct and complete this process is daily between 5:30 a.m. and 7:00 a.m. Pacific time.

Pipeline nominating procedures permit additional spot market purchase activities at subsequent intervals during the day, but the morning market remains the primary purchasing period, with the bulk of purchases occurring at this early trading time. Because of the very short time in which these purchases must be made and nominations completed, Southwest analyzes market pricing information gathered, volumes required or desired, and completes purchase arrangements with supplier representatives in real-time. Daily

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spot market purchases are usually for one day only, but GP&T personnel are authorized to make spot purchases for multi-day periods, not to exceed one-month in duration. GP&T personnel confirm purchase details with suppliers via written transaction confirmations. Authorized personnel may approve Daily Spot Purchases up to limits set forth in the Gas Purchasing Authorization and Limits document.

Use of Financial Instruments

Although Southwest has suspended Nevada VMP purchases, portfolios for Portfolio Periods 2013/2014 and 2014/2015 still included VMP purchases and could include financial fixed-for-floating index price swaps. In addition, Southwest could reinstitute VMP purchases if conditions warrant, thus the use of these financial instruments for mitigating price volatility could still exist. Prior to February 2008, Southwest historically hedged the price volatility component of its portfolio with fixed-price contracts. In 2005, as a part of Southwest's continuous re-examination of its gas supply acquisition process, Southwest approached the possibility of expanding the tools by which it accomplishes price stabilization. While fixed-price contracts have proven to be an effective means by which to stabilize price volatility in Southwest's current gas supply portfolio, Southwest concluded to incorporate alternative stabilization methods into the VMP. Southwest determined that the use of financial instruments would help to address ever-present issues related to supplier portfolio concentration, credit, and flexibility and would therefore be a desirable addition to Southwest's portfolio. Southwest identified the procedures, personnel, and software systems required to employ the use of financial instruments in its price stabilization efforts. Although Southwest's policies contemplate the use of fixed-for-floating swaps, options, basis differential contracts, and natural gas futures contracts, as of the date of this report, Southwest has only incorporated fixed-for-floating financial swaps into the VMP. The Authorization and Limits document authorizes the Vice President/Gas Resources to approve fixed-for-floating index swaps up to limits set forth in that document. Southwest solicited and awarded these initial fixed-for-floating financial swap transactions for gas

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flow beginning November 1, 2008, for the 2008/2009 Portfolio Period and included swap transactions in VMP solicitations through the suspension of the VMP in late 2013.

To manage the front, middle, and back-office separation of duties that the use of financial derivatives requires, Southwest acquired Entegrate from Sungard. This software permits Southwest to manage and monitor the financial and physical positions it uses to stabilize prices. The system is known at Southwest as the Hedge Capture and Control System (HCCS). Beginning in 2005 and continuing through 2006 and into 2007, Southwest engaged in the extensive process of training, configuration, testing, process development, and documentation necessary to implement HCCS. GP&T personnel entered existing fixed-price deals for the 2006/2007 Portfolio Period into the system during the implementation. Beginning May 2006, Gas Buyers began entering new fixed-price supply contracts into the HCCS as acquisition of those supplies occurred.

Beginning in 2006, Southwest identified potential suppliers of financial hedging products. Since then, Southwest worked with these providers to negotiate contracts conforming to International Swaps and Derivatives Association (ISDA) standards. That process was complete for three financial counter-parties in January 2008. Southwest continues to work with other potential suppliers of financial hedging products and expects to complete ISDA agreements with additional counter-parties during calendar 2008.

As a first step in making a decision concerning the purchase of a financial product, as outlined above under the VMP section, Southwest compares fixed-for-floating financial swaps with competing fixed-price physical gas supplies at various locations where Southwest purchases gas. Under a fixed-for-floating financial swap, if the index is above the agreed upon swap price, the seller pays the buyer (Southwest) the difference between the actual value of the index and the agreed upon swap price. If the index is below the agreed upon swap price, the buyer (Southwest) pays the seller the difference between the swap price and the actual value of the index.

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When Southwest combines a fixed-for-floating financial swap with a contract for firm physical baseload gas priced based on the same index as the swap, the combination of the swap and the physical purchase are equivalent to a fixed-price physical contract. Thus, this financial instrument provides Southwest with the same level of price mitigation that was previously only available using firm fixed-price physical gas supplies.

The Company can substitute fixed-for-floating swaps (combined with indexed physical gas) for some of the hedges previously completed with fixed-price physical contracts through the competitive process described above. Because the two types of hedges behave the same and are in direct competition with each other, the impact on the price volatility mitigation portion of the portfolio is virtually identical. However, the Company's use of swaps provides additional counterparties into Southwest's potential supplier mix. This reduces Southwest's counter-party credit risk by spreading the agreements among more counterparties and ensures that counter-party concerns about credit risk with Southwest would not limit the number of suppliers to a small number.

In the future, Southwest may consider incorporating other derivatives into the portfolio mix. Nevertheless, considering the stipulation in Docket 06-05018, and the current suspension of VMP purchases, before integrating financial derivatives other than fixed-for-floating swaps into the portfolio, Southwest will hold a workshop with the parties to that docket.

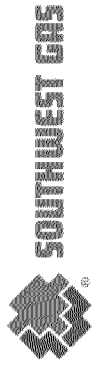


Southwest Gas' VMP and Gas Market Fundamentals Review (Docket Nos. 13-06006 and 19-06003) March 23, 2020

EXHIBIT NO. ____ (JRO-5)
SHEET 1 OF 154



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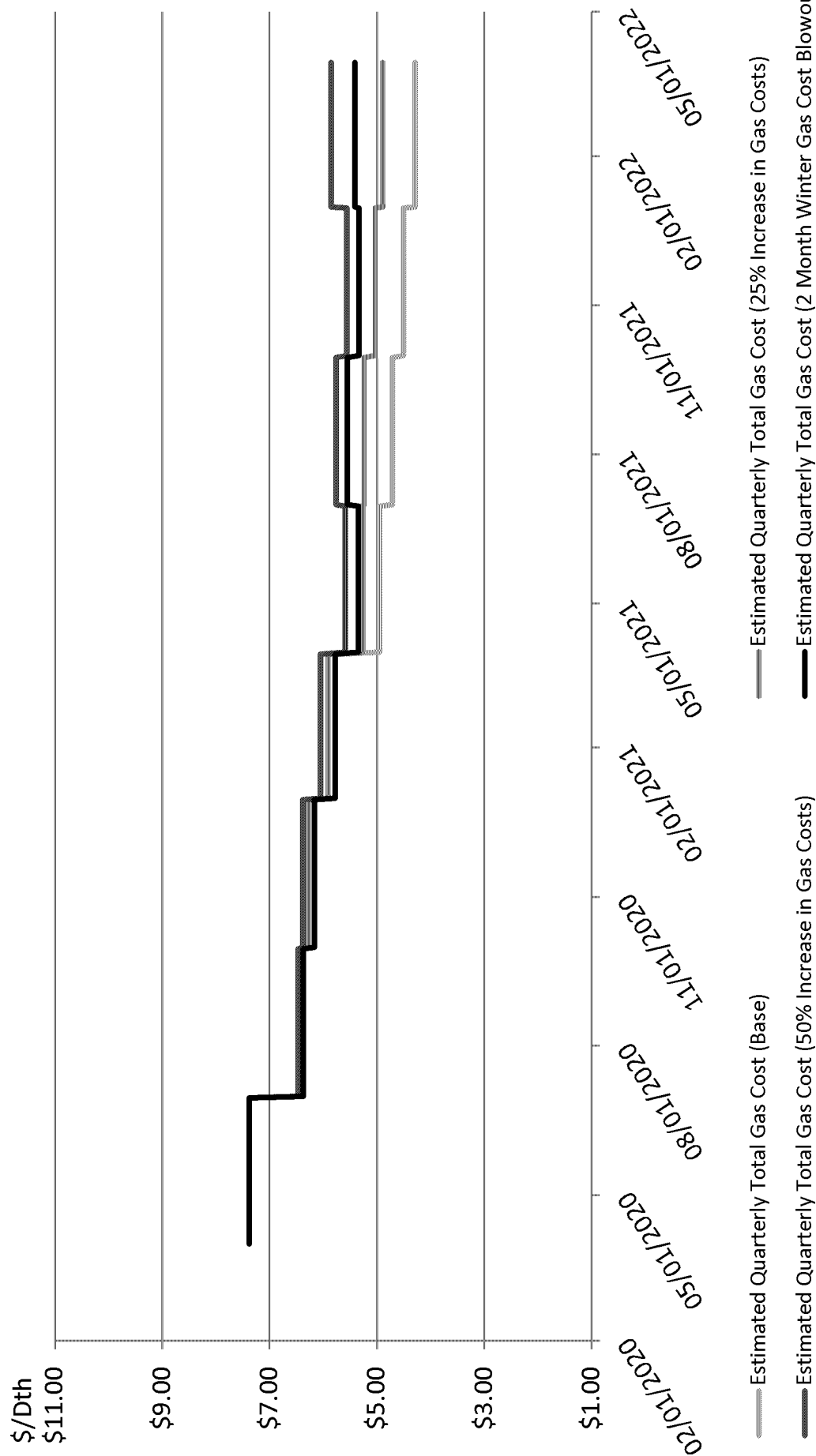
Volatility Mitigation Plan Update

- Analysis Summary
 - Base BTER/DEAA analysis shows gas cost rates have minimal volatility throughout the 2020 – 2022 study period
 - BTER/DEAA sensitivity analysis shows minimal volatility in gas cost rate fluctuations throughout the 2020 – 2022 study period
- Decision
 - Continue to suspend VMP purchases for Northern and Southern Nevada





BTER/DEAA Forecast – Northern Nevada

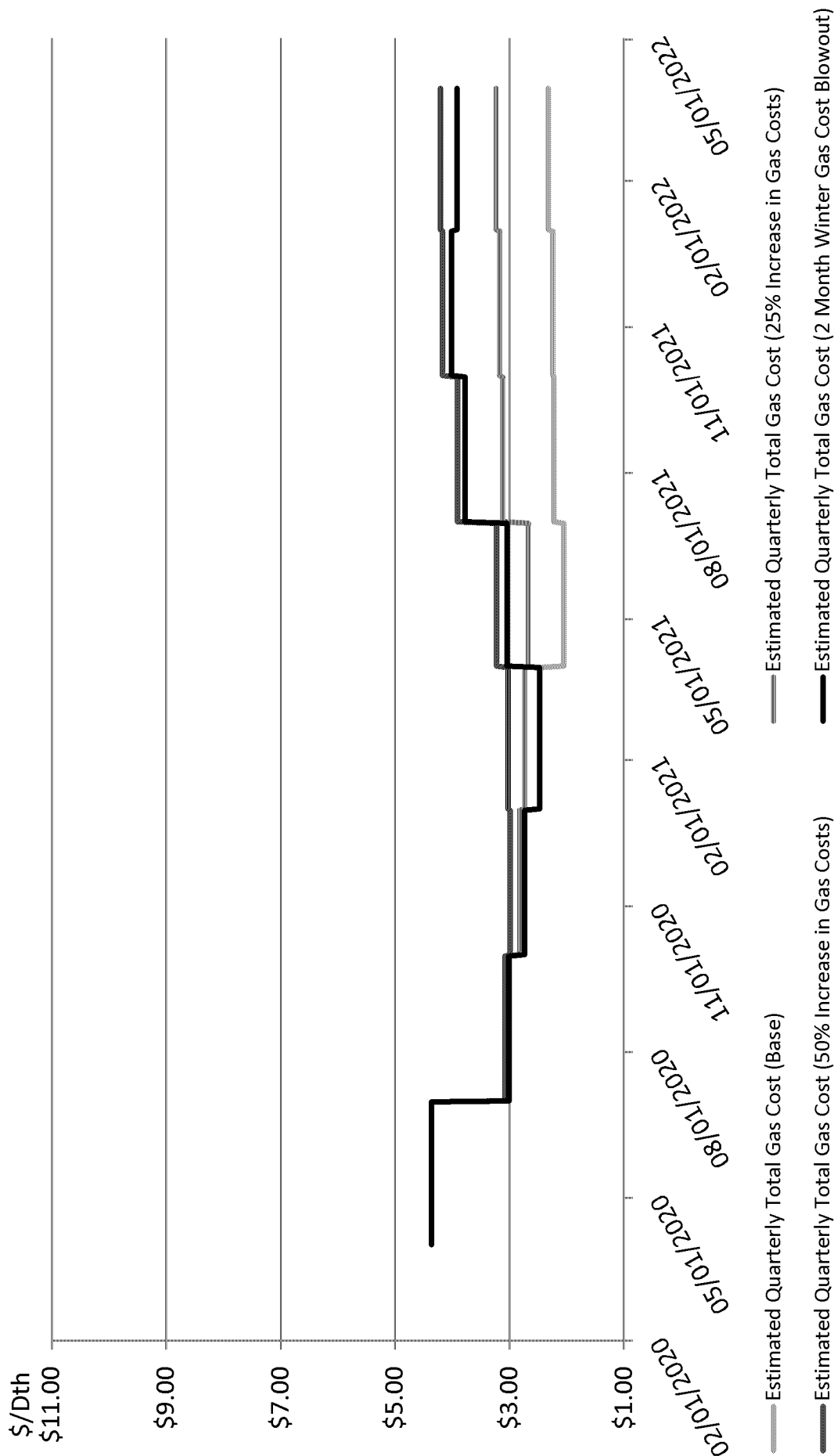


March 02, 2020 estimated forwards pricing



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BTER/DEAA Forecast – Southern Nevada



March 02, 2020 estimated forwards pricing





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Quarterly Gas Cost Projections [2],[4] & [5]

Description	Apr-20	Jul-20	Oct-20	Jan-21	Apr-21	Jul-21	Oct-21	Jan-22
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Base

Southern Nevada

BTER Rate [1]	\$ 0.37087	\$ 0.30120	\$ 0.29854	\$ 0.29774	\$ 0.25796	\$ 0.25957	\$ 0.26341	\$ 0.26805
DEAA Surcharge [3]	\$ 0.06533	\$ 0.00000	\$ (0.02500)	\$ (0.05000)	\$ (0.05212)	\$ (0.03648)	\$ (0.03825)	\$ (0.03581)
Total Gas Cost	\$ 0.43620	\$ 0.30120	\$ 0.27354	\$ 0.24774	\$ 0.20584	\$ 0.22309	\$ 0.22516	\$ 0.23224

Northern Nevada

BTER Rate [1]	\$ 0.65282	\$ 0.57707	\$ 0.58152	\$ 0.56682	\$ 0.50929	\$ 0.51155	\$ 0.51508	\$ 0.51829
DEAA Surcharge [3]	\$ 0.08525	\$ 0.06025	\$ 0.03525	\$ 0.01025	\$ (0.01475)	\$ (0.03975)	\$ (0.06475)	\$ (0.08975)
Total Gas Cost	\$ 0.73807	\$ 0.63732	\$ 0.61677	\$ 0.57707	\$ 0.49454	\$ 0.47180	\$ 0.45033	\$ 0.42854

[1] The Base Tariff Energy Rate (BTER) does not include the Unrecovered Gas Cost Expense (UGCE) Base Rate.

[2] There is a 3-month lag between accounting month data and quarterly rate changes, i.e. January rates are based on the previous September data.
 [3] Quarterly DEAA 1) If absolute value of 191 balance < 5% of 12 month purchased gas cost, DEAA = \$.00000, 2) otherwise change in DEAA change cannot exceed (+/-) \$.02500 per therm.

[4] Gas Cost and Sales are based on Gas Supply Cost Projections updated with the March 02, 2020 Forward Market Prices.

[5] The above projections are based on estimated gas cost and customer usage and are subject to change.

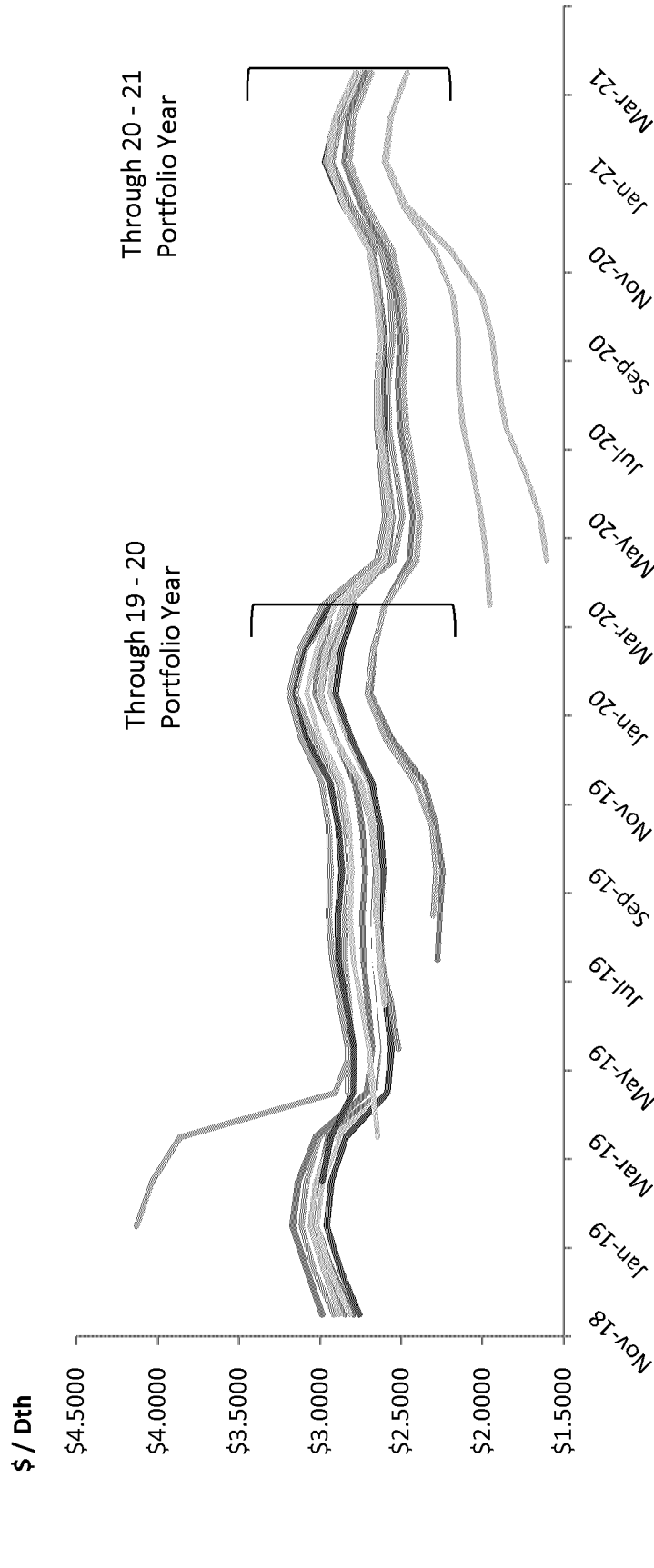




Gas Market Fundamentals



NYMEX Forward Prices



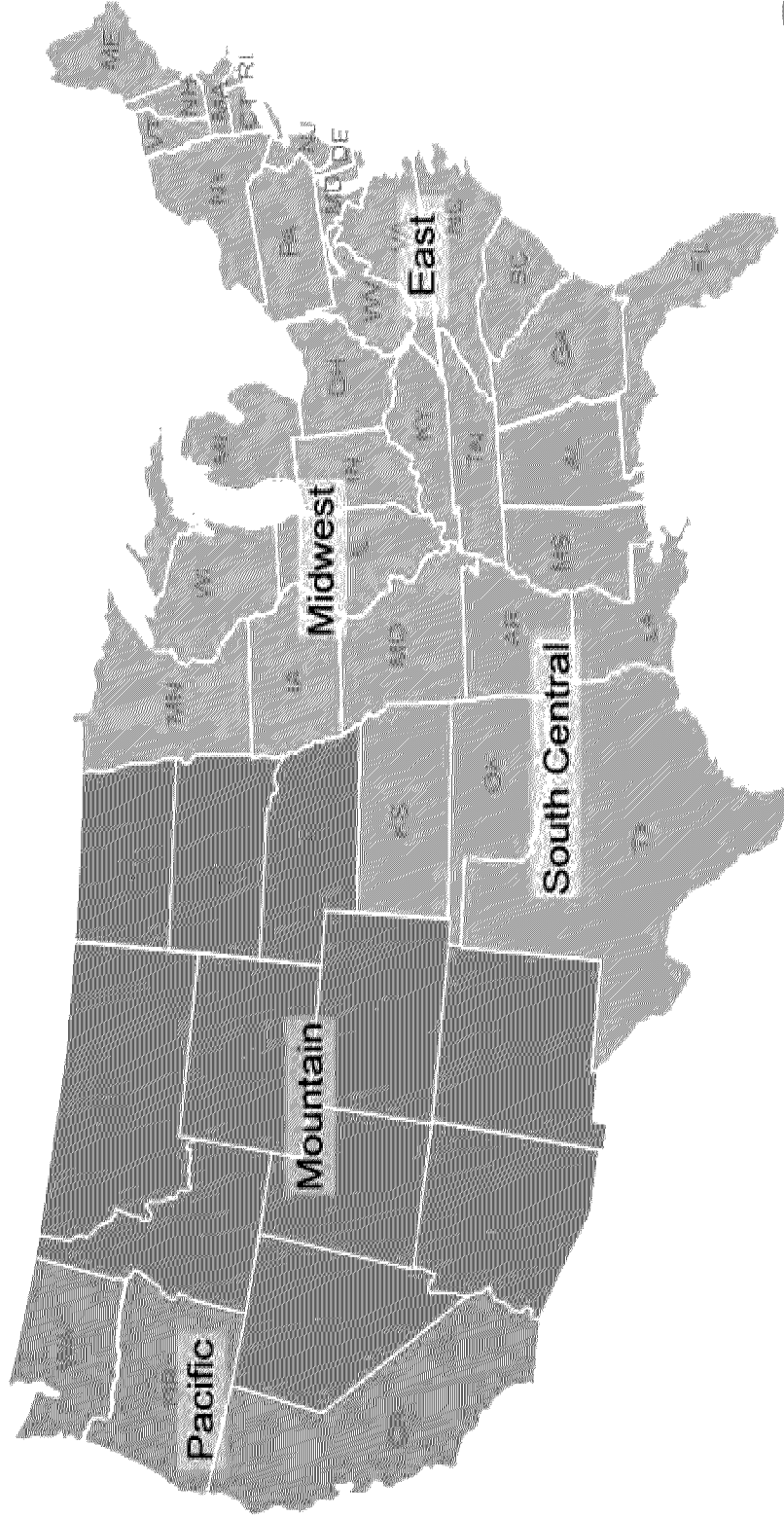
- 05/16/2018 Forwards 06/20/2018 Forwards 07/18/2018 Forwards 08/15/2018 Forwards 12/13/2018 Forwards
- 01/23/2019 Forwards 02/20/2019 Forwards 03/20/2019 Forwards 04/17/2019 Forwards 05/15/2019 Forwards
- 06/19/2019 Forwards 07/17/2019 Forwards 02/19/2020 Forwards 03/18/2020 Forwards

Forwards dates correspond to Nevada Baseload Supply Program solicitation dates



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Underground Storage Regions

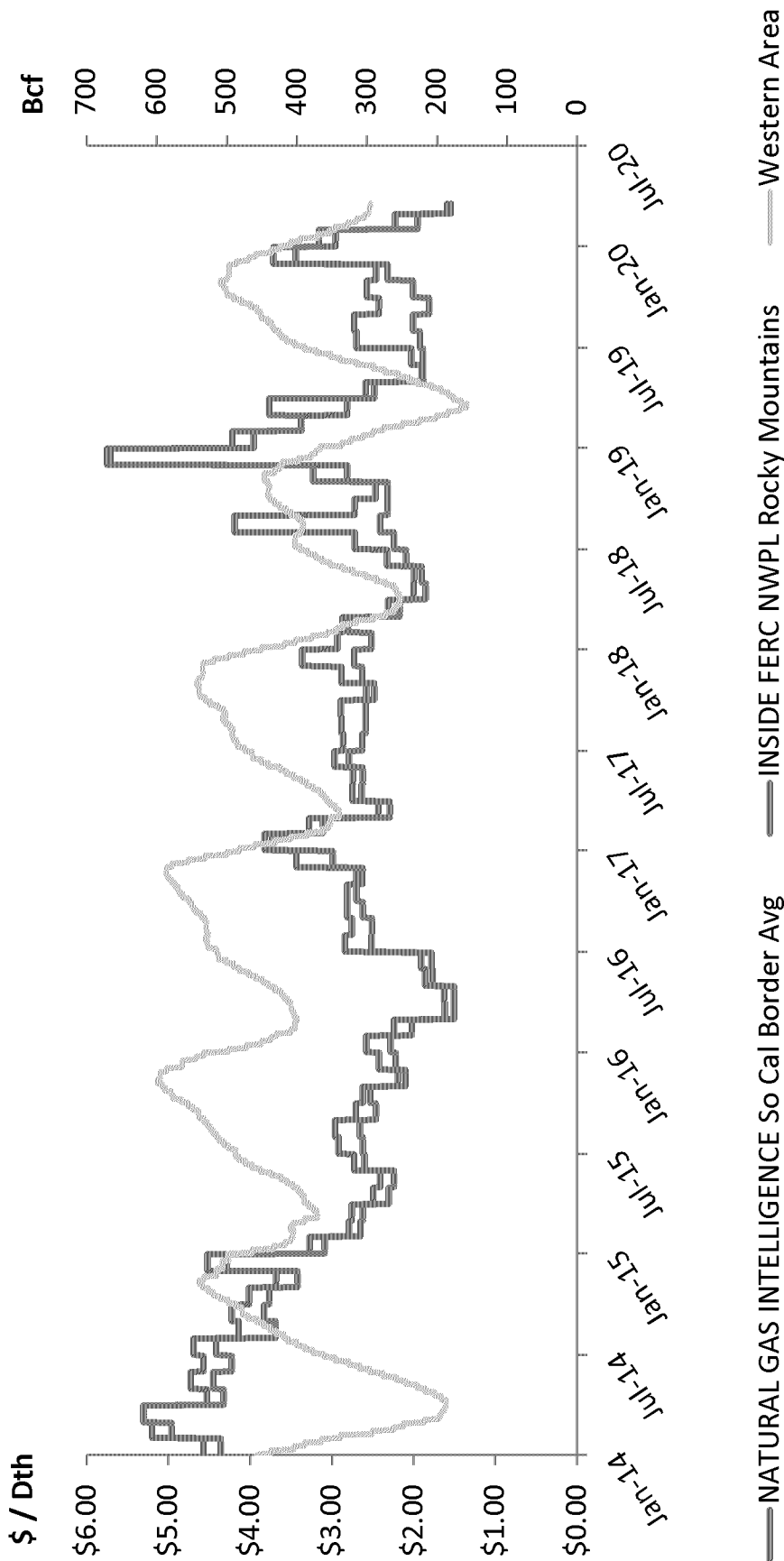


SoCal Storage Information – <https://scgenvoy.sempva.com/>
 PG&E Storage Information – <https://pge.com/pipeline/index.page/>





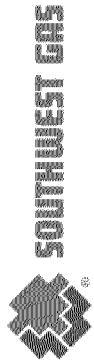
Historical FOM Market Prices & Western Area Natural Gas Storage Inventory



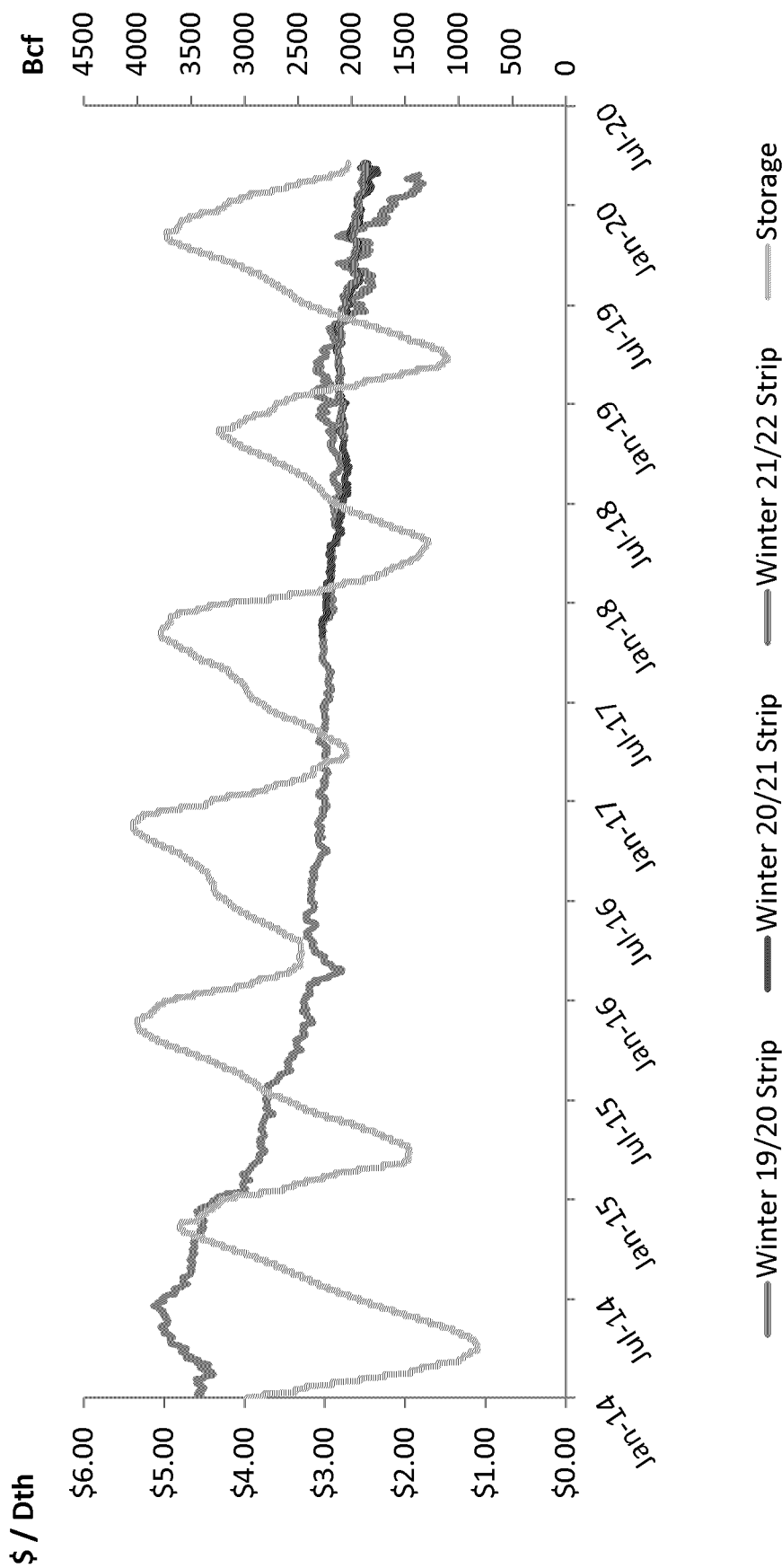
Western area includes Mountain and Pacific Storage Regions



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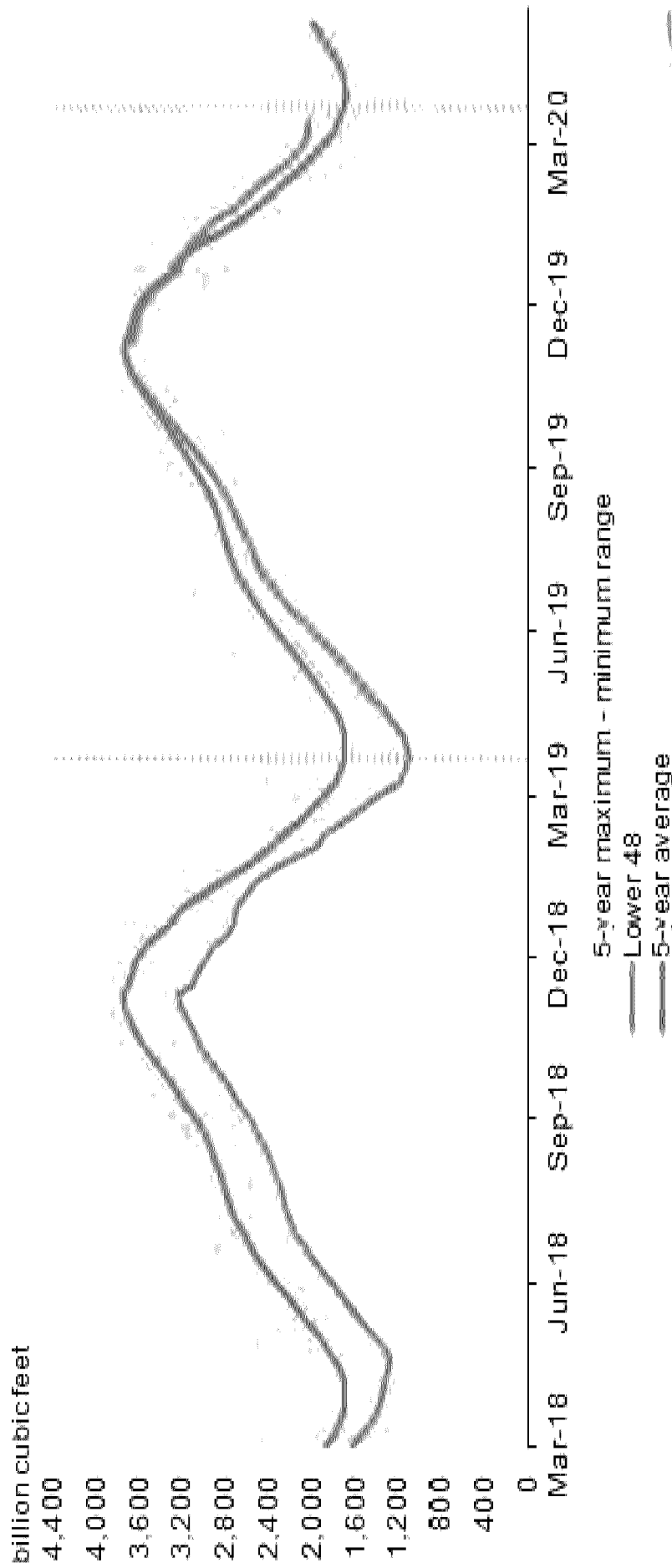


2019/20 – 2021/22 NYMEX Winter Strip Price & Natural Gas Storage



Working Gas in Underground Storage Compared with the 5-Year Maximum and Minimum

Working gas in underground storage compared with the 5-year maximum and minimum



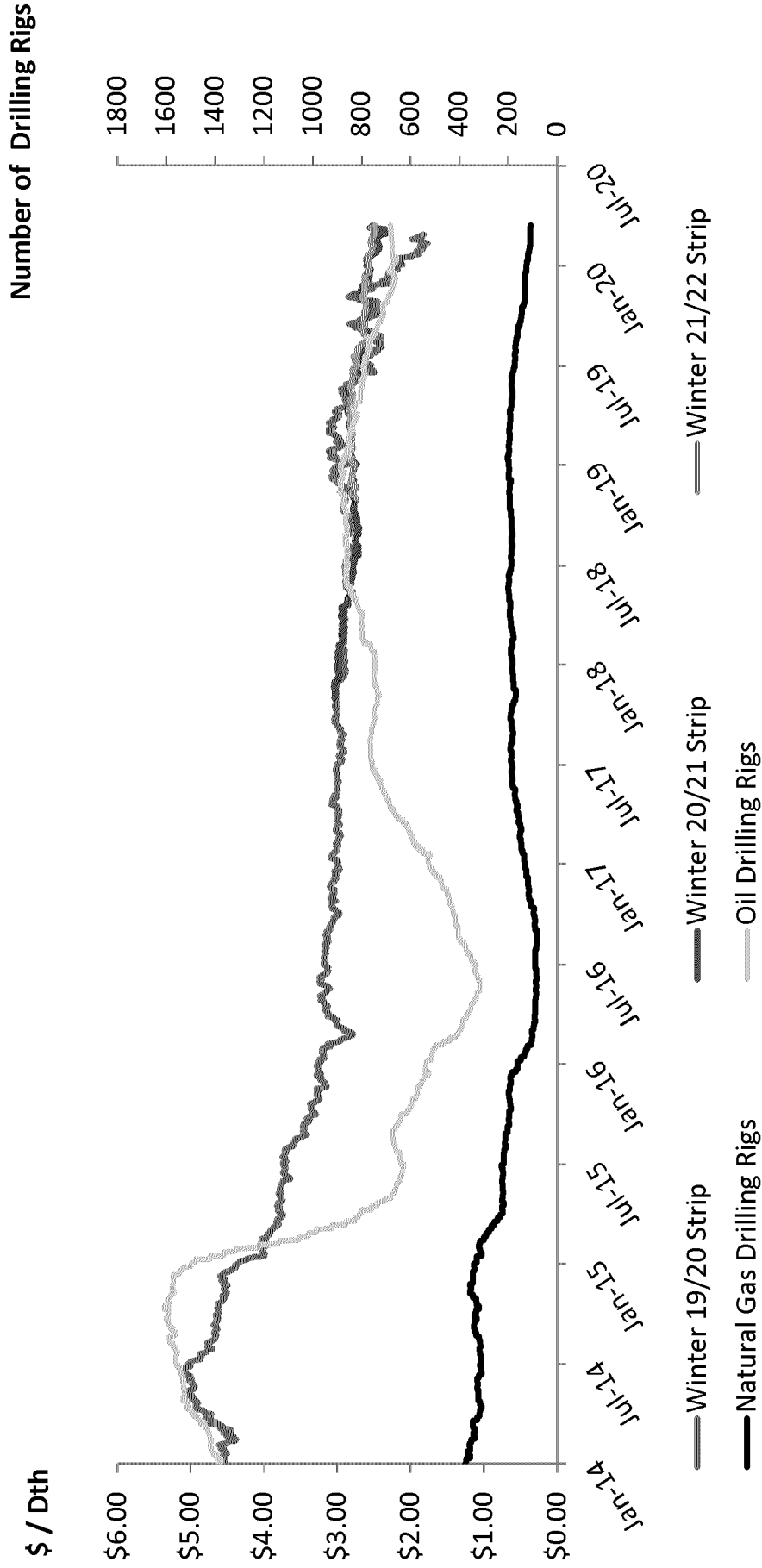
Source: U.S. Energy Information Administration



For week ending March 13, 2020

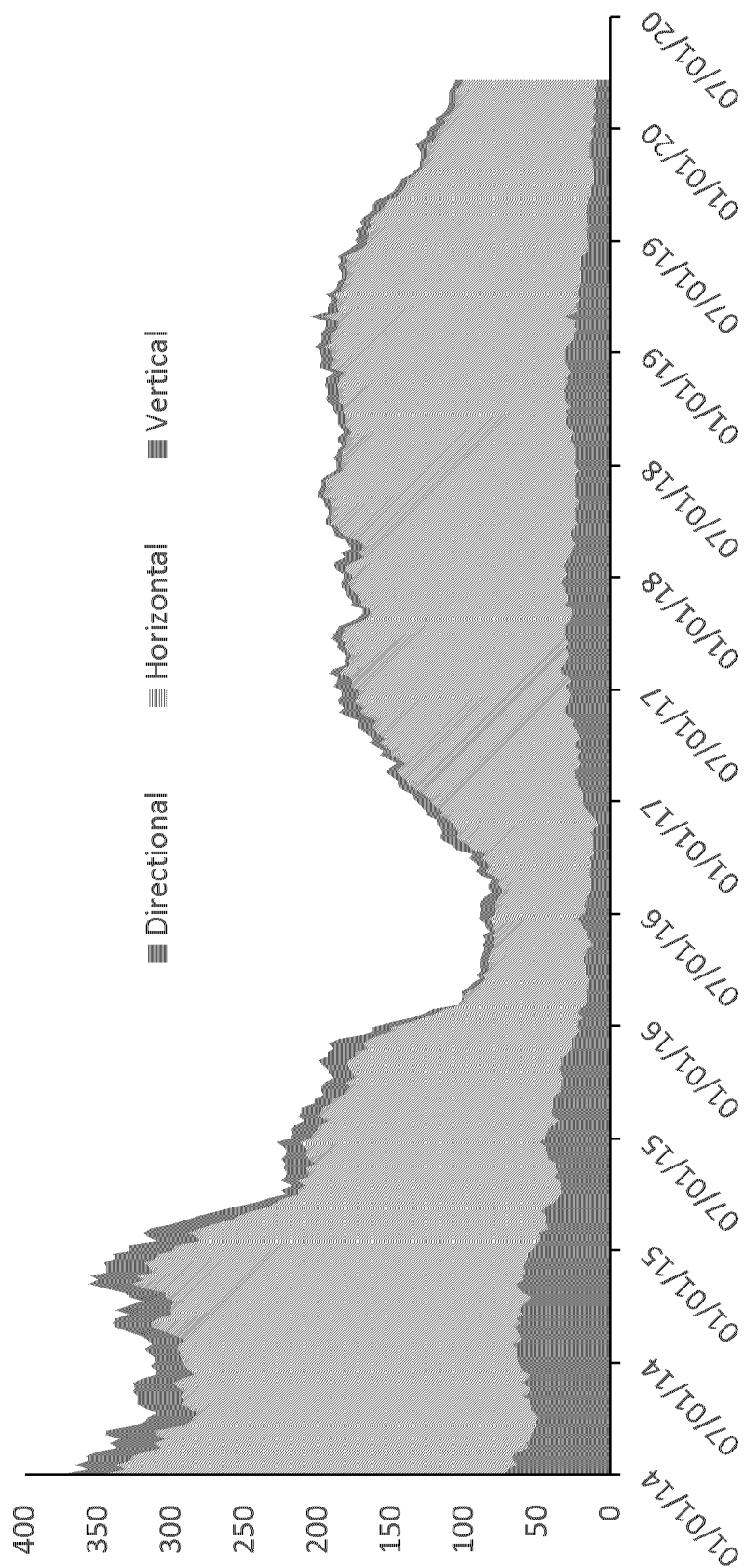


2019/20 – 2021/22 NYMEX Winter Strip Price & Oil and Gas Rotary Rig Count



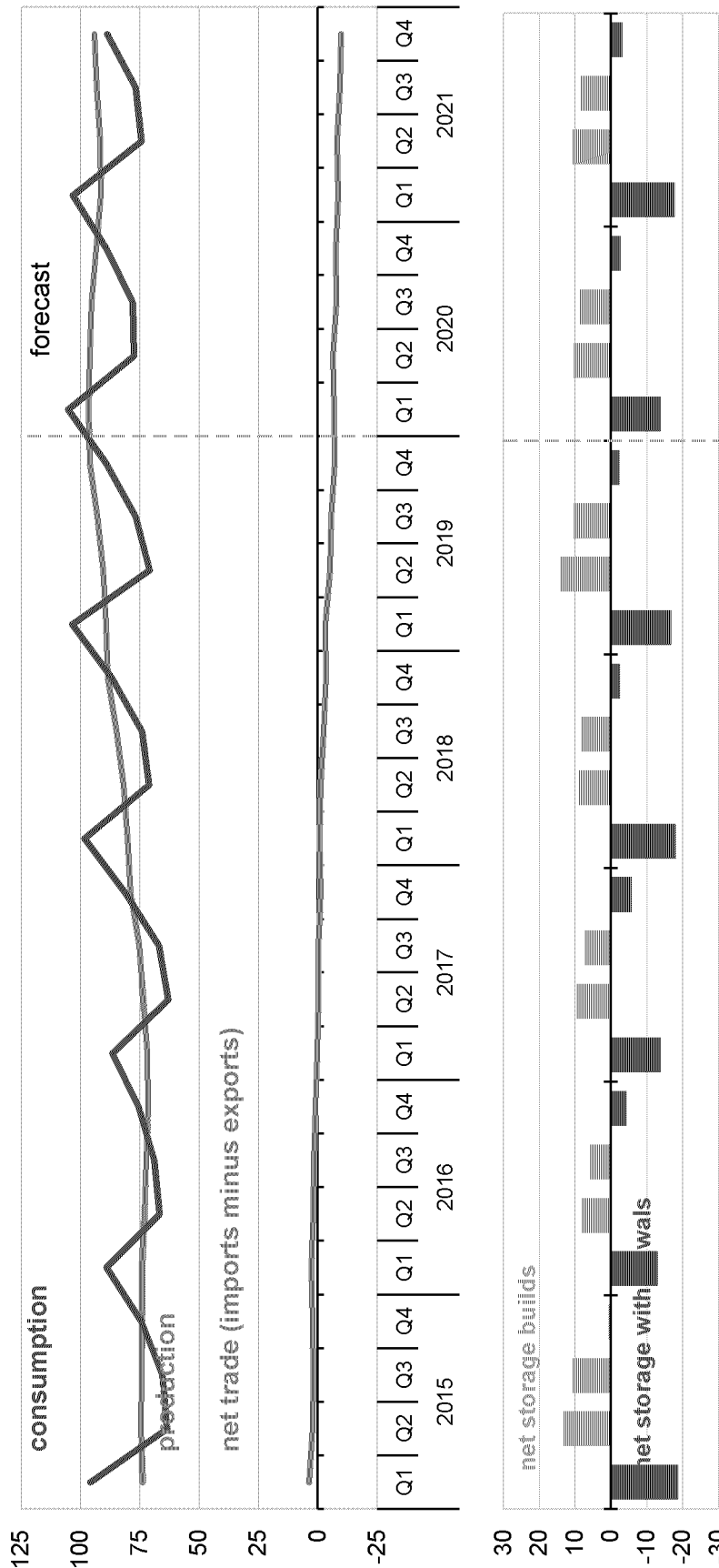
Weekly Natural Gas Rig Count by Type

Number of Active Rigs



U. S. Natural Gas Production, Consumption and Net Imports

U.S. natural gas production, consumption, and net imports
billion cubic feet per day

