2016

CAPITALIZATION RATE STUDY FOR CENTRALLY ASSESSED PROPERTIES

FOR: JANUARY 1, 2016

UTAH STATE TAX COMMISSION

PROPERTY TAX DIVISION
NATURAL RESOURCES SECTION
210 NORTH 1950 WEST, THIRD FLOOR
SALT LAKE CITY, UTAH 84134

(801) 297-3600

www.propertytax.utah.gov

REV. 3/7/2016

Industry	Page	Debt Rate	Debt/Equity	Equity Yield Rate	WACC
COAL MINING	3	9.40%	70% / 30%	14.65%	10.98%
PRECIOUS METALS	6	6.96%	40% / 60%	9.56%	8.52%
NON-PRECIOUS METALS	9	5.46%	40% / 60%	12.61%	9.75%
NON-METALS	12	6.96%	20% / 80%	12.17%	11.13%
OIL & GAS PRODUCTION/WD	15	8.29%	45% / 55%	13.64%	11.23%
OIL & GAS GATHERING	18	6.96%	50% / 50%	14.97%	10.97%
SAND AND GRAVEL	21	7.15%	15% / 85%	11.30%	10.68%
URANIUM MINING	24	9.40%	10% / 90%	13.34%	12.95%

CORPORATE BONDS

Aaa	3.97%
Aa	4.16%
A	4.38%
Baa	5.46%
Ba1	6.96%
Ba2	7.15%
Ba3	7.15%
B1	8.29%
B2	8.29%
B3	8.29%
Caa1	9.40%
Caa2	9.40%
Caa3	9.40%
Ca	12.56%
C	12.56%

PUBLIC UTILITY BONDS

Aaa	N/A
Aa	4.16%
A	4.35%
Baa	5.55%

PREFERRED STOCKS

Aaa	N/A
Aa	N/A
A	N/A
Baa	N/A

MISCELLANEOUS RATES

Risk-Free Rate	2.67%
Market Risk Premium	6.90%
Default Income Tax Rate	38.50%
ValueLine GDP Price Deflator Forecast	2.00%

INFLATION FACTORS

Year	4th Quarter GDP Implicit Price Deflator	Annual Percent Change	Conversion Factor
2005	93.100	N/A	**1.184**
2006	95.580	2.66%	**1.154**
2007	97.956	2.49%	**1.126**
2008	99.815	1.90%	**1.105**
2009	100.169	0.35%	**1.101**
2010	101.949	1.78%	**1.081**
2011	103.917	1.93%	**1.061**
2012	105.935	1.94%	**1.041**
2013	107.589	1.56%	**1.025**
2014	109.067	1.37%	**1.011**
2015	110.254	1.09%	**1.000**

2016 - 2006 Average Change: 1.71%

Source:
Website:

MISCELLANEOUS INFORMATION

NOMINAL RATE (NR) = Includes both the real rate and the impact of inflation (IR).

REAL RATE = [(1+NR)/(1+IR)] -1

Coal Example = [(1+0.1098)/(1+0.0171)]-1 = 0.0912

INDUSTRY	NOMINAL	REAL
Coal	10.98%	9.12%
Precious Metals	8.52%	6.70%
Non-Precious Metals	9.75%	7.91%
Non-Metals	11.13%	9.26%
Oil & Gas Production/WD	11.23%	9.36%
Oil & Gas Gathering	10.97%	9.11%
Sand & Gravel	10.68%	8.82%
Uranium	12.95%	11.05%

(tax-adjusted)	NOMINAL	REAL
Coal	13.70%	11.79%
Precious Metals	12.07%	10.19%
Non-Precious Metals	14.43%	12.51%
Non-Metals	17.16%	15.19%
Oil & Gas Production/WD	15.88%	13.94%
Oil & Gas Gathering	15.60%	13.66%
Sand & Gravel	16.63%	14.67%
Uranium	20.39%	18.37%

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	12.40%
CAPM: Supply Side	11.17%
CAPM: Implied ERP	11.17%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	11.36%
DGM: Earnings & Dividend	23.66%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**14.65%**

Reconciled Equity Rate	14.65%	30.00%	4.40%
Debt Rate (Corporate Caa3)	9.40%	70.00%	6.58%
Weighted Average Cost of Capital			**10.98%**
Reconciled Equity Rate	14.65%		
Tax-Adjusted (38.25%)	23.72%	30.00%	7.12%
Industry Debt Rate	9.40%	70.00%	6.58%
Tax-Adjusted Weighted Average Cost of Capital			**13.70%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Alliance Resource	NMF	1.00 (B+)	1.00
Alpha Natural Resources Inc.	NMF	1.44 (C)	2.15
Arch Coal	NMF	1.44 (C)	1.15
CONSOL Energy	NMF	1.00 (B+)	1.35
Peabody Energy	NMF	1.44 (C)	1.40
Selected	**38.25%**	**1.26**	**1.41**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	6.90%
x Industry Beta	1.41
Industry Risk Premium	9.73%
Add: Risk-Free Rate	2.67%
Indicated Rate	**12.40%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.41
Industry Risk Premium	8.50%
Add: Risk-Free Rate	2.67%
Indicated Rate	**11.17%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.41
Industry Risk Premium	8.50%
Add: Risk-Free Rate	2.67%
Indicated Rate	**11.17%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	6.90%
x Industry Financial Strength	1.26
Industry Risk Premium	8.69%
Add: Risk-Free Rate	2.67%
Indicated Rate	**11.36%**

DIVIDEND GROWTH MODEL: EARNINGS AND DIVIDEND GROWTH

Company Name	Recent Stock Price	Next Year's Dividend	Projected Earnings Growth	Projected Dividend Growth	Market Growth Rate	D.G.M. Rate
Alliance Resource	$13.49	$2.72	1.50%	5.50%	3.50%	23.66%
Alpha Natural Resources Inc.	$0.01	-	-	-	-	-
Arch Coal	$0.99	-	-	-	-	-
CONSOL Energy	$7.90	$0.04	8.00%	-24.00%	-8.00%	-
Peabody Energy	$7.68	-	-	-	-	-

Indicated Rate **23.66%**

DIVIDEND GROWTH MODEL: PLOWBACK RATIO

Company Name	Recent Stock Price	Next Year's Dividend	Return on Equity	Retention Rate	Market Growth Rate	D.G.M. Rate
Alliance Resource	$13.49	$2.72	-	-	-	-
Alpha Natural Resources Inc.	$0.01	-	-	-	-	-
Arch Coal	$0.99	-	-	-	-	-
CONSOL Energy	$7.90	$0.04	-	-	-	-
Peabody Energy	$7.68	-	-	-	-	-

