



**Jim Falder**  
LPG Trading Manager, F&L LPG TRADING  
Tel +441372225361  
James.a.falder@exxonmobil.com

February 5, 2019

Hugh Moran  
Executive Director  
(hughmoran@ontpet.com)

Lorraine Fillmore  
(opi@ontpet.com)  
(519-680-1620) (519-680-1621 Fax)

Ontario Petroleum Institute  
555 Southdale Road East  
Suite 104  
London, Ontario  
N6E 1A2

Dear Hugh,

Imperial Oil purchases crude oil in Ontario on the basis of a reference price, a terminal charge to Marcus and quality adjustments.

There are two reference prices, one for sweet, one for sour crudes and these are changed monthly.

For **January 2019** these prices are:

|                       |                  |                   |           |                   |                   |
|-----------------------|------------------|-------------------|-----------|-------------------|-------------------|
| Sweet Reference Price | <b>\$ 403.55</b> | Reference Density | 825 kg/m3 | Reference Sulphur | .5% S (by weight) |
| Sour Reference Price  | <b>\$ 404.79</b> |                   | 850 kg/m3 |                   | 1.2% S            |

If you have any questions please feel free to call.

**Guillermina Colombres Garmendia**

Canada Crude Oil Supply and Marketing  
Pricing Analyst

Skype (+5411) 3985-2225

cc  
Marcus marcus@ebtech.net (519) 337-5979 (519) 337-5816 Fax)  
Nilo Julian Aversa

# ONTARIO POOL PRICE LIST

MARCUS TERMINALS INC December 2018

Sweet Reference Price (\$/M3) 403.55

Sour Reference Price (\$/M3) 404.79

64.16 c/bl.  
64.35 c/bl.

| POOL ID | Location                | Sweet Sour | Date Change | Quality | Density Kg/M3 | Sulphur Percent | Sulphur Adj. | Density Adj. | BSW Pen | Mercap Penalty | Producer Price |
|---------|-------------------------|------------|-------------|---------|---------------|-----------------|--------------|--------------|---------|----------------|----------------|
| 01      | WARWICK FIELD (01)(HEA  | Sour       | 7/10/1996   |         | 883.00        | .800            | 5.520        | -16.170      | 0.0000  | 0.00           | 394.14         |
| 02      | BROOKE FIELD (02)       | C Sour     | 7/10/1996   |         | 899.00        | 1.200           | 0.000        | -24.010      | 0.0000  | 0.00           | 380.78         |
| 03      | PLYMPTON FIELD (03)     | Sour       | 7/10/1996   |         | 886.00        | .940            | 3.588        | -17.640      | 0.0000  | 0.00           | 390.74         |
| 04      | BLENHHEIM (04)          | C Sour     |             |         | 897.00        | 1.700           | -6.900       | -23.030      | 0.0000  | 0.00           | 374.86         |
| 06      | GODERICH (06)           | Sour       |             |         | 846.00        | .700            | 6.900        | 1.960        | 0.0000  | 0.00           | 413.65         |
| 07      | PELEE TWP (07)          | Sour       |             |         | 834.00        | .700            | 6.900        | 7.840        | 0.0000  | 0.00           | 419.53         |
| 08      | RODNEY WEST FIELD (08)  | Sweet      |             |         | 833.00        | .100            | 5.520        | -3.920       | 0.0000  | 0.00           | 405.15         |
| 09      | THAMESVILLE FIELD (09)  | Sour       |             |         | 834.00        | .700            | 6.900        | 7.840        | 0.0000  | 0.00           | 419.53         |
| 10      | RODNEY (10)             | Sour       |             |         | 836.00        | .950            | 3.450        | 6.860        | 0.0000  | 1.00           | 414.10         |
| 11      | GLENCOE (11)            | Sour       |             |         | 862.00        | .700            | 6.900        | -5.880       | 0.0000  | 0.00           | 405.81         |