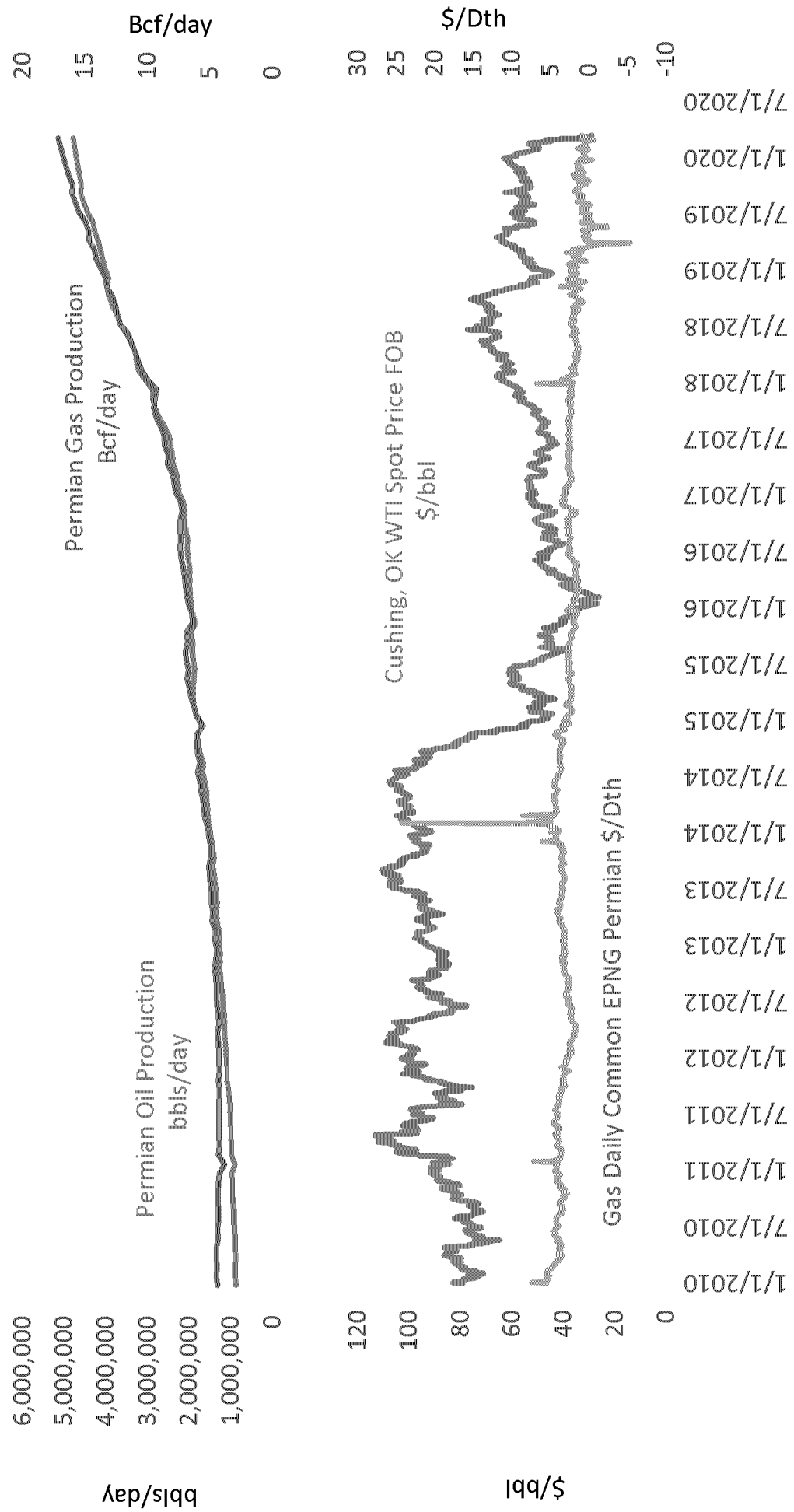


Source: Short-Term Energy Outlook, March 2020

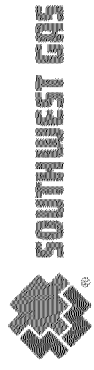




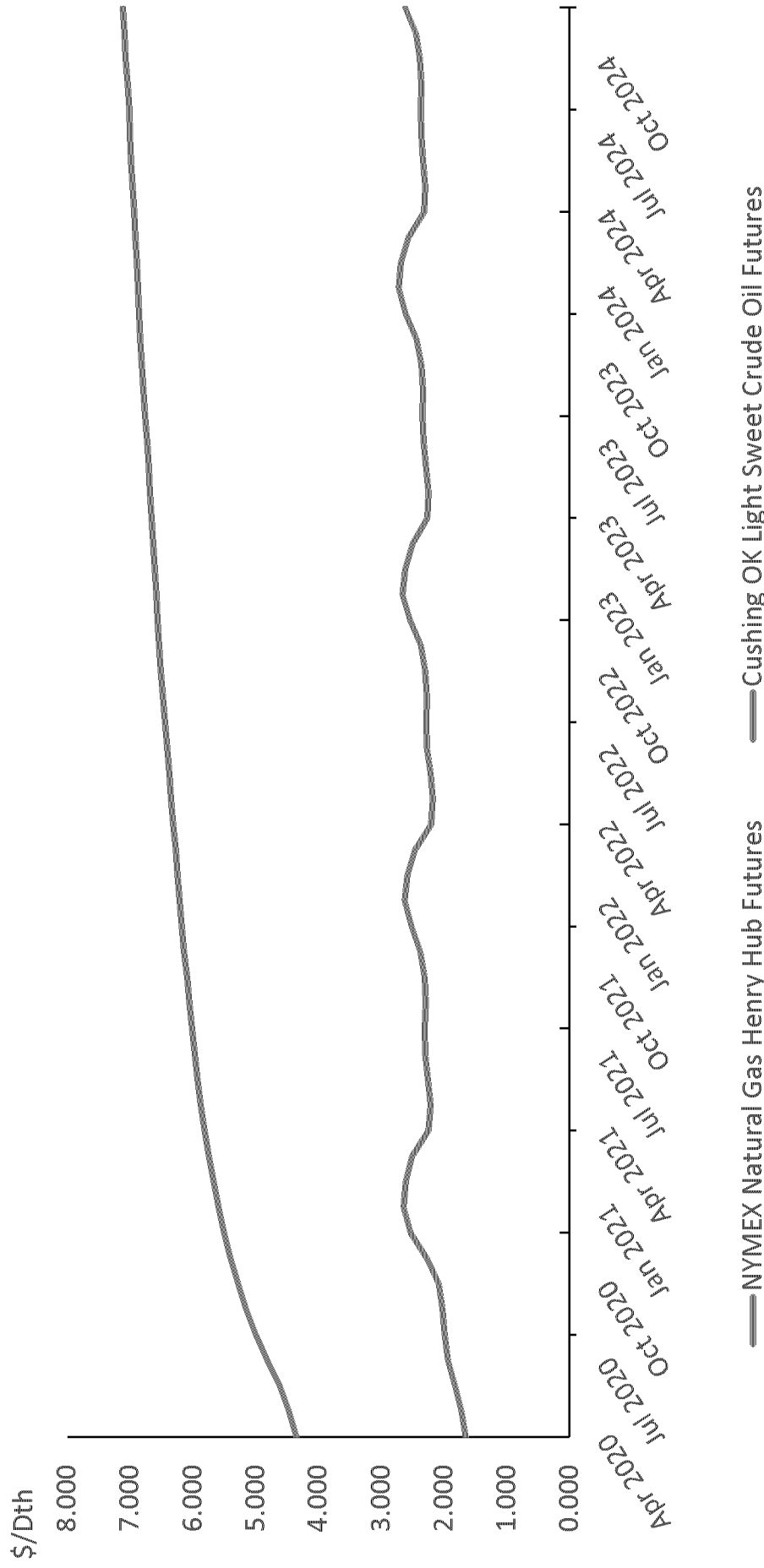
Permian Oil and Natural Gas Daily Production — Daily Pricing



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NYMEX Henry Hub Natural Gas and Cushing OK Light Sweet Crude Oil Futures



March 19, 2020 Futures



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Supplemental Information

EXHIBIT NO. ____ (JRO-5)
SHEET 17 OF 154



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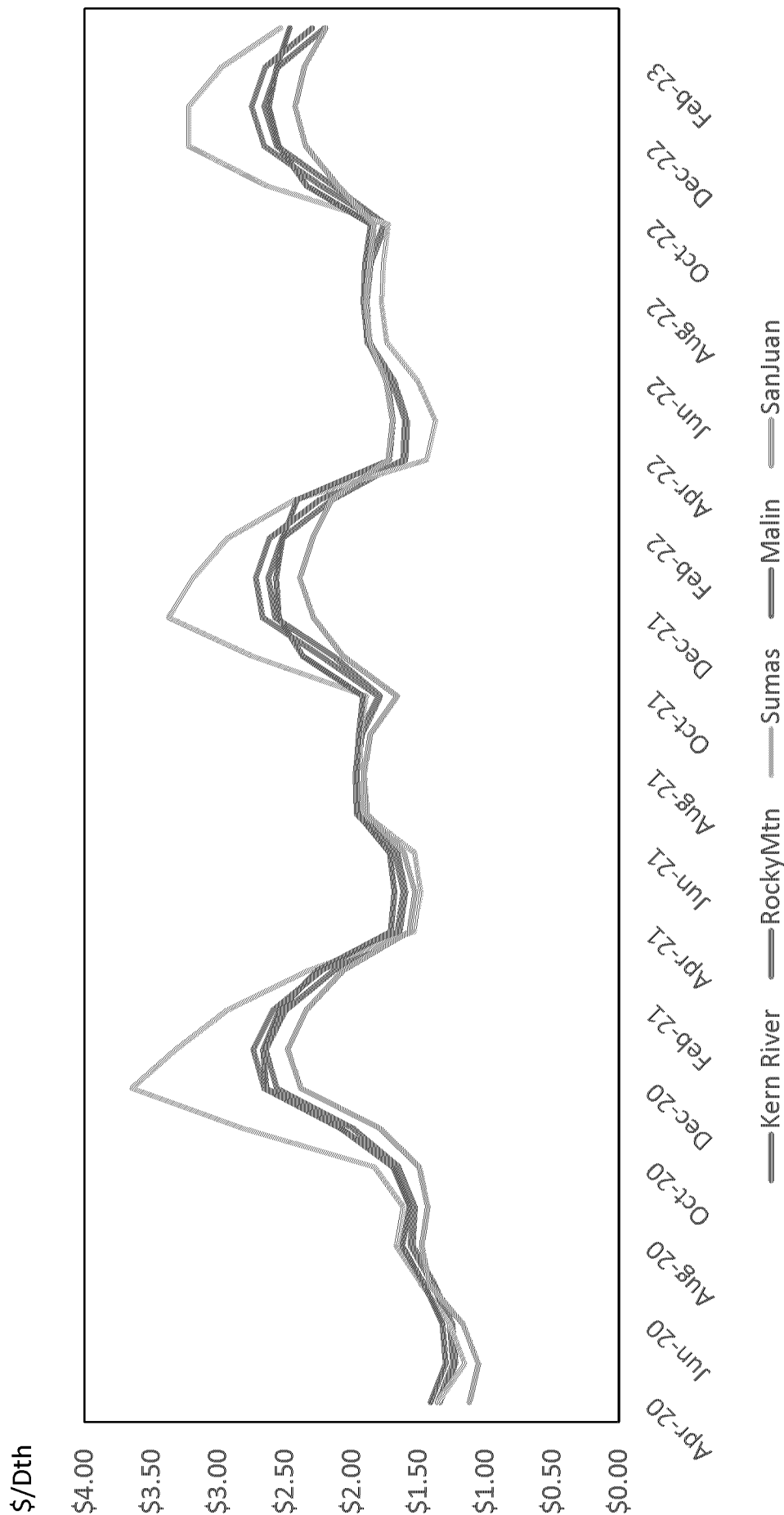
Estimated Winter Strip Forwards (\$/Dth) 2020/21 Solicitations Dates

Solicitation Date	Rockies	Sumas	Malin	Kern	San Juan	NYMEX
12/13/2018	2.2314	2.4552	2.2566	2.2534	2.1900	2.7854
1/23/2019	2.4004	2.6236	2.4140	2.4224	2.3230	2.8284
2/20/2019	2.3956	2.6420	2.4718	2.4176	2.3908	2.8184
3/20/2019	2.4786	2.9424	2.5064	2.5006	2.4396	2.8372
4/17/2019	2.4586	2.8840	2.5160	2.5526	2.4532	2.8208
5/15/2019	2.5194	2.9478	2.5586	2.6134	2.5176	2.8370
6/19/2019	2.3988	2.7916	2.4540	2.4928	2.3934	2.7464
7/17/2019	2.3664	2.7220	2.4058	2.4604	2.3078	2.7110
3/18/2020	2.3980	2.9392	2.4698	2.4920	2.2154	2.4926

The above forward prices are not necessarily representative of the prices Southwest Gas would have paid for VMP transactions.



Nevada Supply Point Monthly Forwards



March 20, 2020 Monthly Forwards Prices



Market Report Information

- EIA's November dry natural gas production estimates (EIA, 2020)
 - Average 92.2 Bcf/d in 2019 (actual)
 - Average 95.3 Bcf/d in 2020 (estimated)
- EIA's November U.S. natural gas consumption forecast (EIA, 2019)
 - Average 84.97 Bcf/d in 2019
 - Average 87.27 Bcf/d in 2020
- EIA's November Henry Hub spot price projections (EIA, 2020)
 - Average \$2.11/Dth in 2020
 - Average \$2.51/Dth in 2021



Market Report Information

EIA's November U.S. average crude oil production estimate (EIA, 2020)

- 13.0 MMBbl/d in 2020
- 12.7 MMBbl/d in 2021

U.S. combined oil and natural gas rig count advanced to 770 as of March 20, 2020 (Baker Hughes, 2020).

- 664 oil directed rigs
- 106 natural gas directed rigs
- Total down 246 from the corresponding week a year earlier



Market Report Information References

- U.S. Energy Information Administration (EIA), (March 11, 2020). Forecast highlights global liquid fuels. *Short Term Outlook*. Retrieved from: <https://www.eia.gov/outlooks/steo/>
- Baker Hughes, (March 13, 2020). Rig count summary. Retrieved from: <http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother>





MEMORANDUM

To: Randy Gabe

From: Nevada Gas Purchase Strategy Committee

Date: April 2, 2020

Subject: First Quarter 2020 Nevada Hedging Strategy Recommendation

On March 23, 2020, pursuant to the Stipulation approved by the Public Utilities Commission of Nevada in Docket 13-06006 and as modified in Docket 19-06003, the Nevada Gas Purchase Strategy Committee reviewed the Company's current hedging strategy, various market fundamentals, and the ratemaking methodologies used to recover gas costs from the Company's customers.

The Nevada Gas Purchase Strategy Committee (hereinafter "Committee"), at a minimum, consists of representatives from each of the following departments:

- Gas Supply
- Gas Resources Planning
- Regulation and Energy Efficiency

The following individuals were present at the Committee meeting:

- Eric Rost, Manager / Gas Purchases and Transportation
- Randy Gabe, Vice President / Gas Resources
- Amy Timperley, Director / Regulation and Energy Efficiency
- Christopher Brown, Manager / Regulation and Energy Efficiency
- Erin Potokar, Supervisor / Regulation and Energy Efficiency
- Nicholas Lape, Analyst I / Regulation and Energy Efficiency
- Laura Spurlock, Manager / Gas Resources Planning
- Ernest Melo, Senior Evaluation Engineer / Gas Resources Planning

To: Gabe
April 2, 2020
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During the March 23, 2020 Committee meeting ("Meeting"), the Committee evaluated market fundamentals such as national storage inventory levels, national rig count levels, current and projected supply and demand levels for natural gas, and forward market price curves. The Committee also reviewed the estimated total gas cost rates that the Company would charge its customers based on the current forwards, as well as a sensitivity analysis of how those total gas cost rates would change if there were various levels of increases in gas prices.

At the time of the Meeting, the national storage inventory level was at 2,034 Bcf. That level is 281 Bcf above the five-year average and 878 Bcf higher than this time last year. Storage inventories in the Pacific region were at 199 Bcf, which is 1 Bcf above that region's five-year average and 101 Bcf higher than last year this time. In the Mountain region, storage inventories were at 96 Bcf, which is 14 Bcf below that region's five-year average and 33 Bcf more than last year this time.

Since the Committee's December 12, 2019 meeting, natural gas directed rig counts have decreased from 131 to 106 and oil directed rigs declined slightly from 668 to 664. EIA shows U.S dry natural gas production averaged 92.2 Bcf/day in 2019 and is expected to increase in 2020 to 95.3 Bcf/day. Moreover, EIA projects U.S. crude oil production to average 13.0 MMbbl/day in 2020 and decrease in 2021 to 12.7 MMbbl/day.

NYMEX prices for the next winter period (November 2020 through March 2021), have ranged from about \$2.39/Dth to \$2.57/Dth over the past month. Current production region spot prices have averaged from around \$1.47/Dth in the Rockies, to about \$1.75/Dth at Henry Hub. EIA estimates that Henry Hub spot prices will average around \$2.11/Dth in 2020 and \$2.51/Dth in 2021.

Based on the current ratemaking methodologies, which have not changed since the Company suspended Nevada VMP purchases in the fall of 2013, the Company calculated projected quarterly total gas cost rates for April 2020 through January 2022 for both southern Nevada and northern Nevada systems. The Company used the March 2, 2020 forward market gas prices when calculating the projected quarterly total gas cost rates.

To: Gabe
April 2, 2020
Page 3 of 3

For customers in southern Nevada, the Company projects that retail gas cost rates for April 2020 through January 2022 could range from a low of approximately \$0.21/therm to a high of about \$0.44/therm. For customers in northern Nevada, the Company projects that gas cost rates for the same period could range from a low of about \$0.43/therm to a high of approximately \$0.74/therm. Sensitivity analysis shows that the current ratemaking methodologies continue to dampen the volatility in customer rates under increased gas price scenarios.

After reviewing the market fundamentals and projected quarterly gas rates that the Company would charge its customers, the Committee recommends that the Company should not alter its current gas hedging strategy and should continue to suspend Nevada VMP purchases. The Committee bases the recommendation upon the market fundamentals and ratemaking methodologies that existed as of March 23, 2020.

The Committee's recommendation does not consider market changes that could come about from unforeseen circumstances, *e.g.* force majeure events in the market place, sudden disruption of market supplies, extreme weather conditions, or regulatory changes. This recommendation only applies to the Company's Nevada gas purchase strategy and does not affect the Company's Arizona or California gas purchase strategies.

Attachments to the recommendation include documentation reviewed during the Committee meeting, as well as other supporting information.

cc:

Justin Brown	Amy Timperley
Christopher Brown	John Olenick
Eric Rost	Steve Williams
Laura Spurlock	



Southwest Gas' VMP and Gas Market Fundamentals Review (Docket Nos. 13-06006 and 19-06003) June 30, 2020

EXHIBIT NO. ____ (JRO-5)
SHEET 26 OF 154



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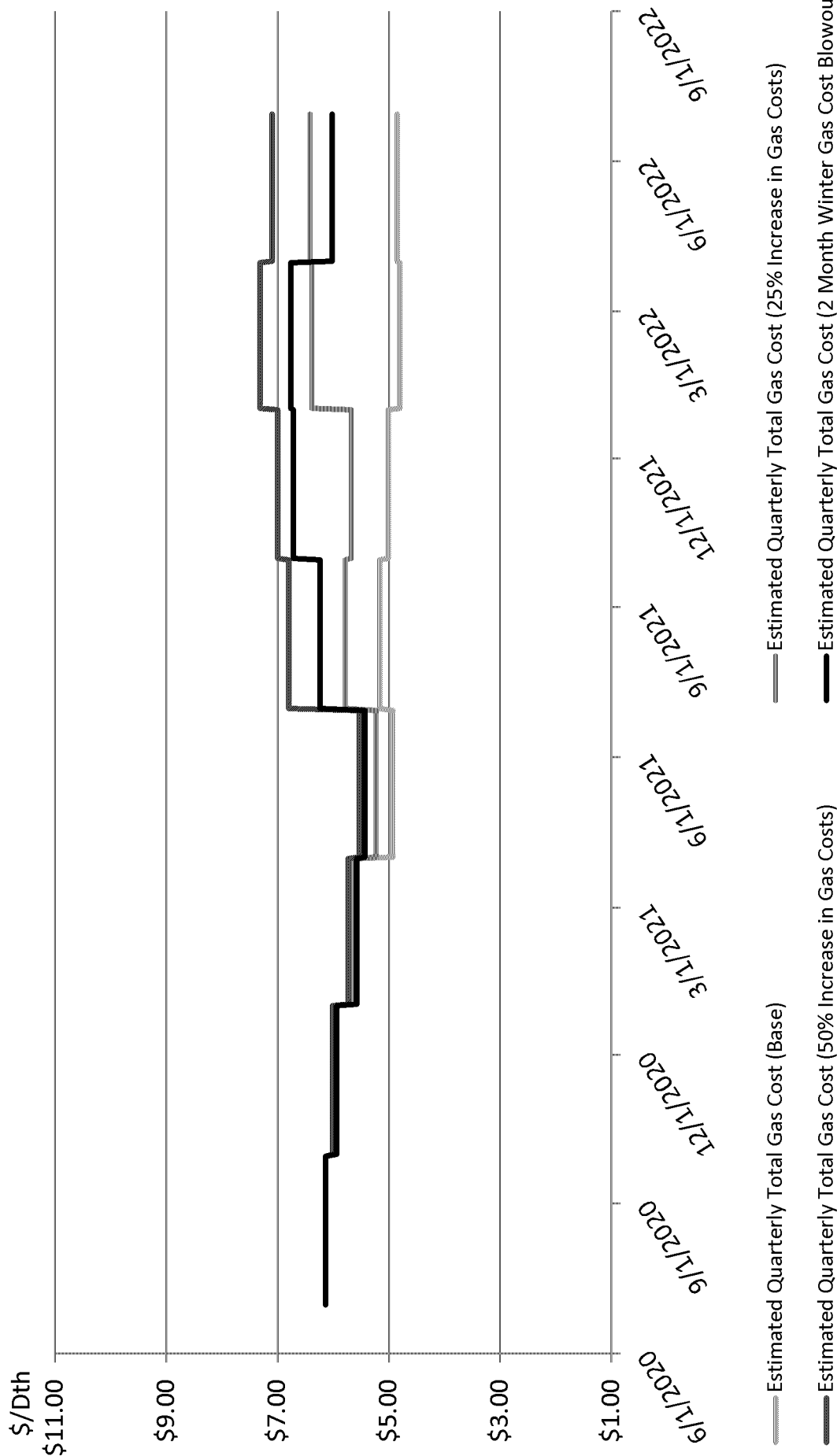
Volatility Mitigation Plan Update

- Analysis Summary
 - BTER/DEAA gas cost rate analysis shows minimal volatility under various market scenarios throughout the 2020 – 2022 study period
- Decision
 - Continue to suspend VMP purchases for Northern and Southern Nevada





BTER/DEAA Forecast – Northern Nevada



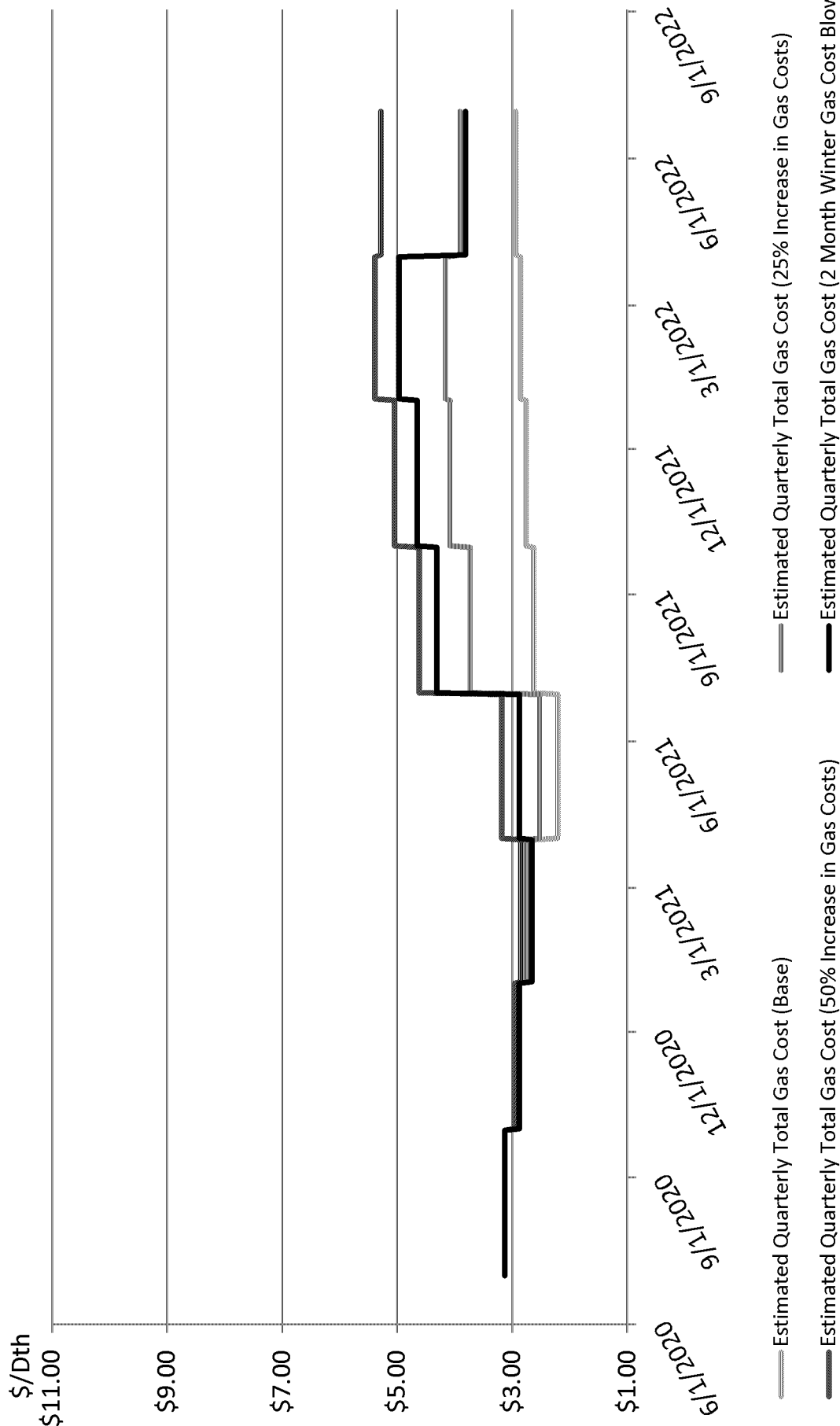
May 12, 2020 estimated forwards pricing



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BTER/DEAA Forecast – Southern Nevada



May 12, 2020 estimated forwards pricing



Southwest Gas Corporation

Quarterly Gas Cost Projections [2],[4] & [5]

Description	Jul-20	Oct-20	Jan-21	Apr-21	Jul-21	Oct-21	Jan-22	Apr-22
Base								
<u>Southern Nevada</u>								
BTER Rate [1]	\$ 0.27287	\$ 0.27210	\$ 0.27509	\$ 0.25628	\$ 0.31024	\$ 0.31951	\$ 0.32566	\$ 0.32100
DEAA Surcharge [3]	\$ 0.04033	\$ 0.01533	\$ (0.00967)	\$ (0.03467)	\$ (0.04669)	\$ (0.04357)	\$ (0.04013)	\$ (0.02697)
Total Gas Cost	\$ 0.31320	\$ 0.28743	\$ 0.26542	\$ 0.22161	\$ 0.26355	\$ 0.27594	\$ 0.28553	\$ 0.29403
<u>Northern Nevada</u>								
BTER Rate [1]	\$ 0.55352	\$ 0.55825	\$ 0.54699	\$ 0.50767	\$ 0.55622	\$ 0.56604	\$ 0.57040	\$ 0.57298
DEAA Surcharge [3]	\$ 0.06025	\$ 0.03525	\$ 0.01025	\$ (0.01475)	\$ (0.03975)	\$ (0.06475)	\$ (0.08975)	\$ (0.08807)
Total Gas Cost	\$ 0.61377	\$ 0.59350	\$ 0.55724	\$ 0.49292	\$ 0.51647	\$ 0.50129	\$ 0.48065	\$ 0.48491

[1] The Base Tariff Energy Rate (BTER) does not include the Unrecovered Gas Cost Expense (UGCE) Base Rate.

[2] There is a 3-month lag between accounting month data and quarterly rate changes, i.e. January rates are based on the previous September data.

[3] Quarterly DEAA 1) If absolute value of 191 balance < 5% of 12 month purchased gas cost, DEAA = \$.00000, 2) otherwise change in DEAA change can not exceed (+/-) \$.02500 per therm.

[4] Gas Cost and Sales are based on Gas Supply Cost Projections updated with the May 12, 2020 Forward Market Prices.

[5] The above projections are based on estimated gas cost and customer usage and are subject to change.

[6] The Base Tariff Energy Rate (BTER) is equal to the prior quarter's twelve month Gas Cost divided by the prior quarters twelve month Volume (therms).



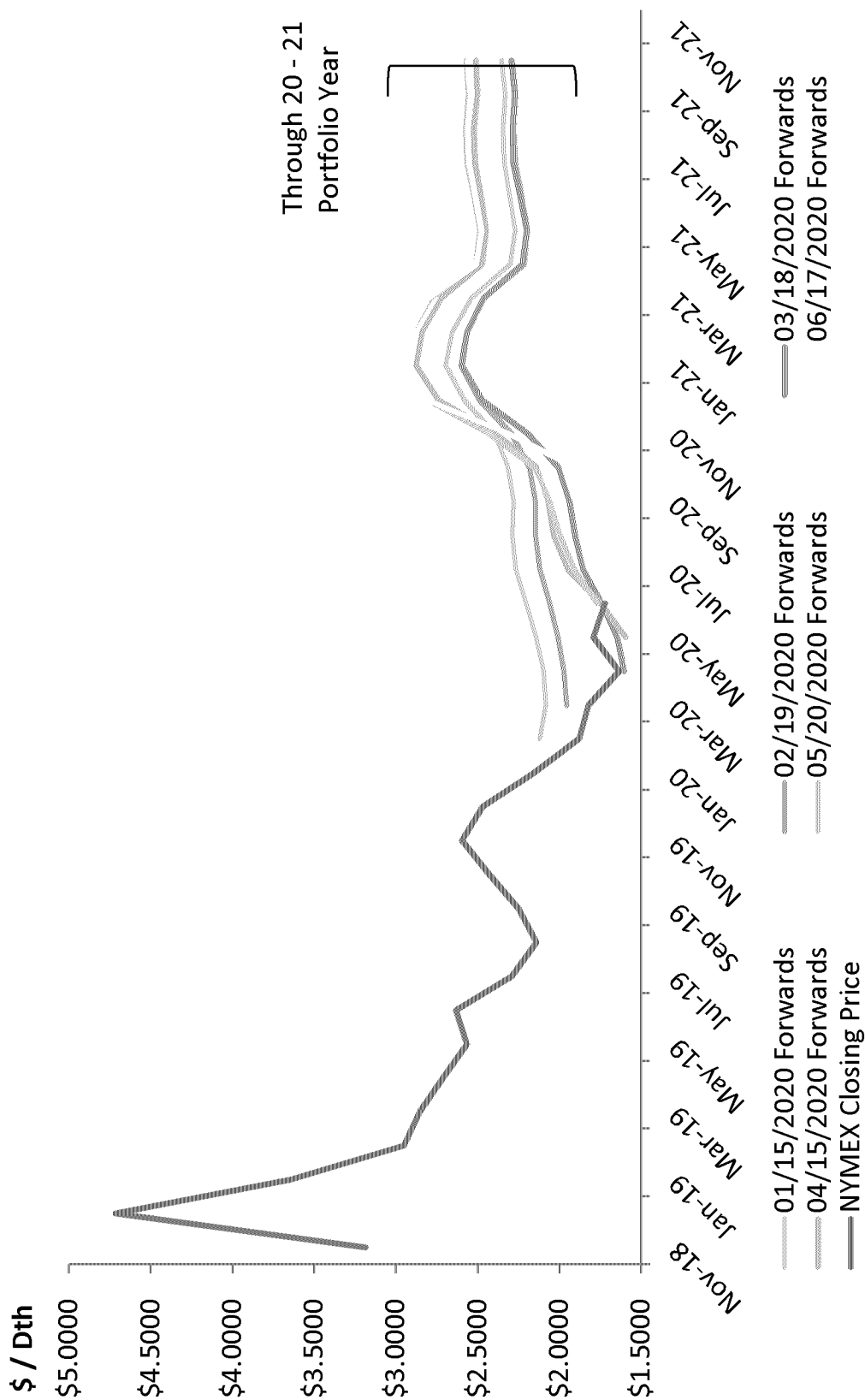


Gas Market Fundamentals



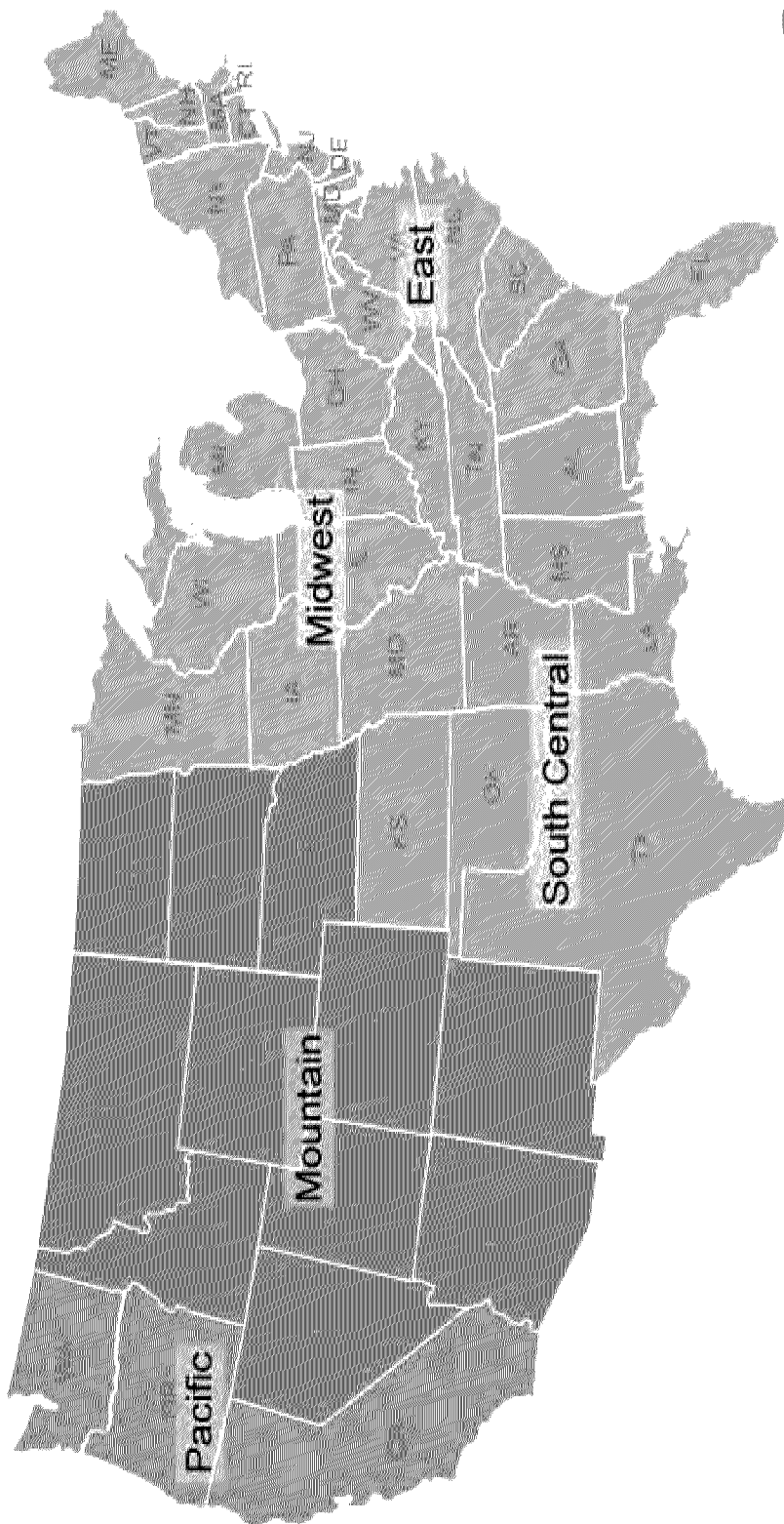
CALL 811 BEFORE YOU DIG!

NYMEX Forward Prices



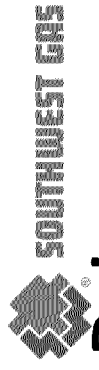
Forwards dates correspond to Nevada Baseload Supply Program solicitation dates



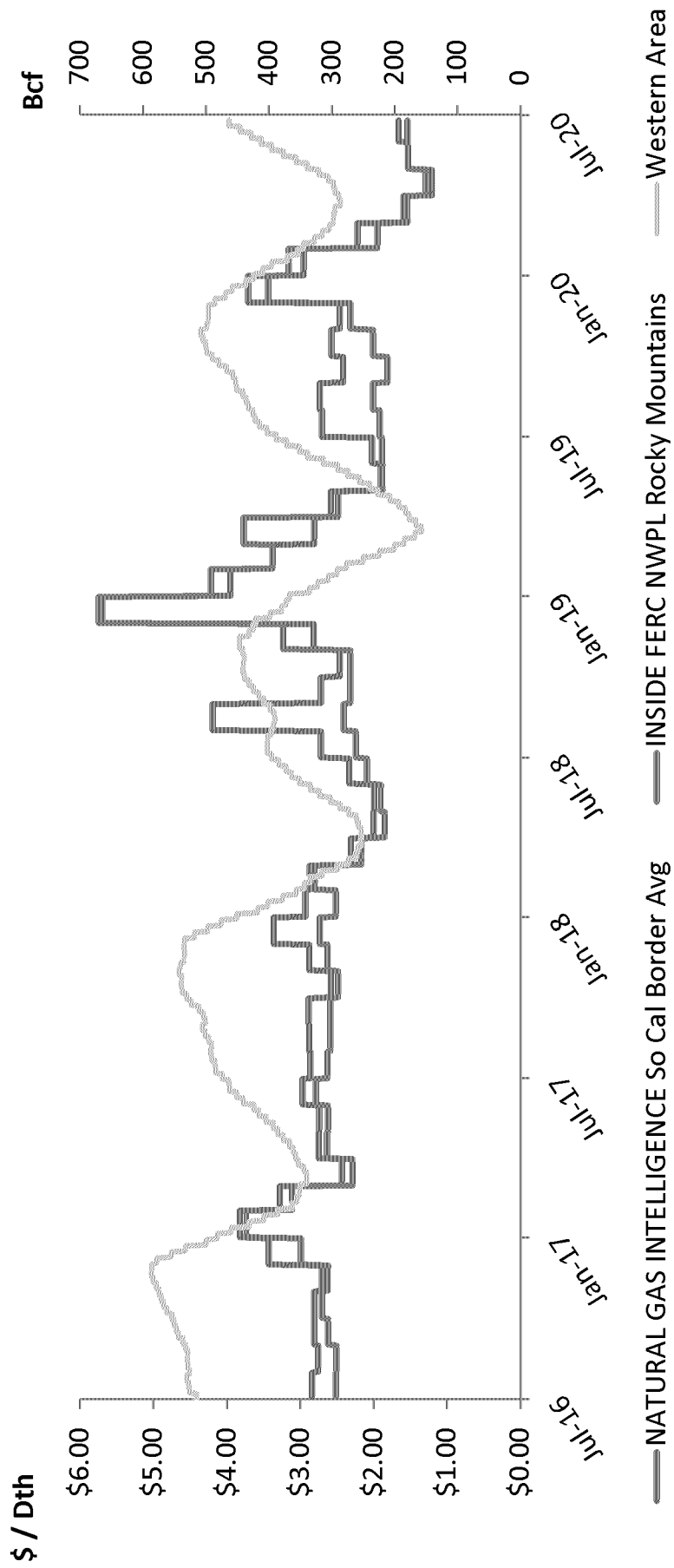


SoCal Storage Information – <https://scgenvoy.sempra.com/>

PG&E Storage Information – <https://pge.com/pipeline/index.page/>



Historical FOM (First of Month) Market Prices & Western Area Natural Gas Storage Inventory

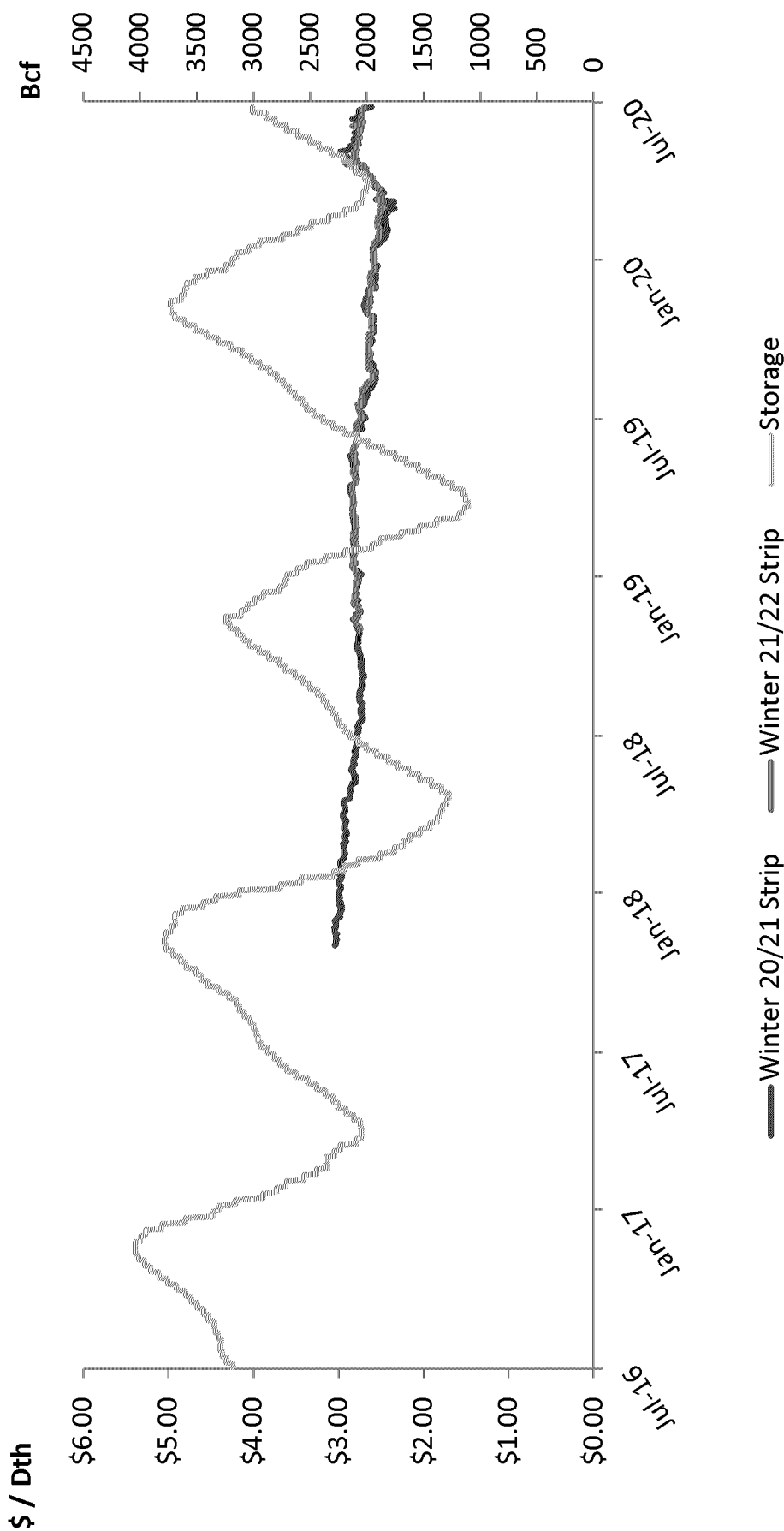


Western area includes Mountain and Pacific Storage Regions



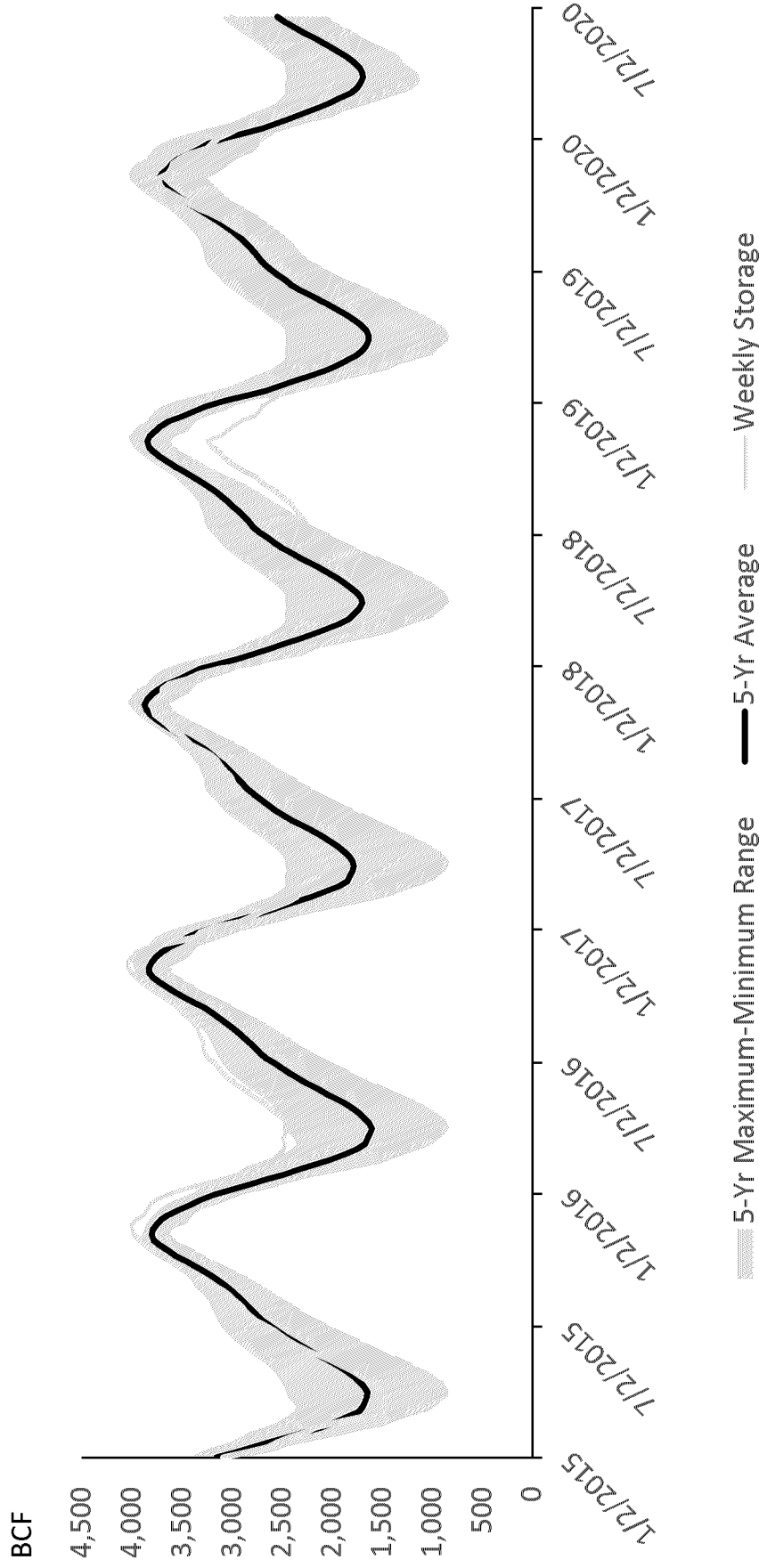
CALL 811 BEFORE YOU DIG!

