



# SHELL OIL COMPANY

WESTERN DIVISION  
P. O. BOX 1509  
MIDLAND, TEXAS 79701

July 17, 1968

Subject: Gas Production and Disposition  
on Antelope Ridge Unit

Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Attention Mr. Elvis Utz

Gentlemen:

Recently the Oil Conservation Commission requested additional information on our Antelope Ridge Unit gas production, metering, allocation, and gas disposition, with emphasis placed on "gas used on lease". Attached is a copy of the Antelope Ridge Plant flow diagram which is a graphic presentation by measurement points of gas flow production from the wellhead to ultimate disposition of gas. The accounting month for April, 1968, oil and gas volumes were used as an example for the production, source, and disposition for actual volumes shown on the flow diagram.

The gas production to the Antelope Ridge gas processing plant is produced from the following wells and formations:

- Antelope Ridge Unit #1 - Morrow
- Antelope Ridge Unit #2 - Morrow
- Antelope Ridge Unit #2 - Devonian
- Antelope Ridge Unit #3 - Devonian
- Antelope Ridge Unit #4 - Atoka

Each well effluent flows directly from the wellhead through a line heater and to separators located in the plant as shown by the attached flow diagram. Meters are provided on each flow line at the plant but since they handle total well effluent, i.e., gas, water and condensate, the measurements are not considered reliable enough for accounting, but are used only in allocation of production to the individual wells. These meter numbers are: Unit #1 (Morrow) M0001; Unit #2 (Morrow) M0005; Unit #2 (Devonian) M0002; Unit #3 (Devonian) M0003; and Unit #4 (Atoka) M0004. (These volumes appear on April C-111, Sheet No. 2.)

The Devonian, Morrow, and Atoka flow to their respective separators where separation is made of gas, condensate and water. Separator gas is metered as follows:

<u>Meter Number</u>		<u>Gas Source</u>
M0006	These are metered	Morrow
M0012	volumes and re-	Devonian
M0018	ceived on charts.	Atoka

The condensate flows to the flash separator where it is flashed at lower pressure with flash gas metered by Morrow - M0007, Devonian - M0013, Atoka - M0014.

The condensate from each flash separator is metered and flows to a stabilizer column. The wells are periodically produced through the test separator individually to determine the condensate production from each well.

#### Well Allocations:

As pointed out above, the individual well meters are used for allocation purposes. The Morrow separator gas, M0006, is allocated to Morrow 1 and 2 wells in proportion to the gas measurement through M0001 and M0005. The Morrow flash gas M0007 is allocated to each well in proportion to the condensate produced by the respective wells. The gas from the stabilizer overhead is allocated to each of the wells (from any formation) based on that well's proportionate part of the condensate charge to the stabilizer.

Likewise, the Devonian gas M0012 is allocated to Devonian wells 2 and 3 on the proportionate basis of the M0002 and M0003 measurements and the condensate of each determines its share of the flash gas M0013, as well as the Devonian share of the stabilizer overhead.

The Atoka's share of the stabilizer gas is determined as outlined for the Morrow and Devonian. There is no commingling on this stream otherwise, so the separator and flash gas M0018 and M0014 is directly attributable to this well.

Each of the flash gas streams plus the stabilizer overhead gas go to a recompressor which discharges through meter M0016 and into the acid gas removal treater. The stabilizer overhead volume is obtained by difference between M0016 and the sum of M0007, M0013 and M0014.

Total gas to the plant is M0006 + M0012 + M0018 + M0016.

The Devonian gas contains acid gas so the separator gas from this source together with the recompressor discharge goes to the acid gas removal treater. The Morrow and Atoka separator gases, which are sweet, bypass the treater and join the treater outlet stream at the inlet to the gasoline plant. Here the propane, butane, and natural gasoline are extracted from the gas by refrigerated absorption oil and the residue gas goes for plant and field fuel and for sale to Southern Union Gas Company.

Gas Disposition Streams:

The gas disposition streams, fuel and sale, are metered as follows:

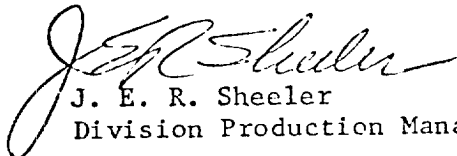
Refrigeration Compressor Fuel	- M0021
Treater Heater Fuel	- M0022
Gasoline Plant Heater Fuel	- M0023
Recompressor Fuel	- M0024
Field Line Heater Fuel	- M0025
Southern Union Sale	- S0026

The reduction in gas volume by removal of the acid gas and the recovery of the liquid products constitutes the extraction loss.

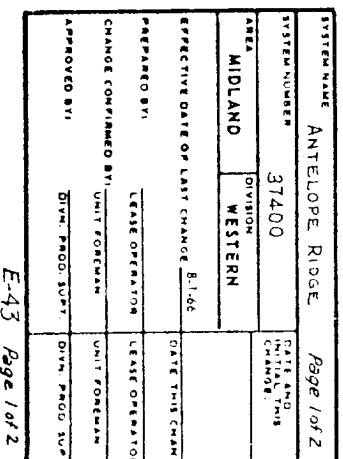
The recovered liquid is separated into the various products, stored and shipped as is the stabilized condensate.

If any additional information or further explanatory assistance is required, we will be pleased to have one of our staff members visit with your people.

Yours very truly,

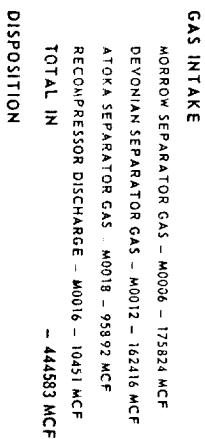
  
J. E. R. Sheeler  
Division Production Manager

Attachments



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## SUMMARY



**DISPOSITION**

FUEL - M0021 - M0022 - M0023 - M0024 - M0025 - 20982 - VOLUME INCLUDED (USED ON LEASE) - C-115 REPORT
SOUTHERN UNION SALE
EXTRACTION LOSS
- 389835 - TAKEN FROM SOUTHERN UNION STATEMENT + REPORTED ON C-115 REPORT
- 15039 - VOLUME INCLUDED (USED ON LEASE) - C-115 REPORT
TOTAL
- 425856 MCF
METER DIFFERENCE
- 18727 MCF - VOLUME INCLUDED (USED ON LEASE) - C-115 REPORT
- 18727 MCF

SPECIAL REMARKS:

THE MCF VOLUMES AND CONDENSATE BBLs REPRESENT APRIL 1968 ACCOUNTING VOLUMES ON GAS PURCHASERS MONTHLY REPORT FORM C-111, STATE FORM C-115, METER READINGS, AND GAS MEASUREMENT CHARTS.