Indicated Rate **N/A**

COMMENTS ABOUT THE COAL MINING INDUSTRY

CALCULATION OF CAPITAL STRUCTURE

Company Name	Total Debt	Long-Term Interest	Implied Coupon Rate*	Market Value of Debt**	Fair Value of Debt***	Pref'd Divs	MV of Pref Eqty+	Recent Stock Price	Shares Outstd	Market Value of Equity
Alliance Resource	953.1	30.0	1.57%	420.1	-	-	-	13.49	74.1	999.6
Alpha Natural Resources Inc.	3,897.8	275.0	3.53%	3,080.4	-	-	-	0.01	221.6	2.2
Arch Coal	5,160.4	390.0	3.78%	4,310.0	-	-	-	0.99	212.2	210.1
CONSOL Energy	3,737.0	140.0	1.87%	1,847.3	-	-	-	7.90	229.1	1,809.5
Peabody Energy	6,305.2	460.0	3.65%	5,118.4	-	-	-	7.68	278.3	2,137.0
Total				**14,776.2**		**-**				**5,158.4**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Alliance Resource	29.59%	70.41%
Alpha Natural Resources Inc.	99.93%	0.07%
Arch Coal	95.35%	4.65%
CONSOL Energy	50.52%	49.48%
Peabody Energy	70.55%	29.45%
Mean	**69.19%**	**30.81%**
Weighted Mean	**74.12%**	**25.88%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 9.40% (Corporate Caa3)

*** Fair Value of Debt overrides the Market Value of Debt in calculation of Capital Structure.

+ Market Value of Pref. Equity: N/A (Baa)

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	9.50%
CAPM: Supply Side	8.64%
CAPM: Implied ERP	8.64%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	10.12%
DGM: Earnings & Dividend	3.83%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**9.56%**

Reconciled Equity Rate	9.56%	60.00%	5.74%
Debt Rate (Corporate Ba1)	6.96%	40.00%	2.78%
Weighted Average Cost of Capital			**8.52%**
Reconciled Equity Rate	9.56%		
Tax-Adjusted (38.25%)	15.48%	60.00%	9.29%
Industry Debt Rate	6.96%	40.00%	2.78%
Tax-Adjusted Weighted Average Cost of Capital			**12.07%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Agnico Eagle Mines	53.20%	1.00 (B+)	0.75
Barrick Gold	65.99%	1.11 (B)	0.85
Coeur Mining Inc.	NMF	1.22 (C++)	1.30
Goldcorp Inc.	41.18%	0.89 (B++)	0.85
Hecla Mining	NMF	1.11 (B)	1.30
Kinross Gold	NMF	1.22 (C++)	1.00
Kirkland Lake Gold Inc	22.42%		0.90
New Gold Inc	NMF		1.10
Newmont Mining	37.15%	1.00 (B+)	0.85
Richmont Mines	24.79%		1.00
Selected	**38.25%**	**1.08**	**0.99**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	6.90%
x Industry Beta	0.99
Industry Risk Premium	6.83%
Add: Risk-Free Rate	2.67%
Indicated Rate	**9.50%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	0.99
Industry Risk Premium	5.97%
Add: Risk-Free Rate	2.67%
Indicated Rate	**8.64%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	0.99
Industry Risk Premium	5.97%
Add: Risk-Free Rate	2.67%
Indicated Rate	**8.64%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	6.90%
x Industry Financial Strength	1.08
Industry Risk Premium	7.45%
Add: Risk-Free Rate	2.67%
Indicated Rate	**10.12%**

DIVIDEND GROWTH MODEL: EARNINGS AND DIVIDEND GROWTH

Company Name	Recent Stock Price	Next Year's Dividend	Projected Earnings Growth	Projected Dividend Growth	Market Growth Rate	D.G.M. Rate
Agnico Eagle Mines	$26.28	$0.32	4.00%	-5.50%	-0.75%	-
Barrick Gold	$7.38	$0.08	-19.00%	-26.00%	-22.50%	-
Coeur Mining Inc.	$2.48	-	-	-	-	-
Goldcorp Inc.	$11.56	$0.24	11.00%	-7.50%	1.75%	3.83%
Hecla Mining	$1.89	-	1.00%	-	1.00%	-
Kinross Gold	$1.82	-	-20.50%	-	-20.50%	-
Kirkland Lake Gold Inc	$3.49	-	-	-	-	-
New Gold Inc	$2.32	-	-4.95%	-	-4.95%	-
Newmont Mining	$17.99	$0.10	-12.00%	-31.50%	-21.75%	-
Richmont Mines	$4.44	-	-	-	-	-

Indicated Rate **3.83%**

DIVIDEND GROWTH MODEL: PLOWBACK RATIO

Company Name	Recent Stock Price	Next Year's Dividend	Return on Equity	Retention Rate	Market Growth Rate	D.G.M. Rate
Agnico Eagle Mines	$26.28	$0.32	-	-	-	-
Barrick Gold	$7.38	$0.08	-	-	-	-
Coeur Mining Inc.	$2.48	-	-	-	-	-
Goldcorp Inc.	$11.56	$0.24	-	-	-	-
Hecla Mining	$1.89	-	-	-	-	-
Kinross Gold	$1.82	-	-	-	-	-
Kirkland Lake Gold Inc	$3.49	-	-	-	-	-
New Gold Inc	$2.32	-	-	-	-	-
Newmont Mining	$17.99	$0.10	-	-	-	-
Richmont Mines	$4.44	-	-	-	-	-

