

## Federal Processed Gas Reporting Production after January 1, 2017

### Example: Valuation using Gross Proceeds

For time periods after January 1, 2017, when your arm’s-length contract provides for payment to you based on the value of processed products, ONRR’s regulations at 30 CFR §1206.142 direct you to value the production as processed gas. The value of processed gas for royalty purposes is your or your affiliate’s gross proceeds under the first arm’s-length sale, unless you transfer or sell gas to an affiliate and elect to use the index-based valuation option. This example illustrates how you should calculate gross proceeds.



This example applies when you meet all of the following circumstances:

- ✓ You are valuing gas produced from a **federal** oil and gas lease on or after **January 1, 2017**.
- ✓ You are valuing your gas for royalty purposes based on the gross proceeds accruing to you or to your affiliate under an arm’s-length contract under 30 CFR §1206.142.
- ✓ Your contract provides for payment based on the value of residue gas, natural gas liquids (NGLs), or other gas plant products (e.g. sulfur, carbon dioxide, etc.), regardless of where title transfers.

If you have any questions regarding whether this example applies to your situation, please contact [royaltyvaluation@onrr.gov](mailto:royaltyvaluation@onrr.gov).

This example addresses reporting and calculations for the following product codes. The **BLUE** letters refer to fields on the sample statement.

Product:	Location in Statement:
<b>PC 03 Residue Gas</b>	“Net Residue Mcf” ( <b>G</b> ) and “Net Residue MMBtu” ( <b>H</b> ) in the statement’s “Residue Settlement” section
<b>PC 07 Natural Gas Liquids (NGLs)</b>	“Allocated” NGLs ( <b>L</b> ) in the statement’s “Component Settlement” section
<b>PC 15 Pipeline Fuel</b>	“Contractual Field Deducts Mcf” ( <b>C</b> ) and “Contractual Field Deducts MMBtu” ( <b>D</b> ) in the statement’s “Wellhead Information” section

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Assumptions for this example:

1. This gas is transported, processed, and sold under an arm's-length contract.
2. A pre-plant transportation Unbundling Cost Allocation (UCA) of 20%, which means that 20% of the pre-plant transportation costs can be taken as part of a transportation allowance.
3. The post-plant NGL transportation costs and the fractionation costs are 100% allowable.
4. The processor retains 15% of the residue gas and NGLs, 40% of which is allocable to processing and 60% of which is allocable to transportation.
5. A processing UCA of 40%, which means that 40% of the processing costs (the value of the retained percentage allocable to processing) are allowable, including plant fuel.
6. No condensate is recovered along the pipeline or in the gas plant. You should check your statement or transportation invoice for condensate. If you have questions on how to value or report condensate, please contact [royaltyvaluation@onrr.gov](mailto:royaltyvaluation@onrr.gov).
7. The royalty rate is 12.5%.
8. The prices per gallon of NGL components shown on the example statement are reduced by \$0.12/gallon for transportation and fractionation (T&F); the processor deducted a post-plant NGL transportation fee of \$0.05/gallon and an NGL fractionation fee of \$0.07/gallon from the gross price. Here, we have provided the T&F fee; you may need to check your contract or other sources for the amount.



In this example, the UCAs are assumed. Please visit [onrr.gov/unbundling](http://onrr.gov/unbundling) for more information on UCAs.



#### A Quick Note on Rounding

ONRR's policy on rounding is that lessees should not round numbers in royalty calculations until the lessee reports the final number to ONRR. The lessee should then round the final number to two decimal places. For the sake of displaying these calculations and so that lessees can follow the examples more easily, each number is rounded in these examples and may differ from your calculations. When the lessee is performing its royalty calculations, the lessee should not round until the final number, as explained above.

You can find more information about product codes and reporting in the [ONRR Reporter and Payor Handbooks](#).

This example walks you through the royalty calculation and reporting for each product code and completes relevant fields on a sample Form ONRR-2014 after each step. This example only covers valuation-related fields in the order they appear on the Form ONRR-2014.

Form ONRR-2014 Royalty Report								
Product Code	Sales Volume	Sales MMBtu	Sales Value	Sales Type Code	RVPA	Trans Allow	Proc Allow	RVLA

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## PC 03 – Residue Gas

Royalty is due on residue gas resulting from processing, including any disallowed plant fuel.

### Step 1:

In order to determine the plant fuel volume in Mcf, you need to calculate a residue Btu factor

 Be sure to report at a base pressure of 14.73psi.

