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ARGUS US PRODUCTS

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Covering assessments found in *Argus US Products*, *Argus Jet Fuel*,
Argus Americas Biofuels and *Argus Latin Markets*

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The most up-to-date Argus US Products methodology is available on www.argusmedia.com

Methodology overview

Methodology rationale

Argus strives to construct methodologies that reflect the way the market trades. Argus aims to produce price assessments which are reliable indicators of commodity market values, free from distortion and representative of spot market values. As a result, the specific currencies, volume units, locations and other particulars of an assessment are determined by industry consensus to facilitate seamless bilateral trade and Argus mirrors these industry conventions.

In the US refined products markets, Argus typically reflects physical market prices across the entire trading day as a low and high of deals done and in some cases a volume-weighted average of deals done. In illiquid markets and time periods, Argus assesses the range within which product could have traded by applying a strict process outlined later in this methodology. An entire day price is a reliable indicator of physical market values as it incorporates the broadest possible pool of spot market liquidity and has acceptance from industry. Argus applies clean product basis differential transactions to the CME settlement price to arrive at fixed prices because the futures settlement price is a representative futures price reference. This approach has been endorsed by industry acceptance. See also section "Definition of trading day."

Additionally, the industry has asked Argus to reflect swaps market prices as a bid/offer range at 2:30pm EST. This approach aligns the financial swap with its underlying futures settlement price at 2:30pm EST and allows companies to more easily use the price as a mark-to-market tool.

In order to qualify to set the low or high of the day, deals must meet the minimum volume, delivery, timing, and specification requirements in our methodology, and the deals must be bona fide. With the exception of volume, the same requirements apply to transactions that are to be included in volume-weighted averages.

Definition of trading day

Argus defines the trading 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 defined as follows:

US Atlantic coast:	7:00am CT – 2:30pm CT
US Gulf coast:	8:00am CT – 2:30pm CT
Group Three and Chicago:	8:00am CT – 2:30pm CT
US West coast:	6:00am PT – 2:15pm PT
VGO and naphtha:	8:00am CT – 3:30pm CT
US Gulf coast fuel oil:	1pm CT – 1:30pm CT

Argus will announce its publishing schedule in a calendar located at www.argusmedia.com. Argus may not assess prices on certain public holidays even when the exchanges are open, due to anticipated illiquidity in the cash spot markets.

Survey process

Argus price assessments are informed by information received from a wide cross section of market participants, including producers, consumers and intermediaries. Argus reporters engage with the industry by proactively polling participants for market data. Argus will contact and accept market data from all credible market sources including front and back office of market participants and brokers. Argus will also receive market data from electronic trading platforms, Argus Open Markets® (AOM®) and directly from the back offices of market participants. Argus will accept market data by telephone, instant messenger, email, AOM or other means.

Argus encourages all sources of market data to submit all market data to which they are a party that falls within the Argus stated methodological criteria for the relevant assessment. Argus encourages all sources of market data to submit transaction data from back office functions when and where possible.

Throughout all markets, Argus is constantly seeking to increase the number of companies willing to provide market data. Reporters are mentored and held accountable for expanding their pool of contacts. The number of entities providing market data can vary significantly from day to day based on market conditions. Should the number of entities providing market data repeatedly fall to a level that assessment quality may be affected, supervising editors will review the viability of the assessment.

For certain price assessments identified by local management, should more than 50pc of the market data upon which the assessment is based come from a single entity during any assessment period (defined as the minimum period covered, such as a day for a daily assessment), then the supervising editor will engage in an analysis of the market data with the primary reporter to ensure that the quality and integrity of the assessment has not been affected.

Argus has committed to deliver many of our final published prices to clients by a particular deadline each day. Because compiling and confirming transactions and other market data in advance of this deadline is a lengthy process, price assessment procedures must be concluded well before that deadline. As a result, for the US Products markets, Argus has instituted cut-off times for the submission of data by market participants. Argus will review all data received after the cut-off time and will make best efforts to include in the assessment process all verifiable transactions and market data received after the cut-off time but reserves the right to exclude any market data from the process if received after the cut-off time.

Cut-off times

US Atlantic coast:	3:00pm CT
US Gulf coast:	3:00pm CT
Group Three and Chicago:	3:00pm CT
US West coast:	2:30pm PT
VGO and naphtha:	4:30pm CT

Market data usage

In each market, Argus uses the methodological approach deemed to be the most reliable and representative for that market. Argus will utilize various types of market data in its methodologies, to include:

1. Transactions
2. Bids and offers
3. Other market information, to include spread values between grades, locations, timings, and many other data.

In many markets, the relevant methodology will assign a relatively higher importance to transactions over bids and offers, and a relatively higher importance to bids and offers over other market information. Certain markets however will exist for which such a hierarchy would produce unreliable and non-representative price assessments, and so the methodology must assign a different relative importance in order to ensure the quality and integrity of the price assessment. And even in markets for which the hierarchy normally obtains, certain market situations will at times emerge for which the strict hierarchy would produce non-representative prices, requiring Argus to adapt in order to publish representative prices.

Verification of transaction data

Reporters carefully analyze all data submitted to the price assessment process. This data includes transactions, bids, offers, volumes, counterparties, specifications and any other information that contributes materially to the determination of price. This high level of care applies regardless of the methodology employed. Specific to transactions, bids, and offers, reporters seek to verify the price, the volume, the specifications, location basis, and counterparty. In some transactional average methodologies, reporters also examine the full array of transactions to match counterparties and arrive at a list of unique transactions.

Several tests are applied by reporters in all markets to transactional data to determine if it should be subjected to further scrutiny. If a transaction has been identified as failing such a test, it will receive further scrutiny. For certain price assessments identified by local management, Argus has established internal procedures that involve escalation of inquiry within the source's company and escalating review within Argus management. Should this process determine that a transaction should be excluded from the price assessment process, the supervising editor will initiate approval and, if necessary, documentation procedures.

Primary tests applied by reporters

- Transactions not transacted at arms-length, including deals between related parties or affiliates.
- Transaction prices that deviate significantly from the mean of all transactions submitted for that day.
- Transaction prices that fall outside of the generally observed lows and highs that operated throughout the trading day.
- Transactions that are suspected to be a leg of another transaction or in some way contingent on an unknown transaction.
- Single deal volumes that significantly exceed the typical transac-

tion volume for that market.

- Transaction details that are identified by other market participants as being for any reason potentially anomalous.
- Transaction details that are reported by one counterparty differently than the other counterparty.
- Any transaction details that appear to the reporter to be illogical or to stray from the norms of trading behavior. This could include but is not limited to divergent specifications, unusual delivery location and counterparties not typically seen.
- Transactions that involve the same counterparties, the same price and delivery dates are checked to see that they are separate deals and not one deal duplicated in Argus records.

Secondary tests applied by editors for transactions identified for further scrutiny

Transaction tests

- The impact of linkage of the deal to possible other transactions such as contingent legs, exchanges, options, swaps, or other derivative instruments. This will include a review of transactions in markets that the reporter may not be covering.
- The nature of disagreement between counterparties on transactional details.
- The possibility that a deal is directly linked to an offsetting transaction that is not publicly known, for example a "wash trade" which has the purpose of influencing the published price.
- The impact of non-market factors on price or volume, including distressed delivery, credit issues, scheduling issues, demurrage, or containment.

Source tests

- The credibility of the explanation provided for the outlying nature of the transaction.
- The track record of the source submitting the data. Sources will be deemed more credible if they
 - Regularly provide transaction data with few errors.
 - Provide data by Argus' established deadline.
 - Quickly respond to queries from Argus reporters.
 - Have staff designated to respond to such queries.
- How close the information receipt is to the deadline for information, and the impact of that proximity on the validation process.

Assessment guidelines

When insufficient, inadequate, or no transaction information exists, or when a transaction based methodology will not produce representative prices, Argus reporters will make an assessment of market value by applying intelligent judgment based on a broad array of factual market information. Reporters must use a high degree of care in gathering and validating all market data used in determining price assessments, a degree of care equal to that applying to gathering and validating transactions. The information used to form an assessment could include deals done, bids, offers, tenders, spread trades, exchange trades, fundamental supply and demand information and other inputs.

The assessment process employing judgment is rigorous, replicable, and uses widely accepted valuation metrics. These valuation metrics mirror the process used by physical commodity traders to internally assess value prior to entering the market with a bid or offer. Applying these valuation metrics along with sound judgment significantly narrows the band within which a commodity can be assessed, and greatly increases the accuracy and consistency of the price series. The application of judgment is conducted jointly with the supervising editor, in order to be sure that guidelines below are being followed. Valuation metrics include the following:

Relative value transactions

Frequently transactions occur which instead of being an outright purchase or sale of a single commodity, are instead exchanges of commodities. Such transactions allow reporters to value less liquid markets against more liquid ones and establish a strong basis for the exercise of judgment.

