

**IN THE UNITED STATES BANKRUPTCY COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS  
HOUSTON DIVISION**

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In re:	)	Chapter 11
	)	
ULTRA PETROLEUM CORP, <i>et al.</i> , <sup>1</sup>	)	Case No. 16-32202 (MI)
	)	
Debtors.	)	(Jointly Administered)
<hr/>	)	

**OBJECTION OF CROSS SOUND MANAGEMENT  
LLC TO DEBTORS' IMPLEMENTATION OF SECOND  
AMENDED JOINT CHAPTER 11 PLAN OF REORGANIZATION**

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<sup>1</sup> The Debtors in these chapter 11 cases, along with the last four digits of each Debtor's federal tax identification number (if any), are: Ultra Petroleum Corp. (3838); Keystone Gas Gathering, LLC; Ultra Resources, Inc. (0643); Ultra Wyoming, Inc. (6117); Ultra Wyoming LGS, LLC (0378); UP Energy Corporation (4296); UPL Pinedale, LLC (7214); and UPL Three Rivers Holdings, LLC (7158).

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Cross Sound Management LLC (“**Cross Sound**”) does not object to the terms of the Second Amended Joint Chapter 11 Plan of Reorganization (the “**Plan**”)<sup>2</sup> for Ultra Petroleum Corp. (“**HoldCo**”) and its affiliated Debtors (collectively, the “**Debtors**”). Rather, Cross Sound objects to the Debtors’ proposed implementation of the Plan, and particularly the Debtors’ erroneous determination of “Settlement Plan Value HH Strip Price” and “Settlement Plan Value” (*i.e.*, total enterprise value) as defined in the Plan. Cross Sound is a holder of notes issued by HoldCo (“**HoldCo Notes**”). Cross Sound holds no other type of claim or interest in the Debtors and is not a party to any Plan Support Agreement.

In support of its objection, Cross Sound also files the Expert Report of John P. Davidson, dated March 4, 2017, attached hereto as Appendix A.

## I. PRELIMINARY STATEMENT

Pursuant to the Plan, new HoldCo equity will be distributed to HoldCo Noteholders and HoldCo Equityholders based upon “Settlement Plan Value” and “Settlement Plan Value HH Strip Price,” which are defined as:

- “**Settlement Plan Value**” means: (i) \$6 billion, in the event that the Settlement Plan Value HH Strip Price is in the range of \$3.25 to \$3.65; (ii) \$5.5 billion, in the event that the Settlement Plan Value HH Strip Price is below \$3.25; or (iii) \$6.25 billion, in the event that the Settlement Plan Value HH Strip Price is above \$3.65.
- “**Settlement Plan Value HH Strip Price**” means the average of the *closing* HH Strip Price [the 12-month forward Henry Hub natural gas strip price] for the seven (7) *trading days* preceding the Subscription Commencement Date.<sup>3</sup>

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<sup>2</sup> Capitalized terms used but not defined herein have the meanings given to them in the Plan.

<sup>3</sup> See Plan Art. I, § 1.1, 190-191, p. 15 (defining “Settlement Plan Value” and “Settlement Plan Value HH Strip Price”) (emphasis added); *id.* § 1.1, 88, p. 8 (defining “HH Strip Price”). All natural gas price data is expressed in \$/MMBtu.

The Court has determined that the Subscription Commencement Date will be February 21, 2017. Although the Debtors' Rights Offering Procedures solicitation documents do not specify a Settlement Plan Value, Cross Sound understands that the Debtors have determined that the Settlement Plan Value will be \$6.0 billion. Based upon a review of the closing HH Strip Price for the 7 trading days preceding the Subscription Commencement Date, however, Cross Sound has determined that the Settlement Plan Value HH Strip Price was \$3.21, and accordingly the Settlement Plan Value must be \$5.5 billion.

The Debtors appear to have taken the position that February 20 (Presidents' Day) should be excluded from the 7 trading day period used to determine Settlement Plan Value HH Strip Price, and that instead the price data on the following dates should be used to calculate the average price: (1) February 9; (2) February 10; (3) February 13, (4) February 14, (5) February 15; (6) February 16; and (7) February 17.<sup>4</sup>

Cross Sound disagrees with this approach—the relevant dates for calculation of the Settlement Plan Value HH Strip Price should be: (1) February 10; (2) February 13; (3) February 14; (4) February 15; (5) February 16; (6) February 17; and (7) February 20.

Although Presidents' Day was not a "business day," it was a "trading day": the New York Mercantile Exchange ("NYMEX") was open for energy futures trading, and substantial trading of the Henry Hub natural gas futures contracts that comprise the 12-month forward strip price occurred on that day. There was no "settlement price" on Presidents' Day—merely because it was not a business day and financial institutions were closed. There was, however, a "closing price" for each of these contracts when trading ceased at 12:00 pm CT. The Plan definition of Settlement Plan Value HH Strip Price does not use the terms "business day" or

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<sup>4</sup> Cross Sound does not use the word "appear" flippantly—the Debtors have never disclosed in a filing with this Court or with the SEC their determination of Settlement Plan Value HH Strip Price or the methodology underlying their determination.

“settlement price.” Rather, the definition uses the terms “trading day” and “closing price.” Presidents’ Day was in fact a trading day and there was in fact a closing price for each of the relevant futures contracts; therefore, closing prices from February 20 should be included in the 7-day average, and data from February 9 should be excluded. Settlement Plan Value should be \$5.5 billion. This should be the end of the analysis.

A well-known canon of construction instructs that the plain and ordinary meaning of the words on the paper is the best evidence of intent. It is particularly important to apply that canon here.

First, a Settlement Plan Value of \$5.5 billion most closely reflects the Debtors’ own most current midpoint valuation of their estate—\$5.595 million.<sup>5</sup> The Debtors’ proposed \$6 billion Settlement Plan Value would result in a substantial windfall for HoldCo Equityholders. Indeed, if the Debtors’ proposed Settlement Plan Value is implemented, Cross Sound estimates that more than \$300 million of value will be transferred from HoldCo Noteholders to HoldCo Equityholders. Thus, not only does a \$5.5 billion Settlement Plan Value comport with the Plan’s plain language, but it also is fair.

Second, adhering to the plain language ensures that creditors’ rights are protected. The creditors were asked to vote on a Plan that uses the terms “trading day” and “closing price,” and those terms result in a \$5.5 billion Settlement Plan Value. Any other result would be materially different than the Plan and Disclosure Statement that were provided to creditors for solicitation.

Third, the Debtors are not in a position to objectively decide this issue, given that they are led by a management team (and Board) owning a significant amount of HoldCo Equity. The

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<sup>5</sup> See Petrie Partners Expert Report, February 17, 2017 at 33 [ECF 1218-3]. Petrie’s “Sensitivity Case” midpoint TEV of \$5.595 billion reflects strip prices on 2/14/17. The previous midpoint TEV of \$5.949 billion reflected strip prices on 10/12/16.

Ad Hoc Committee of Equityholders (who collectively hold 27% of the total outstanding HoldCo shares) [ECF 884] will fight vigorously to defend their anticipated windfall. And, the Ad Hoc Committee of Noteholders, as reflected by their Rule 2019 statement [ECF 883], includes HoldCo Noteholders who collectively own 44.3 million shares (29% of the total outstanding shares) of HoldCo Equity. Together, management and the two Ad Hoc Committees own approximately *60% of the total outstanding shares of HoldCo equity*. No party is protecting the interests of a dispersed body of smaller, unrepresented noteholders who, nevertheless, in the aggregate own several hundred million dollars of HoldCo Notes. That job has fallen to Cross Sound.

In addition to the Plan's plain language, Cross Sound will present the expert testimony of a former managing director of NYMEX's owner, the CME Group, with more than 30 years of experience in the global financial services industry and who was instrumental in developing and implementing the CME Globex electronic trading platform. The expert will describe the advent of electronic trading and its eventual replacement of "open outcry" trading. He will explain to the Court the important distinctions between "trading days" and "business days," and "closing prices" and "settlement prices," offering the Court further evidence to enforce the Plan's plain language.

Doubtless, the Debtors will attempt to construct a parade of horrors that will befall their reorganization if February 20 trade data is included in the calculus, and if the Settlement Plan Value is \$5.5 billion. But there would be no basis for concern. Every dollar of "new money" to be invested pursuant to the Rights Offering—whether by HoldCo Noteholders or HoldCo Equityholders—will be better off with a \$5.5 billion Settlement Plan Value. That is because it will be invested at a lower—and more realistic by the Debtors' own expert admissions—

Settlement Plan Value. In any event, the Debtors' current rights offering procedures warn subscribers that the proposed \$6.0 billion "Total Enterprise Value" is "subject to the adjustment" based upon the calculation of Settlement Plan Value (*i.e.* the issue discussed herein) and, as disclosed in notices sent to creditors in connection with the Rights Offering, the Debtors have at least once already amended the price per share after the Subscription Commencement Date. Additionally, the only party who will be "worse off" will be HoldCo Equityholders—not on account of subscribing to the rights offering, but solely on account of plan recoveries on their existing equity stake. Assuming Cross Sound is correct, however, HoldCo Equityholders have no entitlement to the windfall they stand to receive if the Plan is implemented incorrectly and unlawfully.

Two important, well-settled principles of valuation cement the conclusion. First, the best indicia of fair value is the price a willing buyer pays a willing seller in a prudent manner. Second, recent market data is of higher quality and relevance than older, more stale market data. Each of these principles militates strongly in favor of including closing prices from February 20 (the trading day immediately preceding the rights offering Subscription Commencement Date) rather than February 9 (12 days prior to the Subscription Commencement Date) in the determination of Settlement Plan Value. The Debtors have apparently ignored the plain language of the Plan and industry custom and practice, which threatens to afford HoldCo Equityholders (and management) a windfall. The inequity of this result was recently highlighted by Debtors' *own* valuation expert, whose valuation mid-point, updated for February 14 strip pricing, is \$5.595 billion, down from \$5.949 billion.

For these reasons, Cross Sound requests that the Court confirm the Plan and order the Debtors to implement it in accordance with its plain language, resulting in a Settlement Plan Value of \$5.5 billion.

## II. STATEMENT OF FACTS<sup>6</sup>

### A. The Relevance and Meaning of Settlement Plan Value Under the Plan

Under the Plan, both HoldCo Noteholders and HoldCo Equityholders are to receive their respective pro rata share of (1) new common stock of Reorganized HoldCo and (2) subscription rights to participate in the Rights Offering contemplated by the Plan.<sup>7</sup> The division of estate value between the HoldCo Noteholders and the HoldCo Equityholders is determined by the Settlement Plan Value.<sup>8</sup>

Settlement Plan Value is not a fixed number; it could be \$5.5 billion, \$6 billion, or \$6.25 billion depending on the “average of the closing HH Strip Price [12-month forward Henry Hub natural gas strip price] for the seven (7) trading days preceding the Subscription Commencement Date.” This Court recently held that the Subscription Commencement Date—the commencement of the Rights Offering solicitation—occurred on February 21, 2017. *See* 2/21/17 Hrg. Tr. 35-37 [ECF 1192]. Thus, the Settlement Plan Value is determined by the average of the closing HH Strip Price for the seven trading days preceding February 21.

### B. Calculation of Settlement Plan Value

The seven trading days preceding February 21 are February 20, 17, 16, 15, 14, 13, and 10. On each of those days, there was trading of the futures contracts that comprise the 12-

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<sup>6</sup> Exhibits cited herein are attached to the accompanying Declaration of Emily M. Smith.

<sup>7</sup> *See* Plan Art. III, §§ 3.2(c)(3), 3.2(h)(3), pp. 20, 22.

<sup>8</sup> *See id.* Art. I, § 1.1, 91-92, 97-98, p. 8 (determining distributions of New Common Stock and Subscription Rights based on Settlement Plan Value).



month forward Henry Hub natural gas strip, and there was an ascertainable closing price for each contract for each of those days.

The closing prices for the seven trading days and their average closing price (\$/MMBtu) are:<sup>9</sup>

	2/20/17	2/17/17	2/16/17	2/15/17	2/14/17	2/13/17	2/10/17
Average	\$3.100	\$3.155	\$3.172	\$3.249	\$3.248	\$3.236	\$3.331
<b>Total Average Closing Price: \$3.21</b>							

Because the average closing price of \$3.21 is below \$3.25, the Settlement Plan Value is \$5.5 billion. See Plan Art. I, § 1.1, 190.

Utilizing “settlement prices” instead of closing prices yields the same result. As discussed below (*infra* pp. 15-16), because February 20 was a trading day, the fact that there is not a settlement price that day simply means that Settlement Plan Value is derived from the average settlement prices from the other 6 trading days preceding February 21.<sup>10</sup>

	2/20/17	2/17/17	2/16/17	2/15/17	2/14/17	2/13/17	2/10/17
Average	N/A	\$3.161	\$3.186	\$3.249	\$3.235	\$3.259	\$3.331
<b>Total Average Settlement Price: \$3.24</b>							

Under each calculus, Settlement Plan Value is \$5.5 billion because the average of the closing HH Strip Price for the seven trading days preceding February 21 is less than \$3.25.

<sup>9</sup> See Ex. B (Closing Price Data).

<sup>10</sup> See Ex. C (Settlement Price Data).

### **C. The Debtors' Erroneous Determination of Settlement Plan Value**

The Debtors have apparently calculated Settlement Plan Value to be \$6.0 billion.<sup>11</sup> Presumably, the Debtors (1) omit February 20, using instead the following days as the seven trading days preceding February 21: February 17, 16, 15, 14, 13, 10, and 9; and (2) use settlement prices rather than closing prices for those days.

The Debtors' use of settlement prices for February 9—nearly two weeks before the Subscription Commencement Date—is likely premised on the position that February 20 (Presidents' Day) was not a trading day, or that there were no settlement prices on February 20 for the contracts that comprise the 12-month forward Henry Hub natural gas strip. Debtors are incorrect on both counts. The Debtors' errors are significant because the closing HH Strip Price on February 9 was \$3.381 and the settlement price was \$3.400.<sup>12</sup> Those are substantially higher than the average of the closing prices and settlement prices for the other 6 days in the Debtors purported seven-day period, which respectively are \$3.23 (closing price) and \$3.28 (settlement price). Including the February 9 price pushes the average price above \$3.25 (barely), driving the Settlement Plan Value from \$5.5 billion to \$6 billion, and diverting a massive amount of value from HoldCo Noteholders to HoldCo Equityholders.<sup>13</sup>

### **D. The Debtors' Management and Board Own Significant Amounts of Stock**

The Debtors' Chief Executive Officer owns nearly 4 million shares, and in total the HoldCo management team and Board own over 5.1 million shares (including in-the-money

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<sup>11</sup> See Ex. A (Rights Offering Procedures), p. 4.

<sup>12</sup> As described below, a "closing price" and "settlement price" are distinct measures, and Settlement Plan Value is determined by **closing price**. See *infra* pp. 14-15.

<sup>13</sup> Were the Disclosure Statement Order not amended, and the Subscription Commencement Date determined to be February 22, February 9 would not have been included in the calculus and this issue would be moot. Cross Sound reserved on this issue in its joinder to the Noteholder Committee's motion to conform the rights offering procedures to the Court's order. See Cross Sound Joinder, at 3 n. 4 [ECF 1153]; see also 2/21/17 Hrg. Tr. 21:22-24 ("...subject to some other arguments that are not before the Court today.").

options and incentive shares). *See* Ultra Petroleum Corp. Proxy Materials for the Annual meeting on May 19, 2016, pp. 5-6. Further, pursuant to Section 4.17 of the Plan, a Management Incentive Plan reflecting 7.5% of the fully-diluted shares post-bankruptcy will be reserved for management, further diluting HoldCo Noteholder recoveries. As noted, management and the two Ad Hoc Committees collectively own approximately 60% of the outstanding HoldCo equity.

### III. ARGUMENT

#### A. The Plan Cannot be Implemented in Violation of its Express Terms

The Plan must be construed like any other contract. When interpreting the provisions of bankruptcy reorganization plans, courts “‘regularly appl[y] principles of contract interpretation to clarify the meaning of the language’ in those plans.” *Hernandez v. Larry Miller Roofing, Inc.*, 628 F. App’x 281, 285 (5th Cir. 2016), *as revised* (Jan. 6, 2016) (citing *Compton v. Anderson*, 701 F.3d 449, 457 (5th Cir. 2012)). Where the language of the contract (here, the Plan) is not ambiguous, its plain language represents the intention of the parties and must be enforced. *Kimbell Foods, Inc. v. Republic Nat’l Bank of Dall.*, 557 F.2d 491, 496 (5th Cir. 1977) (“The language of the contract, unless ambiguous, represents the intention of the parties.”).

Given their plain and ordinary meaning, the terms of the Plan are unambiguous. The Settlement Plan Value is determined by calculating “the average of the closing HH Strip Price [defined as the 12-month forward Henry Hub natural gas strip price] for the seven (7) trading days preceding the Subscription Commencement Date.”<sup>14</sup> The Debtors apparently ignore that February 20 was a trading day and that there was a closing price for Henry Hub natural gas

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<sup>14</sup> Plan Art. I, § 1.1, 191, p. 15 (defining “Settlement Plan Value HH Strip Price”) (emphasis added); *id.* § 1.1, 88, p. 8 (defining “HH Strip Price”)

futures contracts on that day, just as there was for each of the preceding 6 trading days. Critically, the Plan does not use the term “business day,” as the Debtors used in the order approving their Disclosure Statement, and the Plan does not use the term “settlement price.” The Plan cannot be implemented in this manner, but rather must be implemented in accordance with its plain language. That plain language leads to the conclusion that, when properly calculated, the Settlement Plan Value HH Strip price is \$3.21, and the Settlement Plan Value is \$5.5 billion, not \$6.0 billion.

# **1. The Debtors Incorrectly Calculate Settlement Plan Value**

## **(a) February 20 Was a Trading Day**

It cannot be disputed that on February 20, traders purchased and sold the Henry Hub<sup>15</sup> futures contracts that comprise the 12-month forward strip—there was trading. *See Trading*, Black's Law Dictionary (10th ed. 2014) (“The business of buying and selling, esp. of commodities and securities.”). That should be the end of the inquiry under the Plan’s plain language. *See, e.g., Mazzola v. Cty. of Suffolk*, 143 A.D.2d 734, 735 (N.Y. 2d Dep’t 1988) (“The words and phrases used in an agreement must be given their plain meaning so as to define the rights of the parties....”).<sup>16</sup>

That February 20 was a trading day is also confirmed by the rules and definitions of the exchange and platform on which Henry Hub futures are traded. The Court can rely upon those rules and definitions as aids to interpret the Plan. *See, e.g., In re Envirodyne Indus., Inc.*, 29 F.3d 301, 305 (7th Cir. 1994) (holding that “published materials” and other “evidence of trade usage” are “entirely appropriate for use in contract cases as interpretive aids”).

<sup>15</sup> “The Henry Hub is a physical delivery point near Erath, Louisiana, and the confluence of many interstate and intrastate natural gas pipelines. The spot price of physical delivery at the Henry Hub underpins every natural gas future on NYMEX, regardless of whether that future goes to physical delivery.” *Hershey v. Energy Transfer Partners, L.P.*, 610 F.3d 239, 242 (5th Cir. 2010) (citing *NYMEX Rulebook*, § 220.01).

<sup>16</sup> New York law governs the rights and obligations arising under the Plan. *See* Plan Art. I, § 1.4, p. 16.

Henry Hub natural gas futures are traded on NYMEX, which was acquired by and is part of CME Group.<sup>17</sup> The futures are traded on CME Globex, an electronic trading platform for futures and options, and through CME Clearport, a clearing service for OTC trades.<sup>18</sup> The hours for trading Henry Hub futures are determined by NYMEX. *See* Ex. D (NYMEX Rulebook, Ch. 220), § 220101.A.

NYMEX and CME Group define “*trading day*” as “the hours of trading as determined by the board for each contract starting with the opening of trading and ending with the close of trading for such contract.” Ex. E (NYMEX Rulebook Definitions), p. 9; Ex. F (CME Rulebook Definitions, p. 11). The term “*contract*” in this context means simply the type of product (*i.e.* the Henry Hub natural gas futures). Exs. E, F (NYMEX and CME Rulebooks Definitions) at 3 (defining “contract” to mean, depending on the context, “either a unit of trading in a particular futures, options or cleared product or a product approved and designated by the Board for trading or clearing pursuant to the rules of the Exchange”). The Rulebooks separately define “*Business Day*” to mean: “any day on which a settlement price is determined.” *Id.* at 2.

The general hours (Central Time, or “CT”) NYMEX has set for trading Henry Hub natural gas futures on CME Globex are Sunday at 5:00 p.m.—Monday at 4:00 p.m., and 5:00 p.m.—4:00 p.m. (the next day) for each weekday, ending on Friday at 4:00 p.m. *See* Ex. G (CME Energy Trading Hours), pp. 7-8. Trading of Henry Hub natural gas futures through CME Globex took place from Sunday, February 19 at 5:00 p.m. CT through Monday, February 20 at 12:00 p.m. CT.<sup>19</sup> Thus, February 20 was undoubtedly a trading day under the exchange’s own definitions—there were trading hours set and operated for the relevant contracts (*i.e.*

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<sup>17</sup> CME Group is a derivatives marketplace comprised of four different contract markets (including NYMEX).

<sup>18</sup> *See* [www.cmegroup.com/globex](http://www.cmegroup.com/globex); *see also* [www.cmegroup.com/clearport](http://www.cmegroup.com/clearport).

<sup>19</sup> *See* Ex. H (CME Group Globex Presidents’ Day Schedule). Henry Hub futures are under the category of “energy” trading.

products), which in this case were Henry Hub natural gas futures, and trades were made during that time. *See* Ex. B (Closing Price Data).

The fact that the hours for February 20 were four hours shorter than the typical weekday hours set by NYMEX (*i.e.* trading went until 12:00 p.m. CT instead of until 4:00 p.m. CT) is irrelevant. The trading day was still 19 hours long, and there is nothing in the term “trading day” as used in the Plan or in the NYMEX and CME Rulebooks that requires a trading day to be a certain length. To the contrary, NYMEX and the CME define trading day in terms of *whatever* hours are set for trading.

Nor does the term “*trading day*” exclude holidays. CME Group—which includes NYMEX—“observes 11 U.S.-recognized holidays,” and states that “[o]n these holidays, *trading hours may vary* depending on markets traded.” *See* Ex. I (CME Group Holiday Calendar) (emphasis added). CME Group further states that “opening and closing times may be affected on the holiday, as well as the business days prior to or after a holiday.” *Id.* Thus, as CME Group recognizes, trading hours *varied* on Presidents’ Day, but trading was open and took place.<sup>20</sup> CME Group and NYMEX recognize that on certain holidays, like Presidents’ Day, the close of trading is simply earlier than a “normal trading day.”<sup>21</sup> This contrasts with New Year’s Day, a more globally recognized holiday, when trading of Henry Hub natural gas futures on CME Globex *was in fact closed*. *See* Ex. K (CME Group Globex New Year’s Day Schedule). Indeed, unlike trading for Henry Hub natural gas futures on NYMEX (CME Globex), other

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<sup>20</sup> The CME Globex Reference Guide also supports that holidays can still be trading days: “Special holiday trading hours are available at [cmegroup.com/holiday](http://cmegroup.com/holiday).” *See* Ex. J (CME Globex Reference Guide), p. 9.

<sup>21</sup> *See* <http://www.cmegroup.com/market-data/settlements/settlements-details.html> (“Time range in which the relevant data is utilized to derive the daily settlement *on normal trading days*. For all Holidays in which *the Trading Floors close early*, these times will be adjusted to reflect those early closes.”) (emphasis added).

exchanges—including the New York Stock Exchange and Nasdaq—*were actually closed* for trading on February 20 in observance of Presidents’ Day.<sup>22</sup>

**(b) February 20 Was a Trading Day Regardless of When Trades Settled for That Date**

The fact that trades for Henry Hub futures did not “settle” on February 20 is irrelevant. Trading and settlement are distinct concepts. A “trade” is a binding transaction, *i.e.*, “any purchase or sale of any commodity futures or options contract made on the Exchange.” *See* Ex. E (NYMEX Rulebook Definitions), p. 9; Ex. F (CME Rulebook Definitions), p. 10. “Settlement” refers to the settlement of the transaction (*i.e.*, when the actual exchange of money and/or the commodity takes place).<sup>23</sup> *Cf.* 17 C.F.R. § 1.3.

Unlike the label “trade date,” which is used for settlement and bookkeeping purposes, the term “trading day” is defined in terms of hours of *trading*.<sup>24</sup> NYMEX uses a separate term, “business day,” to connote days on which trades are settled, and a settlement price (discussed below) is determined. *See* Exs. E, F (NYMEX and CME Rulebook Definitions), p. 2 (defining “business day” as “[i]n a given commodity, any day on which a settlement price is determined”). The Plan’s definition of Settlement Value HH Strip Price uses the term *trading day*; it does not use the terms “business day” or “settlement day,” although it certainly could have if that had been the parties’ intent.

<sup>22</sup> *See* <http://markets.on.nytimes.com/research/markets/holidays/holidays.asp?display=all&timeOffset=-1>.

<sup>23</sup> NYMEX acts as a clearing house for all of the commodity futures contracts and options traded over NYMEX’s exchange. *See N.Y. Mercantile Exch., Inc. v. IntercontinentalExchange, Inc.*, 389 F. Supp. 2d 527, 530–31 (S.D.N.Y. 2005).

<sup>24</sup> NYMEX’s own’s holiday schedules recognize the difference between a trading day and a day on which trades settle. As noted (*supra* pp. 9-10), trading was open and hours were set for February 20. But settlements did not occur that day. *See* <https://www.cmegroup.com/tools-information/holiday-calendar/files/2017-presidents-day-holiday-settlement-times.pdf> (noting for Monday, February 20, 2017 that “No CME/CBOT/NYMEX/COMEX settlements occur”).

## 2. Settlement Plan Value is \$5.5 Billion When Correctly Calculated

As noted, by erroneously excluding February 20, the Debtors instead elected to include February 9 as one of the 7 trading days preceding the February 21 Subscription Commencement Date. That causes Settlement Plan Value to be inflated to \$6 billion. When properly determined by including closing prices from February 20, Settlement Plan Value is \$5.5 billion.

### (a) Closing Price Should Be Used to Calculate Settlement Plan Value

Cross Sound believes that the Debtors' methodology for determining Settlement Plan Value HH Strip Price utilizes settlement prices rather than closing prices. That is also incorrect and inconsistent with the Plan's plain terms. Settlement Plan Value is based on "closing prices," not "settlement prices." See Plan Art. I, § 1.1, 191 (defining "Settlement Plan Value HH Strip Price" to mean "the average of the *closing* HH Strip Price for the seven (7) trading days preceding the Subscription Commencement Date") (emphasis added).

The settlement price for Henry Hub natural gas futures contracts is distinct from their closing price. CME Group itself explains the difference:

*What is the difference between a closing price and a settlement price?*

*A closing price is the last traded price of a contract at the end of a trading session. A settlement price is a figure determined by the closing range that is used to calculate gains and losses in futures market accounts, performance bond calls and invoice prices for deliveries. The settlement price is the official daily closing price of futures contracts.*

See Ex. L (CME FAQ), p. 3 (emphasis added).<sup>25</sup> While "settlement price" is utilized as the "official daily closing price of futures contracts," this is for settlement purposes in order to mark the positions to market. *Id.* (emphasis added). The Plan does not use the term "settlement

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<sup>25</sup> See also CME Group Glossary, available at <http://www.cmegroup.com/education/glossary.html> (defining "closing price" as "[t]he last price of a contract at the end of a trading session").



price.” Rather, it uses “closing price,” which has a distinct meaning in the context of trading futures.<sup>26</sup>

That the parties used “closing price” and not “settlement price” makes sense given the context. The purpose of “Settlement Plan Value” is not to close out positions or settle trades—no trade is being executed here. Rather it is to use the most recent prices of natural gas futures as a proxy for the value of the company and resulting equity allocations between HoldCo Noteholders and HoldCo Equityholders. *See Matter of Lamar Haddox Contractor, Inc.*, 40 F.3d 118, 121 (5th Cir. 1994) (“The fair value of property is [] determined by ... estimating what the debtor’s assets would realize if sold in a prudent manner in current market conditions.”). Using the “closing price”—reflecting the most recent price a willing buyer paid a willing seller—accomplishes that goal. Moreover, the Plan does not utilize the term “business day,” and as noted settlement prices are only determined on business days. In sharp contrast, a closing price is readily available for every trading day.

When the closing price is used—as instructed by the Plan and as illustrated above (*supra* pp. 6-7)—the Settlement Plan Value HH Strip Price is **\$3.21**, and the Settlement Plan Value is \$5.5 billion. *See* Ex. B (Closing Price Data).