Indicated Rate **N/A**

COMMENTS ABOUT THE PRECIOUS METALS INDUSTRY

CALCULATION OF CAPITAL STRUCTURE

Company Name	Total Debt	Long-Term Interest	Implied Coupon Rate*	Market Value of Debt**	Fair Value of Debt***	Pref'd Divs	MV of Pref Eqty+	Recent Stock Price	Shares Outstd	Market Value of Equity
Agnico Eagle Mines	1,231.8	56.9	2.31%	923.0	-	-	-	26.28	214.2	5,629.2
Barrick Gold	12,321.0	800.0	3.25%	11,704.7	-	-	-	7.38	1,164.7	8,595.5
Coeur Mining Inc.	911.0	-	-	911.0	-	-	-	2.48	103.4	256.4
Goldcorp Inc.	2,699.0	24.0	0.44%	944.0	-	-	-	11.56	813.6	9,405.2
Hecla Mining	833.4	-	-	833.4	-	-	-	1.89	367.4	694.4
Kinross Gold	1,778.9	53.0	1.49%	1,020.5	-	-	-	1.82	1,144.6	2,083.2
Kirkland Lake Gold Inc	165.4	-	-	165.4	-	-	-	3.49	80.3	280.2
New Gold Inc	1,575.9	-	-	1,575.9	-	0.0	-	2.32	509.0	1,180.9
Newmont Mining	6,351.0	300.0	2.36%	4,829.8	-	0.0	-	17.99	498.7	8,971.6
Richmont Mines	41.5	-	-	41.5	-	0.0	-	4.44	33.1	147.0
Total				**22,949.3**			**-**			**37,243.6**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Agnico Eagle Mines	14.09%	85.91%
Barrick Gold	57.66%	42.34%
Coeur Mining Inc.	78.04%	21.96%
Goldcorp Inc.	9.12%	90.88%
Hecla Mining	54.55%	45.45%
Kinross Gold	32.88%	67.12%
Kirkland Lake Gold Inc	37.12%	62.88%
New Gold Inc	57.16%	42.84%
Newmont Mining	35.00%	65.01%
Richmont Mines	22.02%	77.98%
Mean	**39.76%**	**60.24%**
Weighted Mean	**38.13%**	**61.87%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 6.96% (Corporate Ba1)

*** Fair Value of Debt overrides the Market Value of Debt in calculation of Capital Structure.

+ Market Value of Pref. Equity: N/A (Baa)

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	12.61%
CAPM: Supply Side	11.35%
CAPM: Implied ERP	0.00%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	9.78%
DGM: Earnings & Dividend	9.70%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**12.61%**

Reconciled Equity Rate	12.61%	60.00%	7.57%
Debt Rate (Corporate Baa)	5.46%	40.00%	2.18%
Weighted Average Cost of Capital			**9.75%**
Reconciled Equity Rate	12.61%		
Tax-Adjusted (38.25%)	20.42%	60.00%	12.25%
Industry Debt Rate	5.46%	40.00%	2.18%
Tax-Adjusted Weighted Average Cost of Capital			**14.43%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
BHP Billiton Ltd. ADR	45.51%	0.89 (B++)	1.30
Freep't-McMoRan Inc.	32.57%	1.22 (C++)	1.50
Materion Corp.	26.43%	1.00 (B+)	1.45
Rio Tinto plc	26.98%	0.78 (A)	1.40
Southern Copper	36.24%	0.78 (A)	1.25
Taseko Mines Ltd	NMF		1.60
Teck Resources Ltd. 'B'	47.24%	1.22 (C++)	1.50
Thompson Creek Metals Company	NMF		1.55
Vale S.A. ADR	35.44%	1.33 (C+)	1.40
Selected	**38.25%**	**1.03**	**1.44**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	6.90%
x Industry Beta	1.44
Industry Risk Premium	9.94%
Add: Risk-Free Rate	2.67%
Indicated Rate	**12.61%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.44
Industry Risk Premium	8.68%
Add: Risk-Free Rate	2.67%
Indicated Rate	**11.35%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.44
Industry Risk Premium	8.68%
Add: Risk-Free Rate	2.67%
Indicated Rate	**11.35%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	6.90%
x Industry Financial Strength	1.03
Industry Risk Premium	7.11%
Add: Risk-Free Rate	2.67%
Indicated Rate	**9.78%**

DIVIDEND GROWTH MODEL: EARNINGS AND DIVIDEND GROWTH

Company Name	Recent Stock Price	Next Year's Dividend	Projected Earnings Growth	Projected Dividend Growth	Market Growth Rate	D.G.M. Rate
BHP Billiton Ltd. ADR	$25.76	$2.48	-6.50%	1.00%	-2.75%	-
Freep't-McMoRan Inc.	$6.77	-	-0.50%	-5.00%	-2.75%	-
Materion Corp.	$28.00	$0.36	9.00%	7.00%	8.00%	9.29%
Rio Tinto plc	$29.12	$2.22	-1.50%	6.50%	2.50%	10.12%
Southern Copper	$26.12	$0.20	6.00%	-13.00%	-3.50%	-
Taseko Mines Ltd	$0.34	-	-	-	-	-
Teck Resources Ltd. 'B'	$5.34	$0.10	-0.50%	-6.00%	-3.25%	-
Thompson Creek Metals Company	$0.20	-	-	-	-	-
Vale S.A. ADR	$3.29	$0.10	12.50%	-17.50%	-2.50%	-

Indicated Rate **9.70%**

DIVIDEND GROWTH MODEL: PLOWBACK RATIO

Company Name	Recent Stock Price	Next Year's Dividend	Return on Equity	Retention Rate	Market Growth Rate	D.G.M. Rate
BHP Billiton Ltd. ADR	$25.76	$2.48	-	-	-	-
Freep't-McMoRan Inc.	$6.77	-	-	-	-	-
Materion Corp.	$28.00	$0.36	-	-	-	-
Rio Tinto plc	$29.12	$2.22	-	-	-	-
Southern Copper	$26.12	$0.20	-	-	-	-
Taseko Mines Ltd	$0.34	-	-	-	-	-
Teck Resources Ltd. 'B'	$5.34	$0.10	-	-	-	-
Thompson Creek Metals Company	$0.20	-	-	-	-	-
Vale S.A. ADR	$3.29	$0.10	-	-	-	-

Indicated Rate **N/A**

COMMENTS ABOUT THE NON-PRECIOUS METALS INDUSTRY

CALCULATION OF CAPITAL STRUCTURE

Company Name	Total Debt	Long-Term Interest	Implied Coupon Rate*	Market Value of Debt**	Fair Value of Debt***	Pref'd Divs	MV of Pref Eqty+	Recent Stock Price	Shares Outstd	Market Value of Equity
BHP Billiton Ltd. ADR	31,170.0	1,500.0	2.41%	28,731.5	-	-	-	25.76	2,660.6	68,537.1
Freep't-McMoRan Inc.	20,698.0	1,250.0	3.02%	22,146.1	-	-	-	6.77	1,039.0	7,034.0
Materion Corp.	46.2	3.0	3.25%	52.0	-	-	-	28.00	20.4	571.2
Rio Tinto plc	25,365.0	1,200.0	2.37%	23,131.3	-	-	-	29.12	1,849.9	53,869.1
Southern Copper	5,950.9	340.0	2.86%	6,133.1	-	-	-	26.12	812.6	21,225.1
Taseko Mines Ltd	623.4	-	-	623.4	-	-	-	0.34	221.8	75.4
Teck Resources Ltd. 'B'	9,684.0	600.0	3.10%	10,544.7	-	-	-	5.34	576.1	3,076.4
Thompson Creek Metals Company	1,854.5	-	-	1,854.5	-	-	-	0.20	214.1	42.8
Vale S.A. ADR	28,816.0	1,550.0	2.69%	28,533.9	-	-	-	3.29	5,244.3	17,253.7
Total				**121,750.5**		**-**				**171,684.8**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
BHP Billiton Ltd. ADR	29.54%	70.46%
Freep't-McMoRan Inc.	75.89%	24.11%
Materion Corp.	8.34%	91.66%
Rio Tinto plc	30.04%	69.96%
Southern Copper	22.42%	77.58%
Taseko Mines Ltd	89.21%	10.79%
Teck Resources Ltd. 'B'	77.41%	22.59%
Thompson Creek Metals Company	97.74%	2.26%
Vale S.A. ADR	62.32%	37.68%
Mean	**54.77%**	**45.23%**
Weighted Mean	**41.49%**	**58.51%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 5.46% (Corporate Baa)