- Exchange one commodity for a different commodity in the same market at a negotiated value.
- Exchange delivery dates for the same commodity at a negotiated value.
- Exchange a commodity in one location for the same commodity at another location at a negotiated value.

Bids and offers

If a sufficient number of bids and offers populate the market, then the highest bid and the lowest offer can be assumed to define the boundaries between which a deal could be transacted.

Comparative metrics

The relative values between compared commodities are readily discussed in the market and can be discovered through dialogue with market participants. These discussions are the precursor to negotiation and conclusion of transactions.

- Comparison to the same commodity in another market center.
- Comparison to a more actively traded but slightly different specification commodity in the same market center.
- Analysis of prices in forward markets for physically deliverable commodity that allow extrapolation of value into the prompt timing for the commodity assessed.
- Comparison to the commodity’s primary feedstock or primary derived product(s).
- Comparison to trade in the same commodity but in a different modality (as in barge versus oceangoing vessel) or in a different total volume (as in full cargo load versus partial cargo load).

Throughout this methodology, Argus will explain, in more detail and on a market by market basis, the criteria and procedures that are used to make an assessment of market value by applying intelligent judgment.

Volume minimums and transaction data thresholds

In establishing each methodology, Argus will list specific minimum volume for each assessment. Because of the varying transportation infrastructure found in all commodity markets, Argus typically does not establish thresholds strictly on the basis of a count of transactions, as this could lead to unreliable and non-representative assessments. Instead, minimum volumes are typically established which may apply to each transaction accepted, to the aggregate of transactions, to transactions which set a low or high assessment or to other volumetrically relevant parameters.

For certain price assessments identified by local management, Argus will seek to establish minimum transaction data thresholds and when no such threshold can be established Argus will explain the reasons. These thresholds will often reflect the minimum volumes necessary to produce a transaction-based methodology, but may also establish minimum deal parameters for use by a methodology that is based primarily on judgment.

Should no transaction threshold exist, or should submitted data fall below this methodology’s stated transaction data threshold for any reason, Argus will follow the procedures outlined elsewhere in this document regarding the exercise of judgment in the price assessment process.

Minimum transaction thresholds for key assessments

Commodity	Modality	Location	Minimum Transaction Thresholds	
			Low/high minimum volume	VWA aggregate minimum volume
ULSD	Barge	New York Harbor	25,000 bl	na
Jet fuel	Barge	New York Harbor	25,000 bl	na
ULSHO	Barge	New York Harbor	25,000 bl	na
RBOB	Barge	New York Harbor	25,000 bl	na
ULSD	Pipeline	Buckeye	10,000 bl	na
Jet fuel	Pipeline	Buckeye	10,000 bl	na
87M conventional gasoline	Pipeline	Colonial	25,000 bl	75,000 bl
Heating oil	Pipeline	Colonial	25,000 bl	75,000 bl
Jet fuel	Pipeline	Colonial	25,000 bl	75,000 bl
ULSD 62	Pipeline	Colonial	25,000 bl	75,000 bl

Transparency and confidentiality

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

Argus asks for transaction counterparty names from contacts in order to confirm deals and to avoid double-counting in volume-weighted averages. But Argus does not publish counterparty names in the US products 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.

Basis differentials and absolute prices

In the US clean products markets, differentials to futures are the negotiated bids, offers, and transaction values. Argus fixed prices are derived by adding the differentials to the CME futures settlement price or to another differential. In the case of regrade trade the report identifies the basis (as in 87 M conventional). Reformer grade naphtha trades at a differential to a published gasoline price, and vacuum gasoil trades at a differential to either a published clean product formula or to WTI. Certain refined products trade at a fixed price, such as ethanol, paraffinic naphtha and residual fuel oil. Argus publishes various price types for each commodity. These typically include

- Differential Low:** The low differential to futures or another basis.
- Differential High:** The high differential to futures or another basis.
- Low:** The “fixed” or absolute price. For clean products, typically calculated by adding the differential low to the CME settlement, or the absolute price for a basis commodity (such as 87 M conventional).
- High:** The “fixed” or absolute price. For clean products, typically calculated by adding the differential high to the Nymex settlement, or the absolute price for a basis commodity (such as 87 M conventional).
- Delta:** The change between today’s absolute price and that of the previous trading day.

Swaps and forwards markets

Argus publishes forward assessments for numerous markets. These include forward market contracts that can allow physical delivery. Argus looks at forward prices to inform physical assessments but places primary emphasis on the physical markets.

Publications and price data

Argus products prices for the US are published in the *Argus US Products* report. Subsets of these prices appear in other Argus market reports and newsletters in various forms, such as *Argus Latin Markets*, *Argus US West Coast Products*, *Argus Jet Fuel*, *Argus US Ethanol* and *Argus Global Markets*. The price data is available independent of the text-based report in electronic files 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.

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 errors, 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, data submitters are not expected to file corrections to submitted data.

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 of spreadsheets and deal lists used in the price assessment process. 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 arms length).

Consistency in the assessment process

Argus recognizes the need to have judgment consistently applied by reporters covering separate markets, and by reporters replacing existing reporters in the assessment process. In order to ensure this consistency, Argus has developed a program of training and oversight of reporters. This program includes:

- A global price reporting manual describing among other things the guidelines for the exercise of judgment.
- Cross-training of staff between markets to ensure proper holiday and sick leave backup. Editors that float between markets to monitor staff application of best practices.
- Experienced editors overseeing reporting teams are involved in daily mentoring and assisting in the application of judgment for illiquid markets.
- Editors are required to sign-off on all price assessments each day, thus ensuring the consistent application of judgment.

Review of methodology

The overriding objective of any methodology is to produce price assessments which are reliable indicators of commodity market values, free from distortion and representative of spot market values. As a result, Argus editors and reporters are regularly examining our methodologies and are in regular dialogue with the industry in order to ensure that the methodologies are representative of the physical market being assessed. This process is integral with reporting on a given market. In addition to this ongoing review of methodology, Argus conducts reviews of all of its methodologies and methodology documents on at least an annual basis.

Argus market report editors and management will periodically and as merited initiate reviews of market coverage based on a qualitative analysis that includes measurements of liquidity, visibility of market data, consistency of market data, quality of market data and industry usage of the assessments. Report editors will review:

- Appropriateness of the methodology of existing assessments
- Termination of existing assessments
- Initiation of new assessments

The report editor will initiate an informal process to examine viability. This process includes:

- Informal discussions with market participants
- Informal discussions with other stakeholders
- Internal review of market data

Should changes, terminations, or initiations be merited, the report editor will submit an internal proposal to management for review and approval. Should changes or terminations of existing assessments be approved, then formal procedures for external consultation are begun.

Changes to methodology

Formal proposals to change methodologies typically emerge out of the ongoing process of internal and external review of the methodologies. Formal procedures for external consultation regarding material changes to existing methodologies will be initiated with an announcement of the proposed change published in the relevant Argus report. This announcement will include:

- Details on the proposed change and the rationale
- Method for submitting comments with a deadline for submissions
- Notice that all formal comments will be published after the given consultation period unless submitter requests confidentiality

Argus will provide sufficient opportunity for stakeholders to analyze and comment on changes, but will not allow the time needed to follow these procedures to create a situation wherein unrepresentative or false prices are published, markets are disrupted, or market participants are put at unnecessary risk. Argus will engage with industry throughout this process in order to gain acceptance of proposed changes to methodology. Argus cannot however guarantee universal acceptance and will act for the good order of the market and ensure the continued integrity of its price assessments as an overriding objective.

Following the consultation period, Argus management will commence an internal review and decide on the methodology change. This will be followed by an announcement of the decision in the relevant Argus report and include a date for implementation. In addition, publication of stakeholders' formal comments that are not subject to confidentiality and Argus' response to those comments will also take place. These formal comments should be published in a manner described by management but must be available to all market participants and stakeholders.

Updates to methodology

The Argus US Products methodology is constantly updated and revised. The latest available methodology (which may supersede the one you are reading) is available at www.argusmedia.com.

Using this document

This methodology was designed to be read alongside a copy of the print [Argus US Products](#) report, or [Argus Data documentation](#). Both are available at www.argusmedia.com.

Volume-weighted averages

For certain products, Argus publishes volume-weighted averages (“weighted average”) of deals done throughout the entire trading day. These are published as a single differential and a single fixed price. In order to allow the average to be representative in illiquid markets, a minimum aggregate volume of trade must occur in a given trade day for each weighted average to be calculated.

