

November 21, 2008

OIL SANDS INFORMATION BULLETIN **2008-02**

SUBJECT: Royalty Calculation and Reporting for the New Royalty Framework

The New Royalty Framework (NRF) for Oil Sands will take effect January 1, 2009. This Information Bulletin explains the changes to the royalty structure, business processes and systems required for the calculation and reporting of oil sands royalties.

Oil Sands Operations will be conducting training sessions on the NRF and Cost Analysis & Reporting Enhancements (CARE) in Calgary on December 12th, 2008. Each session is planned for two (2) to three (3) hours and will include a presentation and a question period. The documents for CARE will be available on the Department of Energy website by December 8, 2008.

The training sessions will be offered as follows:

Time: Friday December 12, 2008

Sessions:

1. New Royalty Framework
9:00 am to 12:00 pm
2. Cost Analysis & Reporting Enhancements
1:15 pm to 3:30 pm

Place:

21st Floor Bow Valley Square 4
250 - 6 Avenue SW
Calgary

Seating is limited. Please email AnneMarie.McNab@gov.ab.ca by December 3, 2008 to register for these sessions or contact Ray Khan at (780) 422-1346 if you have questions on the content of this Information Bulletin.

Anne Denman
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ATTACHMENT

Oil Sands Royalty - New Royalty Framework

Purpose

Outline the changes to oil sands royalty reporting as a result of the implementation of the New Royalty Framework (NRF).

Background

The fundamental features of the current royalty regime are:

- Revenues minus Costs.
- Determine and collect royalty at the project level.
- Immediate recognition of cash outlays (that meet cost eligibility rules) for the recovery, processing, and transportation of oil sands on project lands.
- Crown royalty share is calculated on the volume of oil sands products that are measured and delivered at the royalty calculation point. Royalty paid is based on the value of the oil sands product that are sold in an arm's length transactions or at fair market value if sold at non-arm's length.

Reporting Requirements

- Monthly royalty reports and royalty payments are due on or before the last day of the month following the production month.
- End of Period statements are due by March 31 of the year following the production year.
- Operator's forecast for the next production year is due by December 15 of the current production year.

Note: *Oil sands royalty projects governed by Crown Agreements are not subject to the New Royalty Framework royalty rates. However, these projects must report royalty payable on the royalty reports required for 2009.*

New Features for NRF

1. **Price sensitive straight line royalty rates** instead of the fixed 1% of gross revenues and 25% of net revenues (Appendix A).
2. **Royalty Payment at the Royalty Calculation Point**- the Crown's share of an oil sands product will now be deemed to have been transferred – “disposed of” – to the lessee immediately downstream of the Royalty Calculation Point (“the RCP”). This means that royalty will be payable on the volume of oil sands products delivered and measured at the RCP during the production month, whether or not the lessee has actually sold or otherwise disposed of those products.

The valuation of an oil sands product delivered at the RCP in a month will be based on dispositions of that product during the month, as follows:

- a. If the ratio of the volume of third party dispositions of the product in the month to the volume of the product delivered to the RCP in the month is greater than or equal to the Third Party Disposition Threshold, then the unit price calculated for the third party dispositions will be used to value all the volumes delivered at the RCP in that month.
- b. If there are third party dispositions of the product in the month, but the ratio of the volume of third party dispositions of the product in the month to the volume of the product delivered to the RCP in the month is less than the Third Party Disposition Threshold, then:

- i. If the product is cleaned crude bitumen, then the unit price calculated for the third party dispositions will value a volume at the RCP equal to that disposed of in third party dispositions, and the other volumes will be valued according to the BVM.
- ii. For any other oil sands product, the unit price calculated for the third party dispositions of the product will value a volume at the RCP equal to that disposed of in third party dispositions, and the other volumes will be valued at their fair market value as determined by the Minister.
- c. If there are no third party dispositions of the product in the month, then the product will be valued according to the BVM, in the case of cleaned crude bitumen, or its fair market value as determined by the Minister, in all other cases.

3. **Bitumen Valuation Methodology (BVM)** - The New Royalty Framework will include a Bitumen Valuation Methodology (“BVM”), which will be used to value bitumen for royalty purposes in cases where a project has insufficient third party dispositions to determine a representative unit price. This will be particularly important for projects with integrated upgraders that are paying royalty based on bitumen.

The basis for the BVM pricing model will be the price of Western Canadian Select (“WCS”), a heavy blend composed mostly of bitumen and diluents, at Hardisty Alberta. The value of individual project bitumens will then be adjusted to reflect their densities and the cost of transporting them to market.