**(b) Even Using Settlement Prices Results in a \$5.5 Billion Settlement Plan Value**

Assuming for the sake of argument it was appropriate to ignore the plain language of the Plan and use “settlement prices” rather than “closing prices,” the result would be the same. Under the Plan, the Settlement Plan Value HH Strip Price is “the *average* of the closing HH Strip

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<sup>26</sup> The Federal Regulations governing commodity and securities exchanges also recognize that closing and settlement prices are often distinct. The rule on publication of market data on futures states that “[e]ach reporting market must record for the trading session and for the opening and closing periods of trading as determined by each reporting market...[t]he price that is used for settlement purposes, *if different from the closing price.*” *See* 17 CFR 16.01(b)(2) (emphasis added).

Price *for the seven (7) trading days* preceding the Subscription Commencement Date.” Plan Art. I, § 1.1, 191 (emphasis added). February 20 was a trading day regardless of whether there was a settlement price determined on that day (*supra* pp. 9-13), and thus February 20 is one of the seven relevant trading days. There is no requirement in the Plan that each one of those seven trading days must have its own price. All that is required is an average closing price over the course of those seven days.

Using an average of settlement prices from 6 of the 7 trading days preceding February 21 is thus more consistent with the terms of the Plan than reaching back to February 9. Indeed, doing so provides the most recent trading data and is more in line with the intent of the Settlement Plan Value—to serve as a proxy for the value of the company as of February 21. There is no basis in the Plan to reach back to February 9 for stale (and outlier) data that is inconsistent with the Debtors’ own expert valuation of the company. When an average of settlement prices for each of the days in the seven-day period on which a settlement price was calculated, the Settlement Plan Value HH Strip Price is \$3.24, and the Settlement Plan Value is \$5.5 billion. *See* Ex. C (Settlement Price Data).

**3. Including the February 20 Trading Day in the Calculus Comports with the Parties’ Objective Intent and Arrives at the Right Result Valuing the Debtors at \$5.5 Billion, Not \$6.0 Billion**

Inherent in the Plan’s structure is an intent to determine the Debtors’ Settlement Plan Value as close in time to the Subscription Commencement Date as possible. This is clear from the fact that the seven trading days are tethered to the Subscription Commencement Date and the toggle price structure itself. As noted, Settlement Plan Value is used to determine the equity splits between HoldCo Noteholders and HoldCo Equitholders, and also the allocation of Rights Offering shares. The parties could have predicated Settlement Plan Value upon closing prices

in November, but they did not (and it would have made no sense to do so). Rather, they sought the freshest market data possible.

It is, of course, unsurprising that the parties did not determine value in November: “it is well-established that a *recent* sale price for the subject asset, negotiated by parties at arm’s length, is the ‘*best evidence*’ of its market value.” *Flourine On Call, Ltd. v. Fluorogas Ltd.*, 380 F.3d 849, 860 (5th Cir. 2004) (emphasis added). To stray from the plain language of the Plan in order to swap out February 20 market data, in exchange for February 9 market data, makes no sense and arrives at a result contrary to any party’s intent. *See Matter of Lipper Holdings v. Trident Holdings*, 1 A.D.3d 170, 171 (N.Y. 1st Dep’t 2003) (“A contract should not be interpreted to produce a result that is absurd, commercially unreasonable, or contrary to the reasonable expectations of the parties.”) (internal citation removed).

Additionally, consistent with the opinion of the Debtors’ own expert, landing on a \$5.5 billion total enterprise valuation for the Debtors is significantly more fair than \$6.0 billion, which would afford a substantial windfall to HoldCo Equityholders. ***The Debtors’ expert report indicates a \$5.595 billion midpoint enterprise value***, based on updated February 14, 2017 strip pricing and market data. *See Petrie Partners Expert Report*, February 17, 2017, p. 33 [ECF 1218-3]. This amount was reduced from a previous \$5.949 billion midpoint, based on higher October 2016 strip pricing and December 2016 market data. *Id.* at 17. Moreover, the company’s market capitalization indicates a value of less than \$5 billion. *Id.* at 14. No bankruptcy policy would be advanced by straying from the Plan’s plain language to transfer value from HoldCo Noteholders to HoldCo Equityholders. *See Matter of Greystone III Joint Venture*, 995 F.2d 1274, 1283 (5th Cir. 1991) (“...permitting the courts ... rather than the creditors, under a strict absolute priority rule, to determine the conditions of former equity

owners' participation in a reorganized debtor introduces an enormously complicating factor in a carefully balanced bargaining structure.”).

**4. Implementing the Plan According to its Terms Does No Violence to any Valid Expectations**

To the extent the Debtors argue that the expectations of parties subscribing to the rights offering will be upset if Settlement Plan Value were determined to be \$5.5 billion, the argument would be without merit for the following reasons:

*First*, the amount of equity each subscribing Eligible Holder will receive will only improve. *See* Schedule A to Plan Support Agreement (indicating holders of HoldCo Notes and HoldCo Equity participating in the Rights Offering receive greater percentages of equity where Settlement Plan Value is \$5.5 and not \$6.0 billion) [ECF 818, p. 171/292]. This is common sense. Those parties will be buying Rights Offering Shares at a lower price.

*Second*, the Rights Offering Procedures clearly state that the Debtors' proposed \$6.0 billion Total Enterprise Value is “subject to the adjustment provided in the definition of Purchase Price and Total Enterprise Value in the Backstop Agreement.” *See* Ex. A (Rights Offering Procedures). In turn, the definition of “Purchase Price” in the Backstop Agreement provides that “the enterprise value of the Debtors under the Plan” could be \$6.25, \$6.0, or \$5.5 billion. *See* Backstop Commitment Agreement attached to Order Authorizing (I) Debtors Entry into Backstop Commitment Agreement and (II) Payment and Allowance of Related Fees and Expenses as Administrative Claims [ECF 996].

*Third*, reducing the amount of equity certain HoldCo Equityholders may have anticipated they would receive on account of their pre-existing shares is not inequitable. Rather, enforcing the Plan's plain language is inherently fair. *See In re Tribune Media Co.*, 799 F.3d 272 (3d Cir. 2015) (reliance is not justified “if a third party obtained a benefit that was inconsistent with a

contract, statute, or judgment, as any benefit from such an error would result in ‘ill-gotten gains.’”); *In re One2One Communications, LLC*, 805 F.3d 428, 453 (3d Cir. 2015) (“...we should be even less solicitous of parties who act opportunistically or advocate unlawful plan provisions during confirmation.”).<sup>27</sup>

#### IV. CONCLUSION

For the foregoing reasons, Cross Sound requests that the Court instruct the Debtors to implement the Plan in accordance with its plain meaning, and determine that Settlement Plan Value is \$5.5 billion.

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<sup>27</sup> There is an additional reason why the Debtors are incorrect to interpret Plan Settlement Value as \$6.0 billion. As argued to the Court on February 21, the original order approving the Disclosure Statement was entered on February 14. *See Ross v. Global Marine, Inc.*, 859 F.2d 336 (5th Cir. 1988) (distinguishing between date of entry and date of mere filing); *see also* Fed.R. Bankr.P. 5003(a). The plain language of that order provided that the Rights Commencement Date was to be 5 “business days” thereafter, landing on February 22—not February 21. Were the Subscription Commencement Date February 22, there would be no dispute that February 9 prices would be excluded, and Plan Settlement Value would be \$5.5 billion.

Respectfully, the Court erred in amending the disclosure statement order on February 21. *See Grede v FCStone*, 746 F.3d 244, 257 (7th Cir. 2014) (“Too much deference to a bankruptcy court’s much-later interpretation would undermine the ability of parties and nonparties to rely on a court order and creates the risk that interpretation of an order becomes a means to rewrite it after unintended consequences have given rise to regrets.”). Cross Sound respects the Court’s ruling on this issue and is merely reserving its appellate rights in view of the fact that the Amended Disclosure Statement Order was interlocutory.

DATED: March 6, 2017

*/s/ David Gerger*

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## APPENDIX A

**IN THE UNITED STATES BANKRUPTCY COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS  
HOUSTON DIVISION**

In re:	)	
	)	Chapter 11
	)	
ULTRA PETROLEUM CORP, <i>et al.</i> ,	)	Case No. 16-32202 (MI)
	)	
Debtors.	)	(Jointly Administered)
	)	

**EXPERT REPORT OF JOHN P. DAVIDSON REGARDING  
ELECTRONIC TRADING AND HOLIDAYS IN FUTURES MARKETS**



I, John P. Davidson, III, served as Managing Director and Chief Corporate Development Officer of Chicago Mercantile Exchange Holdings Inc. from February 2006 to April 2008. I have more than 30 years of experience in the global financial services industry and previously worked for ten years as Head of CME Clearing House. Prior to that, I served in a variety of leadership roles at CME after originally joining it in August 1983, both in trading operations and in the CME Clearing House. I also held derivatives management roles at Merrill Lynch Futures, Inc. At CME, I was instrumental in developing and implementing the CME(R) Globex(R) electronic trading platform, the SIMEX Mutual Offset System, the Standardized Portfolio Analysis of Risk (CME SPAN(R)) margining system and the design of CME Clearing 21.

I have previously been qualified as an expert witness in connection with the U.S. Department of Justice's cases against 46 commodities brokers and traders at the Chicago Mercantile Exchange, concerning alleged stealing and skimming of profits following a two-year investigation by the Federal Bureau of Investigation. Please see exhibit A for further information about my expert qualifications and experience.

I understand that the chapter 11 plan of reorganization for Ultra Petroleum Inc. (the "Debtor") is premised on a certain "Settlement Plan Value", which is supposed to function as an estimate of the Debtor's total enterprise value for purposes of determining the relative equity allocation between holders of Holdco Note Claims and Existing Holdco Equityholders as well as the price such stakeholders may subscribe to the rights offering contemplated by the Plan. I further understand that the parties have defined (I) "Settlement Plan Value" to mean (i) \$6 billion, in the event that the Settlement Plan Value HH Strip Price is in the range of \$3.25 to \$3.65; (ii) \$5.5 billion, in the event that the Settlement Plan Value HH Strip Price is below \$3.25; or (iii) \$6.25 billion, in the event that the Settlement Plan Value HH Strip Price is above \$3.65, and (II) "Settlement Plan Value HH Strip Price" to mean "the average of the closing HH Strip Price for the seven (7) trading days preceding the Subscription Commencement Date." Finally, I understand that the Court has determined the Subscription Commencement Date to be February 21, 2017.

Based on my relevant industry experience, it is my opinion that:

1. The hours set by the CME and operated for trading of Henry Hub natural gas futures from the evening of February 19 through February 20 constituted a trading day, as that term is used in the context of trading Henry Hub natural gas futures.
2. Closing price is distinct from settlement price as those terms are used in the context of trading Henry Hub natural gas futures.
3. The closing price for the February 20, 2017 trading day was the last-traded price of a contract at the end of the session which was 12 p.m CT, which price was and is easily-ascertainable.

The development of electronic trading in futures markets in the United States begins in earnest in the late 1980s largely in reaction to the events of the stock market crash in October 1987. The events of that time drove home to the leadership of the Chicago futures exchanges the fact that

not only was there material international interest in their products, but that both domestic and international market users had a significant need for access to the risk transfer and price discovery features of exchange traded derivatives during many more hours of the day than the six to eight hour “open outcry” trading floor sessions that characterized those markets up until that time. Launched in 1992, the GLOBEX electronic trading system immediately addressed this need. As consolidation occurred among US futures exchanges, GLOBEX became the dominant platform for futures trading, including for the important energy futures contracts, such as Natural Gas, of the New York Mercantile Exchange (“NYMEX”). Simultaneously, the efficiency and transparency advantages of electronic trading almost completely displaced “open outcry” trading during any hours of a trading day. Today, there is no “open outcry” trading of Natural Gas futures.

In developing an extended trading hours electronic trading system a number of operational issues had to be confronted. Critical among those were the definition of a trading day and the treatment of holidays, particularly holidays that were unique to a particular jurisdiction (New Year’s Day being virtually the only holiday that is nearly universally recognized). Two historical factors, much more relevant at the time than today, drove the decision about the definition of a trading day. The first was the fact that at the time electronic extended hours trading began, virtually all of the liquidity in US futures markets occurred in the “open outcry” trading environment on the floors of the various exchanges. Indeed, initially electronic trading was only permitted **after** the completion of regular trading hours. As a consequence, it was determined that each trading day would end at the cessation of trading in the trading pits on the floor, and the “settlement prices” for each contract would be determined as they always had been, also at the point of the cessation of “open outcry” trading. As a result, it was determined that the start of the subsequent trading day would be determined at the time extended hours electronic trading began, regardless of what hour of what calendar day that actually corresponded to in the “real world.”

This convention was further supported by the second historical factor—the existence of the “Mutual Offset System” with the Singapore International Monetary Exchange. Introduced in 1984, the Mutual Offset System was the first attempt to extend effective trading hours for a limited set of fungible financial futures contracts that traded via “open outcry” on trading floors in Singapore and Chicago. Given Singapore’s position relative to the International Date Line, business on Monday morning in Singapore actually happens fourteen hours earlier Chicago-time, or on Sunday evening. To facilitate the customer accounting and bookkeeping systems of the involved financial intermediaries, the “trading day” for Monday’s activity actually starts on Sunday evening from a Chicago perspective. It was then most convenient for these systems for the GLOBEX electronic trading system to follow the same convention when it was introduced eight years later. Monday’s trading commences on Sunday late afternoon/early evening—the trading week ends at the cessation of trading on Friday afternoon. The fact that markets in the US are the last in the world to close each week, and the universal elimination of Saturday trading sessions, also facilitated the adoption of this convention.

In the context of the issue at hand, it is important to understand the function of “settlement prices”—as opposed to “closing prices”—in a futures market. Settlement prices exist to protect

the financial integrity of the market place. They do not exist, nor would they be necessary, in order to provide a "price discovery" function. Because exchange-traded derivatives inherently involve leverage protecting the financial integrity of the marketplace has been an important consideration since the creation of the first "clearing" processes in 1872. This element of clearing and settlement in the futures markets is the daily "mark-to-market" of all trades and open positions. For a particular "trade date" (a clearing/settlement concept not synonymous with "trading day"), the clearing house utilizes the "settlement price" determined for each contract month of each futures contract to "reprice" every trade and every open position from its prior value (execution price in the case of a trade, prior settlement price in the case of an open position) to the current value, to directly debit the bank account of the clearing member with net losses from this marking process and to directly credit the bank account of the clearing member with net gains not later than the opening of business on the immediately following US banking day. In this manner debt is never allowed to accumulate in the system, and the margin requirements and clearing fund deposits can be relied upon fully to secure the next period's price changes. Clearing members perform a roughly analogous process with respect customers and end-users of futures markets.

With that contextual background, I will now turn to the handling of trading on holidays. Although many physical and financial products attract global interest, holidays are a function of country-specific history and tradition. President's Day, for example, was created by an act of the US Congress to consolidate into a single holiday the celebration of the birthdays of George Washington and Abraham Lincoln, where prior observances had varied considerably from state to state. The appeal of this consolidation was further enhanced by having it always fall on a Monday, providing many people with a three-day holiday weekend. Because Washington and Lincoln are American presidents, other countries do not necessarily celebrate Presidents Day (although from time to time different holidays in various countries may coincidentally occur on the same date). Thus, from the perspective of the rest of the world, and indeed from the perspective of any asset or risk manager with a global perspective, access to the risk transfer and price discovery functions of futures markets (i.e., trading itself) was in demand notwithstanding the existence of a US holiday. Electronic trading, rather than the logistical nightmare of opening trading floors on a holiday, was the logical means to address this demand.

From a customer accounting and bookkeeping perspective, general ledger and banking entries on weekends and holidays are problematic. Consequently, for these clearing and settlement purposes, the decision was made to treat a holiday in the same manner as the weekly Sunday evening trading sessions—as an extension of the next trading day's business. From that perspective, trades executed on Sunday February 19 and Monday February 20<sup>th</sup> are considered to have a "trade date" of Tuesday, February 21<sup>st</sup>. Furthermore, just as there is no "settlement price" determined on Sunday, there is no such determination made on a holiday either, notwithstanding the fact that trading, risk transfer and price discovery are fully effective on those days. This is because the US banking system is not open on either Sunday or on bank holidays. The "mark-to-market" bank transfers from trading on Friday have not happened on Sunday, nor can they happen on a bank holiday Monday—they will occur on Tuesday morning. The cessation of trading on Tuesday is the next logical point in time to perform this settlement process, with

the associated bank transfers happening no later than the opening of banking hours on Wednesday. Since “settlement” is a financial integrity, rather than a price discovery function, in general there is no incremental value in a “mark-to-market” process on a holiday, nor can bookkeeping systems easily accommodate such a process. In the event of extreme volatility on a holiday, the clearing house does have the ability to utilize “intraday” prices, including the prices prevalent in the markets when trading was closed, for an “interim” mark-to-market process, just as they may on any non-holiday trading day.

As I understand it, the issue at hand is not the financial integrity of the marketplace and the clearing and settlement systems aimed at that integrity, but rather the question is whether the period from Sunday, February 19 through Monday, February 20 was a trading day. Trading was undoubtedly open that day, and trades were executed. There is an easily-ascertainable closing price for that trading day. Moreover, the fact that there is no “settlement price” published for the relevant contracts on Monday February 20, 2017 is of little relevance. The relevant question was whether price discovery was taking place on that day, and if so, what is a reasonable representation of the results of that price discovery for the instruments in question on that day. The volume of trading that calendar day clearly demonstrates that price discovery was fully functional, and just as we would in the equity securities markets, the prices that were in effect at the cessation of trading, notwithstanding its interim nature from a bookkeeping perspective, are the best representation of the discovered price for the relevant instrument.

Respectfully submitted,

*/s/ John P. Davidson*  
John P. Davidson  
Principal  
Pirnie Advisory, LLC

## **Appendix A Biography**

**John P. Davidson** retired from Citi on January 31, 2017. While there he served as the Chief Compliance Officer of Citigroup. In this role, he led the global 2,400 person, 87 country Compliance organization, which is responsible for proactively identifying, evaluating, mitigating and reporting on compliance, regulatory and reputation risks across Citi. Under John's leadership, the Compliance organization evolved from a primarily advisory capacity to a forward-looking function focused on risk management and expanded its programs dedicated to corporate culture and conduct risk.

Prior to becoming Chief Compliance Officer, John was Head of Enterprise Risk Management (ERM), which is responsible for managing Citi's operational risk across businesses and geographies. John built the ERM team, focusing on managing operational risk through strengthened governance, assessment, mitigation and recovery efforts. Prior to that assignment, John was the Risk Division Chief Administrative Officer and responsible for Infrastructure Risk Management.

From February 2006 to April 2008, John was Managing Director and Chief Corporate Development Officer of CME Group. He was responsible for oversight of research and product development, strategic planning, business development, and corporate project management. While at CME he led the project to integrate the legacy Chicago Mercantile Exchange with the Chicago Board of Trade, operationalizing the benefits of the merger to create the world's largest and most diverse derivatives exchange.

John has more than 35 years of experience in the global financial services industry. Before joining CME in 2006, he had a 12-year career with Morgan Stanley, most recently as Managing Director & Operations Officer for the firm's Global Operations and Services Division. During his tenure at Morgan Stanley, John was responsible for overseeing the integration of systems and processing services to combine the firm's previously separate institutional, retail and investment management divisions into a single, integrated global securities business. He rebuilt the firm's global institutional processing system and opened new processing centers on four continents, away from major financial centers.

Prior to joining Morgan Stanley, John worked for 10 years as head of the CME Clearing House. He was instrumental in developing and implementing the CME Globex® electronic trading platform, the SIMEX Mutual Offset System, the Standardized Portfolio Analysis of Risk (CME SPAN®) margining system, and the design of CME Clearing 21®, viewed as the premier derivatives clearing system in the world.

John serves on the Board of Directors of CLS Bank, International. In addition, he is a member of the Clearing House Risk Committee of the CME Group and the Working Group on Financial Markets of the Federal Reserve Bank of Chicago, and a Trustee of the Museum of American Finance. He is a former Board member of The Options Clearing Corporation and was a member of the Operations Advisory Committee of the

New York Stock Exchange, and the Operations Advisory Committee of the Depository Trust & Clearing Corporation. He is also a percussionist in the Westchester County (New York) Band.

John earned an M.B.A. in financial management and international business from the University of Chicago and graduated with highest distinction from the University of Illinois-Urbana with a bachelor's degree in political science.

**Appendix B**  
**Documents Relied Upon**

- 1. Debtor's Plan of Reorganization**
- 2. CME Rulebook**
- 3. CME Glossary**
- 4. CME FAQs**
- 5. Commodity Exchange Act 7 U.S. Code section 1a – Definitions**
- 6. CME Group Globex Presidents Day Holiday Schedule: February 17, 2017 – February 21, 2017 Last Updated Feb 1, 2017**
- 7. CME Group Electronic Platform Information Console CME Group Settlements Energy: Natural Gas**

**IN THE UNITED STATES BANKRUPTCY COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS  
HOUSTON DIVISION**

In re:	)	
	)	Chapter 11
	)	
ULTRA PETROLEUM CORP, <i>et al.</i> , <sup>1</sup>	)	Case No. 16-32202 (MI)
	)	
Debtors.	)	(Jointly Administered)
	)	

**DECLARATION OF EMILY M. SMITH**

I, EMILY M. SMITH, do hereby declare under penalty of perjury:

1. I am an attorney at Quinn Emanuel Urquhart & Sullivan, LLP and counsel for Cross Sound Management LLC (“**Cross Sound**”). I am in good standing with the Texas State Bar and the United States District Court for the Southern District of Texas.

2. I respectfully submit this declaration in support of Cross Sound’s Objection to Debtors’ Implementation of Second Amended Joint Chapter 11 Plan Of Reorganization.

3. Attached hereto as Exhibit A is a true and correct copy of Ultra Petroleum Corp.’s Rights Offering Procedures.

4. Attached hereto as Exhibit B is a true and correct copy of Bloomberg historical closing price data on Henry Hub futures for the following trading days: February 10, 13, 14, 15, 16, 17, and 20.

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<sup>1</sup> The Debtors in these chapter 11 cases, along with the last four digits of each Debtor’s federal tax identification number (if any), are: Ultra Petroleum Corp. (3838); Keystone Gas Gathering, LLC; Ultra Resources, Inc. (0643); Ultra Wyoming, Inc. (6117); Ultra Wyoming LGS, LLC (0378); UP Energy Corporation (4296); UPL Pinedale, LLC (7214); and UPL Three Rivers Holdings, LLC (7158).



5. Attached hereto as Exhibit C is a true and correct copy of Bloomberg historical settlement price data on Henry Hub futures for the following trading days: February 10, 13, 14, 15, 16, and 17.

6. Attached hereto as Exhibit D is a true and correct copy of New York Mercantile Exchange (“NYMEX”) Rulebook, Ch. 220, also electronically available at <http://www.cmegroup.com/rulebook/NYMEX/2/220.pdf> (last visited March 5, 2017).

7. Attached hereto as Exhibit E is a true and correct copy of NYMEX Rulebook Definitions, also electronically available at [http://www.cmegroup.com/rulebook/NYMEX/1/NYMEX-COMEX\\_Definitions.pdf](http://www.cmegroup.com/rulebook/NYMEX/1/NYMEX-COMEX_Definitions.pdf) (last visited March 5, 2017).

8. Attached hereto as Exhibit F is a true and correct copy of the Chicago Mercantile Exchange (“CME”) Rulebook Definitions, also electronically available at [https://www.cmegroup.com/rulebook/files/CME\\_Definitions.pdf](https://www.cmegroup.com/rulebook/files/CME_Definitions.pdf) (last visited March 5, 2017).

9. Attached hereto as Exhibit G is a true and correct copy of the CME Energy Regular Trading Hours, also electronically available at <http://www.cmegroup.com/trading-hours.html> (last visited March 5, 2017).

10. Attached hereto as Exhibit H is a true and correct copy of the CME Group Globex Schedule for February 17 - 21, 2017, also electronically available at <http://www.cmegroup.com/tools-information/holiday-calendar.html> (last visited March 5, 2017).

11. Attached hereto as Exhibit I is a true and correct copy of the CME Group Holiday Calendar, also available at <http://www.cmegroup.com/tools-information/holiday-calendar.html> (last visited March 6, 2017).

12. Attached hereto as Exhibit J is a true and correct copy of the CME Globex Reference Guide, also electronically available at [http://www.cmegroup.com/globex/files/GlobexRefGd.pdf?utm\\_source=cmegroup&utm\\_medium=friendly&utm\\_campaign=globexreferenceguide](http://www.cmegroup.com/globex/files/GlobexRefGd.pdf?utm_source=cmegroup&utm_medium=friendly&utm_campaign=globexreferenceguide) (last visited March 5, 2017).

13. Attached hereto as Exhibit K is a true and correct copy of the CME Group Globex Schedule for December 29, 2017 – January 2, 2018, also electronically available at <http://www.cmegroup.com/tools-information/holiday-calendar.html> (last visited March 5, 2017).

14. Attached hereto as Exhibit L is a true and correct copy of the CME Historical Data Frequently Asked Questions Guide, also electronically available at <http://www.cmegroup.com/market-data/distributor/files/historicaldataFAQ.pdf> (last visited March 5, 2017).

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed in Houston, Texas on March 6, 2017

By: /s/ Emily M. Smith  
Emily M. Smith

# **EXHIBIT A**

**ULTRA PETROLEUM CORP. (THE “COMPANY”)  
RIGHTS OFFERING PROCEDURES<sup>1</sup>**

- **HoldCo Noteholders**: You must hold at least \$1,000 principal amount of HoldCo Notes to be able to exercise at least one of your Subscription Rights.
- **HoldCo Equityholders**: You must hold at least 15 shares of HoldCo Equity Interests to be able to exercise at least one of your Subscription Rights.
- If you exercise your Subscription Rights, you will have to PAY for such exercise at the Subscription Price, as described further below, and arrange for the underlying HoldCo Notes or HoldCo Equity Interests to be submitted in accordance with the procedures described further below.
- You are not required to exercise any of your Subscription Rights, but you may if you wish to do so and you follow the required procedures.
- Regardless of whether or not any Subscription Rights are exercised, holders of HoldCo Notes and holders of HoldCo Equity Interests at the time of Plan distributions will receive (as applicable) a Pro Rata share of the HoldCo Noteholder New Common Stock Distribution or HoldCo Equityholder New Common Stock Distribution (together, the “Plan Equity Distributions”).
- Holders who have exercised their Subscription Rights will receive both a Pro Rata share of the Plan Equity Distributions and the Rights Offering Shares that were purchased.
- Additional information is provided in this document and in the subscription form enclosed herewith.

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<sup>1</sup> Terms used and not defined herein shall have the meaning assigned to them in the Plan Support Agreement, dated as of November 21, 2016 (including the terms and conditions set forth in the Plan Term Sheet attached as Exhibit A to the Plan Support Agreement (the “Plan Term Sheet”), the terms and conditions set forth in the Backstop Commitment Agreement attached as Exhibit B to the Plan Support Agreement (the “Backstop Agreement”) and collectively, including all the other exhibits thereto, as may be amended, supplemented or otherwise modified from time to time, the “Plan Support Agreement”).

Each Rights Offering Share (as defined below) is being distributed and issued by the Company without registration under the Securities Act of 1933, as amended (the “Securities Act”), in reliance upon the exemption provided in Section 1145 of the Bankruptcy Code (such offering, the “Rights Offering”). None of the Subscription Rights (as defined below) or the Rights Offering Shares issuable upon exercise of such Subscription Rights distributed pursuant to these Rights Offering Procedures in reliance upon the exemption provided in Section 1145 of the Bankruptcy Code have been or will be registered under the Securities Act, nor any state or local law requiring registration for offer and sale of a security.

The Subscription Rights will not be detachable or transferable separately from HoldCo Notes or HoldCo Equity Interests, as applicable. Rather, the Subscription Rights together with the underlying HoldCo Notes or HoldCo Equity Interests with respect to which such Subscription Rights were activated, will trade together and be evidenced by the underlying HoldCo Notes or HoldCo Equity Interests until the Subscription Instruction Deadline, subject to such limitations, if any, that would be applicable to the transferability of the underlying HoldCo Notes or HoldCo Equity Interests; and, provided further, that following the exercise of any Subscription Rights, the holder thereof shall be prohibited from transferring or assigning the HoldCo Notes or the HoldCo Equity Interests, as applicable, corresponding to such Subscription Rights until the earlier of (i) termination of the Rights Offering and (ii) the revocation of exercise of the Subscription Rights to the extent permitted by these Rights Offering Procedures.

The Disclosure Statement (as defined below) has previously been distributed in connection with the Debtors’ solicitation of votes to accept or reject the Plan (as defined below) and that document sets forth important information, including risk factors, that should be carefully read and considered by each Eligible Holder (as defined below) prior to making a decision to participate in the Rights Offering (as defined below). Additional copies of the Disclosure Statement are available upon request from the Subscription Agent.

