United States Department of the Interior

OFFICE OF NATURAL RESOURCES REVENUE

P.O. Box 25165
Denver, Colorado 80225-0165

November 21, 2012

Subject: Keepwhole Gas Processing Contracts

Dear Reporter:

This letter provides guidance on valuing and reporting gas sold under keepwhole processing contracts. The guidance is not new but provides clarification and answers to questions the Office of Natural Resources Revenue (ONRR) often receives about keepwhole processing contracts. Specifically, this letter:

1. Explains how to identify a keepwhole processing contract;
2. Explains why you should report gas sold under keepwhole contracts under the processed gas regulations; and
3. Provides guidance for calculating and reporting royalties using theoretical natural gas liquids (NGLs) recoveries.

Identifying Keepwhole Contracts

ONRR defines a keepwhole contract as a processing agreement whereby the processor delivers to the lessee a quantity of gas after processing equivalent to the quantity of gas the processor received from the lessee prior to processing, normally based on heat content, less gas used as plant fuel and gas unaccounted for and/or lost. This definition includes, but is not limited to, agreements under which the processor retains all NGLs it recovers from the lessee's gas.

A keepwhole contract is not always titled a "keepwhole contract." Gas gathering agreements sometimes stipulate that the gatherer reserves the right to process the gas for the extraction of NGLs, and redeliver to you the same volume or heat content of gas that you delivered to the gatherer. When the gatherer exercises the right to process your gas, then your gathering agreement also becomes a keepwhole processing contract.

In some cases, processing agreements have different terms for different volumes of delivered gas. If any of the terms in your agreement fall under the definition of a keepwhole contract, then you should report and pay your royalties for those volumes under the processed gas regulations at 30 CFR § 1206.153, and the guidance in this letter.

Under a keepwhole contract, the primary cost for processing is the difference between the values of (1) the NGLs the plant extracted at applicable NGL prices and (2) the plant shrinkage (the reduction in the heat content of the gas due to the removal of the NGLs from the gas stream) at a residue gas price acceptable under our regulations. This differential, (*i.e.* the value that you gave up to process the gas) is a reasonable, actual cost of processing that you may include in your processing allowance. In some cases,

the processor may charge you additional fees to process the gas. If these fees are directly allocable and attributable to processing, then you may include them in your processing allowance. If the processor pays you a fee for processing, you should credit the fee against your actual costs when calculating your processing allowance.

Processed Gas Reporting Requirements

The regulations require that, when gas is processed and not sold or disposed of prior to processing, you must report and pay royalties on the full volume and value of the residue gas, all gas plant products, and any condensate recovered downstream of the point of royalty settlement without resorting to processing. *See* 30 CFR §§ 1206.153 and 1206.154(d)(2). Gas processed under a keepwhole contract is processed prior to being sold and is therefore subject to the processed gas valuation and reporting regulations. ONRR has two additional reasons for requiring you to report gas sold under keepwhole contracts as processed gas. First, ONRR does not allow lessees' deductions for processing natural gas to exceed sixty-six and two-thirds percent of the value of the NGLs without approval. Second, numerous entities rely on and scrutinize the accuracy of ONRR's data. Therefore, accurate reporting is essential.

Calculating Royalties Under a Keepwhole Contract

As stated above, when the gas is processed prior to sale or disposition, you must report and pay royalties on the full volume and value of the residue gas and NGLs recovered from processing, less any applicable transportation or processing allowance. Because the service provider may not give you a breakout of residue gas and NGLs attributable to your gas, you may have difficulty correctly reporting royalties for gas processed under a keepwhole contract. For example, on your processing or gathering statement, you may only see the delivered and redelivered MMBtus, with a deduction for any fuel and lost and/or unaccounted for gas.

If the gas plant will not provide you with the volume of NGLs and residue gas attributable to your delivered gas, you may use theoretical volumes determined according to the methodology explained in the following sections. These instructions are laid out step-by-step with an example in the Enclosure.

NGL Volume

When the plant will not provide the NGL volumes attributable to your gas, you should calculate the NGL volumes using the gallons per Mcf (GPM) factors from the gas analysis. Multiply the Mcf volume of the gas by the GPM factor for each component of that gas (ethane, propane, iso- and normal butanes, etc.) to obtain the theoretical NGL volumes, by component. Then, multiply the resulting component volumes by the corresponding gas plant product recovery factors, which provides a more reasonable estimate of the NGLs recovered from your gas. You may be able to obtain the recovery factors from the gas plant. If the gas plant will not provide them, use a reasonable method to approximate them. After determining the theoretical volume of each NGL component, sum the volumes to determine the total NGL volume, which should be reported as product code 07 on the Report of Sales and Royalty Remittance (Form MMS-2014).

