CME Group

A CME/Chicago Board of Trade/NYMEX Company

Advisory Notice

Clearing House

09-346

TO: Clearing Member Firms
Back Office Managers

FROM: CME Clearing

SUBJECT: **Clearing Processing for True Cash-settled Options**

DATE: Monday, August 10th, 2009

This advisory provides important information for clearing firms about processing of true cash-settled options by CME Clearing.

About sixty NYMEX options products are “true” cash-settled options. This means that when exercised or assigned, they simply create a cash movement, rather than a transaction in their underlying product. The table below lists these products.

The upcoming integration of processing for NYMEX products into the CME clearing system, marks the first time that true cash-settled options will flow through the CME clearing system. In the future, true cash-settled options are likely to be introduced for CME and CBOT products.

True cash-settled option products may be identified by a settlement method code of **CASH** in the SPAN® file. All other options products have a value of **DELIV** in this field, meaning that when exercised or assigned, a transaction in the underlying is created at the strike price. (For options on combinations, the transaction in the combination is then immediately decomposed into transactions in the legs.) In the positional format (“pa2”) SPAN file, the settlement method code is provided on the type “P” record, in bytes 122-126. In the XML format, the value is provided in the **setlMeth** element.

True cash-settled options may be either options on futures (OOF’s), options on combinations (OOC’s) or, in the future, options on physicals. And they may have American-style or European-style exercises. Regardless of product type, when exercised or assigned, a cash movement is created, and is banked **with the option position**.

In the FIXML Trade Register File, in the record for the option position, the underlying price used to calculate the cash amount is provided in the **UndSetPx** attribute of the **PosUnd** (position underlying) element. For example: **<PosUnd UndSetPx=”123.40” UndSetPxTyp=”1”>**

The amount of the cash movement is provided in an **Amt** element with type of **CASH** and reason code of **zero**. For example: **<Amt Typ="CASH" Amt="-6346350" Rsn="0"/>**
In other words, there was a cash payment of 6,346,350.00 resulting from option assignment, in the currency in which this option is denominated.

On the Trade Register (**POS591**) Report, for each option position, there is an **Option Adjustment** section which shows the position quantity exercised and/or assigned. For true cash-settled options, there will also be either or both of two lines – **OPTION EXERCISE CASH** and **OPTION ASSIGNMENT CASH** – showing the cash movement(s). On financial settlement reports (for example the **CST590** Recap Ledger report), these cash movements are included in the **Variation** values – not the **Option Premium** values.

Cash amounts from option exercise or assignment for true cash-settled options are calculated in exactly the same manner as if the option had exercised into a transaction in the underlying which is then marked-to-market. Presuming the normal money-calculation method:

- Calculate the rounded monetary value of one contract at the underlying price by multiplying the underlying price by the option's contract value factor, and rounding normally to the precision of the currency (two places for EUR, USD, GBP etc., zero places for JPY).

- Calculate the rounded monetary value of one contract at the strike price by multiplying the strike price by the option's contract value factor, and rounding normally to the precision of the currency.

- Determine the money difference for one contract by subtracting the second value from the first.

- Express the quantity as a positive value for an exercise or a negative value for an assign.

- Multiply the money difference by the quantity. The result is a positive number for a collect or a negative number for a pay.

(If using the "notional" money calculation method used for options where quantities are expressed in large notional quantities, then calculation is simply: the price difference, times the contract value factor, times the quantity, with the rounding done at the end. The money calculation method may be found on the positional-format SPAN file in byte 116 on the type "P" record.
See www.cme-ch.com/span/spanl30p.htm for the layout.)

An annotated example is provided below of a FIXML PosRpt message for a true cash-settled option, together with an example of the money calculation.

For more information, please contact CME Clearing at 312-207-2525.