The Rights Offering is being conducted by the Company in good faith and in compliance with the Bankruptcy Code. In accordance with Section 1125(e) of the Bankruptcy Code, a debtor or any of its agents that participate, in good faith and in compliance with the applicable provisions of the Bankruptcy Code, in the offer, issuance, sale, or purchase of a security offered or sold under the plan of the debtor, of an affiliate participating in a joint plan with the debtor, or of a newly organized successor to the debtor under the plan, is not liable, on account of such participation, for violation of any applicable law, rule, or regulation governing the offer, issuance, sale or purchase of securities.

Eligible Holders (as defined below) should note the following times relating to the Rights Offering:

<b>Date</b>	<b>Calendar Date</b>	<b>Event</b>
Subscription Commencement Date	February 21, 2017	Commencement of the Rights Offering and the first date on which holders of the HoldCo Notes and HoldCo Equity Interests become eligible to exercise Subscription Rights.
Subscription Instruction Deadline	4:00 p.m. Houston time on March 21, 2017	The deadline for Eligible Holders to subscribe for Rights Offering Shares. An Eligible Holder's applicable Beneficial Holder Subscription Form(s) and/or other instructions required by the Eligible Holder's Nominee (as defined below) must be received by such Nominee in sufficient time to allow such Nominee to deliver the relevant HoldCo Notes or HoldCo Equity Interests through ATOP (as defined below) by the Subscription Instruction Deadline; <i>OR only for HoldCo Equity Interests held directly with the transfer agent</i> , the Eligible Holder's Subscription Form must be received by the Subscription Agent at the address set forth in the Subscription Form provided to registered holders. Eligible Holders are urged to consult with their Nominees to determine the necessary deadline to return their Beneficial Holder Subscription Forms to their Nominee.
Subscription Payment Deadline	5:00 p.m. Houston time on March 22, 2017	<p>Payment of the aggregate Purchase Price with respect to Eligible Holders that are not Commitment Parties will be <u>automatically</u> made to the Subscription Agent by DTC on or before the Subscription Payment Deadline.</p> <p>Eligible Holders who are Commitment Parties must arrange for the Commitment Party Addendum to be provided to their Nominee so that the Nominee will (i) receive confirmation that payment does not have to be made prior to the Subscription Payment Deadline and (ii) have the relevant Commitment Party Code to enter into the ATOP system. Eligible Holders who are Commitment Parties must deliver the aggregate Purchase Price no later than the deadline specified in the Funding Notice (as defined below) in accordance with the terms of the Backstop Agreement.</p>

To Eligible Holders and Nominees of Eligible Holders:

On February 8, 2017, the Debtors filed the *Debtors' Second Amended Joint Chapter 11 Plan of Reorganization* [Docket No. 1082] (as may be amended, modified, or supplemented from time to time in accordance with the terms thereof, the "Plan") with the United States Bankruptcy Court for the Southern District of Texas, Houston Division, and the *Disclosure Statement for the Debtors' Second Amended Joint Chapter 11 Plan of Reorganization* [Docket No. 1083] (as may be amended from time to time in accordance with its terms, the "Disclosure Statement"). Pursuant to the Plan, each Holder of an Allowed HoldCo Note Claim from the Subscription Commencement Date to the Subscription Instruction Deadline (each such holder, together with its transferees from the Subscription Commencement Date to the Subscription Instruction Deadline, an "Eligible HoldCo Noteholder") shall be entitled to exercise HoldCo Noteholders Subscription Rights (as defined below) pursuant to the HoldCo Noteholders Rights Offering (as defined below), and each Holder of an Allowed HoldCo Equity Interest from the Subscription Commencement Date to the Subscription Instruction Deadline (each such holder, together with its transferees from the Subscription Commencement Date to the Subscription Instruction Deadline, an "Eligible HoldCo Equityholder" and, together with the Eligible HoldCo Noteholders, "Eligible Holders") shall be entitled to exercise HoldCo Equityholders Subscription Rights (as defined below) pursuant to the HoldCo Equityholder Rights Offering (as defined below), in each case, in accordance with the terms and conditions of these Rights Offering Procedures. For the avoidance of doubt, an Eligible Holder is anyone who holds the relevant HoldCo Notes and HoldCo Equity Interests during the period beginning on the Subscription Commencement Date and ending on the Subscription Instruction Deadline (the "Rights Exercise Period"). The HoldCo Noteholders Rights Offering and the HoldCo Equityholders Rights Offering are collectively referred to herein as the "Rights Offering".

**HoldCo Notes:** Pursuant to the Plan, each holder of HoldCo Notes during the Rights Exercise Period will have the right (but not the obligation) to subscribe for its *pro rata* portion of 75 percent of the Shares (as defined below) offered in the Rights Offering (the "HoldCo Noteholders Rights Offering," and such Shares, the "HoldCo Noteholders Rights Offering Shares"), which HoldCo Noteholder Rights Offering Shares, collectively, will reflect an aggregate purchase price of \$435,000,000 calculated by multiplying the number of Shares offered in the HoldCo Noteholder Rights Offering by the Purchase Price. "Shares" shall be the fully diluted number of shares of Reorganized HoldCo before taking into account issuances of Shares pursuant to the management incentive plan to be adopted by the Company. "Purchase Price" shall be the quotient of \$2.7 billion divided by the Shares based on a Total Enterprise Value of the Debtors of \$6.0 billion, subject to the adjustment provided in the definition of Purchase Price and Total Enterprise Value in the Backstop Agreement. Beneficial Holder Subscription Forms should only be returned to the broker, bank, commercial bank, transfer agent, trust company, dealer, or other agent or nominee (as applicable, the "Nominee") for processing.

**HoldCo Equity Interests:** Pursuant to the Plan, the holders of HoldCo Equity Interests during the Rights Exercise Period will have the right (but not the obligation) to subscribe for its *pro rata* portion of 25 percent of the Shares offered in the Rights Offering (the "HoldCo Equityholders Rights Offering," and such Shares, the "HoldCo Equityholders Rights Offering Shares" and, together with the HoldCo Noteholders Rights Offering Shares, the "Rights Offering Shares"), which HoldCo Equityholder Rights Offering Shares, collectively, will reflect an aggregate purchase price of \$145,000,000 calculated by multiplying the number of Shares offered in the HoldCo Equityholder Rights Offering by the Purchase Price. Beneficial Holder Subscription Forms should only be returned to the Nominee for processing. Equityholders that hold directly on the books of the transfer agent in



their own name (and do not hold the HoldCo Equity Interests through a Nominee) will receive a Registered Holder Subscription Forms that should be returned directly to the Subscription Agent (with an accompanying IRS Form W-9 or appropriate IRS Form W-8, as applicable) in connection with any desired exercise. Any Eligible HoldCo Equityholder holding in their own name should follow all of the instructions outlined in the Registered Holder Subscription Form.

**As part of the exercise process, following exercise of Subscription Rights, the related HoldCo Notes or Holdco Equity Interests held through DTC will be frozen from trading, as described below.** All Beneficial Holder Subscription Forms and/or other instructions required by the Nominee must be returned to the applicable Nominee in sufficient time to allow such Nominee to process and deliver the underlying HoldCo Notes or HoldCo Equity Interests through The Depository Trust Company (“DTC”) Automated Tender Offer Program (“ATOP”), which is how the related Subscription Rights will be exercised. By giving the instruction to its Nominee to submit the underlying HoldCo Notes or HoldCo Equity Interests through ATOP, the holder is (i) authorizing its Nominee to exercise all Subscription Rights associated with the amount of HoldCo Notes or HoldCo Equity Interests as to which the instruction pertains; (ii) acknowledging that payment of the aggregate Purchase Price will be automatically made to the Subscription Agent by DTC on or before the Subscription Payment Deadline (except in the case of a Commitment Party that provides the Commitment Party Addendum to its Nominee); and (iii) certifying that it understands that, once submitted, the underlying HoldCo Notes or HoldCo Equity Interests will be frozen from trading until the Effective Date, at which point (a) the underlying Holdco Notes or HoldCo Equity Interests will be cancelled pursuant to the Plan; (b) the holder will receive its pro rata share of the Plan Equity Distributions; and (c) the holder will receive any related Rights Offering Shares. The amount of time necessary for a Nominee to process and deliver the applicable HoldCo Notes or HoldCo Equity Interests through ATOP may vary. Eligible Holders are urged to consult with their Nominees to determine the necessary deadline to return their Beneficial Holder Subscription Forms to their Nominee. Failure to submit such Beneficial Holder Subscription Form (or other instructions required by the Nominee) on a timely basis will result in forfeiture of an Eligible Holder’s Subscription Rights. None of the Company, the Subscription Agent or any of the Commitment Parties will have any liability for any such failure.

No Eligible Holder (except a Commitment Party) shall be entitled to participate in the Rights Offering unless the aggregate Purchase Price (as defined below) for the Rights Offering Shares it subscribes for is received by the Subscription Agent by the Subscription Payment Deadline. For all Eligible Holders (except a Commitment Party), payment of the aggregate Purchase Price shown in Box C above will be automatically made to the Subscription Agent by DTC on or before the Subscription Payment Deadline. *Commitment Parties are party to the Backstop Agreement, have already been designated, and are known both to the company and to themselves.*

Special note for Commitment Parties. Commitment Parties will receive (through their counsel) a Commitment Party Addendum, and must arrange for the Commitment Party Addendum to be provided to their Nominee so that the Nominee will (i) receive confirmation that payment does not have to be made prior to the Subscription Payment Deadline and (ii) have the relevant Commitment Party Code to enter into the ATOP system. An Eligible Holder that is a Commitment Party must provide its payment no later than the deadline specified in a written notice (a “Funding Notice”) delivered by or on behalf of the Debtors to the Commitment Parties in accordance with Section 2.4 of the Backstop Agreement (the “Backstop Funding Deadline”), provided that the Commitment Parties may deposit their aggregate Purchase Price in the Escrow Account (as defined below), in accordance with the terms of the Backstop Agreement.



No interest is payable on any advanced funding of the Purchase Price. If the Rights Offering is terminated for any reason, the aggregate Purchase Price previously received by the Subscription Agent will be returned to Eligible Holders as provided in Section 6 hereof. No interest will be paid on any returned Purchase Price.

**To participate in the Rights Offering, an Eligible Holder must complete all of the steps outlined below. If an Eligible Holder does not complete all of the steps outlined below by the Subscription Instruction Deadline, Subscription Payment Deadline, or the Backstop Funding Deadline, as applicable, such Eligible Holder shall be deemed to have forever and irrevocably relinquished and waived its right to participate in the Rights Offering.**

## **1. Rights Offering**

Eligible HoldCo Noteholders have the right, but not the obligation, to participate in the HoldCo Noteholders Rights Offering, and Eligible HoldCo Equityholders have the right, but not the obligation, to participate in the HoldCo Equityholders Rights Offering.

During the Rights Exercise Period, Eligible HoldCo Noteholders are eligible to subscribe for their *pro rata* portion of the HoldCo Noteholders Rights Offering Shares, and Eligible HoldCo Equityholders are eligible to subscribe for their *pro rata* portion of the HoldCo Equityholders Rights Offering Shares.

Subject to the terms and conditions set forth in the Plan and these Rights Offering Procedures, each Eligible HoldCo Noteholder during the Rights Exercise Period is entitled to subscribe for up to 23.912812 HoldCo Noteholders Rights Offering Shares per \$1,000 of Principal Amount of 5.75% Senior Notes Due 2018 issued by the Company and up to 24.301060 HoldCo Noteholders Rights Offering Shares per \$1,000 of Principal Amount of 6.125% Senior Notes Due 2024 issued by Company at the Purchase Price. **The difference in the number of Rights Offering Shares that an Eligible HoldCo Noteholder is entitled to subscribe for with respect to each series of HoldCo Notes is to take into account the differing amounts, as of the Subscription Commencement Date, of pre-petition accrued and unpaid interest thereon.**

Subject to the terms and conditions set forth in the Plan and these Rights Offering Procedures, each Eligible HoldCo Equityholder during the Rights Exercise Period is entitled to subscribe for up to 0.068258 HoldCo Equityholders Rights Offering Shares per HoldCo Equity Interest at the Purchase Price. You must hold at least 15 shares of HoldCo Equity Interests to be able to exercise at least one Subscription Right.

There will be no over-subscription privilege in the Rights Offering. Any Rights Offering Shares that are unsubscribed by the Eligible Holders entitled thereto will not be offered to other Eligible Holders but will be purchased by the applicable Commitment Parties in accordance with the Backstop Agreement. Subject to the terms and conditions of the Backstop Agreement, each Commitment Party is obligated to exercise all applicable Subscription Rights that are held by it as of the Rights Offering Expiration Time and to purchase its *pro rata* portion of the applicable Rights Offering Shares.

To the extent the Rights Offering Shares are distributed and issued in reliance upon the exemption provided in Section 1145 of the Bankruptcy Code, any Eligible Holder that subscribes for Rights Offering Shares and is deemed to be an “underwriter” under Section 1145(b) of the Bankruptcy

Code will be subject to restrictions under the Securities Act on its ability to resell those securities. Resale restrictions are discussed in more detail in Article XIV.D of the Disclosure Statement, entitled “Certain Securities Law Matters.”

**SUBJECT TO THE TERMS AND CONDITIONS OF THE RIGHTS OFFERING PROCEDURES AND THE BACKSTOP AGREEMENT IN THE CASE OF ANY COMMITMENT PARTY, ALL SUBSCRIPTIONS SET FORTH IN THE APPLICABLE BENEFICIAL HOLDER SUBSCRIPTION FORM(S) ARE IRREVOCABLE.**

## **2. Rights Exercise Period**

The Rights Offering will commence and the Subscription Rights will be activated on the Subscription Commencement Date and will expire at the Subscription Instruction Deadline. Each Eligible Holder intending to purchase Rights Offering Shares in any Rights Offering must affirmatively elect to exercise its Subscription Rights in the manner set forth in the applicable Subscription Form by the Subscription Instruction Deadline and must pay for any exercised Subscription Rights by the applicable deadline.

Any exercise (including payment) of the Subscription Rights to purchase HoldCo Noteholders Rights Offering Shares (the “HoldCo Noteholders Subscription Rights”) by an Eligible HoldCo Noteholder after the Subscription Instruction Deadline will not be allowed and any purported exercise (including payment) received by the Subscription Agent after the Subscription Instruction Deadline, regardless of when the documents or payment relating to such exercise were sent, will not be honored, except that the Company shall have the discretion, with the consent of the Holdco Noteholder Commitment Parties holding at least sixty-six and two-thirds percent (66-2/3%) of all outstanding HoldCo Noteholders Backstop Commitments at the time of the relevant determination (the “HoldCo Noteholder Requisite Commitment Parties”), to allow any exercise of HoldCo Noteholders Subscription Rights after the Subscription Instruction Deadline.

Any exercise (or payment) of the Subscription Rights to purchase HoldCo Equityholders Rights Offering Shares (the “HoldCo Equityholders Subscription Rights” and, together with the HoldCo Noteholders Subscription Rights, the “Subscription Rights”) by an Eligible HoldCo Equityholder after the Subscription Instruction Deadline will not be allowed and any purported exercise received by the Subscription Agent after the Subscription Instruction Deadline (or payment received after the Subscription Payment Deadline), regardless of when the documents or payment relating to such exercise were sent, will not be honored, except that the Company shall have the discretion, with the consent of the Holdco Equityholder Commitment Parties holding at least sixty-six and two-thirds percent (66-2/3%) of all outstanding HoldCo Equityholders Backstop Commitments at the time of the relevant determination (the “HoldCo Equityholder Requisite Commitment Parties” and together with the HoldCo Noteholder Requisite Commitment Parties, the “Requisite Commitment Parties”), to allow any exercise of HoldCo Equityholders Subscription Rights after the Subscription Instruction Deadline.

The Subscription Instruction Deadline may be extended with the consent of the Requisite Commitment Parties, or as required by law.

### 3. Delivery of Subscription Documents

Each Eligible Holder may exercise all or any portion of such Eligible Holder's Subscription Rights, but subject to the terms and conditions contained herein. In order to facilitate the exercise of the Subscription Rights, beginning on the Subscription Commencement Date, the applicable Subscription Form and these Rights Offering Procedures will be sent to Eligible Holders at that time, together with appropriate instructions for the proper completion, due execution and timely delivery of the executed Subscription Form and the payment of the applicable aggregate Purchase Price for its Rights Offering Shares.

### 4. Exercise of Subscription Rights

For any Eligible HoldCo Noteholder or Eligible HoldCo Equityholder holding through a Nominee: In order to exercise an Eligible Holder's Subscription Rights, such Eligible Holder's Nominee must submit the relevant portion of HoldCo Notes or HoldCo Equity Interests as to which the Subscription Rights pertain into the ATOP system to the account maintained by the Subscription Agent with DTC. (For any Eligible HoldCo Equityholder holding in their own name please follow the steps outlined in the Registered Holder Subscription Form that should have been mailed to you.)

(a) In order to validly exercise its Subscription Rights, each Eligible Holder that is not a Commitment Party must return duly completed and executed applicable Beneficial Holder Subscription Form(s) to its Nominee (or otherwise follow the directions of its Nominee), so that such holder's subscription instructions may be effected by the Nominee by delivering the applicable HoldCo Notes or HoldCo Equity Interests via DTC's ATOP system prior to the Subscription Instruction Deadline; payment of the aggregate Purchase Price with respect to Eligible Holders that are not Commitment Parties will be automatically made to the Subscription Agent by DTC on or before the Subscription Payment Deadline.

(b) In order to validly exercise its Subscription Rights, each Eligible Holder that is a Commitment Party must:

- i. return duly completed and executed applicable Beneficial Holder Subscription Form(s) to its Nominee (or otherwise follow the directions of its Nominee), so that such holder's subscription instructions may be effected by the Nominee by delivering the applicable HoldCo Notes or HoldCo Equity Interests via DTC's ATOP system prior to the Subscription Instruction Deadline;
- ii. ensure that the Commitment Party Addendum is provided to the their Nominee so that the Nominee will receive confirmation that payment does not have to be made prior to the Subscription Payment Deadline and will have the relevant Commitment Party Code to enter into the ATOP system; and
- iii. no later than the Backstop Funding Deadline, pay the applicable Purchase Price to the Subscription Agent or to the escrow account established and maintained by a third party satisfactory to the Commitment Parties and the Company (the "Escrow Account") by wire transfer **ONLY** of immediately available funds in accordance with the wire instructions included in the Funding Notice.

**ALL COMMITMENT PARTIES MUST PAY THEIR APPLICABLE PURCHASE PRICE DIRECTLY TO THE SUBSCRIPTION AGENT OR TO THE ESCROW ACCOUNT, AS APPLICABLE, AND SHOULD NOT PAY THEIR NOMINEE(S).**

- (c) With respect to 4(a) and (b) above, each Eligible Holder must duly complete, execute and return the applicable Beneficial Holder Subscription Form(s) to their Nominee (or otherwise follow their Nominee's instructions) in sufficient time to allow its Nominee to process its instructions and deliver the underlying HoldCo Notes or HoldCo Equity Interests through ATOP, and, solely with respect to the Eligible Holders that are not Commitment Parties, payment of the applicable Purchase Price, payable for the Rights Offering Shares elected to be purchased by such Eligible Holder, will be automatically made by DTC on or before the Subscription Payment Deadline. Eligible Holders that are Commitment Parties must deliver their payment of the applicable Purchase Price payable for the Rights Offering Shares elected to be purchased by such Commitment Party directly to the Subscription Agent or to the Escrow Account, as applicable, no later than the Backstop Funding Deadline.
- (d) In the event that the funds received by the Subscription Agent or the Escrow Account, as applicable, from any Eligible Holder do not correspond to the Purchase Price payable for the Rights Offering Shares elected to be purchased by such Eligible Holder, the number of the Rights Offering Shares deemed to be purchased by such Eligible Holder will be the lesser of (a) the number of the Rights Offering Shares elected to be purchased by such Eligible Holder as evidenced by the relevant ATOP submission(s) and (b) a number of the Rights Offering Shares determined by dividing the amount of the funds received by the Purchase Price, in each case up to such Eligible Holder's *pro rata* portion of Rights Offering Shares.
- (e) The cash paid to the Subscription Agent in accordance with these Rights Offering Procedures will be deposited and held by the Subscription Agent in a segregated account until released to the Debtors in connection with the settlement of the Rights Offering on the Effective Date. The Subscription Agent may not use such cash for any other purpose prior to the Effective Date and may not encumber or permit such cash to be encumbered with any lien or similar encumbrance. The cash held by the Subscription Agent hereunder shall not be deemed part of the Debtors' bankruptcy estates. Wire instructions for the subscription account will be included in the Registered Holder Subscription Form sent to the holders of HoldCo Equity Interests held directly with the transfer agent, and will be provided to DTC by the Subscription Agent.

**5. Transfer Restriction; Revocation**

- The Subscription Rights will not be detachable or transferable separately from HoldCo Notes or HoldCo Equity Interests, as applicable. If any Subscription Rights are transferred by an Eligible Holder in contravention of the foregoing, the Subscription Rights will be cancelled, and neither such Eligible Holder nor the purported transferee will receive any Rights Offering Shares otherwise purchasable on account of such transferred Subscription Rights;
- The Subscription Rights together with the underlying HoldCo Notes or HoldCo Equity Interests with respect to which such Subscription Rights were activated, will trade

together as a unit, subject to such limitations, if any, that would be applicable to the transferability of the underlying HoldCo Notes or HoldCo Equity Interests; and

- Once an Eligible Holder has properly exercised its Subscription Rights, subject to the terms and conditions contained in these Rights Offering Procedures and the Backstop Agreement in the case of any Commitment Party, such exercise will be irrevocable. Moreover, following the exercise of any Subscription Rights, the holder thereof shall be prohibited from transferring or assigning the HoldCo Notes or the HoldCo Equity Interests, as applicable, corresponding to such Subscription Rights until the earlier of (i) termination of the Rights Offering and (ii) the revocation of exercise of the Subscription Rights to the extent permitted by these Rights Offering Procedures.

## **6. Termination/Return of Payment**

Unless the Effective Date has occurred, the Rights Offering will be deemed automatically terminated without any action of any party upon the earlier of (i) termination of the Plan Support Agreement in accordance with its terms, (ii) termination of the Backstop Agreement in accordance with its terms and (iii) the Outside Date (as such date may be extended pursuant to the terms of the Backstop Agreement). In the event the Rights Offering is terminated, any payments received pursuant to these Rights Offering Procedures will be returned, without interest, to the applicable Eligible Holder as soon as reasonably practicable, and the underlying HoldCo Notes or HoldCo Equity Interests will be returned to the Nominee that submitted them through ATOP.

## **7. Settlement of the Rights Offering and Distribution of the Rights Offering Shares**

The settlement of the Rights Offering is conditioned on confirmation of the Plan by the Bankruptcy Court, compliance by the Debtors with these Rights Offering Procedures, and the simultaneous occurrence of the Effective Date. The Debtors intend that the Rights Offering Shares will be issued to the Eligible Holders in book-entry form, and that DTC, or its nominee, will be the holder of record of such Rights Offering Shares for any Rights Offering Shares exercised through a Nominee. To the extent DTC is unwilling or unable to make the Rights Offering Shares eligible on the DTC system, the Rights Offering Shares will be issued directly to the Eligible Holder's Nominee.

## **8. Fractional Shares**

No fractional Rights Offering Shares will be issued in the Rights Offering. All share allocations (including each Eligible Holder's Rights Offering Shares) will be calculated and rounded down to the nearest whole share.

## **9. Validity of Exercise of Subscription Rights**

All questions concerning the timeliness, viability, form and eligibility of any exercise of Subscription Rights will be determined in good faith by the Debtors in consultation with the Requisite Commitment Parties, and, if necessary, subject to a final and binding determination by the Bankruptcy Court. The Debtor, with the consent of the Requisite Commitment Parties, may waive or reject any defect or irregularity in, or permit such defect or irregularity to be corrected within such time as they may determine in good faith, the purported exercise of any Subscription Rights. Subscriptions will be deemed not to have been received or accepted until all irregularities have been waived or cured within such time as the Debtors determine in good faith in consultation with the Requisite Commitment Parties.



*Before exercising any Subscription Rights, Eligible Holders should read the Disclosure Statement and the Plan for information relating to the Debtors and the risk factors to be considered.*

All calculations, including, to the extent applicable, the calculation of (a)(i) the value of any Eligible HoldCo Noteholder's Allowed HoldCo Notes Claim for the purposes of the HoldCo Noteholders Rights Offering and (ii) any Eligible HoldCo Noteholder's HoldCo Noteholders Rights Offering Shares, shall be made in good faith by the Company with the consent of the HoldCo Noteholders Requisite Commitment Parties and (b)(i) the value of any Eligible HoldCo Equityholders' HoldCo Equity Interests for the purposes of the HoldCo Equityholders Rights Offering and (ii) any Eligible HoldCo Equityholders' HoldCo Equityholders Rights Offering Shares, shall be made in good faith by the Company with the consent of the HoldCo Equityholders Requisite Commitment Parties and in each case in accordance with any claim amounts included in the Plan, and any disputes regarding such calculations shall be subject to a final and binding determination by the Bankruptcy Court.

## **10. Modification of Procedures**

With the prior written consent of the Requisite Commitment Parties, the Debtors reserve the right to modify these Rights Offering Procedures, or adopt additional procedures consistent with these Rights Offering Procedures to effectuate the Rights Offering and to issue the Rights Offering Shares, provided, however, that the Debtors shall provide prompt written notice to each Eligible Holder of any material modification to these Rights Offering Procedures made after the Subscription Commencement Date by posting a notice with respect to the modified or additional procedures on the Debtors' case website, provided further that any amendments or modifications to the terms of the Rights Offering are subject to the provisions of Section 10.7 of the Backstop Agreement. In so doing, and subject to the consent of the Requisite Commitment Parties, the Debtors may execute and enter into agreements and take further action that the Debtors determine in good faith is necessary and appropriate to effectuate and implement the Rights Offering and the issuance of the Rights Offering Shares.

## **11. DTC**

Some or all of the Allowed HoldCo Note Claims and the Allowed HoldCo Equity Interests are held in book-entry form in accordance with the practices and procedures of the DTC. The Debtors intend to comply with the practices and procedures of DTC for the purpose of conducting the Rights Offering, and, subject to compliance with Section 11 hereof, these Rights Offering Procedures will be deemed appropriately modified to achieve such compliance.

Without limiting the foregoing the Company intends, that to the extent practicable, the Rights Offering Shares will be issued in book entry form, except with respect to persons that may be deemed underwriters under section 1145(b) of the Bankruptcy Code (who are obligated to make themselves known to the company), and that DTC, or its nominee, will be the holder of record of such Rights Offering Shares for any Rights Offering Shares exercised through a Nominee. The ownership interest of each holder of such Rights Offering Shares, and transfers of ownership interests therein, is expected to be recorded on the records of the direct and indirect participants in DTC. It is expected that all exercised Rights Offering Shares (other than Unsubscribed Shares purchased by the Commitment Parties pursuant to the Backstop Agreement) will be automatically allocated to exercising holders through DTC, along with the related HoldCo Noteholder New Common Stock Distribution or HoldCo Equityholder New Common Stock Distribution, as applicable, on or as soon as practicable after the

Effective Date.

**12. Inquiries And Transmittal of Documents; Subscription Agent**

The Rights Offering Instructions for Eligible Holders attached hereto should be carefully read and strictly followed by the Eligible Holders.

Questions relating to the Rights Offering should be directed to the Subscription Agent via email to [RightsOffering@epiqsystems.com](mailto:RightsOffering@epiqsystems.com) (please reference “Ultra Rights Offering” in the subject line) or at the following phone number: (844) 319-8438 (domestic toll-free) or +1 503-520-4495 (international). Please note that the Subscription Agent is only able to respond to procedural questions regarding the Rights Offering, and cannot provide any information beyond that included in these Rights Offering Procedures and the Beneficial Holder Subscription Forms or Registered Holder Subscription Forms, as applicable. An Eligible Holder must follow the directions of its Nominee with respect to providing instructions to it in connection with the Rights Offering.

The risk of non-delivery of any instructions, documents, and payments to any Nominee or to the Subscription Agent or the Escrow Account is on the Eligible Holder electing to exercise its Subscription Rights and not the Debtors, the Subscription Agent, or the Commitment Parties.