NGL Value

Because the NGLs the processor retains under a keepwhole contract are not sold by the lessee under an arm's-length contract, the lessee must calculate a theoretical value under the first applicable non-arm's-length benchmark at 30 CFR § 1206.153(c). Usually, lessees can determine value under the second benchmark using an arm's-length NGL sales price from a nearby plant or publicly available prices.

Residue Gas Volume

The residue gas volume is the redelivered volume less the volume of shrinkage and any gas used as fuel and/or lost and unaccounted for in the plant. To calculate the shrinkage:

- Identify the "Btu/gal, fuel as ideal gas" factors under the "Gross Heating Value" section in the Gas Processors Association table[1] titled, "Physical Properties of Selected Hydrocarbons;"
- Divide the factor by 1,000,000 to arrive at an MMBtu/gal factor;
- Multiply the factor by its corresponding NGL component volume; and
- Sum the resulting volume of each component to arrive at the shrinkage MMBtu volume.

Subtract the shrinkage and fuel and/or lost and unaccounted for volumes from the redelivered gas volume; this difference is your residue gas volume. Only fuel allowed for processing under the regulations may be deducted from the residue gas volume.

Residue Gas Value

Unlike your theoretical NGLs value, you are probably receiving your residue gas in-kind to sell or dispose of at your discretion. Therefore, determine value under the arm's-length (30 CFR § 1206.153(b)) or non-arm's-length (30 CFR § 1206.153(c)) regulations for processed gas, whichever is applicable.

Processing Allowance

Under a keepwhole contract, your cost of processing (or at least a portion of it) is the difference between the value of the NGLs at a price per gallon and the value of the shrinkage at a price per MMBtu. If you incur additional fees that are directly allocable and attributable to processing, then you may include them in your processing allowance. Credit any fee paid by the processor to you against your actual costs when calculating your processing allowance.

Please note that you may not include in your processing allowance any costs associated with placing the production into marketable condition under 30 CFR § 1206.153(i), or with boosting the residue gas under 30 CFR § 1202.151(b). Functions attributable to marketable condition may include, but are not limited to, treating the gas for the removal of acid gases, dehydration, and compression. You may not include in your processing allowance any disallowed costs, regardless of how your processing costs are structured under the keepwhole contract. To be clear, if the gas plant is performing any function to place the gas into marketable condition or is boosting the residue gas, you must break out the non-allowable marketable condition and boosting costs.

Under 30 CFR § 1206.158(c)(2), you may not take a processing allowance that exceeds sixty-six and two-thirds percent (66 ⅔ %) of the value of the NGLs without ONRR approval.

Failure to Properly Report

The ONRR stresses the importance of reporting gas processed under a keepwhole contract under the processed gas regulations at 30 CFR § 1206.153. Please note that if you knowingly or willfully misreport

[1] This table is published in many gas processing textbooks and Engineering Data Books. If you are unfamiliar with this table, please speak with your company engineer, visit your local library, or purchase the table online at the Gas Processors Association website.

royalties, ONRR may assess civil penalties under 30 U.S.C. § 1719 and 30 C.F.R. Part 1241 of up to $25,000 per day, per violation.

Audit Information

Consistent with 30 CFR §1217.50, ONRR will initiate and conduct audits of Federal and Indian leases to ensure accurate reporting of royalty production and timely and accurate payment of revenues due.

Guidance Information

This letter does not require you to perform any type of restructured accounting or require you to recalculate and pay royalties. It is merely valuation guidance and general information for reporting and paying royalties on gas processed under a keepwhole contract.

This letter is not an appealable decision, order, Notice of Noncompliance, or Civil Penalty Notice under 30 CFR Part 1290 Subpart B (2011) or 30 CFR Part 1241 (2011). If ONRR issues you an order, Notice of Noncompliance, or Civil Penalty Notice at a later date in accordance with the matters addressed in this letter, we will provide your appeal rights at that time.

Please note that the citations refer to ONRR's current published regulations. If these regulations change, please use the most recent applicable version. For detailed regulatory language, please visit http://ecfr.gpoaccess.gov and select Title 30 - Mineral Resources, Chapter XII (1200).

If you have questions, or need valuation assistance, please contact ONRR's Royalty Valuation Office via electronic mail at RoyaltyValuation@onrr.gov.

Sincerely,

James D. Steward
Program Director
Financial and Program Management

Enclosure

Keepwhole Contracts: guidelines for calculating and reporting royalty for processed gas and NGLs

Calculate the volume and value of the NGLs

1) By component, calculate the theoretical gallons of each NGL product by multiplying a) the gas volume (Mcf) by b) the GPM factor for that gas by c) the gas plant recovery factor.

