Effective Date: 1/1/2019

Phillips 66 Pipeline LLC

Blue and Shocker Pipelines
Natural Gas Liquids Specifications

Current Publication Date: 11/27/2018

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Revision Notes:

Combined Shocker and Blue Pipeline Specs to reflect new tariff.

Added freeze valve requirement to propane specifications.

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Phillips 66 Pipeline LLC

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Natural Gas Liquids Specifications

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Trac66 Code(s):
NP1

Phillips 66 Pipeline LLC

Destinations:
Blue Pipeline

Blue and Shocker Pipelines
Natural Gas Liquids Specifications

NGL Products, Propane

Property	Test Method	Units	Min	Max	Specific	Note#
Comp., Butane & heavier	D2163	lv%		2.50		
Composition, Propane	D2163	lv%	90.00			
Composition, Propylene	D2163	lv%		5.00		1
Copper Strip Corrosion	D1838	Rating		1		
Fluorides	ASTM D7359	ppmw		1.0		
Hydrogen Sulfide	D2420			Neg		
Moisture Content- Freeze Valve	D2713		Pass			
Most Current Version	See Note					2
Other Deleterious Substances	Inspection		see note			3
Residual Matter, GC	D7756	ppmw		350		4
Residual Matter, Oil Stain	D2158		Pass			5
Residual Matter, Residue	D2158	ml		0.05		
Specific Gravity @ 60/60F	D1657		Report			
Specifications	See Note					6
Sulfide, Carbonyl	D5623	ppmw		20		7
Sulfur	D2784 or D6667	ppmw		123		8
Vapor Pressure @ 100F	D1267, D2598, or D6897	psig		208		9
Volatile Res., 95% Evap	D1837	deg F		-37		10
Test Methods	See Note					11

Blue and Shocker Pipelines
Natural Gas Liquids Specifications

NGL Products, Propane

Notes:

1. One of the following specifications must be met: the maximum propylene or the 95% evaporated maximum temperature (ASTM D1835 Table 1).

2. The most current version of this specification can be found on the Phillips 66 Midstream website, www.phillips66midstream.com.

3. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, caustics, chlorides, heavy metals, glycol, oxygenates, inorganic gases, masking agents, or any compound added to enhance the ability to meet these specifications that has not been approved by Phiillips 66.

4. Test Method D7756 may be used in place of Test Method D2158. In case of dispute, Test Method D2158 shall be the referee test method. See ASTM D1835 for information about residues in LPG and for information about gas chromatographic test for residues in LPG.

5. An acceptable product shall not yield a persistent oil ring when 0.3 ml of solvent residue mix is added to a filter paper in 0.1 ml increments and examined in daylight after 2 minutes as described in Test Method D2158.

6. These specifications are intended to meet the latest version of ASTM D1835 as well as all downstream customer/pipeline requirements. In case of conflict, the most restrictive specification shall apply.

7. Carbonyl sulfide above 3.0 ppmw can react in the downstream cavern to form hydrogen sulfide, which can result in a copper strip corrosion failure.

8. The total sulfur limits in this specification DO include the sulfur compounds used for stenching purposes. In case of dispute, Test Method D6667 shall be the referee method. (ASTM D1835)

9. The referee method shall be ASTM D1267.

10. One of the following specifications must be met: the maximum propylene or the 95% evaporated maximum temperature (ASTM D1835 Table 1).

11. Test methods designated with the letter “D” are ASTM test methods. The most recent year revision shall be used.

Effective Date: 1/1/2019

Trac66 Code(s):
NNB

Phillips 66 Pipeline LLC

Destinations:
Blue Pipeline

Blue and Shocker Pipelines
Natural Gas Liquids Specifications

NGL Products, Butane, Normal
Butane

Property	Test Method	Units	Min	Max	Specific	Note#
Comp.- Butadiene	D2163	lv%		.01		
Comp.- Hexanes & Heavier	D2163	lv%		.05		
Comp.- Iso-butane	D2163	lv%		5.00		
Comp.- Normal Butane	D2163	lv%	95.00			
Comp.- Olefins	D2163	lv%		.30		
Comp.- Pentanes & Heavier	D2163	lv%		1.50		
Comp.- Propylene, Propane & Lighter	D2163	lv%		.50		
Copper Strip Corrosion	D1838			1	1A or 1B is pass	
Fluorides	UOP 619, ASTM D7359	ppmw		1.0		
Hydrogen Sulfide	D2420		Pass			
Moisture Content- Free Water	Visual			None		
Most Current Version	See Note					1
Other Deleterious Substances	Inspection		see note			2
Oxygenates, IPA & Heavier Alcohols	ASTM D7423, UOP-845	ppmw		5.00		
Oxygenates, Methanol	ASTM D7423, UOP-845	ppmw		50.00		
Oxygenates, MTBE & other Ethers	ASTM D7423, UOP-845	ppmw		2.00		
Oxygenates, Other Oxygenates	ASTM D7423, UOP-845	ppmw		5.00		
Oxygenates, Total	ASTM D7423, UOP-845	ppmw		50.00		
Specifications	See Note					3
Sulfur	D2784 or D6667	ppmw		93		4
Vapor Pressure @ 100˚F	D1267, D2598, or D6897	psig		50		5
Test Methods	See Note					6

Blue and Shocker Pipelines
Natural Gas Liquids Specifications

NGL Products, Butane, Normal
Butane

Notes:

1. The most current version of this specification can be found on the Phillips 66 Midstream website, www.phillips66midstream.com.

2. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, caustics, chlorides, heavy metals, glycol, oxygenates, inorganic gases, masking agents, or any compound added to enhance the ability to meet these specifications that has not been approved by Phiillips 66.

3. These specifications are intended to meet all applicable industry standards and downstream customer/pipeline requirements. In case of conflict, the most restrictive specification shall apply.

4. The total sulfur limits in this specification DO include the sulfur compounds used for stenching purposes. In case of dispute, Test Method D6667 shall be the referee method. (ASTM D1835)

5. The referee method shall be ASTM D1267.

6. Test methods designated with the letter “D” are ASTM test methods. The most recent year revision shall be used.

Effective Date: 1/1/2019

Trac66 Code(s):
NCC

Phillips 66 Pipeline LLC

Destinations:
Blue Pipeline

Blue and Shocker Pipelines
Natural Gas Liquids Specifications

NGL Products, Butane, Refinery Grade (RGB)

Property	Test Method	Units	Min	Max	Specific	Note#
Color (See Note)	D2158			See Note		1
Comp.- Normal Butane	D2163	lv%	65.0			
Comp.- Propane	D2163	lv%		1.0		
Comp.- Total Olefins	D2163	ppm		4000		
Copper Strip Corrosion	D1838			1	1A or 1B is pass	
Fluorides	ASTM D7359	ppmw		Report		
Hydrogen Sulfide	D2420		Pass			
Moisture Content- Free Water	Visual			None		
Most Current Version	See Note					2
Other Deleterious Substances	Inspection		see note			3
Specifications	See Note					4
Sulfur	D2784 or D6667	ppmw		160		
Vapor Pressure @ 100°F	D1267, D2598, or D6897	psig		43.0		5
Volatile Res., 95% Evap	D1837 or D2163	deg F		+36.0		6
Test Methods	See Note					7

Notes:

1. OneOK requires that the solvent/residue mixture obtained by ASTM D2158 be free of any visible color.

2. The most current version of this specification can be found on the Phillips 66 Midstream website, www.phillips66midstream.com.

3. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, caustics, chlorides, heavy metals, glycol, oxygenates, inorganic gases, masking agents, or any compound added to enhance the ability to meet these specifications that has not been approved by Phiillips 66.

4. These specifications are intended to meet all applicable industry standards and downstream customer/pipeline requirements. In case of conflict, the most restrictive specification shall apply.

5. The referee method shall be ASTM D1267.

6. ASTM D2163 may be used, but the ASTM D1837 value shall prevail in the event of a dispute.

7. Test methods designated with the letter “D” are ASTM test methods. The most recent year revision shall be used.

Effective Date: 1/1/2019

Trac66 Code(s):
NIB

Phillips 66 Pipeline LLC

Destinations:
Blue Pipeline

Blue and Shocker Pipelines
Natural Gas Liquids Specifications

NGL Products, Iso-Butane

Property	Test Method	Units	Min	Max	Specific	Note#
Comp.- Iso-butane	D2163	lv%	95.00			
Comp.- Normal Butane & Heavier	D2163	lv%		5.00		
Comp.- Propane & Lighter	D2163	lv%		3.00		
Copper Strip Corrosion	D1838			1	1A or 1B is pass	
Fluorides	ASTM D7359	ppmw		Report		
Hydrogen Sulfide	D2420		Pass			
Moisture Content- Free Water	Visual			None		
Most Current Version	See Note					1
Other Deleterious Substances	Inspection		see note			2
Specifications	See Note					3
Sulfur	D2784 or D5623	ppmw		93		
Vapor Pressure @ 100˚F	D1267, D2598, or D6897	psig	56.00	60.00		4
Volatile Res., 95% Evap	D1837	deg F		+16		
Test Methods	See Note					5

Notes:

1. The most current version of this specification can be found on the Phillips 66 Midstream website, www.phillips66midstream.com.

2. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, caustics, chlorides, heavy metals, glycol, oxygenates, inorganic gases, masking agents, or any compound added to enhance the ability to meet these specifications that has not been approved by Phiillips 66.

3. These specifications are intended to meet all applicable industry standards and downstream customer/pipeline requirements. In case of conflict, the most restrictive specification shall apply.

4. The referee method shall be ASTM D1267.

5. Test methods designated with the letter “D” are ASTM test methods. The most recent year revision shall be used.