



argusmedia.com

ARGUS NGL AMERICAS

Contents:

Methodological Principles	2
Mont Belvieu	4
Conway	4
Napoleonville	5
Hattiesburg	5
Bushton	5
Canada	6
Refined Products	6
Commodities & Locations Assessed	7

LAST UPDATED: MAY 2012

The most up-to-date Argus NGL Americas methodology is available on www.argusmedia.com

Methodological Principles

Price assessment range

Argus US natural gas liquids (NGL) trade range prices represent the market over the course of the entire trading day. Argus publishes the low and the high of deals done throughout the entire trading day for prompt wet, current “any month,” and the next “any month” markets. In order to qualify to set the low or high of the day, deals must meet the minimum volumes established in our methodology, they must meet the strict delivery, timing, and specification requirements in our methodology, and the deals must be confirmed. Argus publishes prices that report and reflect prevailing levels for open-market arm’s length transactions (please see the Argus Global Compliance Policy for a detailed definition of arm’s length). In illiquid markets, Argus makes an intelligent assessment of the range within which product could have traded, based on bids and offers through the entire day, movements in similar grades, and extensive polling of market participants. In addition to the low and high, Argus publishes a mean value, which is the arithmetic mean of the low and high prices.

Argus publishes current month volume-weighted averages of deals done at Mont Belvieu and Conway. These are volume-weighted averages of the current month deals done throughout the entire trading day. These averages are published as a single price, not as a range. In order to allow the average to avoid distortion in illiquid markets, a minimum aggregate volume of trade must occur in a given trade day for the weighted average to be calculated (see table on p4). Should this aggregate volume not be achieved, the weighted average will represent an assessment of market value based on bids, offers, and trades in the market.

Argus also publishes forward assessments for ethane and propane at Mont Belvieu and propane at Conway. These prices are intelligent assessments of the best bid and best offer at a time stamp of 1:30 pm Central time (Houston time). Companies use these prices to mark trading positions to market and calculate value at risk at the end of the trading day.

Survey method and verification

Price assessments in Argus NGL Americas rely on a wide variety of sources for information, including producers, refiners, marketers, traders and brokers and also data from electronic trading platforms.

Argus will accept information over the phone, via instant messenger, via email, or by other means. Argus works to verify all deal prices, counterparties, and volumes. Argus reserves the right to exclude deals from the range of trade: should a deal fall well outside of the channel of trade or raise other concerns, Argus will subject the deal to further scrutiny, which will involve consultation with industry sources and review by senior Argus management. This process is critical to insuring that the Argus range of trade remains representative.

Transparency and deal tables

Argus values transparency in energy markets. As a result, we publish lists of deals in our reports that include price, basis, and volume information. These deals are also archived. The deal tables allow subscribers to cross check and verify the deals against the prices. Argus feels this sort of transparency and openness is vital to developing confidence in the price assessment process.

Confidentiality

Argus asks for counterparties from contacts in order to confirm deals. But Argus does not publish counterparty names in the US NGL markets. Many companies in the US have existing confidentiality agreements with counterparties and can only reveal deals to the press if confidentiality is maintained. Maintaining confidentiality allows Argus to gather more information and create more robust assessments of the range of trade throughout the day.

Definition of trading day

Argus seeks to represent the entire trading day in its assessments. Argus defines the day by determining at what times the market can be said to contain a fair number of willing buyers and sellers. Outside of these time boundaries, markets are typically too illiquid to produce representative price indications and deals. These boundaries can vary in different markets, and will be under continuous review to maintain the accuracy of the assessments. The trading day is currently defined as 8:00 am – 4:00 pm Central Time (Houston Time) for all US and Canadian markets assessed in the Argus NGL Americas. Forward assessments for ethane and propane at Mont Belvieu and propane at Conway are intelligent assessments of the best bid and best offer at a time stamp of 1:30 pm Central time (Houston time).