2) Calculate the value of each NGL component by multiplying the theoretical NGL volume by a price per gallon determined under the regulations. The NGLs are not sold under an arm's-length contract, so you should determine value under the non-arm's-length benchmarks at 30 CFR 1206.153(c). Lessees can usually determine value under the second benchmark using an arm's-length NGL sales price from a nearby plant or publicly available prices.

3) Sum the volumes and values of all the NGL components to find the total NGL volume and value. Report this information using PC 07 on the Form MMS-2014.

Determine your processing costs

4) By NGL component, calculate the shrinkage[1] by multiplying the theoretical gallons from step 1 by the conversion factors in the GPA table titled "Physical Properties of Selected Hydrocarbons[2]." Use the factors for "Btu/gal, fuel as ideal gas" under the "Gross Heating Value" section. The conversion factors should be divided by 1,000,000 to arrive at an MMBtu/gal factor.

5) Sum the MMBtu volume of each component to find the total shrinkage.

6) Calculate the value of the shrinkage by multiplying the shrinkage MMBtu by the price per MMBtu you receive for your residue gas.

7) Your cost of processing (or at least a portion of it[3]) is the difference between the value of the NGLs and the value of the shrink gas. Your reasonable actual costs of processing may be deducted from the sales value of the NGLs as part of the processing allowance[4] on the Form MMS-2014.

Calculate the volume and value of the residue gas

8) Subtract the shrinkage, any fuel for processing allowed under the regulations, and any lost and/or unaccounted for gas from the volume of gas you delivered. This is the theoretical volume of residue gas.

9) Calculate the value of the residue gas by multiplying the MMBtus of residue gas by the price per MMBtu you receive for it. Report this information using PC 03 on the Form MMS-2014.

*Please note:
1) Shrinkage is defined as the MMBtu volume of gas that is extracted as NGLs during processing.
2) This table is published in many gas processing textbooks and Engineering Data Books. If you are unfamiliar with this table, please speak with your company engineer, visit your local library, or purchase the table online at the Gas Processors Association website.
3) If you are charged additional fees for processing (as defined in 30 CFR 1206.151) under your keep-whole agreement, you may include those costs in your processing allowance. If the processor pays you a fee, you should credit that fee against your processing costs.
4) Your processing allowance may not exceed 66 2/3% of the value of the NGLs without ONRR approval.

Keepwhole Contracts: guidelines for calculating and reporting royalty for processed gas and NGLs

Lease # 123456789A										
Sample month April 2008				OGOR Btu content 1,254						
		Step 1			Step 2		Step 4		Step 6	Step 7
Delivered Gas Volume @ 14.73 (Mcf)	NGL Component	GPM Factor	Plant Recovery Factors (%)	Theoretical NGL Volume (Gal)	NGL Publicly Available Price per Gallon	Calc NGL Sales Value	MMBtu/Gal Conversion Factor from GPA***	Theoretical NGL Shrink Volume (MMBtu)	Shrink Value at Residue Gas Price ($7.1646/MMBtu)	Processing Cost (NGL value - Shrink value)
A	B	C	D	E	F	G	H	I	J	K
				A*C*D		E*F		E*H	I*7.1646	$G_{sum} - J_{sum}$
31,281	Ethane	1.814	80.00%	45,395	$0.52	$23,544.56	0.06634	3,011.50		
	Propane	0.534	98.00%	16,370	$0.82	$13,367.56	0.09156	1,498.83		
	I-butane	0.150	98.00%	4,598	$1.01	$4,650.64	0.09963	458.13		
	N-butane	0.177	98.00%	5,426	$0.98	$5,298.00	0.10374	562.89		
	I-pentane	0.097	100.00%	3,034	$1.14	$3,456.60	0.10968	332.80		
	N-pentane	0.052	100.00%	1,627	$1.14	$1,853.02	0.11087	180.34		
	Hexanes	0.132	100.00%	4,129	$1.14	$4,703.82	0.11595	478.77		
				80,579	<--Step 3 -->	$ 56,874.19	Step 5 -->	6,523.27	$ 46,736.61	$ 10,137.58

***Assume the gas is reported on a dry water content basis. When the gas is dry, the factors do not need to be converted for pressure base.

Step 8	Step 9
Residue Gas Volume (Mcf)	Residue Gas Value at $7.1646/MMBtu ($)
L	M
A-I	L*7.1646
24,758	$ 177,379.24

The regulations at 30 CFR part 1206 and the Valuation Payor Handbook Volume III provide instructions for reporting and paying royalties on processed gas. The guidelines in the Dear Reporter Letter and this Enclosure are provided as additional assistance to the reporter and are not a binding or appealable decision.