*** Fair Value of Debt overrides the Market Value of Debt in calculation of Capital Structure.

+ Market Value of Pref. Equity: N/A (Baa)

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	11.09%
CAPM: Supply Side	10.03%
CAPM: Implied ERP	10.03%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	9.57%
DGM: Earnings & Dividend	18.29%
DGM: Plowback Ratio	5.55%
Reconciled Equity Rate	**12.17%**

Reconciled Equity Rate	12.17%	80.00%	9.74%
Debt Rate (Corporate Ba1)	6.96%	20.00%	1.39%
Weighted Average Cost of Capital			**11.13%**
Reconciled Equity Rate	12.17%		
Tax-Adjusted (38.25%)	19.71%	80.00%	15.77%
Industry Debt Rate	6.96%	20.00%	1.39%
Tax-Adjusted Weighted Average Cost of Capital			**17.16%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Compass Minerals Int'l	46.09%	1.00 (B+)	0.85
Eagle Materials	26.27%	1.00 (B+)	1.40
Intrepid Potash Inc	NMF	1.11 (B)	1.45
Martin Marietta	38.06%	0.89 (B++)	1.15
Mosaic Company	NMF	0.78 (A)	1.30
Potash Corp.	28.91%	0.89 (B++)	1.10
U S Lime & Minerals	25.29%	1.00 (B+)	0.85
USG Corp.	NMF	1.33 (C+)	1.65
Vulcan Materials	30.68%	1.00 (B+)	1.20
Selected	**38.25%**	**1.00**	**1.22**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	6.90%
x Industry Beta	1.22
Industry Risk Premium	8.42%
Add: Risk-Free Rate	2.67%
Indicated Rate	**11.09%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.22
Industry Risk Premium	7.36%
Add: Risk-Free Rate	2.67%
Indicated Rate	**10.03%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.22
Industry Risk Premium	7.36%
Add: Risk-Free Rate	2.67%
Indicated Rate	**10.03%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	6.90%
x Industry Financial Strength	1.00
Industry Risk Premium	6.90%
Add: Risk-Free Rate	2.67%
Indicated Rate	**9.57%**

DIVIDEND GROWTH MODEL: EARNINGS AND DIVIDEND GROWTH

Company Name	Recent Stock Price	Next Year's Dividend	Projected Earnings Growth	Projected Dividend Growth	Market Growth Rate	D.G.M. Rate
Compass Minerals Int'l	$75.27	$2.88	13.00%	8.50%	10.75%	14.58%
Eagle Materials	$60.43	$0.40	16.00%	6.00%	11.00%	11.66%
Intrepid Potash Inc	$2.95	-	-	-	-	-
Martin Marietta	$136.58	$1.60	26.50%	2.00%	14.25%	15.42%
Mosaic Company	$27.59	$1.18	5.50%	15.00%	10.25%	14.53%
Potash Corp.	$17.12	$1.52	-	5.50%	5.50%	14.38%
U S Lime & Minerals	$54.96	-	-	-	-	-
USG Corp.	$24.29	-	57.50%	-	57.50%	-
Vulcan Materials	$94.97	$0.40	47.50%	30.00%	38.75%	39.17%

Indicated Rate **18.29%**

DIVIDEND GROWTH MODEL: PLOWBACK RATIO

Company Name	Recent Stock Price	Next Year's Dividend	Return on Equity	Retention Rate	Market Growth Rate	D.G.M. Rate
Compass Minerals Int'l	$75.27	$2.88	29.50%	16.00%	4.72%	8.55%
Eagle Materials	$60.43	$0.40	14.00%	13.00%	1.82%	2.48%
Intrepid Potash Inc	$2.95	-	-	-	-	-
Martin Marietta	$136.58	$1.60	9.50%	6.00%	0.57%	1.74%
Mosaic Company	$27.59	$1.18	12.50%	8.50%	1.06%	5.34%
Potash Corp.	$17.12	$1.52	18.50%	4.00%	0.74%	9.62%
U S Lime & Minerals	$54.96	-	-	-	-	-
USG Corp.	$24.29	-	25.50%	25.50%	6.50%	-
Vulcan Materials	$94.97	$0.40	12.50%	-	-	-

Indicated Rate **5.55%**

COMMENTS ABOUT THE NON-METALS INDUSTRY

CALCULATION OF CAPITAL STRUCTURE

Company Name	Total Debt	Long-Term Interest	Implied Coupon Rate*	Market Value of Debt**	Fair Value of Debt***	Pref'd Divs	MV of Pref Eqty+	Recent Stock Price	Shares Outstd	Market Value of Equity
Compass Minerals Int'l	623.5	21.0	1.68%	383.6	-	-	-	75.27	33.6	2,529.1
Eagle Materials	509.7	10.4	1.02%	241.1	-	-	-	60.43	50.2	3,033.6
Intrepid Potash Inc	150.0	-	-	150.0	-	-	-	2.95	75.1	221.5
Martin Marietta	1,705.1	66.1	1.94%	1,142.0	-	-	-	136.58	67.3	9,191.8
Mosaic Company	3,789.3	140.0	1.85%	2,464.0	-	-	-	27.59	367.5	10,139.3
Potash Corp.	4,123.0	120.0	1.46%	2,334.7	-	-	-	17.12	830.2	14,213.0
U S Lime & Minerals	-	-	-	-	-	-	-	54.96	5.6	307.8
USG Corp.	2,188.0	160.0	3.66%	2,270.6	-	-	-	24.29	144.8	3,517.2
Vulcan Materials	1,979.6	243.0	6.14%	3,106.6	-	-	-	94.97	132.1	12,545.5
Total				**12,092.6**		**-**				**55,698.8**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Compass Minerals Int'l	13.17%	86.83%
Eagle Materials	7.36%	92.64%
Intrepid Potash Inc	40.38%	59.62%
Martin Marietta	11.05%	88.95%
Mosaic Company	19.55%	80.45%
Potash Corp.	14.11%	85.89%
U S Lime & Minerals	-	100.00%
USG Corp.	39.23%	60.77%
Vulcan Materials	19.85%	80.15%
Mean	**18.30%**	**81.70%**
Weighted Mean	**17.84%**	**82.16%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 6.96% (Corporate Ba1)

