Alberta Royalty Framework: Formulas – Natural Gas
Effective January 1, 2011

R% = Price Component (r_p) + Quantity Component (r_q)
R% has a minimum of 5% and a maximum of 36%
For Transition Wells* R% has a minimum of 5% and a maximum of 30%

Royalty Parameters				
	Price ($/GJ)		**%Change (%/$/GJ)**	
	ARF (2011)	Transition Wells	ARF (2011)	Transition Wells
P_1	4.50	2.00	4.5%	3.5%
P_2	5.25	3.25	2%	0.5%
P_3	9.00	5.00	1%	0%
	Q ($10^3m^3/d$)		**% Change (%/10^3m^3/GJ)**	
	ARF (2011)	Transition Wells	ARF (2011)	Transition Wells
Q_1	4	2	5%	5%
Q_2	6	4	3%	2%
Q_3	11	9	1%	1%

Price Component (r_p)			
Alberta Royalty Framework (2011)		**Transition Wells**	
Price ($/GJ)	**r_p**	**Price ($/GJ)**	**$r_{p\ Transition\ Wells}$**
PP ≤ 5.25	((PP – 4.50) * 0.0450)*100	PP ≤ 3.25	((PP – 2.00) * 0.0350)*100
5.25 < PP ≤ 9.00	((PP – 5.25) * 0.0200 + 0.03375)*100	3.25 < PP ≤ 5.00	((PP – 3.25) * 0.0050 + 0.0437)*100
PP > 9.00	((PP – 9.00) * 0.0100 + 0.10875)*100	PP > 5.00	((PP – 5.00) * 0.0000 + 0.0525)*100
Maximum	30%	Maximum	5.25%
PP is the par price for the month in $/GJ			
Note: r_p can be negative			

Quantity Component (r_q)			
Alberta Royalty Framework (2011)		**Transition Wells**	
Quantity ($10^3m^3/d$)	**r_q**	**Quantity ($10^3m^3/d$)**	**$r_{q\ Transition\ Wells}$**
ADP ≤ (6*DF)	([ADP - (4*DF)]*(0.0500/DF))*100	ADP ≤ 4	([ADP - 2]*0.0500)*100
(6*DF) < ADP ≤ (11*DF)	([ADP - (6*DF)]*(0.0300/DF) + 0.1000)*100	4 < ADP ≤ 9	([ADP - 4]*0.0200 + 0.1000)*100
ADP > (11*DF)	([ADP – (11*DF)]*(0.0100/DF) + 0.2500)*100	ADP > 9	([ADP – 9]*0.0100 + 0.2000)*100
Maximum	30%		25%
PP is the par price for the month in $/GJ			
Note: r_q can be negative			
DF is a depth factor that applies only to the quantity component and is based on the measured depth (MD) of a well where: DF = 1 for all transition wells and for MD ≤ 2000 m; DF = $(MD/2000)^2$ for MD > 2000 m; and, The depth factor is capped at 4.			

Illustration of Depth Factor Adjustment			
MD	**DF**	**Quantity**	**r_q**
≤ 2000 m	1.0000	ADP ≤ 6 $10^3m^3/d$	(ADP – 4) * 0.0500
		6 $10^3m^3/d$ <ADP ≤ 11 $10^3m^3/d$	(ADP – 6) * 0.0300 + 0.1000
		ADP >11 $10^3m^3/d$	(ADP-11)*0.0100 + 0.2500
		Maximum	30%
2500 m	1.5625	ADP ≤ 9.3750 $10^3m^3/d$	(ADP-6.25)*0.032
		9.3750 $10^3m^3/d$ < ADP ≤ 17.1875 $10^3m^3/d$	(ADP-9.3750)*0.0192 + 0.1000
		ADP >17.1875 $10^3m^3/d$	(ADP-17.1875)*0.0064 + 0.2500
		Maximum	30%
3000 m	2.2500	ADP ≤ 13.5 $10^3m^3/d$	(ADP-9)*0.0222
		13.5 $10^3m^3/d$ < ADP ≤ 24.75 $10^3m^3/d$	(ADP-13.5)*0.0133 + 0.1000
		ADP > 24.75 $10^3m^3/d$	(ADP - 24.75)*0.0044 + 0.2500
		Maximum	30%
3500 m	3.0625	ADP ≤ 18.375 $10^3m^3/d$	(ADP-12.25)*0.0163
		18.375 $10^3m^3/d$ <ADP ≤ 33.6875 $10^3m^3/d$	(ADP-18.3750)*0.0098+ 0.1000
		ADP >33.6875 $10^3m^3/d$	(ADP-33.6875)*0.0033 + 0.2500
		Maximum	30%
≥ 4000 m	4.000	ADP ≤ 24 $10^3m^3/d$	(ADP-16)*0.0125
		24 $10^3m^3/d$ <ADP ≤ 44 $10^3m^3/d$	(ADP-24)*0.0075 + 0.1000
		ADP >44 $10^3m^3/d$	(ADP-44)*0.0025 + 0.2500
		Maximum	30%