**ULTRA PETROLEUM CORP.  
RIGHTS OFFERING INSTRUCTIONS FOR ELIGIBLE HOLDERS**

**Terms used and not defined herein shall have the meaning assigned to them in the Plan.**

**To elect to participate in the Rights Offering, you must follow the instructions set out below:**

1. **Insert** the principal amount of the HoldCo Notes or HoldCo Equity Interests, as applicable, that you hold in Item 1 of your applicable Beneficial Holder Subscription Form(s) (if you do not know such amount, please contact your Nominee immediately).
2. **Complete** the worksheet in Item 2 of your applicable Beneficial Holder Subscription Form(s), which calculates the maximum number of Rights Offering Shares available for you to purchase. Such amount must be rounded down to the nearest whole share.
3. **Complete** Item 3a of your applicable Beneficial Holder Subscription Form(s) to indicate the principal amount of HoldCo Notes or number of shares of HoldCo Equity Interests associated with the Rights Offering Shares that you elect to purchase, and calculate in Item 3b the aggregate Purchase Price for the Rights Offering Shares that you elect to purchase. **IMPORTANT:** If you do not wish to purchase all of the Rights Offering Shares to which you are entitled, you must provide instructions to your Nominee to **ONLY** submit the relevant portion of HoldCo Notes or HoldCo Interests into the ATOP system. For example, if you only wish to subscribe for 50% of your rights, then request that your Nominee submit only 50% of your HoldCo Notes or HoldCo Interests through ATOP.
4. **Read, complete and sign** the certification in Item 6 of your applicable Beneficial Holder Subscription Form(s). Such execution shall indicate your acceptance and approval of the terms and conditions set forth in these Rights Offering Procedures.
5. **Return** your applicable signed Beneficial Holder Subscription Form(s) to your Nominee, or otherwise follow your Nominee's instructions with respect to the Rights Offering, in sufficient time to allow your Nominee to process your instructions and deliver your underlying HoldCo Notes or HoldCo Equity Interests through ATOP by the Subscription Instruction Deadline. **(If you are a registered holder of Equity Interests in your own name on the books and records of the transfer agent,** you should follow the instructions in the Registered Holder Subscription Form to complete and return your form, and also attach a completed IRS Form W-9 if you are a U.S. person. If you are a non-U.S. person, read, complete and sign an appropriate IRS Form W-8. These forms may be obtained from the IRS at its website: [www.irs.gov](http://www.irs.gov). Payment instructions will also be included in the Registered Holder Subscription Form. Registered positions in the HoldCo Equity Interests will be verified as of the Subscription Instruction Deadline and the Effective Date of the Plan to confirm that a Registered Holder is entitled to participate in the Rights Offering.)



6. **Payment will be automatically made** for any HoldCo Notes or HoldCo Equity Interests submitted through ATOP by the Subscription Instruction Deadline, except for a submission made on behalf of a Commitment Party pursuant to a Commitment Party Addendum.
7. **For Commitment Parties ONLY, Confirm** that you are a Commitment Party by providing the Commitment Party Addendum to your Nominee, so that the Nominee will (i) receive confirmation that payment does not have to be made prior to the Subscription Payment Deadline and (ii) have the relevant Commitment Party Code to enter into the ATOP system. *(This instruction is only for Commitment Parties, each of whom is aware of their status as a Commitment Party).*

- The Subscription **Instruction** Deadline is 4:00 p.m. Central Time on March 21, 2017.

- The Subscription **Payment** Deadline is 5:00 p.m. Houston time on March 22, 2017.

Please note that the Beneficial Holder Subscription Form(s) (and/or other instructions required by your Nominee) must be received by your Nominee in sufficient time to allow such Nominee to process and deliver the applicable HoldCo Notes or HoldCo Equity Interests through ATOP by the Subscription Instruction Deadline.

Payment for exercised Subscription Rights (with respect to Eligible Holders that are not Commitment Parties) will be automatically made by DTC on or before the Subscription Payment Deadline.

Eligible Holders that are Commitment Parties must deliver the appropriate funding directly to the Subscription Agent or to the Escrow Account, as applicable, pursuant to the Funding Notice no later than the Backstop Funding Deadline.

# **EXHIBIT B**

## SUMMARY- HISTORICAL CLOSING PRICES ON 12 MONTH FORWARD HENRY HUB FUTURES

<u>Month</u>	<u>Bloomberg Ticker</u>	<u>Contract Expiration</u>	<u>CLOSING PRICES</u>						
			<u>2/20/17</u>	<u>2/17/17</u>	<u>2/16/17</u>	<u>2/15/17</u>	<u>2/14/17</u>	<u>2/13/17</u>	<u>2/10/17</u>
1	NGH7 Comdty	Mar-17	2.769	2.843	2.832	2.934	2.934	2.929	3.035
2	NGJ7 Comdty	Apr-17	2.880	2.956	2.953	3.043	3.028	3.015	3.122
3	NGK7 Comdty	May-17	2.950	3.018	3.026	3.117	3.100	3.086	3.192
4	NGM7 Comdty	Jun-17	3.020	3.072	3.091	3.176	3.170	3.151	3.255
5	NGN7 Comdty	Jul-17	3.082	3.140	3.153	3.233	3.234	3.204	3.311
6	NGQ7 Comdty	Aug-17	3.102	3.160	3.169	3.256	3.248	3.223	3.328
7	NGU7 Comdty	Sep-17	3.089	3.143	3.168	3.238	3.238	3.220	3.309
8	NGV7 Comdty	Oct-17	3.110	3.160	3.183	3.256	3.255	3.232	3.329
9	NGX7 Comdty	Nov-17	3.161	3.214	3.237	3.303	3.308	3.295	3.386
10	NGZ7 Comdty	Dec-17	3.293	3.337	3.365	3.427	3.440	3.440	3.513
11	NGF8 Comdty	Jan-18	3.389	3.420	3.458	3.520	3.530	3.531	3.604
12	NGG8 Comdty	Feb-18	3.360	3.393	3.430	3.480	3.494	3.500	3.584
<b>AVERAGE</b>			<b>\$3.100</b>	<b>\$3.155</b>	<b>\$3.172</b>	<b>\$3.249</b>	<b>\$3.248</b>	<b>\$3.236</b>	<b>\$3.331</b>

**Total Average:           \$3.213**

*Source: Bloomberg*

# **EXHIBIT C**

## SUMMARY- HISTORICAL SETTLEMENT PRICES ON 12 MONTH FORWARD HENRY HUB FUTURES

<u>Month</u>	<u>Bloomberg Ticker</u>	<u>Contract Expiration</u>	<u>SETTLEMENT PRICES</u>					
			<u>2/17/17</u>	<u>2/16/17</u>	<u>2/15/17</u>	<u>2/14/17</u>	<u>2/13/17</u>	<u>2/10/17</u>
1	NGH7 Comdty	Mar-17	2.834	2.854	2.925	2.905	2.944	3.034
2	NGJ7 Comdty	Apr-17	2.951	2.971	3.037	3.005	3.032	3.117
3	NGK7 Comdty	May-17	3.020	3.042	3.113	3.084	3.108	3.189
4	NGM7 Comdty	Jun-17	3.082	3.107	3.177	3.153	3.175	3.254
5	NGN7 Comdty	Jul-17	3.142	3.170	3.235	3.217	3.240	3.313
6	NGQ7 Comdty	Aug-17	3.160	3.188	3.249	3.232	3.255	3.325
7	NGU7 Comdty	Sep-17	3.152	3.180	3.240	3.222	3.242	3.311
8	NGV7 Comdty	Oct-17	3.166	3.196	3.256	3.241	3.264	3.332
9	NGX7 Comdty	Nov-17	3.220	3.250	3.307	3.298	3.324	3.389
10	NGZ7 Comdty	Dec-17	3.348	3.377	3.432	3.429	3.459	3.518
11	NGF8 Comdty	Jan-18	3.441	3.470	3.520	3.520	3.551	3.608
12	NGG8 Comdty	Feb-18	3.415	3.441	3.487	3.493	3.525	3.582
<b>AVERAGE</b>			<b>\$3.161</b>	<b>\$3.187</b>	<b>\$3.248</b>	<b>\$3.233</b>	<b>\$3.260</b>	<b>\$3.331</b>

**Total Average                    \$3.237**

*Source: Bloomberg*

# **EXHIBIT D**

## Chapter 220

### Henry Hub Natural Gas Futures

#### 220100. SCOPE OF CHAPTER

This chapter is limited in application to Henry Hub Natural Gas futures. The procedures for trading, clearing, delivery and settlement not specifically covered herein or in Chapter 7 shall be governed by the general rules of the Exchange.

The provisions of these rules shall apply to all natural gas bought or sold for future delivery on the Exchange with delivery at the Henry Hub.

The terms "seller" and "buyer" shall mean the seller of the physical product and the buyer of the physical product, respectively.

For purposes of these rules, unless otherwise specified, times referred to herein shall refer to and indicate New York time.

#### 220101. CONTRACT SPECIFICATIONS

The contract grade for delivery on futures contracts shall be "natural gas" which shall mean any mixture of hydrocarbons, or hydrocarbons and noncombustible gases, in a gaseous state, consisting essentially of methane, meeting the specifications set forth in the FERC-approved tariff of Sabine Pipe Line LLC as then in effect at the time of delivery and shall be deliverable in satisfaction of futures contract delivery obligations.

The futures contract delivery point shall be the Henry Hub which refers to piping and related facilities owned and/or leased by Sabine Pipe Line LLC near Erath, Louisiana.

#### 220102. TRADING SPECIFICATIONS

Trading in Henry Hub Natural Gas futures is regularly conducted in all calendar months. The number of months open for trading at a given time shall be determined by the Exchange.

##### 220102.A. Trading Schedule

The hours for trading shall be determined by the Exchange.

##### 220102.B. Trading Unit

The unit of trading shall be 10,000 MMBtu. A delivery tolerance of two percent (2%) above or below the unit of trading is permitted.

The term Btu (British thermal unit) shall mean the amount of heat required to raise the temperature of one (1) pound of avoirdupois pure water from fifty-eight and five tenths degrees (58.5) Fahrenheit to fifty-nine and five tenths degrees (59.5) Fahrenheit at a constant pressure of 14.73 pounds per square inch absolute. MMBtu shall mean one million (1,000,000) Btu.

##### 220102.C. Price Increments

The minimum fluctuation shall be \$0.001 (one tenth of one cent) per MMBtu. Prices shall be quoted in dollars and cents per MMBtu.

Trades may also occur in multiples of \$ 0.00025 per MMBtu for Henry Hub Natural Gas Futures inter-commodity spreads executed as simultaneous transactions on GLOBEX® pursuant to Rule 542.F.

##### 220102.D. Special Price Fluctuation Limits

At the commencement of each trading day, the contract shall be subject to special fluctuation limits as set forth in Rule 589 and in the Special Price Fluctuation Limits Table in the Interpretations & Special Notices Section of Chapter 5

##### 220102.E. Position Limits, Exemptions, Position Accountability and Reportable Levels

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

#### **220102.F. Termination of Trading**

No trades in Henry Hub Natural Gas futures in the expiring contract month shall be made after the third business day prior to the first day of the delivery month for such expiring contract. In the event that the official Exchange holiday schedule changes subsequent to the listing of a Henry Hub Natural Gas futures, the originally listed expiration date shall remain in effect. In the event that the originally listed expiration day is declared a holiday, expiration will move to the business day immediately prior. Any contracts remaining open after the last day of trading must be either:

- (a) Settled by delivery which shall take place no earlier than the first calendar day of the delivery month and shall be completed no later than the last calendar day of the delivery month; or
- (b) Liquidated by means of a bona fide Exchange for Related Position ("EFRP") pursuant to Rule 538. An EFRP is permitted in an expired futures contract until 5:15 p.m. on the last day of trading of the expiring futures contract. An EFRP which establishes a futures position for either the buyer or the seller in an expired futures contract shall not be permitted following the termination of trading of an expired futures contract.

### **220103. MEASUREMENT**

The natural gas delivered hereunder shall be measured at the buyer's point of interconnection at the Henry Hub in accordance with transporting pipeline practices.

### **220104. DELIVERY**

Delivery shall be made free-on-board ("F.O.B.") at the buyer's interconnection point at the Henry Hub. Delivery shall be made in accordance with all applicable Federal executive orders and all applicable Federal, State and Local laws and regulations. Delivery shall have occurred when product passes through the buyer's interconnection point via physical flow or displacement, at which time the buyer shall bear the risk of loss. For purposes of this Rule, Intra Hub Transfer ("IHT") service at the Henry Hub is recognized as an acceptable buyer interconnection point.

The seller shall provide natural gas which is free from all liens, encumbrances, unpaid taxes, fees and other charges.

### **220105. DELIVERY PROCEDURES**

#### **220105.A. Notices of Intention to Deliver and Notices of Intention to Accept**

By 11:30 a.m. on the first business day after the final day of trading:

1. Exchange Clearing Members having open short positions shall provide the Clearing House with a Notice of Intention to Delivery. The Notice of Intention to Delivery must be in the form prescribed by the Exchange and must include: the name of the seller(s), the pipeline(s) through which the seller(s) will transport the product to the Henry Hub, the number of contracts to be delivered, and shall also provide any additional information as may be required by the Exchange.
2. Exchange Clearing Members having open long positions shall provide the Clearing House with a Notice of Intention to Accept. The Notice of Intention to Accept must be in the form prescribed by the Exchange and must include: the name of the buyer(s), the pipeline(s) through which the buyer(s) will receive the product at the Henry Hub, the number of contracts to be accepted, and shall also provide any additional information as may be required by the Exchange.

#### **220105.B. Notice Day**

The Clearing House shall allocate Notices of Intention to Deliver and Notices of Intention to Accept by matching size of positions, and the designated delivery and receiving pipelines to the extent possible. The Clearing House shall provide copies of the notices to the respective clearing members by 2:00 p.m. on the first business day after the final day of trading. The day on which the notices are provided to the clearing members shall be referred to as the Notice Day. Thereafter, a buyer's clearing member or seller's clearing member may amend the name(s) of the pipeline(s) for



their respective buyer(s) or seller(s) in a form prescribed by the Exchange to the counterparty and the Exchange no later than 4:30 p.m. on the Notice Day.

#### **220105.C. Clearance and Non-Clearance**

1. Notice of Scheduled Clearance. No later than 3:00 p.m. on the last business day prior to the delivery month, the seller's clearing member shall give the buyer's clearing member and the Exchange a properly completed Notice of Scheduled Clearance. The Notice of Scheduled Clearance must be in the form prescribed by the Exchange, indicate that the product and transportation are in place to enable the delivery to occur in accordance with the provisions of the Notice of Intention to Deliver and Notice of Intention to Accept.
2. Non-Clearance. In the event that either the seller or the buyer is unable to make or take delivery in accordance with the Notice of Intention to Deliver and Notice of Intention to Accept because of a good faith inability to receive clearance from the Henry Hub facility, the seller's clearing member or the buyer's clearing member, as applicable, shall, no later than 3:00 p.m. on the last business day prior to the delivery month, notify the opposite clearing member and the Exchange, in a form prescribed by the Exchange, of the reasons for inability to make or take, as applicable, delivery in accordance with the Notice of Intention to Deliver and Notice of Intention to Accept. Such notification shall contain an alternate or preferred delivery site and set forth a revised designation of the pipeline(s) at the Henry Hub through which delivery will be completed.

#### **220105.D. Final Settlement Price**

The final settlement price shall be the basis for delivery.

### **220106.**

#### **TIMING OF DELIVERY**

Delivery shall take place no earlier than the first calendar day of the delivery month and shall be completed no later than the last calendar day of the delivery month.

All deliveries shall be at as uniform an hourly and daily rate of flow over the course of the delivery month as is possible under the operating procedures and conditions of the transporting pipelines. Deliveries shall be subject to the transporting pipelines' variation in daily flow rate and balancing of receipts and deliveries of the transporting pipelines.

The seller shall give the buyer, upon request, within one business day, copies of Henry Hub transportation confirmations and invoices issued by Sabine Pipe Line LLC related to a standard delivery involving both parties.

The seller shall give the buyer all appropriate documents to transfer title of product upon receipt of payment.

### **220107.**

#### **DELIVERY MARGIN AND PAYMENTS**

##### **220107.A. Definitions**

For the purposes of this Section 107,

"Payment Date" shall mean the twentieth day of the month following the delivery month or if such date is a Saturday or an Exchange or New York bank holiday other than Monday, payment shall be made on the preceding day which is not an Exchange or New York bank holiday. If such day is a Sunday or an Exchange or New York bank holiday which occurs on a Monday, payment shall be made on the next day which is not an Exchange or New York bank holiday.

##### **220107.B. Margin**

On the third business day following the last day of trading, the clearing member shall obtain from any buyer margin equal to the full value of the product to be delivered and the clearing member shall obtain from any seller margin in an amount fixed, from time to time, by the Exchange.

The buyer's clearing member and the seller's clearing member shall deposit with the Clearing House margins in such amounts and in such form as required by the Exchange. Such margins shall be returned on the business day following notification to the Exchange that delivery and payment have been completed.

##### **220107.C. Payment**

No later than 12:00 p.m. on the third business day prior to the Payment Date, the seller shall advise its clearing member of the name and address of the bank, and the name of the account to which payment shall be made. The clearing member shall advise the opposite clearing member who shall advise the buyer. On the Payment Date, the buyer shall pay the short contract value by federal

funds wire transfer to the account of the seller at the bank nominated by the seller. The term "contract value" shall mean the amount equal to the settlement price on the last day of trading in a futures contract times ten thousand (10,000) times the number of contracts to be delivered.

No later than 12:00 p.m. on the Payment Date, the buyer shall advise its clearing member of the federal funds wire transfer number and the name of the sending bank. The clearing member representing the buyer shall advise the opposite clearing member who shall similarly advise the seller.

No later than the business day following the Payment Date, the seller shall advise its clearing member of receipt of payment, who shall deliver a notice of payment to the clearing member representing the buyer and the Clearing House. Upon receipt of such notice, the delivery shall be complete.

Any payment made on the required Payment Date shall be based on British thermal units actually delivered. If quantitative results are unavailable prior to the time established in the rules for payment, a pro-forma payment based on 10,000 MMBtu per contract shall be made. Payment adjustments based on the actual quantity delivered shall be completed by 12:00 p.m. on the tenth business day after initial payment.

In the event that the seller's clearing member receives notification that payment has not been received, the seller's clearing member shall advise the Exchange and the buyer's clearing member in writing. On the following business day, unless the buyer or the buyer's clearing member has advised the Exchange in writing that the seller failed to deliver, the Exchange shall liquidate the margins held and, when the liquidation is complete, shall pay the seller's clearing member which shall pay its seller. If the buyer or the buyer's clearing member has advised the Exchange in writing that the seller failed to deliver, the matter shall be deemed a failure to deliver pursuant to Rule 714.

#### **220108. VALIDITY OF DOCUMENTS**

The Exchange makes no representation respecting the authenticity, validity, or accuracy of any Notice of Intention to Deliver, Notice of Intention to Accept, check or any document or instrument delivered pursuant to these rules.

#### **220109. ALTERNATIVE DELIVERY PROCEDURES**

A seller and buyer matched by the Exchange under Section 105.B may agree to make and take delivery under terms or conditions which differ from the terms and conditions prescribed by this Chapter. In such a case, clearing members shall execute an Alternative Notice of Intention to Deliver on the form prescribed by the Exchange and shall deliver a completed and executed copy of such notice to the Exchange. The delivery of an executed Alternative Notice of Intention to Deliver to the Exchange shall release the clearing members and the Exchange from their respective obligations under the rules of this Chapter and any other rules regarding physical delivery.

In executing such notice, clearing members shall indemnify the Exchange against any liability, cost or expense the Exchange may incur for any reason as a result of the execution, delivery or performance of such contracts or such agreement, or any breach thereof or default thereunder. Upon receipt of an executed Alternative Notice of Intention to Deliver, the Exchange will return to the clearing members all margin monies held for the account of each with respect to the contracts involved.

# **EXHIBIT E**

## **DEFINITIONS**

### **ACT OR CEA**

The term "Act" or "CEA" shall mean the Commodity Exchange Act, as amended from time to time.

### **AGGREGATE BASE AVAILABLE FUNDS**

The sum of any remaining Base Collateral, any remaining Base Customer Collateral (if applicable as described in Rule 802.A.2), any Remaining Base Priority of Payments and the Aggregate Base Pays.

### **AGGREGATE BASE COLLECTS**

The sum of all Proprietary Base Collects, all Customer Futures Collects, all Individual Customer Swap Collects and the amount of payments utilized for position liquidation pursuant to Rule 802.B.7(b)(ii).

### **AGGREGATE BASE PAYS**

The sum of all Proprietary Base Pays, Customer Futures Pays and Individual Customer Swap Pays.

### **AUCTION PAYMENTS**

The amounts that would be owed to winner(s) of an auction of a defaulted Clearing Member's portfolio (or some portion thereof).

### **BASE ASSESSMENTS**

The amounts by which the Clearing House assesses Base Clearing Members collectively pursuant to Rule 802.

### **BASE CLEARING MEMBER**

A firm meeting the requirements of, and approved for, clearing membership with respect to Base Contracts at the Clearing House.

### **BASE COLLATERAL**

All assets of a defaulting Base Clearing Member that are available to the Clearing House, including without limitation its Base Guaranty Fund contribution (pursuant to Rule 816) including any excess amounts, its performance bonds on deposit with the Clearing House relating to the Base Guaranty Fund Product Classes, any partial payment amounts or settlement variation gains in respect of Base Guaranty Fund Product Classes, the proceeds of the sale of any membership assigned to it for clearing qualification, excess performance bond or guaranty fund deposits of the clearing member for non-Base Guaranty Fund Product Classes and any of its other assets held by, pledged to or otherwise available to the Clearing House but excluding amounts carried in any customer account class.

### **BASE CONTRACT**

A Base Guaranty Fund Product that has been accepted for clearing by the Clearing House, provided however that for purposes of Rules 802.B.7, 802.B.8, 802.B.9, 802.B.10(b), and 802.B.11, the term Base Contract shall include Commingled Futures Positions (as such term is defined in Rule 8G831).

### **BASE CUSTOMER COLLATERAL**

The sum of Base Swap Customer Collateral and Base Futures Customer Collateral, each as applicable pursuant to Rule 802.A.2.

### **BASE PRIORITY OF PAYMENTS**

The CME Contribution, the Base Tranche, the Commingled Tranche, the Alternate Tranche and the Base Assessments, which shall be used in the order set forth in Rule 802.B.

**BLOCK TRADE**

A privately negotiated futures or option on futures transaction that is executed apart from the public auction market and that is permitted in designated contracts subject to specified conditions. These trades are governed by Rule 526 ("Block Trades").

**BOARD**

The Board of Directors of the Exchange or any other body acting in lieu of and with the authority of the Board.

**BROAD-BASED INDEX FUTURE**

A futures contract based upon an index that is not considered narrow-based as defined in Section 1a(35) of the Commodity Exchange Act.

**BROKERAGE**

The fee paid to an agent to facilitate the execution of orders.

**BUSINESS DAY**

In a given commodity, any day on which a settlement price is determined.

**BY-LAWS**

The By-Laws of the Exchange, unless otherwise specified.

**CASH COMMODITY**

The actual physical commodity or financial instrument as distinguished from the futures contract that is based on the physical commodity or financial instrument. Also referred to as "spot commodity."

**CBOT**

The Board of Trade of the City of Chicago, Inc.

**CERTIFICATE OF INCORPORATION**

The Certificate of Incorporation of the Exchange, unless otherwise specified.

**CFTC OR COMMISSION**

The U.S. Commodity Futures Trading Commission.

**CHAIRMAN**

The Chairman of the Board of Directors, or one acting in lieu of and with the authority of the Chairman of the Board.

**CHIEF EXECUTIVE OFFICER OR CEO**

The Chief Executive Officer of the Exchange or one duly authorized to act in lieu of and with the authority of the Chief Executive Officer.

**CLASS A SHARE**

A share of Class A Common Stock of CME Group Inc. Class A Shares shall confer no trading rights.

**CLEARED OTC DERIVATIVES CUSTOMER SEQUESTERED ACCOUNT**

An account in which Funds of Cleared OTC Derivatives positions Customers (or investments thereof) (and the money, securities and/or property margining, guaranteeing or securing such positions) of Cleared OTC Derivatives Customers are held; *Provided, however*, That, for purposes of CME Rules, the term Cleared OTC Derivatives Customer Sequestered Account shall not include an account in which positions in cleared OTC derivatives (or the money,

securities and/or other property margining, guaranteeing or securing such derivatives) are, pursuant to a CFTC order, commingled with positions and funds held in segregated accounts maintained in accordance with Section 4d of the CEA.

### **CLEARED OTC DERIVATIVES CUSTOMERS**

Customers of a futures commission merchant with positions in cleared OTC derivatives, as that term is defined in CFTC Regulation 190.01(o); *Provided however*, That a customer is only a Cleared OTC Derivatives Customer with respect to its positions in cleared OTC derivatives, as that term is defined in CFTC Regulation 190.01(o); *Provided, further*, That, for purposes of CME Rules, the term Cleared OTC Derivatives Customers shall not include customers whose only cleared OTC derivatives positions (and whose money, securities and/or other property margining, guaranteeing or securing such derivatives) are, pursuant to a CFTC order, commingled with positions and funds held in segregated accounts maintained in accordance with Section 4d of the CEA.

### **CLEARING HOUSE**

The CME Clearing House, also referred to as CME Clearing, a division of CME.

### **CLEARING MEMBER**

A firm meeting the requirements of, and approved for, clearing membership at the Exchange. The term "clearing member" as used in the Rules shall include all clearing member categories set forth in Rule 900, unless otherwise specified.

### **CME**

Chicago Mercantile Exchange Inc.

### **CME GROUP INC.**

CME Group or CME Group Inc. is a holding company and the parent of CME, CBOT and NYMEX.

### **COMBINATION ORDER/SPREAD ORDER**

A combination of buy and/or sell orders for the same account, except as provided by Rule 527, at the market, at a fixed differential or by some other appropriate pricing convention. Also referred to as a spread order.

### **COMMODITY**

Any product approved and designated by the Board for trading or clearing pursuant to the rules of the Exchange.

### **CONTRACT**

Depending on the context in which it is used, a term of reference describing either a unit of trading in a particular futures, options or cleared product or a product approved and designated by the Board for trading or clearing pursuant to the rules of the Exchange.

### **DELIVERY MONTH**

Unless otherwise specified in the rules, the designated period of time during which delivery intents may be tendered or deliveries may be completed.

### **DISCIPLINARY OFFENSE**

Any offense as set forth in Rule 300.E.

### **ELECTRONIC DEVICE**

Any type of voice or data communications interface, including but not limited to a computer, headset, trading device, microphone, telephone or camera.

**EMERGENCY**

Any occurrence or circumstance which, in the opinion of the Exchange, requires immediate action and threatens or may threaten fair and orderly trading, clearing, delivery or liquidation of any contracts on the Exchange. Occurrences and circumstances which the Exchange may deem emergencies are set forth in the Rules.

**EXCHANGE**

New York Mercantile Exchange, Inc., including its wholly owned subsidiary Commodity Exchange Inc.

**EXCHANGE OF OPTIONS FOR OPTIONS (EOO) TRADE**

A privately negotiated and simultaneous exchange of an Exchange option position for a corresponding OTC option position. An EOO is one type of an authorized Exchange for Related Position (EFRP) trade governed by Rule 538.

**EXCHANGE FOR PHYSICAL (EFP) TRADE**

A privately negotiated and simultaneous exchange of an Exchange futures position for a corresponding cash position. An EFP is one type of an authorized Exchange for Related Position (EFRP) trade governed by Rule 538.

**EXCHANGE FOR RISK (EFR) TRADE**

A privately negotiated and simultaneous exchange of an Exchange futures position for a corresponding OTC swap or other OTC instrument. An EFR is one type of an authorized Exchange for Related Position (EFRP) trade governed by Rule 538.

**EXCHANGE OFFICIAL**

An employee or member designated by the Exchange to perform or execute certain acts.

**EXERCISE PRICE**

The terms "exercise price", "strike price" and "striking price" shall be synonymous and mean the price at which the futures contract underlying the options contract will be assigned upon exercise of the option. For options contracts which are exercised into multiple futures contracts, the exercise price represents the spread price differential between the futures contracts.

**EXPIRATION DATE**

The term "expiration date" shall mean the last day on which an options contract may be exercised.

**FIRM**

The term "firm" shall mean a corporation, partnership, association, sole proprietorship or other eligible entity.

**FLOOR BROKER**

An Exchange member who is registered as a floor broker under the CEA.

**FLOOR TRADER**

An Exchange member who is registered as a floor trader under the CEA.

**FOLLOWING DAY (OR OTHER SIMILAR EXPRESSION)**

The following, or subsequent, business day.

**FORCE MAJEURE**

Any circumstance (including but not limited to an act of God, strike, lockout, blockage, embargo, governmental action or terrorist activity) which is beyond the control of the buyer or seller and precludes either party from making or taking delivery of product or precludes the Exchange from determining a final settlement as provided for in Exchange Rules.

## **FUNDS OF CLEARED OTC DERIVATIVES CUSTOMERS**

The money, securities, and/or other property received by a futures commission merchant from, for, or on behalf of Cleared OTC Derivatives Customers, to margin, guarantee, or secure their cleared OTC derivatives and all money accruing to such customers as a result of such contracts, and, in the case of cleared OTC derivatives options, to be used as a premium for the purchase of such option by the customer or as a premium payable to the customer or to guarantee or secure the performance of such option by the customer or representing accruals for such options to the customer (including the market value of such options purchased by the customer and for which the customer has paid full value).

## **FUTURES COMMISSION MERCHANT OR FCM**

An individual or organization which solicits or accepts orders to buy or sell futures or options on futures contracts and accepts money or other assets from customer in connection with such orders. An FCM must be registered with the CFTC.