*** Fair Value of Debt overrides the Market Value of Debt in calculation of Capital Structure.

+ Market Value of Pref. Equity: N/A (Baa)

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	13.64%
CAPM: Supply Side	12.26%
CAPM: Implied ERP	12.26%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	10.74%
DGM: Earnings & Dividend	13.57%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**13.64%**

Reconciled Equity Rate	13.64%	55.00%	7.50%
Debt Rate (Corporate B2)	8.29%	45.00%	3.73%
Weighted Average Cost of Capital			**11.23%**
Reconciled Equity Rate	13.64%		
Tax-Adjusted (38.25%)	22.09%	55.00%	12.15%
Industry Debt Rate	8.29%	45.00%	3.73%
Tax-Adjusted Weighted Average Cost of Capital			**15.88%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Abraxas Petrol	NMF	1.22 (C++)	2.10
Bill Barrett Corp	39.78%	1.33 (C+)	1.65
Bonanza Creek Energy Inc.	35.63%	1.22 (C++)	2.30
Continental Resources	37.43%	1.00 (B+)	1.65
Earthstone Energy Inc	NMF	1.11 (B)	1.20
Emerald Oil Inc	NMF	1.44 (C)	2.10
Encana Corp.	NMF	1.22 (C++)	1.30
Legacy Reserves	NMF	1.22 (C++)	1.25
Linn Energy LLC	NMF	1.44 (C)	1.05
Matador Resources Company	36.76%	1.00 (B+)	1.55
Newfield Exploration	61.02%	1.00 (B+)	1.65
Pioneer Natural Res.	34.82%	0.78 (A)	1.45
QEP Resources	NMF	0.89 (B++)	1.45
Resolute Energy Corp	NMF	1.44 (C)	1.65
Royale Energy Inc	NMF	1.22 (C++)	1.40
SM Energy Co.	37.44%	1.11 (B)	1.60
Ultra Petroleum	NMF	1.22 (C++)	1.10
Warren Resources Inc	NMF	1.44 (C)	1.75
Whiting Petroleum	54.97%	0.89 (B++)	1.80
WPX Energy	36.77%	1.11 (B)	1.80
Selected	**38.25%**	**1.17**	**1.59**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	6.90%
x Industry Beta	1.59
Industry Risk Premium	10.97%
Add: Risk-Free Rate	2.67%
Indicated Rate	**13.64%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.59
Industry Risk Premium	9.59%
Add: Risk-Free Rate	2.67%
Indicated Rate	**12.26%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.59
Industry Risk Premium	9.59%
Add: Risk-Free Rate	2.67%
Indicated Rate	**12.26%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	6.90%
x Industry Financial Strength	1.17
Industry Risk Premium	8.07%
Add: Risk-Free Rate	2.67%
Indicated Rate	**10.74%**

DIVIDEND GROWTH MODEL: EARNINGS AND DIVIDEND GROWTH

Company Name	Recent Stock Price	Next Year's Dividend	Projected Earnings Growth	Projected Dividend Growth	Market Growth Rate	D.G.M. Rate
Abraxas Petrol	$1.06	-	-	-	-	-
Bill Barrett Corp	$3.93	-	15.00%	-	15.00%	-
Bonanza Creek Energy Inc.	$5.27	-	-	-	-	-
Continental Resources	$22.98	-	0.50%	-	0.50%	-
Earthstone Energy Inc	$13.31	-	-	-	-	-
Emerald Oil Inc	$1.13	-	-	-	-	-
Encana Corp.	$5.09	$0.06	-1.50%	-11.50%	-6.50%	-
Legacy Reserves	$1.75	-	-	-	-	-
Linn Energy LLC	$1.29	-	-1.50%	-	-1.50%	-
Matador Resources Company	$19.77	-	-	-	-	-
Newfield Exploration	$32.56	-	9.50%	-	9.50%	-
Pioneer Natural Res.	$125.38	$0.08	13.50%	21.00%	17.25%	17.31%
QEP Resources	$13.40	$0.11	1.50%	16.50%	9.00%	9.82%
Resolute Energy Corp	$0.87	-	15.00%	-	15.00%	-
Royale Energy Inc	$0.36	-	-	-	-	-
SM Energy Co.	$19.66	-	25.50%	-	25.50%	-
Ultra Petroleum	$2.50	-	-5.50%	-	-5.50%	-
Warren Resources Inc	$0.21	-	-	-	-	-
Whiting Petroleum	$9.44	-	5.50%	-	5.50%	-
WPX Energy	$5.74	-	-	-	-	-
Indicated Rate						**13.57%**

DIVIDEND GROWTH MODEL: PLOWBACK RATIO

Company Name	Recent Stock Price	Next Year's Dividend	Return on Equity	Retention Rate	Market Growth Rate	D.G.M. Rate
Abraxas Petrol	$1.06	-	-	-	-	-
Bill Barrett Corp	$3.93	-	-	-	-	-
Bonanza Creek Energy Inc.	$5.27	-	-	-	-	-
Continental Resources	$22.98	-	-	-	-	-
Earthstone Energy Inc	$13.31	-	-	-	-	-
Emerald Oil Inc	$1.13	-	-	-	-	-
Encana Corp.	$5.09	$0.06	-	-	-	-
Legacy Reserves	$1.75	-	-	-	-	-
Linn Energy LLC	$1.29	-	-	-	-	-
Matador Resources Company	$19.77	-	-	-	-	-
Newfield Exploration	$32.56	-	-	-	-	-
Pioneer Natural Res.	$125.38	$0.08	-	-	-	-
QEP Resources	$13.40	$0.11	-	-	-	-
Resolute Energy Corp	$0.87	-	-	-	-	-
Royale Energy Inc	$0.36	-	-	-	-	-
SM Energy Co.	$19.66	-	-	-	-	-
Ultra Petroleum	$2.50	-	-	-	-	-
Warren Resources Inc	$0.21	-	-	-	-	-
Whiting Petroleum	$9.44	-	-	-	-	-
WPX Energy	$5.74	-	-	-	-	-
Indicated Rate						**N/A**