| 12      | PETROLIA (12)           | Sour       |             |         | 861.00        | .920            | 3.864        | -5.390       | 0.0000  | 0.00           | 403.26         |
| 14      | WATFORD KERWOOD FIE     | Sour       |             |         | 838.00        | .890            | 4.278        | 5.880        | 0.0000  | 0.00           | 414.95         |
| 16      | DOVER FIELD (16)        | Sweet      |             |         | 827.00        | .130            | 5.106        | -0.980       | 0.0000  | 0.00           | 407.68         |
| 17      | OIL SPRINGS (17)        | Sour       |             |         | 843.00        | .800            | 5.520        | 3.430        | 0.0000  | 0.00           | 413.74         |
| 18      | BOTHWELL THAMESVILL     | Sour       |             |         | 836.00        | .910            | 4.002        | 6.860        | 0.0000  | 0.00           | 415.65         |
| 19      | DRESDEN (19)            | Sour       |             |         | 851.00        | 1.020           | 2.484        | -0.490       | 0.0000  | 0.00           | 406.78         |
| 20      | TILBURY WEST (20)(5-10) | Sour       |             |         | 834.00        | 1.100           | 1.380        | 7.840        | 0.0000  | 0.00           | 414.01         |
| 21      | KINGSVILLE (21)         | Sweet      |             |         | 823.00        | .200            | 4.140        | 0.000        | 0.0000  | 0.00           | 407.69         |
| 22      | WALLACETOWN (22)        | Sour       |             |         | 840.00        | 1.000           | 2.760        | 4.900        | 0.0000  | 0.00           | 412.45         |
| 23      | SHETLAND (23)           | Sour       |             |         | 869.00        | .210            | 13.662       | -9.310       | 0.0000  | 0.00           | 409.14         |
| 24      | CHATHAM TWP (24)        | Sour       |             |         | 836.00        | 1.100           | 1.380        | 6.860        | 0.0000  | 0.00           | 413.03         |
| 25      | WANSTEAD (25)           | C Sour     |             |         | 902.00        | 1.300           | -1.380       | -25.480      | 0.0000  | 0.00           | 377.93         |
| 26      | WILSON CROFT (26)       | Sour       |             |         | 878.00        | 1.310           | -1.518       | -13.720      | 0.0000  | 0.00           | 389.55         |
| 28      | BECHER (28)             | Sour       |             |         | 832.00        | .920            | 3.864        | 8.820        | 0.0000  | 0.00           | 417.47         |
| 29      | COLCHESTER (29)         | Sweet      |             |         | 823.00        | .190            | 4.278        | 0.000        | 0.0000  | 0.00           | 407.83         |
| 30      | WARWICK (30)            | C Sour     |             |         | 892.00        | 1.200           | 0.000        | -20.580      | 0.0000  | 0.00           | 384.21         |
| 31      | GRAND BEND (31)         | Sweet      |             |         | 832.00        | .240            | 3.588        | -3.430       | 0.0000  | 0.00           | 403.71         |
| 32      | CORUNNA (32)            | Sour       |             |         | 853.00        | .811            | 5.368        | -1.470       | 0.0000  | 0.00           | 408.69         |
| 36      | LOT 23 CON 1 (DAWNSOM   | Sour       |             |         | 852.00        | .760            | 6.072        | -0.980       | 0.0000  | 0.00           | 409.88         |
| 39      | GOBLES #54 (39)         | Sweet      |             |         | 836.00        | .130            | 5.106        | -5.390       | 0.0000  | 0.00           | 403.27         |
| 40      | MALDEN (40)             | Sweet      |             |         | 819.00        | .160            | 4.692        | 0.000        | 0.0000  | 0.00           | 408.24         |