Should this aggregate volume not be achieved, the weighted average will default to the mean of the low and the high for the same product.

Minimum aggregate volumes are as follows:

Minimum aggregate volumes	
Market	Minimum aggregate volume
Colonial (including Colonial line space)	75,000 bl
Group 3	30,000 bl
Los Angeles	75,000 bl

Midpoint prices

Midpoint prices published in the market summary section of the report are rounded to two decimal places. Midpoint prices available via FTP, the Argus Direct platform, or other data feeds are rounded to three decimal places.

RVP and gasoline seasons

Argus’ gasoline assessments are the price of gasoline with a volatility no greater than a named Reid vapor pressure (RVP). These RVP standards change during the year.

The RVP value of CBOB blendstock is a pre-blend value, before the addition of 10pc denatured fuel ethanol.

The RVP value of RBOB blendstock is a post-blend value, assuming the inclusion of 10pc denatured fuel ethanol. The relevant ethanol price assessment is also published in Argus US Products.

Argus publishes its gasoline price assessments as a number of different series including “summer,” “winter,” “continuous,” “supplemental (supp),” and “transition supplemental,” each defined by the [Argus Gasoline RVP schedule](#).

“Summer” assessments are published 15 March through 15 September. “Winter” assessments are published 1 September through 15 April. “Supplemental” and “Transition” assessments are published on each publication day during the period listed in the Argus Gasoline RVP schedule. All other price assessments, including “continuous” assessments, are published year-round.

Argus also publishes each day’s RVP standards as separate, stand-alone data series.

The published RVP does not account for waivers. RBOB does not receive waivers. The price of other oxygenate blendstocks are assessed before the addition of ethanol that would result in RVP waivers.

A full list of gasoline price data codes and corresponding RVP data codes is available in the [Argus PA code index for gasoline prices](#) and [Argus Gasoline RVP schedule](#).

Duty, RINs and the RVO

Unless otherwise stated, Argus’ US refined products assessments include duty (“inc duty”). Duty-inclusive assessments reflect the value of fuel on which any applicable US import duties have already been paid, either by the seller or by the original importer. Import duties include:

- Import tariff (52.5¢/bl)
- Harbor Maintenance Fee (0.125pc of cargo value)
- Oil Spill Tax (9¢/bl)
- Merchandise Processing Fee (0.3464pc of cargo value, not to exceed \$498)

In the case of diesel, gasoline, and ultra-low sulphur kerosine (ULSK), and with the exception of Argus USGC waterborne ex-RVO prices, duty-inclusive assessments also include an RVO: they reflect the value of fuel that, under US law, imposes a renewable volume obligation (RVO) on the company that refined or imported it. Companies can meet their RVO by blending the requisite volume of renewable fuels, or purchasing a corresponding quantity of renewable identification numbers (RINs).

Argus assessments described as “ex-duty” reflect the value of fuel on which applicable import duties have not been paid. Ex-duty assessments also exclude RVO, meaning that the fuel has yet to incur any renewable volume obligation.

Differential adjustments

When market activity takes place against a different CME Nymex contract month than the one against which Argus publishes, Argus will adjust the differentials to its CME Nymex contract month while maintaining equivalent outright prices.

Argus reserves the right to choose the appropriate method for such adjustment, including using the inter-month spread at the time of the trade, if such information is available, and using the inter-month spread at the time of settlement.

US Atlantic coast

Argus assesses US Atlantic coast clean product markets as differentials to CME Nymex settlement prices. First-month settlement prices are used except on the last business day of the month, when second-month settlement prices are used.

US Atlantic coast assessments are for the price, over the entire trading day (see above), of product meeting the volume, quality, location and timing criteria set out below, as well as the volatility (RVP) criteria set out above.

Prompt timing alignment

Barge, Buckeye pipeline and Laurel pipeline price assessments are for activity 3-7 days forward from the assessment day. When no pipeline shipments are scheduled within 3-7 days forward of the day of assessment, Argus will assess the price based on market activity for the cycle immediately following 7 days forward, taking into account any backwardation or contango in the forward curve.

Colonial Linden cycle timing

Argus begins assessing each Colonial Linden cycle three business days prior to the previous cycle's delivery into Linden. For example, if Colonial cycle 3 delivers CBOB into Linden on Thursday, 23 January, Argus will begin assessing cycle 4 CBOB at Linden starting Monday, 20 January.

Non-specific origins

Argus assesses prices for the Laurel pipeline on a fob Philadelphia basis without origin restrictions. Argus New York Harbor barge assessments are for prices on a fob New York Harbor basis without specific locations.

RVP transitions

Argus uses the Buckeye Pipeline calendar as the basis for US Atlantic coast RVP transitions of Buckeye, barge and Laurel gasoline assessments, and of cargo RBOB and CBOB assessments. The Buckeye Pipeline schedule can be found at www.buckeye.com.

Argus uses the Colonial Pipeline calendar as the basis for US Atlantic coast RVP transitions of Colonial Linden gasoline assessments and cargo 87 conventional and 93 conventional assessments. The Colonial Pipeline schedule can be found at www.colpipe.com/home.

New York Harbor fuel oil

Assessed as the low-high range within which product traded or could have traded.

Assessments are published as \$/bl outright prices. The 0.5pc fuel oil price is also published as calculated \$/bl differentials to the Ice Brent and Nymex WTI front-month settlements. The Ice Brent and Nymex WTI basis months for the 0.5pc fuel oil differentials roll three business days before the expiry of the prompt-month contract.

Information about trades done as differentials to Ice Brent or Nymex WTI may be considered for inclusion in all New York Harbor fuel oil assessments.

Calculated assessments

- **89 conv:** calculated as $(0.65 * 87 \text{ conv}) + (0.35 * 93 \text{ conv})$
- **New York waterborne gasoline ex-duty:** calculated by subtracting Argus RVO and associated import duties from the corresponding New York waterborne gasoline inc duty assessment. For details on how Argus calculates RVO, see the [Argus Americas Biofuels methodology](#).

US Gulf coast

Argus assesses US Gulf refined products as outright prices or as differentials to basis prices listed in the specifications table below.

Assessments are of the price, over the entire trading day (see above) of product meeting the volume, quality, location, and timing criteria set out in the specification tables below, as well as the volatility (RVP) criteria set out above, and other modality-specific criteria detailed below. For definitions of low, high, and VWA, see "Basis differentials and absolute prices" and "Volume-weighted averages" sections above.

RVP transitions

Argus uses the Colonial Pipeline calendar as the basis for US Gulf coast RVP transitions for gasoline assessments. The Colonial Pipeline schedule can be found at: www.colpipe.com/home.

Waterborne CBOB, RBOB, Conv, ULSD 62, ULSHO, Heating oil, Jet, Kerosine

Prices are fob US Gulf coast for domestic shipment. Prices are assessed by adding the corresponding USGC Colonial Pipeline prompt cycle to a fixed 1.25¢/USG premium which reflects the assessed cost of transporting material onto a barge or vessel. The premium is reviewed annually.

Waterborne ex-RVO

For CBOB, Conv, ULSD, prices are calculated by subtracting Argus' current-year RVO assessment from the corresponding Argus waterborne assessment.

ULSD, 45 cetane

Prices are published in \$/m³ for 200,000-250,000bl of US Gulf coast diesel meeting Colonial 62 grade ULSD specifications and with a cetane number of 45 loading 5-15 days forward.

Calculated by adding an assessed differential to the outright Colonial 62 ULSD midpoint, and subtracting the Argus Renewable Volume Obligation (RVO).

Colonial

- All assessments exclude trade carrying "Texas-origin only" clause
- ULSD and CBOB assessments are for trade that does not allow delivery at injection points that will not count toward buyer's Colonial shipping history.
- Gasolines: prompt cycle is the earliest A grade cycle for which the nomination deadline has not passed
- Distillates: prompt cycle is the earliest cycle for which the nomination deadline has not passed

Colonial line space

- Prices are for material withdrawn from the named cycle on the named line, at a differential to material injected to the named cycle at Pasadena, TX.
- Prices are assessed independently of logistics (e.g. tariffs, line loss)

Vacuum gasoil (VGO)

- Prices are assessed in \$/bl using both outright prices and differentials to Nymex WTI and Ice Brent crude futures.
- Argus rolls the differential basis month for Nymex WTI and Ice Brent crude futures three business days prior to the expiry of the prompt month contract.

Texas CBOB

Prices for Texas CBOB, fuel meeting the boutique state fuel program approved for Texas by the EPA, are calculated from 20 April to 1 October inclusive for 25,000 bl on a fob Houston/Pasadena basis as follows:

Texas Regular and Premium CBOBs are calculated using an 82:18 split between the respective regular and premium 7.4 RVP post-blend RBOB and 9.0 RVP CBOB assessments. During periods in which either 7.4 RVP post-blend RBOB or 9.0 RVP CBOB are no longer fungible on the Colonial Pipeline at origin, Argus will use the average of RBOB/CBOB market spreads during the four weeks immediately before one of the grades ceased to be fungible.

