2020

CAPITALIZATION RATE STUDY FOR CENTRALLY ASSESSED PROPERTIES

FOR: JANUARY 1, 2020

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. 4/3/2020

Industry	Page	Debt Rate	Debt/Equity	Equity Yield Rate	WACC
COAL MINING	3	7.01%	50% / 50%	11.62%	9.32%
PRECIOUS METALS	6	6.13%	20% / 80%	7.33%	7.09%
NON-PRECIOUS METALS	9	3.88%	20% / 80%	13.05%	11.22%
NON-METALS	12	5.69%	20% / 80%	11.55%	10.38%
OIL & GAS PRODUCTION/WD	15	6.57%	45% / 55%	16.34%	11.95%
OIL & GAS GATHERING	18	6.13%	50% / 50%	13.19%	9.67%
SAND AND GRAVEL	21	5.69%	15% / 85%	11.47%	10.60%
URANIUM MINING	24	10.09%	15% / 85%	10.47%	10.41%

CORPORATE BONDS

Aaa	3.01%
Aa	3.11%
A	3.36%
Baa	3.88%
Ba1	5.69%
Ba2	6.13%
Ba3	6.57%
B1	7.01%
B2	7.45%
B3	7.89%
Caa1	8.33%
Caa2	8.77%
Caa3	9.21%
Ca	9.65%
C	10.09%

PUBLIC UTILITY BONDS

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

PREFERRED STOCKS

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

MISCELLANEOUS RATES

Risk-Free Rate	2.25%
Market Risk Premium	7.15%
Default Income Tax Rate	25.00%
ValueLine GDP Price Deflator Forecast	0.00%

INFLATION FACTORS

Year	4th Quarter GDP Implicit Price Deflator	Annual Percent Change	Conversion Factor
2009	95.269	N/A	**1.187**
2010	96.781	1.59%	**1.168**
2011	98.676	1.96%	**1.146**
2012	100.728	2.08%	**1.123**
2013	102.551	1.81%	**1.103**
2014	104.078	1.49%	**1.086**
2015	104.997	0.88%	**1.077**
2016	106.543	1.47%	**1.061**
2017	108.715	2.04%	**1.040**
2018	111.212	2.30%	**1.017**
2019	113.076	1.68%	**1.000**

2020 - 2010 Average Change: 1.73%

Source:

U.S. Department of Commerce: Bureau of Economic Analysis
Gross Domestic Product: Implicit Price Deflator

Website:

http://alfred.stlouisfed.org/series?seid=GDPDEF

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+0.0932)/(1+0.0168)]-1 = 0.0751

INDUSTRY	NOMINAL	REAL
Coal	9.32%	7.51%
Precious Metals	7.09%	5.32%
Non-Precious Metals	11.22%	9.38%
Non-Metals	10.38%	8.56%
Oil & Gas Production/WD	11.95%	10.10%
Oil & Gas Gathering	9.67%	7.86%
Sand & Gravel	10.60%	8.77%
Uranium	10.41%	8.59%
(Tax-Adjusted)		
Coal	11.26%	9.42%
Precious Metals	9.05%	7.25%
Non-Precious Metals	14.70%	12.80%
Non-Metals	13.46%	11.59%
Oil & Gas Production/WD	14.94%	13.04%
Oil & Gas Gathering	11.87%	10.02%
Sand & Gravel	13.85%	11.97%
Uranium	13.38%	11.51%

RECONCILIATION

Equity Models	Equity Rate
CAPM: Rule 62 Compliant	11.62%
CAPM: Supply Side	10.33%
CAPM: Implied ERP	2.25%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	10.47%
DGM: Earnings & Dividend	22.54%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**11.62%**