65.78 bl.

MARCUS TERMINALS INC December 2018

| POOL ID | Location                        | Sweet Sour | Date Quality Change | Density Kg/M3 | Sulphur Percent | Sulphur Adjustment | Density Adj. | BSW Pen | Mercap Penalty | Producer Price     |
|---------|---------------------------------|------------|---------------------|---------------|-----------------|--------------------|--------------|---------|----------------|--------------------|
| 41      | CLEARVILLE (41)                 | Sweet      |                     | 832.00        | .130            | 5.106              | -3.430       | 0.0000  | 0.00           | 405.23             |
| 42      | SOMBRA (42)(2-24-10) mn         | Sour       | 7/23/1996           | 834.00        | .700            | 6.900              | 7.840        | 0.0000  | 0.00           | 419.53             |
| 44      | INNERKIP FIELD (44)             | Sweet      |                     | 842.00        | .090            | 5.658              | -8.330       | 0.0000  | 0.00           | 400.88             |
| 47      | MOORE (10-4)(BRIGDEN?) ( Sour   |            |                     | 843.00        | .680            | 7.176              | 3.430        | 0.0000  | 0.00           | 415.40             |
| 48      | SUTORVILLE FIELD (48)(H Sour    |            |                     | 904.00        | 1.100           | 1.380              | -26.460      | 0.0000  | 0.00           | 379.71             |
| 49      | WILLEY SOUTH FIELD (49 Sweet    |            |                     | 828.00        | .110            | 5.382              | -1.470       | 0.0000  | 0.00           | 407.46             |
| 52      | BROOKE (52) C                   | Sour       |                     | 888.00        | 1.100           | 1.380              | -18.620      | 0.0000  | 0.00           | 387.55             |
| 53      | DAWN FIELD (53)                 | Sour       |                     | 839.00        | .820            | 5.244              | 5.390        | 0.0000  | 0.00           | 415.42             |
| 57      | MOSA (57)                       | Sweet      |                     | 824.00        | .300            | 2.760              | 0.000        | 0.0000  | 0.00           | 406.31             |
| 71      | DAWN (71)(1-26-2)               | Sour       |                     | 844.00        | .800            | 5.520              | 2.940        | 0.0000  | 0.00           | 413.25             |
| 72      | DAWN (72)(5-27-3)               | Sour       |                     | 827.00        | .670            | 7.314              | 11.270       | 0.0000  | 0.00           | 423.37             |
| 77      | TILBURY E TWP (77) ??           | Sour       |                     | 836.00        | .620            | 8.004              | 6.860        | 0.0000  | 0.00           | 419.65             |
| 78      | MORPETH FIELD (78)(NGL Sweet    |            |                     | 748.00        | .430            | 0.966              | -25.480      | 0.0000  | 0.00           | 379.04             |
| 79      | MERSEA (79) (8-14-A)            | Sweet      | 4/7/2006            | 816.60        | .162            | 4.664              | 0.000        | 0.0000  | 0.00           | 408.21 - 64.90/bl. |
| 80      | LADYSMITH (80)                  | Sweet      | 10/1/1996           | 832.00        | .500            | 0.000              | -3.430       | 0.0000  | 0.00           | 400.12             |
| 82      | SOMBRA (82)(7-18-7) C           | Sour       |                     | 881.00        | .400            | 11.040             | -15.190      | 0.0000  | 0.00           | 400.64             |
| 83      | DAWN FIELD (83)                 | Sweet      |                     | 847.00        | .250            | 3.450              | -10.780      | 0.0000  | 0.00           | 396.22             |
| 84      | RUSCUM RIVER TRENTON Sour       |            |                     | 834.00        | .700            | 6.900              | 7.840        | 0.0000  | 0.00           | 419.53             |
| 85      | MOORE (85)(8-4-2)               | Sour       |                     | 832.00        | .640            | 7.728              | 8.820        | 0.0000  | 0.00           | 421.34             |
| 86      | PETROLIA MEDIUM (86)            | Sour       | 9/23/1998           | 880.50        | 1.190           | 0.138              | -14.945      | 0.0000  | 0.00           | 389.98 - 62.00/bl. |
| 87      | SOMBRA (87)(6-28-9)             | Sour       |                     | 849.00        | .540            | 9.108              | 0.490        | 0.0000  | 0.00           | 414.39             |
| 88      | CORUNNA SECKERTON (8 Sour       |            |                     | 853.00        | .811            | 5.368              | -1.470       | 0.0000  | 0.00           | 408.69             |
| 89      | DAWN (89)(3-28-2)               | Sweet      |                     | 830.00        | .100            | 5.520              | -2.450       | 0.0000  | 0.00           | 406.62             |
| 90      | BUTLER DAWN (90)(13-10) Sweet   |            | 10/1/1996           | 849.00        | .500            | 0.000              | -11.760      | 0.0000  | 0.00           | 391.79             |
| 91      | ENNISKILLEN (91)(4-22-2) Sour   |            |                     | 880.00        | .440            | 10.488             | -14.700      | 0.0000  | 0.00           | 400.58             |
| 92      | SOMBRA FIELD (92)(4-9-12) Sweet |            |                     | 855.00        | .500            | 0.000              | -14.700      | 0.0000  | 0.00           | 388.85             |
| 93      | MOORE (93)(2-3-11) C            | Sour       |                     | 900.00        | 1.630           | -5.934             | -24.500      | 0.0000  | 0.00           | 374.36             |
| 94      | ENNISKILLEN TWP (94)            | Sour       |                     | 901.00        | .870            | 4.554              | -24.990      | 0.0000  | 0.00           | 384.35             |
| 95      | MALDEN (95)(3-41-4)             | Sweet      |                     | 844.00        | .200            | 4.140              | -9.310       | 0.0000  | 0.00           | 398.38             |
| 96      | RUSCUM RIVER GUELPH ( Sweet     |            |                     | 875.00        | .400            | 1.380              | -24.500      | 0.0000  | 0.00           | 380.43             |
| 97      | EDYS MILLS (97)                 | Sour       |                     | 832.00        | .770            | 5.934              | 8.820        | 0.0000  | 0.00           | 419.54             |
| 98      | COREY EAST FIELD (98)           | Sour       | 9/23/1998           | 896.20        | 1.450           | -3.450             | -22.638      | 0.0000  | 0.00           | 378.70             |
| B1      | ALDBOROUGH EAGLE (B1) Sour      |            |                     | 830.00        | .990            | 2.898              | 9.800        | 0.0000  | 0.00           | 417.49             |
| B2      | MCCOLL #2 (B2)                  | Sour       |                     | 832.00        | .850            | 4.830              | 8.820        | 0.0000  | 0.00           | 418.44             |
| B3      | BROOKE TWP (B3)                 | Sour       |                     | 855.00        | .700            | 6.900              | -2.450       | 0.0000  | 0.00           | 409.24             |

