NOMENCLATURE

SRV	Stimulated Reservoir Volume.	
EIA	Energy Information Administration.	
Tcf	Trillion Cubic Feet	
TOC	Total Organic Content.	
ARI	Advanced Resources International	
USGS	United Geological Survey	
PEL	Petroleum Exploration Lease	
PML	Petroleum Mining Lease	
SEM	Scanning Electron Microscope	
MINC	Multiple Interaction Continua Method	
ECM	Effective Continuum Model	
K_n	Knudsen Number	
Δx	Width of the Matrix Block	ft
Δy	Thickness of the Matrix Block	ft
Δz	Length of the Matrix Block.	ft
V_a	Adsorbed gas volume at standard conditions	ft^3
V_d	Desorbed Gas Volume	ft^3
V_L	Langmuir Volume	ft^3
$v_{gmx}, v_{gmy}, v_{gmz}$	Velocity of gas in x, y and z directions	$\dfrac{ft}{sec}$
k_m	Effective matrix permeability.	Darcy, mD
k_∞	Equivalent liquid permeability of matrix.	Darcy, mD
S_g	Gas Saturation in rock pore	
ρ_{gs}	Standard gas density	
ρ_m	Rock density	
B_g	Formation volume factor	
α_c	Volume Conversion Factor	$\dfrac{BTU}{ft^3}$
β_c	Transmissibility conversion factor	$\dfrac{scf}{D-psi}.$
b_k	Klinkenberg Coefficient	
Z	Compressibility Factor	
P_m	Pressure of Matrix	psi
T	Temperature	^oF
P_{pr}	Pseudo Reduced Pressure	psi
T_{pr}	Pseudo Reduced Temperature.	^oF
M_a	Average Molecular Weight of Natural Gas	

k_{rg}	Relative Permeability of gas flow	Darcy, mD
μ_g	Gas Viscosity	cp
P_L	Langmuir Pressure	psi
V_L	Langmuir Volume	$\dfrac{scf}{ton}$
V_b	Bulk Volume of the Matrix.	ft^3
$\overline{W_f}$	Avg. Width of the Hydraulic Fracture	ft
$\emptyset_m \ and \ \emptyset_f$	Matrix Porosity and Hydraulic Fracture Porosity	
S_{gf}	Saturation of Gas in the Fracture	
k_{rgf}	Relative Permeability of Gas in the hydraulic fracture	Darcy, mD
k_f	Absolute permeability in fracture with proppant.	
k_{gf}	Effective permeability of gas in the fracture.	
S_{wf}	Saturation of water in the Hydraulic Fracture	
A_x, A_y, A_z	Cross Sectional areas normal to x,y and z directions.	
k_{rwf}	Relative Permeability of Water in the hydraulic fracture	
r_w	Radius of the wellbore	ft
B_w	Water Formation Volume Factor	
d	Diameter of the horizontal wellbore	ft
$p_{i,j,k}$	Pressure in the surrounding blocks of the horizontal wellbore	psi
p_{wf}	Well flowing pressure in the horizontal wellbore.	psi
$X_O \ and \ Z_0$	Centre Coordinates of the Horizontal Wellbore.	
c	Thickness of the matrix	ft
h	Length of the matrix	ft
S	Skin Factor	
CMG	Computer Modeling Group	