Reconciled Equity Rate	11.62%	50.00%	5.81%
Debt Rate (Corporate B1)	7.01%	50.00%	3.51%
Weighted Average Cost of Capital			**9.32%**
Reconciled Equity Rate	11.62%		
Tax-Adjusted (25.00%)	15.49%	50.00%	7.75%
Industry Debt Rate	7.01%	50.00%	3.51%
Tax-Adjusted Weighted Average Cost of Capital			**11.26%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Alliance Resource	NMF	1.00 (B+)	1.15
CONSOL Coal Resources LP	NMF	1.11 (B)	1.20
Hallador Energy Co	NMF	1.33 (C+)	1.05
Peabody Energy	NMF	1.11 (B)	1.25
SunCoke Energy Inc	NMF	1.22 (C++)	1.90
Selected	**25.00%**	**1.15**	**1.31**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	7.15%
x Industry Beta	1.31
Industry Risk Premium	9.37%
Add: Risk-Free Rate	2.25%
Indicated Rate	**11.62%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.17%
x Industry Beta	1.31
Industry Risk Premium	8.08%
Add: Risk-Free Rate	2.25%
Indicated Rate	**10.33%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	0.00%
x Industry Beta	1.31
Industry Risk Premium	0.00%
Add: Risk-Free Rate	2.25%
Indicated Rate	**2.25%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	7.15%
x Industry Financial Strength	1.15
Industry Risk Premium	8.22%
Add: Risk-Free Rate	2.25%
Indicated Rate	**10.47%**

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	$11.65	$2.16	4.50%	3.50%	4.00%	22.54%
CONSOL Coal Resources LP	$10.05	-	-	-	-	-
Hallador Energy Co	$2.91	-	-	-	-	-
Peabody Energy	$10.04	$0.58	-	-	-	-
SunCoke Energy Inc	$5.97	-	-	-	-	-
Indicated Rate						**22.54%**

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	$11.65	$2.16	-	-	-	-
CONSOL Coal Resources LP	$10.05	-	-	-	-	-
Hallador Energy Co	$2.91	-	-	-	-	-
Peabody Energy	$10.04	$0.58	-	-	-	-
SunCoke Energy Inc	$5.97	-	-	-	-	-
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	783.3	40.0	2.55%	624.2	-	-	-	11.65	128.1	1,492.4
CONSOL Coal Resources LP	188.1	-	-	188.1	-	-	-	10.05	27.5	276.4
Hallador Energy Co	165.0	-	-	165.0	-	-	-	2.91	30.2	87.9
Peabody Energy	1,352.8	110.0	4.07%	1,514.6	-	-	-	10.04	110.4	1,108.4
SunCoke Energy Inc	782.9	-	-	782.9	-	-	-	5.97	64.8	386.9
Total				**3,274.8**		**-**				**3,352.0**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Alliance Resource	29.49%	70.51%
CONSOL Coal Resources LP	40.50%	59.50%
Hallador Energy Co	65.24%	34.76%
Peabody Energy	57.74%	42.26%
SunCoke Energy Inc	66.93%	33.07%
Mean	**51.98%**	**48.02%**
Weighted Mean	**49.42%**	**50.58%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 7.01% (Corporate B1)

*** 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	7.33%
CAPM: Supply Side	6.63%
CAPM: Implied ERP	2.25%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	10.40%
DGM: Earnings & Dividend	14.51%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**7.33%**