FIXML PosRpt example for a true cash-settled option

```
<PosRpt
        RptID="7119"                            // report ID
        ReqID="C104P104NEOD20090527"            // request ID
        SetSesID="EOD"                          // for end-of-day
        MtchStat="0"                            // matched position
        SetPx="1.4534"                          // option’s settlement price
        SetPxTyp="1"                            // normal price type
        SettlCcy="USD"                          // settlement currency
        ReqTyp="1"                              // cleared trades provided
        MsgEvtSrc="REG"                         // trade register file
        BizDt="2009-08-27">                     // clearing business date

<Pty ID="CME" R="21"></Pty>                     // clearing organization
<Pty ID="104" R="4"></Pty>                      // clearing member firm
<Pty ID="NYMEX" R="22"></Pty>                   // trading member firm exchange
<Pty ID="104N" R="38"><Sub ID="2" Typ="26"/></Pty>   // position account & origin
<Pty ID="104" R="1"></Pty>                      // trading member firm

<Instrmt
        ID="E7"                                 // product code
        Desc="HENRY HUB FINANCIAL LAST DAY O"       // product description
        CFI="OCEXCS"                            // CFI code
        SecTyp="OOF"                            // product type
        MMY="200909"                            // option period code
        MatDt="2009-08-27"                      // option settlement (expiration) date
        StrkPx="3.00"                           // strike price
        Mult="10000"                            // contract value factor
        Exch="NYMEX"                            // product exchange
        UOM="MMBtu"                             // unit of measure
        PutCall="1"                             // put-call code
        Fctr="1">                               // variable value factor
</Instrmt>

<PosUnd>
        UndSetPx=”3.674”                        // underlying price used for cash calculation
        UndSetPxTyp=”1”                         // an end-of-day settlement price
<Undly
        CFI="FXXCSO"                            // underlying CFI code
        Desc="NYMEX NATURAL GAS (H.HUB LTD) "       // underlying description
         ID="HH"                                // underlying product code
        MMY="200909"                            // underlying period code
        UOM="MMBtu"                             // underlying unit of measure
        Mult="10000"                            // underlying contract value factor
        SecTyp="FUT"                            // underlying product type
        Exch="NYMEX">                           // underlying product exchange
</Undly>
</PosUnd>
```

<Qty Long="222" Short="0" Typ="EP"/> // ex-pit transactions cleared today
<Qty Long="0" Short="0" Typ="SOD"/> // start of day
<Qty Long="0" Short="0" Typ="FIN"/> // final position -- after all exercises
<Qty Long="0" Short="0" Typ="IES"/> // inter-commodity spreadable positions
<Qty Long="0" Short="0" Typ="PA"/> // adjustments to start of day position
<Qty Long="222" Short="0" Typ="EX"/> // exercises

<Amt Typ="PREM" Amt="-1568430"/> // option premium
<Amt Typ="CASH" Amt="1496280" Rsn="0"/> // cash from exercise or assignment
</PosRpt>

In this example, 222 options were purchased by ex-pit transactions on the final day of trading which is also the option's expiration date.

The premium paid is calculated by:

- Take the trade price of 0.7065, multiply by the contract value factor of 10,000, and round to two places (since the settlement currency is USD), yielding the premium for one contract of 7,065.00
- Multiply by the quantity of 222 and express as a negative number since these are purchases.

The ending position was 222 long prior to exercise and assignment, and all positions were automatically exercised since they were in the money. The cash adjustment is calculated as:

- Money value of one contract at underlying price = 3.674 * 10,000 = 36,740.00
- Money value of one contract at strike price = 3.000 * 10,000 = 30,000.00
- Money difference = 36,740.000 less 30,000.00 = 6,740.00
- Quantity = +222 (we're exercising)
- Cash from E&A = 6,740.00 * 222 = 1,496,280.00

The table on the next page lists NYMEX cash-settled options.