MARCUS TERMINALS INC December 2018

| POOL ID | Location                   | Sweet Sour | Date Quality Change | Density Kg/M3 | Sulphur Percent | Sulphur Adjustment | Density Adj. | BSW Pen | Mercap Penalty | Producer Price |
|---------|----------------------------|------------|---------------------|---------------|-----------------|--------------------|--------------|---------|----------------|----------------|
| B4      | EUPHEMIA TWP (B4)          | Sour       |                     | 834.00        | .700            | 6.900              | 7.840        | 0.0000  | 0.00           | 419.53         |
| B5      | ROCHESTER (1-20-5) (RUSC   | Sweet      |                     | 824.00        | .130            | 5.106              | 0.000        | 0.0000  | 0.00           | 408.66         |
| B6      | COMBER (B6)                | Sour       |                     | 868.00        | 1.040           | 2.208              | -8.820       | 0.0000  | 0.00           | 398.18         |
| B7      | WHEATLEY NORTH (B7)        | Sweet      | 8/30/2000           | 816.10        | .140            | 4.968              | 0.000        | 0.0000  | 0.00           | 408.52         |
| B8      | DAWN TWP (B8)(4-30-3)      | Sour       |                     | 817.00        | .570            | 8.694              | 12.250       | 0.0000  | 0.00           | 425.73         |
| B9      | ZONE CENTRE FIELD(B9)      | Sour       |                     | 827.00        | .900            | 4.140              | 11.270       | 0.0000  | 0.00           | 420.20         |
| C1      | MOORE TWP (C1) (2-22-2)    | Sour       |                     | 850.00        | .570            | 8.694              | 0.000        | 0.0000  | 0.00           | 413.48         |
| C3      | SARNIA TWP. (C3)           | Sour       |                     | 859.00        | 1.240           | -0.552             | -4.410       | 0.0000  | 0.00           | 399.83         |
| C4      | GOSFIELD S. (C4)(8-7-5)(IN | Sweet      |                     | 825.00        | .500            | 0.000              | 0.000        | 0.0000  | 0.00           | 403.55         |
| C5      | TILBURY EAST (C5)          | Sweet      |                     | 824.00        | .400            | 1.380              | 0.000        | 0.0000  | 0.00           | 404.93         |
| C6      | PT.ALMA CONDENSATE         | Sour       | 2/20/1997           | 833.80        | 1.270           | -0.966             | 7.938        | 0.0000  | 0.00           | 411.76         |
| C7      | MAIDSTONE (C7)(7-17-5)(I   | Sweet      |                     | 825.00        | .500            | 0.000              | 0.000        | 0.0000  | 0.00           | 403.55         |
| C8      | ROMNEY (C8)(6-13-3)        | Sweet      |                     | 813.00        | .170            | 4.554              | 0.000        | 0.0000  | 0.00           | 408.10         |
| C9      | GOSFIELD S. (C9)(1-1-3)(IN | Sweet      |                     | 825.00        | .500            | 0.000              | 0.000        | 0.0000  | 0.00           | 403.55         |
| D1      | MERSEA TWP (D1)(6-23-7)    | Sweet      |                     | 813.00        | .140            | 4.968              | 0.000        | 0.0000  | 0.00           | 408.52         |
| D4      | ROMNEY (D4)(7-10-2)        | Sweet      |                     | 820.00        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| D5      | DOVER EAST (D5)(7-5-5)     | Sweet      |                     | 828.00        | .130            | 5.106              | -1.470       | 0.0000  | 0.00           | 407.19         |
| D6      | MERSEA TWP (D6)(2-15-8)    | Sweet      |                     | 816.00        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| D7      | MERSEA (D7)(8-16-VIII)     | Sweet      |                     | 816.00        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| D8      | ROMNEY (D8)(3-14-2)        | Sweet      |                     | 814.00        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| D9      | MOORE TWP (D9)(3-14-10)    | Sweet      |                     | 866.00        | .500            | 0.000              | -20.090      | 0.0000  | 0.00           | 383.46         |
| E1      | ROMNEY (E1)(6-13-4)        | Sweet      |                     | 813.00        | .140            | 4.968              | 0.000        | 0.0000  | 0.00           | 408.52         |
| E2      | ROMNEY (E2)(5-15-1)(INT)   | Sweet      | 5/13/1997           | 824.90        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| E3      | RALIEGH (E3)(1-17-13)(INT) | Sweet      |                     | 750.00        | .500            | 0.000              | -24.500      | 0.0000  | 0.00           | 379.05         |
| E4      | GOSFIELD (E4)(4-4-4)(INT)  | Sweet      |                     | 825.00        | .500            | 0.000              | 0.000        | 0.0000  | 0.00           | 403.55         |
| E5      | RALIEGH (ST. PATRICKS?)    | Sour       |                     | 900.00        | 1.500           | -4.140             | -24.500      | 0.0000  | 0.00           | 376.15         |
| E6      | GOSFIELD N. (E6)(2-21-6)(I | Sweet      |                     | 817.00        | .151            | 4.816              | 0.000        | 0.0000  | 0.00           | 408.37         |
| E7      | COLCHESTER SOUTH (E7)(     | Sweet      |                     | 816.00        | .160            | 4.692              | 0.000        | 0.0000  | 0.00           | 408.24         |
| E8      | ENNISKILLEN (E8)(7-16-6)(  | Sour       |                     | 895.00        | 1.300           | -1.380             | -22.050      | 0.0000  | 0.00           | 381.36         |
| E9      | MERSEA (E9)(4-14-1)        | Sweet      |                     | 820.00        | .160            | 4.692              | 0.000        | 0.0000  | 0.00           | 408.24         |
| F1      | MOORE (F1)(1-1-22-VI)(INT  | Sour       |                     | 895.00        | 1.300           | -1.380             | -22.050      | 0.0000  | 0.00           | 381.36         |
| F2      | MOORE TWP (F2)(2-14-7)     | Sour       |                     | 827.00        | .880            | 4.416              | 11.270       | 0.0000  | 0.00           | 420.48         |
| F3      | ENNISKILLEN (F3)(6-15-2)   | Sour       |                     | 895.00        | 1.300           | -1.380             | -22.050      | 0.0000  | 0.00           | 381.36         |
| F4      | MERSEA (F4)(5-10-9)(INT)   | Sweet      |                     | 825.00        | .500            | 0.000              | 0.000        | 0.0000  | 0.00           | 403.55         |
| F5      | GOSFIELD S. (F5)           | Sweet      |                     | 815.00        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |

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| POOL ID | Location                  | Sweet Sour | Date Quality Change | Density Kg/M3 | Sulphur Percent | Sulphur Adjustment | Density Adj. | BSW Pen | Mercap Penalty | Producer Price |
|---------|---------------------------|------------|---------------------|---------------|-----------------|--------------------|--------------|---------|----------------|----------------|
| F6      | SOMBRA (F6)(8-02-06)      | Sour       |                     | 849.00        | .840            | 4.968              | 0.490        | 0.0000  | 0.00           | 410.25         |
| F7      | CAMDEN (DAWN #2?) (F7)    | Sour       |                     | 839.00        | .820            | 5.244              | 5.390        | 0.0000  | 0.00           | 415.42         |
| F8      | MERSEA 6-20-11            | Sweet      | 5/13/1997           | 827.60        | .170            | 4.554              | -1.274       | 0.0000  | 0.00           | 406.83         |
| F9      | SOMBRA (RAM #33) (F9)(5-  | Sour       |                     | 876.00        | .890            | 4.278              | -12.740      | 0.0000  | 0.00           | 396.33         |
| G1      | ROCHESTER #1 (G1) (1-17-2 | Sweet      | 6/1/1998            | 818.80        | .170            | 4.554              | 0.000        | 0.0000  | 0.00           | 408.10         |
| G2      | MERSEA (G2)(3-6-V)        | Sweet      |                     | 813.00        | .160            | 4.692              | 0.000        | 0.0000  | 0.00           | 408.24         |
| G3      | MERSEA (G3.G9)(3-4-IV-ST  | Sweet      |                     | 815.00        | .151            | 4.816              | 0.000        | 0.0000  | 0.00           | 408.37         |
| G4      | MERSEA (G4)(2-1-V)        | Sweet      |                     | 820.00        | .160            | 4.692              | 0.000        | 0.0000  | 0.00           | 408.24         |
| G8      | MOORE (G8)(27.28-2)       | Sour       |                     | 842.00        | .740            | 6.348              | 3.920        | 0.0000  | 0.00           | 415.06         |
| G9      | MERSEA 4-240-STR          | Sweet      |                     | 815.00        | .151            | 4.816              | 0.000        | 0.0000  | 0.00           | 408.37         |
| H1      | MERSEA (H1.H2)(2-241.6-24 | Sweet      |                     | 817.00        | .154            | 4.775              | 0.000        | 0.0000  | 0.00           | 408.33         |
| H3      | MERSEA (H3)(3-3-V)        | Sweet      |                     | 813.00        | .155            | 4.761              | 0.000        | 0.0000  | 0.00           | 408.31         |
| H4      | MERSEA (H4) (1-5-IV)      | Sweet      |                     | 815.00        | .155            | 4.761              | 0.000        | 0.0000  | 0.00           | 408.31         |
| H5      | ROCHESTER (H5) (8-21-6)   | Sweet      |                     | 822.00        | .167            | 4.595              | 0.000        | 0.0000  | 0.00           | 408.15         |
| H6      | RAM BP #29 (H6)           | Sweet      |                     | 817.00        | .139            | 4.982              | 0.000        | 0.0000  | 0.00           | 408.53         |
| H7      | SOMBRA 1-10 (WELL#15)     | Sour       |                     | 871.00        | 1.000           | 2.760              | -10.290      | 0.0000  | 0.00           | 397.26         |