Reconciled Equity Rate	7.33%	80.00%	5.86%
Debt Rate (Corporate Ba2)	6.13%	20.00%	1.23%
Weighted Average Cost of Capital			**7.09%**
Reconciled Equity Rate	7.33%		
Tax-Adjusted (25.00%)	9.77%	80.00%	7.82%
Industry Debt Rate	6.13%	20.00%	1.23%
Tax-Adjusted Weighted Average Cost of Capital			**9.05%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Agnico Eagle Mines	48.11%	1.00 (B+)	0.45
Barrick Gold	48.00%	1.11 (B)	0.55
Coeur Mining Inc.	NMF	1.22 (C++)	1.00
Hecla Mining	NMF	1.22 (C++)	1.15
Kinross Gold	52.40%	1.22 (C++)	0.60
Newmont Goldcorp	32.13%	1.00 (B+)	0.70
Pretium Resources	NMF	1.22 (C++)	0.50
Selected	**25.00%**	**1.14**	**0.71**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	7.15%
x Industry Beta	0.71
Industry Risk Premium	5.08%
Add: Risk-Free Rate	2.25%
Indicated Rate	**7.33%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.17%
x Industry Beta	0.71
Industry Risk Premium	4.38%
Add: Risk-Free Rate	2.25%
Indicated Rate	**6.63%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	0.00%
x Industry Beta	0.71
Industry Risk Premium	0.00%
Add: Risk-Free Rate	2.25%
Indicated Rate	**2.25%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	7.15%
x Industry Financial Strength	1.14
Industry Risk Premium	8.15%
Add: Risk-Free Rate	2.25%
Indicated Rate	**10.40%**

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	$60.92	$0.70	26.00%	13.00%	19.50%	20.65%
Barrick Gold	$18.57	$0.20	4.00%	11.00%	7.50%	8.58%
Coeur Mining Inc.	$7.70	-	-	-	-	-
Hecla Mining	$3.35	-	1.00%	-	1.00%	-
Kinross Gold	$4.71	-	29.00%	-	29.00%	-
Newmont Goldcorp	$42.83	$0.56	11.50%	14.50%	13.00%	14.31%
Pretium Resources	$10.96	-	76.50%	-	76.50%	-
Indicated Rate						**14.51%**

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	$60.92	$0.70	-	-	-	-
Barrick Gold	$18.57	$0.20	-	-	-	-
Coeur Mining Inc.	$7.70	-	-	-	-	-
Hecla Mining	$3.35	-	-	-	-	-
Kinross Gold	$4.71	-	-	-	-	-
Newmont Goldcorp	$42.83	$0.56	-	-	-	-
Pretium Resources	$10.96	-	-	-	-	-
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	1,723.4	78.9	2.29%	1,417.5	-	-	-	60.92	234.5	14,285.7
Barrick Gold	5,560.0	525.0	4.72%	7,666.4	-	-	-	18.57	1,167.8	21,686.0
Coeur Mining Inc.	298.7	-	-	298.7	-	-	-	7.70	203.3	1,565.4
Hecla Mining	598.9	-	-	598.9	-	0.6	-	3.35	482.6	1,616.7
Kinross Gold	1,836.8	86.0	2.34%	1,532.6	-	-	-	4.71	1,250.2	5,888.4
Newmont Goldcorp	6,765.0	275.0	2.03%	5,167.3	-	-	-	42.83	533.0	22,828.4
Pretium Resources	497.6	34.0	3.42%	537.6	-	-	-	10.96	184.2	2,018.8
Total				**17,219.0**		**-**				**69,889.4**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Agnico Eagle Mines	9.03%	90.97%
Barrick Gold	26.12%	73.88%
Coeur Mining Inc.	16.02%	83.98%
Hecla Mining	27.03%	72.97%
Kinross Gold	20.65%	79.35%
Newmont Goldcorp	18.46%	81.54%
Pretium Resources	21.03%	78.97%
Mean	**19.76%**	**80.24%**
Weighted Mean	**19.77%**	**80.23%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 6.13% (Corporate Ba2)

*** 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	13.05%
CAPM: Supply Side	11.57%
CAPM: Implied ERP	2.25%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	9.54%
DGM: Earnings & Dividend	18.63%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**13.05%**