Should both grades cease to be fungible, Argus will identify a price spread between fungible grades that can contribute to the identification of values to be used in the calculation of Texas CBOB prices.

From 2 October to 19 April inclusive, the lowest RVP not 7.8 or 7 price assessment is published for these series.

US Gulf coast fuel oil

Assessed as the low-high range within which product traded or could have traded. If traded quantities meet or exceed the aggregate threshold then the midpoint of the low-high range will be assessed as a weighted average of the trades.

Assessments are published as \$/bl outright prices. The 0.5pc fuel oil price is also published as calculated \$/bl differentials to the Ice Brent and Nymex WTI front-month settlements. The Ice Brent and Nymex WTI basis months for the 0.5pc fuel oil differentials roll three business days before the expiry of the prompt-month contract.

Information about trades done as differentials to Ice Brent or Nymex WTI may be considered for inclusion in all US Gulf coast fuel oil assessments.

Aggregate thresholds:

- \$/t—10,000t
- \$/bl—100,000bl

During times of market volatility, Argus may establish a relationship between the price of reported fixed-price fuel oil trades and the price of one or more underlying commodities such as Brent crude futures.

To account for any volatility in that underlying basis market, Argus may re-calculate the fixed-price value of the trade against the day's settlement price of the underlying basis market and include that adjusted value in the final volume-weighted average and low/high range. Argus encourages market participants to specify the time at which trades were completed, and the basis market, if any, used to value the fuel oil to facilitate this adjustment.

Calculated assessments

- 89 conv: calculated as $(0.65 * 87 \text{ conv}) + (0.35 * 93 \text{ conv})$
- VGO differentials are calculated as the price of VGO minus the named basis
 - prompt month Ice Brent settlement (\$/bl)
 - 70:30 ULSD (¢/USG)
 - 70:30 heating oil (¢/USG)
- 70:30, 87 conv/heating oil: calculated as $(0.7 * \text{USGC waterborne 87 conv M, lowest RVP no less than 9RVP}) + (0.3 * \text{USGC waterborne heating oil})$
- 70:30, 87 conv/ULSD: calculated as $(0.7 * \text{USGC waterborne 87 conv M, lowest RVP no less than 9RVP}) + (0.3 * \text{USGC waterborne ULSD})$

Group Three

Argus assesses Group Three refined products as differentials to basis prices listed in the specifications table below.

Argus assesses US Group Three clean product markets as differentials to CME Nymex settlement prices. First-month settlement prices are used except on the last business day of the month, when second-month settlement prices are used.

Assessments are of the price over the entire trading day (see above) of product meeting the volume, quality, location, and timing criteria set out in the specification table below, as well as the volatility (RVP) criteria set out above.

RVP transitions

Argus uses the Magellan Pipeline calendar as the basis for Group Three gasoline RVP transitions. The Magellan Pipeline schedule can be found at: www.magellanlp.com.

ULSK Seasonality

Ultra-low sulphur kerosine (ULSK) is assessed seasonally, from 1 September to 30 April.

Ultra-low sulphur kerosine (ULSK) is assessed seasonally, from 15 October to 31 March.

Calculated assessments

- 89 conv: calculated as $(0.5 * 87 \text{ conv}) + (0.5 * 91 \text{ conv})$

ULSK Seasonality

Ultra-low sulphur kerosine (ULSK) is assessed seasonally, from 1 September to 30 April.

Detroit

Detroit CBOB

Prices are for Detroit CBOB, fuel meeting the boutique state fuel program approved for Michigan by the EPA and sold on a fob Wolverine basis.

From Cycle 1 April through Cycle 2 September inclusive, calculated as 82pc Chicago West Shore/Badger RBOB plus 18pc Wolverine CBOB for both the respective regular and premium CBOB assessments.

From Cycle 3 September through Cycle 3 October inclusive, assessed based on a market survey and other market information about the price of 10,000 bl on a fob Wolverine basis.

From Cycle 1 November through Cycle 3 March inclusive, published as the respective Wolverine CBOB price assessments.

US west coast

Argus assesses US west coast refined products as differentials to basis prices listed in the specifications table below.

Assessments are of the price, over the entire trading day (see above) of product meeting the volume, quality, location, and timing criteria set out in the specification tables below, as well as the volatility (RVP) criteria set out above.

Assessments are for product traded before the Kinder Morgan nominations deadline ("freeze") for the last cycle of the assessed month.

RVP transitions

In Los Angeles, Argus uses the Kinder Morgan West Line calendar as the basis for RVP transitions. The Kinder Morgan Pipeline schedule can be found at: www.kindermorgan.com.

In San Francisco, Argus uses the Kinder Morgan North/Zero Line calendar as the basis for RVP transitions. The Kinder Morgan Pipeline schedule can be found at: www.kindermorgan.com

In Portland, Argus uses the BP Olympic Pipeline calendar as the basis for RVP transitions.

Chicago

Argus assesses Chicago refined products as differentials to basis prices listed in the specifications table below.

Assessments are of the price, over the entire trading day (see above) of product meeting the volume, quality, location, and timing criteria set out in the specification tables below, as well as the volatility (RVP) criteria set out above.

RVP transitions

Argus uses the Buckeye-Midwest Pipeline System calendar as the basis for Chicago BCX gasoline RVP transitions. The Buckeye Pipeline schedule can be found at: www.buckeye.com.

For other (non-BCX) gasoline assessments in the Chicago market, Argus will base RVP transitions on market liquidity and regional pipeline requirements.

Cycle timing

The Chicago cycles that Argus assesses correspond to periods of the month.

Chicago trade month cycle timing		
	Prompt assessment begins	Ships
Cycle 1	25th of the previous month	1st-10th of the month
Cycle 2	5th of the month	11th-20th of the month
Cycle 3	15th of the month	21st-end of the month

Waterborne San Francisco CARBOB, CARB ULSD

Prices are fob US west coast for domestic shipment. Prices are assessed by adding the corresponding San Francisco pipeline assessment to a fixed 1.5¢/USG premium which reflects the assessed cost of transporting material onto a barge or vessel. The premium is reviewed annually.

Waterborne ex-RVO

For San Francisco CARBOB and San Francisco CARB ULSD, prices are calculated by subtracting Argus' current-year RVO assessment from the corresponding Argus waterborne assessment.

- **Chicago 6-3-2-1 crack spread:** West Shore/Badger CBOB, West Shore/Badger ULSD, USGC fuel oil and WCS daily weighted average crude
- **Group Three 3-2-1 crack spread:** Magellan CBOB, Magellan ULSD and WTI Formula Basis crude
- **USWC 5-3-1-1 crack spread:** LA CARBOB, LA CARB ULSD, LA fuel oil and ANS USWC crude

See the [Argus Crude](#) and [Argus Americas Crude](#) methodologies for more information about Argus crude prices.

Delivered Florida

Assessments are published daily in ¢/USG for regular CBOB, premium CBOB, ULSD, and jet fuel originating in the US Gulf coast and delivered to each of Tampa and Port Everglades, Florida.

Prices are calculated daily by adding the latest waterborne US Gulf coast price assessment for each commodity and the freight costs between the US Gulf coast and Tampa and Port Everglades, respectively. CBOB prices are for 9.0 RVP during the summer EPA-governed period.

Freight costs are assessed weekly and published in Argus Petroleum Transportation North America.

The following assessments are used to calculate delivered values:

- Freight clean Houston - Tampa 140-260k bbl
- Freight clean Houston - Port Everglades 140-260k bbl

See the [Argus Petroleum Transportation methodology](#).

Crack spreads

Crack spreads are expressed as a ratio of product outputs to crude inputs in the order listed below. For example, the Chicago 6-3-2-1 crack spread is the price of three barrels of West Shore/Badger CBOB, two barrels of West Shore/Badger ULSD and one barrel of USGC fuel oil less the cost of six barrels of WCS daily weighted average crude.

Regional crack spreads are calculated and published daily in \$/bl using the most recent prompt assessment of the following components:

- **USAC 3-2-1 crack spread:** barge RBOB, barge ULSD and North Sea Dated crude
- **USGC sweet 3-2-1 crack spread:** Colonial pipeline conventional gasoline, Colonial pipeline ULSD and WTI Houston weighted average crude
- **USGC sour 3-2-1 crack spread:** Colonial pipeline conventional gasoline, Colonial pipeline ULSD and Mars weighted average crude

Delivered South America

Prices are published in \$/m³ for US Gulf coast and Rotterdam gasoline, US Gulf coast diesel and US Gulf coast jet fuel delivering to South American ports.