| H8      | EOTT ENERGY (H8)          | Sweet      |                     | 822.00        | .202            | 4.112              | 0.000        | 0.0000  | 0.00           | 407.66         |
| H9      | GOSFIELD SOUTH 4-4-III    | Sweet      | 3/6/1997            | 817.00        | .160            | 4.692              | 0.000        | 0.0000  | 0.00           | 408.24         |
| J1      | ANDERTON 8-2-IV (J1)      | Sour       |                     | 844.00        | .209            | 13.676             | 2.940        | 0.0000  | 0.00           | 421.41         |
| J2      | ROCHESTER 7-17-IV EBR     | Sweet      |                     | 826.40        | .150            | 4.830              | -0.686       | 0.0000  | 0.00           | 407.69         |
| J4      | DAWN 5-30-10              | Sour       | 10/23/1996          | 877.50        | .677            | 7.217              | -13.475      | 0.0000  | 0.00           | 398.53         |
| J5      | ENNISKILLEN 1-25-IX       | Sour       |                     | 875.10        | .760            | 6.072              | -12.299      | 0.0000  | 0.00           | 398.56         |
| J6      | GOSFIELD SOUTH 3-K-3      | Sweet      | 5/30/1997           | 813.70        | .169            | 4.568              | 0.000        | 0.0000  | 0.00           | 408.12         |
| J7      | GOSFIELD SOUTH 2-24-V     | Sweet      | 9/2/1997            | 823.60        | .140            | 4.968              | 0.000        | 0.0000  | 0.00           | 408.52         |
| J8      | ROMNEY 4-9-2              | Sour       | 4/3/2003            | 825.00        | .700            | 6.900              | 12.250       | 0.0000  | 0.00           | 423.94         |
| J9      | MERSEA 8-23-IX            | Sweet      | 9/2/1998            | 820.10        | .152            | 4.802              | 0.000        | 0.0000  | 0.00           | 408.35         |
| K1      | MERSEA 1-16-1             | Sweet      | 8/31/1998           | 808.50        | .140            | 4.968              | 0.000        | 0.0000  | 0.00           | 408.52         |
| K2      | STEPHEN 4-11-XXII         | Sweet      | 12/8/1999           | 835.00        | .400            | 1.380              | -4.900       | 0.0000  | 0.00           | 400.03         |
| K3      | ENNISKILLEN 2-27-XI       | Sour       | 1/8/1999            | 892.20        | .910            | 4.002              | -20.678      | 0.0000  | 0.00           | 388.11         |
| K4      | ALDBOROUGH 7-D-VII        | Sour       | 5/1/2000            | 836.50        | .880            | 4.416              | 6.615        | 0.0000  | 0.00           | 415.82         |
| K5      | MOORE 2-15-VIII           | Sour       | 5/1/2000            | 853.00        | .810            | 5.382              | -1.470       | 0.0000  | 0.00           | 408.70         |
| K6      | MERSEA 5-20-A             | Sweet      | 8/30/2000           | 811.20        | .140            | 4.968              | 0.000        | 0.0000  | 0.00           | 408.52         |
| K7      | INNERKIP CONDENSATE       | Sour       | 11/29/2000          | 600.00        | .150            | 14.490             | -85.750      | 0.0000  | 0.00           | 333.53         |
| K8      | DOVER WEST 4-9-III        | Sweet      | 2/9/2001            | 845.00        | .350            | 2.070              | -9.800       | 0.0000  | 0.00           | 395.82         |
| K9      | SOMBRA 7-A-XI             | Sour       | 5/2/2001            | 841.40        | 1.040           | 2.208              | 4.214        | 0.0000  | 0.00           | 411.21         |