- The Btu factor is the heating value per volume of the residue gas, calculated by dividing the net residue gas MMBtu (1,922.39 MMBtu) **(H)** by the volume of the net residue gas (1,697.81 Mcf) **(G)**
- The Btu factor is 1.13228 MMBtu/Mcf

#### PC 03 Btu Factor (Step 1):

$$PC\ 03\ Btu\ factor = \frac{residue\ gas\ MMBtu}{net\ residue\ gas\ Mcf}$$

$$PC\ 03\ Btu\ factor = \frac{1,922.39\ MMBtu}{1,697.81\ Mcf}$$

$$PC\ 03\ Btu\ factor = 1.13228\ MMBtu/Mcf$$

### Step 2:

Calculate the disallowed plant fuel volume (Mcf):

- Identify the total plant fuel reported on the plant statement
  - In this example, the plant fuel is called “Contractual Allocated Fuel” and is 326.40 MMBtu **(F)**
- Determine the total plant fuel volume (Mcf)
  - Divide the contractual allocated fuel (326.40 MMBtu **(F)**) by the Btu factor (1.13228 MMBtu/Mcf)
  - The total plant fuel volume is 288.27 Mcf
- Obtain the percent disallowed for processing
  - In this example, because the UCA is 40%, 60% of the plant fuel is disallowed (1 minus the 40 % UCA)
- Multiply the disallowed rate (60%) by the total plant fuel volume (288.27 Mcf)
- The disallowed plant fuel volume is 172.96 Mcf



In this example, UCAs always represent the allowed percentage.

#### PC 03 Disallowed Plant Fuel Volume (Mcf) (Step 2):

$$Disallowed\ plant\ fuel\ Mcf = \frac{contractual\ allocated\ fuel\ MMBtu}{Btu\ factor} \times \% \text{ disallowed}$$

$$Disallowed\ plant\ fuel\ Mcf = \frac{326.40\ MMBtu}{1.13228\ MMBtu/Mcf} \times 0.60$$

$$Disallowed\ plant\ fuel\ Mcf = 288.27\ Mcf \times 0.60$$

$$Disallowed\ plant\ fuel\ Mcf = 172.96\ Mcf$$

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### Step 3:

Calculate the total residue gas sales volume:

- Add the residue gas total volume (1,697.81 Mcf) (**G**) to the volume from Step 2 (172.96 Mcf)
- The total residue gas sales volume is 1,870.77 Mcf

#### PC 03 Residue Gas Sales Volume (Mcf) (Step 3):

$$PC\ 03\ Mcf = residue\ Mcf + disallowed\ plant\ fuel\ Mcf$$

$$PC\ 03\ Mcf = 1,697.81\ Mcf + 172.96\ Mcf$$

$$PC\ 03\ Mcf = 1,870.77\ Mcf$$

### Step 4:

Calculate the disallowed plant fuel MMBtu:

- Identify the total plant fuel MMBtu reported on the plant statement
  - In this example, the plant fuel is called the “Contractual Allocated Fuel” and is 326.40 MMBtu (**F**)
- Obtain the percent disallowed for processing
  - In this example, 60% of the plant fuel is disallowed (1 minus the 40% UCA)
- Multiply the disallowed rate (60%) by the total plant fuel MMBtu reported on the plant statement (326.40 MMBtu) (**F**)
  - The disallowed plant fuel is 195.84 MMBtu



MMBtu is a measure of heat content, not a volume.

#### Step 5:

Calculate the total residue gas sales MMBtu:

- Add the heat content of the residue gas sales (1,922.39 MMBtu) (**H**) to the heat content from Step 4 (195.84 MMBtu)
- The total residue gas sales heat content is 2,118.23 MMBtu

#### PC 03 Residue Gas Sales MMBtu (Steps 4-5):

$$PC\ 03\ MMBtu = residue\ MMBtu + (plant\ fuel\ MMBtu \times \% \text{ disallowed})$$

$$PC\ 03\ MMBtu = 1,922.39\ MMBtu + (326.40\ MMBtu \times 0.60)$$

$$PC\ 03\ MMBtu = 1,922.39\ MMBtu + 195.84\ MMBtu$$

$$PC\ 03\ MMBtu = 2,118.23\ MMBtu$$

### Step 6:

Calculate the residue gas sales value:

- Multiply the residue gas sales MMBtu determined under Steps 4-5 (2,118.23 MMBtu) by the residue unit price (\$3.13905/MMBtu) (**J**). The residue gas price may not be reduced by any costs of placing the gas into marketable condition (30 CFR §1206.151).

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- The total residue gas sales value is \$6,649.23

**PC 03 Residue Gas Sales Value (Step 6):**

$$PC\ 03\ sales\ value = residue\ sales\ MMBtu \times residue\ unit\ price$$

$$PC\ 03\ sales\ value = 2,118.23\ MMBtu \times \$3.13905/MMBtu$$

$$PC\ 03\ sales\ value = \$6,649.23$$

**Step 7:**

Determine which sales type code you should use:

- In this example, we assume that your first sale is arm's length. Therefore, the correct sales type code is ARMS.



Please refer to your gas sales contracts to help determine if you have an arm's-length or non-arm's-length contract. If you are using your affiliate's gross proceeds under your affiliate's arm's-length contract, the sales type code would be NARM.