2020/21 - 2021/22 NYMEX Winter Strip Price & Natural Gas Storage



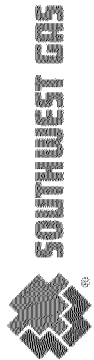


Working Gas in Underground Storage Compared with the 5-Year Maximum and Minimum

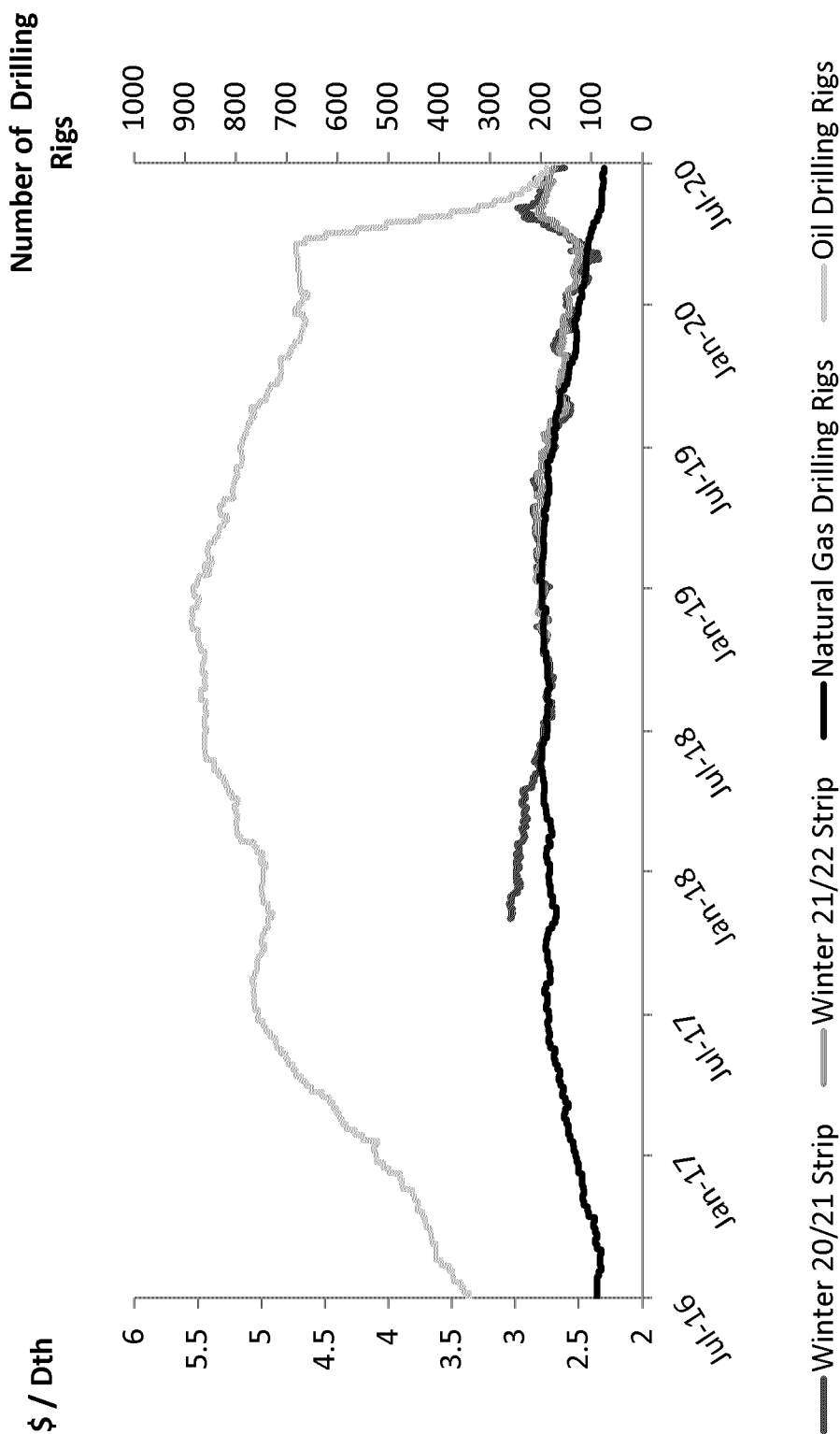


For week ending June 19, 2020



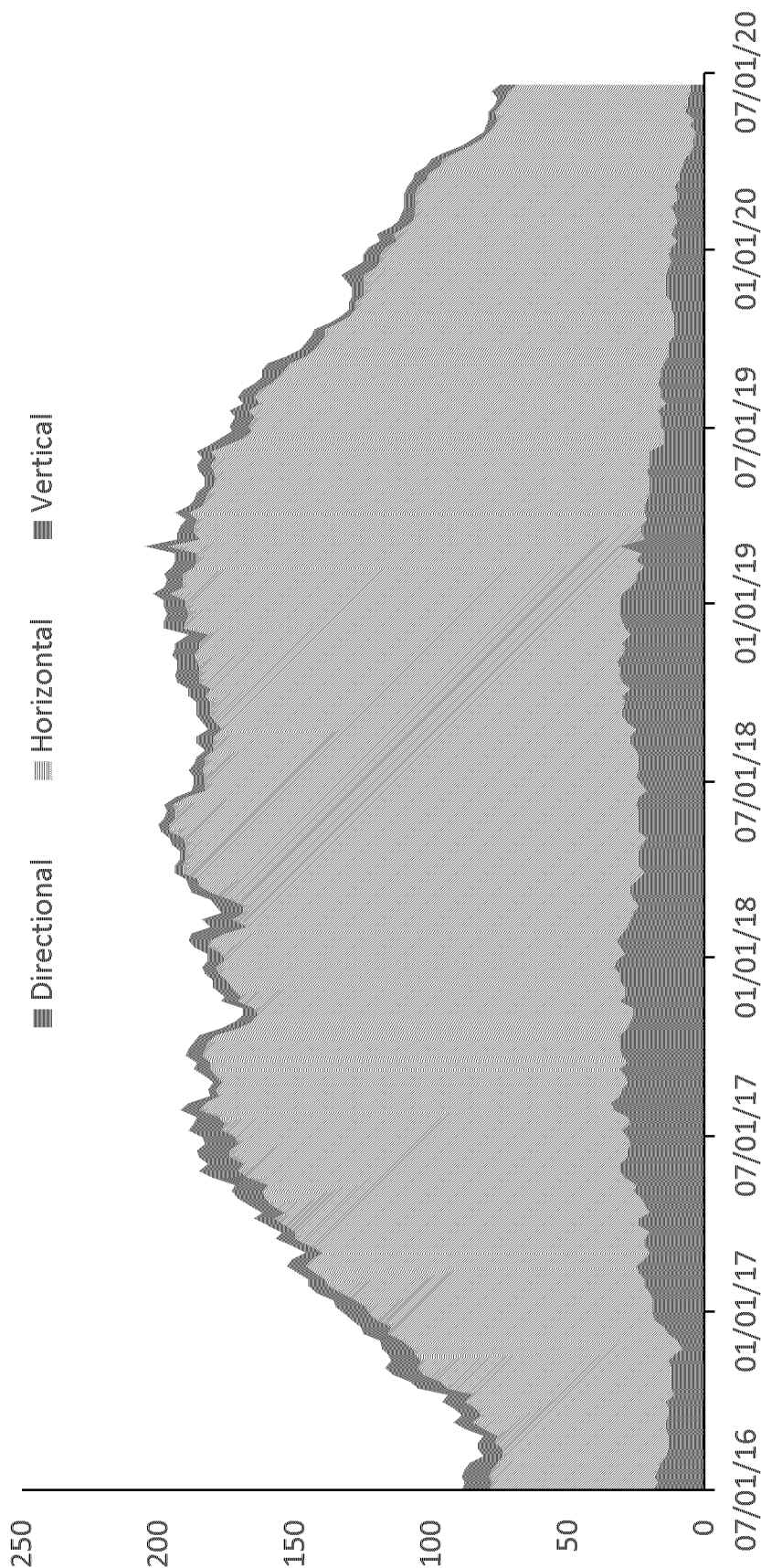


2020/21 – 2021/22 NYMEX Winter Strip Price & Oil and Gas Rotary Rig Count



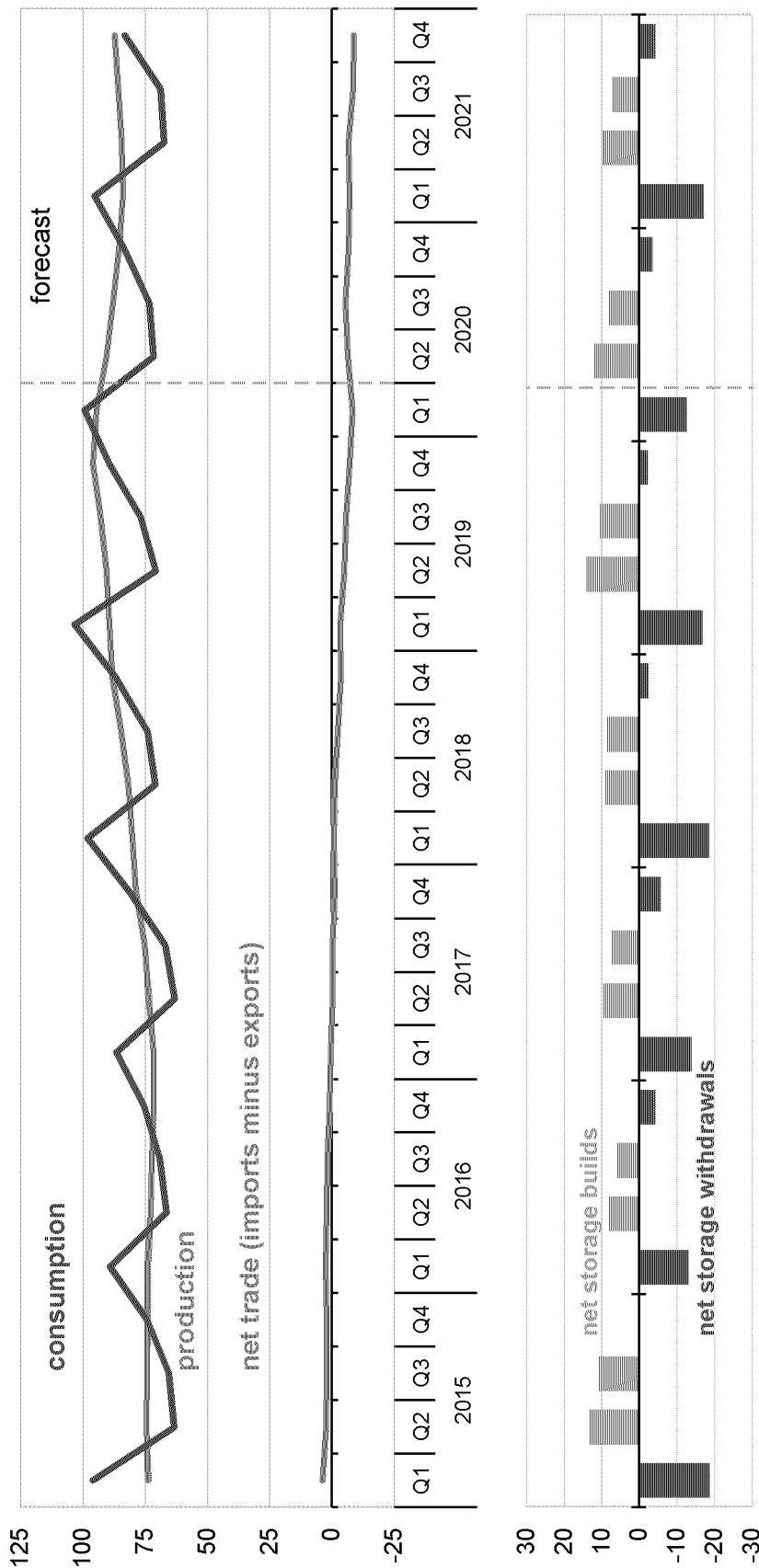
Weekly Natural Gas Rig Count by Type

Number of Active Rigs



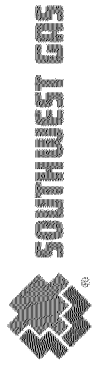
U. S. Natural Gas Production, Consumption and Net Imports

U.S. natural gas production, consumption, and net imports
billion cubic feet per day

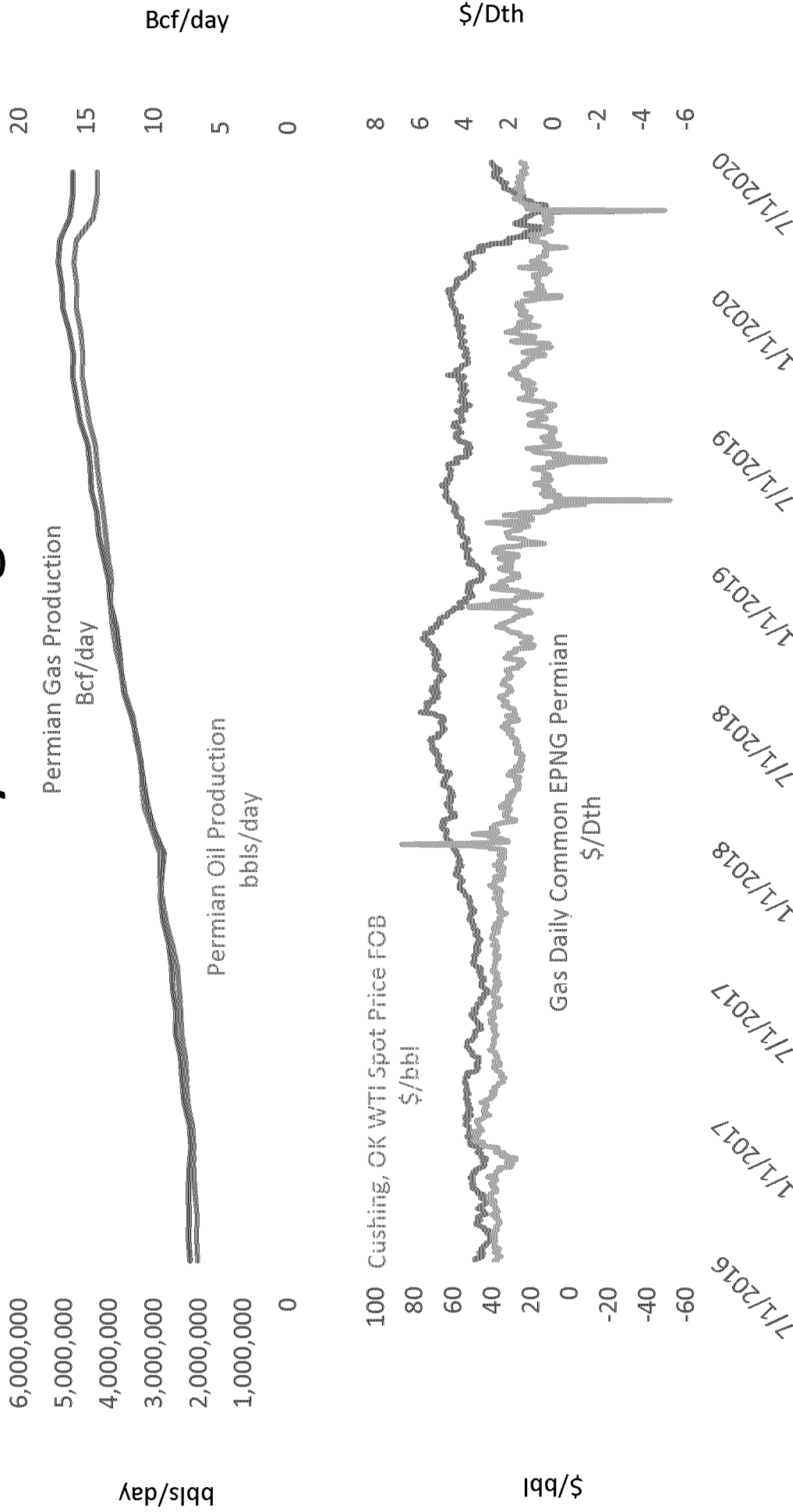


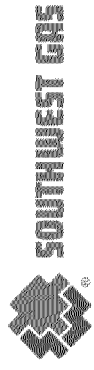
Source: Short-Term Energy Outlook, June 2020



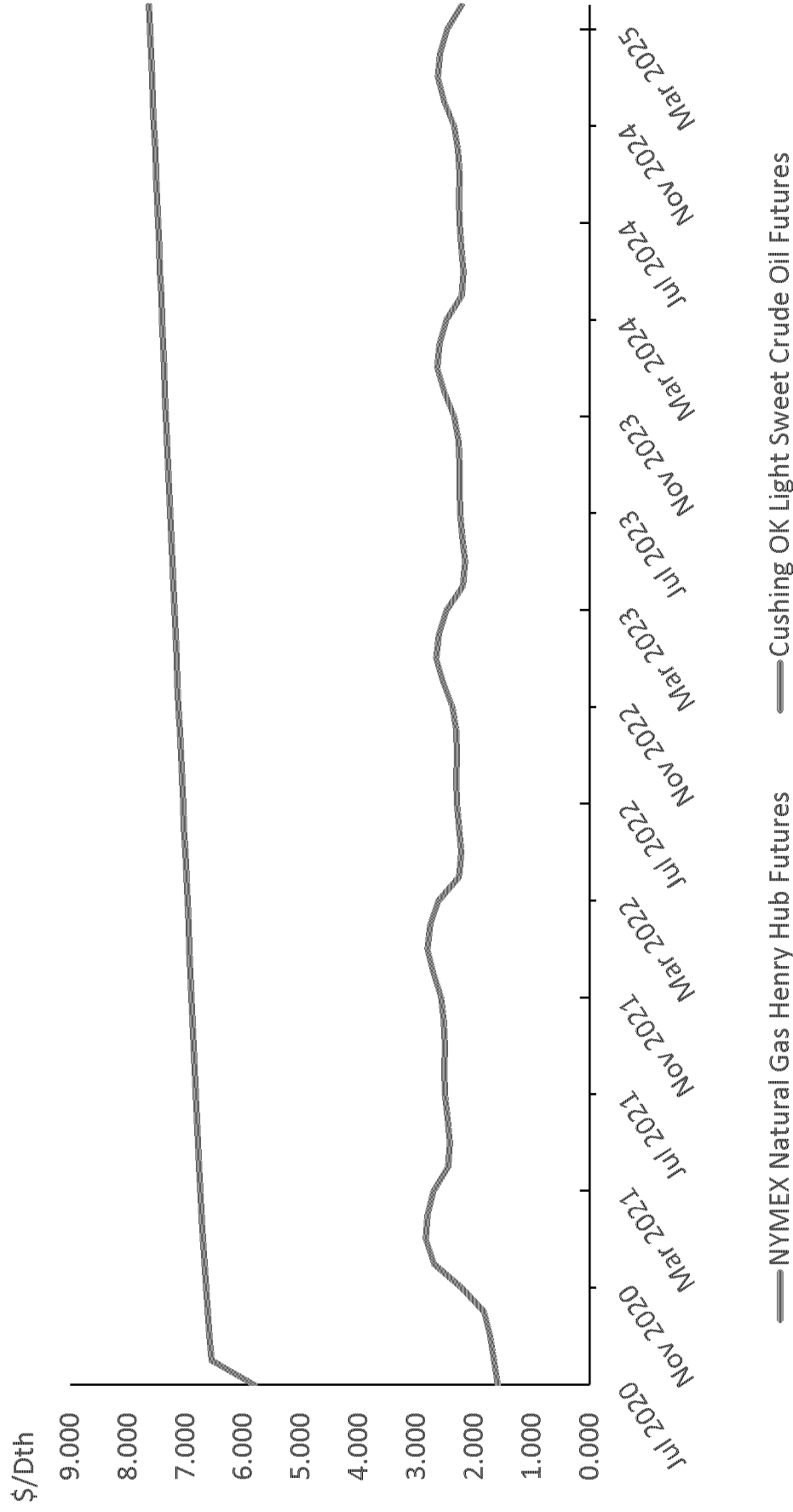


Permian Oil and Natural Gas Daily Production — Daily Pricing





NYMEX Henry Hub Natural Gas and Cushing OK Light Sweet Crude Oil Futures



June 25, 2020 Futures



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Supplemental Information

EXHIBIT NO. ____ (JRO-5)
SHEET 42 OF 154



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Estimated Winter Strip Forwards (\$/Dth)

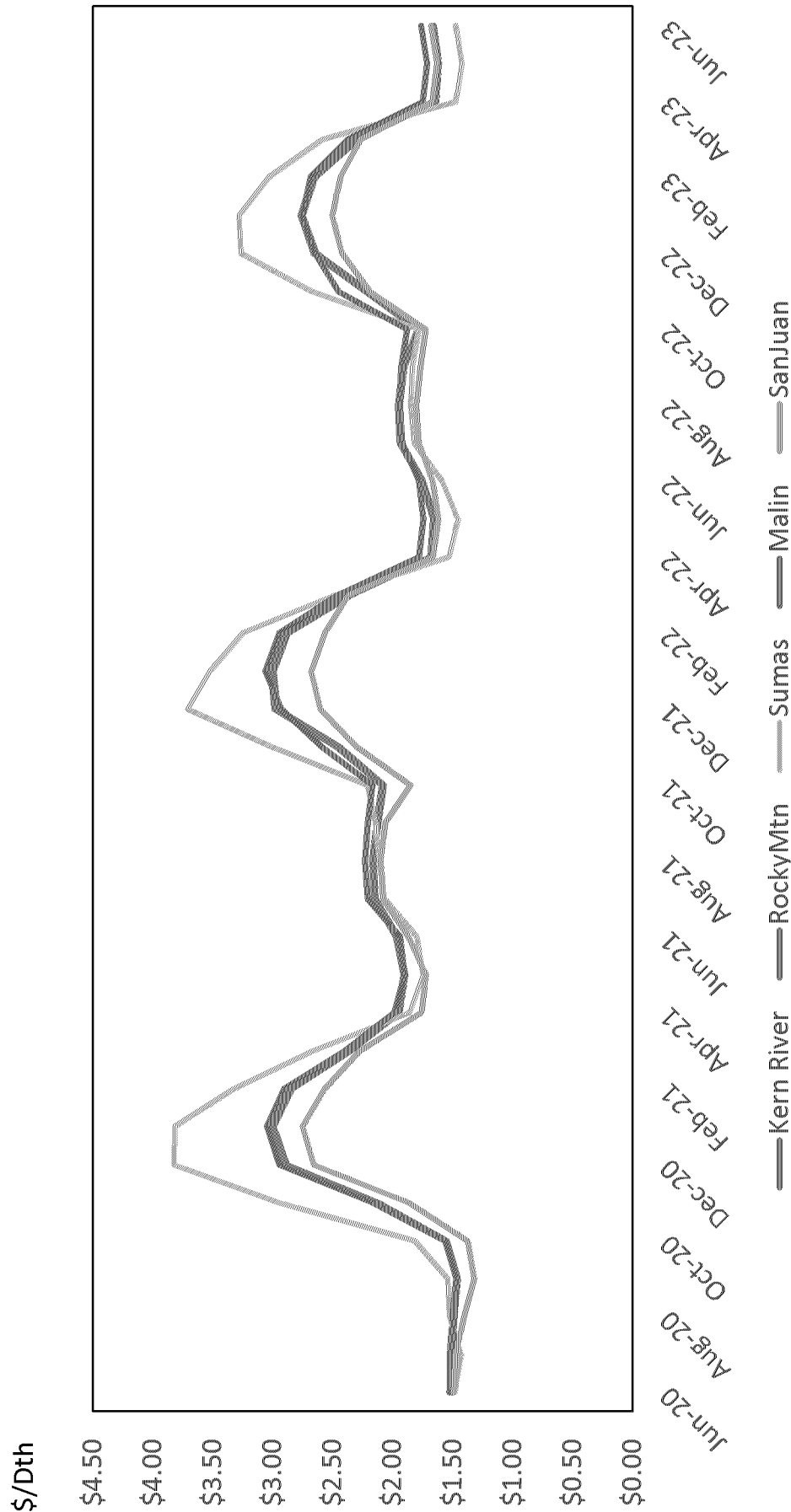
2020/21 Solicitations Dates

Solicitation Date	Rockies	Sumas	Malin	Kern	San Juan	NYMEX
	2020/21	2020/21	2020/21	2020/21	2020/21	2020/21
1/15/2020	2.4138	3.1548	2.5062	2.5078	2.2072	2.5750
2/19/2020	2.2846	3.0004	2.3560	2.3786	2.0906	2.4840
3/18/2020	2.3980	2.9392	2.4698	2.4920	2.2154	2.4926
4/15/2020	2.5422	3.2052	2.6210	2.5672	2.3840	2.7142
5/20/2020	2.8500	3.5674	2.9196	2.8750	2.6424	2.7772
6/17/2020	2.8084	3.5048	2.8670	2.8334	2.5884	2.7562

The above forward prices are not necessarily representative of the prices Southwest Gas would have paid for VMP transactions.



Nevada Supply Point Monthly Forwards



June 25, 2020 Monthly Forwards Prices



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Market Report Information

- EIA's June dry natural gas production estimates (EIA, 2020)
 - Average 92.2 Bcf/d in 2019 (actual)
 - Average 89.7 Bcf/d in 2020 (estimated)
- EIA's June U.S. natural gas consumption forecast (EIA, 2020)
 - Average 85.4 Bcf/d in 2019 (actual)
 - Average 81.9 Bcf/d in 2020 (estimated)
- EIA's June Henry Hub spot price projections (EIA, 2020)
 - Average \$2.12/Dth in 2020 (estimated)
 - Average \$3.20/Dth in 2021 (estimated)





Market Report Information

EIA's June U.S. average crude oil production estimate (EIA, 2020)

- 11.6 MMbbl/d in 2020
- 10.8 MMbbl/d in 2021

U.S. combined oil and natural gas rig count declined to 264 as of June 19, 2020 (Baker Hughes, 2020).

- 189 oil directed rigs
- 75 natural gas directed rigs
- Total down 701 from the corresponding week a year earlier



Market Report Information References

- U.S. Energy Information Administration (EIA), (June 19, 2020). Forecast highlights global liquid fuels. *Short Term Outlook*. Retrieved from: <https://www.eia.gov/outlooks/steo/>
- Baker Hughes, (June 19, 2020). Rig count summary. Retrieved from: <http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother>





MEMORANDUM

To: Randy Gabe

From: Nevada Gas Purchase Strategy Committee

Date: July 6, 2020

Subject: Second Quarter 2020 Nevada Hedging Strategy Recommendation

On June 3, 2020, pursuant to the Stipulation approved by the Public Utilities Commission of Nevada in Docket 13-06006 and as modified in Docket 19-06003, the Nevada Gas Purchase Strategy Committee reviewed the Company's current hedging strategy, various market fundamentals, and the ratemaking methodologies used to recover gas costs from the Company's customers.

The Nevada Gas Purchase Strategy Committee (hereinafter "Committee"), at a minimum, consists of representatives from each of the following departments:

- Gas Supply
- Gas Resources Planning
- Regulation and Energy Efficiency

The following individuals were present at the Committee meeting:

- Randy Gabe, Vice President / Gas Resources
- Amy Timperley, Director / Regulation and Energy Efficiency
- Erin Potokar, Supervisor / Regulation and Energy Efficiency
- Nicholas Lape, Analyst I / Regulation and Energy Efficiency
- Steve Williams Director / Gas Resources Planning
- Laura Spurlock, Manager / Gas Resources Planning
- Ernest Melo, Senior Evaluation Engineer / Gas Resources Planning
- Kristien Tary, Reg Specialist / Gas Resources Planning
- Francell Rodriguez, Evaluation Engineer / Gas Resources Planning
- John Olenick, Director / Gas Purchases and Transportation
- Eric Rost, Manager / Gas Purchases and Transportation

To: Gabe
July 6, 2020
Page 2 of 3

During the June 3, 2020 Committee meeting (“Meeting”), the Committee evaluated market fundamentals such as national storage inventory levels, national rig count levels, current and projected supply and demand levels for natural gas, and forward market price curves. The Committee also reviewed the estimated total gas cost rates that the Company would charge its customers based on the current forwards, as well as a sensitivity analysis of how those total gas cost rates would change if there were various levels of increases in gas prices.

At the time of the Meeting, the national storage inventory level was at 2,612 Bcf. That level is 423 Bcf above the five-year average and 778 Bcf higher than this time last year. Storage inventories in the Pacific region were at 264 Bcf, which is 10 Bcf above that region’s five-year average and 69 Bcf higher than last year this time. In the Mountain region, storage inventories were at 132 Bcf, which is 2 Bcf below that region’s five-year average and 40 Bcf more than last year this time.

Since the Committee’s March 23, 2020 meeting, natural gas directed rig counts have decreased from 106 to 77 and oil directed rigs declined from 664 to 222. EIA shows U.S dry natural gas production averaged 92.2 Bcf/day in 2019 and is expected to decrease in 2020 to 89.8 Bcf/day. Moreover, EIA projects U.S. crude oil production to average 11.7 MMbbl/day in 2020 and decrease in 2021 to 10.9 MMbbl/day.

NYMEX prices for the next winter period (November 2020 through March 2021), have ranged from about \$2.76/Dth to \$2.97/Dth over the past month. Current production region spot prices have averaged from around \$1.56/Dth in the Rockies, to about \$1.70/Dth at Henry Hub. EIA estimates that Henry Hub spot prices will average around \$2.14/Dth in 2020 and \$2.89/Dth in 2021.

Based on the current ratemaking methodologies, which have not changed since the Company suspended Nevada VMP purchases in the fall of 2013, the Company calculated projected quarterly total gas cost rates for July 2020 through April 2022 for both southern Nevada and northern Nevada systems. The Company used the May 12, 2020 forward market gas prices when calculating the projected quarterly total gas cost rates.

To: Gabe
July 6, 2020
Page 3 of 3

For customers in southern Nevada, the Company projects that retail gas cost rates for July 2020 through April 2022 could range from a low of approximately \$0.22/therm to a high of about \$0.31/therm. For customers in northern Nevada, the Company projects that gas cost rates for the same period could range from a low of about \$0.48/therm to a high of approximately \$0.61/therm. Sensitivity analysis shows that the current ratemaking methodologies continue to dampen the volatility in customer rates under increased gas price scenarios.

After reviewing the market fundamentals and projected quarterly gas rates that the Company would charge its customers, the Committee recommends that the Company should not alter its current gas hedging strategy and should continue to suspend Nevada VMP purchases. The Committee bases the recommendation upon the market fundamentals and ratemaking methodologies that existed as of June 3, 2020.

The Committee's recommendation does not consider market changes that could come about from unforeseen circumstances, *e.g.* force majeure events in the market place, sudden disruption of market supplies, extreme weather conditions, or regulatory changes. This recommendation only applies to the Company's Nevada gas purchase strategy and does not affect the Company's Arizona or California gas purchase strategies.

Attachments to the recommendation include documentation reviewed during the Committee meeting, as well as other supporting information.

cc:

Justin Brown	Amy Timperley
Christopher Brown	John Olenick
Eric Rost	Steve Williams
Laura Spurlock	



Southwest Gas' VMP and Gas Market Fundamentals Review (Docket Nos. 13-06006 and 19-06003) September 22, 2020

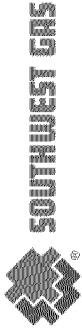




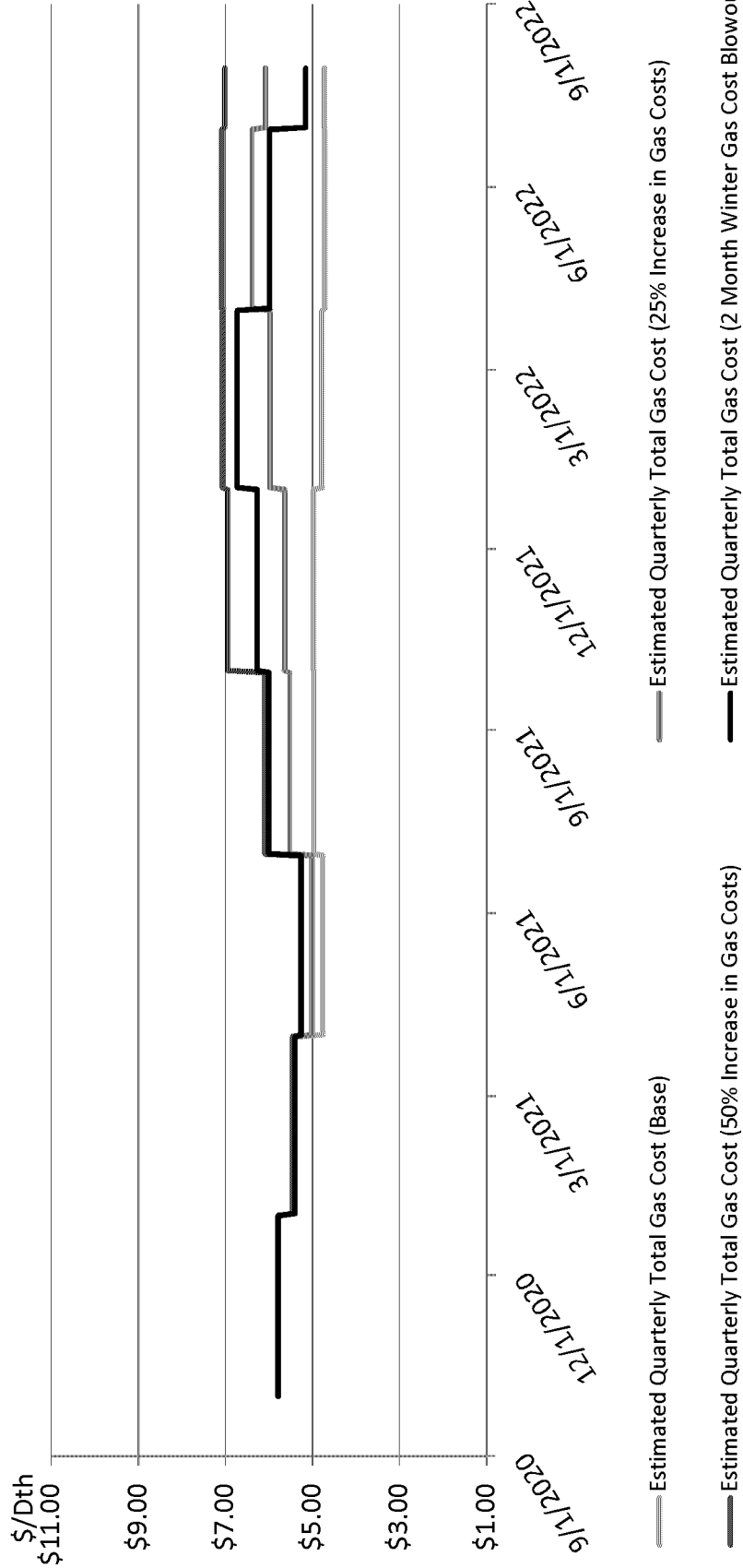
Volatility Mitigation Plan Update

- Analysis Summary
 - BTER/DEAA gas cost rate analysis shows minimal volatility under various market scenarios throughout the 2020 – 2022 study period
- Decision
 - Continue to suspend VMP purchases for Northern and Southern Nevada





BTER/DEAA Forecast – Northern Nevada



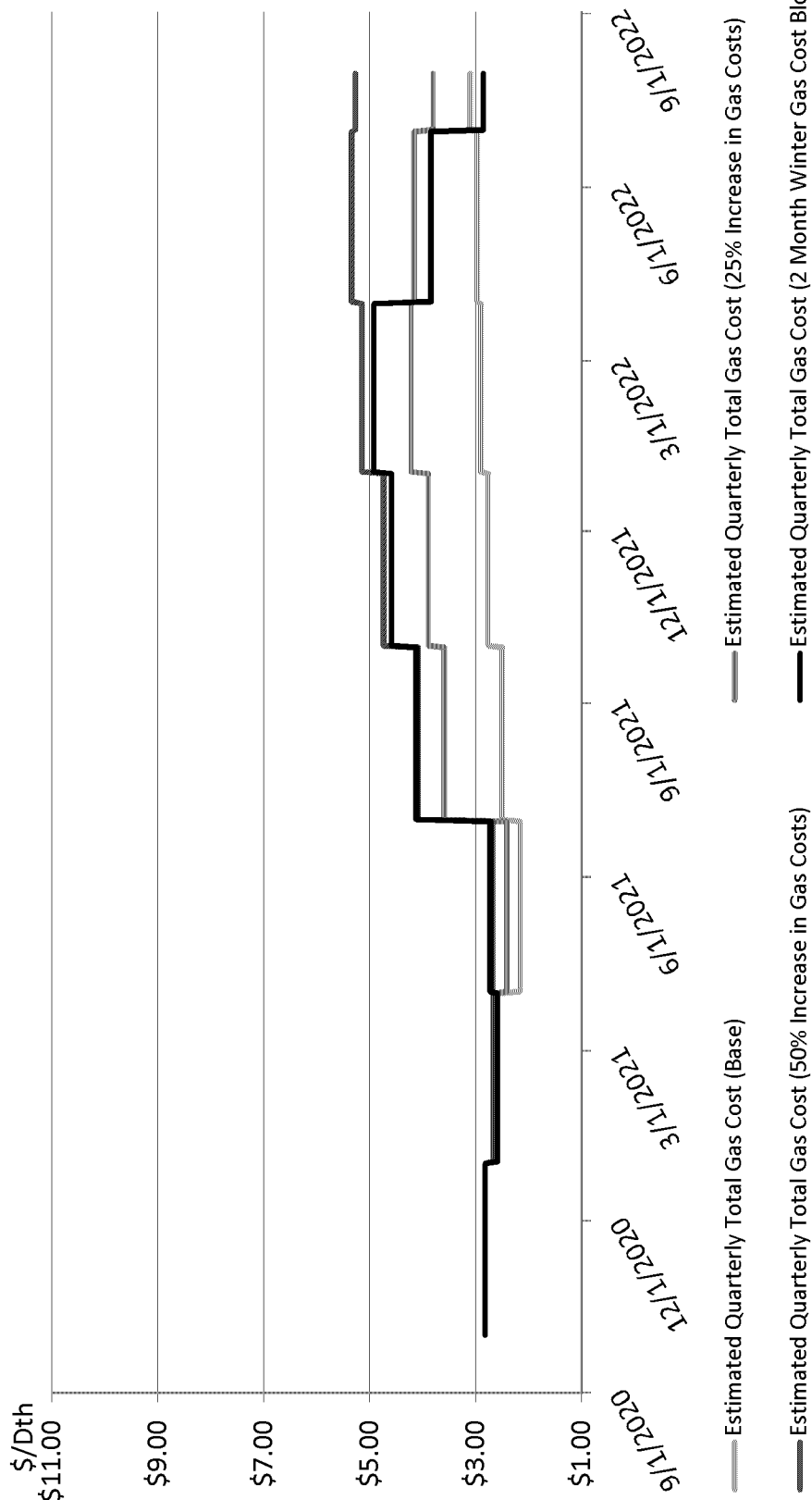
July 23, 2020 estimated forwards pricing



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BTER/DEAA Forecast – Southern Nevada



July 23, 2020 estimated forwards pricing



CALL 811 BEFORE YOU DIG!



Southwest Gas Corporation

Quarterly Gas Cost Projections [2],[4] & [5]

Description	Oct-20	Jan-21	Apr-21	Jul-21	Oct-21	Jan-22	Apr-22	Jul-22
Base								
<u>Southern Nevada</u>								
BTER Rate [1]	\$ 0.26657	\$ 0.26860	\$ 0.25077	\$ 0.30323	\$ 0.32257	\$ 0.33081	\$ 0.32496	\$ 0.31053
DEAA Surcharge [3]	\$ 0.01533	\$ (0.00967)	\$ (0.03467)	\$ (0.05290)	\$ (0.04623)	\$ (0.04011)	\$ (0.02745)	\$ 0.00000
Total Gas Cost	\$ 0.28190	\$ 0.25893	\$ 0.21610	\$ 0.25033	\$ 0.27634	\$ 0.29070	\$ 0.29751	\$ 0.31053
<u>Northern Nevada</u>								
BTER Rate [1]	\$ 0.54301	\$ 0.52960	\$ 0.49064	\$ 0.53607	\$ 0.56227	\$ 0.56829	\$ 0.56946	\$ 0.56526
DEAA Surcharge [3]	\$ 0.03525	\$ 0.01025	\$ (0.01475)	\$ (0.03975)	\$ (0.06475)	\$ (0.08975)	\$ (0.09780)	\$ (0.09255)
Total Gas Cost	\$ 0.57826	\$ 0.53985	\$ 0.47589	\$ 0.49632	\$ 0.49752	\$ 0.47854	\$ 0.47166	\$ 0.47271

[1] The Base Tariff Energy Rate (BTER) does not include the Unrecovered Gas Cost Expense (UGCE) Base Rate.

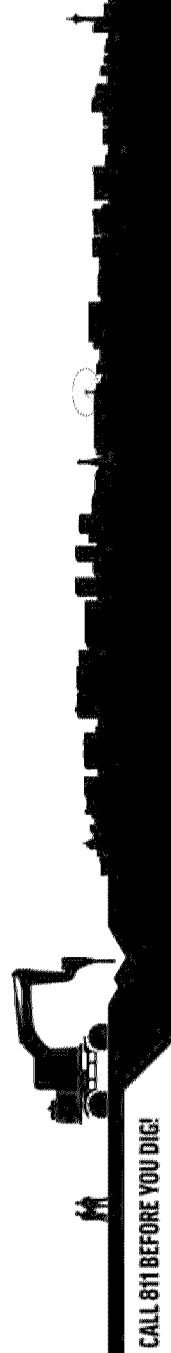
[2] There is a 3-month lag between accounting month data and quarterly rate changes, i.e. January rates are based on the previous September data.

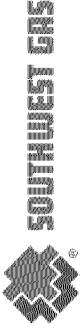
[3] Quarterly DEAA 1) If absolute value of 191 balance < 5% of 12 month purchased gas cost, DEAA = \$.00000, 2) otherwise change in DEAA change can not exceed (+/-) \$.02500 per therm.

[4] Gas Cost and Sales are based on Gas Supply Cost Projections updated with the Jul 23, 2020 Forward Market Prices.

[5] The above projections are based on estimated gas cost and customer usage and are subject to change.

[6] The Base Tariff Energy Rate (BTER) is equal to the prior quarter's twelve month Gas Cost divided by the prior quarters twelve month Volume (therms).





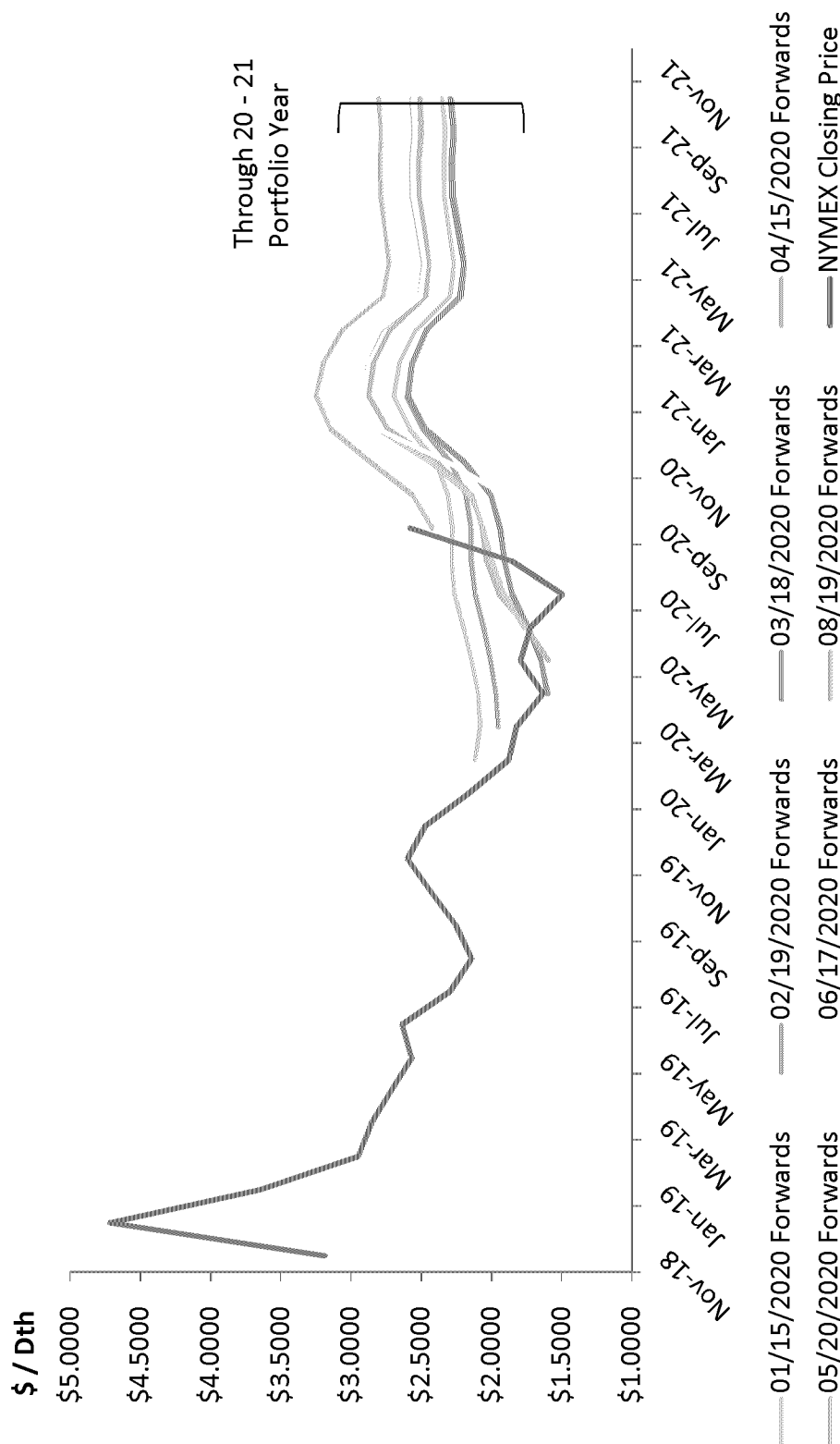
Gas Market Fundamentals



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NYMEX Forward Prices



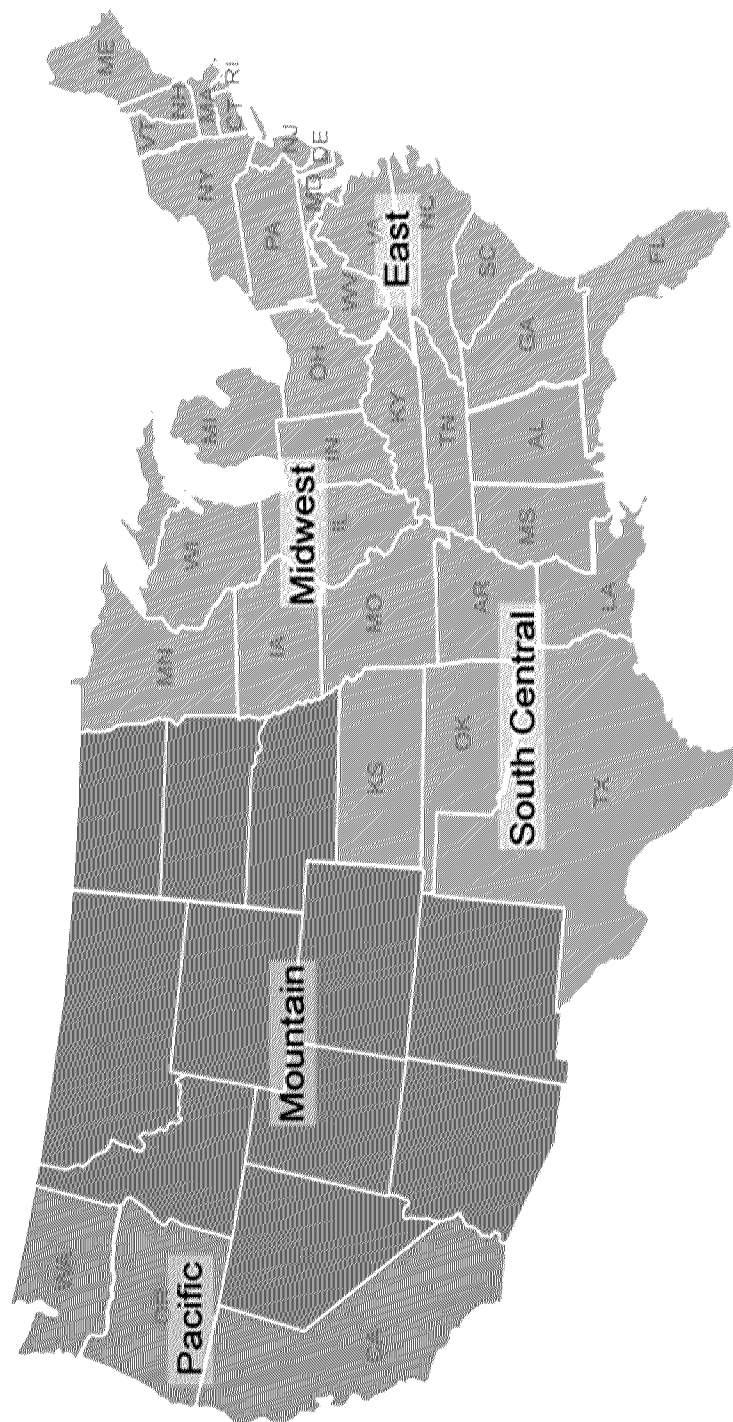
Forwards dates correspond to Nevada Baseload Supply Program solicitation dates