COMMENTS ABOUT THE OIL & GAS PRODUCTION/WD INDUSTRY

CALCULATION OF CAPITAL STRUCTURE

Company Name	Total Debt	Long-Term Interest	Implied Coupon Rate*	Market Value of Debt**	Fair Value of Debt***	Pref'd Divs	MV of Pref Eqty+	Recent Stock Price	Shares Outstd	Market Value of Equity
Abraxas Petrol	127.3	-	-	127.3	-	-	-	1.06	104.4	110.7
Bill Barrett Corp	803.9	-	-	803.9	-	-	-	3.93	48.1	189.0
Bonanza Creek Energy Inc.	887.7	-	-	887.7	-	-	-	5.27	41.3	217.7
Continental Resources	6,990.1	335.7	2.40%	4,628.8	-	-	-	22.98	371.9	8,546.3
Earthstone Energy Inc	11.2	-	-	11.2	-	-	-	13.31	13.8	183.7
Emerald Oil Inc	311.2	-	-	311.2	-	-	-	1.13	3.9	4.4
Encana Corp.	6,128.0	360.0	2.94%	4,694.3	-	-	-	5.09	741.2	3,772.7
Legacy Reserves	1,451.7	-	-	1,451.7	-	-	-	1.75	68.9	120.6
Linn Energy LLC	10,028.3	570.0	2.84%	7,496.8	-	-	-	1.29	332.0	428.3
Matador Resources Company	391.0	-	-	391.0	-	-	-	19.77	73.3	1,449.1
Newfield Exploration	2,450.0	125.0	2.55%	1,693.4	-	-	-	32.56	137.3	4,470.5
Pioneer Natural Res.	2,672.0	155.0	2.90%	2,027.8	-	-	-	125.38	149.0	18,681.6
QEP Resources	2,218.5	150.0	3.38%	1,890.0	-	-	-	13.40	175.4	2,350.4
Resolute Energy Corp	716.4	-	-	716.4	-	-	-	0.87	74.9	65.2
Royale Energy Inc	1.5	-	-	1.5	-	-	-	0.36	14.9	5.4
SM Energy Co.	2,534.0	-	-	2,534.0	-	-	-	19.66	67.5	1,327.1
Ultra Petroleum	3,430.0	170.0	2.48%	2,322.4	-	-	-	2.50	152.9	382.3
Warren Resources Inc	448.8	-	-	448.8	-	-	-	0.21	80.8	17.0
Whiting Petroleum	5,254.6	219.2	2.09%	3,158.4	-	-	-	9.44	122.5	1,156.4
WPX Energy	3,400.0	160.0	2.35%	2,219.6	-	-	-	5.74	203.7	1,169.2
Total				**37,816.2**			**-**			**44,647.6**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Abraxas Petrol	53.49%	46.51%
Bill Barrett Corp	80.96%	19.04%
Bonanza Creek Energy Inc.	80.31%	19.69%
Continental Resources	35.13%	64.87%
Earthstone Energy Inc	5.75%	94.25%
Emerald Oil Inc	98.61%	1.39%
Encana Corp.	55.44%	44.56%
Legacy Reserves	92.33%	7.67%
Linn Energy LLC	94.60%	5.40%
Matador Resources Company	21.25%	78.75%
Newfield Exploration	27.47%	72.53%
Pioneer Natural Res.	9.79%	90.21%
QEP Resources	44.57%	55.43%
Resolute Energy Corp	91.66%	8.34%
Royale Energy Inc	21.74%	78.26%
SM Energy Co.	65.63%	34.37%
Ultra Petroleum	85.87%	14.13%
Warren Resources Inc	96.35%	3.65%
Whiting Petroleum	73.20%	26.80%
WPX Energy	65.50%	34.50%
Mean	**59.98%**	**40.02%**
Weighted Mean	**45.86%**	**54.14%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 8.29% (Corporate B2)

*** Fair Value of Debt overrides the Market Value of Debt in calculation of Capital Structure.

+ Market Value of Pref. Equity: N/A (Baa)

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	10.95%
CAPM: Supply Side	9.91%
CAPM: Implied ERP	9.91%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	9.85%
DGM: Earnings & Dividend	21.01%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**14.97%**

Reconciled Equity Rate	14.97%	50.00%	7.49%
Debt Rate (Corporate Ba1)	6.96%	50.00%	3.48%
Weighted Average Cost of Capital			**10.97%**
Reconciled Equity Rate	14.97%		
Tax-Adjusted (38.25%)	24.24%	50.00%	12.12%
Industry Debt Rate	6.96%	50.00%	3.48%
Tax-Adjusted Weighted Average Cost of Capital			**15.60%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Azure Midstream Partners LP	NMF	1.22 (C++)	1.70
Crestwood Equity Partners LP	NMF	1.33 (C+)	1.35
Energy Transfer	NMF	0.89 (B++)	0.80
EnLink Midstream Part.	NMF	1.00 (B+)	1.15
ONEOK Inc.	32.10%	1.00 (B+)	1.15
Plains All Amer. Pipe.	NMF	1.00 (B+)	0.95
Summit Midstream Partners LP	56.29%	1.11 (B)	1.40
Tallgrass Energy Partners LP	NMF	1.00 (B+)	1.25
Western Gas Partners LP	NMF	0.89 (B++)	0.90
Williams Cos.	31.38%	1.00 (B+)	1.35
Selected	**38.25%**	**1.04**	**1.20**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	6.90%
x Industry Beta	1.20
Industry Risk Premium	8.28%
Add: Risk-Free Rate	2.67%
Indicated Rate	**10.95%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.20
Industry Risk Premium	7.24%
Add: Risk-Free Rate	2.67%
Indicated Rate	**9.91%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.20
Industry Risk Premium	7.24%
Add: Risk-Free Rate	2.67%
Indicated Rate	**9.91%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	6.90%
x Industry Financial Strength	1.04
Industry Risk Premium	7.18%
Add: Risk-Free Rate	2.67%
Indicated Rate	**9.85%**