Corrections to assessments

Argus will on occasion publish corrections to price assessments after the publication date. We will correct errors that arise from clerical mistakes, calculation error, or a misapplication of our stated methodology. Argus will not retroactively assess markets based on new information learned after the assessments are published. We make our best effort to assess markets based on the information we gather during the trading day assessed. If transaction information is submitted in error, and the company submitting informs Argus of the error within 24 hours of the original submission, Argus will make best efforts to correct the price data. After 24 hours, Argus will review both the material effect that the correction will have on the price data and the amount of time that has elapsed from the date of the published price data before deciding whether to issue a correction. After 30 days, Argus is unlikely to make a correction based on information submitted in error, and data submitters are not expected to file corrections to submitted data.

Relationship to industry

Our methodology is developed in consultation with the industry, in order to provide a service that is useful. Argus seeks to report the market in the way that it is traded. We do not feel it is our role to change the way the industry seeks to trade or hedge. Our goal is to develop price assessments that are reliable and consistent enough to be used as price benchmarks in spot trade, term contracts, exchanges, and transfer pricing. Argus editors and managers are available to discuss our methodology and understand the needs of our clients for robust price reporting.

Ethics and compliance

Argus operates according to the best practices in the publishing field, and maintains thorough compliance procedures throughout the firm. We want to be seen as a preferred provider by our subscribers, who are held to equally high standards, while at the same time maintaining our editorial integrity and independence. Argus has a strict ethics policy that applies to all staff. The policy can be found on our website at www.argusmedia.com. Included in this policy are restrictions against staff trading in any energy commodity or energy related stocks, and guidelines for accepting gifts. Argus also has strict policies regarding central archiving of email and instant messenger communication, maintenance and archiving of notes, and archiving and maintaining confidentiality of deal lists used in the price assessment process.

Absolute prices

Natural gas liquids in the US trade at a “fixed” or absolute price, and so Argus prices represent values as absolute prices. Argus publishes five values in its NGL price tables:

- Low:** Represents the lowest trade of the day meeting minimum volumes.
- High:** Represents the highest trade of the day meeting minimum volumes.
- Mean:** The arithmetic mean of the low and high values for that commodity.
- MTD Avg:** The cumulative average of all the daily prices for the current prompt trade month to date, including the day assessed. Published for the mean price and the volume-weighted average price.

Forward markets

Argus publishes forward assessments for propane and ethane at Mont Belvieu, propane at Conway, and propane in Northwest Europe. These include informal forward market contracts that can allow physical delivery, such as an “Any Month” paper contract, and swaps contracts that swap a fixed price for the average of a floating published price. Argus may look at forward markets to inform physical assessments but places primary emphasis on transactions in the physical markets.

- Bid:** The best bid assessed in the market at the time stamp.
- Offer:** The best offer assessed in the market at the time stamp.
- Average:** The arithmetic mean of the bid and offer.

Publications and price data

Argus NGL prices for the US trading centers and for Canada are published in the Argus NGL Americas report. Argus also publishes the Argus International LPG daily report, which covers Europe, Asia Pacific, Former Soviet Union, China, and includes prices for Mont Belvieu NGLs. Prices in the International LPG report are used as benchmark indices for physical and financial trade in Europe and Asia Pacific. Swaps based on Argus LPG prices are available for clearing on CME Clearport system.

The price data is available in electronic files – independent of the text-based report – that can feed into various databases. These price data are also supplied through various third-party data integrators. The Argus website also provides access to prices, reports and news with various web-based tools. All Argus prices are kept in a historical database and available for purchase. Contact your local Argus office for information.

Mont Belvieu

Timing

Wet: Delivery within 24 hours or by close of the next business day.

Current "Any Month": "Any month" reflects trade in a forward contract for delivery anytime during the named month at seller's option. The first month assessed is the same as the current calendar month. Months roll at end of calendar month.