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Underground Storage Regions



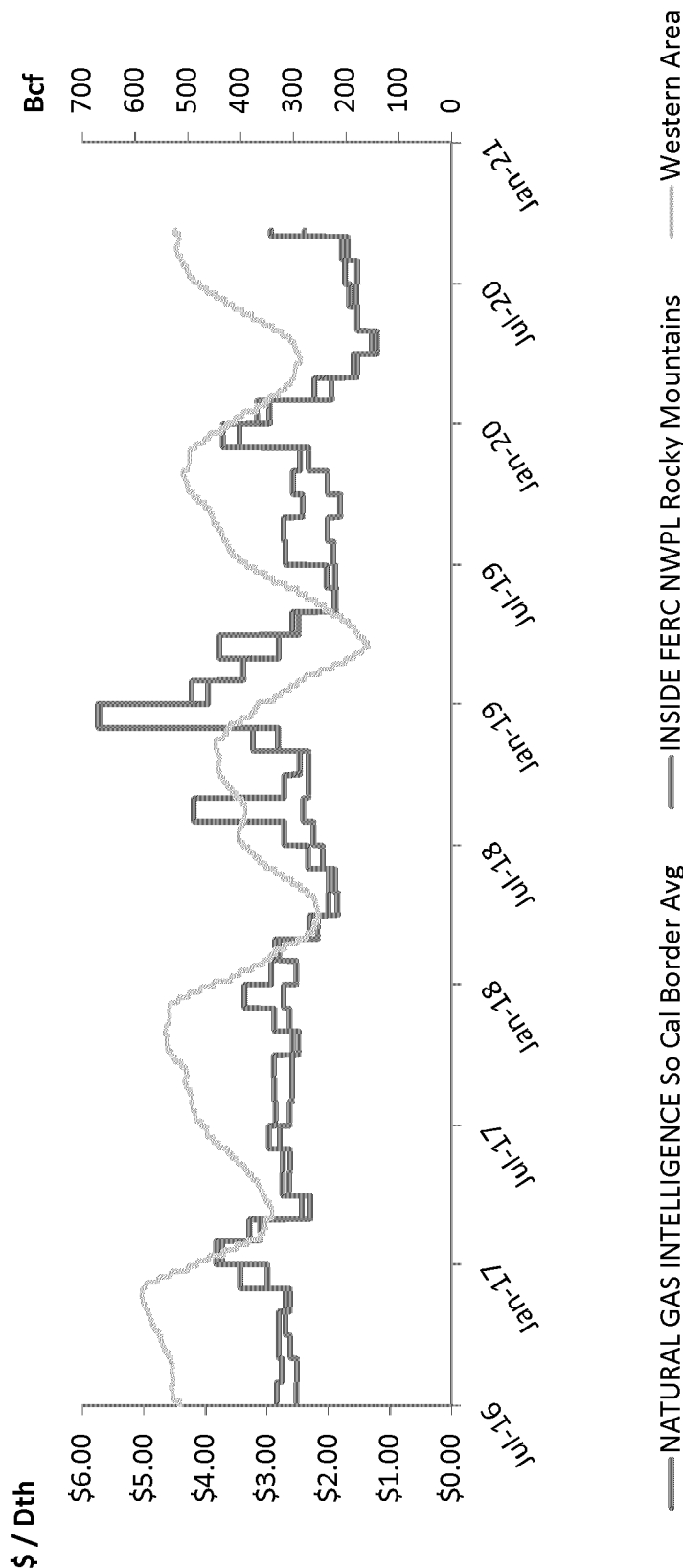
SoCal Storage Information – <https://scgenvoy.sempura.com/>
PG&E Storage Information – <https://pge.com/pipeline/index.page/>



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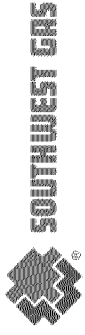
Historical FOM (First of Month) Market Prices & Western Area Natural Gas Storage Inventory



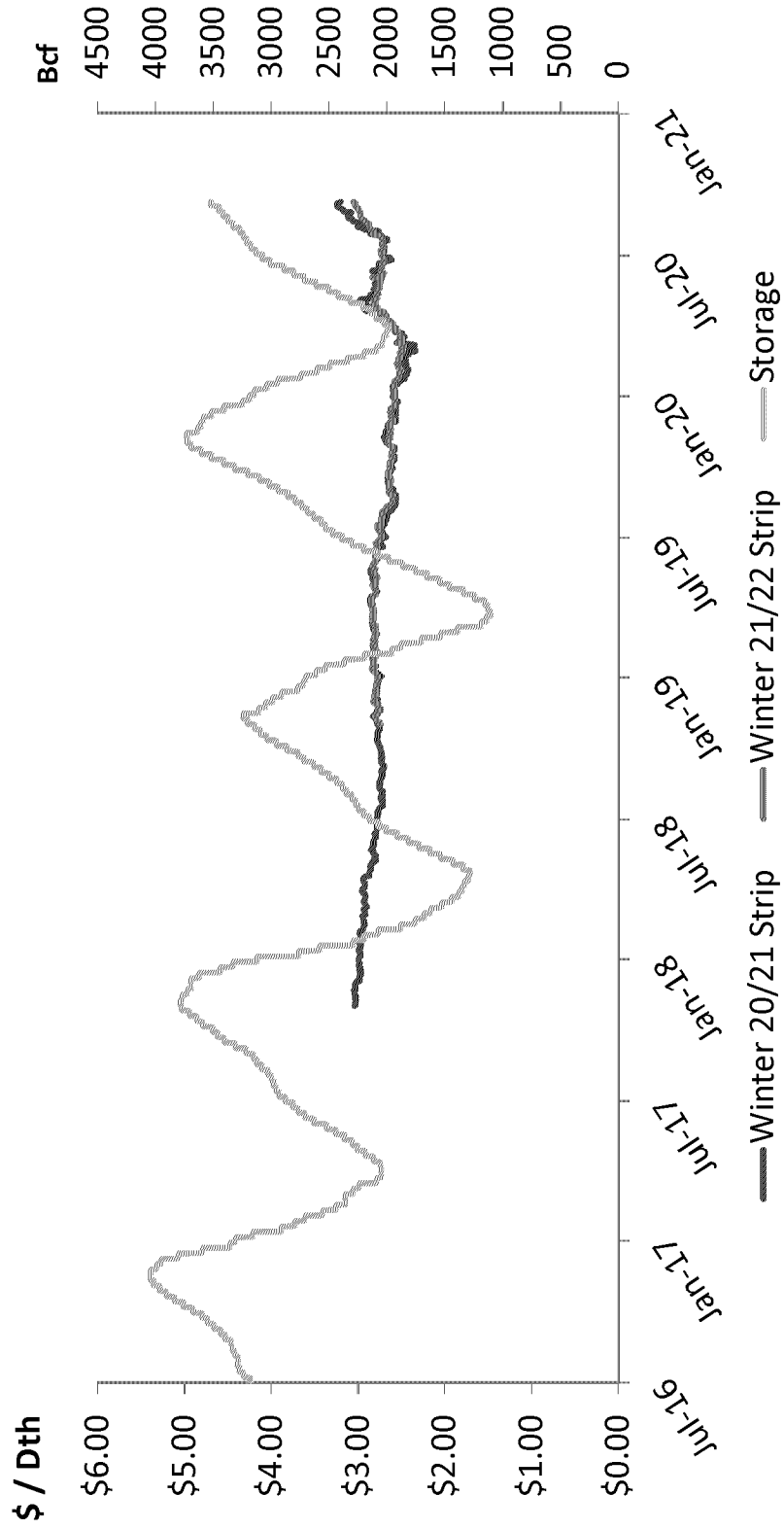
Western area includes Mountain and Pacific Storage Regions



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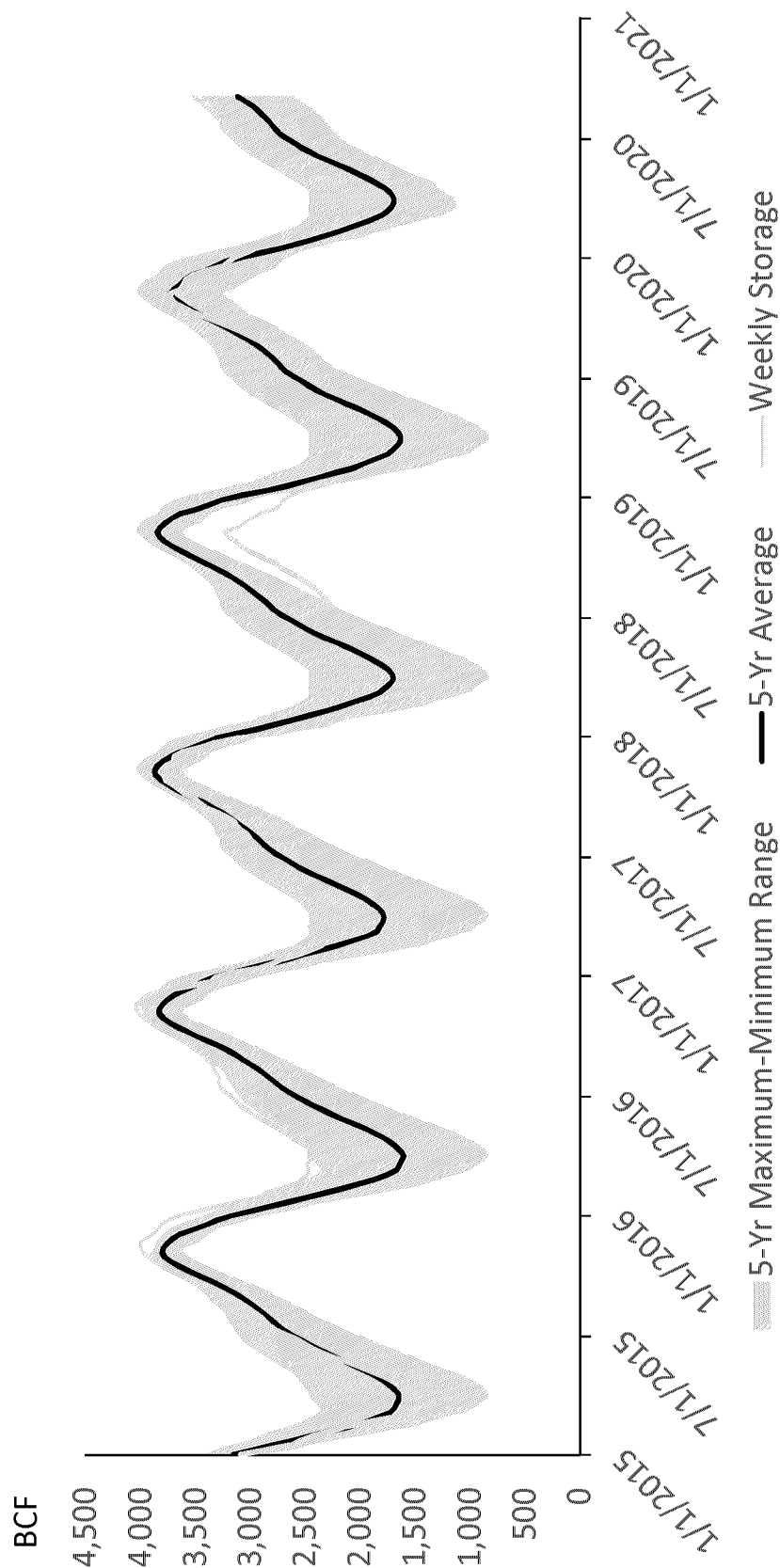
2020/21 - 2021/22 NYMEX Winter Strip Price & Natural Gas Storage



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Working Gas in Underground Storage Compared with the 5-Year Maximum and Minimum



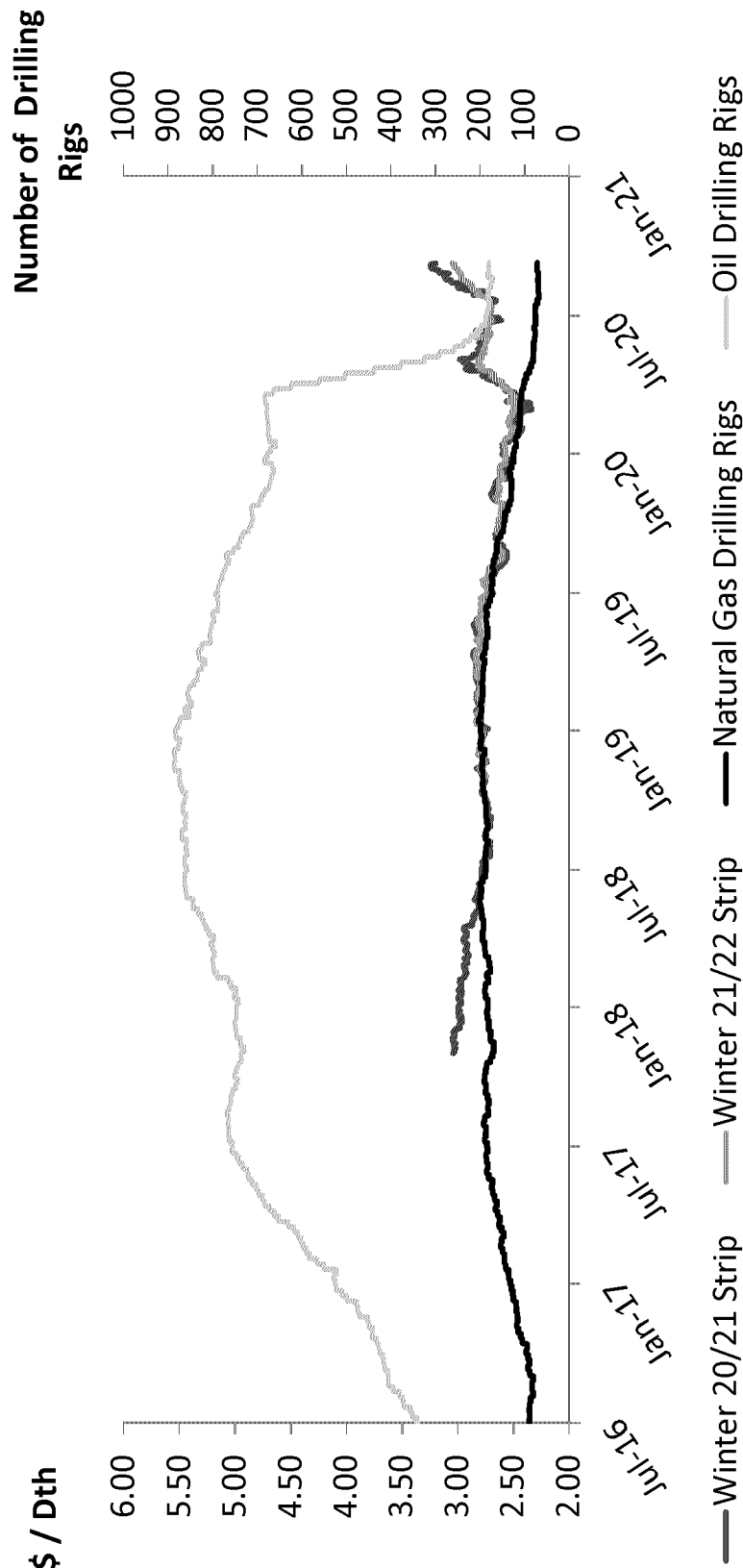
For week ending September 10, 2020



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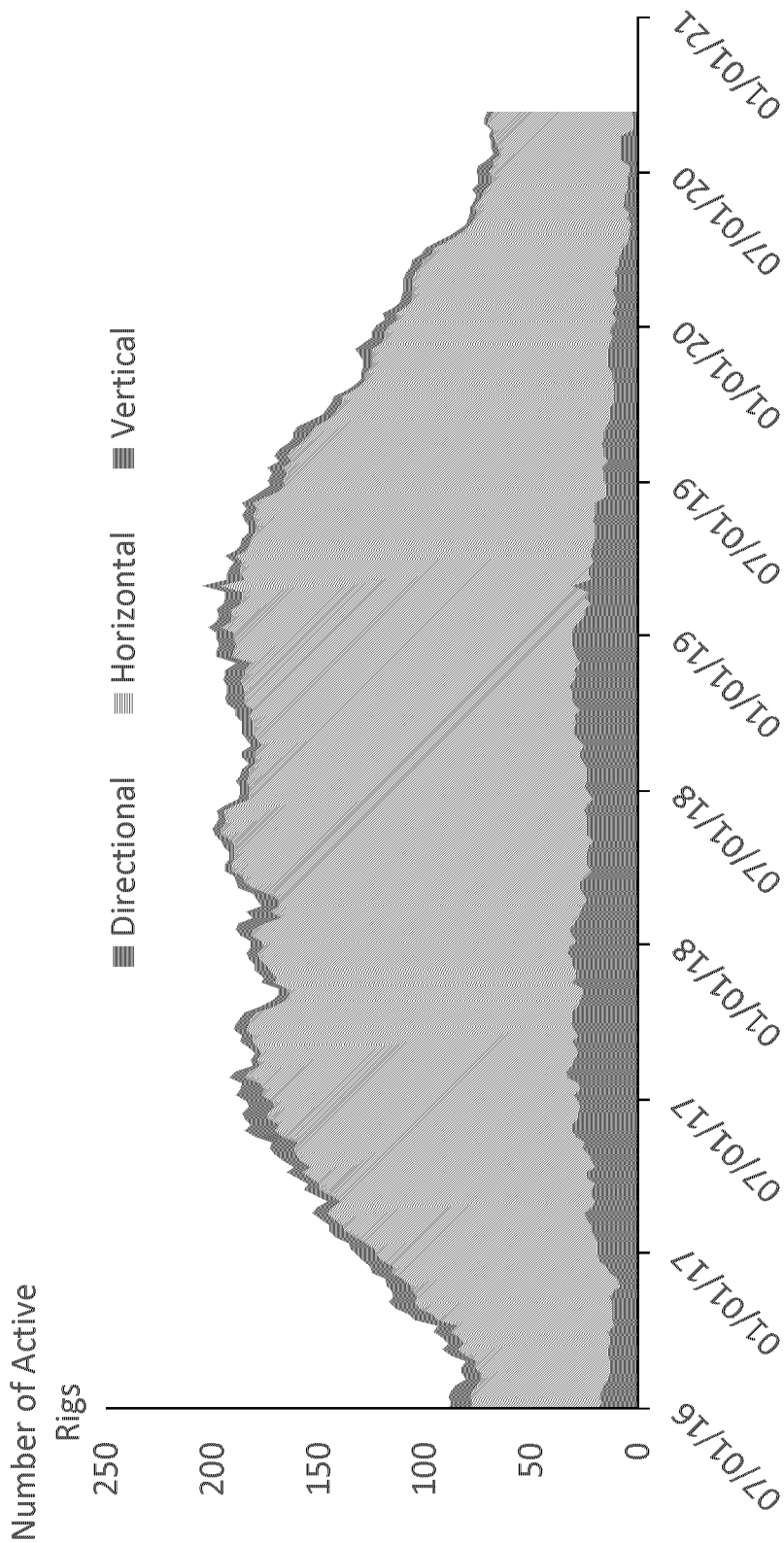
2020/21 – 2021/22 NYMEX Winter Strip Price & Oil and Gas Rotary Rig Count



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Weekly Natural Gas Rig Count by Type

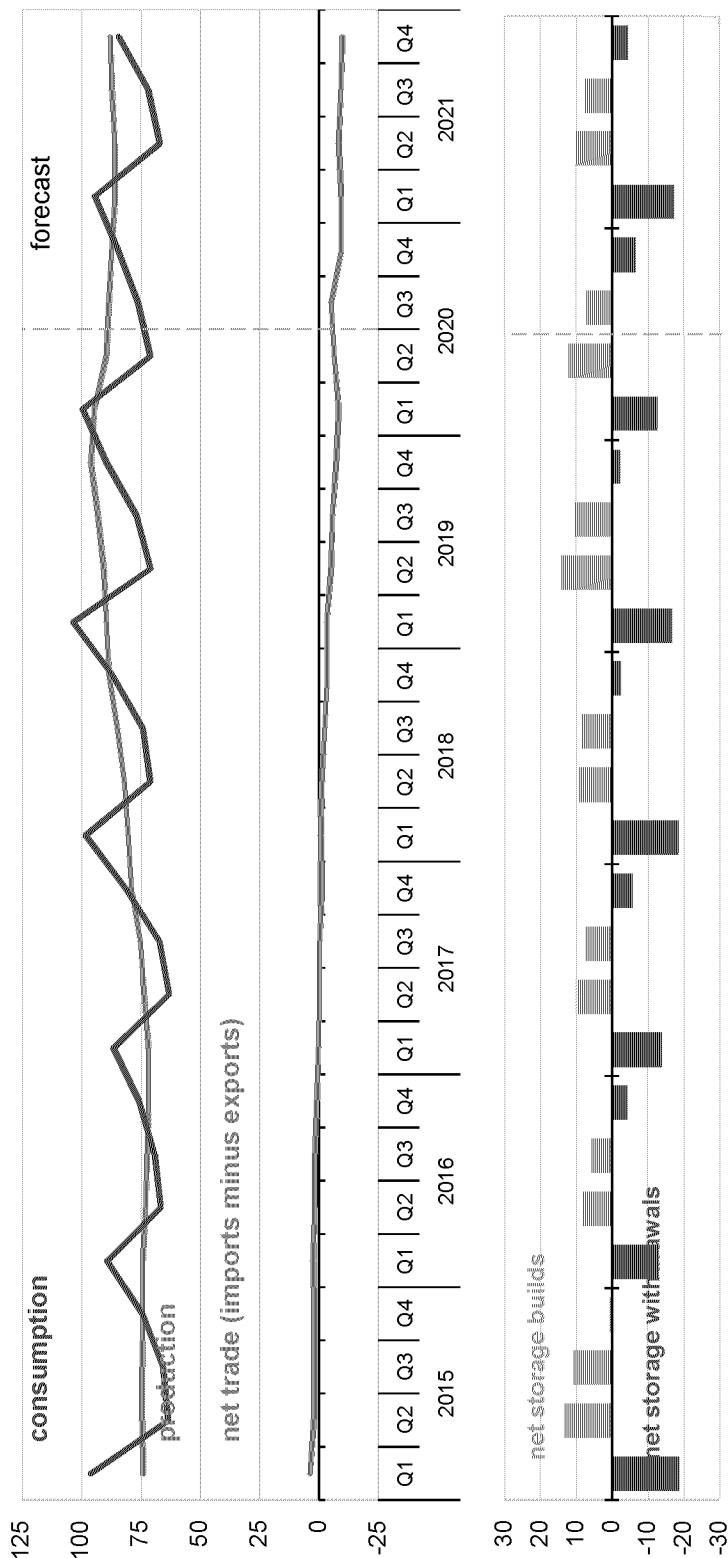


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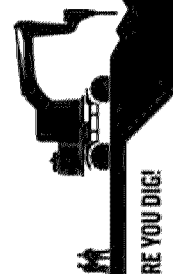


U. S. Natural Gas Production, Consumption and Net Imports

U.S. natural gas production, consumption, and net imports
billion cubic feet per day



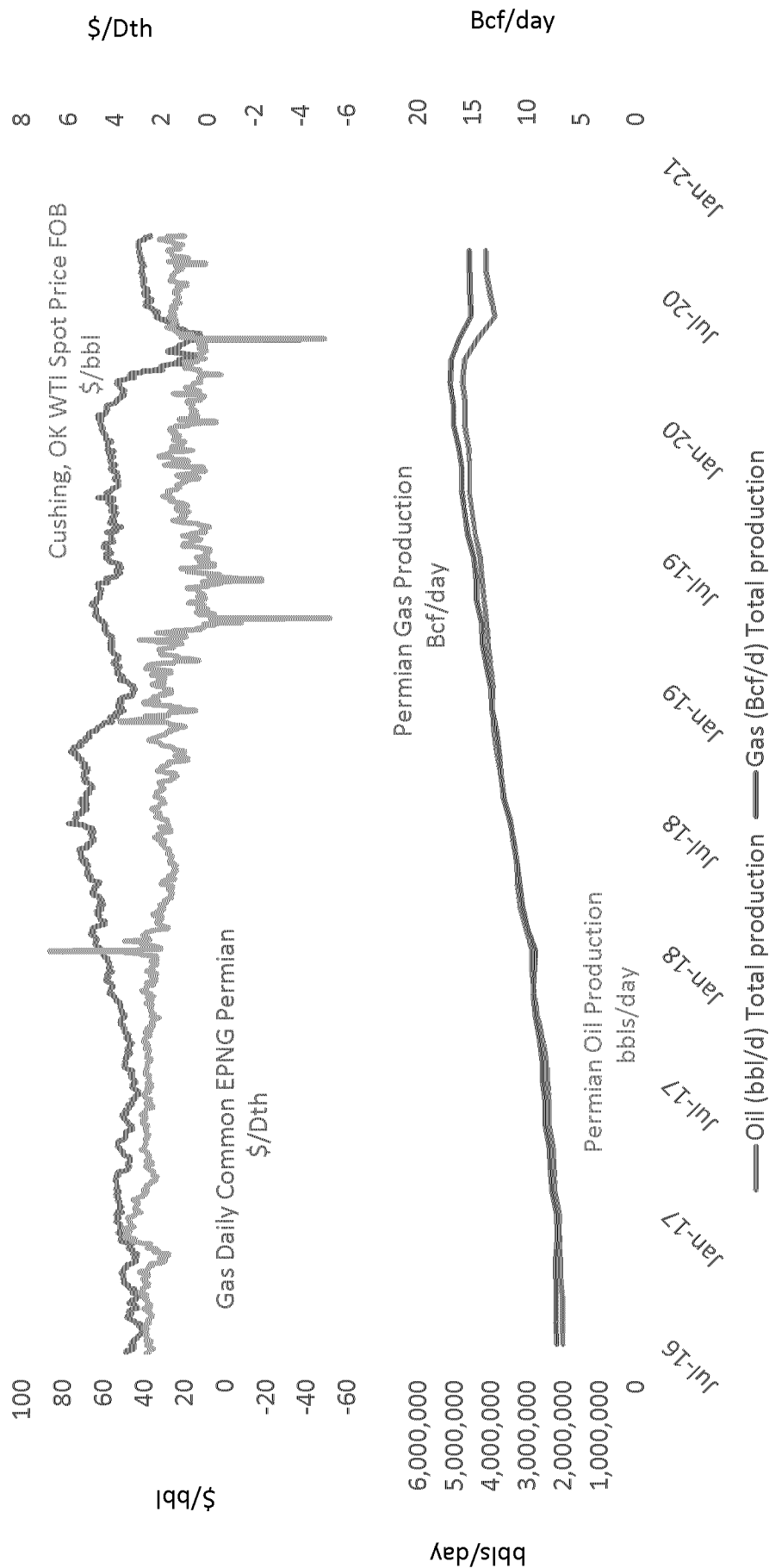
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2020



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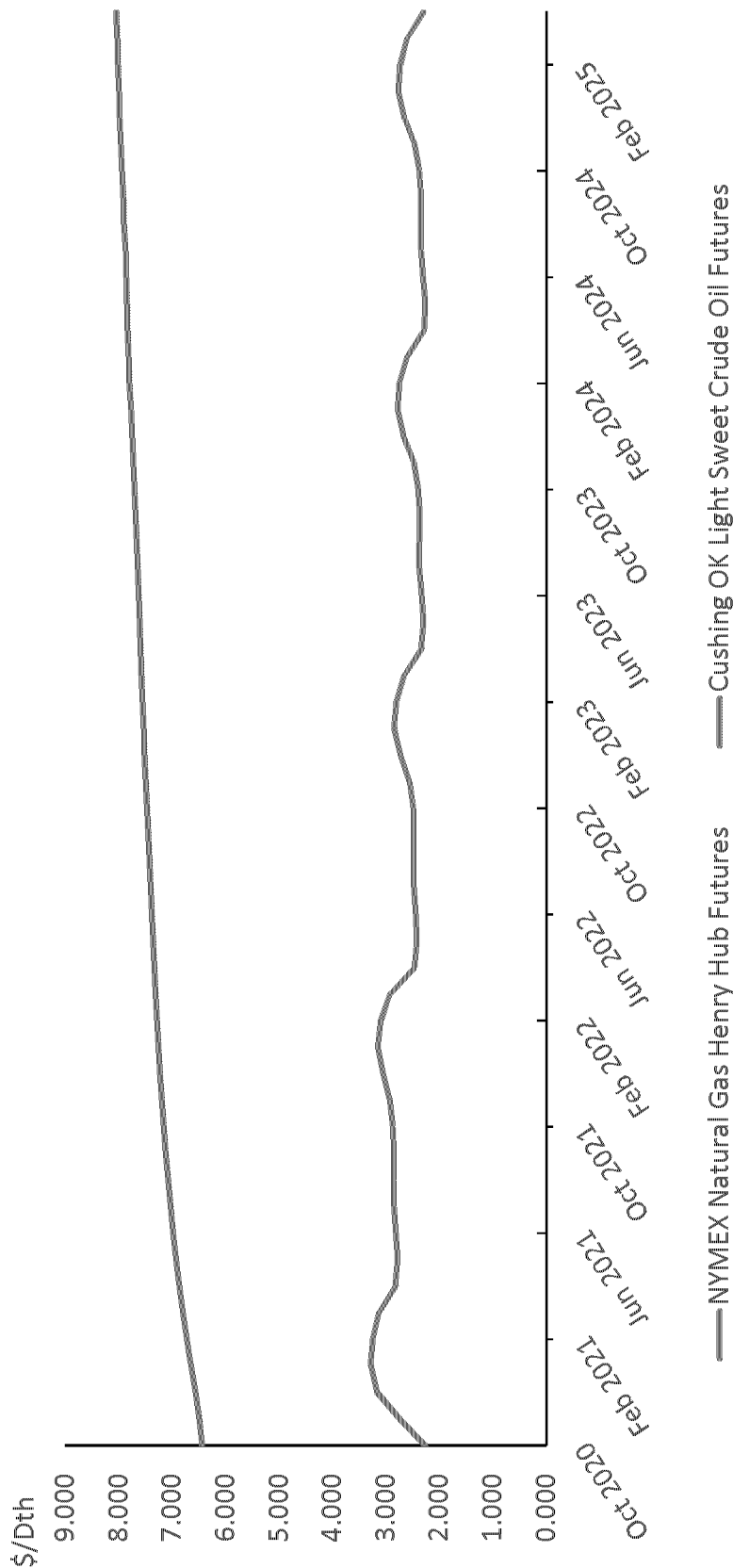
Permian Oil and Natural Gas Daily Production – Daily Pricing



CALL 811 BEFORE YOU DIG!



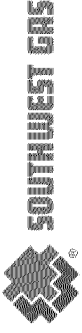
NYMEX Henry Hub Natural Gas and Cushing OK Light Sweet Crude Oil Futures



September 11, 2020 Futures



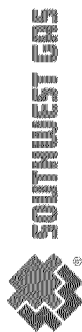
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Supplemental Information



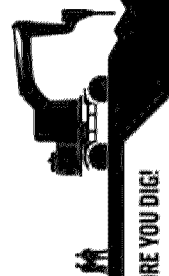
CALL 811 BEFORE YOU DIG!



Estimated Winter Strip Forwards (\$/Dth) 2020/21 Solicitations Dates

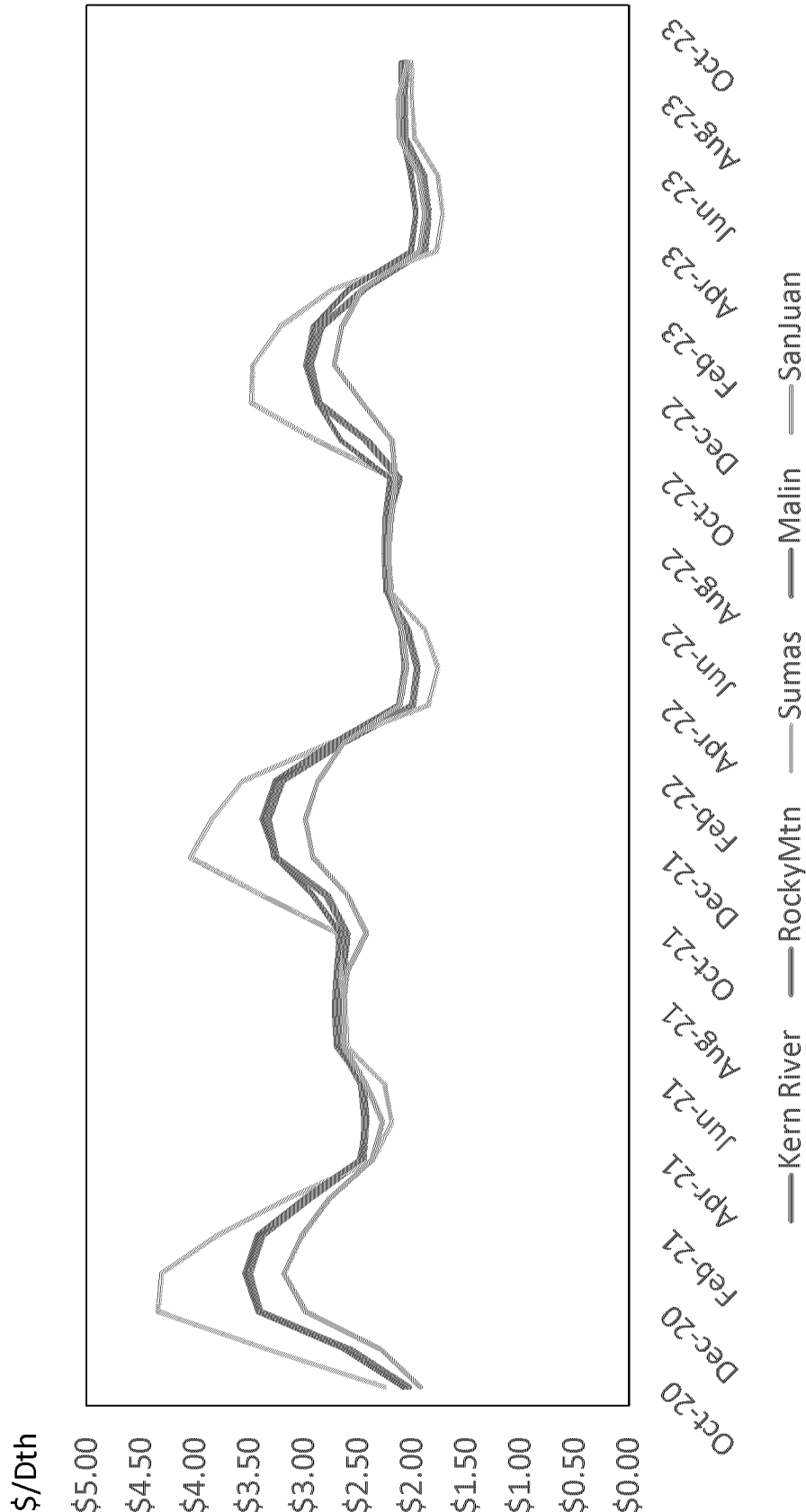
Solicitation Date	Rockies 2020/21	Sumas 2020/21	Malin 2020/21	Kern 2020/21	San Juan 2020/21	NYMEX 2020/21
1/15/2020	2.4138	3.1548	2.5062	2.5078	2.2072	2.5750
2/19/2020	2.2846	3.0004	2.3560	2.3786	2.0906	2.4840
3/18/2020	2.3980	2.9392	2.4698	2.4920	2.2154	2.4926
4/15/2020	2.5422	3.2052	2.6210	2.5672	2.3840	2.7142
5/20/2020	2.8500	3.5674	2.9196	2.8750	2.6424	2.7772
6/17/2020	2.8084	3.5048	2.8670	2.8334	2.5884	2.7562
8/19/2020	3.1332	3.7934	3.1834	3.1582	2.8328	3.1056

The above forward prices are not necessarily representative of the prices Southwest Gas would have paid for VMP transactions.





Nevada Supply Point Monthly Forwards



September 15, 2020 Monthly Forwards Prices



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Market Report Information

- EIA's September dry natural gas production estimates (EIA, 2020)
 - Average 89.9 Bcf/d in 2020 (estimated)
 - Average 86.6 Bcf/d in 2021 (estimated)
- EIA's September U.S. natural gas consumption forecast (EIA, 2020)
 - Average 82.7 Bcf/d in 2019 (actual)
 - Average 80.5 Bcf/d in 2020 (estimated)
- EIA's September Henry Hub spot price projections (EIA, 2020)
 - Average \$2.16/Dth in 2020 (estimated)
 - Average \$3.19/Dth in 2021 (estimated)





Market Report Information

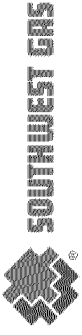
EIA's September U.S. average crude oil production estimate (EIA, 2020)

- 11.4 MMbbl/d in 2020
- 11.1 MMbbl/d in 2021

U.S. combined oil and natural gas rig count declined to 251 as of September 11, 2020 (Baker Hughes, 2020).

- 180 oil directed rigs
- 71 natural gas directed rigs
- Total down 647 from the corresponding week a year earlier





Market Report Information References

- U.S. Energy Information Administration (EIA), (September 9, 2020). Forecast highlights global liquid fuels. *Short Term Outlook*. Retrieved from: <https://www.eia.gov/outlooks/steo/>
- Baker Hughes, (September 11, 2020). Rig count summary. Retrieved from: <http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother>





MEMORANDUM

To: Randy Gabe

From: Nevada Gas Purchase Strategy Committee

Date: September 25, 2020

Subject: Third Quarter 2020 Nevada Hedging Strategy Recommendation

On September 22, 2020, pursuant to the Stipulation approved by the Public Utilities Commission of Nevada in Docket 13-06006 and as modified in Docket 19-06003, the Nevada Gas Purchase Strategy Committee reviewed the Company's current hedging strategy, various market fundamentals, and the ratemaking methodologies used to recover gas costs from the Company's customers.

The Nevada Gas Purchase Strategy Committee (hereinafter "Committee"), at a minimum, consists of representatives from each of the following departments:

- Gas Supply
- Gas Resources Planning
- Regulation and Energy Efficiency

The following individuals were present at the Committee meeting:

- Randy Gabe, Vice President / Gas Resources
- Christopher Brown, Manager / Regulation and Energy Efficiency
- Luis Cruz, Analyst I / Regulation and Energy Efficiency
- Steve Williams Director / Gas Resources Planning
- Laura Spurlock, Manager / Gas Resources Planning
- Ernest Melo, Senior Evaluation Engineer / Gas Resources Planning
- Kristien Tary, Reg Specialist / Gas Resources Planning
- Francell Rodriguez, Evaluation Engineer / Gas Resources Planning
- John Olenick, Director / Gas Purchases and Transportation
- Eric Rost, Manager / Gas Purchases and Transportation

To: Gabe
September 25, 2020
Page 2 of 3

During the September 22, 2020 Committee meeting (“Meeting”), the Committee evaluated market fundamentals such as national storage inventory levels, national rig count levels, current and projected supply and demand levels for natural gas, and forward market price curves. The Committee also reviewed the estimated total gas cost rates that the Company would charge its customers based on the current forwards, as well as a sensitivity analysis of how those total gas cost rates would change if there were various levels of increases in gas prices.

At the time of the Meeting, the national storage inventory level was at 3,614 Bcf. That level is 421 Bcf above the five-year average and 535 Bcf higher than this time last year. Storage inventories in the Pacific region were at 310 Bcf, which is 11 Bcf above that region’s five-year average and 32 Bcf higher than last year this time. In the Mountain region, storage inventories were at 221 Bcf, which is 24 Bcf above that region’s five-year average and 34 Bcf more than last year this time.

Since the Committee’s June 3, 2020 meeting, natural gas directed rig counts have decreased from 77 to 71 and oil directed rigs declined from 222 to 180. EIA shows U.S dry natural gas production is estimated to average 89.9 Bcf/day in 2020 and is expected to decrease in 2021 to 86.6 Bcf/day. Moreover, EIA projects U.S. crude oil production to average 11.4 MMbbl/day in 2020 and decrease in 2021 to 11.1 MMbbl/day.

NYMEX prices for the next winter period (November 2020 through March 2021), have ranged from about \$3.03/Dth to \$3.21/Dth over the past month. Current production region spot prices have averaged from around \$2.12/Dth in the Rockies, to about \$2.22/Dth at Henry Hub. EIA estimates that Henry Hub spot prices will average around \$2.16/Dth in 2020 and \$3.19/Dth in 2021.

Based on the current ratemaking methodologies, which have not changed since the Company suspended Nevada VMP purchases in the fall of 2013, the Company calculated projected quarterly total gas cost rates for October 2020 through July 2022 for both southern Nevada and northern Nevada systems. The Company used the July 23, 2020 forward market gas prices when calculating the projected quarterly total gas cost rates.

To: Gabe
September 25, 2020
Page 3 of 3

For customers in southern Nevada, the Company projects that retail gas cost rates for October 2020 through July 2022 could range from a low of approximately \$0.22/therm to a high of about \$0.31/therm. For customers in northern Nevada, the Company projects that gas cost rates for the same period could range from a low of about \$0.47/therm to a high of approximately \$0.58/therm. Sensitivity analysis shows that the current ratemaking methodologies continue to dampen the volatility in customer rates under increased gas price scenarios.

After reviewing the market fundamentals and projected quarterly gas rates that the Company would charge its customers, the Committee recommends that the Company should not alter its current gas hedging strategy and should continue to suspend Nevada VMP purchases. The Committee bases the recommendation upon the market fundamentals and ratemaking methodologies that existed as of September 22, 2020.

The Committee's recommendation does not consider market changes that could come about from unforeseen circumstances, *e.g.* force majeure events in the market place, sudden disruption of market supplies, extreme weather conditions, or regulatory changes. This recommendation only applies to the Company's Nevada gas purchase strategy and does not affect the Company's Arizona or California gas purchase strategies.

Attachments to the recommendation include documentation reviewed during the Committee meeting, as well as other supporting information.

cc:

Justin Brown	Amy Timperley
Christopher Brown	John Olenick
Eric Rost	Steve Williams
Laura Spurlock	



Southwest Gas' VMP and Gas Market Fundamentals Review (Docket Nos. 13-06006 and 19-06003) December 15, 2020



CALL 811 BEFORE YOU DIG!



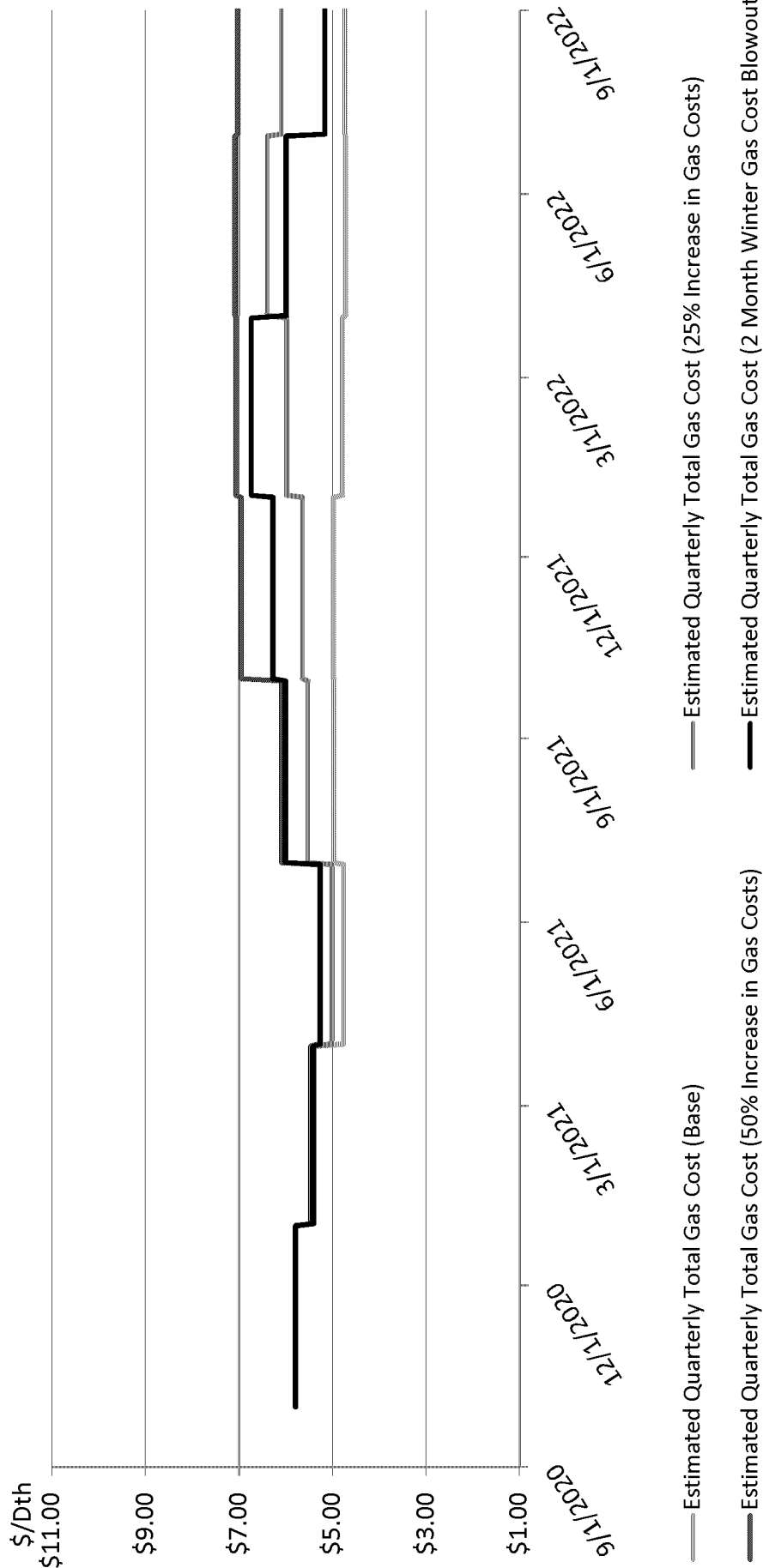
Volatility Mitigation Plan Update

- Analysis Summary
 - BTER/DEAA gas cost rate analysis shows minimal volatility under various market scenarios throughout the 2020 – 2022 study period
- Decision
 - Continue to suspend VMP purchases for Northern and Southern Nevada

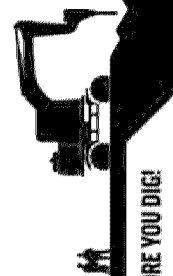




BTER/DEAA Forecast – Northern Nevada



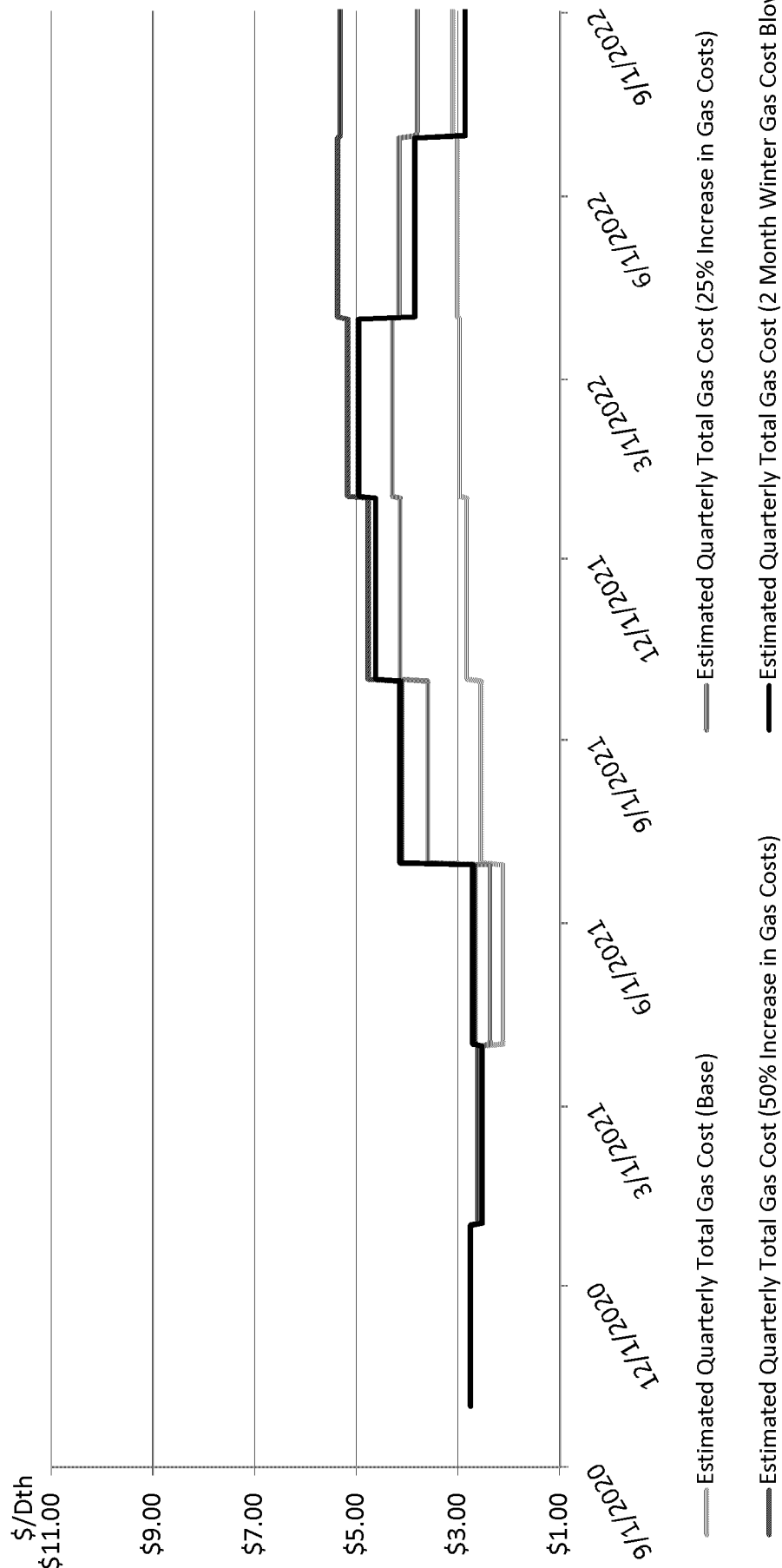
July 23, 2020 estimated forwards pricing



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BTER/DEAA Forecast – Southern Nevada



July 23, 2020 estimated forwards pricing



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Southwest Gas Corporation

Quarterly Gas Cost Projections [2],[4] & [5]

Description	Oct-20	Jan-21	Apr-21	Jul-21	Oct-21	Jan-22	Apr-22	Jul-22
Base								
<u>Southern Nevada</u>								
BTER Rate [1]	\$ 0.25988	\$ 0.26181	\$ 0.24652	\$ 0.30234	\$ 0.32257	\$ 0.33081	\$ 0.32496	\$ 0.31053
DEAA Surcharge [3]	\$ 0.01528	\$ (0.00972)	\$ (0.03472)	\$ (0.04748)	\$ (0.03983)	\$ (0.03399)	\$ (0.02328)	\$ 0.00000
Total Gas Cost	\$ 0.27516	\$ 0.25209	\$ 0.21180	\$ 0.25486	\$ 0.28274	\$ 0.29682	\$ 0.30168	\$ 0.31053
<u>Northern Nevada</u>								
BTER Rate [1]	\$ 0.54301	\$ 0.52960	\$ 0.49064	\$ 0.53607	\$ 0.56227	\$ 0.56829	\$ 0.56946	\$ 0.56526
DEAA Surcharge [3]	\$ 0.03525	\$ 0.01025	\$ (0.01475)	\$ (0.03975)	\$ (0.06475)	\$ (0.08975)	\$ (0.09780)	\$ (0.09255)
Total Gas Cost	\$ 0.57826	\$ 0.53985	\$ 0.47589	\$ 0.49632	\$ 0.49752	\$ 0.47854	\$ 0.47166	\$ 0.47271

[1] The Base Tariff Energy Rate (BTER) does not include the Unrecovered Gas Cost Expense (UGCE) Base Rate.