DIVIDEND GROWTH MODEL: EARNINGS AND DIVIDEND GROWTH

Company Name	Recent Stock Price	Next Year's Dividend	Projected Earnings Growth	Projected Dividend Growth	Market Growth Rate	D.G.M. Rate
Azure Midstream Partners LP	$3.15	-	-	-	-	-
Crestwood Equity Partners LP	$20.78	-	-	-	-	-
Energy Transfer	$33.73	$4.22	13.00%	4.50%	8.75%	21.26%
EnLink Midstream Part.	$16.58	$1.56	-	6.50%	6.50%	15.91%
ONEOK Inc.	$24.66	$2.63	9.50%	12.50%	11.00%	21.67%
Plains All Amer. Pipe.	$23.10	$2.83	8.00%	8.00%	8.00%	20.25%
Summit Midstream Partners LP	$18.73	-	7.50%	-	7.50%	-
Tallgrass Energy Partners LP	$41.21	-	19.00%	-	19.00%	-
Western Gas Partners LP	$47.53	-	30.00%	-	30.00%	-
Williams Cos.	$25.70	$2.56	16.00%	16.00%	16.00%	25.96%

Indicated Rate **21.01%**

DIVIDEND GROWTH MODEL: PLOWBACK RATIO

Company Name	Recent Stock Price	Next Year's Dividend	Return on Equity	Retention Rate	Market Growth Rate	D.G.M. Rate
Azure Midstream Partners LP	$3.15	-	-	-	-	-
Crestwood Equity Partners LP	$20.78	-	-	-	-	-
Energy Transfer	$33.73	$4.22	-	-	-	-
EnLink Midstream Part.	$16.58	$1.56	-	-	-	-
ONEOK Inc.	$24.66	$2.63	-	-	-	-
Plains All Amer. Pipe.	$23.10	$2.83	-	-	-	-
Summit Midstream Partners LP	$18.73	-	-	-	-	-
Tallgrass Energy Partners LP	$41.21	-	-	-	-	-
Western Gas Partners LP	$47.53	-	-	-	-	-
Williams Cos.	$25.70	$2.56	-	-	-	-

Indicated Rate **N/A**

COMMENTS ABOUT THE OIL & GAS GATHERING INDUSTRY

CALCULATION OF CAPITAL STRUCTURE

Company Name	Total Debt	Long-Term Interest	Implied Coupon Rate*	Market Value of Debt**	Fair Value of Debt***	Pref'd Divs	MV of Pref Eqty+	Recent Stock Price	Shares Outstd	Market Value of Equity
Azure Midstream Partners LP	225.7	-	-	225.7	-	-	-	3.15	18.1	57.0
Crestwood Equity Partners LP	2,537.4	-	-	2,537.4	-	-	-	20.78	18.6	386.5
Energy Transfer	27,450.0	860.0	1.57%	16,198.2	-	-	-	33.73	331.5	11,181.5
EnLink Midstream Part.	2,852.0	100.0	1.75%	1,797.0	-	-	-	16.58	245.4	4,068.7
ONEOK Inc.	8,721.7	380.0	2.18%	6,290.0	-	-	-	24.66	208.3	5,136.7
Plains All Amer. Pipe.	10,651.0	475.0	2.23%	7,798.6	-	-	-	23.10	375.1	8,664.8
Summit Midstream Partners LP	904.6	-	-	904.6	-	-	-	18.73	58.8	1,101.3
Tallgrass Energy Partners LP	696.0	-	-	696.0	-	-	-	41.21	49.0	2,019.3
Western Gas Partners LP	2,587.2	-	-	2,587.2	-	-	-	47.53	138.6	6,587.7
Williams Cos.	23,712.0	1,000.0	2.11%	16,746.2	-	-	-	25.70	747.0	19,197.9
Total				**55,780.9**		-				**58,401.4**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Azure Midstream Partners LP	79.84%	20.16%
Crestwood Equity Partners LP	86.78%	13.22%
Energy Transfer	59.16%	40.84%
EnLink Midstream Part.	30.64%	69.36%
ONEOK Inc.	55.05%	44.95%
Plains All Amer. Pipe.	47.37%	52.63%
Summit Midstream Partners LP	45.10%	54.90%
Tallgrass Energy Partners LP	25.63%	74.37%
Western Gas Partners LP	28.20%	71.80%
Williams Cos.	46.59%	53.41%
Mean	**50.43%**	**49.57%**
Weighted Mean	**48.85%**	**51.15%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 6.96% (Corporate Ba1)

*** Fair Value of Debt overrides the Market Value of Debt in calculation of Capital Structure.

+ Market Value of Pref. Equity: N/A (Baa)

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	11.30%
CAPM: Supply Side	10.21%
CAPM: Implied ERP	0.00%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	9.36%
DGM: Earnings & Dividend	22.37%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**11.30%**

Reconciled Equity Rate	11.30%	85.00%	9.61%
Debt Rate (Corporate Ba3)	7.15%	15.00%	1.07%
Weighted Average Cost of Capital			**10.68%**
Reconciled Equity Rate	11.30%		
Tax-Adjusted (38.25%)	18.30%	85.00%	15.55%
Industry Debt Rate	7.15%	15.00%	1.07%
Tax-Adjusted Weighted Average Cost of Capital			**16.63%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Eagle Materials	26.27%	1.00 (B+)	1.40
Granite Construction	35.31%	1.00 (B+)	1.25
Martin Marietta	38.06%	0.89 (B++)	1.15
Summit Materials Inc	NMF		
Vulcan Materials	30.68%	1.00 (B+)	1.20
Selected	**38.25%**	**0.97**	**1.25**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	6.90%
x Industry Beta	1.25
Industry Risk Premium	8.63%
Add: Risk-Free Rate	2.67%
Indicated Rate	**11.30%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.25
Industry Risk Premium	7.54%
Add: Risk-Free Rate	2.67%
Indicated Rate	**10.21%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.25
Industry Risk Premium	7.54%
Add: Risk-Free Rate	2.67%
Indicated Rate	**10.21%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	6.90%
x Industry Financial Strength	0.97
Industry Risk Premium	6.69%
Add: Risk-Free Rate	2.67%
Indicated Rate	**9.36%**

DIVIDEND GROWTH MODEL: EARNINGS AND DIVIDEND GROWTH

Company Name	Recent Stock Price	Next Year's Dividend	Projected Earnings Growth	Projected Dividend Growth	Market Growth Rate	D.G.M. Rate
Eagle Materials	$60.43	$0.40	16.00%	6.00%	11.00%	11.66%
Granite Construction	$42.91	$0.52	40.50%	3.50%	22.00%	23.21%
Martin Marietta	$136.58	$1.60	26.50%	2.00%	14.25%	15.42%
Summit Materials Inc	$20.04	-	10.50%	-	10.50%	-
Vulcan Materials	$94.97	$0.40	47.50%	30.00%	38.75%	39.17%