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| POOL ID | Location              | Sweet Sour | Date Quality Change | Density Kg/M3 | Sulphur Percent | Sulphur Adjustment | Density Adj. | BSW Pen | Mercap Penalty | Producer Price |
|---------|-----------------------|------------|---------------------|---------------|-----------------|--------------------|--------------|---------|----------------|----------------|
| L1      | SOMBRA 8-27-XII       | Sour       | 6/6/2001            | 833.00        | .640            | 7.728              | 8.330        | 0.0000  | 0.00           | 420.85         |
| L2      | BEAVER CREEK MICHIGA  | Sour       | 1/9/2003            | 790.00        | 1.920           | -9.936             | 7.350        | 0.0000  | 0.00           | 402.20         |
| L4      | ROMNEY 8-194-TRS LAKE | Sweet      | 3/11/2003           | 813.90        | .168            | 4.582              | 0.000        | 0.0000  | 0.00           | 408.13         |
| L5      | SLOCUM BATTERY        | Sour       | 6/7/2012            | 699.70        | .606            | 8.197              | -36.897      | 0.0000  | 0.00           | 376.09         |
| L6      | ROOD BATTERY          | Sour       | 6/7/2012            | 655.00        | .284            | 12.641             | -58.800      | 0.0000  | 0.00           | 358.63         |
| L7      | GOSFIELD SOUTH 4 G 2  | Sweet      | 4/22/2003           | 816.00        | .160            | 4.692              | 0.000        | 0.0000  | 0.00           | 408.24         |
| L8      | HOUGHTON 6-13-VII     | Sour       | 7/15/2005           | 865.80        | .800            | 5.520              | -7.742       | 0.0000  | 0.00           | 402.57         |
| L9      | NORTH WALSINGHAM 8-8  | Sour       | 7/15/2005           | 894.00        | .800            | 5.520              | -21.560      | 0.0000  | 0.00           | 388.75         |
| M1      | BAYHAM                | Sweet      | 8/29/2005           | 841.30        | .145            | 4.899              | -7.987       | 0.0000  | 0.00           | 400.46         |
| M2      | ROCHESTER 5-12-IV EBR | Sweet      | 9/30/2005           | 826.60        | .150            | 4.830              | -0.784       | 0.0000  | 0.00           | 407.60         |
| M3      | TILBURY WEST 3-2-X    | Sweet      | 1/30/2008           | 830.20        | .177            | 4.457              | -2.548       | 0.0000  | 0.00           | 405.46         |
| M4      | BROOKE 4-5-XIV        | Sour       | 1/7/2011            | 913.50        | 1.030           | 2.346              | -31.115      | 0.0000  | 0.00           | 376.02         |
| M5      | DUNWICH 1-4-24-A      | Sour       | 6/1/2012            | 836.00        | .910            | 4.002              | 6.860        | 0.0000  | 0.00           | 415.65         |
| M6      | DUNWICH 4-24-A PATON  | Sweet      | 6/1/2012            | 834.70        | .110            | 5.382              | -4.753       | 0.0000  | 0.00           | 404.18         |
| M8      | MOORE 2-5-2 CROMAR    | Sour       | 2/27/2018           | 817.80        | .610            | 8.142              | 12.250       | 0.0000  | 0.00           | 425.18         |
| R1      | BAKKEN / WILLMAR SASK | Sweet      | 6/27/2012           | 822.00        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| R10     | CAL/SW, WHITECOURT, A | Sour       | 2/1/2013            | .00           | .000            | 16.560             | -379.750     | 0.0000  | 0.00           | 41.60          |
| R2      | CONNACHER BLEND/FT.M  | Sour       | 9/12/2012           | .00           | 4.500           | -45.540            | -379.750     | 0.0000  | 0.00           | -20.50         |
| R3      | FOSTERTON/SASKATCHE   | Sour       | 3/15/2012           | 934.00        | 3.300           | -28.980            | -41.160      | 0.0000  | 0.00           | 334.65         |
| R4      | L.S.B. /MANITOBA/VIP  | Sour       | 9/12/2012           | 833.00        | .500            | 9.660              | 8.330        | 0.0000  | 0.00           | 422.78         |
| R5      | SLE EDMONTON ALBERT   | Sour       | 2/12/2013           | 826.00        | .800            | 5.520              | 11.760       | 0.0000  | 0.00           | 422.07         |
| R6      | MBS EDMONTON ALBER    | Sweet      | 2/12/2013           | 828.00        | .500            | 0.000              | -1.470       | 0.0000  | 0.00           | 402.08         |
| R7      | RSW, SCOTFORD, LB.    | Sweet      | 2/28/2013           | 822.00        | .400            | 1.380              | 0.000        | 0.0000  | 0.00           | 404.93         |
| R8      | CAL, SCOTFORD, ALB.   | Sour       | 2/28/2013           | 850.00        | 1.040           | 2.208              | 0.000        | 0.0000  | 0.00           | 407.00         |
| R9      | NDS, SUPERIOR, WISC.  | Sweet      | 2/28/2013           | 819.00        | .280            | 3.036              | 0.000        | 0.0000  | 0.00           | 406.59         |
| RC9     | RAIL CAR              | Sour       | 4/10/2012           | 803.00        | .100            | 15.180             | 12.250       | 0.0000  | 0.00           | 432.22         |
| S1      | CAL/SW, WHITECOURT, A | Sour       | 2/1/2013            | .00           | .000            | 16.560             | -379.750     | 0.0000  | 0.00           | 41.60          |
| S2      | CAL/MBS, WHITECOURT,  | Sour       | 2/1/2013            | .00           | .000            | 16.560             | -379.750     | 0.0000  | 0.00           | 41.60          |
| S3      | MSW SUPERIOR WISCONS  | Sweet      | 4/24/2013           | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| S4      | CAL WHITECOURT, ALB.  | Sour       | 4/24/2013           | .00           | .000            | 16.560             | -379.750     | 0.0000  | 0.00           | 41.60          |
| S5      | MSW UNITY, SASKATCHE  | Sweet      | 4/24/2013           | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| S6      | SW WHITECOURT, ALB.   | Sweet      | 4/24/2013           | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| S7      | DRAYTON VALLEY SWEE   | Sweet      | 5/14/2013           | 834.00        | .000            | 6.900              | -4.410       | 0.0000  | 0.00           | 406.04         |
| S8      | BAKKEN/BIENFAIT SASKA | Sweet      | 5/15/2013           | 822.00        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| S9      | NDS, FT. SASKATCHEWAN | Sour       | 5/3/2013            | 819.00        | .280            | 12.696             | 12.250       | 0.0000  | 0.00           | 429.74         |