[2] There is a 3-month lag between accounting month data and quarterly rate changes, i.e. January rates are based on the previous September data.

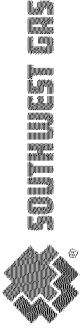
[3] Quarterly DEAA 1) If absolute value of 191 balance < 5% of 12 month purchased gas cost, DEAA = \$.00000, 2) otherwise change in DEAA change can not exceed (+/-) \$.02500 per therm.

[4] Gas Cost and Sales are based on Gas Supply Cost Projections updated with the Jul 23, 2020 Forward Market Prices.

[5] The above projections are based on estimated gas cost and customer usage and are subject to change.

[6] The Base Tariff Energy Rate (BTER) is equal to the prior quarter's twelve month Gas Cost divided by the prior quarters twelve month Volume (therms).





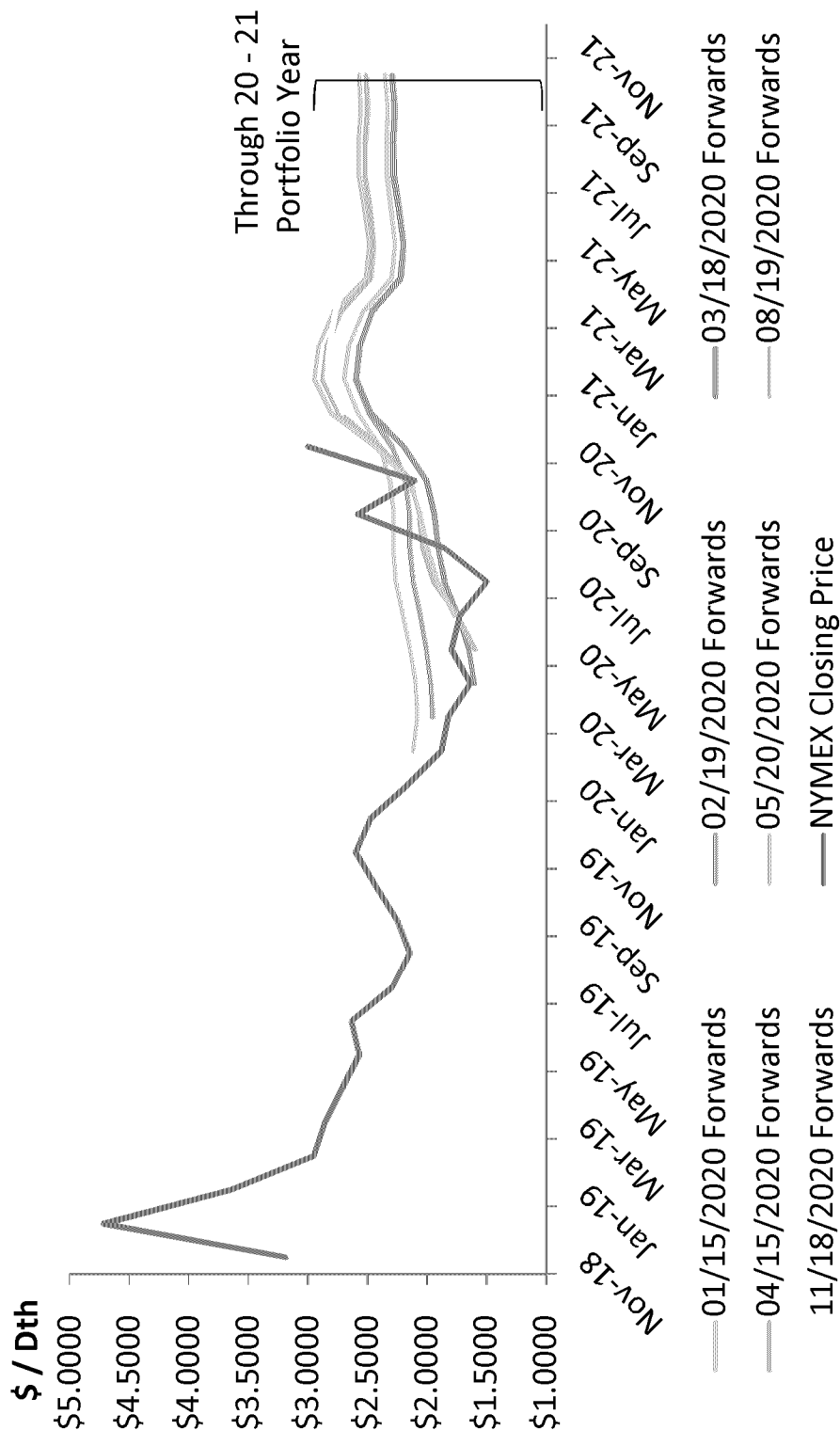
Gas Market Fundamentals



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NYMEX Forward Prices



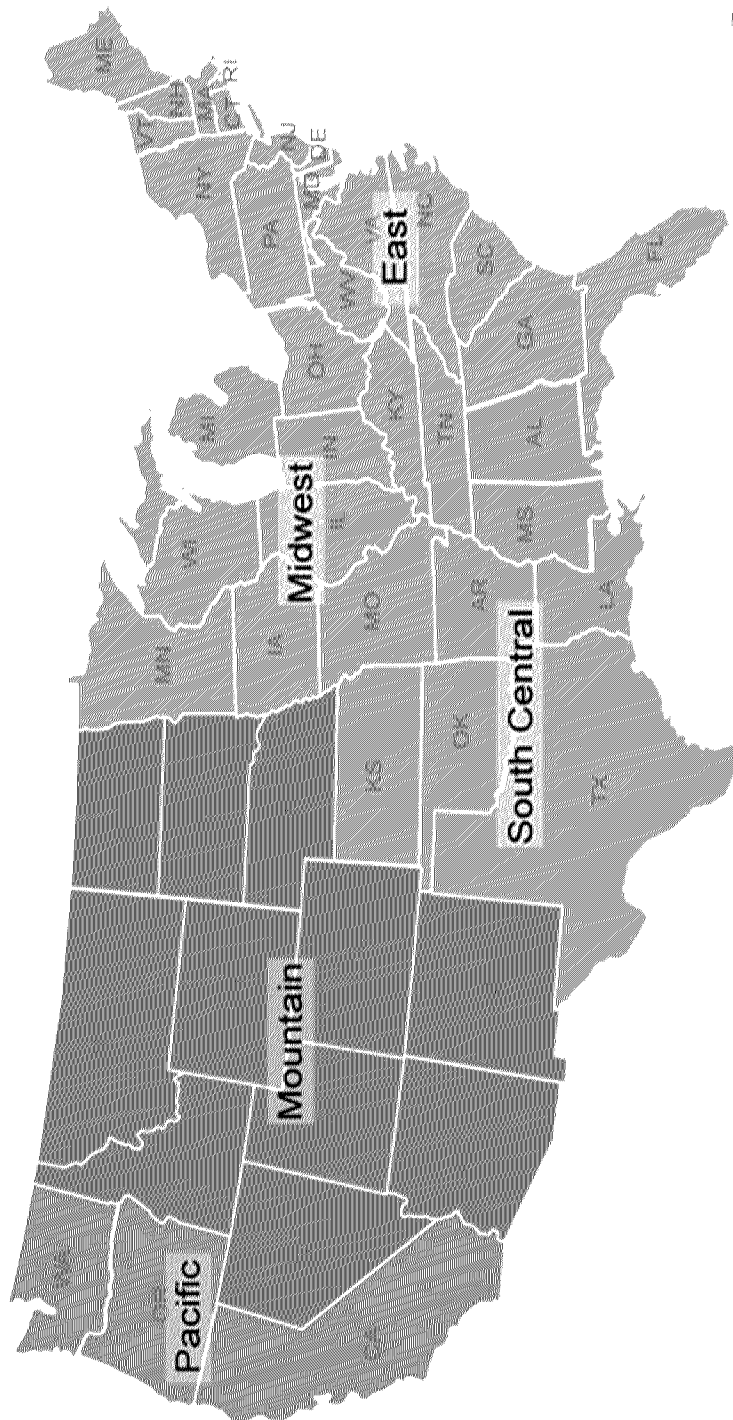
Forwards dates correspond to Nevada Baseload Supply Program solicitation dates



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Underground Storage Regions



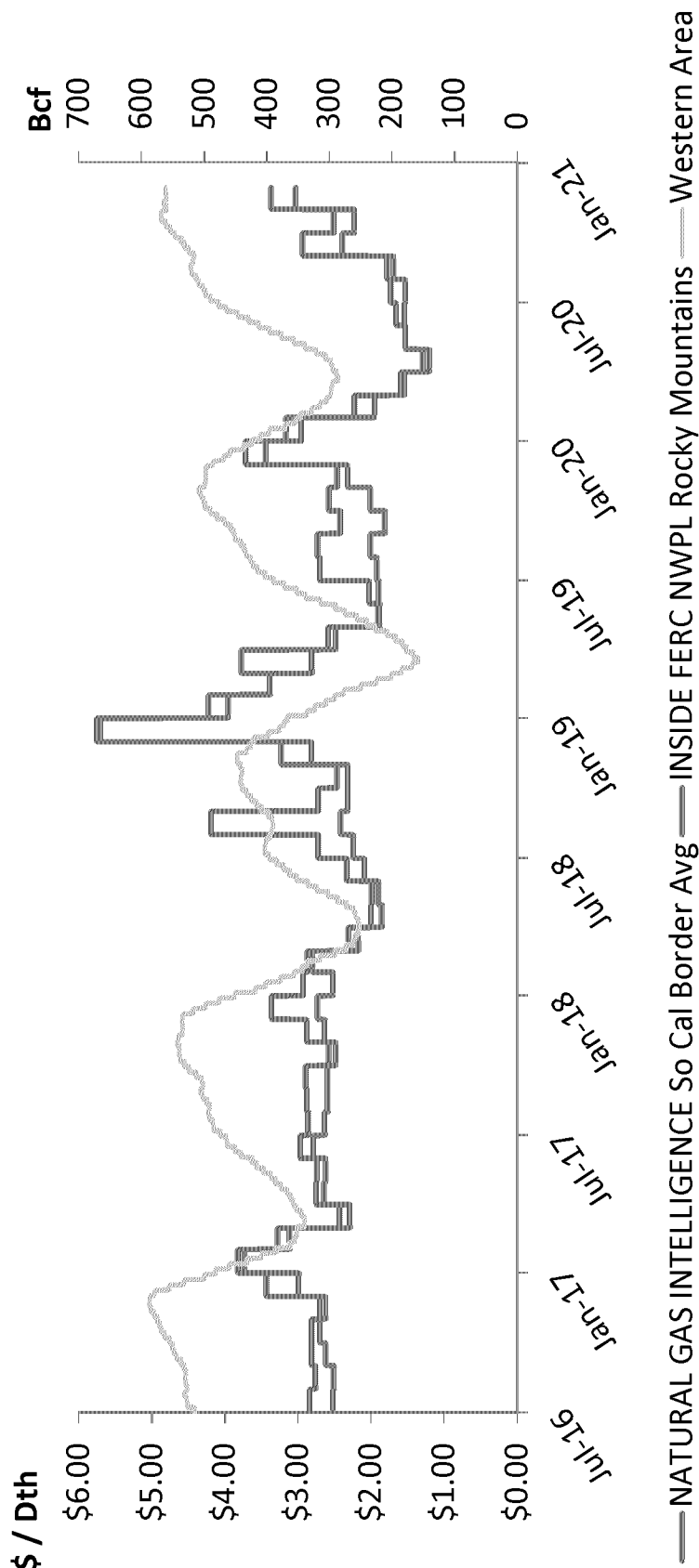
SoCal Storage Information – <https://scgenvoy.sempura.com/>
PG&E Storage Information – <https://pge.com/pipeline/index.page/>



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Historical FOM (First of Month) Market Prices & Western Area Natural Gas Storage Inventory



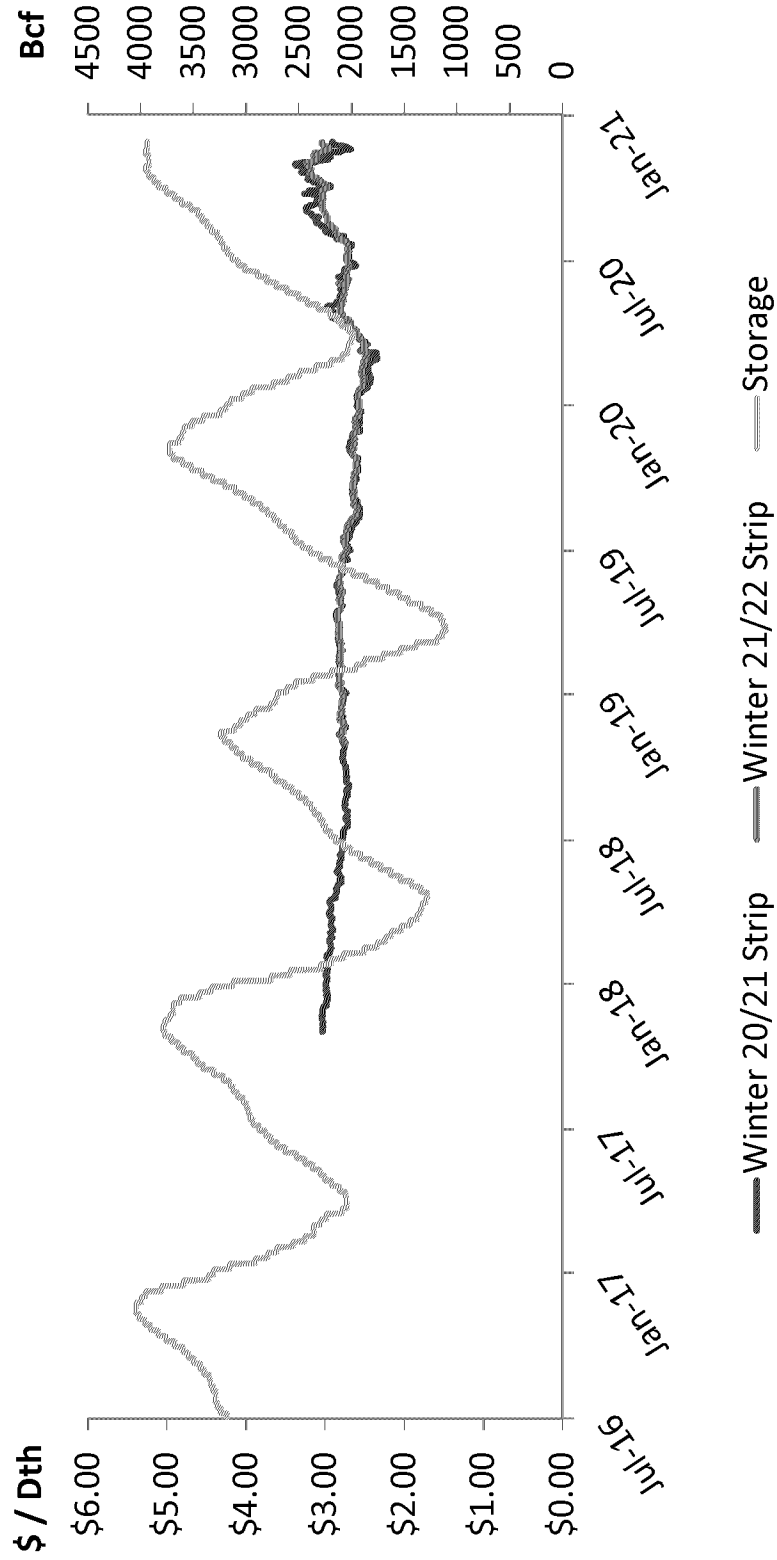
Western area includes Mountain and Pacific Storage Regions



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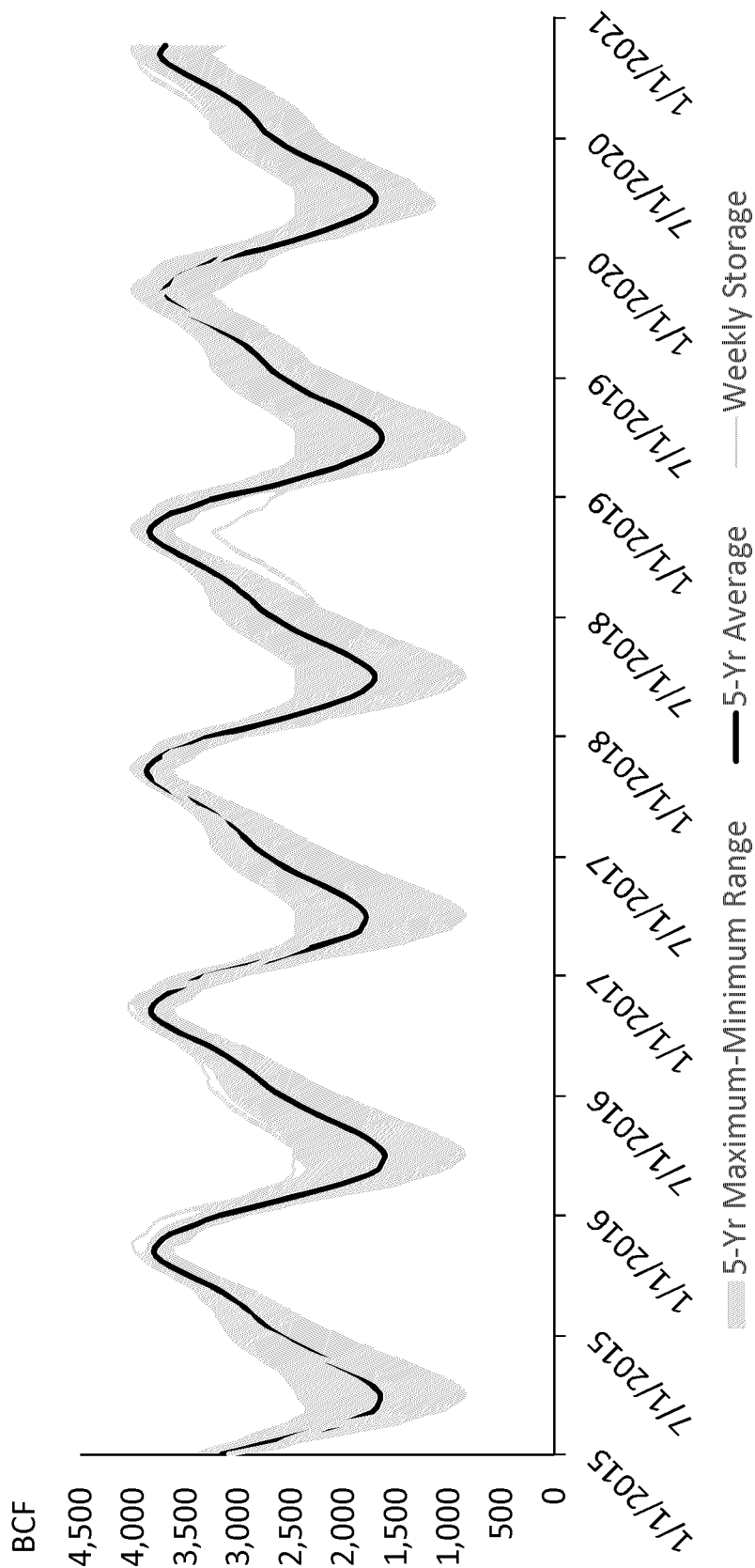
2020/21 - 2021/22 NYMEX Winter Strip Price & Natural Gas Storage



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Working Gas in Underground Storage Compared with the 5-Year Maximum and Minimum



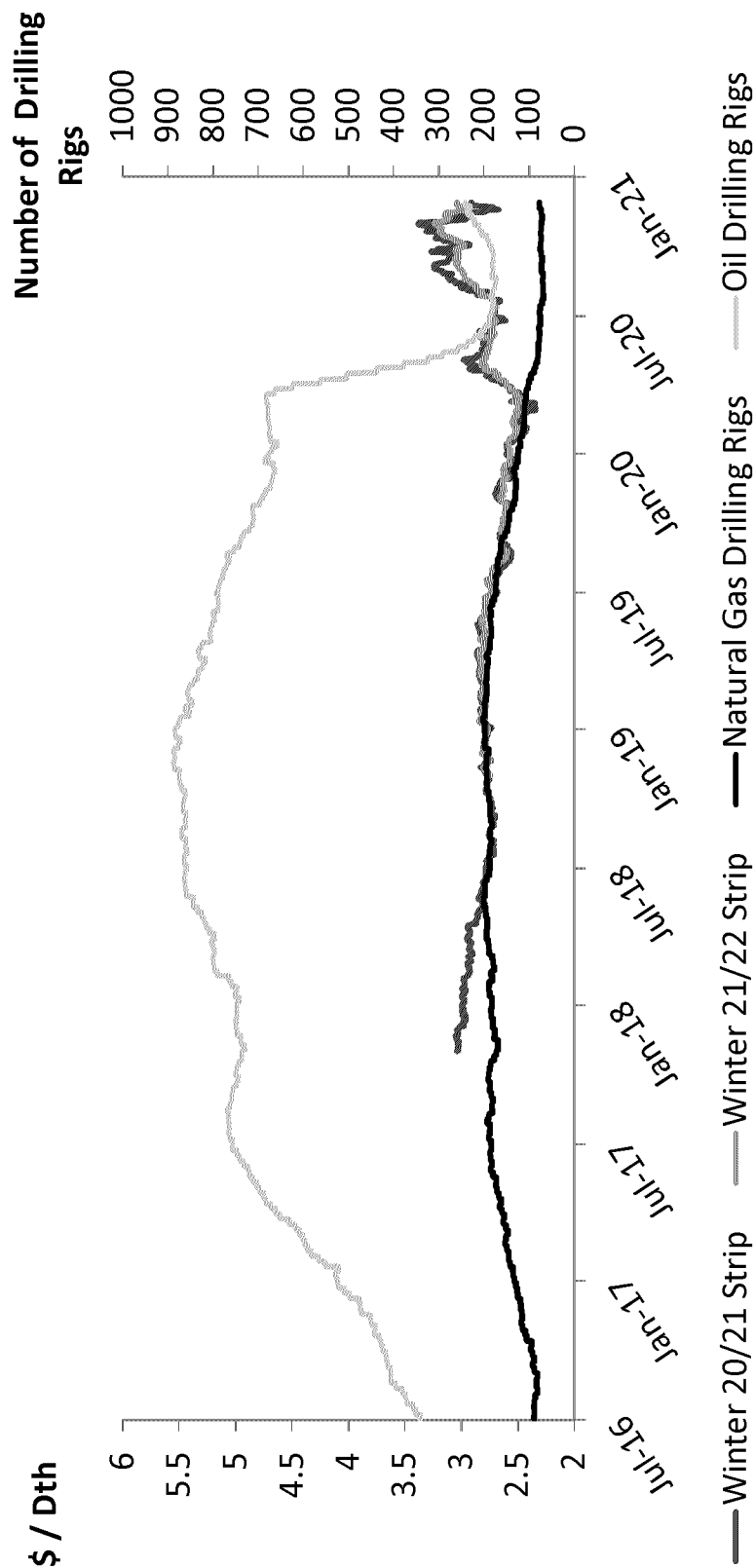
For week ending November 20, 2020



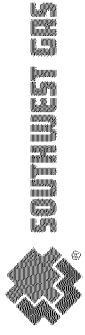
CALL 811 BEFORE YOU DIG!



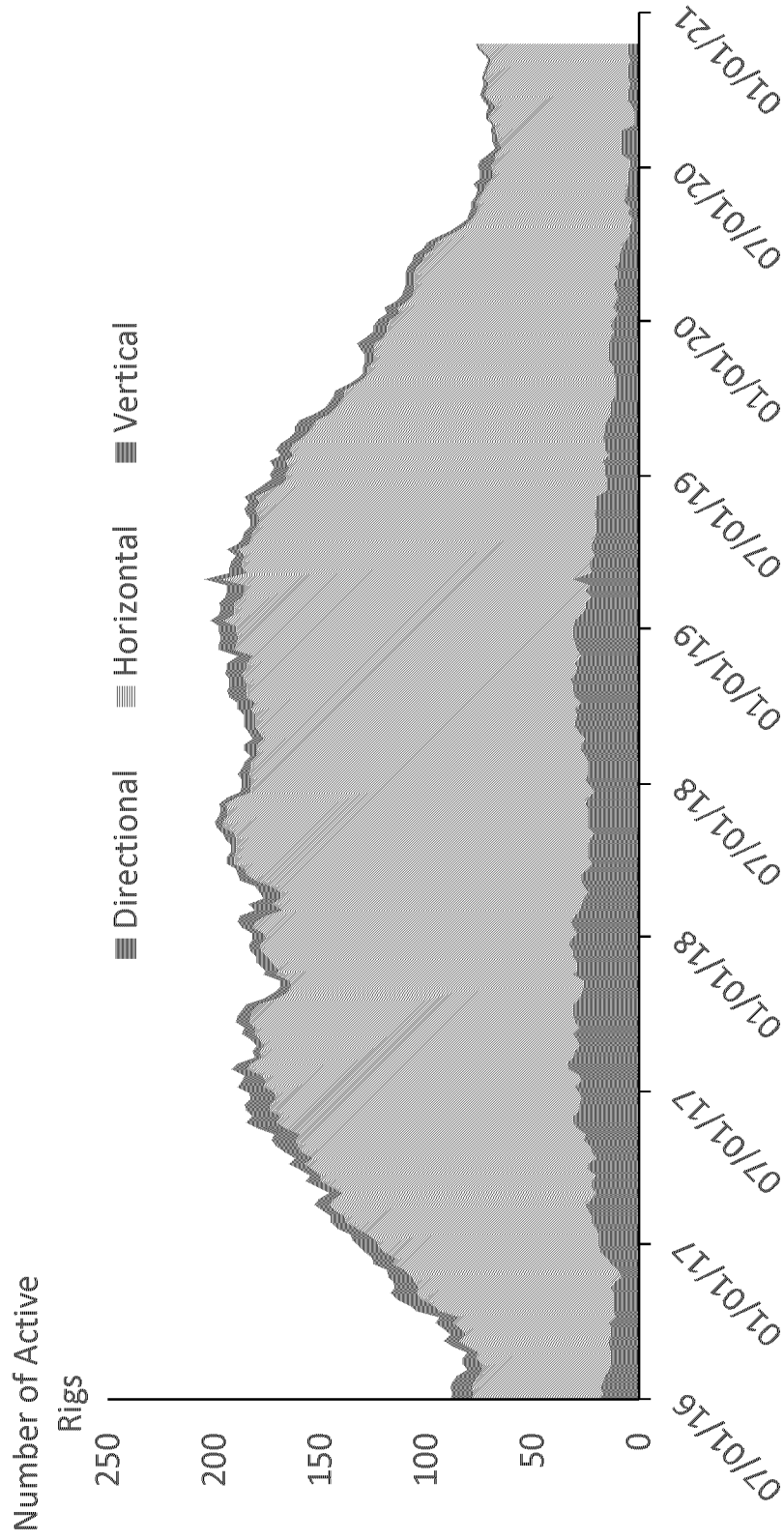
2020/21 – 2021/22 NYMEX Winter Strip Price & Oil and Gas Rotary Rig Count



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Weekly Natural Gas Rig Count by Type

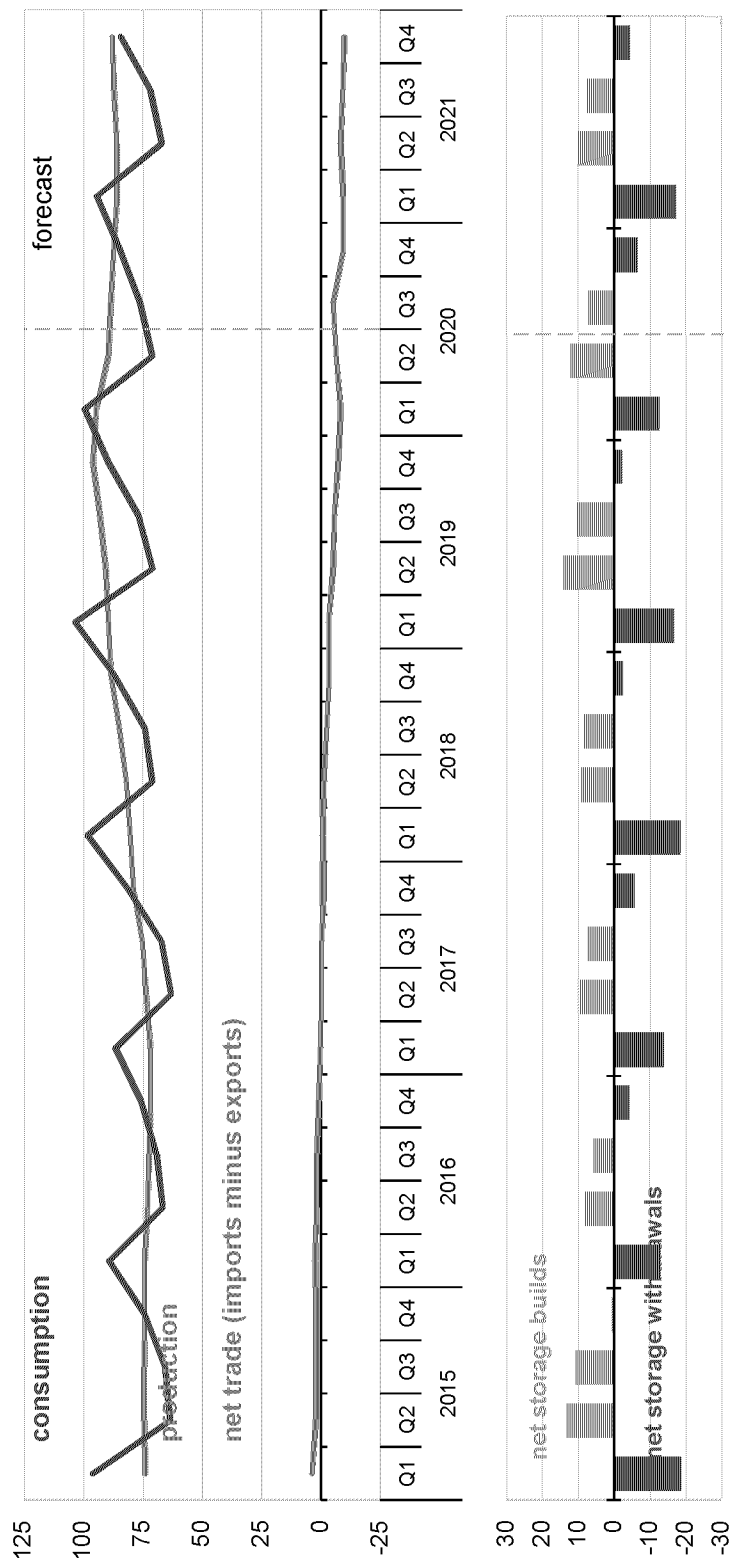


CALL 811 BEFORE YOU DIG!

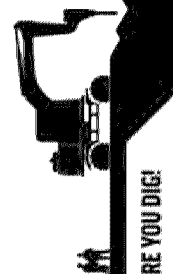


U. S. Natural Gas Production, Consumption and Net Imports

U.S. natural gas production, consumption, and net imports
billion cubic feet per day



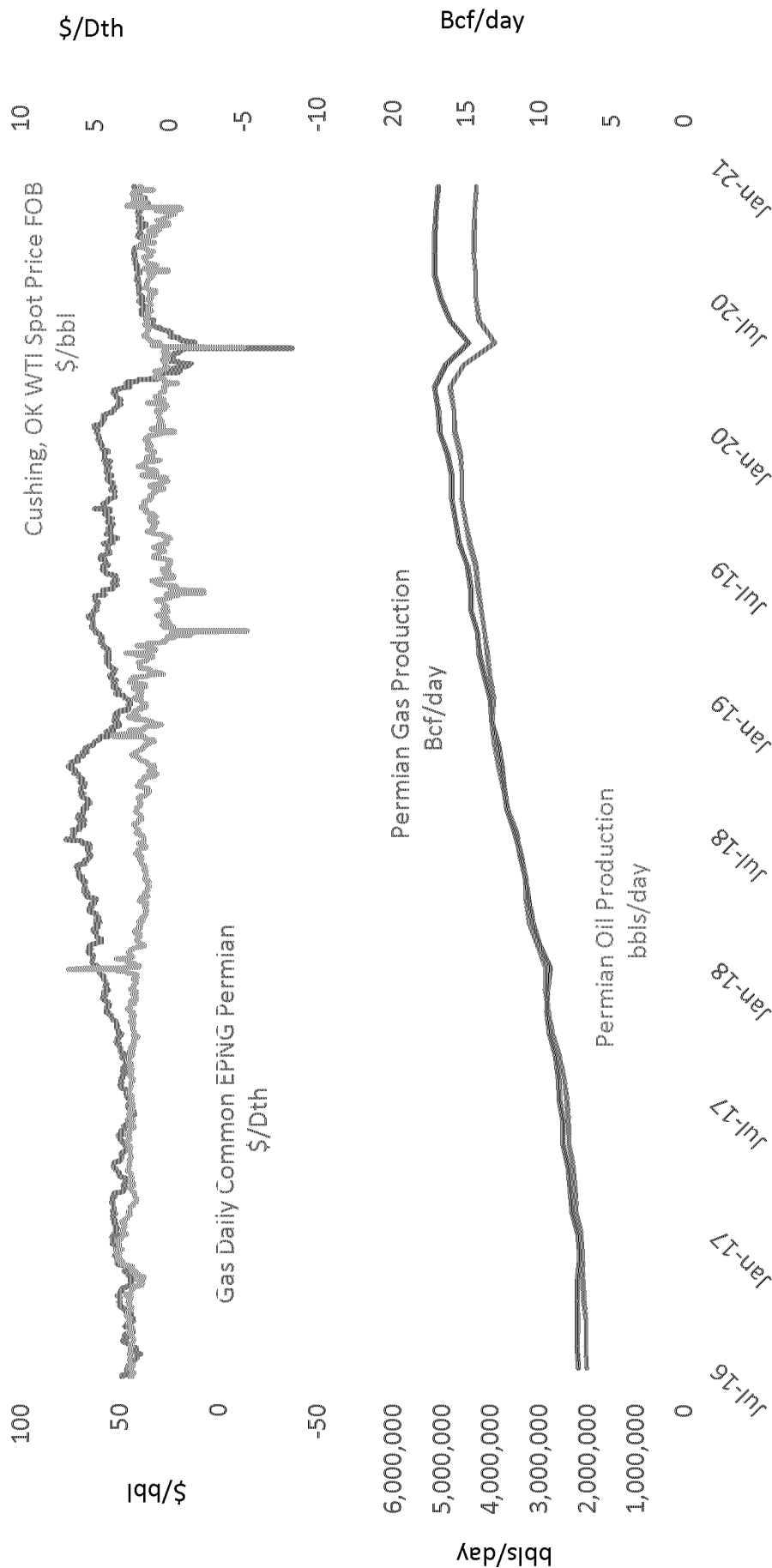
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2020



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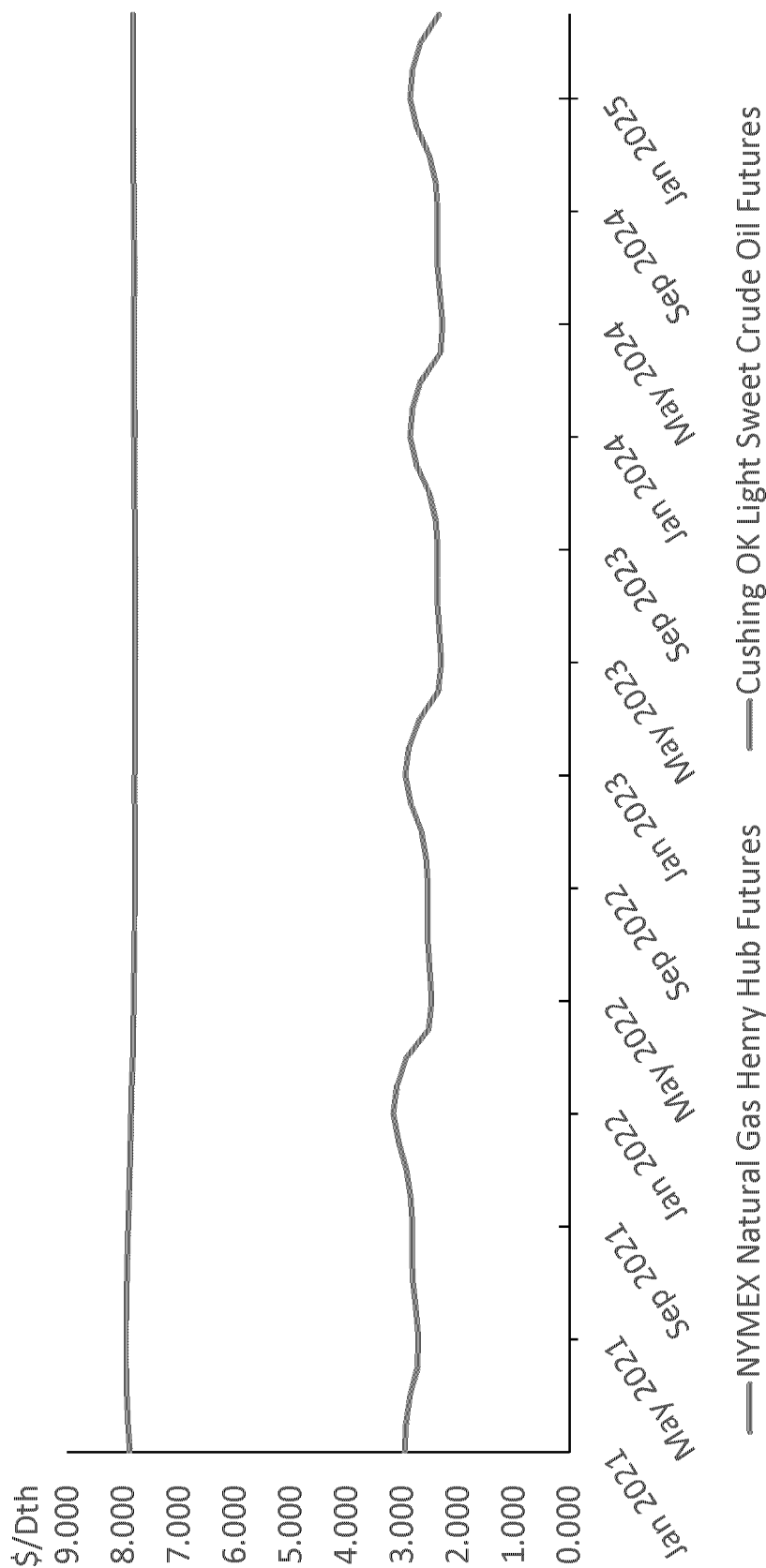
Permian Oil and Natural Gas Daily Production – Daily Pricing



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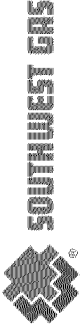
NYMEX Henry Hub Natural Gas and Cushing OK Light Sweet Crude Oil Futures



November 25, 2020 Futures



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Supplemental Information



CALL 811 BEFORE YOU DIG!



Estimated Winter Strip Forwards (\$/Dth) 2020/21 Solicitations Dates

Solicitation Date	Rockies	Sumas	Malin	Kern	San Juan	NYMEX
1/15/2020	2.4138	3.1548	2.5062	2.5078	2.2072	2.5750
2/19/2020	2.2846	3.0004	2.3560	2.3786	2.0906	2.4840
3/18/2020	2.3980	2.9392	2.4698	2.4920	2.2154	2.4926
4/15/2020	2.5422	3.2052	2.6210	2.5672	2.3840	2.7142
5/20/2020	2.8500	3.5674	2.9196	2.8750	2.6424	2.7772
6/17/2020	2.8084	3.5048	2.8670	2.8334	2.5884	2.7562
8/19/2020	3.1332	3.7934	3.1834	3.1582	2.8328	3.1056
11/18/2020	3.1330	3.7502	3.2370	3.1442	2.8146	3.0300

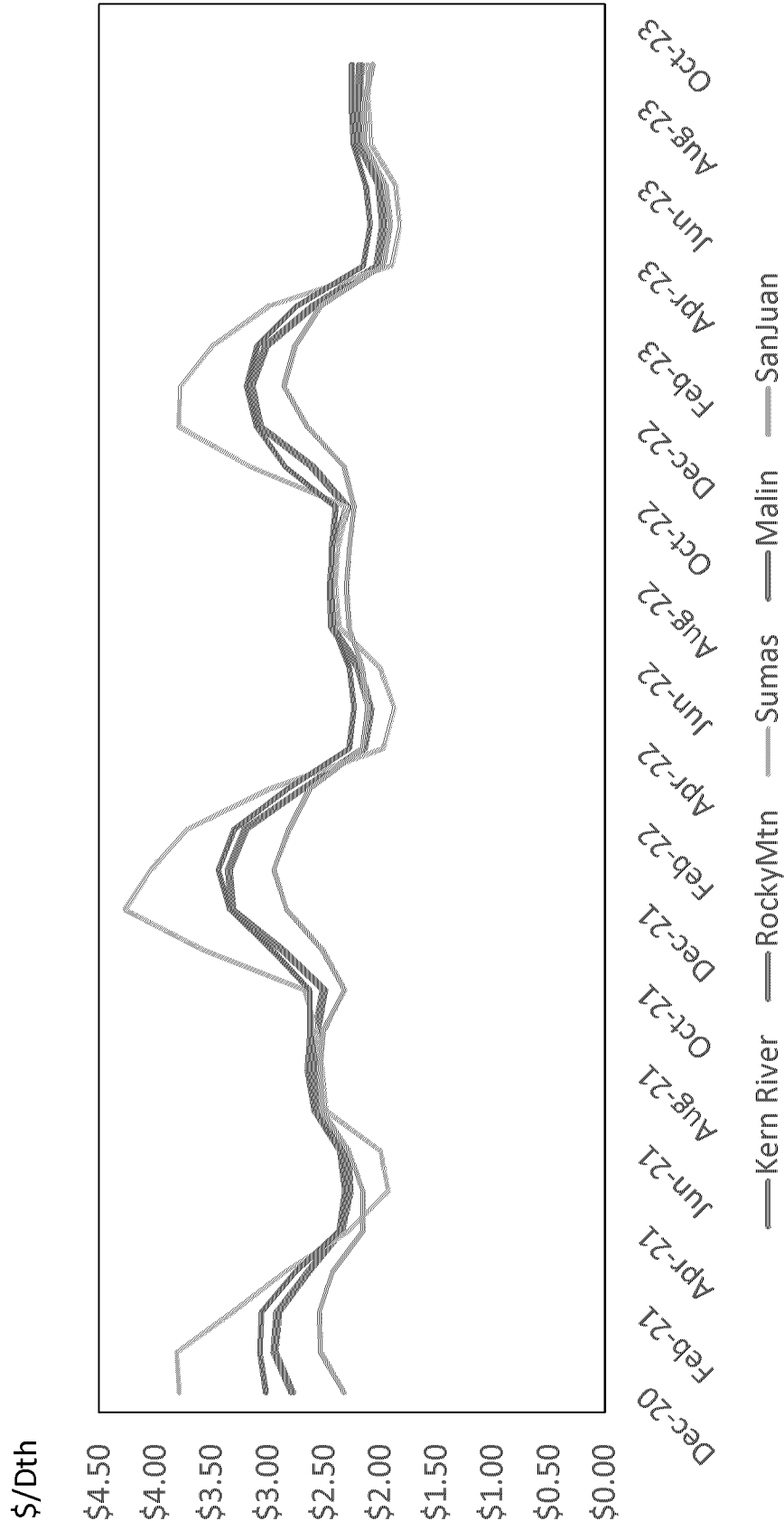
The above forward prices are not necessarily representative of the prices Southwest Gas would have paid for VMP transactions.



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Nevada Supply Point Monthly Forwards



November 19, 2020 Monthly Forwards Prices



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Market Report Information

- EIA's September dry natural gas production estimates (EIA, 2020)
 - Average 89.9 Bcf/d in 2020 (estimated)
 - Average 86.6 Bcf/d in 2021 (estimated)
- EIA's September U.S. natural gas consumption forecast (EIA, 2020)
 - Average 82.7 Bcf/d in 2019 (actual)
 - Average 80.5 Bcf/d in 2020 (estimated)
- EIA's September Henry Hub spot price projections (EIA, 2020)
 - Average \$2.16/Dth in 2020 (estimated)
 - Average \$3.19/Dth in 2021 (estimated)





Market Report Information

EIA's September U.S. average crude oil production estimate (EIA, 2020)

- 11.4 MMbbl/d in 2020
- 11.1 MMbbl/d in 2021

U.S. combined oil and natural gas rig count declined to 251 as of September 11, 2020 (Baker Hughes, 2020).