Exch	Prod_Code	Prod_Type	Product_Name
NYM	7A	OOC	WTI CRUDE OIL 1 M CSO FIN
NYM	7B	OOC	WTI CRUDE OIL 2 M CSO FIN
NYM	7C	OOC	WTI CRUDE OIL 3 M CSO FIN
NYM	7M	OOC	WTI CRUDE OIL 6 M CSO FIN
NYM	7Z	OOC	WTI CRUDE OIL 12 M CSO FIN
NYM	9B	OOC	BRENT CRUDE OIL 2 M CSO FIN
NYM	9C	OOC	BRENT CRUDE OIL 1 M CSO FIN
NYM	9D	OOC	BRENT CRUDE OIL 3 M CSO FIN
NYM	9L	OOC	BRENT CRUDE OIL 6 M CSO FIN
NYM	9Y	OOC	BRENT CRUDE OIL 12 M CSO FIN
NYM	G2	OOC	NATURAL GAS 2 M CSO FIN
NYM	G3	OOC	NATURAL GAS 3 M CSO FIN
NYM	G4	OOC	NATURAL GAS 1 M CSO FIN
NYM	G5	OOC	NATURAL GAS 5 M CSO FIN
NYM	G6	OOC	NATURAL GAS 6 M CSO FIN
NYM	G7	OOC	NATURAL GAS 12 M CSO FIN
NYM	3U	OOF	GASOIL CRACK SPREAD APO
NYM	3W	OOF	HEATING OIL CRACK SPREAD APO
NYM	3Y	OOF	RBOB CRACK SPREAD APO
NYM	4W	OOF	MICHIGAN CONS.GAS CO BASIS OPT
NYM	5D	OOF	COLUMBAI GAS TRANS CO APP BAS
NYM	5E	OOF	HENRY HUB BASIS (PLATTS IFERC)
NYM	5F	OOF	HOUSTON SHIP CHAN. BASIS
NYM	5G	OOF	NG PIPELINE CO AMRC MIDCON BAS
NYM	5H	OOF	NG PIPELINE CO AMRC TEXOK BAS
NYM	5I	OOF	NW PIPELINE ROCKIES BASIS OPT
NYM	5K	OOF	PANHANDLE BASIS OPTION
NYM	5M	OOF	SOCAL BASIS OPTION
NYM	5N	OOF	TEXAS EASTERN ZONE M-3 BASIS
NYM	5O	OOF	WAHA BASIS OPTION
NYM	AO	OOF	CRUDE OIL APO
NYM	AT	OOF	HEATING OIL APO
NYM	ATY	OOF	MT. BELVIEU PROPANE APO OPTIONS
NYM	BA	OOF	BRENT AWERAGE PRICE OPTION
NYM	BE	OOF	BRENT EURO STYLE OPTION
NYM	BV	OOF	WTI-BRENT SPREAD OPTION
NYM	C5	OOF	SINGAPORE FUEL OIL 180 CST APO
NYM	CD	OOF	NYMEX ONE DAY CRUDE OIL OPTIONS
NYM	CW	OOF	PGE CITYGATE PIPE OPTION
NYM	D1	OOF	MT. BELVIEU NORMAL BUTANE APO
NYM	E1	OOF	MT. BELVIEU NATURAL GASOIL APO
NYM	E7	OOF	HENRY HUB FINANCIAL LAST DAY O
NYM	F1	OOF	MT. BELVIEU ETHANE APO
NYM	KD	OOF	NYMEX ONE DAY NATURAL GAS OPTIONS
NYM	LB	OOF	EURO HEATING OIL
NYM	LG	OOF	EURO UNLEADED GASOLINE
NYM	LNE	OOF	EUROPEAN NATURAL GAS OPTIONS
NYM	M2	OOF	SINGAPORE GASOIL CALENDAR APO
NYM	N2	OOF	SINGAPORE JET FUEL CALENDR APO
NYM	PI	OOF	ALBERAT PIPE OPTION
NYM	PJ	OOF	SAN JUAN PIPE OPTION
NYM	PK	OOF	HOUSTON SHIP CHANNEL PIPE OPT
NYM	PU	OOF	PANHANDLE PIPE OPTION
NYM	PY	OOF	CHICAGO CITY GATE PIPE OPTION
NYM	Q6	OOF	ROTTERDAM 3.5%FUEL OIL CLN APO
NYM	RA	OOF	RBOB AVERAGE PRICE OPTION
NYM	RF	OOF	RBOB EURO EXPIRATION OPTION
NYM	TZ	OOF	TRANSCO ZONE 6 PIPE OPTION
NYM	V1	OOF	NATIONAL BALANCING POINT OPTIONS
NYM	ZN	OOF	SOCAL PIPE OPTION
NYM	ZR	OOF	NORTHERN ROCKIES PIPE OPTION