The methodology of the BVM will be established in a Ministerial Regulation. The necessary data for the BVM calculation will be provided on ADOE and CAPP web sites. It is intended that a valuation model will be available on the CAPP website to facilitate the BVM calculation process.

4. **Inventory** – Alberta Energy will require a special statement of Crown royalty inventory volumes applicable to each royalty project. The statement will identify the volumes of oil sands products which have crossed the royalty calculation point but were not disposed of or sold at December 31, 2008 (i.e. volumes where royalty has not been paid) This will include volumes used as line fill and in tankage. For integrated projects, that will transition to bitumen royalty in 2009, the Crown share of inventory volumes will also include upgraded products in intermediate stages of processing including those in tankage, and within the upgrader’s process equipment (vessels and lines) if that upgrader is part of the royalty project at December 31, 2008. The inventory statement needs to include volumes of diluents or diesel that were supplied to the royalty project from an integrated upgrader that will no longer be part of the royalty project on January 1, 2009 or which originated as bitumen but where no royalty has been assessed. The ERCB can provide more specifics regarding the measurement of inventory volumes.

For clarity, the inventory statement should identify Crown royalty volumes at December 31, 2008 for:

- a) bitumen, synthetic crude oil or intermediate products used in line fill,
- b) bitumen, synthetic crude oil or intermediate products used in line tankage,

- c) partially upgraded products within process units at those royalty projects for operators subject to a BRO,
- d) diluent supplied in a NAL transaction to another Royalty Project,
- e) diluents or diesel in inventory within a Royalty Project,
- f) sulphur, coke or any other byproduct volume and,
- g) any other oil sands product which may be affected by a transition on January 1, 2009.

The volume or value of intermediate products may be adjusted based on the quality of the individual products. If an actual purchase or sale can be identified, the actual purchase or sale will be used for valuation (i.e. will follow normal business rules for the valuation of non-arm's length sales and purchases where those rules can be applied). In any case, a value for certain oil sands products may have to be determined in consultation with industry.

The inventory statement (Appendix B) should be submitted with the December 2008 month royalty report due on January 31, 2009. The measurements of volumes or calculated volumes will need to be auditable and acceptable to the ERCB. Alberta Energy will also subject these values to audit by our Compliance and Assurance Branch. Oil Sands Operations will issue a separate Information Bulletin on the business rules for the valuation and reporting of the royalty payable on the Crown royalty inventory volumes. The act of reporting a volume does not in itself obligate the operator to pay royalties on that volume. Certain information reported in inventory may be required to establish a baseline for determining future costs or revenues.

Appendix A-NRF Royalty Formulas

1. **Gross Royalty Rate:** Royalty rate calculated monthly based on the actual WTI prices and exchange rate for the month.
 - RG% = Gross Royalty Rate - Straight line sliding scale royalty rate applied to project gross revenue; calculated to 5 decimal places.
 - RG% range from 1% to a maximum of 9%
 - Minimum Royalty Rate
 - $RG\% = 1\% \text{ for } W \leq L$
 - Maximum Royalty Rate
 - $RG\% = 9\% \text{ for } W \geq H$
 - Price Sensitive Royalty Rate
 - $RG\% = [1\% + (W - L) * FG] \text{ for } L < W < H$

Where:

- W = WTI price in Canadian Dollars (CAD\$) per barrel
 - L = CAD \$55/bbl
 - H = CAD \$120/bbl
 - FG = 8 %/\$65 per barrel increase in A (straight line relation)
 - L and H are not indexed to inflation.
2. **Net Royalty Rate:** An annual royalty rate calculated monthly based on the simple average of the monthly actual USD WTI prices and exchange rates available until that point and future USD WTI prices and exchange rates for the remaining months of the year. A monthly gross royalty rate based on the simple annual average of actual and estimated monthly WTI prices *will also* be calculated for a post payout project because the royalty

payable for a post payout project is the greater of the gross revenue times the gross royalty rate or the net revenue times the net revenue royalty rate.

- $RN\% = \text{Net Royalty Rate} - \text{Straight line sliding scale royalty rate applied to project net revenue; calculated to 5 decimal places.}$
- $RN\%$ range from 25% to a maximum of 40%
- Minimum Royalty Rate
- $RN\% = 25\%$ for $W \leq L$
- Maximum Royalty Rate
- $RN\% = 40\%$ for $W \geq H$
- $RN\% = [25\% + (W - L) * FN]$ for $L < W < H$

Where:

- $W = \text{WTI price in CAD\$/bbl}$
- $L = \text{CAD\$55/bbl}$
- $H = \text{CAD\$120/bbl}$
- $FN = 15\% / \$65$ per barrel increase in A (straight line relation)
- L and H are not indexed to inflation.