- 180 oil directed rigs
- 71 natural gas directed rigs
- Total down 647 from the corresponding week a year earlier

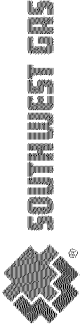




Market Report Information References

- U.S. Energy Information Administration (EIA), (September 9, 2020). Forecast highlights global liquid fuels. *Short Term Outlook*. Retrieved from: <https://www.eia.gov/outlooks/steo/>
- Baker Hughes, (September 11, 2020). Rig count summary. Retrieved from: <https://bakerhughesrigcount.gcs-web.com/na-rig-count>

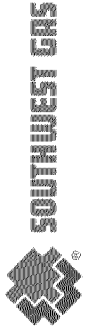




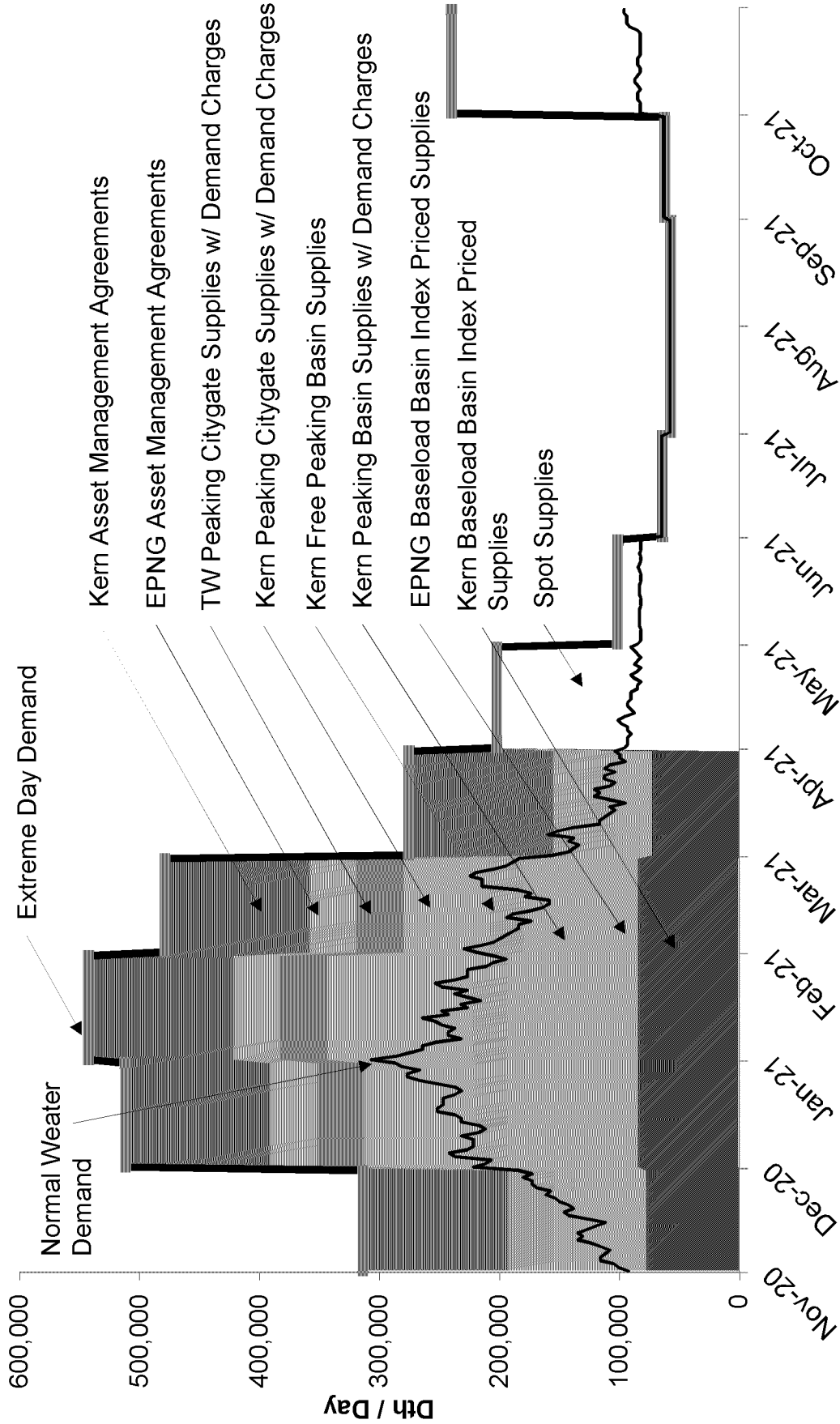
Southern and Northern Nevada 2020-2021 Supply Portfolios



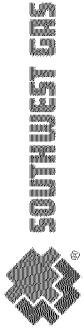
CALL 811 BEFORE YOU DIG!



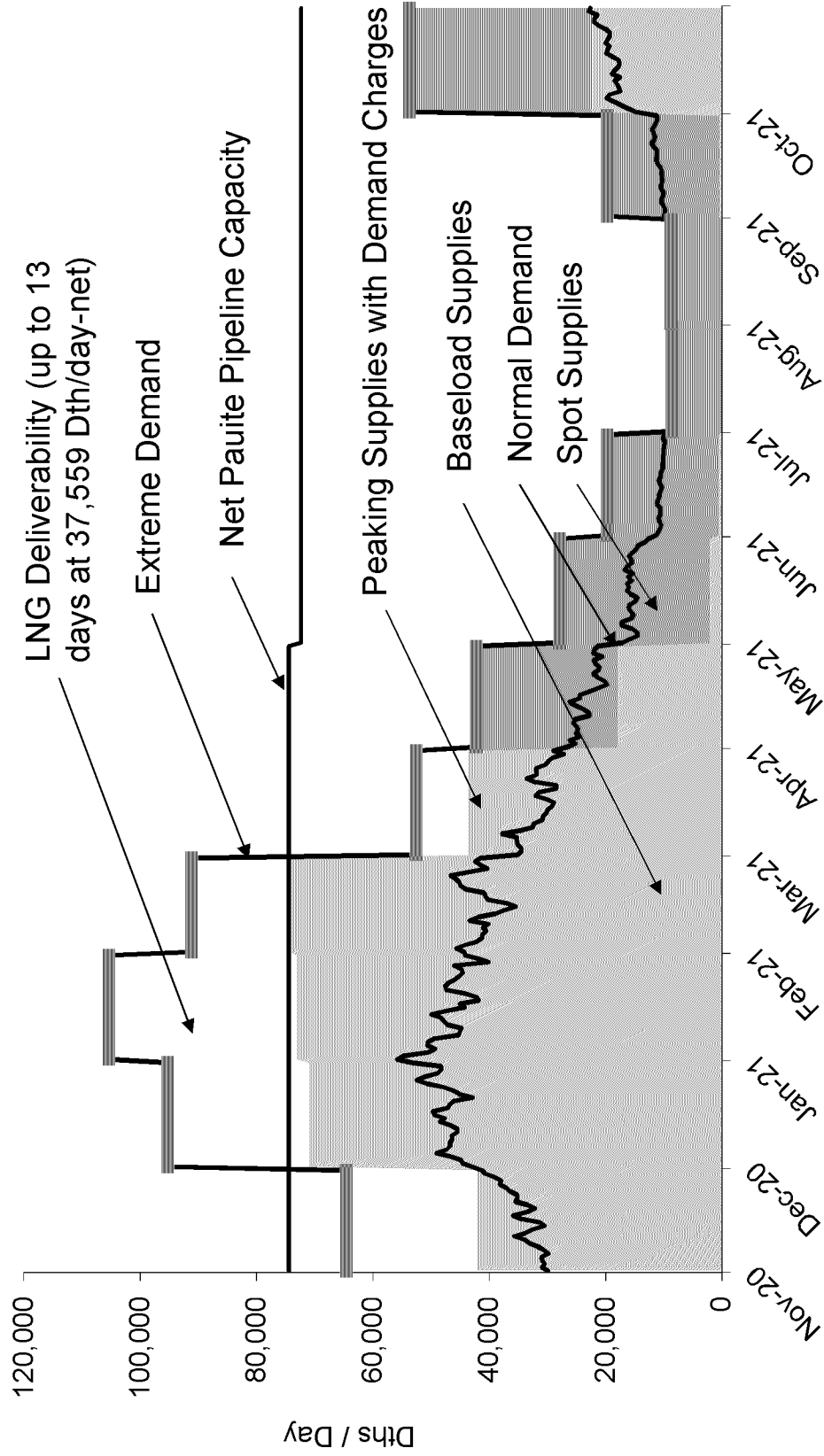
Southern Nevada 2020-2021 Supply Portfolio



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Northern Nevada 2020-2021 Supply Portfolio



CALL 811 BEFORE YOU DIG!



MEMORANDUM

To: Randy Gabe

From: Nevada Gas Purchase Strategy Committee

Date: December 23, 2020

Subject: Fourth Quarter 2020 Nevada Hedging Strategy Recommendation

On December 3, 2020, pursuant to the Stipulation approved by the Public Utilities Commission of Nevada in Docket 13-06006 and as modified in Docket 19-06003, the Nevada Gas Purchase Strategy Committee reviewed the Company's current hedging strategy, various market fundamentals, and the ratemaking methodologies used to recover gas costs from the Company's customers.

The Nevada Gas Purchase Strategy Committee (hereinafter "Committee"), at a minimum, consists of representatives from each of the following departments:

- Gas Supply
- Gas Resources Planning
- Regulation and Energy Efficiency

The following individuals were present at the Committee meeting:

- Randy Gabe, Vice President / Gas Resources
- Christopher Brown, Manager / Regulation and Energy Efficiency
- Luis Cruz, Analyst I / Regulation and Energy Efficiency
- Nicholas Lape, Analyst I / Regulation and Energy Efficiency
- Steve Williams Director / Gas Resources Planning
- Laura Spurlock, Manager / Gas Resources Planning
- Ernest Melo, Senior Evaluation Engineer / Gas Resources Planning
- Kristien Tary, Reg Specialist / Gas Resources Planning
- Francell Rodriguez, Evaluation Engineer / Gas Resources Planning
- John Olenick, Director / Gas Purchases and Transportation
- Eric Rost, Manager / Gas Purchases and Transportation

To: Gabe
December 23, 2020
Page 2 of 3

During the December 3, 2020 Committee meeting (“Meeting”), the Committee evaluated market fundamentals such as national storage inventory levels, national rig count levels, current and projected supply and demand levels for natural gas, and forward market price curves. The Committee also reviewed the estimated total gas cost rates that the Company would charge its customers based on the current forwards, as well as a sensitivity analysis of how those total gas cost rates would change if there were various levels of increases in gas prices.

At the time of the Meeting, the national storage inventory level was at 3,939 Bcf. That level is 290 Bcf above the five-year average and 343 Bcf higher than this time last year. Storage inventories in the Pacific region were at 318 Bcf, which is 7 Bcf above that region’s five-year average and 20 Bcf higher than last year this time. In the Mountain region, storage inventories were at 240 Bcf, which is 28 Bcf above that region’s five-year average and 39 Bcf more than last year this time.

Since the Committee’s September 22, 2020 meeting, natural gas directed rig counts have increased from 71 to 79 and oil directed rigs rose from 180 to 258. EIA shows U.S dry natural gas production is estimated to average 90.9 Bcf/day in 2020 and is expected to decrease in 2021 to 87.9 Bcf/day. Moreover, EIA projects U.S. crude oil production to average 11.3 MMbbl/day in 2020 and decrease in 2021 to 11.1 MMbbl/day.

NYMEX prices for the next winter period (November 2021 through March 2022), have ranged from about \$2.81/Dth to \$3.13/Dth over the past month. Current production region spot prices have averaged from around \$3.03/Dth in the Rockies, to about \$2.56/Dth at Henry Hub. EIA estimates that Henry Hub spot prices will average around \$2.07/Dth in 2020 and \$3.01/Dth in 2021.

Based on the current ratemaking methodologies, which have not changed since the Company suspended Nevada VMP purchases in the fall of 2013, the Company calculated projected quarterly total gas cost rates for January 2021 through October 2022 for both southern Nevada and northern Nevada systems. The Company used the November 19, 2020 forward market gas prices when calculating the projected quarterly total gas cost rates.

To: Gabe
December 23, 2020
Page 3 of 3

For customers in southern Nevada, the Company projects that retail gas cost rates for January 2021 through October 2022 could range from a low of approximately \$0.21/therm to a high of about \$0.37/therm. For customers in northern Nevada, the Company projects that gas cost rates for the same period could range from a low of about \$0.47/therm to a high of approximately \$0.57/therm. Sensitivity analysis shows that the current ratemaking methodologies continue to dampen the volatility in customer rates under increased gas price scenarios.

After reviewing the market fundamentals and projected quarterly gas rates that the Company would charge its customers, the Committee recommends that the Company should not alter its current gas hedging strategy and should continue to suspend Nevada VMP purchases. The Committee bases the recommendation upon the market fundamentals and ratemaking methodologies that existed as of December 3, 2020.

The Committee's recommendation does not consider market changes that could come about from unforeseen circumstances, *e.g.* force majeure events in the market place, sudden disruption of market supplies, extreme weather conditions, or regulatory changes. This recommendation only applies to the Company's Nevada gas purchase strategy and does not affect the Company's Arizona or California gas purchase strategies.

Attachments to the recommendation include documentation reviewed during the Committee meeting, as well as other supporting information.

cc:

Justin Brown	Amy Timperley
Christopher Brown	John Olenick
Eric Rost	Steve Williams
Laura Spurlock	



Southwest Gas' VMP and Gas Market Fundamentals Review (Docket Nos. 13-06006 and 19-06003) March 18, 2021



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Volatility Mitigation Plan Update

Analysis Summary

- BTER/DEAA gas cost rate analysis reflects daily price volatility resulting from the February 2021 cold weather events
- The higher daily gas costs incurred in February 2021 are expected to begin increasing the BTER and DEAA in July 2021
- Daily price volatility, like that experienced in February 2021, impacts the BTER/DEAA regardless of whether the Company made fixed price purchases contemplated under the currently suspended VMP or the actual purchases made under the BSP, which are priced at first of the month index prices
- Daily price volatility impacts the quantities of gas purchased to meet the fluctuating daily customer demands above baseload purchases quantities
- The baseload quantities purchased would be equal under either the contemplated VMP or the actual BSP
- Consequently, the decision to make purchases under the contemplated VMP or the currently utilized BSP is not changed by the daily price volatility experienced in February 2021

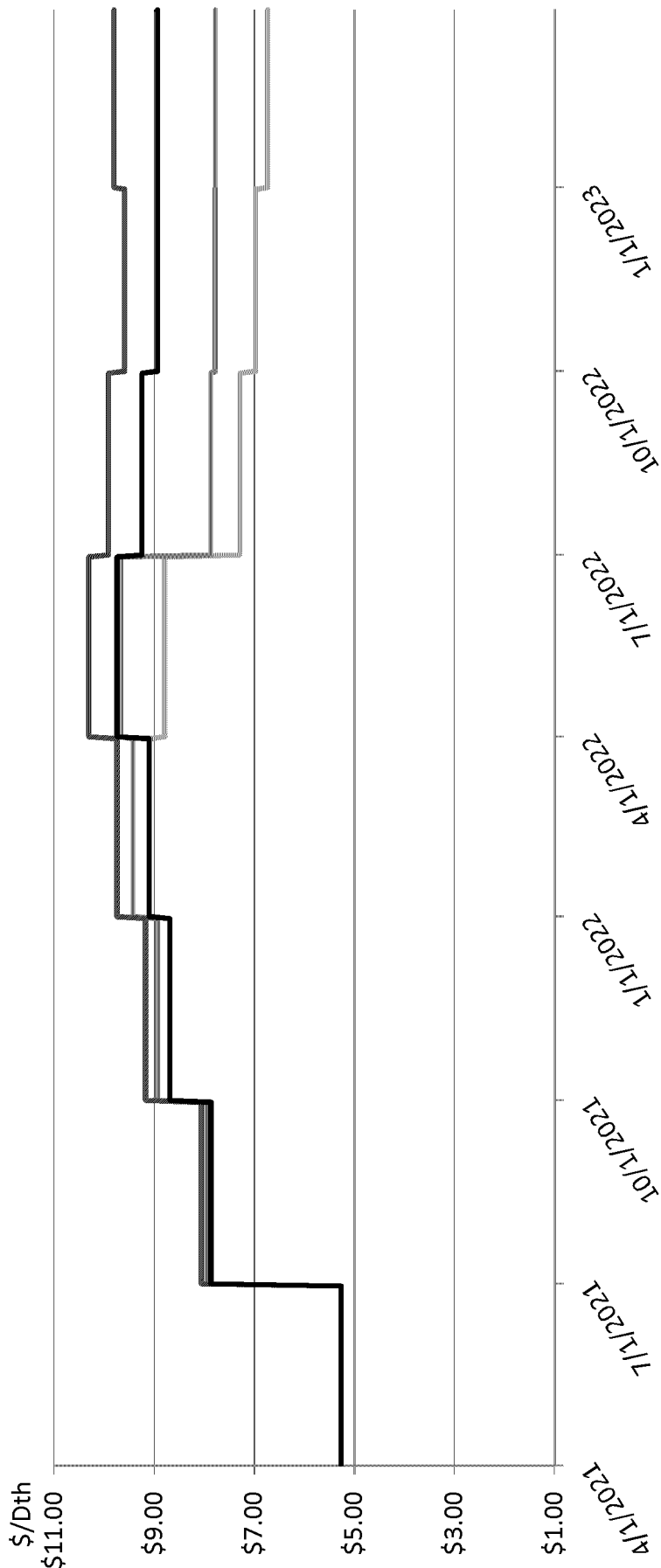
Decision

- Continue to suspend VMP purchases for Northern and Southern Nevada





BTER/DEAA Forecast – Northern Nevada



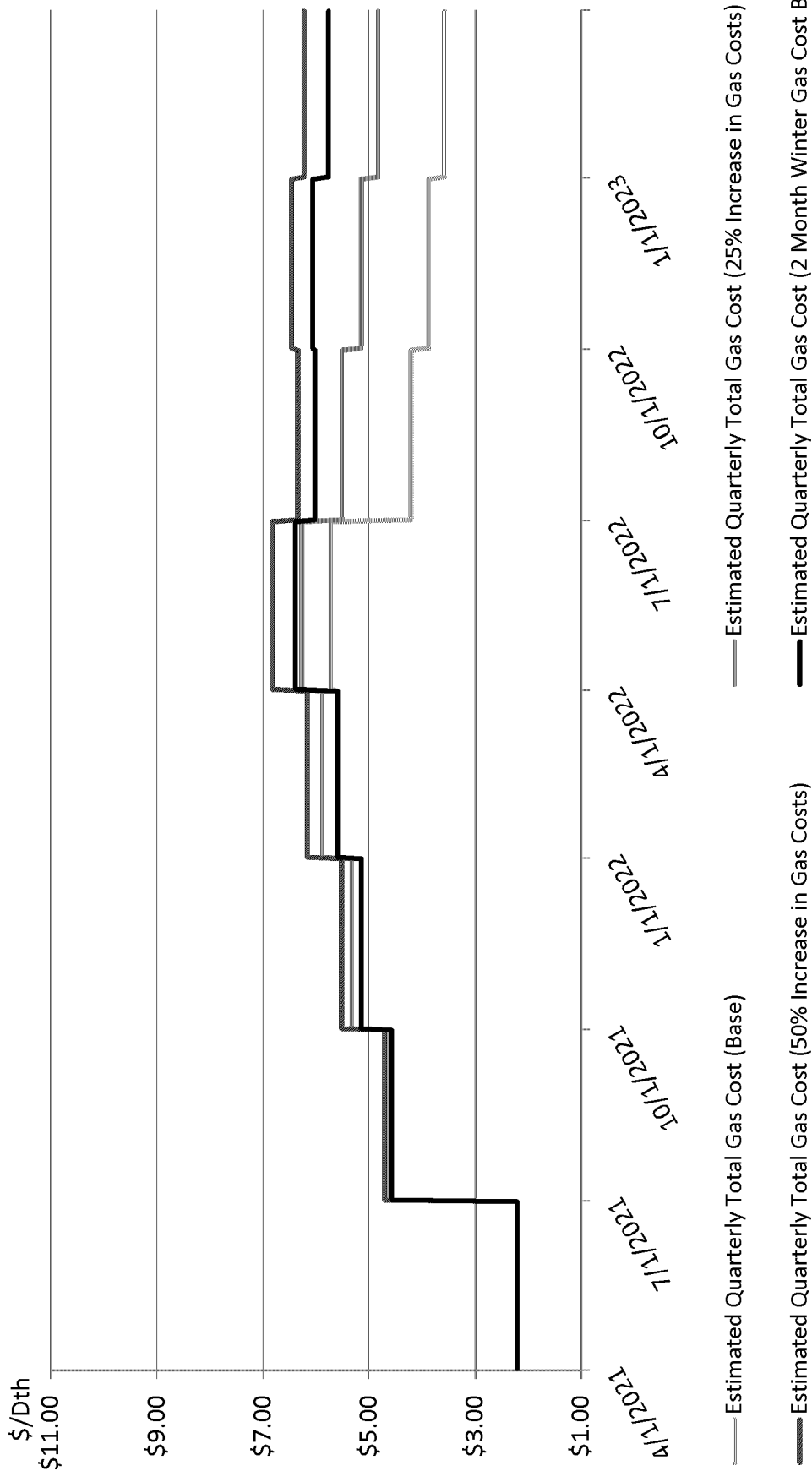
Estimated Quarterly Total Gas Cost (Base)
Estimated Quarterly Total Gas Cost (50% Increase in Gas Costs)
Estimated Quarterly Total Gas Cost (25% Increase in Gas Costs)
Estimated Quarterly Total Gas Cost (2 Month Winter Gas Cost Blowout)

February 26, 2021 estimated forwards pricing

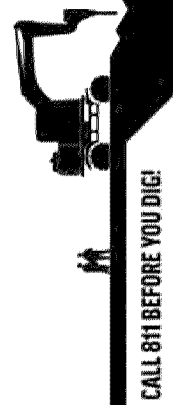




BTER/DEAA Forecast – Southern Nevada



February 26, 2021 estimated forwards pricing





Southwest Gas Corporation

Quarterly Gas Cost Projections [2],[4] & [5]

Description	Apr-21	Jul-21	Oct-21	Jan-22	Apr-22	Jul-22	Oct-22	Jan-23
Base								
<u>Southern Nevada</u>								
BTER Rate [1]	\$ 0.25565	\$ 0.46728	\$ 0.49901	\$ 0.51893	\$ 0.50764	\$ 0.38088	\$ 0.37307	\$ 0.36808
DEAA Surcharge [3]	\$ (0.03472)	\$ (0.00972)	\$ 0.01528	\$ 0.04028	\$ 0.06528	\$ 0.04028	\$ 0.01528	\$ (0.00972)
Total Gas Cost	\$ 0.22093	\$ 0.45756	\$ 0.51429	\$ 0.55921	\$ 0.57292	\$ 0.42116	\$ 0.38835	\$ 0.35836
<u>Northern Nevada</u>								
BTER Rate [1]	\$ 0.54096	\$ 0.77617	\$ 0.83360	\$ 0.84981	\$ 0.81858	\$ 0.69335	\$ 0.68717	\$ 0.68777
DEAA Surcharge [3]	\$ (0.01475)	\$ 0.01025	\$ 0.03525	\$ 0.06025	\$ 0.06068	\$ 0.03568	\$ 0.01068	\$ (0.01432)
Total Gas Cost	\$ 0.52621	\$ 0.78642	\$ 0.86885	\$ 0.91006	\$ 0.87926	\$ 0.72903	\$ 0.69785	\$ 0.67345

[1] The Base Tariff Energy Rate (BTER) does not include the Unrecovered Gas Cost Expense (UGCE) Base Rate.

[2] There is a 3-month lag between accounting month data and quarterly rate changes, i.e. January rates are based on the previous September data.

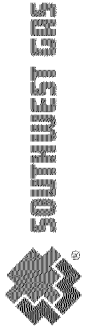
[3] Quarterly DEAA 1) If absolute value of 191 balance < 5% of 12 month purchased gas cost, DEAA = \$.00000, 2) otherwise change in DEAA change can not exceed (+/-) \$.02500 per therm.

[4] Gas Cost and Sales are based on Gas Supply Cost Projections updated with the Feb 26, 2021 Forward Market Prices.

[5] The above projections are based on estimated gas cost and customer usage and are subject to change.

[6] The BTER is equal to the prior quarter's twelve month Gas Cost divided by the prior quarters twelve month Volume (therms).

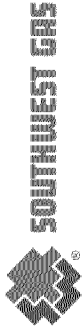




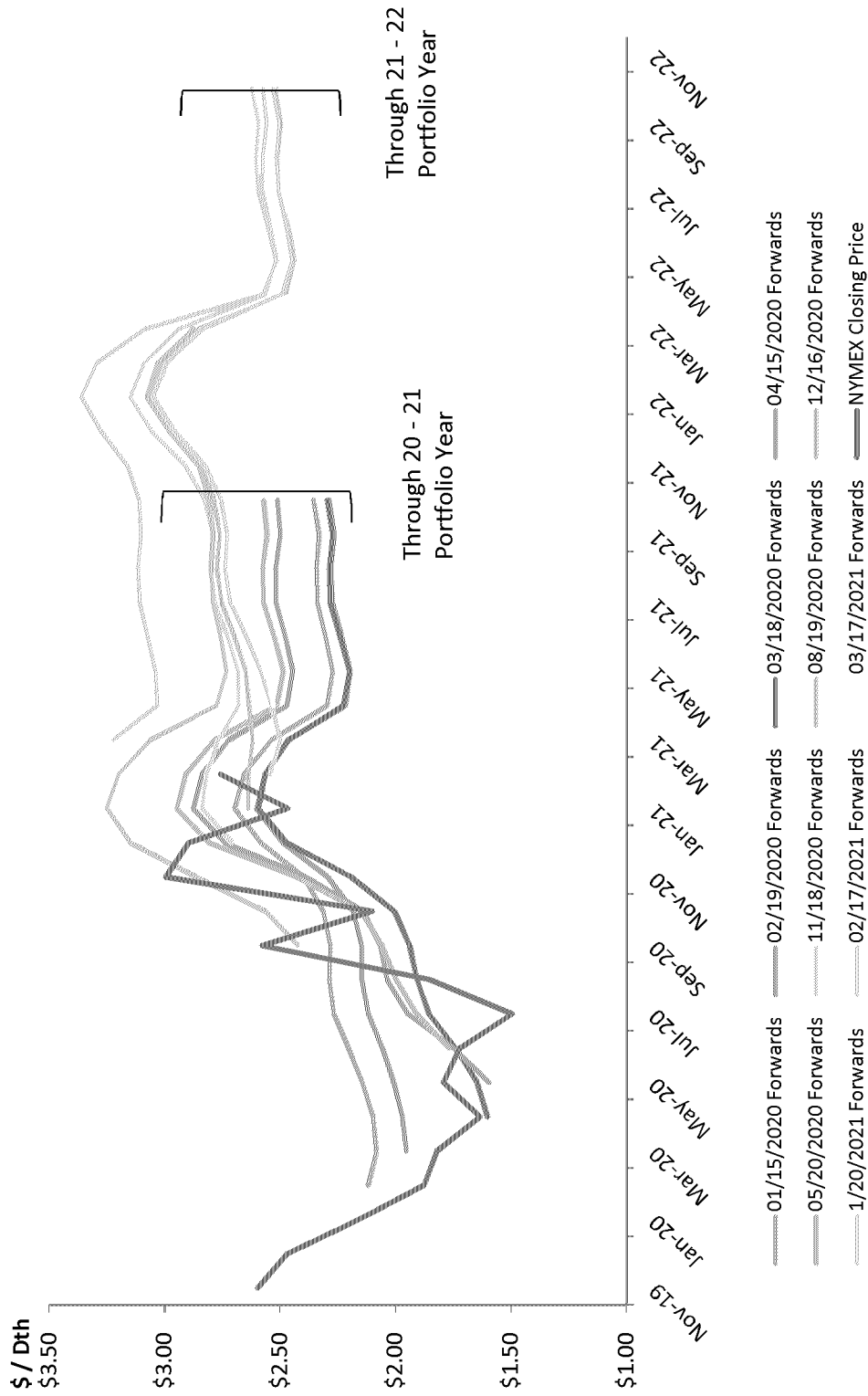
Gas Market Fundamentals



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NYMEX Forward Prices



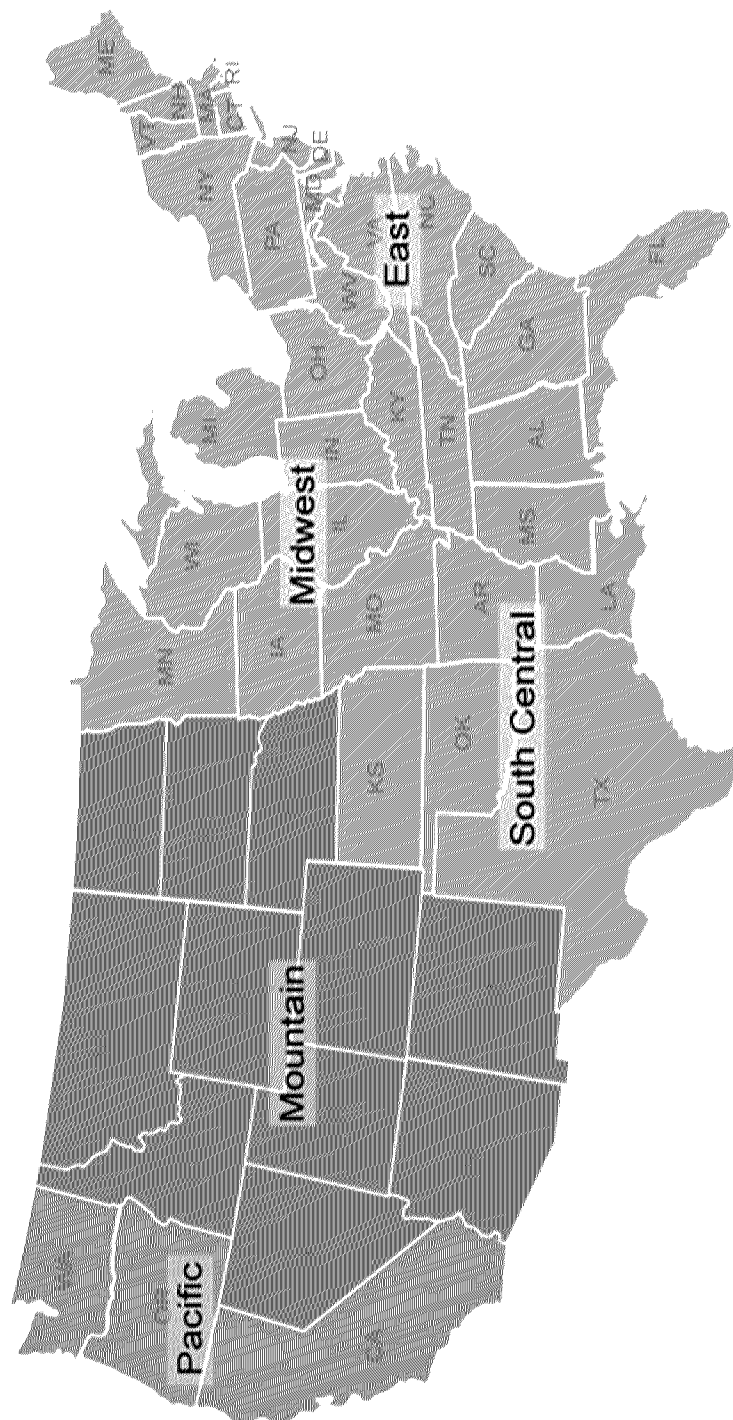
Forwards dates correspond to Nevada Baseload Supply Program solicitation dates



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Underground Storage Regions



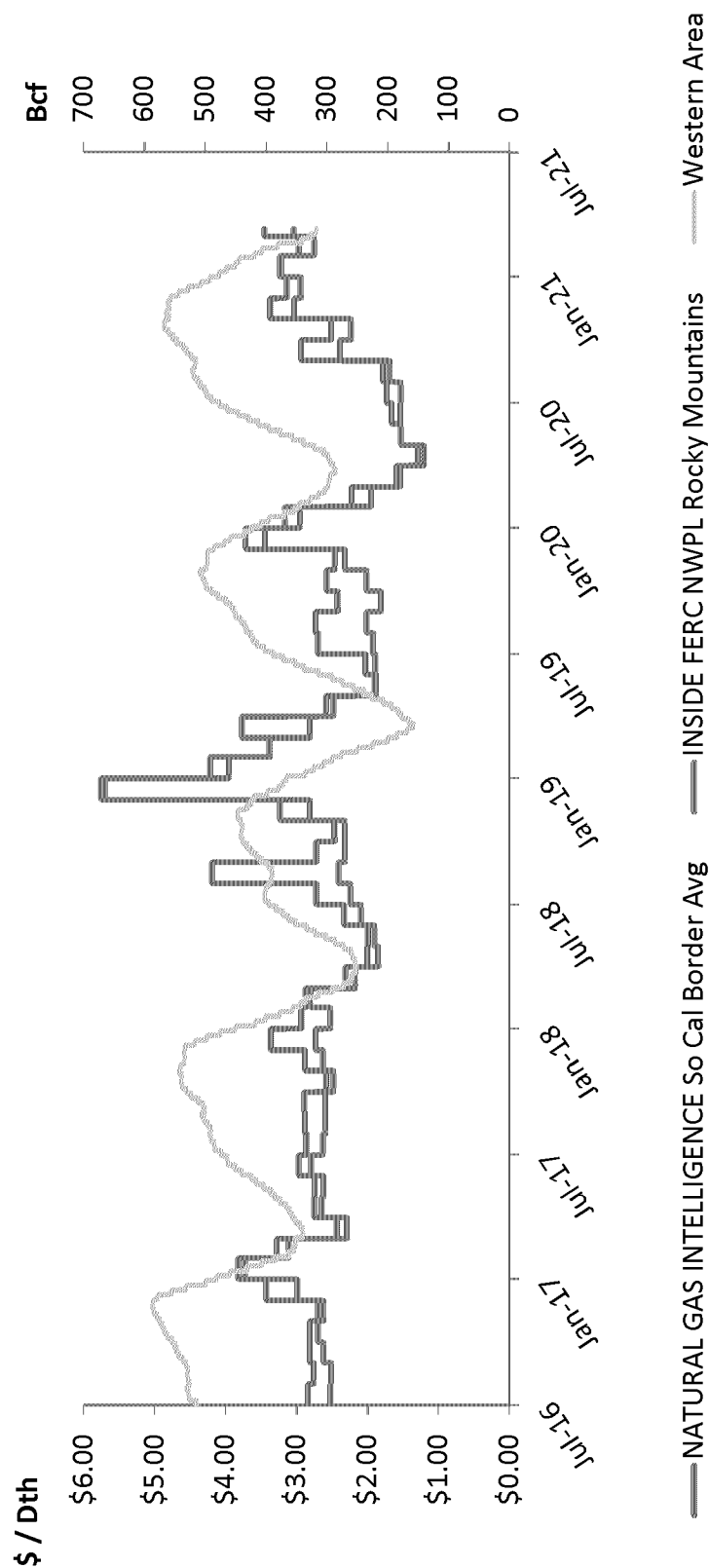
SoCal Storage Information – <https://scgenvoy.sempira.com/>
PG&E Storage Information – <https://pge.com/pipeline/index.page/>



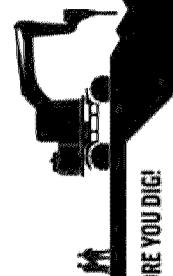
CALL 811 BEFORE YOU DIG!



Historical FOM (First of Month) Market Prices & Western Area Natural Gas Storage Inventory



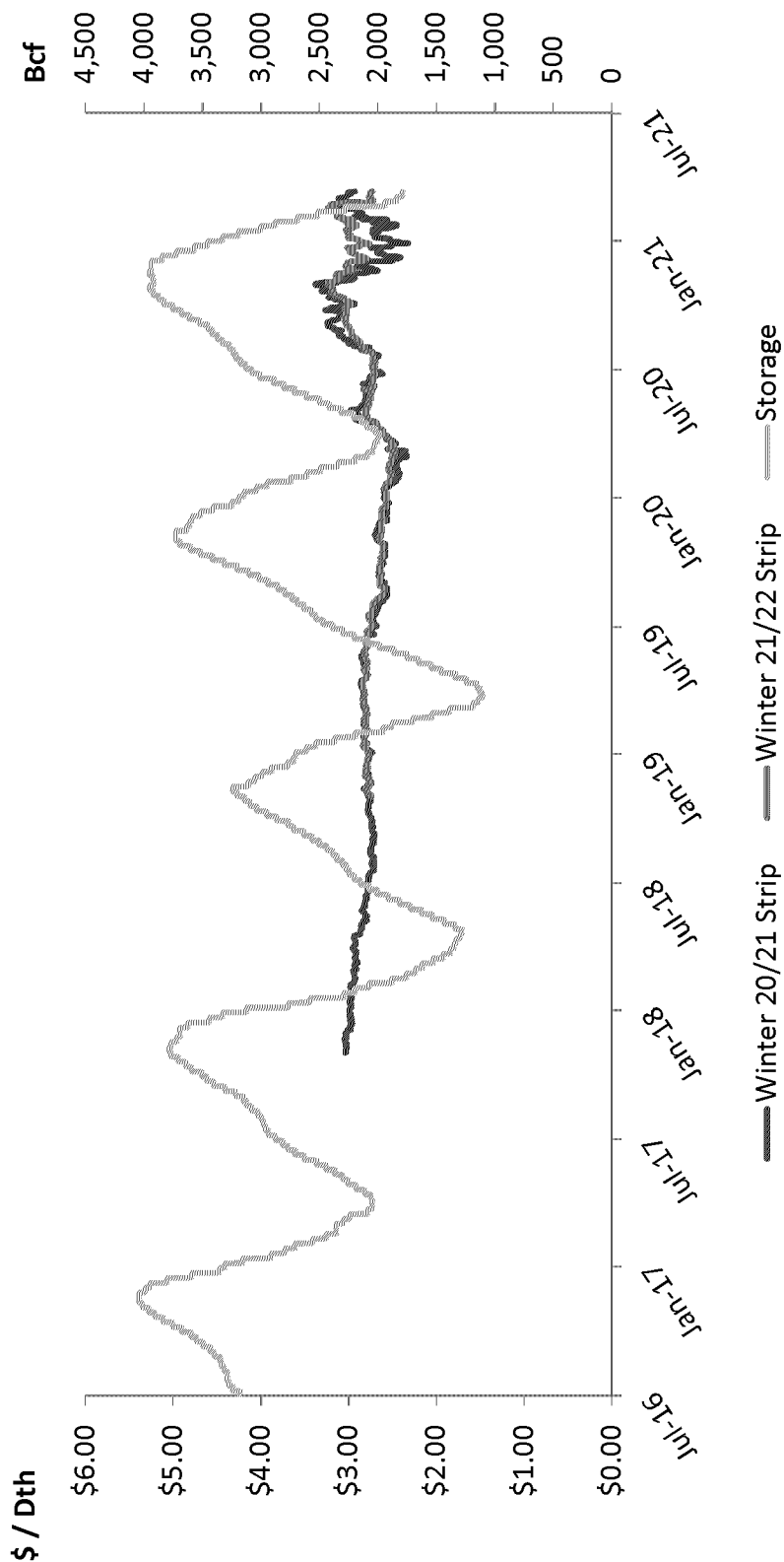
Western area includes Mountain and Pacific Storage Regions



CALL 811 BEFORE YOU DIG!



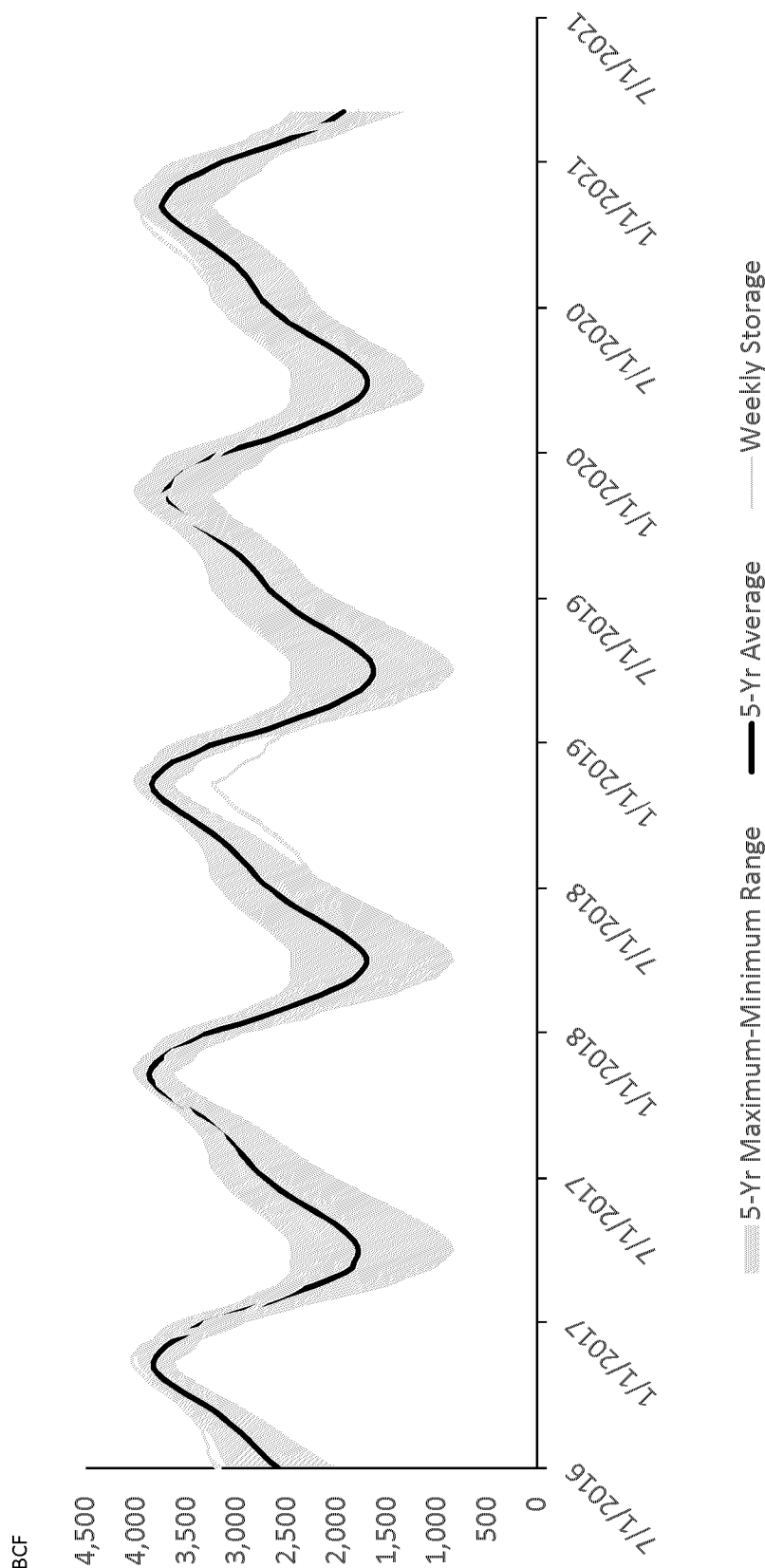
2020/21 - 2021/22 NYMEX Winter Strip Price & Natural Gas Storage



CALL 811 BEFORE YOU DIG!



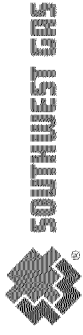
Working Gas in Underground Storage Compared with the 5-Year Maximum and Minimum



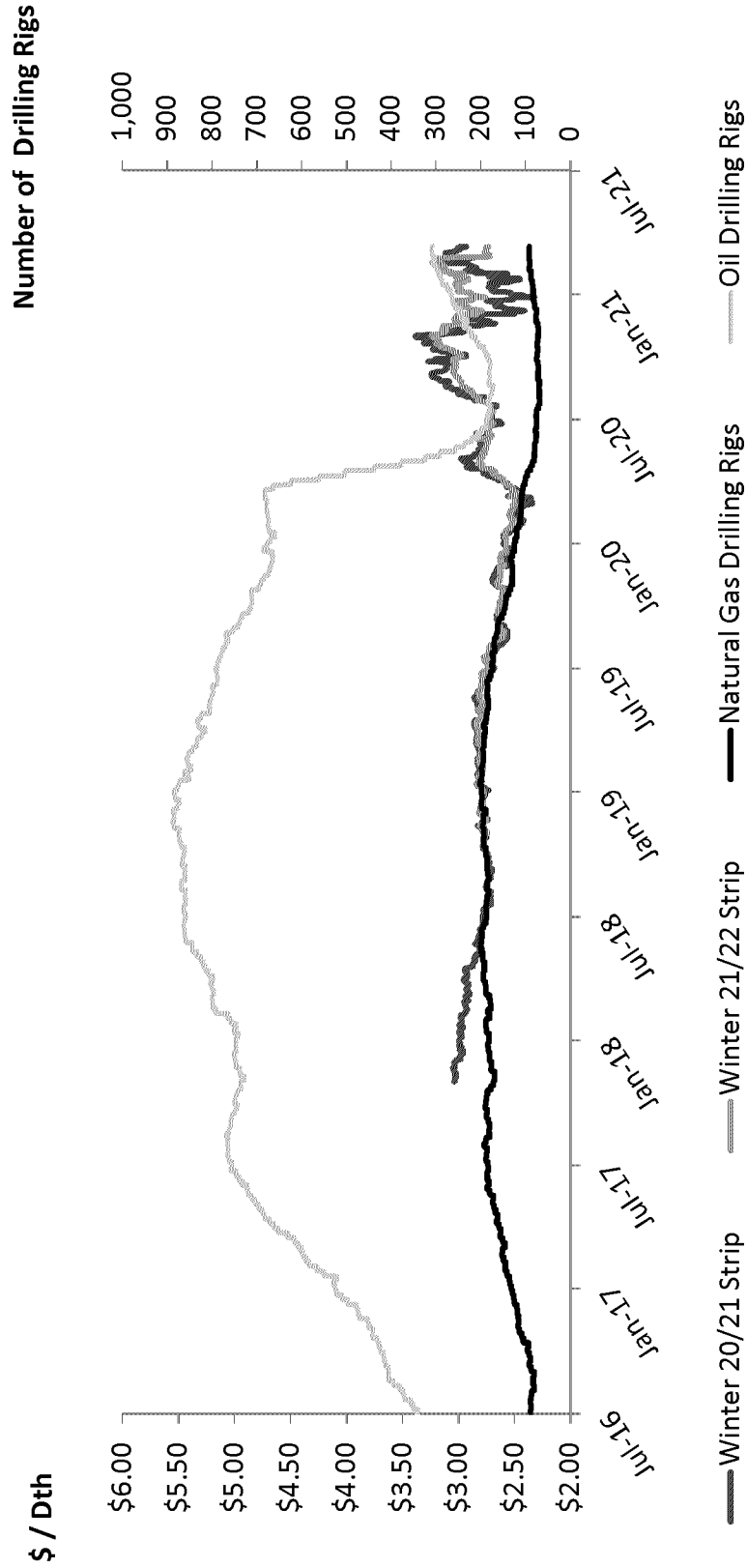
For week ended March 5, 2021



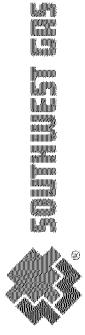
CALL 811 BEFORE YOU DIG!