**PC 03 Residue Gas Sales Type Code (Step 7):**

$$ARMS = arm's-length\ contract$$

**Step 8:**

Calculate the Royalty Value Prior to Allowances (RVPA):

- Multiply the residue gas sales value calculated under Step 6 (\$6,649.23) by the royalty rate (12.5%)
- The total RVPA is \$831.15

**PC 03 Royalty Value Prior to Allowances (RVPA) (Step 8):**

$$PC\ 03\ RVPA = sales\ value \times royalty\ rate$$

$$PC\ 03\ RVPA = \$6,649.23 \times 0.125$$

$$PC\ 03\ RVPA = \$831.15$$

We will wait until the end of the example to calculate the allowances. Here is what the royalty reporting looks like so far:

Form ONRR-2014 Royalty Report								
Prod Code	Sales Volume	Sales MMBtu	Sales Value	Sales Type Code	RVPA	Trans Allow	Proc Allow	RVLA
03	1,870.77	2,118.23	\$6,649.23	ARMS	\$831.15			

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## PC 07 – Natural Gas Liquids (NGLs)

Royalty is due on any natural gas liquids (NGLs) resulting from processing.

### Step 1:

Calculate the gross volume-weighted-average price:

- Locate the total value on the plant statement under the Component Settlement section (\$4,998.51) **(N)** and divide by the settlement NGL gallons (5,868.05 gallons) **(M)**. NGL prices may not be reduced by any costs of placing the NGLs into marketable condition (30 CFR §1206.151)
- The net volume-weighted-average price is \$0.85182/gallon
- In order to calculate the **gross** volume-weighted average price, add back the deducted T&F fee (\$0.12/gallon, given in assumptions)
- The gross volume-weighted average price is \$0.97182/gallon

#### PC 07 Gross Volume-Weighted-Average Price (Step 1):

$$\text{Gross volume-weighted-average price} = \left( \frac{\text{total component value}}{\text{settlement NGL gal}} \right) + \text{T\&F fee}$$

$$\text{Gross volume-weighted-average price} = \left( \frac{\$4,998.51}{5,868.05 \text{ gal}} \right) + \$0.12/\text{gal}$$

$$\text{Gross volume-weighted-average price} = \$0.85182/\text{gal} + \$0.12/\text{gal}$$

$$\text{Gross volume-weighted-average price} = \$0.97182/\text{gal}$$

### Step 2:

Determine the NGL sales value:

- Locate the NGLs actually recovered by the plant on the plant statement under the Component Settlement section showing the “Allocated” amount **(L)**
- Multiply the NGL sales volume (6,903.59 gal) **(L)** by the gross volume-weighted-average price (\$0.97182/gal)
- The NGL sales value is \$6,709.05



Royalty is due on the total NGLs actually recovered, not on the theoretical NGLs or the NGLs on which the lessee is actually paid.

#### PC 07 NGL Sales Value (Step 2):

$$\text{PC 07 sales value} = \text{NGL sales volume} \times \text{gross volume-weighted-average price}$$

$$\text{PC 07 sales value} = 6,903.59 \text{ gal} \times \$0.97182/\text{gal}$$

$$\text{PC 07 sales value} = \$6,709.05$$

### Step 3:

Determine which sales type code you should use:

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- In this example, we assume that your first sale is arm’s-length.. Therefore, the correct sales type code is ARMS.



Please refer to your gas sales contracts to help determine if you have an arm’s-length or non-arm’s-length contract. If you are using your affiliate’s gross proceeds under your affiliate’s arm’s-length contract, the sales type code would be NARM.

**PC 07 NGL Sales Type Code (Step 3):**

$$ARMS = \text{arm's-length contract}$$

**Step 4:**

Determine the Royalty Value Prior to Allowances (RVPA):

- Multiply the sales value from Step 2 (\$6,709.05) by the royalty rate (12.5%)
- The RVPA is \$838.63

**PC 07 Royalty Value Prior to Allowances (RVPA) (Step 4):**

$$PC\ 07\ RVPA = \text{sales value} \times \text{royalty rate}$$

$$PC\ 07\ RVPA = \$6,709.05 \times 0.125$$

$$PC\ 07\ RVPA = \$838.63$$

We will wait until the end of the example to calculate the allowances. Here is what the royalty reporting looks like so far:

Form ONRR-2014 Royalty Report								
Product Code	Sales Volume	Sales MMBtu	Sales Value	Sales Type Code	RVPA	Trans Allow	Proc Allow	RVLA
03	1,870.77	2,118.23	\$6,649.23	ARMS	\$831.15			
07	6,903.59		\$6,709.05	ARMS	\$838.63			

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## PC 15 – Pipeline Fuel

Report gas used or lost along a pipeline using PC 15. The [reporter letter dated December 18, 2014](#), addresses this topic in detail.

### Step 1:

Determine the pipeline fuel sales value:

- Locate the “Contractual Field Deducts” MMBtu amount on the plant statement and report as a positive number (162.20 MMBtu) **(D)**
  - Also locate the Pipeline Fuel Sales Volume of 129.75 Mcf **(C)**
- Multiply the contractual field deducts (162.20 MMBtu) **(D)** by the residue gas unit price (\$3.13905/MMBtu) **(J)**
  - Under 30 CFR §1206.142(e), If some of your gas is used, lost, unaccounted for, or retained as a fee under the terms of a sales or service agreement, that gas will be valued for royalty purposes using the same royalty valuation method for valuing the rest of the gas that you do sell.
- The pipeline fuel sales value is \$509.15



There may be other names for pipeline fuel. For this example, our statement lists “Contractual Field Deducts.”