## **FUTURES CONTRACT**

A legally binding agreement to buy or sell a commodity or financial instrument at a later date pursuant to the Rules of the Exchange. Futures contracts are normally standardized according to the quality, quantity, delivery period and location for each commodity, with price as the only variable.

## **GLOBEX®**

Globex refers to CME Globex, an electronic trading platform.

## **GLOBEX ORDER TYPES**

The availability of specific Globex Order Types is dependent on the product, and not all Order Types are available for all products. Supported Order Types by Product are set forth in the Globex Reference Guide (<http://www.cmegroup.com/globex/files/GlobexRefGd.pdf>).

### **COMBINATION ORDER**

A combination of buy and/or sell orders for the same account or accounts with the same ownership, except as provided by Rule 527, at a fixed differential or by some other appropriate pricing convention.

### **HIDDEN QUANTITY ORDER**

An order which displays only a portion of the order to the marketplace. When the displayed quantity has been filled, another portion of the order will then be displayed to the marketplace.

### **LIMIT ORDER**

An order to be executed at a specific price ("limit price") or better.

### **MARKET WITH PROTECTION ORDER**

An order to execute as much of order as possible at the best current offer price (for buy orders) or bid price (for sell orders) within a range of prices predefined by the Exchange (the protected range). Any quantity which cannot be filled within the protected range will remain in the order book as a limit order at the limit of the protected range.

### **MINIMUM QUANTITY ORDER**

An order which is executed only if a certain minimum quantity of that order can be immediately matched. Any unfilled balance will remain in the book as a limit order at the specified price.

### **STOP LIMIT ORDER**

An order which becomes eligible for execution at its limit price or better when the market trades at or above the stop price in the case of a buy stop limit order or at or below the stop price in the case of a sell stop limit order.

### **STOP WITH PROTECTION ORDER**

An order which becomes eligible for execution when the designated price (the stop price) is traded on Globex. Such orders are filled only within a range of prices predefined by the Exchange (the protected range). When the stop price is triggered, the order enters the order book as a limit order with the limit price equal to the trigger price plus or minus the predefined protected range. Any quantity which cannot be filled within the protected range will remain in the order book as a limit order at the limit price.

### **Globex Order Duration Qualifiers**



An order eligible to be entered into Globex that does not contain a duration qualifier will be cancelled if not filled during the Trading Day in which it was received or, if it was received between Trading Days, during the next Trading Day. An order may specify one of the following duration qualifiers:

**DAY**

An order that will be canceled if not filled by the conclusion of the Globex trade date for which it was entered.

**FILL AND KILL**

An order immediately filled in whole or in part at the specified price, with any remaining quantity canceled.

**GOOD 'TILL CANCELED (GTC)**

An order which will remain in force until executed, cancelled or the contract expires.

**GOOD 'TILL DATE (GTD)**

An order which will remain in force through a specified trade date unless executed or canceled, or until the contract expires.

**GLOBEX TERMINAL OPERATOR**

Globex terminal operator refers to 1) any person who physically enters orders into Globex or 2) any automated trading system which enters orders into Globex, either directly or through an automated order routing system or independent software vendor. All Globex terminal operators must be identified to the Exchange in accordance with the provisions of Rule 576 (Identification of Globex Terminal Operators).

**GLOBEX TRADING HOURS**

Those hours designated by the Board of Directors for trading particular contracts on Globex.

**GUARANTY FUND DEPOSIT**

The amount required to be deposited with the Clearing House by the clearing member as a guaranty of its obligations to the Clearing House.

**HOLIDAY**

Any day declared to be a holiday by these rules or by a resolution of the Board on which the Exchange is closed. When any such holiday falls on Sunday, the following Monday shall be considered such holiday. When any such holiday falls on Saturday, the immediately preceding Friday shall be considered such holiday.

**INITIAL PERFORMANCE BOND**

Generally, a factored amount over the maintenance performance bond requirement calculated by the SPAN<sup>®</sup> performance bond system.

**INTRODUCING BROKER OR IB**

A firm or individual that solicits and accepts orders to buy or sell futures or options on futures contracts from customers but does not accept money or other assets from such customers. An IB must be registered with the CFTC, unless exempt from registration pursuant to CFTC Regulations.

**INVESTIGATIVE AND HEARING COMMITTEES**

The investigative and hearing committees of the Exchange are the Business Conduct Committee, the Clearing House Risk Committee, the Probable Cause Committee, Hearing Panels of the Board of Directors and such other committees created for this purpose by the Board.

#### **LIQUIDITY EVENT**

The Clearing House requires liquidity (1) to satisfy obligations of a defaulted or suspended Clearing Member, (2) to satisfy obligations associated with the transfer of account(s) of a defaulted or suspended Clearing Member or (3) as a result of a liquidity constraint or default by a depository or settlement bank.

#### **MAINTENANCE PERFORMANCE BOND**

The minimum amount of performance bond equity required to be maintained in an account. The maintenance performance bond requirement is the actual risk performance bond calculated by the SPAN® performance bond system.

#### **MEMBER**

Unless otherwise specified in the rules, an individual owning or holding a membership in the Exchange.

#### **MEMBER FIRM**

An entity to which membership privileges on the Exchange have been conferred.

#### **NARROW-BASED INDEX FUTURE**

Refers to a futures contract based upon a Security Index that is considered narrow-based as defined in Section 1a(35) of the Commodity Exchange Act.

#### **NATIONAL FUTURES ASSOCIATION OR NFA**

The National Futures Association. NFA is an independent self-regulatory organization for the U.S. futures industry with no ties to any specific marketplace.

#### **NON-MEMBER**

Unless otherwise specified in the rules, any Person who is not a Member of the Exchange.

#### **NON-MEMBER FIRM**

An entity to which membership privileges on the Exchange have not been conferred.

#### **NOTICE**

Except as otherwise specifically provided, a notice in writing emailed to or personally served upon the person to be notified, left at his usual place of business during business hours or mailed by U.S. First Class Mail, Certified Mail, Registered Mail or by overnight delivery to his last known place of business or residence.

#### **OMNIBUS ACCOUNT**

An account of one Futures Commission Merchant (FCM), the originating FCM, which resides on the books of another FCM (the carrying FCM), in which the transactions of two or more persons are combined and carried in the name of the originating FCM rather than in the name of the individual customers.

#### **PANEL**

A subcommittee selected in accordance with committee procedure to adjudicate or make a particular determination. A decision of a panel shall be deemed a decision of the committee.

#### **PANELIST**

An individual appointed to an Exchange committee who is entitled to participate in a decision on any matter under consideration by the committee or panel thereof.

**PARTNER CLEARINGHOUSE**

The term “Partner Clearinghouse” means a derivatives clearing organization or a clearinghouse which has agreed to act in concert with the Exchange to facilitate clearance of Security Futures Products as defined herein. A Partner Clearinghouse shall be considered a Clearing Member for purposes of the Rules except to the extent otherwise provided in an agreement between the Exchange and the Partner Clearinghouse.

**PARTICIPATING EXCHANGE**

An exchange or clearing house that has entered into a business relationship with the Exchange for clearing, order routing or any other business purpose.

**PERFORMANCE BOND**

The minimum amount of funds that must be deposited as a performance bond by 1) an account holder with his FCM, 2) a non-clearing FCM with a clearing member or 3) a clearing member with the Clearing House.

**PERFORMANCE BOND EQUITY**

An account’s net liquidating equity plus the collateral value of acceptable performance bond deposits.

**PERSON**

It shall include the singular or plural, and individuals, associations, partnerships, corporations and trusts.

**PRESIDENT**

The President of the Exchange, or one duly authorized to act in lieu of and with the authority of the President.

**PRESIDENT OF THE CLEARING HOUSE**

The President of the Clearing House, or one duly authorized to act in lieu of and with the authority of the President of the Clearing House.

**REMAINING BASE PRIORITY OF PAYMENTS**

The amount of each non-defaulted Base Clearing Member’s remaining payment obligations, if any, in respect of Base Assessments, any remaining CME Contribution, any remaining Base Guaranty Fund amounts and any remaining Base Assessments previously funded.

**REQUEST FOR QUOTE**

An electronic message disseminated on Globex for the purpose of soliciting bids or offers for specific contract(s) or combinations of contracts.

**RULES**

The Certificate of Incorporation, By-Laws, rules, interpretations, orders, resolutions, advisories, notices, manuals and similar directives of the Exchange, and all amendments thereto. The trading and clearing of all Exchange futures, options on futures, cleared-only and spot contracts shall be subject to the rules.

**SECURITY FUTURES PRODUCTS**

A contract based on securities products as such term is defined by 1a(45) of the Commodity Exchange Act. Security Futures Products (“SFPs”) include futures contracts based upon a single security (or “stock futures”); futures contracts based upon a narrow-based security index; and, options on any security futures as those terms are defined in Sections 1a(35) and 1a(44) of the Commodity Exchange Act.

**SETTLEMENT PRICE**

The official daily closing price of futures and options on futures contracts, as determined in accordance with Rule 813, used by the Clearing House for marking all open positions at the close of the daily settlement cycle.

#### **SETTLEMENT VARIATION**

The change in dollar amount calculated by the Clearing House for clearing members figured to the daily settlement price on the basis of their positions.

#### **SPOT**

The actual physical commodity as distinguished from the futures contract that is based on the physical commodity. Also referred to as "cash commodity."

#### **TRADE**

The term "trade" shall mean any purchase or sale of any commodity futures or options contract made on the Exchange.

#### **TRADING DAY**

A trading day shall mean the hours of trading as determined by the board for each contract starting with the opening of trading and ending with the close of trading for such contract.

#### **TRADING ANNEX**

The term "Trading Annex" means the location provided by the Exchange, subject to availability and entry into an applicable Trading Annex license agreement, in which a Member may act in a registered capacity by soliciting or broking transactions in Exchange products or may trade as a principal.

#### **TRADING SESSION**

A trading session means the Globex session (the hours on a particular trading day when a product can be traded on Globex).

#### **U.S. GOVERNMENT SECURITIES BROKER-DEALER**

A broker-dealer registered with the Securities and Exchange Commission that functions in the operation of markets for U.S. Treasuries. The functions may include, but are not limited to:

- Acting as a channel for the United States Department of the Treasury and investors in primary market for U.S. Treasuries (for example, by participating in auctions);
- Acting as providers of liquidity in primary and secondary markets for U.S. Treasuries; and
- Acting as providers of asset transformation and market making services in the market for U.S. Treasuries.

***(End Definitions)***

# **EXHIBIT F**

## DEFINITIONS

### ACT OR CEA

The term “Act” or “CEA” shall mean the Commodity Exchange Act, as amended from time to time.

### AGGREGATE BASE AVAILABLE FUNDS

The sum of any remaining Base Collateral, any remaining Base Customer Collateral (if applicable as described in Rule 802.A.2), any Remaining Base Priority of Payments and the Aggregate Base Pays.

### AGGREGATE BASE COLLECTS

The sum of all Proprietary Base Collects, all Customer Futures Collects, all Individual Customer Swap Collects and the amount of payments utilized for position liquidation pursuant to Rule 802.B.7(b)(ii).

### AGGREGATE BASE PAYS

The sum of all Proprietary Base Pays, Customer Futures Pays and Individual Customer Swap Pays.

### AUCTION PAYMENTS

The amounts that would be owed to winner(s) of an auction of a defaulted Clearing Member’s portfolio (or some portion thereof).

### BASE ASSESSMENTS

The amounts by which the Clearing House assesses Base Clearing Members collectively pursuant to Rule 802.

### BASE CLEARING MEMBER

A firm meeting the requirements of, and approved for, clearing membership with respect to Base Contracts at the Exchange.

### BASE COLLATERAL

All assets of a defaulting Base Clearing Member that are available to the Clearing House, including without limitation its Base Guaranty Fund contribution (pursuant to Rule 816) including any excess amounts, its performance bonds on deposit with the Clearing House relating to the Base Guaranty Fund Product Classes, any partial payment amounts or settlement variation gains in respect of Base Guaranty Fund Product Classes, the proceeds of the sale of any membership assigned to it for clearing qualification, excess performance bond or guaranty fund deposits of the clearing member for non-Base Guaranty Fund Product Classes and any of its other assets held by, pledged to or otherwise available to the Clearing House but excluding amounts carried in any customer account class.

### BASE CONTRACT

A Base Guaranty Fund Product that has been accepted for clearing by the Clearing House, provided however that for purposes of Rules 802.B.7, 802.B.8, 802.B.9, 802.B.10(b), and 802.B.11, the term Base Contract shall include Commingled Futures Positions (as such term is defined in Rule 8G831).

### BASE CUSTOMER COLLATERAL

The sum of Base Swap Customer Collateral and Base Futures Customer Collateral, each as applicable pursuant to Rule 802.A.2.

### BASE PRIORITY OF PAYMENTS

The CME Contribution, the Base Tranche, the Comingled Tranche, the Alternate Tranche and the Base Assessments, which shall be used in the order set forth in Rule 802.B.

**BLOCK TRADE**

A privately negotiated futures or option on futures transaction that is executed apart from the public auction market and that is permitted in designated contracts subject to specified conditions. These trades are governed by Rule 526 ("Block Trades").

**BOARD**

The Board of Directors of the Exchange or any other body acting in lieu of and with the authority of the Board.

**BROAD-BASED INDEX FUTURE**

A futures contract based upon an index that is not considered narrow-based as defined in Section 1a(35) of the Commodity Exchange Act.

**BROKERAGE**

The fee paid to an agent to facilitate the execution of orders.

**BUSINESS DAY**

In a given commodity, any day on which a settlement price is determined.

**BY-LAWS**

The By-Laws of the Exchange, unless otherwise specified.

**CASH COMMODITY**

The actual physical commodity or financial instrument as distinguished from the futures contract that is based on the physical commodity or financial instrument. Also referred to as "spot commodity."

**CBOT**

The Board of Trade of the City of Chicago, Inc.

**CERTIFICATE OF INCORPORATION**

The Certificate of Incorporation of the Exchange, unless otherwise specified.

**CFTC OR COMMISSION**

The U.S. Commodity Futures Trading Commission.

**CHAIRMAN**

The Chairman of the Board of Directors, or one acting in lieu of and with the authority of the Chairman of the Board.

**CHIEF EXECUTIVE OFFICER OR CEO**

The Chief Executive Officer of the Exchange or one duly authorized to act in lieu of and with the authority of the Chief Executive Officer.

**CLASS A SHARE**

A share of Class A Common Stock of CME Group Inc. Class A Shares shall confer no trading rights.

**CLASS B STOCKHOLDER**

The registered owner of one or more Class B Shares.

**CLEAR DATE OF THE FX OTC CLEARED TRANSACTION**

For purposes of these rules, the “clear date of the foreign exchange (FX) over-the-counter (OTC) cleared transaction” is the date on which an original spot, forward and swap FX OTC transaction clears at CME Clearing as a substituted, cleared transaction.

#### **CLEARING HOUSE**

The CME Clearing House, also referred to as CME Clearing, a division of CME.

#### **CLEARING MEMBER**

A firm meeting the requirements of, and approved for, clearing membership at the Exchange. The term “clearing member” as used in the Rules shall include all clearing member categories set forth in Rule 900, unless otherwise specified.

#### **CLOSING RANGE**

The high and low prices, inclusive of bids and offers, recorded during the time period designated by the Exchange as the close of pit trading in a particular contract.

#### **CME**

Chicago Mercantile Exchange Inc.

#### **CME GROUP INC.**

CME Group or CME Group Inc. is a holding company and the parent of CME, CBOT and NYMEX.

#### **COMBINATION ORDER/SPREAD ORDER**

A combination of buy and/or sell orders for the same account, except as provided by Rule 527, at the market, at a fixed differential or by some other appropriate pricing convention. Also referred to as a spread order.

#### **COMMODITY**

Any product approved and designated by the Board for trading or clearing pursuant to the rules of the Exchange.

#### **CONTRACT**

Depending on the context in which it is used, a term of reference describing either a unit of trading in a particular futures, options or cleared product or a product approved and designated by the Board for trading or clearing pursuant to the rules of the Exchange.

#### **DELIVERY MONTH**

Unless otherwise specified in the rules, the designated period of time during which delivery intents may be tendered or deliveries may be completed.

#### **DISCIPLINARY OFFENSE**

Any offense as set forth in Rule 300.E.

#### **ELECTRONIC DEVICE**

Any type of voice or data communications interface, including but not limited to a computer, headset, trading device, microphone, telephone or camera.

#### **EMERGENCY**

Any occurrence or circumstance which, in the opinion of the Exchange, requires immediate action and threatens or may threaten fair and orderly trading, clearing, delivery or liquidation of any contracts on the Exchange. Occurrences and circumstances which the Exchange may deem emergencies are set forth in the Rules.



## **EXCHANGE**

Chicago Mercantile Exchange Inc.

## **EXCHANGE OF OPTIONS FOR OPTIONS (EOO) TRADE**

A privately negotiated and simultaneous exchange of an Exchange option position for a corresponding OTC option position. An EOO is one type of an authorized Exchange for Related Position (EFRP) trade governed by Rule 538.

## **EXCHANGE FOR PHYSICAL (EFP) TRADE**

A privately negotiated and simultaneous exchange of an Exchange futures position for a corresponding cash position. An EFP is one type of an authorized Exchange for Related Position (EFRP) trade governed by Rule 538.

## **EXCHANGE FOR RISK (EFR) TRADE**

A privately negotiated and simultaneous exchange of an Exchange futures position for a corresponding OTC swap or other OTC instrument. An EFR is one type of an authorized Exchange for Related Position (EFRP) trade governed by Rule 538.

## **EXCHANGE OFFICIAL**

An employee or member designated by the Exchange to perform or execute certain acts.

## **EXERCISE PRICE**

The terms "exercise price", "strike price" and "striking price" shall be synonymous and mean the price at which the futures contract underlying the options contract will be assigned upon exercise of the option. For options contracts which are exercised into multiple futures contracts, the exercise price represents the spread price differential between the futures contracts.

## **EXPIRATION DATE**

The term "expiration date" shall mean the last day on which an options contract may be exercised.

## **FIRM**

The term "firm" shall mean a corporation, partnership, association, sole proprietorship or other eligible entity.

## **FLOOR**

Except as otherwise provided by the Exchange, the term "Floor" shall mean any trading floor on which Exchange contracts are listed for open outcry trading.

## **FLOOR BROKER**

An Exchange member who is registered as a floor broker under the CEA.

## **FLOOR TRADER**

An Exchange member who is registered as a floor trader under the CEA.

## **FOLLOWING DAY (OR OTHER SIMILAR EXPRESSION)**

The following, or subsequent, business day.

## **FORCE MAJEURE**

Any circumstance (including but not limited to an act of God, strike, lockout, blockage, embargo, governmental action or terrorist activity) which is beyond the control of the buyer or seller and precludes either party from making or taking delivery of product or precludes the Exchange from determining a final settlement as provided for in Exchange Rules.

### **FORWARD FX OTC CLEARED TRANSACTION**

For purposes of these rules, a “forward” foreign exchange (FX) over-the-counter (OTC) cleared transaction shall be an agreement between counterparties to exchange (“delivery”) of the associated currency pairs at a maturity date greater than one or two business days in the future. A forward FX transaction may be for standard delivery maturities from the original trade date, such as TOM Next (tomorrow next or day after tomorrow), 1-week, 2-weeks, 3-weeks, 1-month, 2-months, 3-months, ..., 6-months, ..., 1-year, 18-months, 2-years, etc. Also, a forward FX transaction may be for broken date maturities, that is, for delivery on any good business day in both the issuing countries of the associated currency pair that is not one of the standard delivery dates.

### **FUTURES COMMISSION MERCHANT OR FCM**

An individual or organization which solicits or accepts orders to buy or sell futures or options on futures contracts and accepts money or other assets from customer in connection with such orders. An FCM must be registered with the CFTC.

### **FUTURES CONTRACT**

A legally binding agreement to buy or sell a commodity or financial instrument at a later date pursuant to the Rules of the Exchange. Futures contracts are normally standardized according to the quality, quantity, delivery period and location for each commodity, with price as the only variable.

### **GLOBEX®**

Globex refers to CME Globex, an electronic trading platform.

### **GLOBEX TERMINAL OPERATOR**

Globex terminal operator refers to 1) any person who physically enters orders into Globex or 2) any automated trading system which enters orders into Globex, either directly or through an automated order routing system or independent software vendor. All Globex terminal operators must be identified to the Exchange in accordance with the provisions of Rule 576 (Identification of Globex Terminal Operators).

### **GLOBEX TRADING HOURS**

Those hours designated by the Board of Directors for trading particular contracts on Globex.

### **GUARANTY FUND DEPOSIT**

The amount required to be deposited with the Clearing House by the clearing member as a guaranty of its obligations to the Clearing House.

### **HOLIDAY**

Any day declared to be a holiday by these rules or by a resolution of the Board on which the Exchange is closed. When any such holiday falls on Sunday, the following Monday shall be considered such holiday. When any such holiday falls on Saturday, the immediately preceding Friday shall be considered such holiday.

### **INITIAL PERFORMANCE BOND**

Generally, a factored amount over the maintenance performance bond requirement calculated by the SPAN® performance bond system.

### **INTRODUCING BROKER OR IB**

A firm or individual that solicits and accepts orders to buy or sell futures or options on futures contracts from customers but does not accept money or other assets from such customers. An IB must be registered with the CFTC, unless exempt from registration pursuant to CFTC Regulations.

## **INVESTIGATIVE AND HEARING COMMITTEES**

The investigative and hearing committees of the Exchange are the Business Conduct Committee, the Clearing House Risk Committee, the Floor Conduct Committee, the Probable Cause Committee, Hearing Panels of the Board of Directors and such other committees created for this purpose by the Board.

## **LIQUIDITY EVENT**

The Clearing House requires liquidity (1) to satisfy obligations of a defaulted or suspended Clearing Member, (2) to satisfy obligations associated with the transfer of account(s) of a defaulted or suspended Clearing Member or (3) as a result of a liquidity constraint or default by a depositary or settlement bank.

## **MAINTENANCE PERFORMANCE BOND**

The minimum amount of performance bond equity required to be maintained in an account. The maintenance performance bond requirement is the actual risk performance bond calculated by the SPAN® performance bond system.

## **MEMBER**

Unless otherwise specified in the rules, an individual owning or holding a membership in the Exchange.

## **MEMBER FIRM**

An entity to which membership privileges on the Exchange have been conferred.

## **NARROW-BASED INDEX FUTURE**

Refers to a futures contract based upon a Security Index that is considered narrow-based as defined in Section 1a(35) of the Commodity Exchange Act.

## **NATIONAL FUTURES ASSOCIATION OR NFA**

The National Futures Association. NFA is an independent self-regulatory organization for the U.S. futures industry with no ties to any specific marketplace.

## **NON-MEMBER**

Unless otherwise specified in the rules, any Person who is not a Member of the Exchange.

## **NON-MEMBER FIRM**

An entity to which membership privileges on the Exchange have not been conferred.

## **NOTICE**

Except as otherwise specifically provided, a notice in writing emailed to or personally served upon the person to be notified, left at his usual place of business during business hours or mailed by U.S. First Class Mail, Certified Mail, Registered Mail or by overnight delivery to his last known place of business or residence.

## **OMNIBUS ACCOUNT**

An account of one Futures Commission Merchant (FCM), the originating FCM, which resides on the books of another FCM (the carrying FCM), in which the transactions of two or more persons are combined and carried in the name of the originating FCM rather than in the name of the individual customers.

## **ORDER TYPES**

(Note that not all order types are eligible for execution in a trading pit on Globex and through open outcry. Additionally, order types eligible for both venues may have different meanings depending on whether the order is to be executed in a trading pit via open outcry or through Globex.

Open Outcry Order Types**ALL-OR-NONE (AON) ORDER**

Where allowed pursuant to Rule 523, an order to be executed in designated contracts in a trading pit via open outcry only for its entire quantity at a single price, with a size at or above a predetermined threshold.

**DISREGARD TAPE (DRT) or NOT-HELD ORDER**

Absent any restrictions, a "DRT" (Not-Held Order) means any order giving a person complete discretion over price and time in execution of the order, including discretion to execute all, some, or none of the order. A member or clearing member shall not accept an order containing the phrase "with a tick, you are held" (or similar such language). It is understood that a floor broker may trade for his own account while holding such an order without violating Rule 530 ("Priority of Customers' Orders") provided the customer has previously consented in writing and evidence of such general consent is indicated on the order with the "WP" (with permission) designation.

**ENTER OPEN STOP (EOS) ORDER**

An instruction to the clearing firm to enter a stop order after execution of a previous order has been achieved.

**FILL OR KILL (FOK) ORDER**

A designation, added to an order, instructing the broker to fill the order immediately in its entirety or not all. If the order is not filled immediately in its entirety, it is cancelled.

**LIMIT ORDER**

An order with instructions to be executed at a specific price ("limit price") or better.

**MARKET (MKT) ORDER**

An order with instructions to be executed upon receipt by a floor broker at the best available price.

**MARKET IF TOUCHED (MIT) ORDER**

A sell (buy) order placed above (below) the market which becomes a market order when the designated price is touched.

**MARKET ON CLOSE (MOC) ORDER**

An order to be executed only in the closing range.

**ONE-CANCELS-OTHER (OCO) ORDER**

A combination of two orders, in which the execution of either one automatically cancels the other.

**OPEN ORDER (GOOD-TILL-CANCELLED)**

An order which remains in force until cancelled. Without such designation, all unfilled orders are cancelled at the end of the Regular Trading Hours Session.

**OPENING ONLY ORDER**

An order that is to be executed during the time period designated by the Exchange as the Regular Trading Hours session opening range time period. Any remaining unfilled quantity not executed during the time period designated as the opening range will be deemed cancelled.

**STOP ORDER**

An order which becomes a market order when the price designated on the order (the "Stop Price") is elected as described below.

A "Buy Stop" order is placed above the market, and is elected only when the market trades at or above, or is bid at or above, the Stop Price. A "Sell Stop" order is placed below the market, and is elected only when the market trades at or below, or is offered at or below, the Stop Price.

**STOP-CLOSE ONLY ORDER**

A stop order which is in effect only during the closing range. It becomes a market order if, during the closing range, the market: (1) in the case of a Buy Stop-Close Only order, trades at or above, or is bid at or above the Stop Price; or (2) in the case of a Sell Stop-Close Only order, trades at or below, or is offered at or below the Stop Price.

**STOP LIMIT ORDER**

A stop order which becomes executable at its limit price or better, when and if the market: (1) in the case of a Buy Stop Limit order, trades at or above, or is bid at or above the Stop Price; or (2) in the case of a Sell Stop Limit order, trades at or below, or is offered at or below the Stop Price.

### Globex Order Types

The availability of specific Globex Order Types is dependent on the product, and not all Order Types are available for all products. Supported Order Types by Product are set forth in the Globex Reference Guide (<http://www.cmegroup.com/globex/files/GlobexRefGd.pdf>).

#### **COMBINATION ORDER**

A combination of buy and/or sell orders for the same account or accounts with the same ownership, except as provided by Rule 527, at a fixed differential or by some other appropriate pricing convention.

#### **HIDDEN QUANTITY ORDER**

An order which displays only a portion of the order to the marketplace. When the displayed quantity has been filled, another portion of the order will then be displayed to the marketplace.

#### **LIMIT ORDER**

An order to be executed at a specific price ("limit price") or better.

#### **MARKET WITH PROTECTION ORDER**

An order to execute as much of order as possible at the best current offer price (for buy orders) or bid price (for sell orders) within a range of prices predefined by the Exchange (the protected range). Any quantity which cannot be filled within the protected range will remain in the order book as a limit order at the limit of the protected range.

#### **MINIMUM QUANTITY ORDER**

An order which is executed only if a certain minimum quantity of that order can be immediately matched. Any unfilled balance will remain in the book as a limit order at the specified price.

#### **STOP LIMIT ORDER**

An order which becomes eligible for execution at its limit price or better when the market trades at or above the stop price in the case of a buy stop limit order or at or below the stop price in the case of a sell stop limit order.

#### **STOP WITH PROTECTION ORDER**

An order which becomes eligible for execution when the designated price (the stop price) is traded on Globex. Such orders are filled only within a range of prices predefined by the Exchange (the protected range). When the stop price is triggered, the order enters the order book as a limit order with the limit price equal to the trigger price plus or minus the predefined protected range. Any quantity which cannot be filled within the protected range will remain in the order book as a limit order at the limit price.

### Globex Order Duration Qualifiers

An order eligible to be entered into Globex that does not contain a duration qualifier will be cancelled if not filled during the Trading Day in which it was received or, if it was received between Trading Days, during the next Trading Day. An order may specify one of the following duration qualifiers:

#### **DAY**

An order that will be canceled if not filled by the conclusion of the Globex trade date for which it was entered.

#### **FILL AND KILL**

An order immediately filled in whole or in part at the specified price, with any remaining quantity canceled.

#### **GOOD 'TILL CANCELED (GTC)**

An order which will remain in force until executed, cancelled or the contract expires.