Forward months: Reflect either swaps or forward market trades. Months roll at end of calendar month. Assessed for propane and ethane.

Forward quarters: Reflect either swaps or forward market trades that are rateable volumes across three calendar months. The first quarter assessed will be the quarter following the current calendar quarter, and will roll at the end of the calendar quarter.

Volume

All grades: 10,000 bl minimum required to set the low or high price.

Volume-weighted averages: 30,000 bl aggregate minimum required to calculate volume weighted average. Below that minimum, the average will represent an assessment of the volume-weighted price based on bids, offers, and trades in the market.

Basis

Mont Belvieu: Refers to terminals and storage facilities near Mont Belvieu, Texas.

E/P Mix: Non LST: FOB Enterprise.

Purity Ethane: Non LST: FOB Enterprise.

Propane:

LST: FOB Lone Star storage. (Location previously known as TET.)

Non LST: FOB Enterprise storage.

Butane:

LST: FOB Lone Star storage.

Non LST: FOB Enterprise storage.

Isobutane: Non LST: FOB Enterprise storage.

Natural Gasoline: Non LST: FOB Enterprise storage.

Specifications

E/P Mix: 80% ethane, 20% propane.

Purity Ethane (C2): 95% ethane and ethylene minimum, 3% methane maximum, 3.5% propane and heavier maximum, 30 ppm wt maximum.

Propane (C3):

LST: 90% propane minimum, 5% propylene maximum.

Non LST: 90% propane minimum, 5% propylene maximum, 2.5% butanes and heavier maximum.

Normal Butane (C4):

LST: 94% normal butane minimum, 6% isobutane maximum, 2.5% propane maximum, 2% pentanes and heavier maximum.

Non LST: 94% normal butane minimum, 6% isobutane maximum, 0.35% propane and lighter maximum, 1.5% pentanes and heavier maximum, 0.35% olefins maximum.

Volume-Weighted Averages

Argus publishes current month volume-weighted averages of deals done at Mont Belvieu and Conway. These averages are provided as an additional tool for the industry to use for purposes of indexing transactions. The volume-weighted average methodology is used extensively for indexation in the natural gas, crude, and clean products markets. The Argus averages are published as a single price, not as a range, and represent volume-weighted averages of the current month deals done throughout the entire trading day.

In order to allow the average to avoid distortion in illiquid markets, a minimum aggregate volume of trade must occur in a given trade day for the weighted average to be calculated (see table below). Should this aggregate volume not be achieved, the weighted average will represent an assessment of the market value based on bids, offers, and trades in the market. If deals are reported to Argus with volumes identified as meeting the minimum volume required for setting the low and high price, Argus will enter the volume at the minimum stated in the table below for purposes of calculating the volume weighted averages.

These averages are located in the main page one table of the Argus NGL Americas adjacent to the low, high, and mean (of low and high) values.

Volume minimums for volume weighted average

Mont Belvieu	
EP Mix	20,000
Ethane non LST	30,000
Propane LST	30,000
Propane Non LST	30,000
Normal Butane LST	20,000
Normal Butane non LST	20,000
Isobutane non LST	20,000
Natural Gasoline non LST	30,000
Conway	
EP Mix	10,000
Propane	15,000
Normal Butane	10,000
Isobutane	10,000
Natural Gasoline	10,000

Isobutane (IC4): 96% isobutane minimum, 4% normal butane maximum, 3% propane maximum.

Natural Gasoline (C5): 6% normal butane and lighter maximum, 14 RVP maximum, 1000 ppm wt maximum.

US Gulf Coast

Propane export cargo prices are assessed by adding a value for terminal loading fees to the Argus Mont Belvieu volume-weighted average price for non-LST propane. Timing therefore reflects the same timing as Mont Belvieu current "any month." The value for terminal loading fees is arrived at by a market survey.