Reconciled Equity Rate	13.05%	80.00%	10.44%
Debt Rate (Corporate Baa)	3.88%	20.00%	0.78%
Weighted Average Cost of Capital			**11.22%**
Reconciled Equity Rate	13.05%		
Tax-Adjusted (25.00%)	17.40%	80.00%	13.92%
Industry Debt Rate	3.88%	20.00%	0.78%
Tax-Adjusted Weighted Average Cost of Capital			**14.70%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
BHP Group Ltd. ADR	36.74%	1.00 (B+)	1.35
Freep't-McMoRan Inc.	39.68%	1.22 (C++)	2.15
Materion Corp.	NMF	1.00 (B+)	1.20
Rio Tinto plc	27.47%	0.78 (A)	1.25
Southern Copper	40.69%	0.89 (B++)	1.30
Teck Resources 'B'	30.30%	0.89 (B++)	1.65
Vale S.A. ADR	NMF	1.33 (C+)	1.65
Selected	**25.00%**	**1.02**	**1.51**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	7.15%
x Industry Beta	1.51
Industry Risk Premium	10.80%
Add: Risk-Free Rate	2.25%
Indicated Rate	**13.05%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.17%
x Industry Beta	1.51
Industry Risk Premium	9.32%
Add: Risk-Free Rate	2.25%
Indicated Rate	**11.57%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	0.00%
x Industry Beta	1.51
Industry Risk Premium	0.00%
Add: Risk-Free Rate	2.25%
Indicated Rate	**2.25%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	7.15%
x Industry Financial Strength	1.02
Industry Risk Premium	7.29%
Add: Risk-Free Rate	2.25%
Indicated Rate	**9.54%**

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 Group Ltd. ADR	$54.55	$2.70	14.50%	12.00%	13.25%	18.20%
Freep't-McMoRan Inc.	$12.80	$0.20	22.50%	39.00%	30.75%	32.31%
Materion Corp.	$59.79	$0.44	14.50%	5.50%	10.00%	10.74%
Rio Tinto plc	$58.84	$3.40	11.00%	13.00%	12.00%	17.78%
Southern Copper	$41.55	$1.60	15.00%	17.00%	16.00%	19.85%
Teck Resources 'B'	$21.97	$0.20	12.00%	12.00%	12.00%	12.91%
Vale S.A. ADR	$13.29	-	11.00%	9.00%	10.00%	-

Indicated Rate **18.63%**

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 Group Ltd. ADR	$54.55	$2.70	-	-	-	-
Freep't-McMoRan Inc.	$12.80	$0.20	-	-	-	-
Materion Corp.	$59.79	$0.44	-	-	-	-
Rio Tinto plc	$58.84	$3.40	-	-	-	-
Southern Copper	$41.55	$1.60	-	-	-	-
Teck Resources 'B'	$21.97	$0.20	-	-	-	-
Vale S.A. ADR	$13.29	-	-	-	-	-

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 Group Ltd. ADR	24,828.0	1,200.0	2.42%	28,099.5	-	-	-	54.55	2,528.4	137,924.2
Freep't-McMoRan Inc.	9,919.0	800.0	4.03%	15,657.4	-	-	-	12.80	1,449.0	18,547.2
Materion Corp.	2.4	0.2	4.17%	3.9	-	-	-	59.79	20.2	1,207.8
Rio Tinto plc	15,324.0	650.0	2.12%	16,090.2	-	-	-	58.84	1,649.4	97,050.7
Southern Copper	6,940.1	295.0	2.13%	7,295.7	-	-	-	41.55	773.0	32,118.1
Teck Resources 'B'	4,929.0	300.0	3.04%	6,432.3	-	-	-	21.97	570.7	12,538.3
Vale S.A. ADR	16,597.0	870.0	2.62%	19,721.5	-	-	-	13.29	5,126.3	68,128.5
Total				**93,300.5**		**-**				**367,514.8**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
BHP Group Ltd. ADR	16.92%	83.08%
Freep't-McMoRan Inc.	45.78%	54.22%
Materion Corp.	0.32%	99.68%
Rio Tinto plc	14.22%	85.78%
Southern Copper	18.51%	81.49%
Teck Resources 'B'	33.91%	66.09%
Vale S.A. ADR	22.45%	77.55%
Mean	**21.73%**	**78.27%**
Weighted Mean	**20.25%**	**79.75%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 3.88% (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	11.55%
CAPM: Supply Side	10.27%
CAPM: Implied ERP	2.25%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	9.19%
DGM: Earnings & Dividend	10.62%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**11.55%**