#### **GOOD 'TILL DATE (GTD)**

An order which will remain in force through a specified trade date unless executed or canceled, or until the contract expires.

### **ORIGINAL TRADE DATE OF AN FX OTC TRANSACTION**

For purposes of these rules, an "original trade date of a foreign exchange (FX) over-the-counter (OTC) cleared transaction," is the date on which the two counterparties agreed to the OTC transaction that is being replaced with the FX OTC cleared transaction.

**PANEL**

A subcommittee selected in accordance with committee procedure to adjudicate or make a particular determination. A decision of a panel shall be deemed a decision of the committee.

**PANELIST**

An individual appointed to an Exchange committee who is entitled to participate in a decision on any matter under consideration by the committee or panel thereof.

**PARTNER CLEARINGHOUSE**

The term "Partner Clearinghouse" means a derivatives clearing organization or a clearinghouse which has agreed to act in concert with the Exchange to facilitate clearance of Security Futures Products as defined herein. A Partner Clearinghouse shall be considered a Clearing Member for purposes of the Rules except to the extent otherwise provided in an agreement between the Exchange and the Partner Clearinghouse.

**PARTICIPATING EXCHANGE**

An exchange or clearing house that has entered into a business relationship with the Exchange for clearing, order routing or any other business purpose.

**PERFORMANCE BOND**

The minimum amount of funds that must be deposited as a performance bond by 1) an account holder with his FCM, 2) a non-clearing FCM with a clearing member or 3) a clearing member with the Clearing House.

**PERFORMANCE BOND EQUITY**

An account's net liquidating equity plus the collateral value of acceptable performance bond deposits.

**PERSON**

It shall include the singular or plural, and individuals, associations, partnerships, corporations and trusts.

**PRESIDENT**

The President of the Exchange, or one duly authorized to act in lieu of and with the authority of the President.

**PRESIDENT OF THE CLEARING HOUSE**

The President of the Clearing House, or one duly authorized to act in lieu of and with the authority of the President of the Clearing House.

**REGULAR TRADING HOURS (RTH)**

Those hours designated for open outcry trading of the relevant product as determined from time to time.

**REMAINING BASE PRIORITY OF PAYMENTS**

The amount of each non-defaulted Base Clearing Member's remaining payment obligations, if any, in respect of Base Assessments, any remaining CME Contribution, any remaining Base Guaranty Fund amounts and any remaining Base Assessments previously funded.

**REQUEST FOR QUOTE**

An electronic message disseminated on Globex for the purpose of soliciting bids or offers for specific contract(s) or combinations of contracts.

**RULES**

The Certificate of Incorporation, By-Laws, rules, interpretations, orders, resolutions, advisories, notices, manuals and similar directives of the Exchange, and all amendments thereto. The trading and clearing of all Exchange futures, options on futures, cleared-only and spot contracts shall be subject to the rules.

**SECURITY FUTURES PRODUCTS**

A contract based on securities products as such term is defined by 1a(45) of the Commodity Exchange Act. Security Futures Products ("SFPs") include futures contracts based upon a single security (or "stock futures"); futures contracts based upon a narrow-based security index; and, options on any security futures as those terms are defined in Sections 1a(35) and 1a(44) of the Commodity Exchange Act.

**SETTLEMENT PRICE**

The official daily closing price of futures and options on futures contracts, as determined in accordance with Rule 813, used by the Clearing House for marking all open positions at the close of the daily settlement cycle.

**SETTLEMENT VARIATION**

The change in dollar amount calculated by the Clearing House for clearing members figured to the daily settlement price on the basis of their positions.

**SPOT**

The actual physical commodity as distinguished from the futures contract that is based on the physical commodity. Also referred to as "cash commodity."

**SPOT FX OTC CLEARED TRANSACTION**

For purposes of these rules, a "spot" foreign exchange (FX) over-the-counter (OTC) cleared transaction shall be a very short-dated forward transaction with counterparties agreeing to exchange ("delivery") of the associated currency pairs in one or two business days, whichever is the standard OTC market convention for the particular currency pairs.

**SWAP FX OTC CLEARED TRANSACTION**

For purposes of these rules, a "swap" foreign exchange (FX) over-the-counter (OTC) cleared transaction shall be an agreement between counterparties to execute the combination of a spot or forward FX OTC cleared transaction and a subsequent-dated forward FX OTC cleared transaction, where the buyer of the spot or forward currency pair becomes the seller of the subsequent-dated forward currency pair and the seller of the spot or forward currency pair becomes the buyer of the subsequent-dated forward currency pair. In other words, the counterparties are agreeing to the prices on the original trade date to exchange currency pairs for immediate (or nearby forward) delivery, and reverse the same transaction on some mutually agreed to subsequent "forward date," which according to the definition above for a "forward" may be a standard delivery date or a broken delivery date.

**TRADE**

The term "trade" shall mean any purchase or sale of any commodity futures or options contract made on the Exchange.

**TRADE DATE OF AN FX OTC CLEARED TRANSACTION**

The trade date of a foreign exchange (FX) over-the-counter (OTC) cleared transaction" is the date on which counterparties to the OTC transaction submit the FX OTC transaction to clearing as a cleared contract. Although in most instances counterparties may submit an FX OTC cleared transaction for clearing on the same date as the original trade for the FX OTC spot, forward and swap transaction, there is no requirement that it is submitted on the same date. Therefore, an FX OTC cleared transaction may be submitted on any date for clearing on the exchange.

#### **TRADING DAY**

A trading day shall mean the hours of trading as determined by the board for each contract starting with the opening of trading and ending with the close of trading for such contract.

#### **TRADING SESSION**

A trading session will mean either the pit trading session (the hours designated for open outcry trading for a product) and/or the Globex session (the hours on a particular trading day when a product can be traded on Globex).

#### **U.S. GOVERNMENT SECURITIES BROKER-DEALER**

A broker-dealer registered with the Securities and Exchange Commission that functions in the operation of markets for U.S. Treasuries. The functions may include, but are not limited to:

- Acting as a channel for the United States Department of the Treasury and investors in primary market for U.S. Treasuries (for example, by participating in auctions);
- Acting as providers of liquidity in primary and secondary markets for U.S. Treasuries; and
- Acting as providers of asset transformation and market making services in the market for U.S. Treasuries.

#### **VALID VALUE DATE FOR DELIVERY OR CASH SETTLEMENT OF AN FX OTC CLEARED TRANSACTION**

"Cleared only" foreign exchange (FX) over-the-counter (OTC) cleared transactions shall be delivered or cash settled for any valid value date mutually agreed to by buyer and seller, including all applicable standard valid value dates for delivery or cash settlement in futures offered for "trading and clearing." In general, for any currency pair, a valid value date shall be any business day that is a banking business day in the countries of issue for both currencies.

***(End Definitions)***



# **EXHIBIT G**

# Trading Hours: Futures & Options

Trading hours are in U.S. Central Time unless otherwise stated.

**For products traded solely via CME ClearPort Clearing, the hours are as follows:**

Sunday-Friday 6:00 p.m.-5:15 p.m. New York time/ET (5:00 p.m.-4:15 p.m. Chicago Time/CT) with a 45-minute break each day beginning at 5:15 p.m. (4:15 p.m. CT)

🕒 Open Outcry closing range time periods listing

Agriculture

Energy

Equity Index

FX

Interest Rates

Metals

Real Estate

Weather

Product Name	Pre-Open CME Globex (Sunday)	CME Globex (Sunday)	Pre-Open CME Globex (Weekday)	CME Globex (Weekday)	Open Outcry	CME ClearPort
Crude Oil (NYMEX)						
Light Sweet Crude Oil (WTI) Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Light Sweet Crude Oil (WTI) Options	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Crude Oil Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Crude Oil TAS*	17:00 ET (16:00 CT)	18:00-14:30 ET (17:00-13:30 CT)	17:45 ET (16:45 CT)	18:00-14:30 ET (17:00-13:30 CT)		18:00-14:30 ET (17:00-13:30 CT)
Crude Oil TAM LDN*	17:00 ET (16:00 CT)	18:00-11:30 ET (17:00-10:30 CT)	17:50 ET (16:50 CT)	18:00-11:30 ET (17:00-10:30 CT)		
Crude Oil TAM SINGAPORE*	17:00 ET (16:00 CT)	18:00-04:00 ET (17:00-03:00 CT)	17:50 ET (16:50 CT)	18:00-04:00 ET (17:00-03:00 CT)		
E-mini Light Sweet Crude Oil (WTI) - Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Brent Crude Oil Last-day - Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Brent Crude Oil Last-day - Financial Options	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Brent Crude Oil TAS*	17:00 ET (16:00 CT)	18:00-14:30 ET (17:00-13:30 CT)	17:45 ET (16:45 CT)	18:00-14:30 ET (17:00-13:30 CT)		18:00-14:30 ET (17:00-13:30 CT)
Brent Crude Oil Last Day TAS*	17:00 ET (16:00 CT)	18:00-14:30 ET (17:00-13:30 CT)	17:45 ET (16:45 CT)	18:00-14:30 ET (17:00-13:30 CT)		18:00-14:30 ET (17:00-13:30 CT)

Product Name	Pre-Open CME Globex (Sunday)	CME Globex (Sunday)	Pre-Open CME Globex (Weekday)	CME Globex (Weekday)	Open Outcry	CME ClearPort
Brent Crude Oil Last Day TAM LDN*	17:00 ET (16:00 CT)	18:00-11:30 ET (17:00-10:30 CT)	17:50 ET (16:50 CT)	18:00-11:30 ET (17:00-10:30 CT)		
Brent Crude Oil Last Day TAM SINGAPORE*	17:00 ET (16:00 CT)	18:00-04:00 ET (17:00-03:00 CT)	17:50 ET (16:50 CT)	18:00-04:00 ET (17:00-03:00 CT)		
Russian Export Blend Crude Oil (REBCO) Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Russian Export Blend Crude Oil (REBCO)- Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Russian Export Blend Crude Oil (REBCO) TAS*	17:00 ET (16:00 CT)	18:00-13:30 ET (17:00-13:30 CT)	17:45 ET (16:45 CT)	18:00-14:30 ET (17:00-13:30 CT)		18:00-14:30 ET (17:00-13:30 CT)
Gulf Coast Sour Crude Oil Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Brent Crude Oil Penultimate Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Urals Mediterranean (S&P Global Platts) vs. Dated Brent (S&P Global Platts) CFD Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Urals North (S&P Global Platts) vs. Dated Brent (S&P Global Platts) CFD Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Blend CIF Mediterranean (S&P Global Platts) vs. Dated Brent (S&P Global Platts) Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Electricity						

Product Name	Pre-Open CME Globex (Sunday)	CME Globex (Sunday)	Pre-Open CME Globex (Weekday)	CME Globex (Weekday)	Open Outcry	CME ClearPort
PJM AECO Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM APS Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM ATSI Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM BGE Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM ComEd Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM DPL Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM Duquesne Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM Eastern Hub Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM JCPL Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)

Product Name	Pre-Open CME Globex (Sunday)	CME Globex (Sunday)	Pre-Open CME Globex (Weekday)	CME Globex (Weekday)	Open Outcry	CME ClearPort
PJM METED Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PECO Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PENELEC Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PEPCO Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PPL Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PSEG Zone Off-Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM ATSI Zone Off-Peak Calendar-Day 5 MW Real-Time LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM AECO Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM APS Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)

Product Name	Pre-Open CME Globex (Sunday)	CME Globex (Sunday)	Pre-Open CME Globex (Weekday)	CME Globex (Weekday)	Open Outcry	CME ClearPort
PJM ATSI Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM BGE Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM ComEd Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM DPL Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM Duquesne Zone Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM Eastern Hub Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM JCPL Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM METED Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PECO Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PENELEC Zone Peak Calendar-Day 5 MW Day-Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)

Product Name	Pre-Open CME Globex (Sunday)	CME Globex (Sunday)	Pre-Open CME Globex (Weekday)	CME Globex (Weekday)	Open Outcry	CME ClearPort
PJM PEPCO Zone Peak Calendar-Day 5 MW Day-Ahead LMP 5 MW	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PPL Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM PSEG Zone Peak Calendar- Day 5 MW Day- Ahead LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
PJM ATSI Zone Peak Calendar- Day 5 MW Real- Time LMP	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Ethanol						
CBOT Denatured Fuel Ethanol Forward Month Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
CBOT Denatured Fuel Ethanol Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
CBOT Denatured Fuel Ethanol Options	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Cash Settled Ethanol						19:36-16:00 ET (18:36-15:00 CT)
Cash-Settled Ethanol Options						19:36-16:00 ET (18:36-15:00 CT)
Natural Gas (NYMEX)						
Natural Gas (Henry Hub) Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Natural Gas (Henry Hub) Options	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Henry Hub Natural Gas Last Day Physically- Delivered	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)

Product Name	Pre-Open CME Globex (Sunday)	CME Globex (Sunday)	Pre-Open CME Globex (Weekday)	CME Globex (Weekday)	Open Outcry	CME ClearPort
Henry Hub Natural Gas Last-day-Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Henry Hub Natural Gas Penultimate - Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
E-mini Natural Gas (Henry Hub) - Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Henry Hub Natural Gas Penultimate - Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Henry Hub Natural Gas Last Day Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Natural Gas TAS*	17:00 ET (16:00 CT)	18:00-14:30 ET (17:00-13:30 CT)	17:45 ET (16:45 CT)	18:00-14:30 ET (17:00-13:30 CT)		18:00-14:30 ET (17:00-13:30 CT)
Refined Products (NYMEX)						
Mini Naphtha (Free Spec) Barges CIF ARA (Argus)	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Mini Naphtha (Free Spec) Cargoes CIF NWE (Argus)	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Mini Naphtha (Free Spec) Cargoes CIF NWE (Argus) Crack Spread (100mt)	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
NY Harbor ULSD Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
NY Harbor ULSD Options	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
NY Harbor ULSD Bullet Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
E-mini NY Harbor ULSD Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
NY Harbor ULSD TAS*	17:00 ET (16:00 CT)	18:00-14:30 ET (17:00-13:30 CT)	17:45 ET (16:45 CT)	18:00-14:30 ET (17:00-13:30 CT)		18:00-14:30 ET (17:00-13:30 CT)







Product Name	Pre-Open CME Globex (Sunday)	CME Globex (Sunday)	Pre-Open CME Globex (Weekday)	CME Globex (Weekday)	Open Outcry	CME ClearPort
RBOB Gasoline Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
RBOB Gasoline Options	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
RBOB Gasoline - Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		21:00-13:30 ET (08:00-13:30 CT)
E-mini RBOB Gasoline - Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
RBOB Gasoline TAS*	17:00 ET (16:00 CT)	18:00-14:30 ET (17:00-13:30 CT)	17:45 ET (16:45 CT)	18:00-14:30 ET (17:00-13:30 CT)		18:00-14:30 ET (17:00-13:30 CT)
European Gasoil (ICE) - Financial Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Coal (NYMEX)						
Emissions (NYMEX)						
Certified Emission Reduction Plus (CERplusSM) Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Regional Greenhouse Gas Initiative (RGGI) CO2 Allowance Futures	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Regional Greenhouse Gas Initiative (RGGI) CO2 Allowance Option	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)
Other						
Uranium	17:00 ET (16:00 CT)	18:00-17:00 ET (17:00-16:00 CT)	17:45 ET (16:45 CT)	18:00-17:00 ET (17:00-16:00 CT)		18:00-17:00 ET (17:00-16:00 CT)

\*In Exchange products eligible for Trading at Settlement ("TAS") or Trading at Marker ("TAM"), TAS and TAM orders may not be entered into CME Globex from the end of a TAS trading session until receipt of the security status message indicating that the group has transitioned to the pre-open state.

# EXHIBIT H

## CME Group Globex Presidents Day Holiday Schedule: February 17, 2017 - February 21, 2017

Trade Date	Friday, Feb 17		Tuesday, February 21	
Products	Friday, Feb 17	Sunday, Feb 19 into Monday, Feb 20	Monday, Feb 20	Monday, Feb 20 into Tuesday 21
	CLOSE	OPEN	HALT	OPEN
Equity	Regular @ 1600 CT / 2200 UTC	Regular @ 1700 CT / 2300 UTC	1200 CT / 1800 UTC	Regular @ 1700 CT / 2300 UTC
Interest Rate	Regular @ 1600 CT / 2200 UTC	Regular @ 1700 CT / 2300 UTC	1200 CT / 1800 UTC	Regular @ 1700 CT / 2300 UTC
FX	Regular @ 1600 CT / 2200 UTC	Regular @ 1700 CT / 2300 UTC	1200 CT / 1800 UTC	Regular @ 1700 CT / 2300 UTC
Energy, Metals & DME	Regular @ 1600 CT / 2200 UTC	Regular @ 1700 CT / 2300 UTC	1200 CT / 1800 UTC	Regular @ 1700 CT / 2300 UTC
Grain & Oilseed	Regular per Product	Extended Pre Open		
Mini-Grain	Regular per Product	Extended Pre Open		
MGEX Indices & Wheat	Regular per Product	Extended Pre Open		
MGEX Apple Juice	Regular per Product	Closed for President's Day	Closed for President's Day	Tuesday @ 0700 CT / 1300 UTC
Dairy	Regular per Product	Extended Pre Open		
Lumber	Regular per Product	Closed for President's Day	Closed for President's Day	Tuesday @ 0900 CT/1500 UTC
Livestock	Regular per Product	Closed for President's Day	Closed for President's Day	Tuesday @ 0830 CT/1430 UTC

## Notes

\*PCP: Post Close Pre-opening order entry, modification and cancellation is allowed for GTC/GTD orders only

\*\*Pre-opening: order entry, modification and cancellation is allowed.

February 17 TAM, TAM (Platts) & TAS: regular close per each product schedule

Day/Session orders entered after a product's Pre-opening(s) on Sunday, February 19 are for trade date Tuesday, February 21 and can continue working until their Tuesday, February 21 Globex close.

Tuesday, February 21: Regular CME Group Globex close for all products

# **EXHIBIT I**



## CME Group Holiday Calendar

CME Group observes 11 U.S.-recognized holidays. On these holidays, trading hours may vary depending on markets traded. Opening and closing times may be affected on the holiday, as well as the business days prior to or after a holiday.

➔ [View regular trading hours](#)

## 2017 Holiday Schedules

[CME Globex](#)
[CME ClearPort](#)
[Trading Floors](#)
[CME Clearing](#)
[Settlement Notices](#)

### 2017 CME Globex Trading Schedule

CME Globex will observe the following holidays in 2017. Trading times and days affected may vary depending on the holiday. Download the existing files to view altered trading hours.

U.S. Holiday	Includes the following dates:	Excel	Compact Excel
Dr. Martin Luther King, Jr.	13-17 January 2017	<a href="#">Excel</a> Dr. Martin Luther King, Jr.	<a href="#">Excel</a> Dr. Martin Luther King, Jr.
President's Day	17-21 February 2017	<a href="#">Excel</a> President's Day	<a href="#">Excel</a> President's Day
Good Friday	13-17 April 2017	<a href="#">Excel</a> Good Friday	<a href="#">Excel</a> Good Friday
Memorial Day	26-30 May 2017	<a href="#">Excel</a> Memorial Day	<a href="#">Excel</a> Memorial Day
Independence Day	3-5 July 2017	<a href="#">Excel</a> Independence Day	<a href="#">Excel</a> Independence Day
Labor Day	1-5 September 2017	<a href="#">Excel</a> Labor Day	<a href="#">Excel</a> Labor Day
Columbus Day	9 October 2017	<a href="#">Excel</a> Columbus Day	<a href="#">Excel</a> Columbus Day
Veterans Day	10 November 2017	<a href="#">Excel</a> Veteran's Day	<a href="#">Excel</a> Veteran's Day
Thanksgiving	22-24 November 2017	<a href="#">Excel</a> Thanksgiving	<a href="#">Excel</a> Thanksgiving
Christmas	22-26 December 2017	<a href="#">Excel</a> Christmas	<a href="#">Excel</a> Christmas
New Year's	29 December 2017 - 2 January 2018	<a href="#">Excel</a> New Year's Day	<a href="#">Excel</a> New Year's Day

\*\* Note: This schedule is subject to change. Trading hours are usually finalized approximately two weeks prior to the holiday.

## Archived Calendars

2016 Holiday Calendars (ZIP)  
2015 Holiday Calendars (ZIP)  
2014 Holiday Calendars (ZIP)  
2013 Holiday Calendars (ZIP)  
2012 Holiday Calendars (ZIP)  
2011 Holiday Calendars (ZIP)  
2010 Holiday Calendars (ZIP)  
2009 Holiday Calendars (ZIP)

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# EXHIBIT J



# CME GLOBEX REFERENCE GUIDE

The CME Globex electronic trading platform provides trading opportunities on the world's most diverse array of futures and options on futures products to customers around the world nearly 24 hours a day.



As the world's leading and most diverse derivatives marketplace, CME Group ([www.cmegroup.com](http://www.cmegroup.com)) is where the world comes to manage risk. CME Group exchanges offer the widest range of global benchmark products across all major asset classes, including futures and options based on interest rates, equity indexes, foreign exchange, energy, agricultural commodities, metals, weather and real estate. CME Group brings buyers and sellers together through its CME Globex electronic trading platform and its trading facilities in New York and Chicago. CME Group also operates CME Clearing, one of the largest central counterparty clearing services in the world, which provides clearing and settlement services for exchange-traded contracts, as well as for over-the-counter derivatives transactions through CME ClearPort.

## IN THIS GUIDE

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# ELECTRONIC TRADING AT CME GROUP

## GLOBAL ACCESS TO ALL YOUR MAJOR ASSET CLASSES FROM A SINGLE PLATFORM

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The CME Globex platform was the first—and remains among the fastest—global electronic trading system for futures and options. Through its advanced functionality, high-reliability and global connectivity, it is now the world's premier marketplace for derivatives trading. CME Globex gives you access to the broadest array of futures and options products available on any exchange, virtually around the clock, from anywhere in the world.

CME Group electronic markets are among the most liquid in the world, enabling customers to choose from a wide range of products in thousands of possible expirations and spreads. In addition to a single point of connection, customers who trade CME, CBOT, NYMEX and COMEX futures and options enjoy streamlined development efforts, a single source for customer support and more efficient access to real-time market data.

The platform is continuously enhanced to serve customers with high-speed, high-volume capacity, improved options capabilities and a range of new products. Functionality and capacity continue to grow dramatically to accommodate demand.

### Benefits include:

#### Performance and speed

Trades on CME Globex are executed and confirmed to the customer with millisecond precision. CME Group is constantly working to reduce processing time—the platform continues to handle significantly more volume at a significantly faster pace. Our average daily order volume continues to increase, while the response time for trades continues to decrease.

#### Diverse, innovative products

CME Globex is the first derivatives platform to offer global access to all major asset classes—interest rates, equity indexes, FX, agriculture, energy, metals, weather and real estate. Customers can trade a range of global benchmark futures and options, including our flagship Eurodollar and E-mini S&P 500 contracts, benchmark metals and energy products, and highly innovative alternative investment products such as weather and real estate futures. Additionally, through partnerships with exchanges like the Brazilian Exchange BM&FBOVESPA, Bursa Malaysia (BMD), the Dubai Mercantile Exchange (DME), the Korea Exchange (KRX), the Minneapolis Grain

Exchange (MGEX), and CME Europe Ltd, CME Globex gives you simple and easy access to market exposure around the world.

#### Open access and direct participation

The platform is an open access marketplace that allows customers to participate directly in the trading process, view the book of orders and prices for CME Group products and enter their own orders. Anyone who has an account with a Futures Commission Merchant (FCM) or Introducing Broker (IB), who in turn has a CME Clearing guarantee, can trade on the platform.

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## Access the CME Globex platform from nearly 150 countries and foreign territories through a range of connectivity options.

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### Our electronic trading platform offers customers:

- Streamlined development efforts
- Single source for production customer support
- Access to free risk management tools
- More efficient access to real-time market data
- 10-deep futures and 3-deep options for most markets
- High-speed, high-volume capacity
- Improved options capabilities and a range of new products
- Direct order routing to Mexican Derivatives Exchange (MexDer)
- Access to listed products traded on, Bursa Malaysia (BMD), the Dubai Mercantile Exchange (DME), the Korean Exchange (KRX), and the Minneapolis Grain Exchange (MGEX)

### Connectivity Options

Customers worldwide have access to the platform from nearly 150 countries and foreign territories, with new connections being added all the time. The range of connectivity options include Internet connections, direct connections and several telecommunication hubs that provide reduced connectivity costs, increased accessibility and fast efficient trading. Our telecommunication hubs are located in Hong Kong, Kuala Lumpur, London, Mexico City, New York City, São Paulo, Seoul, Singapore, and Tokyo.

### Fairness, transparency, anonymity

CME Group electronic markets provide fair and equal trading opportunity for all participants. Individual retail traders, small businesses and large institutions alike see and have access to the same prices. The anonymity of traders and firms is protected electronically in all bids, offers and trades.

### Market integrity

CME Clearing, the largest derivatives clearing house in the world, guarantees all contracts traded on the CME Globex platform and ensures that all traders honor their performance obligations. The CME Global Command Center (GCC) monitors trading activity and system performance around the clock to assure the orderly functioning of CME Group electronic markets.

[Learn more about the connectivity options and benefits delivered by the CME Globex platform at cmegroup.com/globex.](http://cmegroup.com/globex)

# PRODUCT OVERVIEW – WHAT'S ACCESSIBLE ON CME GLOBEX

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The CME Globex platform brings diverse product solutions to customers around the world nearly 24 hours a day. These products address the business and risk management objectives of customers which are as varied as our products.

To view a complete list of CME Group products available on the CME Globex platform as well as contract codes, up-to-date specifications and expiration dates for all CME Group products, visit [cmegroup.com](http://cmegroup.com).

Click on the product names below to go to a description for that product.

- [CME Group Interest Rate Products](#)
- [CME Group Energy Products](#)
- [CME Group Agricultural Products](#)
- [CME Group Equity Indexes](#)
- [CME Group Metals Products](#)
- [CME Group FX Products](#)

## CME Group Interest Rate Products

CME Group is the world's leading marketplace for trading short-, medium- and long-term interest rate derivative products. Whether you're managing risk from 30 days to 30 years, CME Group offers the most diverse suite of Interest Rate products including: Eurodollars, U.S. Treasuries, 30-Day Fed Funds and Interest Rate Swaps. Our Euro-denominated Euribor futures, and our Sovereign Yield Spread futures, denominated in both Euro and British pound, offer a cost effective way to expand your global interest rate trading strategies. Additionally, we offer central

counterparty clearing for OTC Interest Rate Swaps. The liquidity, transparency and security of CME Group interest rate markets provide customers around the world with a safe and capital efficient way to manage interest rate risk.

Backed by our central counterparty clearing model, we offer powerful solutions to address a wide variety of risk management needs. For more information, visit [cmegroup.com/ir](http://cmegroup.com/ir).

## CME Group Equity Indexes

CME Group is the leading equity index derivatives marketplace, offering futures and options on key benchmark indexes that cover the spectrum of small-, mid- and large-cap indexes in the United States, Europe and Asia. Our global product suite includes contracts on such well-known indexes as the S&P 500, S&P MidCap 400, S&P SmallCap 600, Dow Jones Industrial Average, NASDAQ-100, Nikkei 225 Stock Average, S&P CNX Nifty, S&P Select Sectors and more. View our equity contracts and specifications at [cmegroup.com/equities](http://cmegroup.com/equities).

## CME Group FX Products

CME Group offers the world's largest regulated FX marketplace and one of the top two FX platforms with over \$125 billion in daily liquidity. We offer transparent pricing in a regulated centralized marketplace that provides all participants equal access to 56 futures contracts and 31 options contracts based on 20 major world and emerging market currencies. Trading FX at CME Group gives you effective and efficient investment and risk management

opportunities and unprecedented access to a global array of market participants – including banks, hedge funds, proprietary trading firms and active individual traders. Additionally, we continue to roll-out comprehensive and flexible clearing services for OTC FX trades through CME ClearPort – an open-access, platform agnostic, post-execution clearing solution.

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### CME Group Agricultural Products

CME Group offers the widest range of agricultural futures and options available on any exchange. Our agricultural contracts include grains, oilseeds, livestock, dairy and other products. These products are the fundamental economic drivers and represent the origins of the earliest forward and futures markets. We serve agricultural producers and those seeking risk management and hedging tools, alongside funds and other traders looking to capitalize on the extraordinary opportunities our markets offer. In addition, we offer flexible risk management tools through our suite of cleared OTC grain and fertilizer swaps.

View our agricultural contracts and specifications at [cmegroup.com/agriculture](http://cmegroup.com/agriculture).

### CME Group Metals Products

CME Group offers a full range of precious, base and ferrous contracts, including gold, silver, platinum, palladium, copper, steel and aluminum futures and options. We also offer smaller size contracts for gold (miNY 50 oz.), (E-micro 10 oz.), silver (E-mini 1,000 oz), (miNY 2,500 oz.) and copper (E-mini 12,500 lbs.). Additionally, we offer clearing services of OTC London Gold spot and forwards and Iron Ore Swap futures through CME ClearPort. CME Group also provides the electronic auction platform for the LBMA Silver Price.