Prices are calculated by combining product prices, freight, insurance, loss and demurrage costs. For all countries except Colombia, insurance is calculated as 0.05pc of cargo value and losses are calculated as 0.2pc of cargo value, assuming cargo value to be the product price plus freight. For Colombia, insurance is calculated as 0.015pc of the product price.

Demurrage is calculated using the \$/day demurrage cost and the average number of days demurrage at each port. Demurrage costs are not included for Cartagena, and Callao. Days demurrage is assumed to be 2 days for Pozos and 0.5 days for Barranquilla. AFRMM taxes are included for Brazilian ports.

Freight

- UKC-South America 37,000t
- USGC-Argentina/Brazil 38,000t
- Atlantic coast Americas MR demurrage \$/day

See the [Argus Freight methodology](#)

Refined products

The following assessments are used to calculate delivered values for Brazil, Uruguay and Argentina

- Eurobob oxy NWE barge for Rotterdam origin gasoline*
See the [Argus European Products methodology](#)
- ULSD fob USGC ex-RVO for US Gulf coast origin diesel
- 87 conv USGC ex-RVO lowest RVP not 7.8 or 7.0 for US Gulf coast origin gasoline
- Jet fuel fob USGC for US Gulf coast origin jet fuel

For Colombia, the following assessments are used to calculate delivered values:

- ULSD fob USGC for US Gulf coast origin diesel
- 87 conv USGC lowest RVP not 7.8 or 7.0 for US Gulf coast origin gasoline

For Peru, the following assessments are used to calculate delivered values:

- ULSD fob USGC ex-RVO for US Gulf coast origin diesel
- 87 conv USGC ex-RVO lowest RVP not 7.8 or 7.0 for US Gulf coast origin gasoline
- 93 conv USGC ex-RVO lowest RVP not 7.8 or 7.0 for US Gulf coast origin gasoline
- Jet fuel fob USGC for US Gulf coast origin jet fuel

The 87 and 93 conventional gasoline assessments are used to calculate a 90 octane delivered price.

*Note – the Eurobob oxy NWE barge price assessment is adjusted by adding the difference between the Nymex RBOB contract settlement price and the Nymex RBOB price at 4:30pm London time to account for the difference in time between the assessment of the Eurobob oxy NWE price and the settlement of the Nymex RBOB contract price at 1:30pm Houston time.

Published delivered South America assessments

Country	Port	Gasoline	Diesel	Jet fuel
Brazil	Itaqui		x	x
	Suape		x	x
	Rio de Janeiro			x
	Santos		x	x
	Paranagua		x	
Uruguay	Montevideo	x	x	
Argentina	Buenos Aires	x	x	
Peru	Callao	x	x	x
	Pozos	x	x	
Colombia	Barranquilla	x	x	x
	Cartagena	x	x	

Biofuels, RINs, RVO

Argus US Products includes biofuels, ethanol, RVO, RIN and other associated price assessments published in Argus Americas Biofuels.

Ethanol

- Chicago Argo same-day
- Chicago Argo prompt
- Chicago Argo any month
- Chicago Rule 11
- New York Harbor any month
- Houston barge/rail
- Tampa rail

- Atlanta rail
- Dallas rail
- Nebraska Union Pacific rail
- Nebraska BNSF rail
- Los Angeles low-carbon intensity rail
- Brazil fob anhydrous
- Brazil del anhydrous

Biodiesel

- B100 SME
 - New York Harbor rail
 - Houston rail/barge
 - Chicago in-tank transfer Argo
- B99 SME
 - New York Harbor rail
 - Houston rail/barge
 - Chicago in-tank transfer Argo
 - San Francisco fob truck
 - Los Angeles fob truck

Renewable diesel

- R99
 - San Francisco delivered rail
 - Los Angeles delivered rail

Tier 3 sulphur credits

- Early
- Standard

Benzene credits

50:50 split of retroactive Blenders Tax Credit

RINs

- Renewable fuel (ethanol D6)
- Biomass-based diesel (D4)
- Cellulosic biofuels (D3)
- Advanced biofuels (D5)
- Renewable volume obligation (RVO)

Current year RIN spreads

- Biomass-based diesel (D4) - Renewable fuel ethanol (D6)
- Biomass-based diesel (D4) - Advanced biofuel (D5)
- Advanced biofuel (D5) - Renewable fuel ethanol (D6)
- Previous year RIN spreads
- Biomass-based diesel (D4) - Renewable fuel ethanol (D6)
- Biomass-based diesel (D4) - Advanced biofuel (D5)
- Advanced biofuel (D5) - Renewable fuel ethanol (D6)
- Current - previous year RIN spreads
- Biomass-based diesel (D4)
- Advanced biofuel (D5)
- Renewable fuel ethanol (D6)

See the [Argus Americas Biofuels methodology](#).

Sustainable aviation fuel (SAF)

- del US west coast

See the [Argus Jet Fuel methodology](#).

Marine fuels (bunkers)

Argus US Products includes marine fuel price assessments published in Argus Marine Fuels.

- Bunker 3.5% 380 cst Philadelphia
- Bunker 3.5% 380 cst New York
- Bunker 3.5% 380 cst Houston
- Bunker 3.5% 380 cst Los Angeles
- Bunker 3.5% 380 cst Seattle
- Bunker 0.5%S 380 cst Los Angeles

See the [Argus Marine Fuels methodology](#).

NGLs (including butane)

Argus US Products includes natural gas liquids price assessments published in Argus NGL Americas.

- Natural gasoline Mt Belvieu Enterprise month
- Butane refinery grade New York Harbor

See the [Argus NGL Americas methodology](#).

Emissions

Argus US Products includes emissions price assessments published in Argus Air Daily.

- California Carbon allowance (CCA)
- California carbon price for gasoline, diesel
- Quebec carbon price for gasoline, diesel
- California Low-Carbon Fuel Standard (LCFS)
- Oregon Low-Carbon Fuel Standard (LCFS)
- LCFS premium per carbon intensity point
- California LCFS cost for gasoline, diesel
- California LCFS CI crude deficit cost for carbob, diesel

See the [Argus Air Daily methodology](#).

Diesel exhaust fluid

Argus US Products includes diesel exhaust fluid (DEF) price assessments published in Argus DEF Weekly.

- DEF bulk Atlanta fot
- DEF bulk Chicago fot
- DEF bulk Dallas fot

- DEF bulk Denver fot
- DEF bulk Los Angeles fot
- DEF bulk Philadelphia fot

See the [Argus DEF Weekly methodology](#).

MTBE

Argus US Products includes MTBE price assessments published in Argus Fuels and Octane.

- MTBE fob US Gulf coast

See the [Argus Fuels and Octane methodology](#).

Snapshot prices

Argus US Products includes a set of moment-in-time snapshot differential price assessments. Snapshot differentials are assessed at 8:00am, 10:30am, 1:30pm, and 2:30pm timestamps and are published for US gasoline, diesel, heating oil, ethanol and RIN markets.

See the [Argus US Products - Spot Ticker methodology](#).

Posted prices

Argus publishes Paria's wholesale posted prices for 92 Ron and 95 Ron gasoline, 0.1%S gasoil, jet/kerosine and fuel oil at Pointe-a-Pierre, Trinidad and Tobago.

Posted prices are published when updated. Prices are stored and labelled with the date on which they came into effect. The most recent updates and their effective dates are published in the print edition of Argus US Products.