Reconciled Equity Rate	11.55%	80.00%	9.24%
Debt Rate (Corporate Ba1)	5.69%	20.00%	1.14%
Weighted Average Cost of Capital			**10.38%**
Reconciled Equity Rate	11.55%		
Tax-Adjusted (25.00%)	15.40%	80.00%	12.32%
Industry Debt Rate	5.69%	20.00%	1.14%
Tax-Adjusted Weighted Average Cost of Capital			**13.46%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Cenovus Energy	NMF	1.11 (B)	1.40
Compass Minerals Int'l	NMF	1.00 (B+)	1.15
Eagle Materials	21.05%	0.89 (B++)	1.35
Intrepid Potash Inc	NMF	1.11 (B)	1.45
Martin Marietta	NMF	0.78 (A)	1.10
Mosaic Company	NMF	1.00 (B+)	1.50
Vulcan Materials	NMF	0.89 (B++)	1.15
Selected	**25.00%**	**0.97**	**1.30**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	7.15%
x Industry Beta	1.30
Industry Risk Premium	9.30%
Add: Risk-Free Rate	2.25%
Indicated Rate	**11.55%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.17%
x Industry Beta	1.30
Industry Risk Premium	8.02%
Add: Risk-Free Rate	2.25%
Indicated Rate	**10.27%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	0.00%
x Industry Beta	1.30
Industry Risk Premium	0.00%
Add: Risk-Free Rate	2.25%
Indicated Rate	**2.25%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	7.15%
x Industry Financial Strength	0.97
Industry Risk Premium	6.94%
Add: Risk-Free Rate	2.25%
Indicated Rate	**9.19%**

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
Cenovus Energy	$13.23	$0.25	-	8.00%	8.00%	9.89%
Compass Minerals Int'l	$60.00	$3.00	15.50%	3.50%	9.50%	14.50%
Eagle Materials	$90.94	$0.40	6.50%	7.00%	6.75%	7.19%
Intrepid Potash Inc	$2.65	-	-	-	-	-
Martin Marietta	$275.79	$2.22	9.50%	6.50%	8.00%	8.80%
Mosaic Company	$20.76	$0.25	18.00%	-0.50%	8.75%	9.95%
Vulcan Materials	$142.10	$1.24	14.50%	10.50%	12.50%	13.37%

Indicated Rate **10.62%**

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
Cenovus Energy	$13.23	$0.25	-	-	-	-
Compass Minerals Int'l	$60.00	$3.00	-	-	-	-
Eagle Materials	$90.94	$0.40	-	-	-	-
Intrepid Potash Inc	$2.65	-	-	-	-	-
Martin Marietta	$275.79	$2.22	-	-	-	-
Mosaic Company	$20.76	$0.25	-	-	-	-
Vulcan Materials	$142.10	$1.24	-	-	-	-

Indicated Rate **N/A**

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
Cenovus Energy	7,239.0	475.0	3.28%	7,986.9	-	-	-	13.23	1,228.8	16,257.0
Compass Minerals Int'l	1,409.1	60.0	2.13%	1,169.9	-	-	-	60.00	33.9	2,034.0
Eagle Materials	966.9	40.0	2.07%	788.9	-	-	-	90.94	45.1	4,101.4
Intrepid Potash Inc	49.7	-	-	49.7	-	-	-	2.65	128.7	341.1
Martin Marietta	2,922.9	123.0	2.10%	2,409.5	-	-	-	275.79	62.5	17,236.9
Mosaic Company	4,664.1	175.0	1.88%	3,592.8	-	-	-	20.76	385.5	8,003.0
Vulcan Materials	2,783.1	138.0	2.48%	2,541.8	-	-	-	142.10	131.8	18,728.8
Total				**18,539.5**		**-**				**66,702.2**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Cenovus Energy	32.94%	67.06%
Compass Minerals Int'l	36.51%	63.49%
Eagle Materials	16.13%	83.87%
Intrepid Potash Inc	12.72%	87.28%
Martin Marietta	12.26%	87.74%
Mosaic Company	30.98%	69.02%
Vulcan Materials	11.95%	88.05%
Mean	**21.93%**	**78.07%**
Weighted Mean	**21.75%**	**78.25%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 5.69% (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	16.34%
CAPM: Supply Side	14.41%
CAPM: Implied ERP	2.25%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	10.76%
DGM: Earnings & Dividend	30.97%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**16.34%**