### PC 15 Pipeline Fuel Sales Value (Step 1):

$$PC\ 15\ sales\ value = pipeline\ fuel\ MMBtu \times unit\ price$$

$$PC\ 15\ sales\ value = 162.20\ MMBtu \times \$3.13905/MMBtu$$

$$PC\ 15\ sales\ value = \$509.15$$

### Step 2:

Determine the Sales Type Code:

- In this example, as discussed above, the pipeline fuel is valued under 30 CFR §1206.142(e)
- In this example, you value your residue gas using its first disposition, which is an arm’s-length contract. As discussed above, you can value the pipeline fuel using the same method as the method for valuing the residue gas. In this case, you should use Sales Type Code ARMS, which describes the value you are reporting, even though you never sell the pipeline fuel.

Federal Gas No-Sales Situations & Sales Type Codes	
Unprocessed gas used, lost, unaccounted-for, or retained <i>as a fee under a service contract</i> (e.g. pipeline fuel)	<ul style="list-style-type: none"> <li>• Value the gas in the same manner as the rest of the gas that you do sell</li> <li>• Use the same Sales Type Code as you are using for the rest of your gas</li> </ul>
Gas dispositions without a written contract or gas that is not sold but which is royalty-bearing (e.g. vented or flared gas)	<ul style="list-style-type: none"> <li>• Value the gas using the index-based option or the default provision (propose a method to ONRR)</li> </ul>

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**PC 15 Pipeline Fuel Sales Type Code (Step 2):**

*ARMS because the value is obtained via your arm's-length contract*

**Step 3:**

Determine the Royalty Value Prior to Allowances (RVPA):

- Multiply the pipeline fuel sales value from Step 1 (\$509.15) by the royalty rate (12.5%)
- The RVPA is \$63.64

**PC 15 Royalty Value Prior to Allowances (RVPA) (Step 3):**

$$PC\ 15\ RVPA = sales\ value \times royalty\ rate$$

$$PC\ 15\ RVPA = \$509.15 \times 0.125$$

$$PC\ 15\ RVPA = \$63.64$$

We will wait until the end of the example to calculate the allowances. Here is what the royalty reporting looks like so far:

Form ONRR-2014 Royalty Report								
Product Code	Sales Volume	Sales MMBtu	Sales Value	Sales Type Code	RVPA	Trans Allow	Proc Allow	RVLA
03	1,870.77	2,118.23	\$6,649.23	ARMS	\$831.15			
07	6,903.59		\$6,709.05	ARMS	\$838.63			
15	129.75	162.20	\$509.15	ARMS	\$63.64			

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## Transportation Allowance

The transportation allowance (TA) is comprised of three parts:

1. The allowed portion of the pipeline fuel value
2. The allowed portion of the percentage of products retained allocable to transportation
3. The allowed portion of the NGL transportation fee

Items 1 and 2 constitute pre-plant transportation and item 3 is the post-plant NGL transportation. The allowed portion of the pre-plant transportation will be allocated across all royalty-bearing products transported, but the allowed portion of the post-plant NGL transportation fee only applies to NGLs (PC 07).

### Step 1:

Calculate the amount and value of allowed pipeline fuel:



In this example, UCAs always represent the allowed percentage.

- In this example, we assume a transportation UCA of 20%, so the value of 20% of the pipeline fuel can be included in your transportation allowance
- Locate the “Contractual Field Deducts” (162.20 MMBtu) **(D)** and multiply by the sales price of the residue gas (\$3.13905/MMBtu) **(J)**, then by the allowable UCA (20%), and then by the royalty rate (12.5%)
- This portion of the transportation allowance is \$12.73

### Pipeline Fuel Pre-Plant Transportation Allowance (Step 1):

$$\text{Allowance} = \text{contractual field deducts} \times \text{sales price} \times \text{UCA} \times \text{royalty rate}$$

$$\text{Allowance} = 162.20 \text{ MMBtu} \times \$3.13905/\text{MMBtu} \times 0.20 \times 0.125$$

$$\text{Allowance} = \$12.73$$

### Step 2:

Calculate the amount and value of the allowed percentage of retained products allocable to transportation:

### Step 2a:

Calculate the value of the retained residue gas:

- The percent retained is 1 minus the contract percentage (85%) **(I)** or 15%
- Locate the net residue MMBtu (1,922.39 MMBtu) **(H)** and multiply by the percent retained (15%) and then by the residue unit price (\$3.13905/MMBtu) **(J)**
- The value of the retained residue gas is \$905.17