Note (i) `W` is the production month WTI price for pre-payout royalty calculation and the production year average WTI price for the post –payout royalty rate calculation.

(ii) Formulas are the working level representation of the legal version that was drafted for OSRR 2009.

Monthly Royalty Rates:

For each production month, the Oil Sands Operations Division will calculate and publish the actual royalty rate for pre-payout projects (*based on the actual WTI price for the month*) and estimates of the average annual gross and net royalty rates (*based on the average of the actual and estimated WTI prices for the year*) to be used for post payout projects to calculate the monthly royalty instalments.

The December royalty rates will be the actual annual average royalty rate for the period for a post payout project. Operators must use the published royalty rates to calculate royalty payable.

Sample of the Published Monthly Royalty Rate Information

Oil Sands Royalty Calculation For Jan 2009

Royalty Rates		
Pre-payout Gross:		5.64700% (based on Prod Month actual WTI Price)
Pre-payout Gross:		6.23400% (based on the estimated average WTI price for Prod Year)
Post-payout Net:		34.81500% (based on the estimated average WTI price for Prod Year)

WTI Prices and Exchange Rates

Month		WTI Price USD\$	Exchange Rate	
Jan 2009	Act	91.74	0.98900000	=92.76 (CAD\$)
Feb 2009	Est	91.50	0.98200000	
Mar 2009	Est	91.89	0.98200000	
Apr 2009	Est	92.63	0.98200000	
May 2009	Est	94.75	0.98200000	
Jun 2009	Est	95.68	0.98200000	
Jul 2009	Est	97.84	0.98200000	
Aug 2009	Est	97.92	0.98200000	
Sep 2009	Est	98.01	0.98200000	
Oct 2009	Est	98.56	0.98200000	
Nov 2009	Est	99.42	0.98200000	
Dec 2009	Est	99.98	0.98200000	
Average		95.83	0.98258333	=97.53 (CAD\$)

Gross Royalty Formula

Minimum Royalty Rate:	$R_G\% = 1\%$ for $W \leq L$
Maximum Royalty Rate:	$R_G\% = 9\%$ for $W \geq H$
Price Sensitive Royalty Rate:	$R_G\% = [1\% + (W - L) * F_G]$ for $L < W < H$

Net Royalty Formula

Minimum Royalty Rate:	$R_N\% = 25\%$ for $W \leq L$
Maximum Royalty Rate:	$R_N\% = 40\%$ for $W \geq H$
Price Sensitive Royalty Rate:	$R_N\% = [25\% + (W - L) * F_N]$ for $L < W < H$

W = WTI Price CAD\$

L = CAD\$55/bbl

H = CAD\$120/bbl

$F_G = 8\% / \$65$ per barrel increase in A (straight line relation)

$F_N = 15\% / \$65$ per barrel increase in A (straight line relation)

Note: Formulas are the working level representation of the legal version that is in OSRR2009

Oil Sands Royalty Regulation, 1984

Any oil sands well that is not part of an approval granted under OSRR, 97 or OSRR 2009 (i.e. non project wells) must pay cash royalty to the Crown at the heavy oil rates prescribed by the Petroleum Royalty Regulation.

Royalty Calculation for Non project Wells - New Royalty Framework

- Crown Royalty Share is the quantity of crude oil obtained from the well event, multiplied by the Crown royalty rate, multiplied by the Crown interest percentage.
- The royalty formulas prior to 2009 had two distinct components, one for volume (S) and one for price sensitivity (R-multiplier).
- The New Royalty Framework proposed formulas also have two distinct components, one for volume (rq) and one for price sensitivity (rp).
- The New Royalty Framework proposed formulas are capped at 35% for rp and 30% for rq; and the combined total will not exceed 50%.
- The formula for price (rp) changes as the price increases, and
- The formula for quantity (rq) changes as the production increases.
- No longer requires royalty factors, select prices, or vintage of the oil.
- Requires correct density of the oil to determine which par price to use.
- There will be four par prices for each of these density categories:
 - i. Light – density < 850 kg/m³ or 35° API
 - ii. Medium – density 850 kg/m³ or 35° API and greater, but less than 900 kg/m³ or 25.7° API
 - iii. Heavy – density 900 kg/m³ or 25.7° API and greater, but less than 925 kg/m³ or 21.5° API
 - iv. Ultra Heavy – density 925 kg/m³ or 21.5° API

The Ultra Heavy (density 925 kg/m³ or 21.5° API) par price must be used to calculate the royalty payable on production from oil sands wells which are not tied to an OSR royalty project.