View our metals contracts and specifications at [cmegroup.com/metals](http://cmegroup.com/metals).

### CME Group Energy Products

CME Group offers the most extensive and liquid energy marketplace in the world. We offer crude oil contracts such as Light Sweet Crude Oil (WTI), Brent and DME Oman, Henry Hub natural gas as well as over 50 basis points, refined oils such as gasoline and heating oil, electricity, and weather products. Many of our contracts are benchmarks that set the price for these resources worldwide. From the world's largest industrial companies to financial institutions, our diverse universe of participants trade on CME Globex, through CME ClearPort or on our trading floor. Building on the legacy of NYMEX, CME Group is the world's leading energy marketplace.

View our energy contracts and specifications at [cmegroup.com/energy](http://cmegroup.com/energy).

# ACCESSING THE CME GLOBEX PLATFORM

## AN OPEN ARCHITECTURE THAT EASILY ACCOMMODATES CHANGING MARKETS, NEW CUSTOMERS AND NEW PRODUCTS

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The open architecture of the CME Globex platform provides a wide range of access solutions and extensive functionality. The platform readily accommodates changing markets, new customers and new products. In addition to the trade matching system, components of the platform include trading applications, an order entry interface, a market data dissemination system and order risk management tools. These components all work together seamlessly to provide virtually instantaneous market visibility and trading.

### A Wide Range of Trading Solutions

Traders may develop a proprietary front-end application or select from a variety of certified applications to execute electronic orders and receive market data directly. These applications are available from CME Group, FCMs, IBs and Independent Software Vendors (ISVs), and vary in the types of functionality supported.

Learn more about front-end trading solutions at [cmegroup.com/tradingapplications](http://cmegroup.com/tradingapplications).

### CME Group Solutions

#### CME Direct

CME Direct is a highly-configurable trading front-end system that allows customers to directly access CME Group markets. CME Direct's integrated environment allows you to trade futures and options, enter blocks and fulfill reporting requirements, all on one screen. The platform is fast and robust, with click-optimized options strategy builders, rapid order entry tickets, real-time block and RFQ feeds and real-time streaming quotes, to help you make the most of your trading front-end. Learn more at [cmegroup.com/direct](http://cmegroup.com/direct).

#### Key Functions:

- Online trading of CME Group futures, including all NYMEX benchmarks
- Electronic trading of OTC markets, supported by selected, independent brokers

- Support for hybrid, broker-assisted trading combines the convenience of online execution with the benefits of voice brokerage
- Fully customizable instant messenger platform, CME Direct Messenger for your trading and communication needs
- Available globally, regionally supported

For more information please visit [cmegroup.com/direct](http://cmegroup.com/direct).

#### The CME Globex Order Routing Interface: iLink

iLink provides direct access to all CME Globex markets and supports all the enhanced trading functionality available on the platform. Based on the industry-standard FIX 4.X protocol, it readily supports customized trading systems.

Learn more about iLink at [cmegroup.com/ilink](http://cmegroup.com/ilink).

#### Market Data Platform (MDP 3.0)

Market Data Platform (MDP) 3.0, a low latency and direct data access solution designed to improve customers' ability to process and act on real-time price information.

#### MDP 3.0 includes:

- Simple Binary Encoding (SBE)
- FIX 5.0 (SP2) Market by Price messaging formats
- Event-driven market price and trade information
- Enhanced market state dissemination
- Increased timestamp granularity
- Opt-In functionality for Order identifier on both market data and order entry messages

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## CME Group login

CME Group login is a self-managed, centralized user profile service that authenticates access to CME Group applications and services. CME Group login provides:

- Access to CME Group applications and services with one user ID and password.
- Ability to update or change your CME Group login profile online, without paperwork.
- Access to CME Group systems with permissions for multiple clearing firms, when appropriate.
- A unique user ID that is retained when changing clearing firms or employers.

Learn more about CME Group login at [cmegroup.com/smartclick](http://cmegroup.com/smartclick).

## CME Globex Risk Management Tools

### Cancel on Disconnect

Cancel on Disconnect (COD) monitors the order routing interface iLink system for involuntary lost connections between customers and the CME Globex platform. If a lost connection is detected, COD cancels all resting futures and options orders for the disconnected registered customer. This does not include Good Till Cancel (GTC) and Good Till Date (GTD) orders. It is the customer's responsibility to reenter all orders that have been canceled by COD. There is no charge for the COD service.

#### Features:

- Opt-in, subscription-based
- Free service

Learn more about this tool at [cmegroup.com/cod](http://cmegroup.com/cod).

### Kill Switch

Kill Switch is a GUI that is designed to allow firms a one step shutdown of all their CME Globex activity at the SenderComp ID level.

When the Kill Switch functionality is activated by the permissioned firm, all order entry is blocked and all working orders are cancelled for either a selected subset or all of firm's SenderComp IDs.

#### Kill Switch functionality includes:

- Day Orders and Good Till messages are blocked when Kill Switch is invoked, however, Kill Switch will not cancel resting Good Till or Day Orders when a market is "closed" or in the final "30 seconds" prior to an open.
- Impacted customers are prevented from submitting any message other than what is required to keep alive the connection with the exchange (session management).
- Only orders intended for CME Group core match engines are supported.
- Customers receive a reject message with entity level and administrator role information.
- Blocking takes less than one second, though the cascading cancellations may extend beyond this time frame.



### CME Globex Credit Controls (GC2)

CME Globex Credit Controls (GC2) provides pre-execution risk controls and allows Clearing Firm Risk Administrators to set real-time credit limits on all CME Globex customers. Clearing Firm Risk Administrators can define trading limits and dynamically act if those limits are exceeded. GC2 is intended to complement existing Clearing Firm risk systems and front-end risk tools. GC2 access is only available at the Class A Clearing Member level. As stated in the CME mandatory Credit Control Policy (Rule 949), clearing members must employ GC2 credit control functionality on every one of their CME Globex Executing Firms.

Learn more about this tool at [cmegroup.com/gc2](http://cmegroup.com/gc2).

### Risk Management Interface (RMI)

An Application Programming Interface (API) and Graphical user interface (GUI) that supports granular, pre-trade risk management for Clearing firms. RMI allows Clearing Firms to block or unblock order entry by execution firm, account, exchange, derivative type, and/or side.

For more information, visit [cmegroup.com/rmi](http://cmegroup.com/rmi).

### FirmSoft

FirmSoft is a free, browser-based order management tool that provides real-time visibility and access to working and filled orders across multiple firm IDs. FirmSoft provides view and cancel capabilities for all CME Globex orders.

#### Users can view:

- Order information, including status
- Fill information, including partial fills
- History
- Details, including timestamps and cancel replace history

Users can also cancel an individual order, a group of orders or all working orders for which they are permissioned with FirmSoft.

Market participants also have the ability to call into the GCC to cancel and/or status orders based on their CME Group login profile permissions being enabled in FirmSoft.

Learn more about this tool at [cmegroup.com/firmsoft](http://cmegroup.com/firmsoft).

# THE TRADING SESSION

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Trading sessions on the CME Globex platform meet customer needs around the world.

## Electronic Trading Availability

Virtually all CME Group products trade electronically at some point during the day, but specific schedules vary according to product.

**Note:** Special holiday trading hours are available at [cmegroup.com/holiday](http://cmegroup.com/holiday).

A current list of products on CME Globex and specific availability can be found online at [cmegroup.com/trading\\_hours](http://cmegroup.com/trading_hours).

## Trading Sessions and States

Trading on the CME Globex platform is generally available Sunday evening through late Friday afternoon. Exact trading hours vary by product. CME Globex sessions start in the afternoon or evening and mark the beginning of the next trading day (for example, orders entered during Sunday's evening session are dated for and cleared on the following Monday).

## Market States

All CME Globex markets cycle through the daily order entry states. Below are the pre-defined market states:

### 1. Pre-Opening

A predetermined time before the trading session opens when customers can begin entering, modifying and canceling orders for the next trading day, but no trades are executed.

### 2. Pre-Opening/No-Cancel

A predetermined time before the session opens when customers can enter orders for the next trade date but cannot cancel or modify orders, and no trades are executed.

### 3. Open

The period of time when orders are sent and matched in real time, based on the product's trading times.

### 4. Pause

A predetermined time when customers can only cancel orders. No trades are executed.

### 5. Closed

This CME Globex state change cancels, day orders and advance the trade date.

### 6. Post Close/Pre Open (PCP)

This market state allows order placement, modification, and cancellation of GTC/GTD orders only. No matching takes place and no action can be taken on non GTC/GTD orders.

### 7. Maintenance Period

Occurring between 16:00 Central Time (CT) and 16:45 (CT) Monday through Thursday.

The ability to enter, modify or cancel orders varies according to the CME Globex predefined state, as the chart below shows:

	Order Entry	Order Modification	Order Cancellation
<b>CME Globex Session Starts</b>			
1. Pre-Opening	✓	✓	✓
2. Pre-Opening/No Cancel	✓		
<b>MARKET OPEN</b>			
3. Open	✓	✓	✓
4. Post Close/Pre-Open (PCP)*	✓	✓	✓
<b>MARKET CLOSE</b>			
<b>CME Globex Session Ends</b>			
5. Pause			✓
6. Closed			
7. Maintenance Period			

■ No order functionality available

**Note:** All open session orders are automatically canceled at market close.

\* GTC and GTD orders only.

# ENTERING ORDERS ON CME GLOBEX

The CME Globex platform supports a broad array of order functionality, offering convenience and flexibility to meet a wide variety of individual trading needs. This section

summarizes the order types and order duration qualifiers available in the CME Group markets.

## Supported Order Types and Functionality on CME Globex – By Product Line

Order Types	Agriculture	Equities	FX	Interest Rates		Energy	Metals	Real Estate	Weather
				CME	CBOT				
Limit	F, O	F, O	F, O	F, O	F, O	F, O	F, O	F	F
Market Order with Protection	F, O	F, O	F, O	F, O	F, O	F, O	F, O	F	F
Market to Limit	F, O	F, O	F, O	F, O	F, O	F, O	F, O	F	F
Stop Limit	F	F	F	F	F	F	F	F	F
Stop Order with Protection	F	F	F	F	F	F	F	F	F

Order Qualifiers	Agriculture	Equities	FX	Interest Rates		Energy	Metals	Real Estate	Weather
				CME	CBOT				
Minimum Quantity	F, O	F, O	F, O	F	F, O	F	F	F	F
Display Quantity	F, O	F, O	F, O	F	F, O	F, O	F, O	F, O	F

Functionality	Agriculture	Equities	FX	Interest Rates		Energy	Metals	Real Estate	Weather
	CME	CBOT Grains							
Cross Order	O		O	O	O	O	O		
Mass Quote	O	O	O	O	O	O	O		
UDS: Covereds	O	O	O	O	O	O	O		
UDS: Combos	O	O	O	O	O	O	O		

KEY: F = Available for futures O = Available for options

## Order Types

The availability of specific order types varies based on how customers access CME Globex and the products they trade.

### Limit

A Limit order allows the buyer to define the maximum price to pay and the seller the minimum price to accept (the limit price). A Limit order remains on the book until the order is either executed, canceled or expires.

### Market Order with Protection

Market orders at CME Group are implemented using a “Market with Protection” approach. Unlike a conventional Market order, where customers are at risk of having their orders filled at extreme prices, Market with Protection orders are filled within a predefined range of prices (the protected range). The protected range is typically the current best bid or offer, plus or minus 50 percent of the product's Non-Reviewable Trading Range. If any part of the order cannot be filled within the protected range, the unfilled quantity remains on the book as a Limit order at the limit of the protected range.

### Stop Limit

A resting Stop Limit order is triggered when the trigger price is traded in the market. The order then becomes a Limit order with the customer's specified limit price. The order is executed at all price levels between the trigger price and the limit price. If the order is not fully filled, the unfilled quantity remains in the market at the limit price. A buy Stop Limit order must have a trigger price greater than the last traded price for the instrument. A sell Stop Limit order must have a trigger price lower than the last traded price for the instrument.

### Stop Order with Protection

A Stop with Protection is a Stop Limit order (see above) with the limit price calculated based on:

- The trigger price, and
- The protected range.

The protected range is typically the trigger price, plus or minus 50 percent of the Non-Reviewable Trading Range for that product. The limit price for a buy Stop with Protection will be calculated by adding the protected range to the trigger price. Likewise, the limit price for a sell Stop with Protection will be calculated by subtracting the protected range from the trigger price. Once the limit price for the order is calculated, it becomes a Stop with limit order in all respects.

### Request for Cross (RFC)

A Request for Cross Order ("RFC Order") is required to be entered to facilitate options orders that result from allowable pre-execution communications. An RFC Order contains both the buy and sell sides in a single message, and must be entered by one party at a single price and quantity. Both sides of the RFC Order are exposed to the market and will first be matched against resting orders that are at the same or a better price than the price on the RFC Order prior to any portion of the two orders matching opposite each other. Any unmatched quantity on one side of the RFC Order will remain as a working order. Please refer to Rule 539 for additional information on RFC Orders.

### Mass Quote

A Mass Quote is a bundle of two-sided, actionable quotes in one or more options markets submitted via a single message. Only designated customers can submit Mass Quotes, and they have special protections that help mitigate their risk in matched transactions.

### Additional Notes on Order Types

- Some order types require an opposing bid or offer to be present in the market before the order can be submitted. Entering one of these order types without an opposing bid or offer present will cause the order to be rejected.
- Front-end system vendors may offer additional functionality in their applications. Check with your vendor for more information.
- Information on Non-Reviewable Trading Ranges is accessible at [cmegroup.com/pricebanding](http://cmegroup.com/pricebanding).

## Order Quantity and Duration

Order duration qualifiers allow you to indicate how long the order will be valid – for example, if it should remain open for the next trading session if it isn't executed by the end of the trading session in which it was entered. An order submitted without an order duration qualifier will be eliminated at the end of that same trading session if not filled, or if it was received between trading sessions, at the end of the following session.

### Day

An order to buy or sell a contract during that trading day only. Day orders that have been placed but not executed on a trade date do not carry over to the next trade date. Unexecuted Day orders are eliminated at the end of the day.

### Good 'Till Canceled (GTC)

GTC orders will remain in force until executed, canceled or the contract expires.

### Good 'Till Date (GTD)

GTD orders remain in force through the end of the specified date unless executed or canceled, or the contract expires.

## Fill and Kill (FAK)

FAK orders are immediately filled in whole or in part at the specified price or better. Any remaining quantity is eliminated.

### Fill or Kill (FOK)

FOK orders are canceled if not immediately filled for the specified minimum quantity at the specified price or better.

## Minimum Quantity

A Minimum Quantity order is immediately executed only if a certain minimum quantity of that order can be immediately matched. If the minimum quantity cannot be immediately filled, the entire order is canceled.

## Display Quantity

A Display Quantity displays only a portion of the order to the marketplace. When the displayed quantity has been filled, another portion equal to the displaced quantity is then displayed as a new order

## Additional Functionality

### UDS

User-Defined Spreads (UDS) functionality enables customers to create and trade unique instruments intra-day. A UDS: Covered instrument is composed of an outright option or options strategy covered by one or more underlying outright futures. A UDS: Combos instrument is composed of any or all of the following:

- Exchange-defined outright option(s)
- Existing user-defined spread(s)

# MARKET PROTECTIONS

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The following features minimize excessive price movements on the CME Globex platform and ensure fair, competitive markets.

## Stop Spike Logic

Stop Spike Logic prevents the excessive price movements caused by cascading stop orders by introducing a momentary pause in matching (Reserved State) when triggered stops would cause the market to trade outside predefined values (typically the same as the Non-Reviewable Trading Ranges). This momentary pause allows new orders to be entered and matched against the triggered stops in an algorithm similar to market opening.

Whenever a lead month futures instrument is placed in a Reserved State, the Options Auto-Reserve functionality automatically pauses matching in the associated options markets. All resting Mass Quotes are canceled when the Auto-Reserve functionality is initiated. This state is maintained for a few seconds after the futures contract has resumed trading. During the reserved period, customers can submit, modify and cancel all orders except Market Orders and Mass Quotes; Mass Quotes and Market Orders are rejected.

## Velocity Logic

Velocity Logic is designed to detect market movement of a predefined number of points either up or down within a predefined time. Velocity Logic introduces a momentary suspension in matching by transitioning the futures instrument(s) and related options into the Reserved/Pause State.

Whenever a lead month futures instrument is placed in a Reserved State, the Options Auto-Reserve functionality automatically pauses matching in the associated options markets. All resting Mass Quotes are canceled when the Auto-Reserve functionality is initiated. This state is maintained for a few seconds after the futures contract has resumed trading. During the reserved period, customers can submit, modify and cancel all orders except Market Orders and Mass Quotes; Mass Quotes and Market Orders are rejected.

## Price Limits and Circuit Breakers

Numerous CME Group products have rules that establish daily price limits and/or circuit breakers in order to promote market confidence and mitigate risks to the market infrastructure by allowing market participants time to assimilate information and mobilize liquidity during periods of sharp and potentially destabilizing price swings. Circuit breakers are calibrated at defined levels and completely halt trading for a defined period of time or for the balance of the day's trading session. Price limits allow trading to continue, but only within the defined limits.

## Price Banding

To ensure fair and orderly markets, CME Group has a price banding mechanism in place that subjects all incoming electronic orders to price verification and rejects all orders with clearly erroneous prices. Price bands are monitored throughout the day by the

CME Global Command Center (GCC) and adjusted if necessary. A dynamic enhanced options price banding system is implemented for options and options spreads traded on the CME Globex platform.

For complete banding information on each CME Globex product, including information on the enhanced options price banding, visit [cmegroup.com/pricebanding](http://cmegroup.com/pricebanding).

## Reserve Price Band Multiplier

When a non-implied Lead Month and/or Secondary Month futures instrument transitions into the Reserved State, the price band values are expanded by a predefined Reserve Price Band Multiplier. The Reserve Price Band Multiplier expands the default Price Band by a positive whole number multiplier (e.g., 2x or 3x) during the Reserved State, to allow Limit and Stop order entry from the non-biased Buy or Sell side of the market. Allowing Limit and Stop order entry supports the creation of an Indicative Opening Price (IOP) at a fair market value level, thus supporting a more accurate reopening.

## Matching Algorithms

To ensure that customers get the best possible executions at the fairest prices, the CME Globex platform employs predefined sets of matching rules—algorithms—designed to best meet the needs of market participants in each product group. View details on the algorithms used for the different product groups at [cmegroup.com/algorithm](http://cmegroup.com/algorithm).

# MARKET OPERATIONS

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## The CME Global Command Center (GCC)

The GCC provides market operations, support and customer service for all electronic trading on CME Globex. That includes handling all CME Globex inquiries and requests for assistance from CME Group-registered contacts. The GCC supports the matching engine, order routing and market data interfaces and network connectivity.

Additionally, the GCC also provides customers with order status and, in cases of emergency, may cancel orders for customers. The GCC will only provide critical assistance to CME Group registered contacts. Critical assistance consists of order status, order cancellation and net position. If you are not registered, have your firm administrator call the GCC on your behalf.

### Areas of expertise include:

- Product and market information
- Block trade reporting
- Performance troubleshooting
- GCC notifications
- Product scheduling
- Trading halt management
- Limit move procedures
- Error trade oversight and resolution
- Liability claim support
- Order status and cancellation
- Settlement and limit price maintenance
- Price banding oversight
- Product state management (launching, listing, delisting, activations and expirations)

## Hours

The GCC is available from 14:00 CT Sunday through 16:45 CT Friday. An international number is provided for the convenience of our global customers.

### How to contact the GCC

U.S.:

+1 800 438 8616

Europe:

+44 20 7623 4747

Asia:

+65 6532 5010

## Order Cancel/Status Requests

In order to process an order cancellation or status, the GCC requires CME Group-registered contacts to be able to confirm their identity (through security information) and provide:

1. CME Group login
2. Nature of inquiry
3. Account number
4. Instrument, buy or sell and quantity
5. Trade Order Number (TON)

Market participants also have the ability to call into the GCC to cancel and/or status orders based on their CME Group login profile permissions being enabled in FirmSoft.



## GCC Phone Requests – Quick Navigation Guide

This quick reference guide to the automated GCC telephone system is designed to help customers navigate the phone system more quickly

**Note:** You do not need to wait for the menu prompts to play, you can select your option at any time.

## CME GLOBAL COMMAND CENTER PHONE MENU

**GCC – +1 800 438 8616**

**GCC Outside U.S. – +44 20 7623 4747 / +65 6532 5010**

### Press Option 1 for CME Globex Support

Sub Menu Option:	Description:	Select For:
1	Invoke the Error Trade Policy	Invoke the Error Trade Policy
2	Order Status, Order Cancellation	Critical Order Status Assistance
3	All Technical or Market Support	Assistance for issues relating to Production Connectivity, Order Entry, Market Data, General Functionality and FirmSoft Support
4	Report a Block Trade	Report a Block Trade

### Press Option 2 for CME ClearPort, API and CME ConfirmHub Support

Sub Menu Option:	Description:	Select For:
1	To facilitate a CME ClearPort Transaction including corrections	CPC Transactions
2	Other CME ClearPort, API and CME ConfirmHub Support	All other CPC, API, ConfirmHub Support

**Note:** You can select the desired option at any time after the menu begins.

For GCC Administrative Assistance:	+1 312 580 5387
For Certification and New Release Environments, call CSET:	United States: +1 312 930 2322 Europe: +44 20 3379 2803 Asia: +65 6593 5593 Email: cset@cmegroup.com

All calls to the GCC are recorded. [cmegroup.com/gcc](http://cmegroup.com/gcc)

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### GCC Notification System

To keep customers informed, especially during system emergencies, the GCC also provides CME Group-registered customer contacts with real-time CME Globex updates via telephone, e-mail and pager. In emergency situations, special procedures are implemented to enhance information sharing.

If CME Group determines that an event is likely to affect a significant number of customers or may require an emergency market halt, the information is disseminated via GCC Targeted Messaging, Market Data Platform administration messages, the CME Group Web site and/or the GCC Phone Menu.

Registered contacts also can sign up for GCC Targeted Messaging to receive messages via e-mail, pagers, mobile phones and land phones.

If markets are halted, the GCC will send regularly timed messages throughout the investigation of the event. Once the issue has been resolved, the GCC will send appropriate messages with the same methods used to announce that the event has been resolved.

In the event of a Market Halt, the GCC will also make this information available to all customers via [cmegroup.com](http://cmegroup.com).

### Trade Review Policy

If an order execution occurs at a price not representative of the current market, the CME Group customer may call the GCC to request to have the trade reviewed.

The customer must call the GCC within eight minutes of the error trade. A trade stands if the GCC is not notified within the eight-minute limit. The GCC also sends out a message (including the contract, time of trade, quantity and trade price) to all CME Globex registered contacts via Targeted Messaging alerting them that the trade has been questioned.

In order to cancel or price adjust a trade, the GCC must first determine if the trade is within the Non-Reviewable Trading Range:

- If a trade is within the Non-Reviewable Trading Range, the trade will stand and cannot be canceled or price adjusted.
- If a trade is outside the Non-Reviewable Trading Range, the GCC will send a message (including the contract, time of trade, quantity and trade price) to all CME Globex registered contacts via Targeted Messaging alerting them that the trade has been canceled, adjusted or stands. The GCC will also attempt to contact directly all parties involved in the trade.

Note: All futures and options contracts are price adjusted, not canceled, except in certain circumstances. View more information on the trade cancellation and price adjustment procedures in Rule 588, including the Non-Reviewable Trading Ranges for each product.

### Some important notes:

### CME Globex Messaging Efficiency Program

The CME Globex Messaging Efficiency Program creates fair business guidelines by which customers are billed a surcharge for overly high message rates. This program benefits all customers trading on CME Globex by discouraging excessive messaging abuses. This helps ensure that CME Globex maintains the responsiveness and reliability that our customers around the world have come to expect.

The CME Globex Messaging Efficiency Program scoring system establishes an executing firm's messaging score based on the specific message type submitted. During this process, the Volume Ratio measures the ratio between an executing firm's messaging score and the executing firm's traded volume in a particular product group between 7:00 a.m. and 3:15 p.m. Central Time (CT). If an executing firm's daily Volume Ratio exceeds the established Product Group Benchmark and all exemption types have been exhausted or are not applicable, CME Group will levy a surcharge of \$1,000 per product group, per day.

To account for unusual market conditions, there are a number of exceptions to the CME Globex Messaging Efficiency Program.

More information on the CME Globex Messaging Efficiency Program is available at [cmegroup.com/messagingefficiencyprogram](http://cmegroup.com/messagingefficiencyprogram).

### The Liability Claim Process

Customers who take market action based upon an incorrect order status provided by the GCC or a CME Group system, service or facility may complete a Liability Claim Form to seek damages. In general, CME Group may accept liability for direct losses incurred by a customer who takes market action based upon an incorrect order status provided by the GCC or a CME Group system, service or facility. CME Group liability in such situations is subject to cumulative liability caps. A customer who receives an incorrect status must take immediate action to limit any losses as soon as the customer knows or should have known that the order status information is incorrect.

In addition, CME Group will not be liable if it provides prior notification that a CME Group system, service or facility may produce such incorrect order status information and a means to access the correct information. CME Group liability to such a customer will be limited to the price at which the customer's position could have reasonably been liquidated.

If you have any questions regarding the Liability Claim Process, please contact the GCC or refer to the complete text of the policy in the Liability Claim Form document posted on the CME Group Web site.

### CME Clearing

In today's market environment, effective risk management is a business imperative. Risk management opens the door to opportunity and it supports faster and smarter decisions. CME Group's centralized clearing capability brings the benefits of transparency, trust and confidence to our markets. By acting as the counterparty to every trade, CME Clearing mitigates counterparty credit risk, meaning that for every trade completed on our exchange, we guarantee the financial soundness of both parties. By being at the center of every transaction, we can protect everyone's interest and ensure the integrity of the marketplace.

Key Features of CME Clearing:

- **Your counterparty credit risk is substantially mitigated** as CME Clearing becomes the buyer to every seller and the seller to every buyer. We guarantee the financial soundness of both parties.
- **Accumulation of debts/losses is limited** and transparency is achieved as CME Clearing marks your positions to market twice daily.

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- **Approximately \$146 billion in financial safeguards** stand ready to mitigate systemic risk.\* In over a century of excellence, CME Clearing has never had a default.
  - **Customer segregation protections** under which your funds are not subject to creditor claims against your own clearing firm should it become financially unstable or insolvent are included.
  - **Multilateral netting helps you gain capital efficiencies** and decreases your credit exposure.
  - **Your choice of execution is preserved** and made safer. You have the flexibility to manage your risk on-exchange or with cleared-only services for OTC products, all with the performance guarantee of CME Clearing.

## Electronic Market Data (E-data) Information

CME Group provides customers with access to real-time, delayed and historical market data via Internet-based E-data applications.

### Real-Time Data

#### CME E-quotes

The CME E-quotes application offers a best-in-class display of data. In both web-based desktop and mobile editions, CME E-quotes delivers real-time, delayed and historical quotes and charts, and analytics to your exact specifications. Benefit from global access and a powerful combination of sophistication, usability, performance and price.

For more information about CME E-quotes, visit [cmegroup.com/e-quotes](http://cmegroup.com/e-quotes).

\* Approximately \$125B in financial safeguards as of September 30, 2016.

### Delayed Data

#### Charts

This application provides current and historical performance of CME Group contracts with free delayed snapshot charting.

#### Delayed Futures and Options

Customers can get detailed delayed price information at each product and contract level.

### Historical Data

#### CME DataMine

With a broad array of data types, CME DataMine makes it easier than ever to access historical price information in a form that can be easily used to develop, enhance or refine trading algorithms. By providing market depth, top-of-book, time and sales, and end-of-day data, CME DataMine has established itself as a premier information resource. Customers can access daily updates through a secure FTP account as well as conduct one-time bulk orders.

For more information on CME DataMine, visit [cmegroup.com/datamine](http://cmegroup.com/datamine).

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## Important Contacts

Contact Information	Department	Phone
CME Globex Market Access	CME Global Account Management U.S. Europe Asia	+1 312 634 8700 +44 203 379 3754 +65 6593 5505
Market and System Inquiries	CME Global Command Center (U.S.) U.S. Europe Asia	+1 800 438 8616 +44 20 7623 4747 +65 6532 5010

# CME GLOBEX ELECTRONIC TRADING

## RULES AND POLICIES

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The following list of rules and policies is not meant to be exhaustive or complete, but is intended as a summary of the most common CME Globex rule or policy questions. For the text of actual rules or interpretations, please refer to the CME, CBOT or NYMEX Rulebooks, which are available online at [cmegroup.com](http://cmegroup.com), or the various Market Regulation Advisory Notices or other policies that have been published on the Web site. This document should not be relied upon as the official source of the rules. Further, while many rules have been harmonized across CME Group Exchanges, several rules remain different and market participants must be aware of these differences. Specific differences are noted with respect to the rules referenced below.