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**Value of Retained Residue Gas (Step 2a):**

$$\begin{aligned} & \text{Value of retained residue gas} \\ & = \text{net residue MMBtu} \times \% \text{ retained} \times \text{residue unit price} \end{aligned}$$

$$\text{Value of retained residue gas} = 1,922.39 \text{ MMBtu} \times 0.15 \times \$3.13905/\text{MMBtu}$$

$$\text{Value of retained residue gas} = \$905.17$$

**Step 2b:**

Calculate the value of the retained NGLs:

- The percent retained is 1 minus the contract percentage (85%) (**P**) or 15%
- Locate the allocated gallons (6,903.59 gal) (**L**) and multiply by the percent retained (15%) and then by the **net** volume-weighted-average price from Step 2 for PC 07-NGLs (\$0.85182/gal)
- The value of the retained NGLs is \$882.09

**Value of Retained NGLs (Step 2b):**

$$\begin{aligned} & \text{Value of retained NGLs} \\ & = \text{allocated gallons} \times \% \text{ retained} \\ & \quad \times \text{net volume-weighted-average price} \end{aligned}$$

$$\text{Value of retained NGLs} = 6,903.59 \text{ gal} \times 0.15 \times \$0.85182/\text{gal}$$

$$\text{Value of retained NGLs} = \$882.09$$

**Step 2c:**

Calculate the allowed portion from the retained value of the NGLs and residue gas allocable to transportation:

- Add the value of the retained residue gas from Step 2a (\$905.17) to the value of the NGLs from Step 2b (\$882.09) to get a value of \$1,787.26
- Multiply the value of the products (\$1,787.26) by the percentage allocable to transportation (60%), then by the transportation UCA (20%) and then by the royalty rate (12.5%)
- This portion of the transportation allowance is \$26.81

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**Portion of Transportation Allowance (Step 2c):**

$$\begin{aligned} \text{Portion of transportation allowance} \\ &= (\text{value of retained residue gas} + \text{value of retained NGLs}) \\ &\times \% \text{ allocable to transportation} \times UCA \times \text{royalty rate} \end{aligned}$$

$$\text{Portion of transportation allowance} = (\$905.17 + \$882.09) \times 0.60 \times 0.20 \times 0.125$$

$$\text{Portion of transportation allowance} = \$214.47 \times 0.125$$

$$\text{Portion of transportation allowance} = \$26.81$$

**Step 3:**

Calculate the total pre-plant transportation amount:

- Add the portion of the pre-plant transportation allowance from Step 1 (\$12.73) to the portion of the pre-plant transportation allowance from Step 2c (\$26.81) for a total pre-plant transportation allowance of \$39.54

**Total Pre-Plant Transportation Allowance (Step 3):**

$$\begin{aligned} \text{Total allowance} \\ &= \text{pre-plant transportation allowance from Step 1} \\ &+ \text{pre-plant transportation allowance from Step 2c} \end{aligned}$$

$$\text{Total allowance} = \$12.73 + \$26.81$$

$$\text{Total allowance} = \$39.54$$

**Step 4:**

Allocate the total pre-plant transportation across all the products transported.

Calculate the residue gas allocation:

- Divide the residue gas sales MMBtu from PC 03 Step 6 (2,118.23 MMBtu) by the gross wellhead MMBtu (3,013.00 MMBtu **(B)**)
- The residue gas allocation is 0.70303
- Multiply the residue gas allocation by the total pre-plant transportation allowance from Step 3 (\$39.54)
- The portion applied to PC 03 is \$27.80

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**Residue Allocation and Transportation Allowance (TA) (Step 4):**

$$\text{Residue allocation} = \frac{\text{residue gas sales MMBtu}}{\text{gross wellhead MMBtu}}$$

$$\text{Residue allocation} = \frac{2,118.23 \text{ MMBtu}}{3,013.00 \text{ MMBtu}}$$

$$\text{Residue allocation} = 0.70303$$

$$\text{PC 03 TA} = \text{total transportation allowance} \times \text{residue allocation}$$

$$\text{PC 03 TA} = \$39.54 \times 0.70303$$

$$\text{PC 03 TA} = \$27.80$$

**Step 5:**

Allocate the total pre-plant transportation across all the products transported.

Calculate the NGL allocation:

- Divide the NGL shrink MMBtu (602.01 MMBtu **(Q)**) by the gross wellhead MMBtu (3,013.00 MMBtu **(B)**)
  - We use the NGL shrink MMBtu rather than the NGLs gallons in order to keep our units consistent across all products
- The NGL allocation is 0.19980
- Multiply by the NGL allocation by the total pre-plant transportation allowance from Step 3 (\$39.54)
- The portion applied to PC 07 is \$7.90

**NGL Allocation and Transportation Allowance (TA) (Step 5):**

$$\text{NGL allocation} = \frac{\text{NGL shrink}}{\text{Gross wellhead MMBtu}}$$

$$\text{NGL allocation} = \frac{602.01 \text{ MMBtu}}{3,013.00 \text{ MMBtu}}$$

$$\text{NGL allocation} = 0.19980$$

$$\text{PC 07 TA} = \text{total transportation allowance} \times \text{NGL allocation}$$

$$\text{PC 07 TA} = \$39.54 \times 0.19980$$

$$\text{PC 07 TA} = \$7.90$$

**Step 6:**

Allocate the total pre-plant transportation across all the products being transported.