Specifications						
Assessment	Volume (bl)		Basis	Timing	As differential to	Quality specification
	min	max				
Gasoline						
Atlantic coast gasoline - waterborne						
87 conv inc duty	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex RBOB settlement price	CPL M
Reg RBOB inc duty	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex RBOB settlement price	CPL F
Prem RBOB inc duty	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex RBOB settlement price	CPL H
93 conv inc duty	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex RBOB settlement price	CPL V
Boston reg RBOB	200,000	350,000	delivered Boston, MA	5-15 days forward	CME Nymex RBOB settlement price	CPL F
Atlantic coast gasoline - Colonial Linden						
87 conv M	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex RBOB settlement price	CPL M
93 conv V	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex RBOB settlement price	CPL V
Reg CBOB A	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex RBOB settlement price	CPL A
Reg RBOB F	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex RBOB settlement price	CPL F
Atlantic coast gasoline - New York Barge						
Reg CBOB dead prompt	25,000	-	fob NYH	0-2 days forward	CME Nymex RBOB settlement price	CPL A
Reg CBOB prompt	25,000	-	fob NYH	3-7 days forward	CME Nymex RBOB settlement price	CPL A
Reg RBOB dead prompt	25,000	-	fob NYH	0-2 days forward	CME Nymex RBOB settlement price	CPL F
Reg RBOB prompt	25,000	-	fob NYH	3-7 days forward	CME Nymex RBOB settlement price	CPL F
Reg RBOB XX days forward	25,000	-	fob NYH	XX days forward	CME Nymex RBOB settlement price	CPL F
Reg RBOB any month	25,000	-	fob NYH	End of the month	CME Nymex RBOB settlement price	CPL F
Prem CBOB dead prompt	25,000	-	fob NYH	0-2 days forward	CME Nymex RBOB settlement price	CPL D
Prem CBOB prompt	25,000	-	fob NYH	3-7 days forward	CME Nymex RBOB settlement price	CPL D
Prem RBOB dead prompt	25,000	-	fob NYH	0-2 days forward	CME Nymex RBOB settlement price	CPL H
Prem RBOB prompt	25,000	-	fob NYH	3-7 days forward	CME Nymex RBOB settlement price	CPL H
Prem RBOB XX days forward	25,000	-	fob NYH	XX days forward	CME Nymex RBOB settlement price	CPL H
Atlantic coast gasoline - Buckeye						
Reg CBOB dead prompt	10,000	-	fob Buckeye pipeline in NYH	0-2 days forward	CME Nymex RBOB settlement price	BPL CBOB spec for named RVP
Reg CBOB prompt	10,000	-	fob Buckeye pipeline in NYH	3-7 days forward	CME Nymex RBOB settlement price	BPL CBOB spec for named RVP
Reg RBOB dead prompt	10,000	-	fob Buckeye pipeline in NYH	0-2 days forward	CME Nymex RBOB settlement price	BPL RBOB spec for named RVP
Reg RBOB prompt	10,000	-	fob Buckeye pipeline in NYH	3-7 days forward	CME Nymex RBOB settlement price	BPL RBOB spec for named RVP
Prem CBOB dead prompt	10,000	-	fob Buckeye pipeline in NYH	0-2 days forward	CME Nymex RBOB settlement price	BPL Prem CBOB spec for named RVP
Prem CBOB prompt	10,000	-	fob Buckeye pipeline in NYH	3-7 days forward	CME Nymex RBOB settlement price	BPL Prem CBOB spec for named RVP
Prem RBOB dead prompt	10,000	-	fob Buckeye pipeline in NYH	0-2 days forward	CME Nymex RBOB settlement price	BPL Prem RBOB spec for named RVP
Prem RBOB prompt	10,000	-	fob Buckeye pipeline in NYH	3-7 days forward	CME Nymex RBOB settlement price	BPL Prem RBOB spec for named RVP

Specifications						
Assessment	Volume (bl)		Basis	Timing	As differential to	Quality specification
	min	max				
Atlantic coast gasoline - Laurel						
Reg CBOB	10,000	-	fob Laurel pipeline in Philadelphia	3-7 days forward	CME Nymex RBOB settlement price	BPL CBOB spec for named RVP
Prem CBOB	10,000	-	fob Laurel pipeline in Philadelphia	3-7 days forward	CME Nymex RBOB settlement price	BPL Prem CBOB spec for named RVP
Gulf coast gasoline - Waterborne						
Reg CBOB A	200,000	250,000	fob USGC	5-15 days forward	CME Nymex RBOB settlement price	CPL A
87 conv M	200,000	250,000	fob USGC	5-15 days forward	CME Nymex RBOB settlement price	CPL M
Prem CBOB D	200,000	250,000	fob USGC	5-15 days forward	CME Nymex RBOB settlement price	CPL D
93 conv V	200,000	250,000	fob USGC	5-15 days forward	CME Nymex RBOB settlement price	CPL V
Gulf coast gasoline - eastern Texas						
Reg Texas CBOB	25,000		fob Houston/Pasadena	5-15 days forward	CME Nymex RBOB settlement price	Conforms to standards for east Texas regular CBOB before being blended with 10pc ethanol.
Prem Texas CBOB	25,000		fob Houston/Pasadena	5-15 days forward	CME Nymex RBOB settlement price	Conforms to standards for east Texas premium CBOB before being blended with 10pc ethanol.
Gulf coast gasoline - Colonial						
87 conv M	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex RBOB settlement price	CPL M
Reg RBOB F	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex RBOB settlement price	CPL F
Reg CBOB A	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex RBOB settlement price	CPL A
Prem CBOB D	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex RBOB settlement price	CPL D
93 conv V	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex RBOB settlement price	CPL V
Prem RBOB	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex RBOB settlement price	CPL H
Gulf coast gasoline - Colonial line space						
Colonial Line Space	25,000	-	off named line	Named cycle	Colonial fob Pasadena	na
Midcontinent gasoline - Group 3						
Suboctane prompt	10,000	-	fob Magellan pipeline at Tulsa, OK	0-2 days forward	CME Nymex RBOB settlement price	MPL V
Suboctane any month	10,000	-	fob Magellan pipeline at Tulsa, OK	End of the month	CME Nymex RBOB settlement price	MPL V
91 conv prompt	10,000	-	fob Magellan pipeline at Tulsa, OK	0-2 days forward	CME Nymex RBOB settlement price	MPL A

Specifications						
Assessment	Volume (bl)		Basis	Timing	As differential to	Quality specification
	min	max				
Midcontinent gasoline - Chicago						
Reg CBOB	10,000	-	fob West Shore and Badger pipelines	Named cycle	CME Nymex RBOB settlement price	Regular CBOB
Reg CBOB BCX	10,000	-	fob Buckeye Complex (BCX)	Named cycle	CME Nymex RBOB settlement price	Buckeye reg CBOB spec for named RVP
Reg CBOB Wolverine	10,000	-	fob Wolverine pipeline	Named cycle	CME Nymex RBOB settlement price	Regular CBOB
87 conv	10,000	-	fob West Shore and Badger pipelines	Named cycle	CME Nymex RBOB settlement price	conforms to ASTM D4814 and EPA regulations in 40 CFR Part 80
91 conv	10,000	-	fob West Shore and Badger pipelines	Named cycle	CME Nymex RBOB settlement price	conforms to ASTM D4814 and EPA regulations in 40 CFR Part 80
91 conv BCX	10,000	-	fob Buckeye Complex (BCX)	Named cycle	CME Nymex RBOB settlement price	Buckeye reg 91 conv spec for named RVP
91 conv Wolverine	10,000	-	fob Wolverine pipeline	Named cycle	CME Nymex RBOB settlement price	conforms to ASTM D4814 and EPA regulations in 40 CFR Part 80
Reg RBOB	10,000	-	fob West Shore and Badger pipelines	Named cycle	CME Nymex RBOB settlement price	84.6 octane RBOB - conforms to ASTM D4806 and EPA regulations in 40 CFR Part 80.46
Reg RBOB BCX	10,000	-	fob Buckeye Complex (BCX)	Named cycle	CME Nymex RBOB settlement price	84.6 octane RBOB - conforms to ASTM D4806 and EPA regulations in 40 CFR Part 80.46
Prem RBOB	10,000	-	fob West Shore and Badger pipelines	Named cycle	CME Nymex RBOB settlement price	91.3 octane RBOB - conforms to ASTM D4814 and EPA regulations in 40 CFR Part 80
Prem RBOB	10,000	-	fob Buckeye Complex (BCX)	Named cycle	CME Nymex RBOB settlement price	91.3 octane RBOB - conforms to ASTM D4814 and EPA regulations in 40 CFR Part 80
Midcontinent gasoline - Detroit						
Reg Detroit CBOB	10,000		fob Wolverine pipeline	Named cycle		Conforms to standards for Detroit area regular CBOB before being blended with 10pc ethanol.
Prem Detroit CBOB	10,000		fob Wolverine pipeline	Named cycle		Conforms to standards for Detroit area premium CBOB before being blended with 10pc ethanol.
West coast gasoline - Los Angeles						
Reg CARBOB	10,000		fob Kinder Morgan West Line Watson, CA	any time during the named month at buyer's option; excluding specified delivery times	CME Nymex RBOB settlement price	Kinder Morgan A
Prem CARBOB	10,000		fob Kinder Morgan West Line Watson, CA	any time during the named month at buyer's option; excluding specified delivery times	LA reg CARBOB	Kinder Morgan B
Suboctane	10,000		fob Kinder Morgan West Line Watson, CA	any time during the named month at buyer's option; excluding specified delivery times	CME Nymex RBOB settlement price	Kinder Morgan H
Reg AZRBOB	10,000		fob Kinder Morgan West Line Watson, CA	any time during the named month at buyer's option; excluding specified delivery times	LA reg CARBOB	AZRBOB - Kinder Morgan X
Prem AZRBOB	10,000		fob Kinder Morgan West Line Watson, CA	any time during the named month at buyer's option; excluding specified delivery times	LA reg CARBOB	AZRBOB - Kinder Morgan Z
West coast gasoline - San Francisco						
Reg CARBOB	10,000	-	fob Kinder Morgan North/Zero Line Concord, CA	any time during the named month at buyer's option; excluding specified delivery times	CME Nymex RBOB settlement price	Kinder Morgan A
Prem CARBOB	10,000	-	fob Kinder Morgan North/Zero Line Concord, CA	any time during the named month at buyer's option; excluding specified delivery times	SF reg CARBOB	Kinder Morgan B