Volume:

Propane: 44,000t refrigerated cargo

Basis:

Propane: Non LST (Enterprise) LPG export terminal, Houston Ship Channel

Specification:

Propane (C3): Non LST: 90% propane minimum, 5% propylene maximum, 2.5% ethane maximum, 2.5% butanes and heavier maximum.

Conway**Timing**

Wet: Delivery within 24 hours or by close of the next business day.

Current "Any Month": "Any month" reflects trade in a forward contract for delivery anytime during the named month at seller's option. The first month assessed is the same as the current calendar month. Months roll at end of calendar month.

Forward months: Reflect either swaps or forward market trades. Months roll at end of calendar month. Assessed for propane.

Forward quarters: Reflect either swaps or forward market trades that are rateable volumes across three calendar months. The first quarter assessed will be the quarter following the current calendar quarter, and will roll at the end of the calendar quarter.

Volume

All grades: 5,000 bl minimum required to set the low or high price.

Volume-weighted averages: Volume-weighted averages: 15,000 bl aggregate minimum required to calculate volume weighted average. Below that minimum, the average will represent an assessment of the volume-weighted price based on bids, offers, and trades in the market.

Basis

Conway: Refers to terminals and storage facilities near Conway, Kansas.

All grades: fob Williams and Enterprise storage.

Specifications

Specifications conform to Williams Midstream standards.

E/P Mix: 80% ethane, 20% propane.

Propane (C3): 90% propane minimum, 5% propylene maximum, 2.5% butanes maximum.

Normal Butane (C4): 95% normal butane minimum, 5% isobutane maximum, 1.5% pentanes and heavier maximum, 0.5% propane maximum.

Isobutane (IC4): 95% isobutane minimum, 5% normal butane maximum, 3% propane maximum.

Natural Gasoline (C5): 50% hexanes and heavier maximum, 42% pentanes minimum, 8% butanes maximum.

Napoleonville**Timing**

Current "Any Month": "Any month" reflects trade in a forward contract for delivery anytime during the named month at seller's option. The first month assessed is the same as the current calendar month. Months roll at end of calendar month.

Volume

All grades: 5,000 bl minimum required to set the low or high price.

Basis

Napoleonville: Refers to terminals and storage facilities near Napoleonville, Louisiana.

All grades: FOB Promix storage.

Specifications

E/P Mix: 70% ethane minimum, 15%/25% propane minimum/maximum, 5% methane and lighter (% of ethane) maximum, isobutane and heavier 3% maximum.

Purity Ethane (C2): 90% ethane minimum, 5% methane maximum, 5% propane maximum, 0.25% butanes and heavier maximum.

Propane (C3): 90% propane minimum, 5% propylene maximum, 2.5% butane and heavier maximum.

Normal Butane (C4): 95% normal butane minimum, 2.5% propane maximum, 2% pentanes and heavier maximum, 0.5% olefins maximum.

Isobutane (IC4): 95% isobutane minimum, 3% propane maximum, 4% normal butane maximum.

Natural Gasoline (C5): 13 RVP maximum, 2% normal butane maximum.

Hattiesburg**Timing**

Current "Any Month": "Any month" reflects trade in a forward contract for delivery anytime during the named month at seller's option. The first month assessed is the same as the current calendar month. Months roll at end of calendar month.

Volume

All grades: 5,000 bl minimum required to set the low or high price.

Basis

Hattiesburg: Refers to terminals and storage facilities near Hattiesburg, Mississippi.

All grades: FIP Dixie Pipeline.

Specifications

Propane (C3): 90% propane minimum, 5% propylene maximum, 2.5% butanes maximum.

Bushton

Timing

Current "Any Month": "Any month" reflects trade in a forward contract for delivery anytime during the named month at seller's option. The first month assessed is the same as the current calendar month. Months roll at end of calendar month.

Volume

All grades: 5,000 bl minimum required to set the low or high price.

Basis

Bushton: Refers to terminals and storage facilities near Bushton, Kansas.