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Calculate the pipeline fuel allocation:

- Divide the contractual field deducts MMBtu (162.20 MMBtu **(D)**) by the gross wellhead MMBtu (3,013.00 MMBtu **(B)**)
- The pipeline fuel allocation is 0.05383
- Multiply by the pipeline fuel allocation by the total pre-plant transportation allowance from Step 3 (\$39.54)
- The portion applied to PC 15 is \$2.13

**Pipeline Fuel Allocation and Transportation Allowance (TA) (Step 6):**

$$\text{Pipeline fuel allocation} = \frac{\text{contractual field deducts MMBtu}}{\text{gross wellhead MMBtu}}$$

$$\text{Pipeline fuel allocation} = \frac{162.20 \text{ MMBtu}}{3,013.00 \text{ MMBtu}}$$

$$\text{Pipeline fuel allocation} = 0.05383$$

$$\text{PC 15 TA} = \text{total transportation allowance} \times \text{pipeline fuel allocation}$$

$$\text{PC 15 TA} = \$39.54 \times 0.05383$$

$$\text{PC 15 TA} = \$2.13$$

**Please note, the allocation decimals will not add up to 1 because a portion of the transportation allowance is allocated to the allowed plant fuel. Because the allowed plant fuel is not royalty-bearing, you may not take a transportation allowance for the cost of moving it.**

**Step 7:**

Determine the post-plant NGL transportation allowance.

Calculate the amount and value of allowed post-plant NGL transportation:



If your contract does not specify a T&F split, you can see if the plant can provide information or you can look at other relevant information (such as FERC tariffs) to come up with a reasonable split value.

- In this example, we are assuming that post-plant NGL transportation costs are 100% allowable, so the value of 100% of the post-plant NGL transportation can be included in your transportation allowance
- Multiply the allocated NGLs (6,903.59 gallons) **(L)** by the NGL transportation fee (\$0.05/gallon), then by the post-plant NGL transportation UCA (100%), and then by the royalty rate (12.5%)
- The total post-plant NGL transportation allowance is \$43.15

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**Post-plant NGL Transportation Allowance (Step 7):**

*Allowance = allocated NGL gallons × transportation fee × UCA × royalty rate*

$$Allowance = 6,903.59 \text{ gallons} \times \$0.05/\text{gal} \times 1.00 \times 0.125$$

$$Allowance = \$43.15$$

**Step 8:**

Calculate the total transportation allowance for PC 07:

- Add the post-plant NGL transportation allowance from Step 7 (\$43.15) to the NGLs share of the pre-plant transportation allowance allocated to PC 07 from Step 5 (\$7.90)
- The total transportation allowance for PC 07 is \$51.05.

**Total PC 07 Transportation Allowance (Step 8):**

*Total allowance*

*= pre-plant transportation allowance*

*+ post-plant NGL transportation allowance*

$$Total allowance = \$7.90 + \$43.15$$

$$Total allowance = \$51.05$$

**Step 9:**

Ensure the transportation allowances do not exceed the 50% transportation allowance limit under 30 CFR §1206.152(e)(1):

*Your transportation allowance may not exceed 50 percent of the value of the residue gas, gas plant products, or unprocessed gas as determined under §1206.141 or §1206.142.*

You may only take your reasonable, actual, allowed costs up to 50% of the value of the transported product. If your allowed costs exceed 50% of the value of the transported product, you must limit your allowance to 50%. In most cases, your costs will not reach 50%.

**Step 9a:**

Calculate the 50% limit for each product:

- Locate the residue gas, NGL, and pipeline fuel Royalty Value Prior to Allowance (RVPA) amounts from Step 8 of PC 03 - Residue Gas (\$831.15), Step 4 of PC 07 - NGLs (\$838.63), and Step 3 of PC 15 - Pipeline Fuel (\$63.64), respectively
- Multiply the RVPA of the residue gas (\$831.15) by 50% to find the limit of \$415.58
- Multiply the RVPA of the NGLs (\$838.63) by 50% to find the limit of \$419.32
- Multiply the RVPA of the pipeline fuel (\$63.64) by 50% to find the limit of \$31.82

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**Transportation Allowance Limit Check (Step 9a):**

*Transportation allowance limit = product RVPA x limit %*

*Transportation allowance limit for residue gas = \$831.15 x 50%*

*Transportation allowance limit for residue gas = \$415.58*

*Transportation allowance limit for NGLs = \$838.63 x 50%*

*Transportation allowance limit for NGLs = \$419.32*

*Transportation allowance limit for pipeline fuel = \$63.64 x 50%*

*Transportation allowance limit for pipeline fuel = \$31.82*

**Step 9b:**

Compare the transportation allowance for each product to the 50% limit calculated above:

- Locate the transportation allowance for residue gas from Step 4 (\$27.80), the total transportation allowance for NGLs from Step 8 (\$51.05), and the transportation allowance for pipeline fuel from Step 6 (\$2.13).
- \$27.80 is less than \$415.58 and is therefore within the transportation allowance limit.
- \$51.05 is less than \$419.32 and is therefore within the transportation allowance limit.
- \$2.13 is less than \$31.82 and is therefore within the transportation allowance limit.