Specifications						
Assessment	Volume (bl)		Basis	Timing	As differential to	Quality specification
	min	max				
West coast gasoline - Portland						
Suboctane	5,000	-	delivered Portland via Olympic Pipeline	1-4 days forward	CME Nymex RBOB settlement price	84 octane - conforms to ASTM D4814 and EPA regulations in 40 CFR Part 80
West coast gasoline - Waterborne						
San Francisco Reg CARBOB	275,000	325,000	fob San Francisco	Named month	CME Nymex RBOB settlement price	Kinder Morgan A
Distillates						
Atlantic coast distillates - Waterborne						
Heating oil	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex ULSD settlement price	CPL 77
ULSD	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex ULSD settlement price	CPL 62
Jet	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex ULSD settlement price	CPL 54
Kerosine	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex ULSD settlement price	CPL 55
ULSK	200,000	350,000	delivered NYH	5-15 days forward	CME Nymex ULSD settlement price	CPL 51
Boston ULSHO*	200,000	350,000	delivered Boston, MA	5-15 days forward	CME Nymex ULSD settlement price	CPL 67
Atlantic coast distillates - New York Barge						
Heating oil prompt	25,000	-	fob NYH	3-7 days forward	CME Nymex ULSD settlement price	CPL 77
Heating oil XX days forward	25,000	-	fob NYH	XX days forward	CME Nymex ULSD settlement price	CPL 77
Heating oil any month	25,000	-	fob NYH	End of the month	CME Nymex ULSD settlement price	CPL 77
ULSHO	25,000	-	fob NYH	3-7 days forward	CME Nymex ULSD settlement price	CPL 67
HO 500ppm	25,000	-	fob NYH	3-7 days forward	CME Nymex ULSD settlement price	CPL 75
ULSD prompt	25,000	-	fob NYH	3-7 days forward	CME Nymex ULSD settlement price	CPL 62
ULSD XX days forward	25,000	-	fob NYH	XX days forward	CME Nymex ULSD settlement price	CPL 62
ULSD any month	25,000	-	fob NYH	End of the month	CME Nymex ULSD settlement price	CPL 62
Jet prompt	25,000	-	fob NYH	3-7 days forward	CME Nymex ULSD settlement price	CPL 54
Jet XX days forward	25,000	-	fob NYH	XX days forward	CME Nymex ULSD settlement price	CPL 54
Kerosine prompt	25,000	-	fob NYH	3-7 days forward	CME Nymex ULSD settlement price	CPL 55
Kerosine XX days forward	25,000	-	fob NYH	XX days forward	CME Nymex ULSD settlement price	CPL 55
ULSK	25,000	-	fob NYH	3-7 days forward	CME Nymex ULSD settlement price	CPL 51
Marine gasoil	40,000	100,000	fob NYH	3-7 days forward	CME Nymex ULSD settlement price	0.5% sulphur max, otherwise conforms to ISO 8217 2010 Marine Distillate DMA standard

Specifications						
Assessment	Volume (bl)		Basis	Timing	As differential to	Quality specification
	min	max				
Atlantic coast distillates - Buckeye						
ULSHO	10,000	-	fob Buckeye pipeline at NYH	3-7 days forward	CME Nymex ULSD settlement price	BPL 164
HO 500ppm	10,000	-	fob Buckeye pipeline at NYH	3-7 days forward	CME Nymex ULSD settlement price	BPL 169
ULSD	10,000	-	fob Buckeye pipeline at NYH	3-7 days forward	CME Nymex ULSD settlement price	BPL 190
Jet	10,000	-	fob Buckeye pipeline at NYH	3-7 days forward	CME Nymex ULSD settlement price	BPL 182
Kerosine	10,000	-	fob Buckeye pipeline at NYH	3-7 days forward	CME Nymex ULSD settlement price	BPL 152
*3,000ppm prior to 2014, <500ppm between 2014-2018, ULSHO since 2018						
Atlantic coast distillates - Laurel						
ULSHO	10,000		fob Laurel pipeline at Philadelphia	3-7 days forward	CME Nymex ULSD settlement price	BPL 164
HO 500ppm	10,000	-	fob Laurel pipeline at Philadelphia	3-7 days forward	CME Nymex ULSD settlement price	BPL 169
ULSD	10,000	-	fob Laurel pipeline at Philadelphia	3-7 days forward	CME Nymex ULSD settlement price	BPL 190
Jet	10,000	-	fob Laurel pipeline at Philadelphia	3-7 days forward	CME Nymex ULSD settlement price	BPL 182
Atlantic coast distillates - Colonial Linden						
ULSHO	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex ULSD settlement price	CPL 67
HO 500ppm	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex ULSD settlement price	CPL 75
HO	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex ULSD settlement price	CPL 77
ULSD	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex ULSD settlement price	CPL 62
Jet	25,000	-	delivered Linden, NJ off Colonial pipeline	Named cycle	CME Nymex ULSD settlement price	CPL 54
Gulf coast distillates - Waterborne						
Heating oil	200,000	250,000	fob US Gulf coast	5-15 days forward	CME Nymex ULSD settlement price	CPL 77
ULSD	200,000	250,000	fob US Gulf coast	5-15 days forward	CME Nymex ULSD settlement price	CPL 62
Jet	200,000	250,000	fob US Gulf coast	5-15 days forward	CME Nymex ULSD settlement price	CPL 54
Kerosine	200,000	250,000	fob US Gulf coast	5-15 days forward	CME Nymex ULSD settlement price	CPL 55
Gulf coast distillates - Colonial						
ULSHO	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex ULSD settlement price	CPL 67
Heating oil	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex ULSD settlement price	CPL 77
ULSD	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex ULSD settlement price	CPL 62
Jet	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex ULSD settlement price	CPL 54
Kerosine	25,000	-	fob Colonial pipeline at Pasadena, TX	Named cycle	CME Nymex ULSD settlement price	CPL 55
Gulf coast distillates - Colonial line space						
Distillates line	25,000	-	off named line	Named cycle	Colonial fob Pasadena	na

Specifications						
Assessment	Volume (bl)		Basis	Timing	As differential to	Quality specification
	min	max				
Midcontinent distillates - Group 3						
ULSD prompt	10,000	-	fob Magellan pipeline at Tulsa, OK	0-2 days forward	CME Nymex ULSD settlement price	MPL X
ULSD any month	10,000	-	fob Magellan pipeline at Tulsa, OK	Named month	CME Nymex ULSD settlement price	MPL X
Jet	10,000	-	fob Magellan pipeline at Tulsa, OK	0-2 days forward	CME Nymex ULSD settlement price	MPL Q
ULSK	10,000	-	fob Magellan pipeline at Tulsa, OK	0-2 days forward	CME Nymex ULSD settlement price	MPL Y
Midcontinent distillates - Chicago						
ULSD	10,000	-	fob West Shore and Badger pipelines	Named cycle	CME Nymex ULSD settlement price	15ppm max sulphur
ULSD BCX	10,000	-	fob Buckeye Complex (BCX)	Named cycle	CME Nymex ULSD settlement price	15ppm max sulphur
ULSD Wolverine	10,000	-	fob Wolverine pipeline	Named cycle	CME Nymex ULSD settlement price	15ppm max sulphur
Jet	10,000	-	fob West Shore and Badger pipelines	Named cycle	CME Nymex ULSD settlement price	108°F flash min, 3,000ppm max sulphur, and -40°C max freeze point
ULSK	10,000	-	fob West Shore and Badger pipelines	Named cycle	CME Nymex ULSD settlement price	10ppm sulphur, min 35°API, 125-160°F flash point
West coast distillates - Los Angeles						
CARB ULSD	10,000	-	fob Kinder Morgan West Line Watson, CA	Any time during the named month at buyer's option; excluding specified delivery times	CME Nymex ULSD settlement price	Kinder Morgan 80
EPA ULSD	10,000	-	fob Kinder Morgan West Line Watson, CA	Any time during the named month at buyer's option; excluding specified delivery times	CME Nymex ULSD settlement price	Kinder Morgan 84
Jet	10,000	-	fob Kinder Morgan West Line Watson, CA	Any time during the named month at buyer's option; excluding specified delivery times	CME Nymex ULSD settlement price	Kinder Morgan 15
West coast distillates - Los Angeles LAX						
Jet	10,000	-	fob LAX, Los Angeles, CA	Any time during the named month at buyer's option; excluding specified delivery times	CME Nymex ULSD settlement price	Kinder Morgan 15
West coast distillates - San Francisco						
CARB ULSD	10,000	-	fob Kinder Morgan North/Zero Line Concord, CA	Any time during the named month at buyer's option; excluding specified delivery times	CME Nymex ULSD settlement price	Kinder Morgan 80
EPA ULSD	10,000	-	fob Kinder Morgan North/Zero Line Concord, CA	Any time during the named month at buyer's option; excluding specified delivery times	CME Nymex ULSD settlement price	Kinder Morgan 84
Jet	10,000	-	fob Kinder Morgan North/Zero Line Concord, CA	Any time during the named month at buyer's option; excluding specified delivery times	CME Nymex ULSD settlement price	Kinder Morgan 15
West coast distillates - Portland						
ULSD	5,000	-	delivered Portland via Olympic Pipeline	1-4 days forward	CME Nymex ULSD settlement price	8ppm max sulphur
West coast distillates - waterborne						
San Francisco CARB ULSD	275,000	325,000	fob San Francisco	Named month	CME Nymex ULSD settlement price	Kinder Morgan 80