All grades: FOB OneOk storage.

Specifications

Propane (C3): 90% propane minimum, 5% propylene maximum, 2.5% butanes maximum.

Canada

Markets for Edmonton and Sarnia are assessed daily at outright prices and at differentials to Mont Belvieu or Conway market centers. Prices represent the range within which product traded or could have traded over the day. Deals transact as differentials to US markets, off of posted prices, or as a percentage of WTI are converted to outright prices. Inventory transfers of product in and around Sarnia, Ontario and Edmonton, Alberta will be the primary modality considered for price assessment. Also potentially included are product transfer orders for propane at the Edmonton inlet of the Cochin pipeline.

Edmonton

Timing

Propane and Field Grade Butane:

Current "Any Month": "Any month" reflects trade in a forward contract for delivery anytime during the named month at seller's option. The first month assessed is the same as the current calendar month. Months roll at end of calendar month.

Condensate:

Month of injection: Assessments are for one month forward and roll on a calendar month basis.

Volume

Propane, Field Grade Butane: 500 bl minimum required to set the low or high price.

Condensate: 1500 b/d per injection month minimum required to set the low or high price.

Basis

Edmonton: Refers to terminals, storage facilities, and company postings at or near Edmonton or Fort Saskatchewan.

Condensate: FOB Edmonton.

Specifications

Propane (C3): 90% propane minimum, 5% propylene maximum, 2.5% butanes maximum.

Field Grade Butane: 65% normal butane, 35% isobutane.

Condensate (C5): 54 API, 0.50 % sulphur.

Sarnia

Timing

All grades:

Current "Any Month": "Any month" reflects trade in a forward contract for delivery anytime during the named month at seller's option. The first month assessed is the same as the current calendar month. Months roll at end of calendar month.

Volume

All grades: 500 bl minimum required to set the low or high price.

Basis

Sarnia: Refers to terminals, storage facilities, and company postings near Sarnia, Ontario.

Specifications

Propane (C3): 90% propane minimum, 5% propylene maximum, 2.5% butanes maximum.

Butane: 93% normal butane minimum, 7% isobutane and lighter maximum, 2% pentanes and heavier maximum.

Refined Products

Reformer grade Naphtha: CIF US Gulf coast, 5-15 days forward. 40pc naphthenes plus aromatics min, 150°F initial boiling point min. 25,000 bl min to 100,000 bl max.

Paraffinic grade Naphtha: CIF US Gulf coast, 5-15 days forward. 70pc paraffins min, 60 API min. 25,000 bl min to 100,000 bl max.

Ultra Low Sulphur Diesel (ULSD): FOB Colonial Pipeline, prompt cycle. Conforms to Colonial 61 grade, 10 ppm sulphur max. 25,000 bl min.

Heating Oil: FOB Colonial Pipeline, prompt cycle. Conforms to Colonial 88 grade, 0.2pc (2000ppm) sulphur max. 25,000 bl min.

Commodities and Locations Assessed: Argus NGL Americas Report

	Mont Belvieu LST	Mont Belvieu Non LST	Conway	Conway Rail	Hattiesburg	Bushton	Napoleonville	Edmonton	Sarnia	Northwest Europe	Colonial Pipeline	US Gulf Coast	West Texas Margin	Ethylene Plant Margin	ICE Wtd Avg	Argus Wtd Avg
E/P Mix		√	√				√						√	√		√
Ethane		√					√						√	√	√	√
Propane	√	√	√		√	√	√	√	√	√			√	√	√	√
Normal Butane	√	√	√				√		√				√	√		√
Field Grade Butane								√								
Isobutane	√	√	√				√						√			√
Natural Gasoline		√	√	√			√						√	√		√
Condensate								√								
Reformer Grade Naphtha												√				
Paraffinic Naphtha												√		√		
Diesel											√					
Heating Oil											√			√		