Indicated Rate **22.37%**

DIVIDEND GROWTH MODEL: PLOWBACK RATIO

Company Name	Recent Stock Price	Next Year's Dividend	Return on Equity	Retention Rate	Market Growth Rate	D.G.M. Rate
Eagle Materials	$60.43	$0.40	-	-	-	-
Granite Construction	$42.91	$0.52	-	-	-	-
Martin Marietta	$136.58	$1.60	-	-	-	-
Summit Materials Inc	$20.04	-	-	-	-	-
Vulcan Materials	$94.97	$0.40	-	-	-	-

Indicated Rate **N/A**

COMMENTS ABOUT THE SAND AND GRAVEL INDUSTRY

CALCULATION OF CAPITAL STRUCTURE

Company Name	Total Debt	Long-Term Interest	Implied Coupon Rate*	Market Value of Debt**	Fair Value of Debt***	Pref'd Divs	MV of Pref Eqty+	Recent Stock Price	Shares Outstd	Market Value of Equity
Eagle Materials	509.7	10.4	1.02%	234.8	-	-	-	60.43	50.2	3,033.6
Granite Construction	275.9	20.0	3.62%	278.8	-	-	-	42.91	39.2	1,682.1
Martin Marietta	1,705.1	66.1	1.94%	1,116.0	-	-	-	136.58	67.3	9,191.8
Summit Materials Inc	1,216.2	-	-	1,216.2	-	-	-	20.04	118.0	2,365.1
Vulcan Materials	1,979.6	243.0	6.14%	3,050.4	-	-	-	94.97	132.1	12,545.5
Total				**5,896.2**		**-**				**28,818.1**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Eagle Materials	7.18%	92.82%
Granite Construction	14.22%	85.78%
Martin Marietta	10.83%	89.17%
Summit Materials Inc	33.96%	66.04%
Vulcan Materials	19.56%	80.44%
Mean	**17.15%**	**82.85%**
Weighted Mean	**16.98%**	**83.02%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 7.15% (Corporate Ba3)

*** Fair Value of Debt overrides the Market Value of Debt in calculation of Capital Structure.

+ Market Value of Pref. Equity: N/A (Baa)

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	13.57%
CAPM: Supply Side	12.20%
CAPM: Implied ERP	12.20%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	10.33%
DGM: Earnings & Dividend	8.84%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**13.34%**

Reconciled Equity Rate	13.34%	90.00%	12.01%
Debt Rate (Corporate Caa1)	9.40%	10.00%	0.94%
Weighted Average Cost of Capital			**12.95%**
Reconciled Equity Rate	13.34%		
Tax-Adjusted (38.25%)	21.60%	90.00%	19.44%
Industry Debt Rate	9.40%	10.00%	0.94%
Tax-Adjusted Weighted Average Cost of Capital			**20.38%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Cameco Corp.	NMF	1.00 (B+)	1.25
Denison Mines Corp	NMF		1.75
Quaterra Resources Inc	NMF		1.40
Uranium Energy Corp	NMF		1.60
Uranium Resources Inc	NMF	1.22 (C++)	1.95
Ur-Energy Inc	NMF		1.55
Selected	**38.25%**	**1.11**	**1.58**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	6.90%
x Industry Beta	1.58
Industry Risk Premium	10.90%
Add: Risk-Free Rate	2.67%
Indicated Rate	**13.57%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.58
Industry Risk Premium	9.53%
Add: Risk-Free Rate	2.67%
Indicated Rate	**12.20%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	6.03%
x Industry Beta	1.58
Industry Risk Premium	9.53%
Add: Risk-Free Rate	2.67%
Indicated Rate	**12.20%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	6.90%
x Industry Financial Strength	1.11
Industry Risk Premium	7.66%
Add: Risk-Free Rate	2.67%
Indicated Rate	**10.33%**

DIVIDEND GROWTH MODEL: EARNINGS AND DIVIDEND GROWTH

Company Name	Recent Stock Price	Next Year's Dividend	Projected Earnings Growth	Projected Dividend Growth	Market Growth Rate	D.G.M. Rate
Cameco Corp.	$17.07	$0.40	6.50%	-	6.50%	8.84%
Denison Mines Corp	$0.70	-	-	-	-	-
Quaterra Resources Inc	$0.06	-	-	-	-	-
Uranium Energy Corp	$1.06	-	-	-	-	-
Uranium Resources Inc	$0.52	-	-	-	-	-
Ur-Energy Inc	$0.65	-	-	-	-	-

Indicated Rate **8.84%**

DIVIDEND GROWTH MODEL: PLOWBACK RATIO

Company Name	Recent Stock Price	Next Year's Dividend	Return on Equity	Retention Rate	Market Growth Rate	D.G.M. Rate
Cameco Corp.	$17.07	$0.40	-	-	-	-
Denison Mines Corp	$0.70	-	-	-	-	-
Quaterra Resources Inc	$0.06	-	-	-	-	-
Uranium Energy Corp	$1.06	-	-	-	-	-
Uranium Resources Inc	$0.52	-	-	-	-	-
Ur-Energy Inc	$0.65	-	-	-	-	-

Indicated Rate **N/A**

COMMENTS ABOUT THE URANIUM MINING INDUSTRY

CALCULATION OF CAPITAL STRUCTURE

Company Name	Total Debt	Long-Term Interest	Implied Coupon Rate*	Market Value of Debt**	Fair Value of Debt***	Pref'd Divs	MV of Pref Eqty+	Recent Stock Price	Shares Outstd	Market Value of Equity
Cameco Corp.	1,517.8	65.0	2.14%	823.1	-	-	-	17.07	395.8	6,756.3
Denison Mines Corp	-	-	-	-	-	-	-	0.70	505.9	354.1
Quaterra Resources Inc	-	-	-	-	-	-	-	0.06	193.5	11.6
Uranium Energy Corp	-	-	-	-	-	-	-	1.06	97.8	103.7
Uranium Resources Inc	-	-	-	-	-	-	-	0.52	25.2	13.1
Ur-Energy Inc	-	-	-	-	-	-	-	0.65	129.4	84.1
Total				**823.1**		**-**				**7,322.9**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Cameco Corp.	10.86%	89.14%
Denison Mines Corp	-	100.00%
Quaterra Resources Inc	-	100.00%
Uranium Energy Corp	-	100.00%
Uranium Resources Inc	-	100.00%
Ur-Energy Inc	-	100.00%
Mean	**1.81%**	**98.19%**
Weighted Mean	**10.10%**	**89.90%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 9.40% (Corporate Caa1)

*** Fair Value of Debt overrides the Market Value of Debt in calculation of Capital Structure.

+ Market Value of Pref. Equity: N/A (Baa)