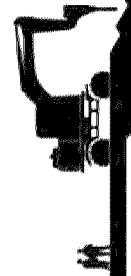
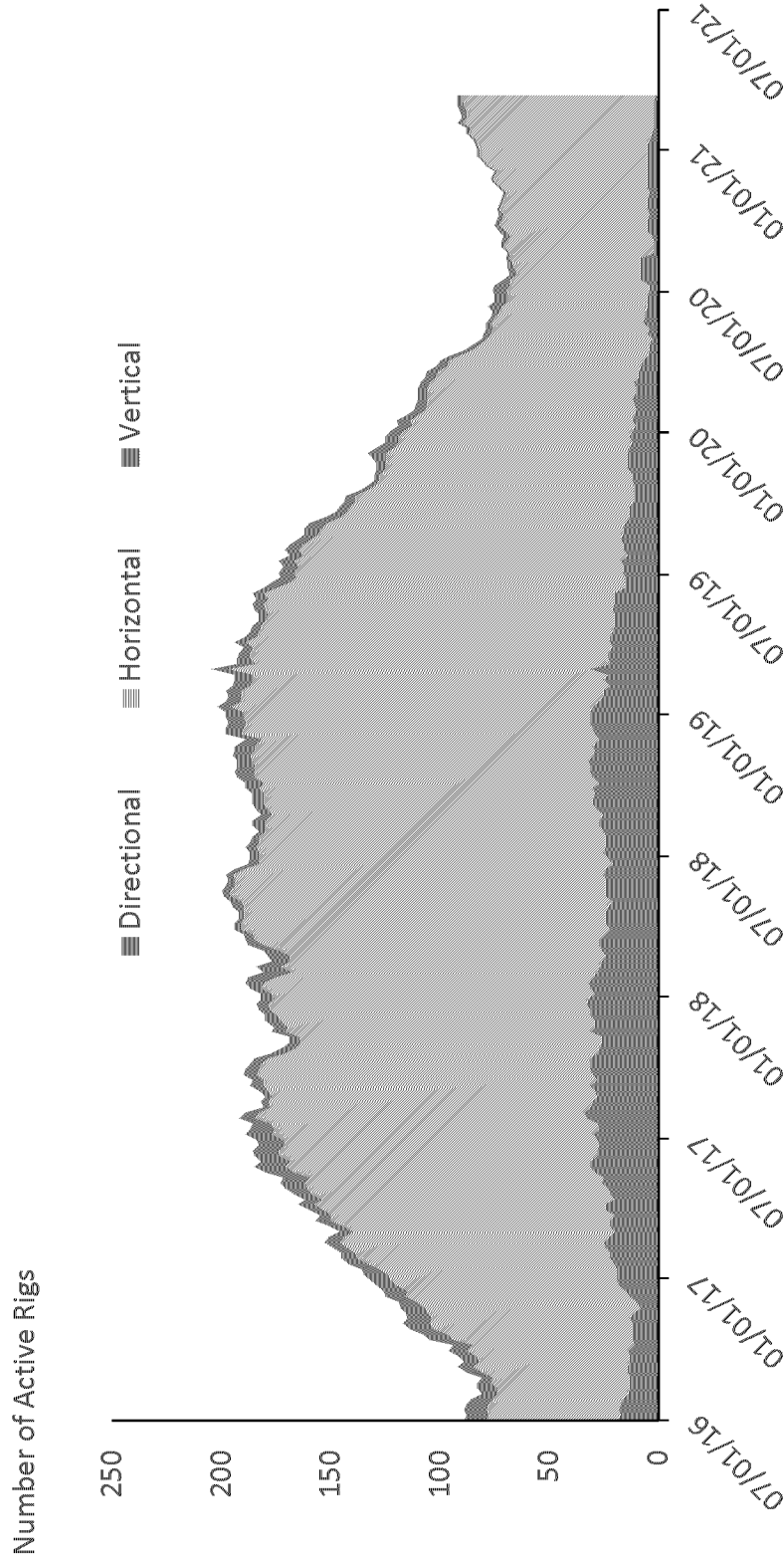
2020/21 – 2021/22 NYMEX Winter Strip Price & Oil and Gas Rotary Rig Count



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Weekly Natural Gas Rig Count by Type

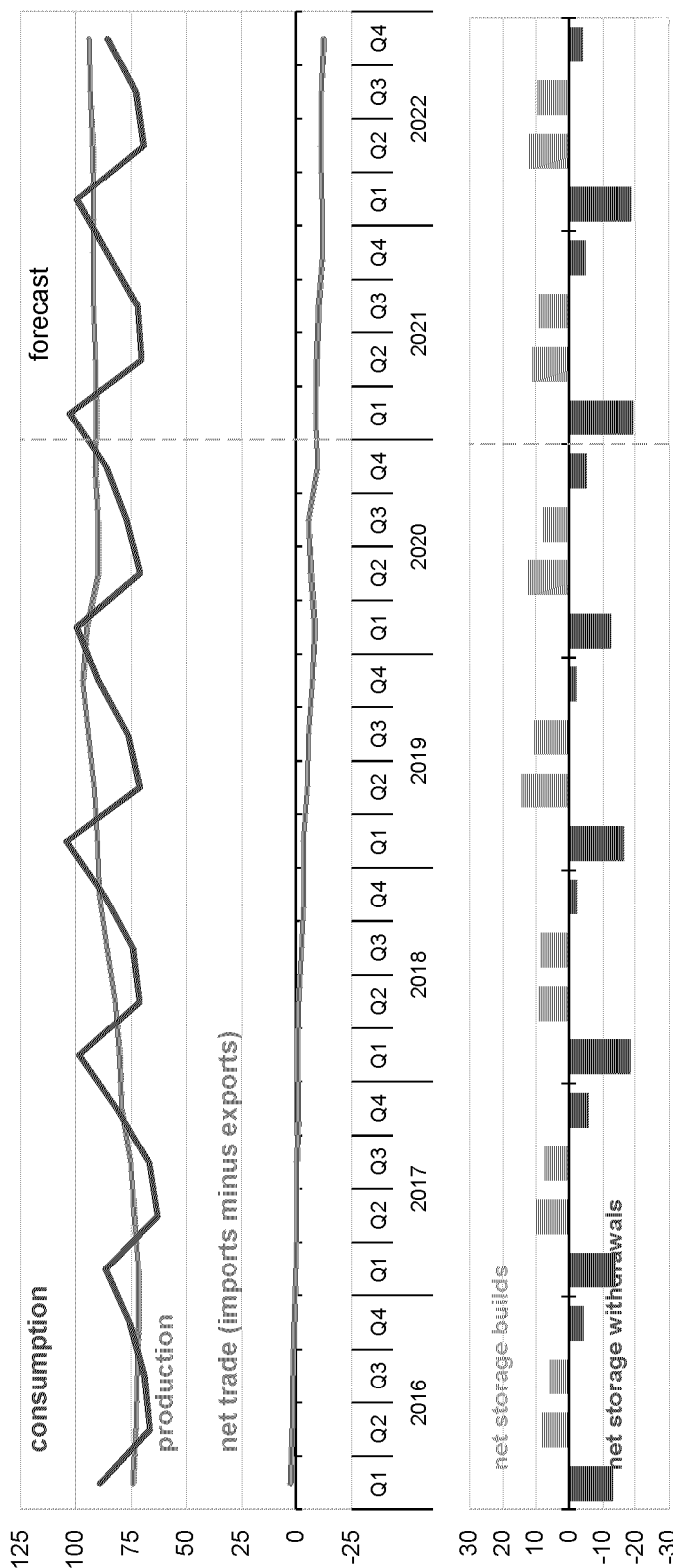


CALL 811 BEFORE YOU DIG!

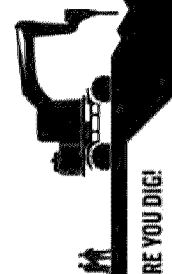


U. S. Natural Gas Production, Consumption and Net Imports

U.S. natural gas production, consumption, and net imports
billion cubic feet per day



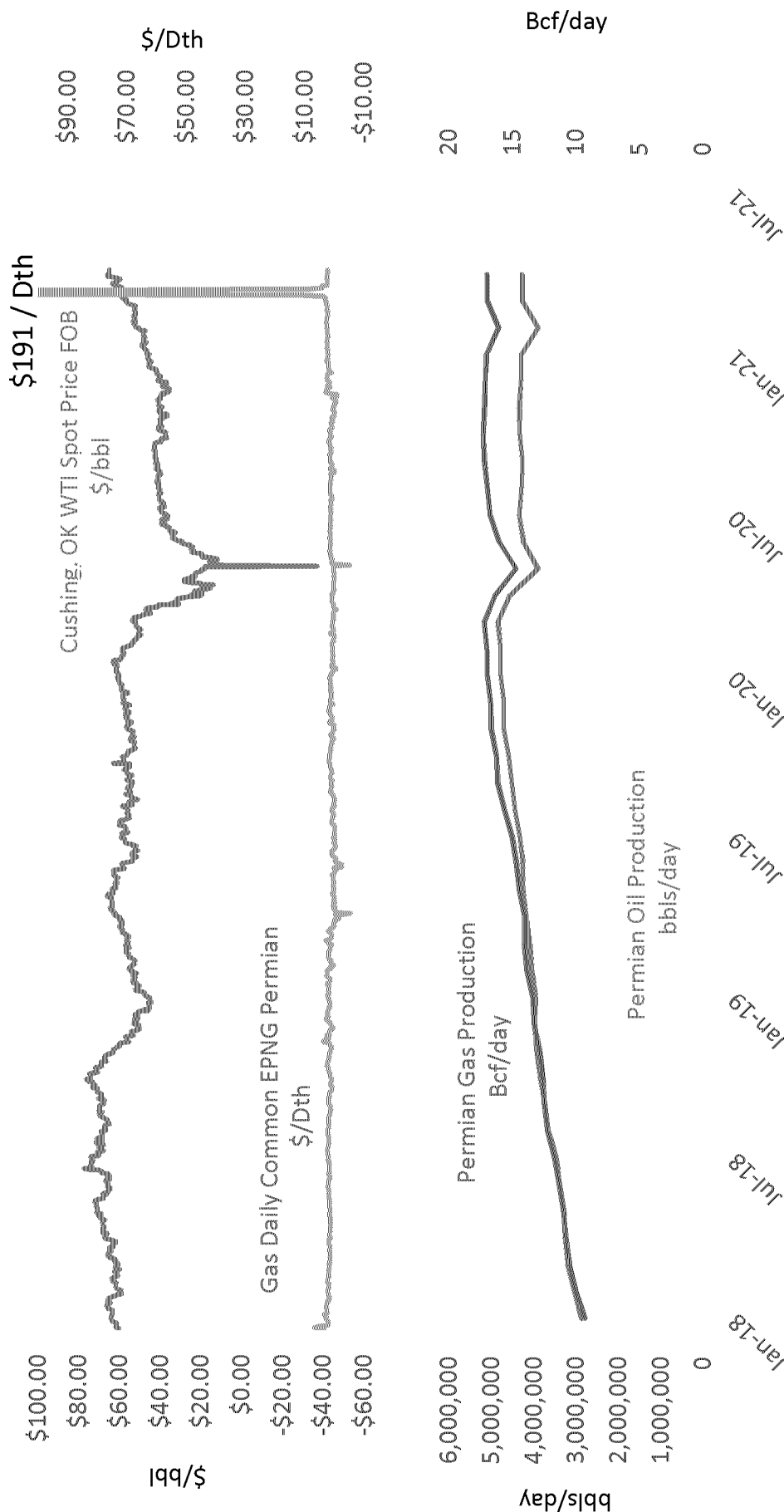
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, March 2021



CALL 811 BEFORE YOU DIG!



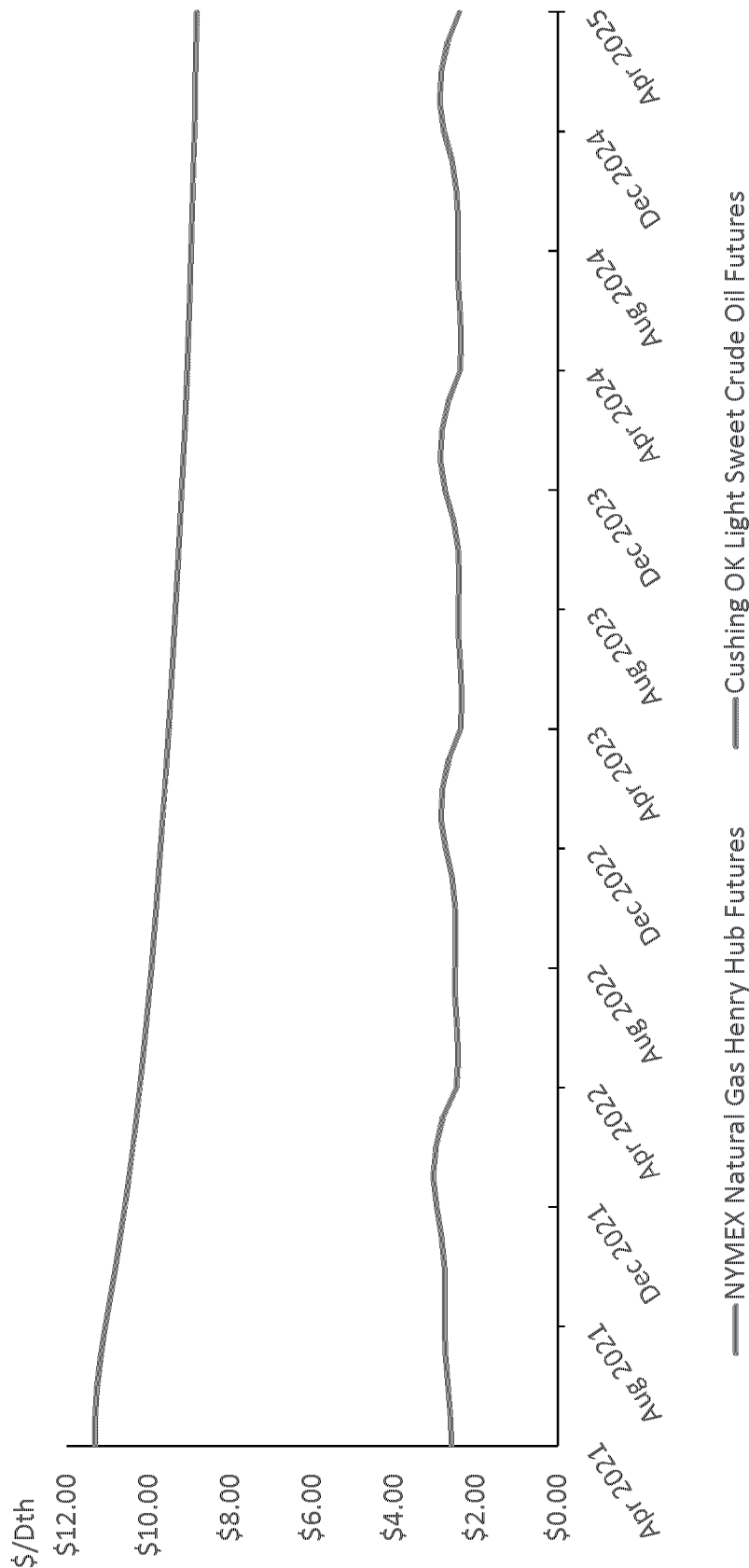
Permian Oil and Natural Gas Daily Production – Daily Pricing



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NYMEX Henry Hub Natural Gas and Cushing OK Light Sweet Crude Oil Futures



March 12, 2021 Futures



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Supplemental Information



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Estimated Winter Strip Forwards (\$/Dth)

Solicitation Date	Portfolio Year	Rockies	Sumas	Malin	Kern	San Juan	NYMEX
5/20/2020	2020/21	2.8500	3.5674	2.9196	2.8750	2.6424	2.7772
6/17/2020	2020/21	2.8084	3.5048	2.8670	2.8334	2.5884	2.7562
8/19/2020	2020/21	3.1332	3.7934	3.1834	3.1582	2.8328	3.1056
11/18/2020	2021/22	3.1330	3.7502	3.2370	3.1442	2.8146	3.0300
12/16/2020	2021/22	3.1290	3.7050	3.2642	3.1388	2.8030	2.9900
1/20/2021	2021/22	3.1428	3.5770	3.2372	3.1432	2.7896	2.9522
2/17/2021	2021/22	3.7282	4.0126	3.7588	3.7282	3.1374	3.2364
3/17/2021	2021/22	3.2522	3.5434	3.2430	3.2588	2.8482	2.8760

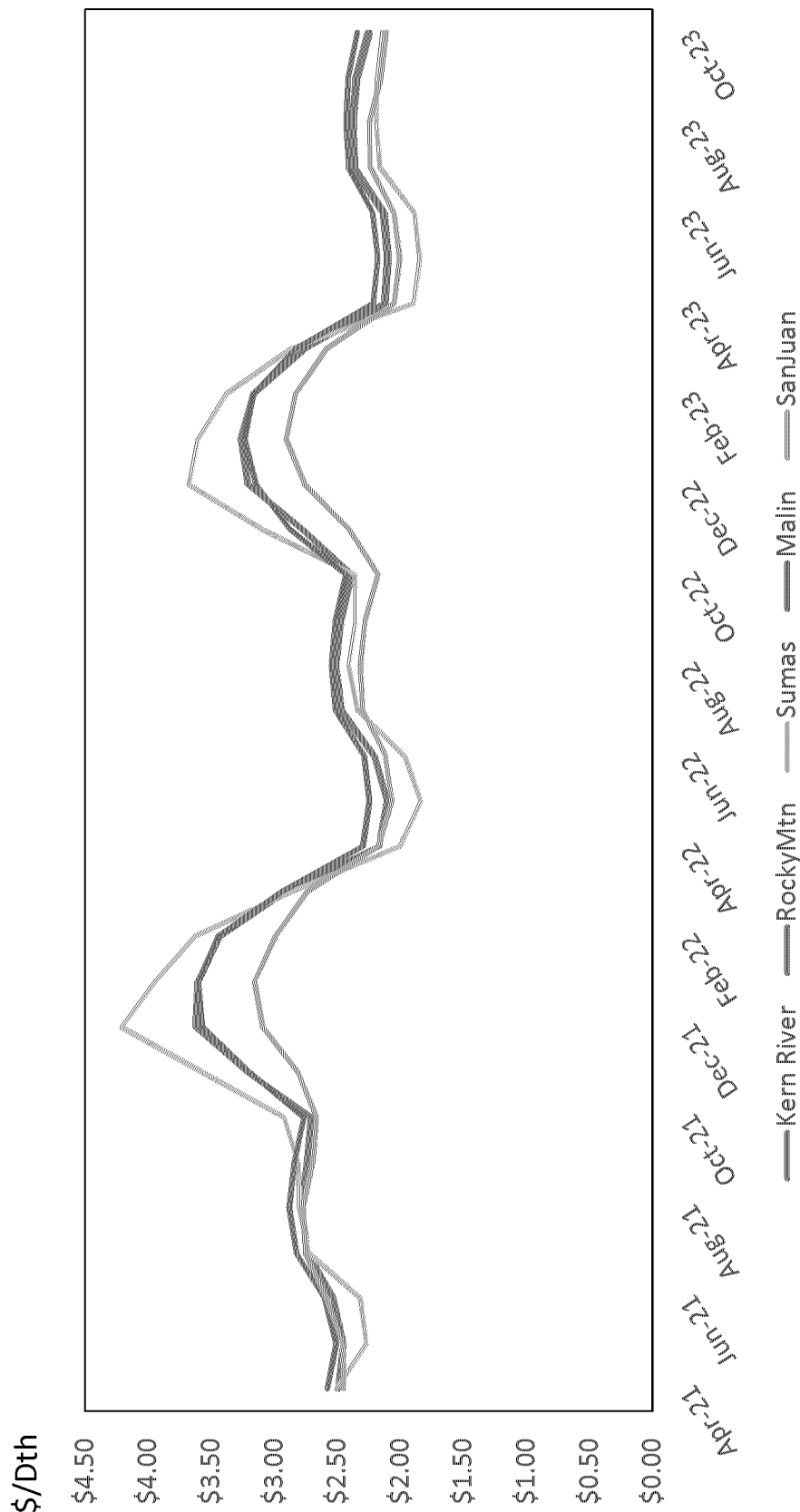
The above forward prices are not necessarily representative of the prices Southwest Gas would have paid for VMP transactions.



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Nevada Supply Point Monthly Forwards



March 12, 2021 Monthly Forwards Prices

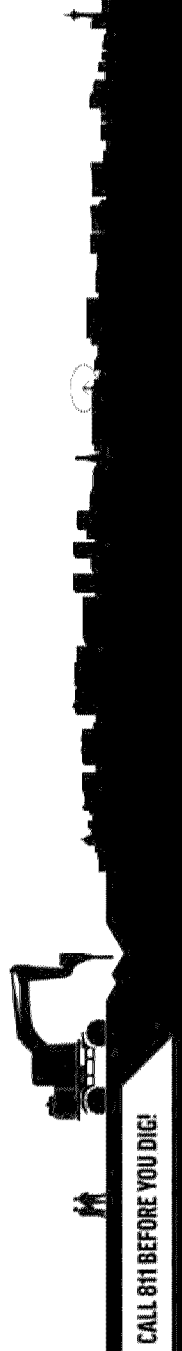


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Market Report Information

- EIA's dry natural gas production estimates (EIA, 2021)
 - Average 91.4 Bcf/d in 2021 (March estimate)
 - Average 90.5 Bcf/d in 2021 (February estimate)
- EIA's March U.S. natural gas consumption forecast (EIA, 2021)
 - Average 83.2 Bcf/d in 2020 (actual)
 - Average 82.5 Bcf/d in 2021 (estimated)
- EIA's March Henry Hub spot price projections (EIA, 2021)
 - Average \$2.03/Dth in 2020 (actual)
 - Average \$3.14/Dth in 2021 (estimated)





Market Report Information

EIA's March U.S. average crude oil production estimate (EIA, 2021)

- 11.3 MMBbl/d in 2020
- 11.1 MMBbl/d in 2021

U.S. combined oil and natural gas rig count rose to 401 as of March 12, 2021(Baker Hughes, 2021).

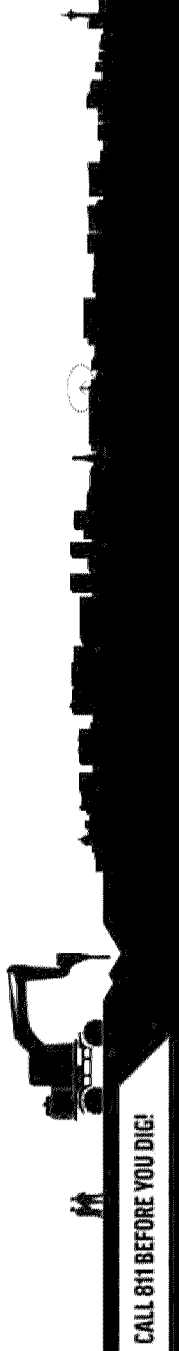
- 309 oil directed rigs
- 92 natural gas directed rigs
- Total down 389 from the corresponding week a year earlier





Market Report Information References

- U.S. Energy Information Administration (EIA), (March 4, 2021). Forecast highlights global liquid fuels. *Short Term Outlook*. Retrieved from: <https://www.eia.gov/outlooks/steo/>
- Baker Hughes, (March 12, 2021). Rig count summary. Retrieved from: <https://bakerhughesrigcount.gcs-web.com/na-rig-count>





MEMORANDUM

To: Randy Gabe

From: Nevada Gas Purchase Strategy Committee

Date: March 26, 2021

Subject: First Quarter 2021 Nevada Hedging Strategy Recommendation

On March 18, 2021, pursuant to the Stipulation approved by the Public Utilities Commission of Nevada in Docket 13-06006 and as modified in Docket 19-06003, the Nevada Gas Purchase Strategy Committee reviewed the Company's current hedging strategy, various market fundamentals, and the ratemaking methodologies used to recover gas costs from the Company's customers.

The Nevada Gas Purchase Strategy Committee (hereinafter "Committee"), at a minimum, consists of representatives from each of the following departments:

- Gas Supply
- Gas Resources Planning
- Regulation and Energy Efficiency

The following individuals were present at the Committee meeting:

- Randy Gabe, Vice President / Gas Resources
- Amy Timperley, Director / Regulation and Energy Efficiency
- Christopher Brown, Manager / Regulation and Energy Efficiency
- Kasey Bohannon, Manager / Regulation and Energy Efficiency
- Luis Cruz, Analyst I / Regulation and Energy Efficiency
- Steve Williams Director / Gas Resources Planning
- Laura Spurlock, Manager / Gas Resources Planning
- Ernest Melo, Senior Evaluation Engineer / Gas Resources Planning
- Kristien Tary, Reg Specialist / Gas Resources Planning
- Francell Rodriguez, Evaluation Engineer / Gas Resources Planning
- Dana Walsh, Associate General Counsel / Corporate & Operations Support

To: Gabe
March 26, 2021
Page 2 of 4

- Catherine Mazzeo, Managing Counsel / Regulation & Litigation
- John Olenick, Director / Gas Supply
- Eric Rost, Manager / Gas Purchases and Transportation

During the March 18, 2021 Committee meeting (“Meeting”), the Committee evaluated market fundamentals such as national storage inventory levels, national rig count levels, current and projected supply and demand levels for natural gas, and forward market price curves. The Committee also reviewed the estimated total gas cost rates that the Company would charge its customers based on the current forward prices, as well as being updated with estimated gas costs incurred during the February 2021 central US cold weather event, and a sensitivity analysis of how those total gas cost rates would change if there were various levels of increases in gas prices.

At the time of the Meeting, the national storage inventory level was at 1,793 Bcf. That level is 141 Bcf below the five-year average and 257 Bcf lower than this time last year. Storage inventories in the Pacific region were at 205 Bcf, which is 17 Bcf above that region’s five-year average and 5 Bcf higher than last year this time. In the Mountain region, storage inventories were at 113 Bcf, which is 4 Bcf above that region’s five-year average and 15 Bcf more than last year this time.

Since the Committee’s December 3, 2020 meeting, natural gas directed rig counts have increased from 79 to 92 and oil directed rigs rose from 258 to 309. EIA shows U.S dry natural gas production is estimated to average 91.4 Bcf/day in 2021. Moreover, EIA projects U.S. crude oil production to average 11.3 MMbbl/day in 2020 and decrease in 2021 to 11.1 MMbbl/day.

NYMEX prices for the next winter period (November 2021 through March 2022), have ranged from about \$2.84/Dth to \$3.12/Dth over the past month. Current production region spot prices ranged from a low of \$2.58/Dth to a high of \$160.84/Dth in the Rockies, while the Henry Hub range was \$2.67/Dth to \$23.605/Dth. EIA estimates that Henry Hub spot prices averaged \$2.03/Dth in 2020 and will average \$3.14/Dth in 2021. Those current price ranges include daily price increases caused by the February 2021 central US cold weather event. That event caused daily prices to spike to previously unexperienced levels for February 12, 2021 through February 18, 2021.

To: Gabe
March 26, 2021
Page 3 of 4

Based on the current ratemaking methodologies, which have not changed since the Company suspended Nevada VMP purchases in the fall of 2013, the Company calculated projected quarterly total gas cost rates for April 2021 through January 2023 for both southern Nevada and northern Nevada systems. The daily price volatility resulting from the February 2021 cold weather event is reflected in the gas cost rate analysis for this period. The Company used the February 26, 2021 forward market gas prices when calculating the projected quarterly total gas cost rates.

For customers in southern Nevada, the Company projects that retail gas cost rates for April 2021 through January 2023 could range from a low of approximately \$0.22/therm to a high of about \$0.57/therm. For customers in northern Nevada, the Company projects that gas cost rates for the same period could range from a low of about \$0.53/therm to a high of approximately \$0.91/therm. While the higher daily gas costs incurred in February 2021 are expected to begin increasing these rates in July 2021, sensitivity analysis shows that the current ratemaking methodologies continue to dampen the volatility in customer rates under increased gas price scenarios.

Daily price volatility, like that experienced in February 2021, impacts total gas cost rates regardless of whether the Company made baseload fixed price purchases contemplated under the currently suspended VMP or the actual purchases made under the BSP, which are priced at first of the month index prices. Daily price volatility impacts the quantities of gas purchased to meet the fluctuating daily customer demands above baseload purchases. Baseload quantities purchased would be equal under either the contemplated VMP or the actual BSP program. Consequently, the decision to make purchases under the contemplated VMP or the currently utilized BSP is not changed by the daily price volatility experienced in February 2021.

After reviewing the February 2021 event, current market fundamentals and projected quarterly gas rates that the Company would charge its customers, the Committee recommends that the Company should not alter its current gas hedging strategy and should continue to suspend Nevada VMP purchases. The Committee bases the recommendation upon the market fundamentals and ratemaking methodologies that existed as of March 18, 2021.

To: Gabe
March 26, 2021
Page 4 of 4

The Committee's recommendation does not consider market changes that could come about from unforeseen future circumstances, *e.g.* force majeure events in the market place, sudden disruption of market supplies, extreme weather conditions, or regulatory changes. This recommendation only applies to the Company's Nevada gas purchase strategy and does not affect the Company's Arizona or California gas purchase strategies.

Attachments to the recommendation include documentation reviewed during the Committee meeting, as well as other supporting information.

cc:

Justin Brown	Amy Timperley
Christopher Brown	John Olenick
Eric Rost	Steve Williams
Laura Spurlock	



Southwest Gas' VMP and Gas Market Fundamentals Review (Docket Nos. 13-06006 and 19-06003) July 22, 2021

EXHIBIT NO. ____ (JRO-5)
SHEET 130 OF 154



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Volatility Mitigation Plan Update

Analysis Summary

- BTER/DEAA gas cost rate analysis reflects daily price volatility resulting from the February 2021 cold weather events
- The higher daily gas costs incurred in February 2021 are expected to begin increasing the BTER and DEAA in July 2021
- Daily price volatility, like that experienced in February 2021, impacts the BTER/DEAA regardless of whether the Company made fixed price purchases contemplated under the currently suspended VMP or the actual purchases made under the BSP, which are priced at first of the month index prices
- Daily price volatility impacts the quantities of gas purchased to meet the fluctuating daily customer demands above baseload purchases quantities
- The baseload quantities purchased would be equal under either the contemplated VMP or the actual BSP
- Consequently, the decision to make purchases under the contemplated VMP or the currently utilized BSP is not changed by the daily price volatility experienced in February 2021

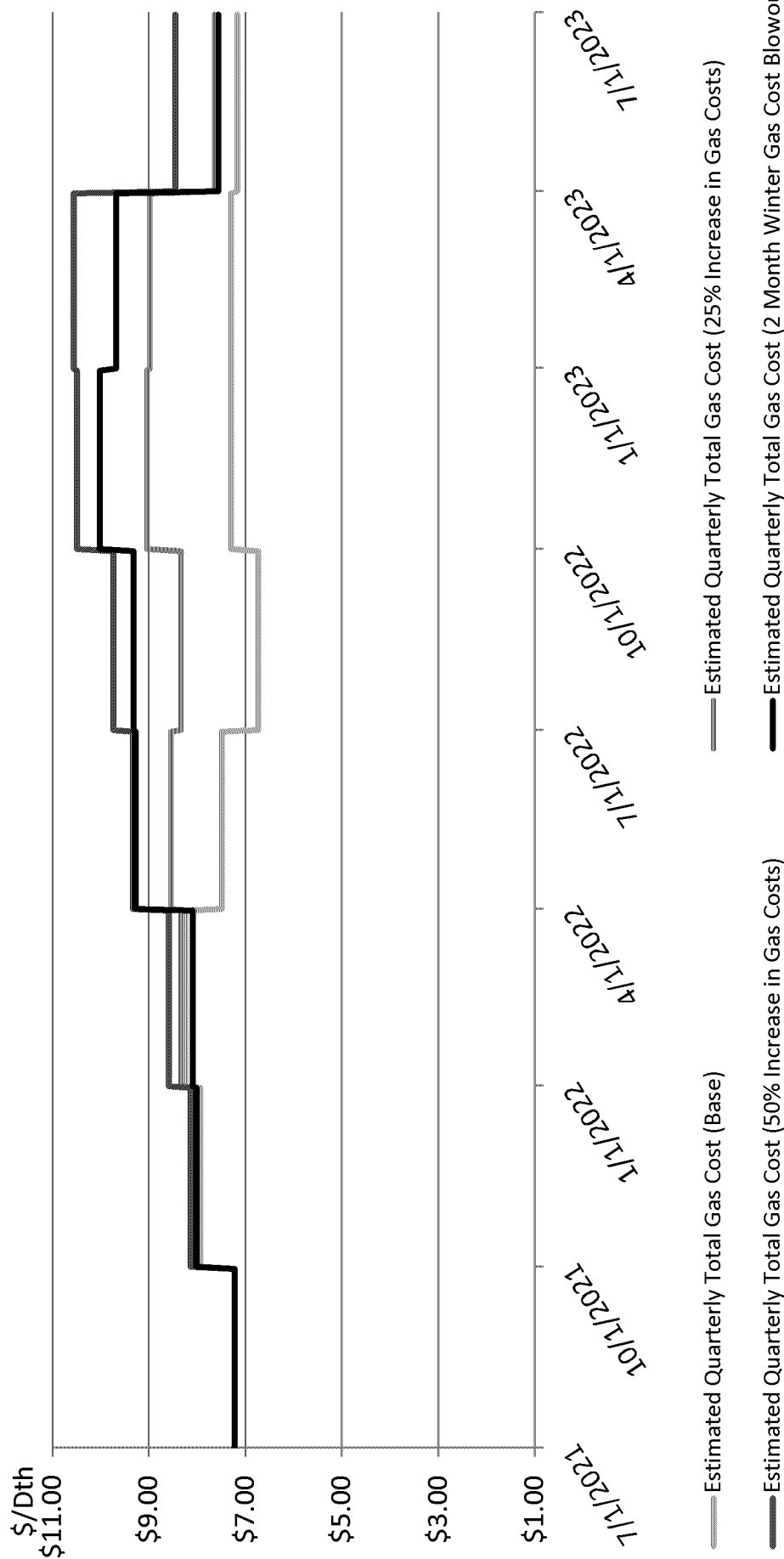
Decision

- Continue to suspend VMP purchases for Northern and Southern Nevada



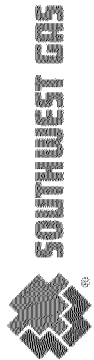


BTER/DEAA Forecast – Northern Nevada

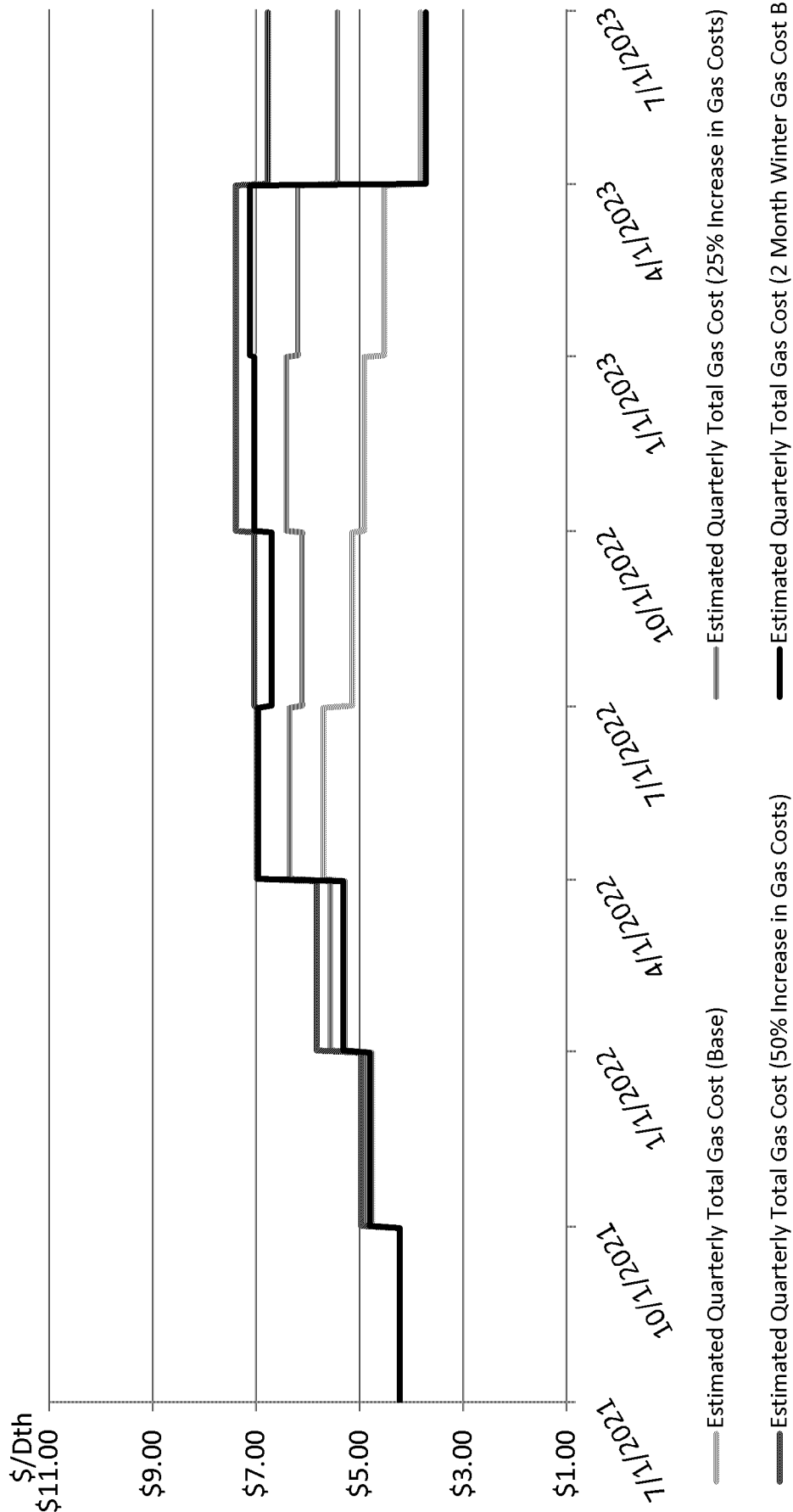


May 20, 2021 estimated forwards pricing





BTER/DEAA Forecast – Southern Nevada



May 20, 2021 estimated forwards pricing



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Southwest Gas Corporation

Quarterly Gas Cost Projections [2],[4] & [5]

Description	Jul-21	Oct-21	Jan-22	Apr-22	Jul-22	Oct-22	Jan-23	Apr-23
Base								
<u>Southern Nevada</u>								
BTER Rate [1]	\$ 0.43170	\$ 0.46088	\$ 0.48808	\$ 0.50512	\$ 0.43233	\$ 0.43425	\$ 0.42098	\$ 0.38212
DEAA Surcharge [3]	\$ (0.00972)	\$ 0.01528	\$ 0.04028	\$ 0.06528	\$ 0.08239	\$ 0.05739	\$ 0.03239	\$ 0.00000
Total Gas Cost	\$ 0.42198	\$ 0.47616	\$ 0.52836	\$ 0.57040	\$ 0.51472	\$ 0.49164	\$ 0.45337	\$ 0.38212
<u>Northern Nevada</u>								
BTER Rate [1]	\$ 0.72209	\$ 0.76905	\$ 0.77460	\$ 0.74946	\$ 0.69869	\$ 0.73054	\$ 0.73075	\$ 0.69221
DEAA Surcharge [3]	\$ 0.00000	\$ 0.02500	\$ 0.05000	\$ 0.00000	\$ (0.02500)	\$ 0.00000	\$ 0.00000	\$ 0.02500
Total Gas Cost	\$ 0.72209	\$ 0.79405	\$ 0.82460	\$ 0.74946	\$ 0.67369	\$ 0.73054	\$ 0.73075	\$ 0.71721

[1] The Base Tariff Energy Rate (BTER) does not include the Unrecovered Gas Cost Expense (UGCE) Base Rate.

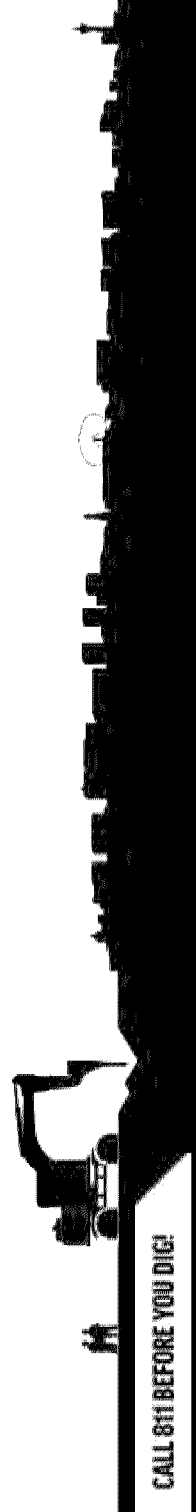
[2] There is a 3-month lag between accounting month data and quarterly rate changes, i.e. January rates are based on the previous September data.

[3] Quarterly DEAA 1) If absolute value of 191 balance < 5% of 12 month purchased gas cost, DEAA = \$.00000, 2) otherwise change in DEAA change can not exceed (+/-) \$.02500 per therm.

[4] Gas Cost and Sales are based on Gas Supply Cost Projections updated with the May 20, 2021 Forward Market Prices.

[5] The above projections are based on estimated gas cost and customer usage and are subject to change.

[6] The BTER is equal to the prior quarter's twelve month Gas Cost divided by the prior quarters twelve month Volume (therms).



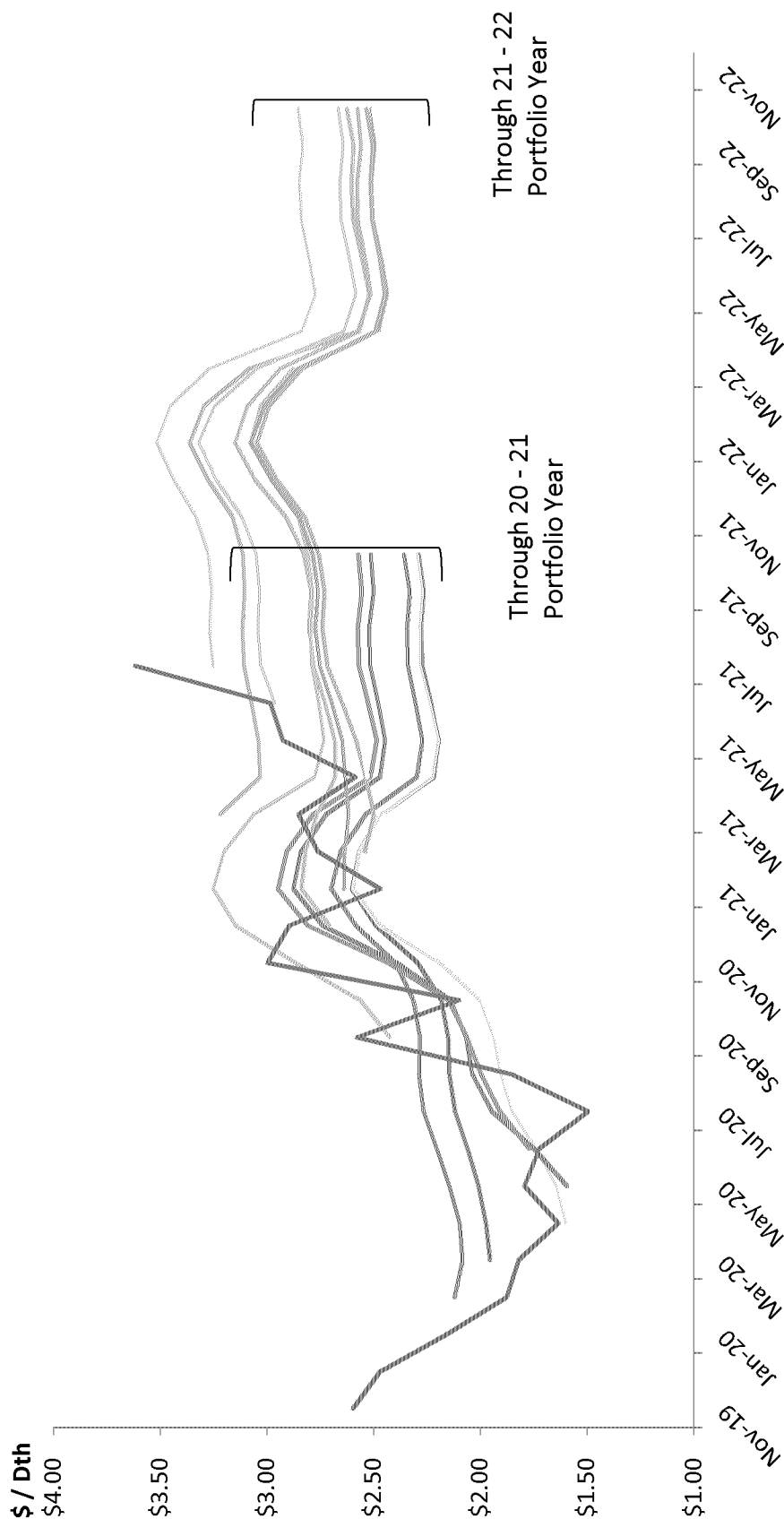


Gas Market Fundamentals



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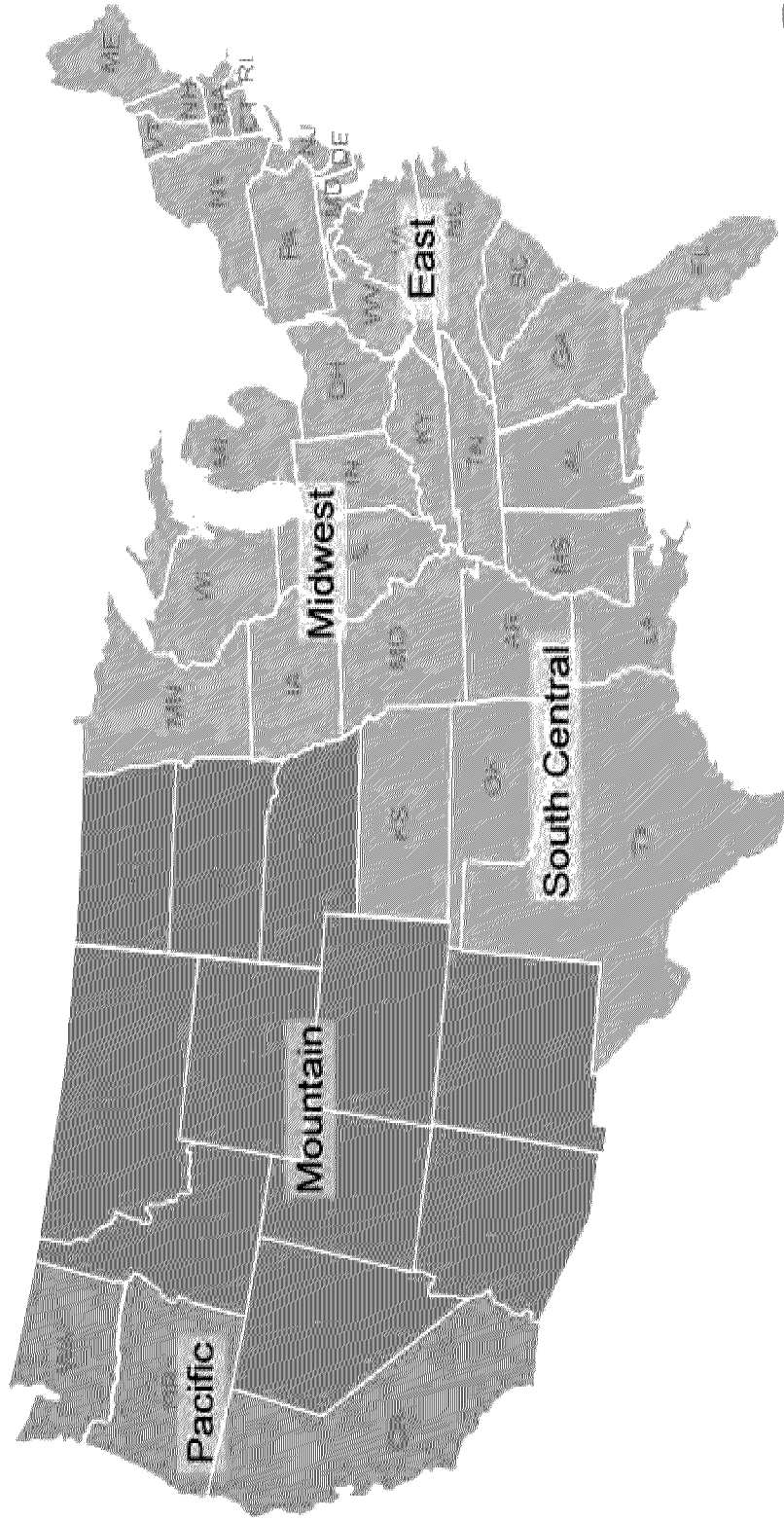
NYMEX Forward Prices