### Accessing CME Globex

Rule 574 outlines certain requirements for gaining access to CME Globex, including a requirement that all connections to CME Globex be guaranteed by a clearing member firm. Additionally, all individuals entering orders in other than a clerical capacity on behalf of non-member customers must have appropriate industry registration. These orders may be entered only from designated areas on the trading floors or from the premises of an entity registered to conduct customer business. Any clearing member firms providing CME Globex access to their customers must comply with all Credit Control requirements as set forth in Schedule 6 of the Customer Connection Agreement.

### Market Data Usage on CME Globex

Any entity connecting to CME Group for market data is required to sign the Market Data License Agreement (MDLA) and complete a Scope of Use document. The Market Data License Agreement (MDLA) covers acceptable uses of all CME Group market data and participating Partner Exchanges.

### CME Globex Trade Cancellations and Price Adjustments

Rule 588 states that trade prices determined by GCC to be within the Non-Reviewable Trading Range will generally not be canceled or adjusted. The only exception to this rule is when the GCC determines that allowing a trade to stand as executed may have a material, adverse effect on the integrity of the market. The GCC may review a trade based on its analysis of market conditions or a request for review by a CME Globex user. A request for review must be made as soon as possible, but will generally not be considered if more than eight minutes have passed since the trade occurred. A party responsible for an order(s) which results in a trade price adjustment or a trade cancellation may be liable for realized losses incurred by affected parties pursuant to the criteria outlined in Rule 588. The Non-Reviewable Trading Ranges for all products and the Bid/Ask Reasonability Allowance for options trading on CME Globex are set forth in Rule 588.

## Identification of CME Globex Terminal Operators

Rule 576 requires that CME Globex terminal operators be identified to the Exchange in the manner prescribed by the Exchange, and are subject to Exchange rules. For parties accessing CME Globex through iLink, clearing member firms or ISVs will issue the workstation user ID (known as the Tag 50 ID).

The user ID must be submitted with each order sent to CME Globex. Additionally, some user IDs are required to be registered with the applicable Exchange by an Exchange clearing member firm. **In no event may a member or clearing member firm enter or permit another party to enter an order with a user ID other than the individual's own unique user ID.**

Clearing member firms must maintain historical records of the identities of each user for at least five years. Additionally, please see the most recent Market Regulation Advisory Notice concerning Tag 50 IDs and registration requirements which may be accessed here [cmegroup.com/rulebook/rulebook-harmonization.html](http://cmegroup.com/rulebook/rulebook-harmonization.html).

## Rules and Requirements for Entering Orders on CME Globex

This section highlights the most commonly referenced rules and requirements for entry of orders into CME Globex. **It is not intended as an exhaustive list of all such rules and requirements.**

- Every order entered into CME Globex must include an account designation, although there is an exception to the requirement of entering the actual account number if the order is entered by an eligible account manager for accounts eligible for post execution allocation as set forth in Rule 536.C.
- Pursuant to Rule 530, no person may enter an order into CME Globex for an account they own, an account in which they have a financial interest or an account over which they have discretionary trading authority (including an order allowing discretion as to time and price) when such person is in possession of any order for another party that CME Globex is capable of accepting.
- Pursuant to Rule 548, all non-discretionary customer orders must be entered into CME Globex in the order received. If the non-discretionary order is not able to be entered immediately upon receipt, it must be entered when it becomes executable.
- Pursuant to Rule 529, no person may withhold or withdraw any order from the market for the benefit of any person other than the person placing the order.
- Pursuant to Rule 531, a person in possession of a customer order may knowingly trade against his customer order for his own account only if the customer order has been entered immediately upon receipt and has first been exposed on CME Globex for a minimum of five seconds in the case of futures orders or for a minimum of 15 seconds in the case of options orders.
- Pursuant to Rule 532, no person may disclose another person's order or solicit or induce another person to disclose order information. An exception to this prohibition is set forth in each Exchange's Rule 539.C., which allows parties to engage in pre-execution communications regarding CME Globex trades in certain products provided that the parties comply with the requirements set forth in the rule. Please see the section on pre-execution communications for a more detailed discussion of the rules regarding pre-execution communications concerning CME Globex trades.
- Pursuant to Rule 534, no person shall place or accept buy and sell orders in the same product and expiration month, and, for a put or call option, the same strike price, for accounts with the same beneficial ownership or for accounts with common beneficial ownership; and where the person knows or reasonably should know that the purpose of the orders is to avoid taking a bona fide market position exposed to market risk.

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## CME Globex Record Keeping and Records Retention Requirements

For each order entered into CME Globex, Rule 536.B. requires the terminal operator to input a) the user ID assigned him by the Exchange, a clearing member or other authorized entity (Tag 50 ID) b) the price, quantity, product, expiration month, CTI code, automated or manual indicator (Tag 1028) and account number (except as provided in Section C.), and, for options, put or call and strike price.

Definitions concerning each of the four CTI codes are set forth in Rule 536.D.

Each order entered into CME Globex must be entered with the correct user ID assigned by the Exchange, a clearing member or other authorized as described earlier in this document.

Pursuant to Rule 536.B, terminal operators who receive orders that are capable of and are immediately entered into CME Globex are not required to create a written, time-stamped order. Orders that are not or cannot be entered immediately into CME Globex must be reduced to writing and include the date, time stamp, order instructions and account designation. CME Globex users are encouraged, but not required, to print and save a listing of all orders they enter into CME Globex during each session.

Clearing member firms are responsible for maintaining or causing to be maintained for five years an audit trail for electronic orders entered into CME Globex through iLink, and must be able to display this data in a pre-approved format using terminology and field names consistent with other CME Group systems. Please see Rule 536 in each Exchange's Rulebook for more information on record keeping requirements.

## Pre-Execution Communications Concerning CME Globex Trades

In certain markets, market participants are allowed to engage in pre-execution communications with regard to transactions executed on CME Globex. Such pre-execution communications are permitted in all CME, NYMEX and COMEX futures products traded on CME Globex, and in all CBOT interest rate, equity index, ethanol, commodity index and real estate index futures products and CBOT interest rate swaps traded on CME Globex. Pre-execution communications remain prohibited in all CBOT grain and oilseed futures products traded on CME Globex. In order for parties to engage in pre-execution communications where allowed, they must adhere to the requirements and procedures set forth in each Exchange's **Rule 539.C** and the applicable [Market Regulation Advisory Notice](#).

Some circumstances in which pre-execution discussions might take place include the following:

- A firm may wish to contact potential contra parties on behalf of its customers or for the benefit of the firm proprietary account, in order to gain some assurance that someone will be ready and willing to take the opposite side of the order. These opposite parties could be the firm's customers, other firms' customers or proprietary traders, or individual traders.
- An individual member may also contact potential contra parties to trade opposite his or her personal trading account.

More detailed information, including the text of Rule 539.C. and a question and answer document concerning the policies and procedures concerning CME Globex pre-execution discussions are available on the CME Group Web site via the following link: [cmegroup.com/rulebook/rulebook-harmonization.html](http://cmegroup.com/rulebook/rulebook-harmonization.html).

Pre-execution communications concerning trades intended for open outcry/pit execution are expressly prohibited and constitute a violation of Rule 539.



## APPENDIX – GLOSSARY

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**After-Hours Electronic Contracts** (i.e., ETH only)

After-hours electronic contracts trade on the CME Globex platform only after they stop trading via open outcry on the trading floor.

**Application Program Interface** An application program interface (API) is a set of tools and protocols that help integrate a solution with other software programs or facilitate the customization of a user interface.

**CME Clearing** The division of CME Group that confirms, clears and settles all trades. CME Clearing also collects and maintains performance bond funds, regulates delivery and reports trading data.

**CME Direct** CME Direct is a highly-configurable trading front-end system that allows customers to directly access CME Group markets.

**CME Globex** The CME Group electronic trading platform.

**CME Global Command Center (GCC)** The department that supports and maintains the CME Group electronic trading environment.

**Continuous Trading Phase** The phase on the CME Globex platform in which orders are sent to the market for real-time matching.

**Cross Margin** The process of allowing for a reduction in performance bond (margin) requirements. This reduction is possible because risk is reduced when offsetting positions are cleared by the same or affiliated clearing members.

**CSET** See *Customer Support for Electronic Trading*.

**Customer Forum** A communication vehicle to update customers and solicit feedback on topics related to CME Group's electronic trading strategy over the next six to 12 months, including new policies, enhancements and products.

**Customer Support for Electronic Trading (CSET)** The department that assists with certification and development to CME Globex.

**Derivatives** Financial instruments whose value is based upon other financial instruments, such as stock indexes, interest rates or interest rate indexes..

**E-px (e-“packs”)** A Web-based application that provides real-time Eurodollar pack and bundle data, including prices for the 40 underlying quarterly Eurodollar futures contracts and a daily log of all executed Eurodollar spread trades.

**E-quotes** A CME Group real-time market data application that offers streaming quotes directly from CME Group for all futures products, in addition to interactive charts and OsterDowJones news.

**Error Trade** A trade that falls outside a contract's Non-Reviewable Range and is deemed to have been submitted in error. Such trades can be removed from official CME Group records, including Time and Sales information.

**FCM** See *Futures Commission Merchant*.

**FEC-ETP** See *Front-End Clearing System Electronic Trade Posting*.

**FirmSoft** A user-friendly, browser-based order management business continuity tool offered at no cost by CME Group to provide firms easy access to view and cancel their orders.

**Front-End Clearing System Electronic Trade Posting (FEC-ETP)** Application that enables brokers to inquire about CME Globex net positions and spread prices. FEC-ETP is accessible from any PC with an Internet connection.

**Fungibility** Interchangeability of contracts. For example, five E-mini S&P 500 contracts are fungible with one standard-sized S&P 500 contract

**Futures Commission Merchants (FCM)** Individuals, associations, partnerships, corporations and trusts that solicit or accept orders for the execution of a commodity transaction on and pursuant to the rules of a contract market, and which accept payment from or extend credit to customers.

**GCC** See *CME Global Command Center*.

**GCC Notification System** The method the GCC uses to send messages regarding system events to customers via e-mail, pagers, fax, mobile phones and land phones.

**Hedging** Offsetting price risk in a cash market by taking an equal but opposite position in the futures market. A means of protection against loss due to adverse price fluctuations.

**Hidden Quantity** A Hidden Quantity order – also called Max Show or Iceberg – displays only a small portion of the order to the marketplace. When the displayed quantity has been filled, another portion is then displayed.

**IB** See *Introducing Broker*.

**iLink** The order routing interface to CME Globex, based on the FIX 4X protocol. iLink creates a session between CME Group and the client through FIX protocol, eliminating the need for Standard Template Libraries (STLs).

**Implied Functionality** Implied prices integrate bids and offers in both spreads and their outright contracts to provide the most liquid possible markets with the best possible prices.

**Independent Software Vendor (ISV)** A company that makes and sells software products that run on one or more computer hardware or operating systems.

**Indicative Opening Price (IOP)** The price at which a product would trade upon the open, if possible, or the opening bid or offer if no trade would occur. At predefined times prior to the opening on CME Globex, an IOP is calculated as orders are entered for each product. Trading begins at an equilibrium price that falls within the overlap of the bid and offer prices. The IOP is broadcast to all CME Globex users and to the CME Group market data/ticker feed.

**Internet Service Provider (ISP)** A company that provides Internet access.

**Introducing Broker (IB)** A firm or person engaged in soliciting or accepting and handling orders for the purchase or sale of futures contracts, subject to the rules of a futures exchange, but not accepting any money or securities to margin any resulting trades or contracts. The IB is associated with a correspondent futures commission merchant and must be licensed by the Commodity Futures Trading Commission (CFTC).

**ISP** See *Internet Service Provider*.

**ISV** See *Independent Software Vendor*.

**Local Pre-Processing** Additional functionality an ISV may provide to its customers before the order is transmitted to the CME Group electronic trading platform.

**MDP 3.0:** Market Data Platform (MDP) 3.0, a low latency and direct data access solution designed to improve customers' ability to process and act on real-time price information.

**Maintenance Period** A period of time in each CME Globex trading session in which the market remains closed and customers cannot enter, modify, view or cancel orders. All remaining day, session and expired Good 'Till Date (GTD) orders are purged during this time.

**Market Data Platform** A dual-feed multicast market data dissemination system used in conjunction with the CME Group order entry interface. Market Data Platform (MDP 3.0) offers superior scalability and more efficient data delivery. The Market Data Platform supports Simple Binary Encoding (SBE) for market data format for CME Globex market data.

**Market Enabled/Pre-Opening Period** The period in the CME Globex trading day in which the market is enabled and customers can begin to enter orders.

**Market Data Platform** A dual-feed multicast market data dissemination system used in conjunction with the CME Group order entry interface. Market Data Platform (MDP 3.0) offers superior scalability and more efficient data delivery. The Market Data Platform supports Simple Binary Encoding (SBE) for market data format for CME Globex market data.

**Minimum Quantity** A Minimum Quantity order is executed only if a certain minimum quantity of that order can be immediately matched.

**Non-Reviewable Trading Range** A range of prices used in determining if a potential error trade should be canceled. The range is based on the true market price for the contract immediately before the error trade occurred, as determined by considering all relevant information, including the last trade price on the CME Globex platform, a better bid or offer price, a more recent price in a different contract month, the price of the same or a related contract established in open outcry trading and the prices of related contracts trading in other markets (e.g., cash FX and SGX Eurodollars). A trade may not be canceled if it falls within the Non-Reviewable Trading Range for that contract. Non-Reviewable Trading Ranges vary by product.

**Order Duration Qualifiers** Order Duration Qualifiers define the span of time the order will be active. Default order duration is Day/Session.

**Post Close/Pre-Open Phase** The phase in the CME Globex trading day in which customers are allowed to enter orders, modify and cancel GTC and GTD on the grain markets only.

**Pre-Opening/No-Cancel Phase** The phase in the CME Globex trading day in which customers are allowed to enter orders, but are prohibited from modifications and cancellations.

**Price Adjustment** To alter the price of an executed trade because the order was entered or filled in error and fell outside the Non-Reviewable Trading Range (a price range) for that product. Trades are adjusted according to strictly followed established rules in the CME Globex Error Trade Policy.

**Price Banding** A CME Group-instituted mechanism to ensure a fair and orderly market. This mechanism subjects all incoming orders to price verification and rejects all orders with clearly erroneous prices. Price bands are monitored throughout the day by the GCC and adjusted if necessary.

**Protection Points** Used to define the protected range of Market and Stop orders with Protection. The protected range is typically the current best bid or offer, plus or minus 50 percent of the Non-Reviewable Trading Range for that instrument.

**Surveillance Intervention Phase** A period of time in each CME Globex trading session during which the market is closed and customers are not allowed order entry or modification, although cancellation of orders is permitted. The Surveillance Intervention Period is followed by the CME Globex Maintenance Period.

**Trade Cancellation** To remove a trade from the official CME Group records because the order was entered or filled in error and fell outside the Non-Reviewable Trading Range (a price range) for that product. Trades are canceled according to strictly followed rules established in the CME Globex Error Trade Policy.

**Trading Session** The time span marked by the start and end of the period during which the CME Globex platform is in operation. The start of the CME Globex session usually occurs in the afternoon or evening, and marks the beginning of the next trading day. For example, orders entered during Sunday's evening session are dated for and cleared on Monday. The trading day includes both the CME Globex trading session (i.e., ETH) and the trading floor open outcry session (i.e., RTH), if the CME Globex and open outcry sessions overlap for a given product.

**Virtual Private Network** A private data network that makes use of the Internet's public telecommunication infrastructure, maintaining privacy through the use of a tunneling protocol and security procedures.

**VPN** See *Virtual Private Network*.

As the world's leading and most diverse derivatives marketplace, CME Group ([cmegroup.com](http://cmegroup.com)) is where the world comes to manage risk. CME Group exchanges offer the widest range of global benchmark products across all major asset classes, including futures and options based on interest rates, equity indexes, foreign exchange, energy, agricultural commodities, metals, weather and real estate. CME Group brings buyers and sellers together through its CME Globex electronic trading platform and its trading facilities in New York and Chicago. CME Group also operates CME Clearing, one of the largest central counterparty clearing services in the world, which provides clearing and settlement services for exchange-traded contracts, as well as for over-the-counter derivatives transactions through CME ClearPort.



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# EXHIBIT K

**CME Group Globex New Years Holiday Schedule: December 29, 2017 - January 2, 2018**

<b>Trade Date</b>	<b>Friday, December 29</b>	<b>Globex Closed</b>	<b>Tuesday, January 2</b>	
<u>Calendar Trade</u>	<u>Friday, Dec 29</u>	<u>Monday, Jan 1</u>	<u>Monday, Jan 1</u>	<u>Tuesday, Jan 2</u>
	CLOSE	CLOSED	OPEN	CLOSE
Equity	Regular @ 1600 CT / 2200 UTC	Closed for New Year's	Regular @ 1700 CT / 2300 UTC	Regular @ 1600 CT / 2200 UTC
Interest Rate	Regular @ 1600 CT / 2200 UTC	Closed for New Year's	Regular @ 1700 CT / 2300 UTC	Regular @ 1600 CT / 2200 UTC
FX	Regular @ 1600 CT / 2200 UTC	Closed for New Year's	Regular @ 1700 CT / 2300 UTC	Regular @ 1600 CT / 2200 UTC
Energy, Metals & DME	Regular @ 1600 CT / 2200 UTC	Closed for New Year's	Regular @ 1700 CT / 2300 UTC	Regular @ 1600 CT / 2200 UTC
Grain & Oilseed	Regular Close	Closed for New Year's	Regular @ 1900 CT / 0100 UTC	Regular per Product
Mini-Grain	Regular Close	Closed for New Year's	Regular @ 1900 CT / 0100 UTC	Regular per Product
MGEX Wheat	Regular Close	Closed for New Year's	Regular @ 1900 CT / 0100 UTC	Regular per Product
MGEX Apple	Regular Close	Closed for New Year's	Regular @ 1900 CT / 0100 UTC	Regular per Product
MGEX Indices	Regular Close	Closed for New Year's	Regular @ 1900 CT / 0100 UTC	Regular per Product
Dairy	Regular close	Closed for New Year's	Regular @ 1700 CT / 2300 UTC	Regular Open and Close
Lumber	Regular close	Closed for New Year's	Closed for New Year's	Regular Open and Close
Livestock	Regular close	Closed for New Year's	Closed for New Year's	Regular Open and Close

**Notes**

December 29: TAS, TAM, & TAM (Platts) : regular close per each product schedule

\*PCP: Post Close Pre-opening order entry, modification and cancellation is allowed for GTC/GTD orders only

\*\*Pre-opening: order entry, modification and cancellation is allowed.

Day/Session orders entered after a product's Pre-opening are for Trade Date Tuesday, January 2, and can continue working until their January 2, Globex close.

If you have any questions, please call the CME Group Global Command Center at +1 800 438 8616, in Europe at + 44 20 7623 4747, or in Asia at + 65 6532 5010

# EXHIBIT L





## CME Historical Data FAQ

### Pricing/Ordering Information

- 1) What historical data does CME have available?
  - a. Time & Sales  
Time & Sales contains the official record of trade times, prices and quantities (quantity only available on electronic trades) for CME products. Both puts and calls are included with each options product.
  - b. End-of-Day  
End-of-day data, sometimes referred to as settlement data, contains all of the official closing information for CME contracts (open, high, low, close, volume, open interest, etc.). Both puts and calls are included with each options product; both trading sessions (electronic and open outcry) are included with CME Globex data.
  - c. Best-Bid-Best-Offer (BBO)  
CME Best-Bid-Best-Offer data is similar to Time & Sales, but contains all of the top-of-the-book data for CME Globex products. This includes top bid, bid size, top ask, ask size, last trade, trade volume and time-stamp.
  - d. Market Depth (MD)  
CME Market Depth data provides all of the CME market data messages (MA messages) needed to recreate the Top 5 book for any electronically-traded CME product. In order to process these messages which show each delta in the book, the user will need to understand the CME logic for building the book. Please go to <http://www.cme.com/trading/dta/hist/reclayguide11987.html>.
  - e. Spread Data  
Spread data provides a detailed record of all spread trades for a given product. Limited to intraday data only.
- 2) How far back does the data go?
  - a. Time & Sales – 1/1/1982 or contract inception if more recent
  - b. End-of-Day – 1/1/1982 or contract inception if more recent
  - c. Best-Bid-Best-Offer (BBO) – 11/1/2004 or contract inception if more recent
  - d. Market Depth – 1/1/2005 or contract inception if more recent
  - e. Spread Data – 1/1/1999 or contract inception if more recent
- 3) How do I purchase this data?

Data can be purchased online via credit card at [www.cme.com/datamine](http://www.cme.com/datamine). If you wish to pay by alternative means, please contact us at [historicaldata@cme.com](mailto:historicaldata@cme.com).

To purchase BBO or MD data, please contact us at [historicaldata@cme.com](mailto:historicaldata@cme.com).
- 4) What is the pricing for historical data?

Pricing varies based upon data type and duration of the data request. More pricing is available at [www.cme.com/datamine](http://www.cme.com/datamine). More pricing information on Market Depth and BBO is available at [historicaldata@cme.com](mailto:historicaldata@cme.com).
- 5) What forms of payment are available?

The preferred method is via credit card; however, payment via an invoice may be arranged. Call 312-930-3178 to request payment by invoice.

- 6) How will I receive the data?  
Depending upon the file size and requested method, the data will be sent via e-mail, mailed on CD-ROM / DVD, or written to an ftp site.
- 7) Can I receive ongoing historical data updates?  
Yes, you can request periodic monthly or weekly updates through the online purchase process.

Please contact us at [historicaldata@cme.com](mailto:historicaldata@cme.com) for a recurring subscription to BBO or Market Depth data.

- 8) Why would I need CME historical data?  
CME historical data fulfills a variety of client needs. Historical data can be used to analyze trading models, feed automated trading systems, perform advanced technical analysis, research, and so on. CME historical data is also useful in building up historical databases.

CME historical data is straight from the source and highly accurate.

- 9) Is there any data available for free?  
A limited amount of free historical data is available for download on the CME.com FTP site. This can be found at <http://www.cme.com/trading/dta/hist/histftp2421.html>.
- 10) Can I get a sample of the data?  
Yes – data samples are available at <http://www.cme.com/trading/dta/hist/reclayguide11987.html>.
- 11) Where can I find the record layout guides?  
Record layout guides, along with a data sample, are available at <http://www.cme.com/trading/dta/hist/reclayguide11987.html>.
- 12) Is the record layout the same for each product/contract?  
Yes – the record layout format is the same for each product/contract within that data type.
- 13) How long does it take to receive the data?  
Normal turnaround time is 24-48 hours after the order has been placed. Smaller orders will be done sooner and larger customized orders may take longer.
- 14) What if I ordered the wrong data?  
All sales are final. If you ordered the wrong data, a refund will be issued at CME's discretion. The data must be returned to CME.
- 15) How can I use this data? Can I redistribute this data?  
CME does not currently restrict the distribution of historical End of Day or Time and Sales data either internally or externally. External redistribution requires vendor registration. Please go to: <http://www.cme.com/trading/dta/dist/> CME does **not** allow external redistribution of BBO or MD.
- 16) Are there discounts for students?  
CME does offer 50% discounts to accredited educational institutions including faculty and students. Please contact [historicaldata@cme.com](mailto:historicaldata@cme.com) for this special discount.

## **Data Interpretation Information**

### **General:**

- 1) How can I import an ASCII file into an Excel file?

Open Excel to a blank spreadsheet. Drag the ASCII file into the spreadsheet using the Excel wizard feature. Format the data, following the record layout for the appropriate data type.

### **End-of-Day**

- 1) Why is there a pit-traded record for a CME Globex-only contract?

The EOD file uses close and settlement records from the pit-traded sessions for Globex-only contracts.

- 2) When is an EOD record generated? Why is there no EOD record some days?

EOD records are generated at the close of the trading session for each day. If there was no trading activity, no record will be generated.

- 3) What is Open Interest?

Open Interest is the total number of futures or options on futures contracts that have not yet been offset or fulfilled by delivery.

- 4) Can I get data for the rollover period only?

Data can be provided for rollover periods only. In fact, customers can customize their purchases to almost any time period they need.

- 5) What is the difference between a closing price and a settlement price?

A closing price is the last traded price of a contract at the end of a trading session. A settlement price is a figure determined by the closing range that is used to calculate gains and losses in futures market accounts, performance bond calls and invoice prices for deliveries. The settlement price is the official daily closing price of futures contracts.

- 6) What constitutes an Opening Range or Closing Range?

The opening range is the range of prices at which the first bids and offers were made or first transactions were completed. It must be initiated by at least one trade. The closing range is the high and low prices or bids and offers recorded during the period designated by the exchange as the official close (the final 60 seconds of trading in currencies and 30 seconds in all other contracts).

- 7) If a market never trades, how is the contract settled at the end of the day?

If a market never trades on a given day, the contract is generally settled nominally using the previous day's settlement or will be adjusted by committee based on the spread between lead and back month contracts.

## Time & Sales

- 1) What do the field headings mean?

Time and Sales headers display Commodity, Trade Date, Time and Price. For CME Globex Time and Sales, Quantity is added to the aforementioned headers.

- 2) Why is there no volume associated with RTH commodities?

RTH is an Open Outcry environment. Volume is not reported for any transaction. Only time and price are entered into the price reporting system by the market reporter.

- 3) What does an "I" stand for?

"I" represents an Inserted price. A price may be inserted when there is a gap in the sequence of executed trades.

- 4) What does it mean for ETH ticks to have volume of 0?

An ETH tick with volume quantity of "0" indicates no trade was executed. This record is an example of an indicative price quote; that is, no trade occurred, but the market is "indicated"

- 5) What are the Bids and Offers in the tick data?

Bids (B) are buy quotes and offers (A) are sell quotes.

Bids (B) are offers to buy and Offers (A) are offers to sell. Bids and Offers reflected in Time and Sales are only those quotes that create a "last" and only appear when the bid is higher than the last sale or when the ask is lower than the last sale.

- 6) What does the "X" or "C" stand for?

"X" represents a cancelled price and "C" represents a corrected price.

- 7) How detailed are your time stamps?

Tick data is time-stamped to the second and TickPlus data is time stamped to the centi-second.

- 8) Can I get 15-, 5-, or 1-minute bars?

Only hourly intraday charts are available on [cme.com](http://cme.com). CME can create customized files for an additional fee. Please contact us at [historicaldata@cme.com](mailto:historicaldata@cme.com). Ordering data in our Excel format will allow you the opportunity to sort data based on your specifications.

- 9) How can I make a chart using this data?

You must have software designed for charting to import the data files.

### **Best-bid-best-offer (BBO)**

- 1) Is this data top of the book?

BBO data is Best Bid/Offer and last trade at the Top of the Book. It includes bid and offer sizes.

- 2) What does it mean if no (B) or (A) is present?

Lack of a (B) or (A) indicates a trade was executed.

- 3) How far back in history is this data available?

This data is available from November 2004 to the present time.

- 4) Do you have this data for all instruments?

This data is available for all CME Globex-traded instruments.

- 5) If I can't open the BBO file you sent, what should I do?

Check your computer. Your PC must meet the minimum RAM requirement, 1 gigabyte, and have a utilities program designed for accessing large data files.

- 6) If the data is not what I expected, whom should I talk to for a refund?

Contact [historicaldata@cme.com](mailto:historicaldata@cme.com).

### **Market Depth (MA Message)**

- 1) How do I interpret market depth data?

Market depth data includes all bids and offers, 5 deep, including size.

- 2) How large are the Market Depth files?

The average Market Depth file exceeds 1 gigabyte in size. However, it is largely dependent on how far back in time one goes, as well as the liquidity of the product.

- 3) Can I get market depth back to the inception?

This data is only available from January 2004 to the present time.

- 4) I can't read the data file. Can you help me format the data?

We can assist with formatting the data from the record layout. Please contact [historicaldata@cme.com](mailto:historicaldata@cme.com)

- 5) Will the Market Depth data fit on one CD?

Depending on the time period requested, the data for some markets will fit on CD. DVD is also available for larger files.

## Spreads

1) What is a spread?

A spread is the price difference between two contracts. A spread can also be defined as the act of holding a long and a short position in two related futures or options on futures contracts with the objective of profiting from a changing price relationship. Additionally, a spread can be defined as the assumption of a long and short position on the same business day in the same or related commodities for the same account.

2) Can I get spread data for just one market?

Single market spread data is available.

3) Can I get spread data for one type of spread?

Single spread type data is available.

4) What are all the columns in the spreadsheet?

Spread columns are identified in the record layout as Instruments, Time of Execution, Points, Volume, and Spread Type.

5) Why does the file show three different contracts?

These columns show the three different instruments being traded in the spread. They are also known as the “legs” of the spread.

6) Is quantity included in the file?

Quantity is included in the file.

7) Is there a commodity code describing the types of spreads?

A commodity code can be found on the DataMine ordering page for spread data.

8) How far back is spread data available?

Spread data is available for most markets from 1999 to the present time.

9) There are no headers for the columns; how do I know what's what?

Please refer to the record layout sheet available on [cme.com](http://cme.com) under “Historical Sample Data.”