Reconciled Equity Rate	16.34%	55.00%	8.99%
Debt Rate (Corporate Ba3)	6.57%	45.00%	2.96%
Weighted Average Cost of Capital			**11.95%**
Reconciled Equity Rate	16.34%		
Tax-Adjusted (25.00%)	21.79%	55.00%	11.98%
Industry Debt Rate	6.57%	45.00%	2.96%
Tax-Adjusted Weighted Average Cost of Capital			**14.94%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Abraxas Petrol	NMF	1.33 (C+)	2.15
Black Stone Minerals	NMF	1.11 (B)	0.90
Callon Petroleum	NMF	1.22 (C++)	2.00
Continental Resources	23.70%	1.11 (B)	1.90
Denbury Resources	24.01%	1.44 (C)	2.70
Devon Energy	NMF	0.89 (B++)	1.90
HighPoint Resources Corp.	NMF	1.33 (C+)	2.55
Pioneer Natural Res.	22.11%	0.89 (B++)	1.45
QEP Resources	NMF	1.22 (C++)	2.10
Ring Energy Inc	27.69%	1.33 (C+)	1.85
Royale Energy Inc	NMF	1.33 (C+)	1.20
SM Energy Co.	22.00%	1.22 (C++)	2.25
Southwestern Energy	NMF	1.11 (B)	1.70
Whiting Petroleum	20.87%	1.22 (C++)	2.85
WPX Energy	23.42%	1.11 (B)	2.10
Selected	**25.00%**	**1.19**	**1.97**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	7.15%
x Industry Beta	1.97
Industry Risk Premium	14.09%
Add: Risk-Free Rate	2.25%
Indicated Rate	**16.34%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.17%
x Industry Beta	1.97
Industry Risk Premium	12.16%
Add: Risk-Free Rate	2.25%
Indicated Rate	**14.41%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	0.00%
x Industry Beta	1.97
Industry Risk Premium	0.00%
Add: Risk-Free Rate	2.25%
Indicated Rate	**2.25%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	7.15%
x Industry Financial Strength	1.19
Industry Risk Premium	8.51%
Add: Risk-Free Rate	2.25%
Indicated Rate	**10.76%**

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	$0.36	-	-	-	-	-
Black Stone Minerals	$13.13	$1.48	9.00%	7.00%	8.00%	19.27%
Callon Petroleum	$4.83	-	31.00%	-	31.00%	-
Continental Resources	$35.34	$0.20	36.00%	-	36.00%	36.57%
Denbury Resources	$1.54	-	18.00%	-	18.00%	-
Devon Energy	$26.10	$0.36	18.00%	11.00%	14.50%	15.88%
HighPoint Resources Corp.	$1.73	-	-	-	-	-
Pioneer Natural Res.	$153.35	$1.76	35.00%	67.00%	51.00%	52.15%
QEP Resources	$4.72	$0.08	-	-	-	-
Ring Energy Inc	$2.74	-	-	-	-	-
Royale Energy Inc	$0.11	-	-	-	-	-
SM Energy Co.	$11.83	-	15.00%	-	15.00%	-
Southwestern Energy	$2.33	-	11.00%	-	11.00%	-
Whiting Petroleum	$7.85	-	-	-	-	-
WPX Energy	$14.06	-	-	-	-	-
Indicated Rate						**30.97%**