- 01/15/2020 Forwards
- 11/18/2020 Forwards
- 03/17/2021 Forwards
- 02/19/2020 Forwards
- 08/19/2020 Forwards
- 04/21/2021 Forwards
- 03/18/2020 Forwards
- 12/16/2020 Forwards
- 05/19/2021 Forwards
- 04/15/2020 Forwards
- 1/20/2021 Forwards
- 06/16/2021 Forwards
- 05/20/2020 Forwards
- 02/17/2021 Forwards
- NYMEX Closing Price

Forwards dates correspond to Nevada Baseload Supply Program solicitation dates

Underground Storage Regions

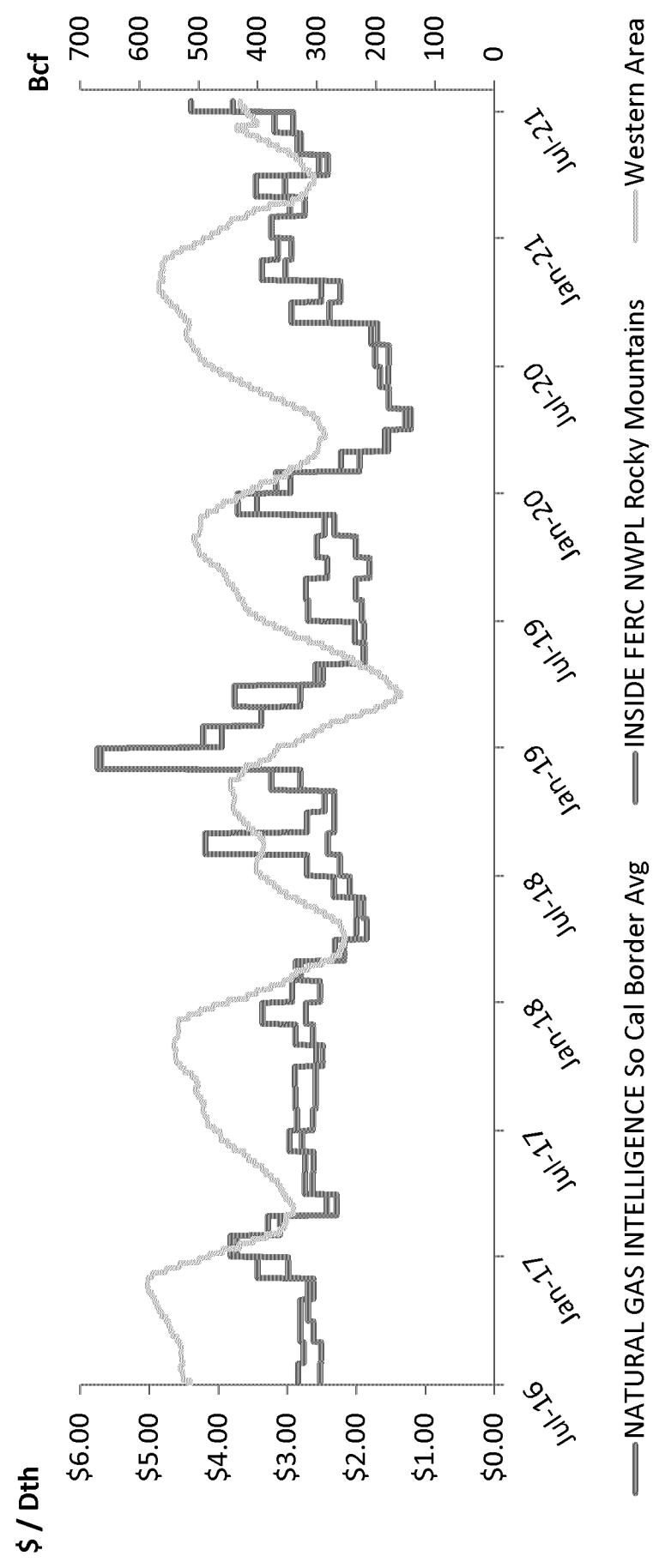


SoCal Storage Information – <https://scgenvoy.semptra.com/>

PG&E Storage Information – <https://pge.com/pipeline/index.page/>



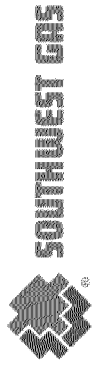
Historical FOM (First of Month) Market Prices & Western Area Natural Gas Storage Inventory



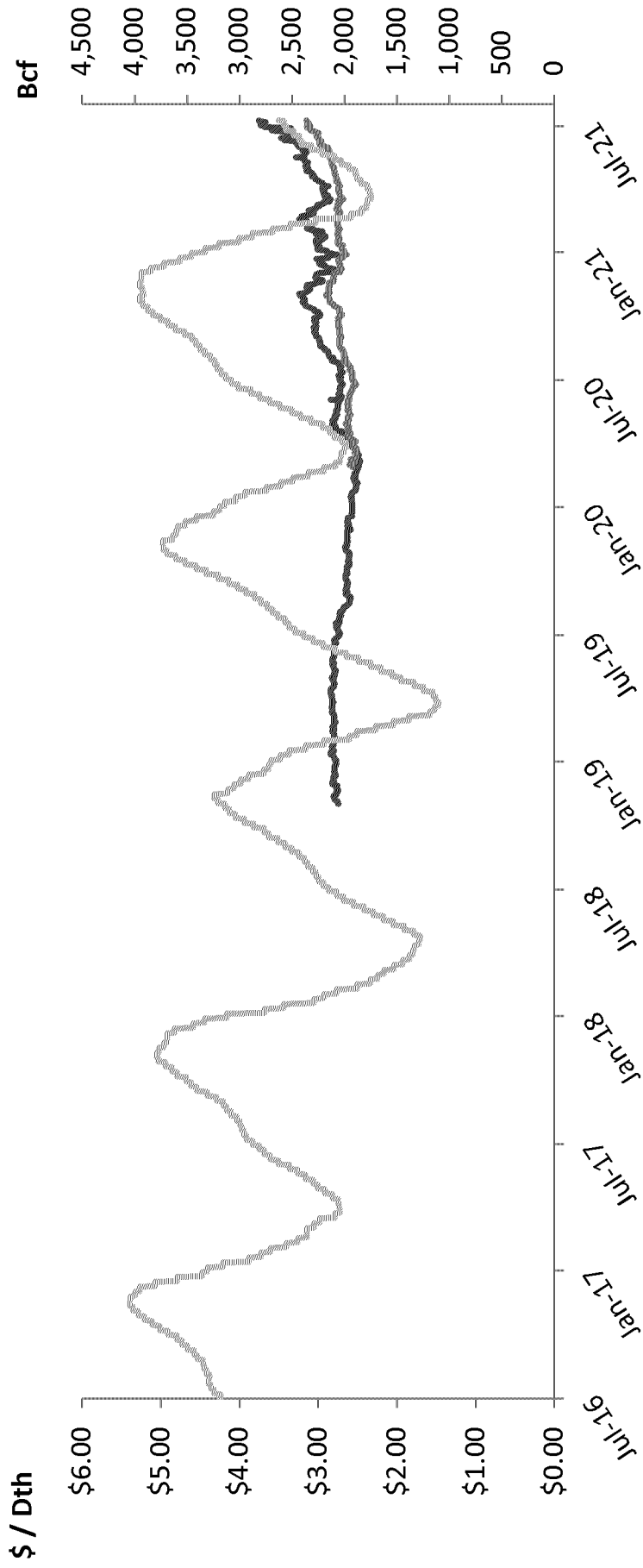
Western area includes Mountain and Pacific Storage Regions



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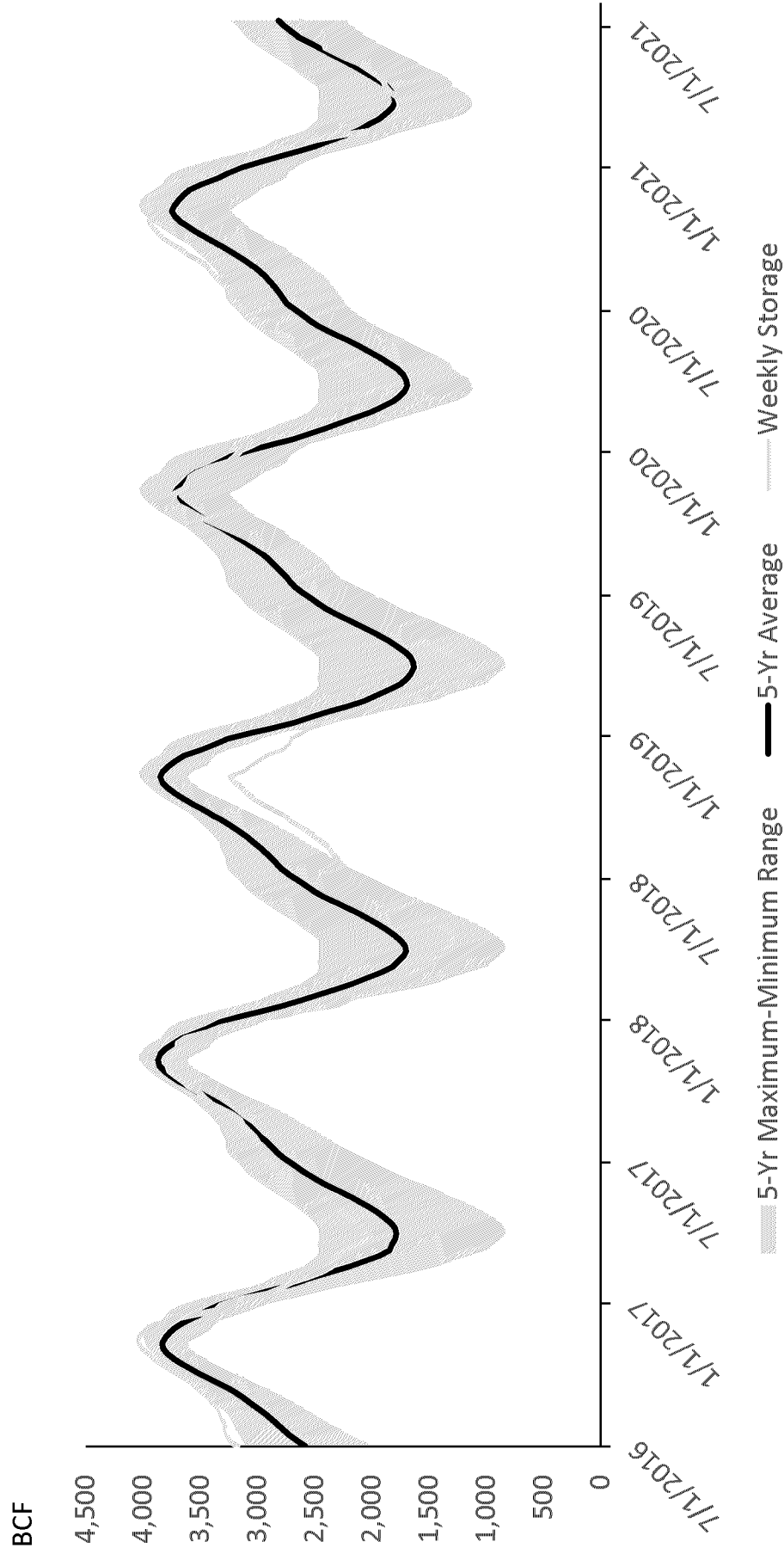
2021/22 - 2022/23 NYMEX Winter Strip Price & Natural Gas Storage



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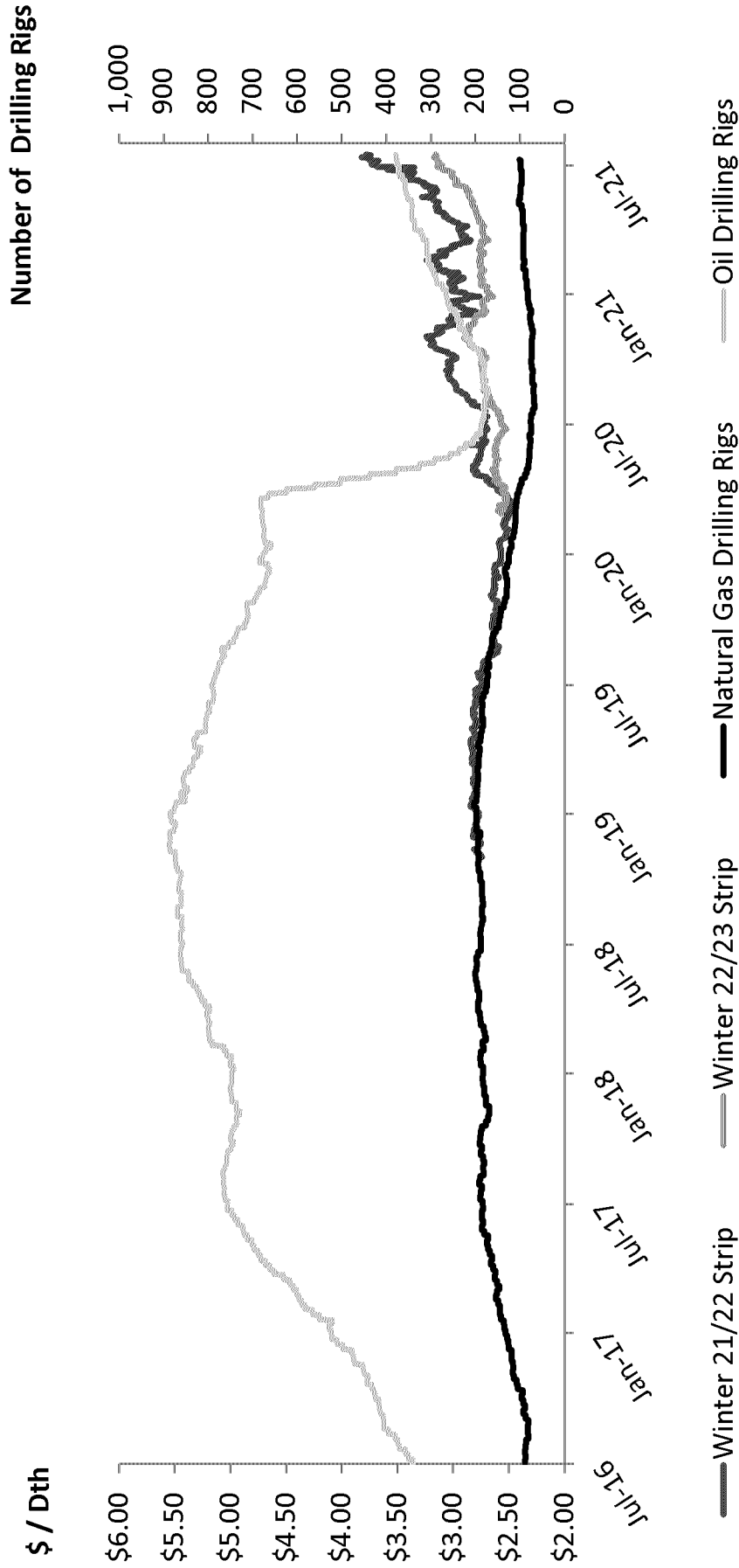
Working Gas in Underground Storage Compared with the 5-Year Maximum and Minimum



For week ended July 9, 2021

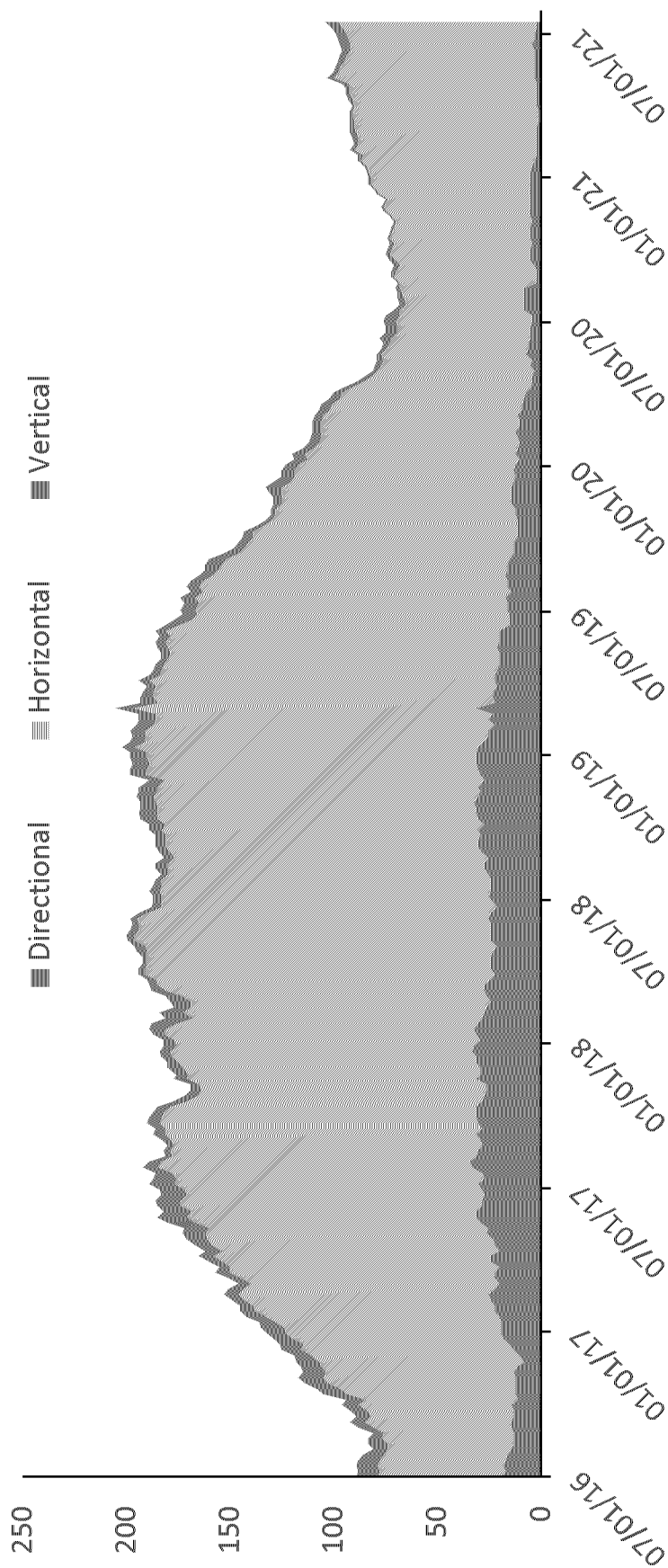


2021/22 – 2022/23 NYMEX Winter Strip Price & Oil and Gas Rotary Rig Count



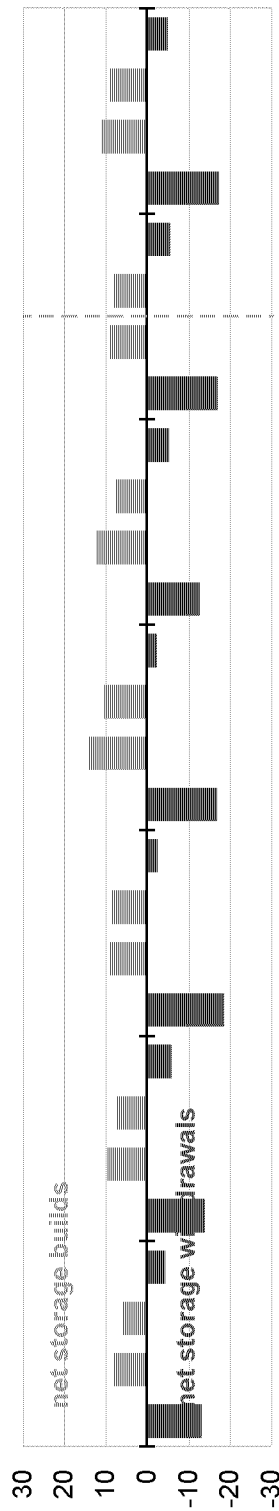
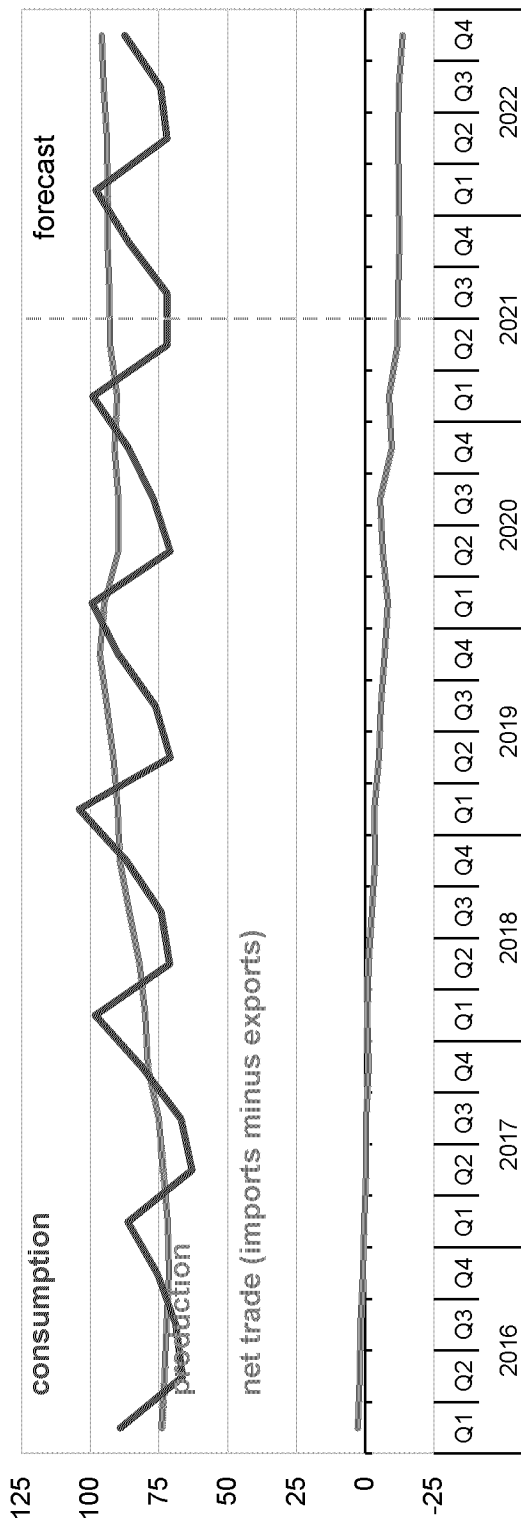
Weekly Natural Gas Rig Count by Type

Number of Active Rigs



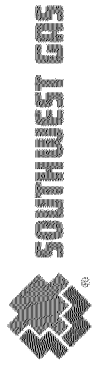
U. S. Natural Gas Production, Consumption and Net Imports

U.S. natural gas production, consumption, and net imports
billion cubic feet per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021





Permian Oil and Natural Gas Daily Production – Daily Pricing

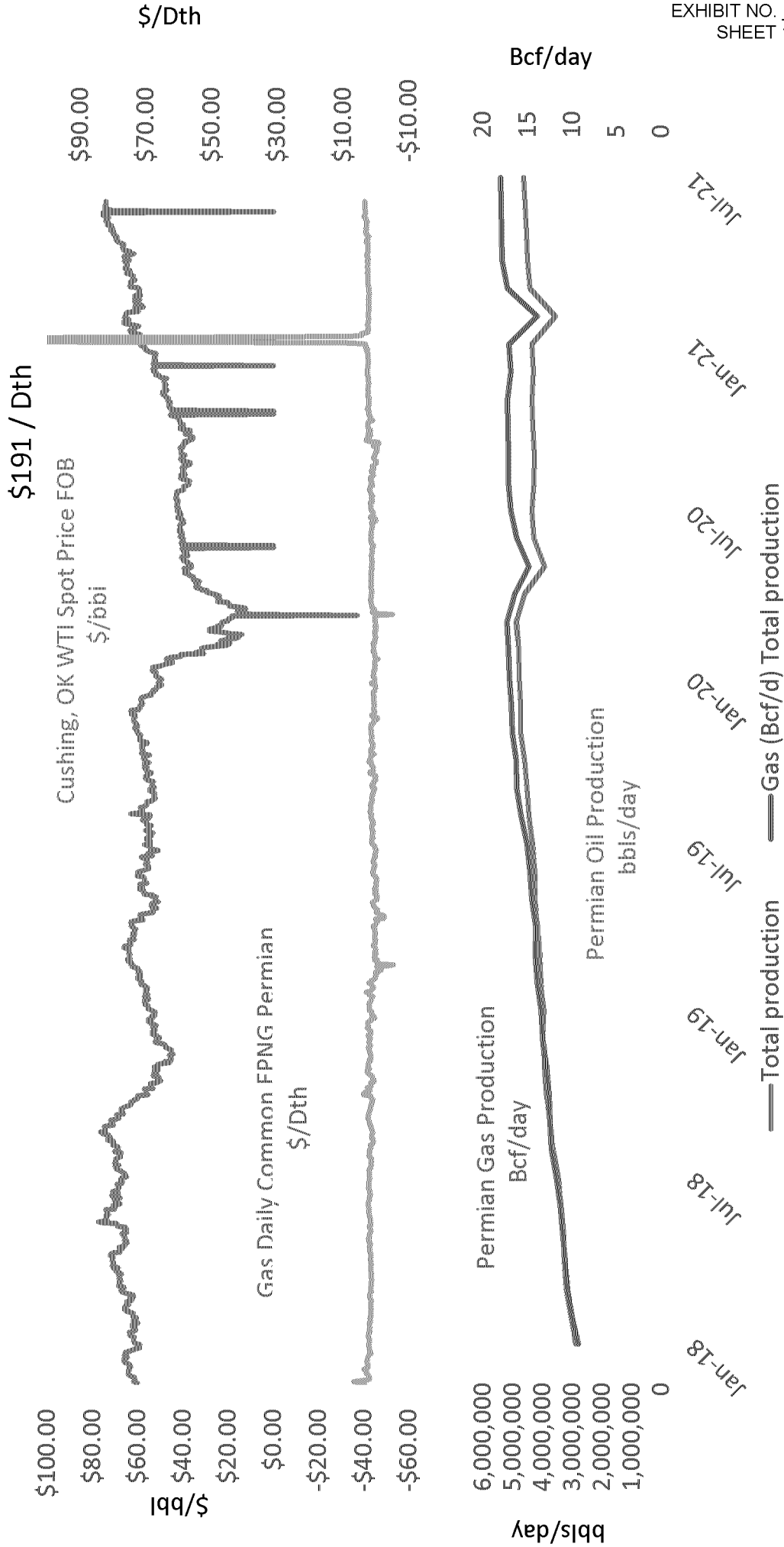


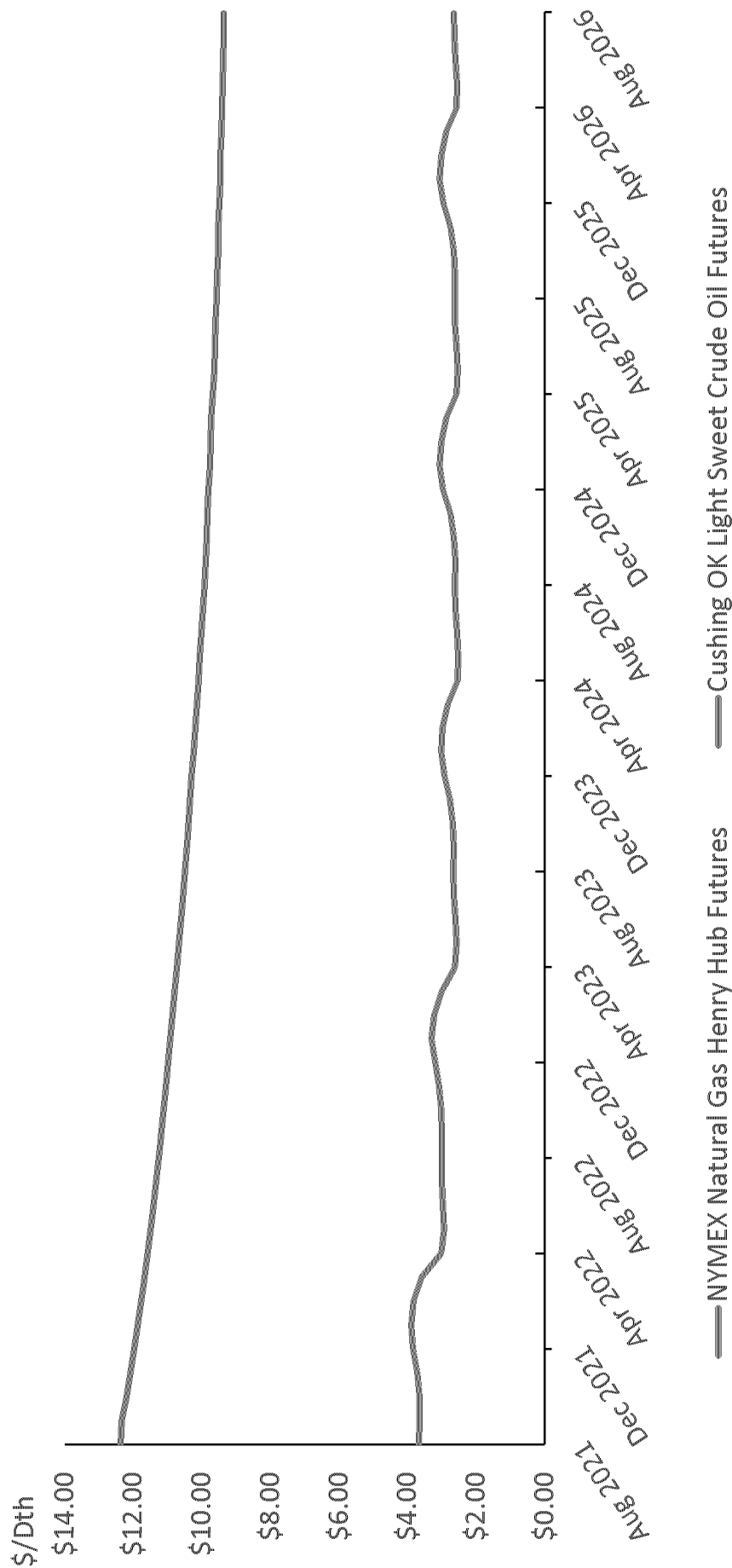
EXHIBIT NO. (JRO-5)
SHEET 144 OF 154





NYMEX Henry Hub Natural Gas and Cushing OK

Light Sweet Crude Oil Futures



July 16, 2021 Futures



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Supplemental Information

EXHIBIT NO. ____ (JRO-5)
SHEET 146 OF 154



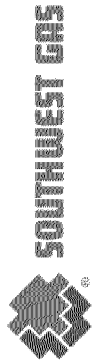
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Estimated Winter Strip Forwards (\$/Dth)

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8/19/2020	2020/21	3.1332	3.7934	3.1834	3.1582	2.8328	3.1056
11/18/2020	2021/22	3.1330	3.7502	3.2370	3.1442	2.8146	3.0300
12/16/2020	2021/22	3.1290	3.7050	3.2642	3.1388	2.8030	2.9900
1/20/2021	2021/22	3.1428	3.5770	3.2372	3.1432	2.7896	2.9522
2/17/2021	2021/22	3.7282	4.0126	3.7588	3.7282	3.1374	3.2364
3/17/2021	2021/22	3.2522	3.5434	3.2430	3.2588	2.8482	2.8760
4/21/2021	2021/22	3.5324	3.8554	3.5296	3.5328	3.2124	3.0666
5/19/2021	2021/22	3.7884	4.1212	3.8102	3.7884	3.4188	3.1944
6/16/2021	2021/22	3.9492	4.3136	4.0228	3.9566	3.6064	3.4026

The above forward prices are not necessarily representative of the prices Southwest Gas would have paid for VMP transactions.





Nevada Supply Point Monthly Forwards

\$/Dth

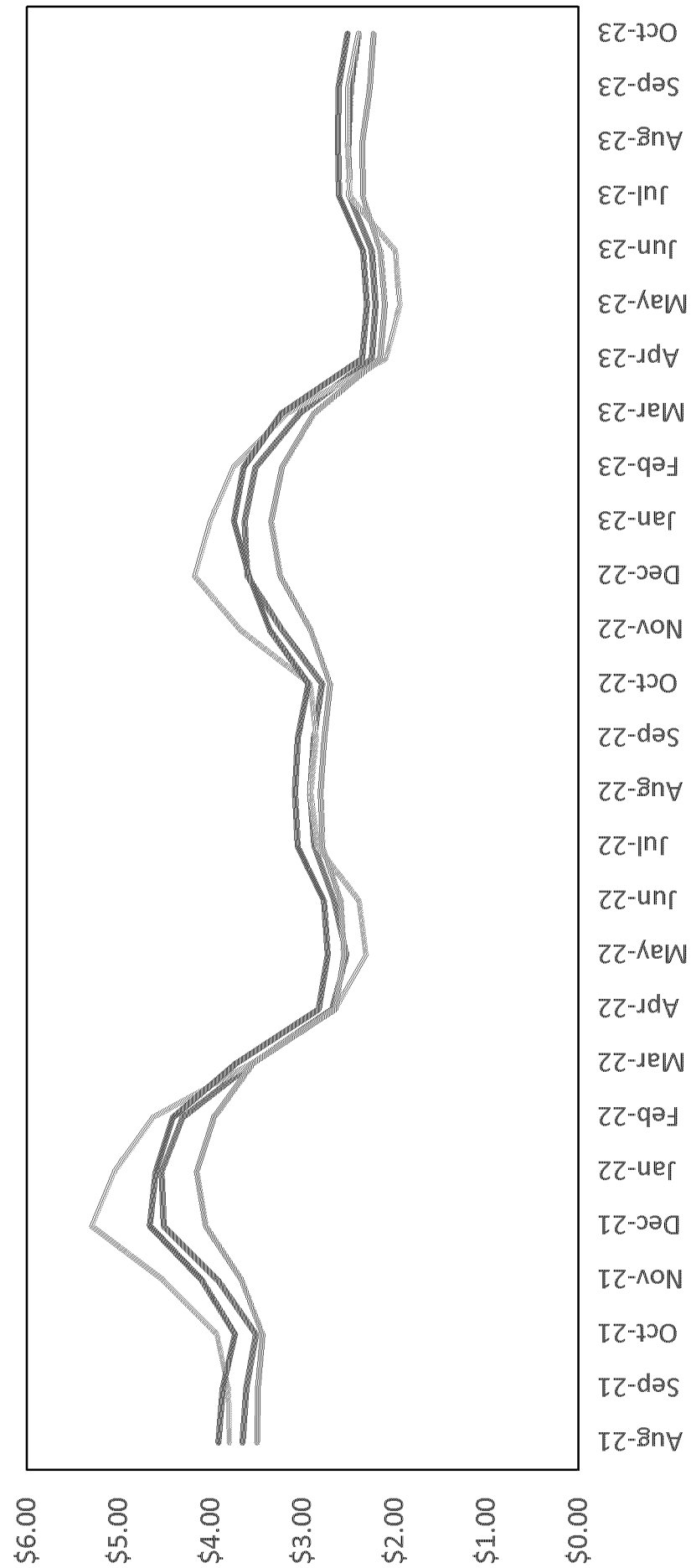


EXHIBIT NO. _____ (JCO-5)
SHEET 148 OF 154



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July 16, 2021 Monthly Forwards Prices

Market Report Information

- EIA's dry natural gas production estimates (EIA, 2021)
 - Average 92.6 Bcf/d in 2021 (July estimate)
 - Average 90.5 Bcf/d in 2021 (February estimate)
- EIA's July U.S. natural gas consumption forecast (EIA, 2021)
 - Average 83.3 Bcf/d in 2020 (actual)
 - Average 82.4 Bcf/d in 2021 (estimated)
- EIA's July Henry Hub spot price projections (EIA, 2021)
 - Average \$2.03/Dth in 2020 (actual)
 - Average \$3.22/Dth in 2021 (estimated)





Market Report Information

EIA's July U.S. average crude oil production estimate (EIA, 2021)

- 11.3 MMbbl/d in 2020
- 11.1 MMbbl/d in 2021

U.S. combined oil and natural gas rig count rose to 479 as of July 9, 2021(Baker Hughes, 2021).

- 378 oil directed rigs
- 101 natural gas directed rigs
- Total up 223 from the corresponding week a year earlier



Market Report Information References

- U.S. Energy Information Administration (EIA), (July 7, 2021). Forecast highlights global liquid fuels. *Short Term Outlook*. Retrieved from: <https://www.eia.gov/outlooks/steo/>
- Baker Hughes, (July 9, 2021). Rig count summary. Retrieved from: <https://bakerhughesrigcount.gcs-web.com/na-rig-count>





MEMORANDUM

To: Randy Gabe

From: Nevada Gas Purchase Strategy Committee

Date: August 2, 2021

Subject: Second Quarter 2021 Nevada Hedging Strategy Recommendation

On July 22, 2021, pursuant to the Stipulation approved by the Public Utilities Commission of Nevada in Docket 13-06006 and as modified in Docket 19-06003, the Nevada Gas Purchase Strategy Committee reviewed the Company's current hedging strategy, various market fundamentals, and the ratemaking methodologies used to recover gas costs from the Company's customers.

The Nevada Gas Purchase Strategy Committee (hereinafter "Committee"), at a minimum, consists of representatives from each of the following departments:

- Gas Supply
- Gas Resources Planning
- Regulation and Energy Efficiency

The following individuals were present at the Committee meeting:

- Randy Gabe, Vice President / Gas Resources
- Christopher Brown, Director / Regulation and Energy Efficiency
- Kasey Bohannon, Manager / Regulation and Energy Efficiency
- Celine Apo, Supervisor / Regulation and Energy Efficiency
- Nick Liu, Supervisor / Regulation and Energy Efficiency
- Makeda Simon, Analyst I / Regulation and Energy Efficiency
- Steve Williams, Director / Gas Resources Planning
- Laura Spurlock, Manager / Gas Resources Planning
- Ernest Melo, Senior Evaluation Engineer / Gas Resources Planning
- Kristien Tary, Senior Reg Specialist / Gas Resources Planning
- Francell Rodriguez, Evaluation Engineer / Gas Resources Planning
- John Olenick, Director / Gas Supply

To: Gabe
August 2, 2021
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- Eric Rost, Manager / Gas Purchases and Transportation

During the July 22, 2021 Committee meeting (“Meeting”), the Committee evaluated market fundamentals such as national storage inventory levels, national rig count levels, current and projected supply and demand levels for natural gas, and forward market price curves. The Committee also reviewed the estimated total gas cost rates that the Company would charge its customers based on the current forwards, as well as a sensitivity analysis of how those total gas cost rates would change if there were various levels of increases in gas prices.

At the time of the Meeting, the national storage inventory level was at 2,678 Bcf. That level is 168 Bcf below the five-year average and 523 Bcf lower than this time last year. Storage inventories in the Pacific region were at 247 Bcf, which is 43 Bcf below that region’s five-year average and 67 Bcf lower than this time last year. In the Mountain region, storage inventories were at 183 Bcf, which is 3 Bcf above that region’s five-year average and 11 Bcf lower than this time last year.

Since the Committee’s March 18, 2021 meeting, natural gas directed rig counts have increased from 92 to 101 and oil directed rigs rose from 309 to 378. EIA shows U.S dry natural gas production is estimated to average 92.6 Bcf/day in 2020 and is expected to decrease in 2021 to 90.5 Bcf/day. Moreover, EIA projects U.S. crude oil production to average 11.3 MMbbl/day in 2020 and decrease in 2021 to 11.1 MMbbl/day.

NYMEX prices for the next winter period (November 2021 through March 2022), have ranged from about \$3.52/Dth to \$3.93/Dth over the past month. Current production region spot prices have averaged from around \$3.16/Dth in the Rockies, to about \$3.19/Dth at Henry Hub. EIA estimates that Henry Hub spot prices averaged \$2.03/Dth in 2020 and will average \$3.22/Dth in 2021.

Based on the current ratemaking methodologies, which have not changed since the Company suspended Nevada VMP purchases in the fall of 2013, the Company calculated projected quarterly total gas cost rates for July 2021 through April 2023 for both southern Nevada and northern Nevada systems. The Company used the May 20, 2021 forward market gas prices when calculating the projected quarterly total gas cost rates.

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For customers in southern Nevada, the Company projects that retail gas cost rates for July 2021 through April 2023 could range from a low of approximately \$0.38/therm to a high of about \$0.57/therm. For customers in northern Nevada, the Company projects that gas cost rates for the same period could range from a low of about \$0.67/therm to a high of approximately \$0.82/therm. Sensitivity analysis shows that the current ratemaking methodologies continue to dampen the volatility in customer rates under increased gas price scenarios.

After reviewing the market fundamentals and projected quarterly gas rates that the Company would charge its customers, the Committee recommends that the Company should not alter its current gas hedging strategy and should continue to suspend Nevada VMP purchases. The Committee bases the recommendation upon the market fundamentals and ratemaking methodologies that existed as of July 22, 2021.

The Committee's recommendation does not consider market changes that could come about from unforeseen circumstances, *e.g.* force majeure events in the market place, sudden disruption of market supplies, extreme weather conditions, or regulatory changes. This recommendation only applies to the Company's Nevada gas purchase strategy and does not affect the Company's Arizona or California gas purchase strategies.

Attachments to the recommendation include documentation reviewed during the Committee meeting, as well as other supporting information.

cc:

Justin Brown	Amy Timperley
Christopher Brown	John Olenick
Eric Rost	Steve Williams
Laura Spurlock	

SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
ACTUAL GAS PURCHASES
SEVENTEEN MONTHS ENDED AUGUST 2021

Line No.	Description (a)	Billing Det./CD Volumes	Volume Dth (b)	Average Cost Per Unit (c)	Amount (d)	Line No.
<u>Gas Purchases Into Upstream Pipelines</u>						
1	Purchases Into Northwest Pipeline		6,148,101	\$ 2.4961	\$ 15,346,098	1
2	Purchases Into Tuscarora Pipeline		927,450	3.0136	2,794,924	2
3	Purchases Into Ruby Pipeline		4,578,026	5.9761	27,358,785	3
4	Total lines 1 through 3		11,653,577	3.9044	45,499,807	4
<u>Gas Purchases Into Paiute - Incl. Volumetric Trans. Charges</u>						
5	NWPL Volumetric Transportation Charge		6,093,339	\$ 0.0095	\$ 57,765	5
6	Tuscarora Volumetric Transportation Charge		924,085	0.0040	3,696	6
7	Ruby Volumetric Transportation Charge		4,578,026	0.0585	267,931	7
8	Purchases Into PPL (Bundled)		409,079	3.0553	1,249,878	8
9	Total lines 4 through 8 (1)		12,004,529	\$ 3.9218	\$ 47,079,077	9
<u>Pipeline Variable Charges to the City Gate</u>						
10	PPL Volumetric Transportation Charge		11,997,023	\$ 0.0011	\$ 13,666	10
11	Total line 10 (1)		11,997,023	\$ 3.9254	\$ 47,092,743	11
<u>Gas Cost to City Gate - Incl. LNG Storage Activity</u>						
12	Liquefaction / Injections (Includes Fuel)		(166,654)	\$ 5.9157	\$ (985,880)	12
13	Boiloff / Vaporization		132,079	6.5305	862,544	13
14	LNG Inventory Adjustment		0	0.0000	0	14
15	Total lines 11 through 14		11,962,448	\$ 3.9264	\$ 46,969,407	15
<u>Pipeline Reservation Charges</u>						
16	NWPL Reservation Charge	991,132			\$ 11,771,677	16
17	Tuscarora Reservation Charge	306,850			2,249,364	17
18	Ruby Reservation Charge	245,700			425,359	18
19	PPL Reservation Charge	1,621,247			19,472,163	19
20	Elko Incremental Facilities Surcharge	25,432			183,787	20
21	2015 Elko Incremental Facilities Surcharge	361,675			6,752,002	21
22	Lake Tahoe Incremental Facilities Surcharge	41,735			420,484	22
23	Acquired No. Calif. Lake Tahoe Capacity	0			0	23
24	Acquired No. Calif. Tuscarora Capacity	0			0	24
25	Acquired No. Calif. Paiute Capacity	4,900			49,368	25
26	Carson Lateral Expansion Surcharge	0			0	26
27	2003 Expansion Incremental Surcharge	0			0	27
28	2005 Expansion Incremental Surcharge	0			0	28
29	LNG - Storage Delivery	638,543			2,595,706	29
30	LNG - Storage Charge	8,428,294			2,595,915	30
31	Total lines 15 through 30		11,962,448	\$ 7.8149	\$ 93,485,232	31
<u>Gas Purchases at the City Gate (Bundled)</u>						
32	Received at Wadsworth		0	\$ 0.0000	\$ 0	32
33	Total lines 31 through 32		11,962,448	\$ 7.8149	\$ 93,485,232	33
<u>Miscellaneous Charges and/or Credits</u>						
34	NWPL Capacity Release Credit				\$ (4,876,357)	34
35	Tuscarora Capacity Release Credit				(8,181)	35
36	Paiute Capacity Release Credit				(474,165)	36
37	Other Charges and Credits				(64,427)	37
38	Out of Period Cost Adjustments				(625,659)	38
39	Total Gas Costs at the City Gate, lines 33 through 38		11,962,448	\$ 7.3092	\$ 87,436,444	39

(1) Volume totals are not cumulative. Volumes are adjusted for fuel in lines 5, 6, 7 and 10.

SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
ACTUAL GAS PURCHASES
SEVENTEEN MONTHS ENDED AUGUST 2021

Line No.	Description (a)	Billing Det./CD Volumes	Volume Dth (b)	Average Cost Per Unit (c)	Amount (d)	Line No.
<u>Gas Purchases Into Kern, Transwestern and El Paso</u>						
1	Purchases into Kern		43,781,027	\$ 3.2512	\$ 142,342,719	1
2	Purchases into Transwestern		0	0.0000	377,205	2
3	Purchases into El Paso		1,660,668	2.7266	4,528,011	3
4	Purchases into Rawhide		3,138	20.7665	65,165	4
5	Total lines 1 through 4		45,444,833	\$ <u>\$3.2416</u>	\$ 147,313,100	5
<u>Pipeline Variable Charges to the City Gate</u>						
6	Kern Transportation Commodity		43,606,569	\$ 0.0050	\$ 218,159	6
7	Transwestern Transportation Commodity		0	0.0000	0	7
8	El Paso Transportation Commodity		1,625,062	0.0105	17,063	8
9	RLC-PIPE Commodity		3,138	20.0425	62,893	9
10	Southwest Gas Transmission Company Commodity		0		25,022	10
11	Total lines 5 through 10 (1)		45,234,769	\$ <u>\$3.2638</u>	\$ 147,636,237	11
<u>Pipeline Reservation Charges</u>						
12	Kern Demand/Reservation	2,889,685		\$ 7.5742	\$ 21,886,945	12
13	EPNG Reservation	250,000		8.5167	2,129,175	13
14	RLC - PIPE Reservation				96,116	14
15	Southwest Gas Transmission Company Reservation				469,464	15
16	Acquired Released Capacity Charge				0	16
17	Total lines 11 through 16		45,234,769	\$ <u>\$3.8072</u>	\$ 172,217,938	17
<u>Gas Purchases at the City Gate (Bundled)</u>						
18	Kern		1,689,155	\$ 22.8722	\$ 38,634,767	18
19	Transwestern		305,904	2.7075	828,225	19
20	El Paso		7,650,213	3.0380	23,241,157	20
21	Total lines 17 through 20		54,880,041	\$ <u>\$4.2806</u>	\$ 234,922,086	21
<u>Miscellaneous Charges and/or Credits</u>						
22	Kern River Capacity Release Credits				\$ (8,858,065)	22
23	El Paso Capacity Release Credits				(106,153)	23
24	Other Volumetric Charges				0	24
25	Other Credits/Debits				42,960	25
26	El Paso 2019 Tax Reform Credit Refund				0	26
27	Total Gas Costs at the City Gate, lines 21 through 26		54,880,041	\$ <u>\$4.1181</u>	\$ 226,000,828	27

(1) Volume totals are not cumulative. Volumes are adjusted for fuel in lines 6 through 8.

Exhibit No.__(JRO-7)
Mesquite Residential Customer Growth
April 2020 - September 2021