Specifications						
Assessment	Volume (bl)		Basis	Timing	As differential to	Quality specification
	min	max				
Blendstocks, feedstocks and fuel oil						
Blendstocks - Alkylate						
NY barge ex duty	10,000	-	fob NYH	5-15 days forward	CME Nymex RBOB settlement price	92.5 octane min, 5.5 RVP, 0pc oxygen by weight
Houston	10,000	-	fob Houston	5-15 days forward	Argus USGC Colonial 87 conv M NLT 9 RVP - midpoint	92 octane min, 5.5 RVP, 0pc oxygen by weight
Blendstocks - Raffinate						
Houston	10,000	-	fob Houston	5-15 days forward	Argus USGC Colonial 87 conv M NLT 9 RVP - midpoint	60-70° API, 5.0-6.0 RVP, 60-65 octane, 20ppm S max
Blendstocks - Reformate						
NY barge ex duty	10,000	-	fob NYH	5-15 days forward	CME Nymex RBOB settlement price	1.0-1.2 RVP, 100.5 octane, 20ppm sulphur max
Houston	10,000	-	fob Houston	5-15 days forward	Argus USGC Colonial 87 conv M NLT 9 RVP - midpoint	1.0 RVP, 100 octane, 30ppm S max
Vacuum gasoil - Gulf coast						
0.5% cargo	150,000	400,000	delivered USGC*	3-20 days forward	CME Nymex WTI settlement price†	0.5% sulphur max, 175 min aniline, 1,100ppm nitrogen, 20° min API, max 1ppm metals (vanadium, sodium, iron, copper, and nickel), 0.5 CCR max
0.5% barge	40,000	100,000	delivered USGC*	3-15 days forward	CME Nymex WTI settlement price†	0.5% sulphur max, 175 min aniline, 1,100ppm nitrogen, 20° min API, max 1ppm metals (vanadium, sodium, iron, copper, and nickel), 0.5 CCR max
1% cargo	150,000	400,000	delivered USGC*	3-20 days forward	CME Nymex WTI settlement price†	1% sulphur max, 170 min aniline, 1,300ppm nitrogen, 20° min API, max 1ppm metals (vanadium, sodium, iron, copper, and nickel), 0.5 CCR max
1% barge	40,000	100,000	delivered USGC*	3-15 days forward	CME Nymex WTI settlement price†	1% sulphur max, 170 min aniline, 1,300ppm nitrogen, 20° min API, max 1ppm metals (vanadium, sodium, iron, copper, and nickel), 0.5 CCR max
2% cargo	150,000	400,000	delivered USGC*	3-20 days forward	CME Nymex WTI settlement price†	2% sulphur max, 165 min aniline, 1,500ppm nitrogen, 18° min API, max 1ppm metals (vanadium, sodium, iron, copper, and nickel), 0.5 CCR max
2% barge	40,000	100,000	delivered USGC*	3-15 days forward	CME Nymex WTI settlement price†	2% sulphur max, 165 min aniline, 1,500ppm nitrogen, 18° min API, max 1ppm metals (vanadium, sodium, iron, copper, and nickel), 0.5 CCR max
*Houston, Beaumont, Texas City, and Port Arthur						
† assessed prices include market activity against an Ice Brent basis						
Naphtha barge - Gulf coast						
Heavy naphtha (40 N+A)	25,000	100,000	delivered USGC*	5-15 days forward	USGC waterborne 87 conv M NLT 9 RVP	40% naphthenes + aromatics min, 150°F IBP, 170 min 10% distillation, 57-60°API
Full range naphtha	25,000	100,000	delivered USGC*	5-15 days forward	USGC waterborne 87 conv M NLT 9 RVP	38% naphthenes + aromatics min, 110°F IBP, 170 min 10% distillation, 61-64°API
LSR/LV naphtha	25,000	100,000	delivered USGC*	5-15 days forward	Argus Mont Belvieu natural gasoline (midpoint)	70% paraffins min, 84° API min, 12-14 RVP, 70-75 octane
*Houston, Beaumont, Texas City, and Port Arthur						

Specifications						
Assessment	Volume (bl)		Basis	Timing	As differential to	Quality specification
	min	max				
Light cycle oil (LCO)						
0.5% sulphur	25,000	100,000	delivered USGC*	5-15 days forward	Argus USGC Colonial heating oil (midpoint)	0.5% sulphur max, 20°API max, 30 cetane, 3.0 max color, 150°F min flash point
2% sulphur	25,000	100,000	delivered USGC*	5-15 days forward	Argus USGC Colonial heating oil (midpoint)	2% sulphur max, 20°API max, 30 cetane, 3.0 max color, 150°F min flash point
*Note: USGC is Houston, Beaumont, Texas City, and Port Arthur						
Residual fuel oil - New York waterborne						
New York waterborne 0.3% low pour	45,000	350,000	delivered NYH	5-20 days forward	NA	min 10°API, 60°F max pour, 1,000 max SSU
New York waterborne 0.3% high pour	45,000	350,000	delivered NYH	5-20 days forward	NA	min 10°API, 60°F min pour, 300 SSF max, 149,000 min Btus
New York waterborne 0.5%, \$/bl	40,000	100,000	delivered NYH	5-20 days forward	NA	0.5% sulphur max, 991kg/m ³ density max at 15°C, 380mm ² /s viscosity max at 50°C, 60°C flash point max, 30°C pour point max, 0.1% ash max, 350ppm vanadium max, 60ppm aluminium plus silicon max, 0.5% water max
New York waterborne 0.5%, \$/t	5,500t	16,000t	delivered NYH	5-20 days forward	NA	0.5% sulphur max, 991kg/m ³ density max at 15°C, 380mm ² /s viscosity max at 50°C, 60°C flash point max, 30°C pour point max, 0.1% ash max, 350ppm vanadium max, 60ppm aluminium plus silicon max, 0.5% water max
New York waterborne 1%	45,000	350,000	delivered NYH	5-20 days forward	NA	min 10°API, 300 SSF max, 151,000 min Btus
New York waterborne 3%	45,000	350,000	delivered NYH	5-20 days forward	NA	min 10°API, 200-250 SSF, 100 max aluminum and silicon
Residual fuel oil - Gulf coast waterborne						
Gulf coast waterborne 0.5%, \$/bl	40,000	100,000	fob Houston; all other US Gulf coast locations may be normalized back to fob Houston	5-15 days forward	NA	sulphur 0.5%, meets ISO 8217 2010 RMG specifications
Gulf coast waterborne 0.5%, \$/t	5,500t	16,000t	fob Houston; all other US Gulf coast locations may be normalized back to fob Houston	5-15 days forward	NA	sulphur 0.5%, meets ISO 8217 2010 RMG specifications
Gulf coast waterborne 3%	40,000	350,000	fob Houston or Mississippi river	5-15 days forward	NA	min 10°API, 200-250 SSF, 100 max vanadium
Gulf coast waterborne RMG	40,000	350,000	fob Houston or Mississippi river	5-15 days forward	NA	3.5% sulphur max, 11.2°API min, 380 cst max viscosity, 300ppm max vanadium