Example:

$$\text{Royalty} = \text{Production} \times \text{Royalty Rate} \times \text{Crown\%}$$

Where

$$\text{Royalty Rate} = \text{Price Component (rp)*} + \text{Quantity Component (rq)**}$$

$$\text{Royalty} = 100.0 \text{ m}^3 \times (26.50\% + -1.66\%) \times 66.6666667\%$$

$$\text{Royalty} = (100.0 \text{ m}^3 \times 24.84\%) \times 66.6666667\%$$

$$\text{Royalty} = 24.84 \text{ m}^3 \times 66.6666667\%$$

$$\text{Royalty} = 16.5600000 \text{ m}^3 = 16.6\text{m}$$

Royalty Formulas – Conventional Oil

R% = Price Component (r_p) + Quantity Component (r_q)

R% has a minimum of 0% and a maximum of 50%

Price Component (r_p)	
Price (\$/m³)	r_p
PP ≤ Sp ₂	$((PP - Sp_1) * 0.0006) * 100$
Sp ₂ < PP ≤ Sp ₃	$((PP - Sp_2) * 0.0010) + 0.0360 * 100$
PP > Sp ₃	$((PP - Sp_3) * 0.0005) + 0.1860 * 100$
Maximum	35%
PP is the par price for the month in \$/m ³	
Note: r_p can be negative	

Quantity Component (r_q)	
Quantity (m³/month)	r_q
Q ≤ Sq ₁	$((Q - Sq_1) * 0.0026) * 100$
Sq ₁ < Q ≤ Sq ₂	$((Q - Sq_1) * 0.0010) * 100$
Sq ₂ < Q ≤ Sq ₃	$((Q - Sq_2) * 0.0007) + 0.0912 * 100$
Q > Sq ₃	$((Q - Sq_3) * 0.0003) + 0.1657 * 100$
Maximum	30%
Q is the monthly production in m ³	
Note: r_q can be negative	

Royalty Parameters		
	Price (\$/m³)	% Change (%/\$/m³)
Sp ₁	\$190.00	0.06%
Sp ₂	\$250.00	0.10%
Sp ₃	\$400.00	0.05%
	Quantity (m³/month)	% Change (%/m³/month)
Sq ₁	106.4	0.26%, 0.10%
Sq ₂	197.6	0.07%
Sq ₃	304.0	0.03%

Examples

Price (\$/m³)	Quantity (m³/month)	r_p	r_q	R%
200	50	0.60%	-14.66%	0.00%
200	200	0.60%	9.17%	9.77%
300	50	8.60%	-14.66%	0.00%
300	200	8.60%	9.17%	17.77%
400	50	18.60%	-14.66%	3.94%
400	200	18.60%	9.17%	27.77%
500	50	23.60%	-14.66%	8.94%
500	200	23.60%	9.17%	32.77%

Appendix B - Royalty Reports:

Changes were made to the monthly and annual royalty reports in order to implement the sliding scale royalty rates required by the New Royalty Framework. Operators are required to use these forms effective January 1, 2009 for both pre and post NRF royalty reporting. The published monthly royalty rates need to be entered on the respective royalty form before the royalty payable for the month can be calculated. Additional information will be required by the reporting enhancement required by CARE (Cost Analysis and Reporting Enhancement).

Examples of the monthly and annual royalty reports are attached.

Pre Payout Projects

Monthly Report



Pre-payout MRC
revisedJan09.xls

End of Period Statement



Pre-payout EOP
FORM revisedJan09.>

Post Payout Project

Good Faith Estimate



Post-payout GFE
revisedJan09.xls

End of Period Statement



Post-payout EOP
FORM revisedJan09.>

PSR Royalty



Conventional Oil
Sands Royalty reviser

Inventory Worksheet



NRF Inventory
Worksheet.xls

Note: The royalty forms are being finalized and will be presented at the training session.

Final formatted copies of the royalty forms will be posted on the Department's website by January 15, 2009 (www.energy.gov.ab.ca). Navigate to Oil Sands – Forms (Royalty).