**Transportation Allowance Limit Check (Step 9b):**

*Product transportation allowance < Transportation allowance limit*

*Residue gas transportation allowance: \$27.80 < \$415.58*

*NGLs transportation allowance: \$51.05 < \$419.32*

*Pipeline fuel transportation allowance: \$2.13 < \$31.82*

Here is what the royalty reporting looks like at this point:

Form ONRR-2014 Royalty Report								
Product Code	Sales Volume	Sales MMBtu	Sales Value	Sales Type Code	RVPA	Trans Allow	Proc Allow	RVLA
03	1,870.77	2,118.23	\$6,649.23	ARMS	\$831.15	-\$27.80		
07	6,903.59		\$6,709.05	ARMS	\$838.63	-\$51.05		
15	129.75	162.20	\$509.15	ARMS	\$63.64	-\$2.13		

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## Processing Allowance

You may only take a processing allowance against PC 07 – NGLs or other gas plant products, if recovered. In this example, the total processing allowance is based on the allowed portion of the percentage of products retained allocable to processing and the allowable fractionation cost. In this example, we assume:

1. 40% of the retained percentage is allocable to processing
2. A UCA of 40% for the retained value of the NGLs and residue gas, which will be used to calculate the allowed portion of the 15% of value retained by the plant, and
3. 100% of the fractionation costs are allowable as a processing allowance

In some cases, there may be additional processing charges in your contract.

### Step 1:

Calculate the portion of the processing allowance from the value of the retained NGLs and residue gas allocable to processing:

- Multiply the value of the retained products from Step 2c of the transportation allowance calculations (\$1,787.26) by the percentage allocable to processing (40%), then by the processing UCA (40%) and then by the royalty rate (12.5%)
- This portion of the processing allowance is \$35.75

#### Portion of Processing Allowance from the Value of the Retained NGLs and Residue Gas Allocable to Processing (Step 1):

*Portion of processing allowance*

$$= \text{value of retained products} \times \% \text{ allocable to processing} \times \text{UCA} \\ \times \text{royalty rate}$$

$$\text{Portion of processing allowance} = \$1,787.26 \times 0.40 \times 0.40 \times 0.125$$

$$\text{Portion of processing allowance} = \$285.96 \times 0.125$$

$$\text{Portion of processing allowance} = \$35.75$$

### Step 2:

Determine the portion of the processing allowance from the allowed fractionation costs.

Calculate the amount and value of allowed fractionation cost:

- In this example, we are assuming that fractionation costs are 100% allowable, so the value of 100% of the fractionation can be included in your processing allowance



If your contract does not specify a T&F split, you can see if the plant can provide information or you can look at other relevant information (such as FERC tariffs) to come up with a reasonable split value.

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- Multiply the allocated NGLs (6,903.59 gallons) (**L**) by the NGL fractionation fee (\$0.07/gallon), then by the fractionation cost UCA (100%), and then by the royalty rate (12.5%)
- This portion of the processing allowance is \$60.41

**Portion of Processing Allowance from the Allowed Fractionation Costs (Step 2):**

*Portion of processing allowance*

$$= \text{allocated NGL gallons} \times \text{fractionation fee} \times \text{UCA} \times \text{royalty rate}$$

$$\text{Portion of processing allowance} = 6,903.59 \text{ gallons} \times \$0.07/\text{gal} \times 1.00 \times 0.125$$

$$\text{Portion of processing allowance} = \$60.41$$

**Step 3:**

Calculate the total processing allowance:

- Add the portion of the processing allowance from the retained value of the NGLs and residue gas from Step 1 (\$35.75) to portion of the processing allowance from the fractionation cost from Step 2 (\$60.41), for a total processing allowance for PC 07 of \$96.16

**Total PC 07 Processing Allowance (Step 3):**

$$\text{Total allowance} = \text{Step 1} + \text{Step 2}$$

$$\text{Total allowance} = \$35.75 + \$60.41$$

$$\text{Total allowance} = \$96.16$$

**Step 4:**

Ensure the processing allowance does not exceed the 66 <sup>2</sup>/<sub>3</sub>% processing allowance limit under 30 CFR §1206.159(c)(2):



Under 30 CFR §1206.159(b) “ONRR considers NGLs to be one product.”