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| POOL ID | Location              | Sweet Sour | Date Quality Change | Density Kg/M3 | Sulphur Percent | Sulphur Adjustment | Density Adj. | BSW Pen | Mercap Penalty | Producer Price |
|---------|-----------------------|------------|---------------------|---------------|-----------------|--------------------|--------------|---------|----------------|----------------|
| U1      |                       | Sour       |                     | .00           | .000            | 16.560             | -379.750     | 0.0000  | 0.00           | 41.60          |
| U10     | AURELIUS MICHIGAN     | Sour       | 11/24/2003          | 838.30        | 1.040           | 2.208              | 5.733        | 0.0000  | 0.00           | 412.73         |
| U2      | CONNACHER BLEND/FT.M  | Sour       | 3/16/2012           | 950.00        | 4.500           | -45.540            | -49.000      | 0.0000  | 0.00           | 310.25         |
| U3      |                       | Sour       |                     | .00           | .000            | 16.560             | -379.750     | 0.0000  | 0.00           | 41.60          |
| U4      | GM 18 MICHIGAN        | Sour       | 11/24/2003          | 834.10        | .790            | 5.658              | 7.791        | 0.0000  | 0.00           | 418.24         |
| U5      | KENNINGTON/MILFORD    | Sour       | 11/24/2003          | 835.60        | .790            | 5.658              | 7.056        | 0.0000  | 0.00           | 417.50         |
| U6      | BRIGHTON 11 MICHIGAN  | Sour       | 11/24/2003          | 854.50        | 1.130           | 0.966              | -2.205       | 0.0000  | 0.00           | 403.55         |
| U7      | CONVIS MICHIGAN       | Sour       | 11/24/2003          | 870.30        | 1.840           | -8.832             | -9.947       | 0.0000  | 0.00           | 386.01         |
| U8      | PENNFIELD MICHIGAN    | Sour       | 11/24/2003          | 892.80        | 2.100           | -12.420            | -20.972      | 0.0000  | 0.00           | 371.40         |
| U9      | SPUTNIK WHOLE CRUDE   | Sour       | 2/12/2007           | 848.00        | 3.090           | -26.082            | 0.980        | 0.0000  | 0.00           | 379.69         |
| V1      | HARTLAND MICHIGAN     | Sour       | 12/12/2003          | 812.00        | .840            | 4.968              | 12.250       | 0.0000  | 0.00           | 422.01         |
| V2      | HYPERION RICH FIELD   | Sour       | 3/30/2007           | 823.10        | 1.810           | -8.418             | 12.250       | 0.0000  | 0.00           | 408.62         |
| V3      | ADDISON MICHIGAN      | Sour       | 5/27/2005           | 839.30        | .765            | 6.003              | 5.243        | 0.0000  | 0.00           | 416.04         |
| X1      | FINCH TERMINAL        | Sweet      | 7/1/2004            | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| X2      | OTTAWA BULK TERMINA   | Sweet      | 7/1/2004            | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| X3      | ST. GEORGE TERMINAL   | Sweet      | 7/1/2004            | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| X4      | S.ST.MARIE TERMINAL   | Sweet      | 7/1/2004            | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| X5      | SHELL KEELE TERMINAL  | Sweet      | 7/1/2004            | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| X6      | SUDBURY BULK TERMINA  | Sweet      | 7/1/2004            | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| X7      | ULTRAMAR TERMINAL (M  | Sweet      | 7/1/2004            | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| X8      | PETRO CANADA/SHELL KE | Sweet      | 4/11/2005           | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| X9      | PETRO CANADA/OAKVILL  | Sweet      | 4/11/2005           | .00           | .000            | 6.900              | -392.000     | 0.0000  | 0.00           | 18.45          |
| Y1      | MERSEA (GOLDSMITH BA  | Sweet      | 6/1/1998            | 819.50        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| Y2      | ROMNEY TWP (RENWICK   | Sweet      |                     | 816.60        | .150            | 4.830              | 0.000        | 0.0000  | 0.00           | 408.38         |
| Y3      | DOVER TWP (BATTERY) ( | Sweet      |                     | 828.00        | .130            | 5.106              | -1.470       | 0.0000  | 0.00           | 407.19         |