*The processing allowance deduction on the basis of an individual product may not exceed 66 <sup>2</sup>/<sub>3</sub> percent of the value of each gas plant product determined under §1206.142(c). Before you calculate the 66 <sup>2</sup>/<sub>3</sub> percent limit, you must first reduce the value for any transportation allowances related to post-processing transportation authorized under §1206.152.*

You may only take your reasonable, actual, allowed costs up to 66 <sup>2</sup>/<sub>3</sub>% of the value of the processed product. If your allowed costs exceed 66 <sup>2</sup>/<sub>3</sub>% of the value of the processed product, you must limit your allowance to 66 <sup>2</sup>/<sub>3</sub>%. In most cases, your costs will not reach 66 <sup>2</sup>/<sub>3</sub>%.

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**Step 4a:**

Reduce the value for transportation allowances related to post-processing transportation and calculate the limit:

- Subtract the post-plant NGL transportation from Step 7 of transportation allowance (\$43.15) from the NGL Royalty Value Prior to Allowances from Step 4 of PC 07 - NGLs (\$838.63) to get \$795.48
- Multiply the reduced amount (\$795.48) by 66 <sup>2</sup>/<sub>3</sub>% to find
- The limit is \$530.32

**Processing Allowance Limit Check (Step 4a):**

$$\text{Processing allowance limit} = (\text{NGL RVPA} - \text{post-plant transportation}) \times \text{limit \%}$$

$$\text{Processing allowance limit} = (\$838.63 - \$43.15) \times 0.66667$$

$$\text{Processing allowance limit} = \$795.48 \times 0.66667$$

$$\text{Processing allowance limit} = \$530.32$$

**Step 4b:**

Compare the processing allowance to the limit calculated above:

- Compare the \$530.32 to the total processing allowance in Step 3 (\$96.16)
- \$96.16 is less than \$530.32 and is therefore within the processing allowance limit.

**Processing Allowance Limit Check (Step 4b):**

$$\text{total processing allowance} < \text{processing allowance limit}$$

$$\$96.16 < \$530.32$$

Here is what the royalty reporting looks like at this point:

Form ONRR-2014 Royalty Report								
Product Code	Sales Volume	Sales MMBtu	Sales Value	Sales Type Code	RVPA	Trans Allow	Proc Allow	RVLA
03	1,870.77	2,118.23	\$6,649.23	ARMS	\$831.15	-\$27.80		
07	6,903.59		\$6,709.05	ARMS	\$838.63	-\$51.05	-\$96.16	
15	129.75	162.20	\$509.15	ARMS	\$63.64	-\$2.13		

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## Royalty Value Less Allowances

Reduce the RVPA by the allowances to get the Royalty Value Less Allowances (RVLA) for each product:

### Step 1:

Calculate the RVLA for the residue gas:

- Find the RVPA for Product Code 03 from Step 8 of PC 03 – Residue Gas (\$831.15) and subtract the transportation allowance allocated to PC 03 from Step 4 of transportation allowance (\$27.80)
- The RVLA for Product Code 03 is \$803.35

#### RVLA for PC 03 (Step 1):

$$PC\ 03\ RVLA = RVPA - PC\ 03\ transportation\ allowance$$

$$PC\ 03\ RVLA = \$831.15 - \$27.80$$

$$PC\ 03\ RVLA = \$803.35$$

### Step 2:

Calculate the RVLA for the NGLs:

- Find the RVPA for Product Code 07 from Step 4 of PC 07 – NGLs (\$838.63), subtract the total transportation allowance for PC 07 from Step 8 of transportation allowance (\$51.05), and then, subtract the total processing allowance from Step 3 of processing allowance (\$96.16)
- The RVLA for Product Code 07 is \$691.42



If the NGL transportation and processing allowance total exceeds the RVPA (which is possible), you can only deduct 99% of the RVPA as a maximum, as you cannot reduce royalties to \$0.

#### RVLA for PC 07 (Step 2):

$$PC\ 07\ RVLA = RVPA - PC\ 07\ transportation\ allowance - processing\ allowance$$

$$PC\ 07\ RVLA = \$838.63 - \$51.05 - \$96.16$$

$$PC\ 07\ RVLA = \$691.42$$

### Step 3:

Calculate the RVLA for the pipeline fuel:

- Find the RVPA for Product Code 15 from Step 3 of PC 15 – Pipeline Fuel (\$63.64) and subtract the transportation allowance allocated to PC 15 from Step 6 of transportation allowance (\$2.13)
- The RVLA for Product Code 15 is \$61.51

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**RVLA for PC 15 (Step 3):**

$$PC\ 15\ RVLA = RVPA - PC\ 15\ transportation\ allowance$$

$$PC\ 15\ RVLA = \$63.64 - \$2.13$$

$$PC\ 15\ RVLA = \$61.51$$

Here is what the final royalty reporting looks like:

Form ONRR-2014 Royalty Report								
Prod Code	Sales Vol	Sales MMBtu	Sales Value	Sales Type Code	RVPA	Trans Allow	Proc Allow	RVLA
03	1,870.77	2,118.23	\$6,649.23	ARMS	\$831.15	-\$27.80		\$803.35
07	6,903.59		\$6,709.05	ARMS	\$838.63	-\$51.05	-\$96.16	\$691.42
15	129.75	162.20	\$509.15	ARMS	\$63.64	-\$2.13		\$61.51

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