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	$0.36	-	-	-	-	-
Black Stone Minerals	$13.13	$1.48	-	-	-	-
Callon Petroleum	$4.83	-	-	-	-	-
Continental Resources	$35.34	$0.20	-	-	-	-
Denbury Resources	$1.54	-	-	-	-	-
Devon Energy	$26.10	$0.36	-	-	-	-
HighPoint Resources Corp.	$1.73	-	-	-	-	-
Pioneer Natural Res.	$153.35	$1.76	-	-	-	-
QEP Resources	$4.72	$0.08	-	-	-	-
Ring Energy Inc	$2.74	-	-	-	-	-
Royale Energy Inc	$0.11	-	-	-	-	-
SM Energy Co.	$11.83	-	-	-	-	-
Southwestern Energy	$2.33	-	-	-	-	-
Whiting Petroleum	$7.85	-	-	-	-	-
WPX Energy	$14.06	-	-	-	-	-
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	201.2	-	-	201.2	-	-	-	0.36	166.7	60.0
Black Stone Minerals	413.0	18.7	2.26%	319.9	-	-	-	13.13	204.7	2,687.7
Callon Petroleum	1,190.7	72.5	3.04%	1,127.4	-	-	-	4.83	227.6	1,099.3
Continental Resources	5,570.8	290.0	2.60%	4,731.5	-	-	-	35.34	376.0	13,287.8
Denbury Resources	2,510.3	80.0	1.59%	1,572.5	-	-	-	1.54	460.4	709.0
Devon Energy	4,300.0	435.0	5.06%	5,983.9	-	-	-	26.10	449.0	11,718.9
HighPoint Resources Corp.	793.5	-	-	793.5	-	-	-	1.73	212.5	367.6
Pioneer Natural Res.	2,288.0	105.0	2.29%	1,787.5	-	-	-	153.35	169.5	25,992.8
QEP Resources	208.1	140.0	33.64%	1,603.1	-	-	-	4.72	236.7	1,117.2
Ring Energy Inc	367.4	-	-	367.4	-	-	-	2.74	63.2	173.2
Royale Energy Inc	0.1	-	-	0.1	-	-	-	0.11	49.4	5.4
SM Energy Co.	2,735.8	-	-	2,735.8	-	-	-	11.83	112.2	1,327.3
Southwestern Energy	2,271.0	170.0	3.74%	2,500.6	-	-	-	2.33	546.3	1,272.9
Whiting Petroleum	2,861.0	195.0	3.41%	2,938.7	-	-	-	7.85	91.0	714.3
WPX Energy	2,201.0	131.0	2.98%	2,050.8	-	-	-	14.06	420.6	5,913.6
Total				**28,713.9**			**-**			**66,447.0**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Abraxas Petrol	77.03%	22.97%
Black Stone Minerals	10.64%	89.36%
Callon Petroleum	50.63%	49.37%
Continental Resources	26.26%	73.74%
Denbury Resources	68.92%	31.08%
Devon Energy	33.80%	66.20%
HighPoint Resources Corp.	68.34%	31.66%
Pioneer Natural Res.	6.43%	93.57%
QEP Resources	58.93%	41.07%
Ring Energy Inc	67.96%	32.04%
Royale Energy Inc	1.82%	98.18%
SM Energy Co.	67.33%	32.67%
Southwestern Energy	66.27%	33.73%
Whiting Petroleum	80.45%	19.55%
WPX Energy	25.75%	74.25%
Mean	**47.37%**	**52.63%**
Weighted Mean	**30.17%**	**69.83%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 6.57% (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	13.19%
CAPM: Supply Side	11.69%
CAPM: Implied ERP	2.25%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	9.90%
DGM: Earnings & Dividend	17.68%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**13.19%**

Reconciled Equity Rate	13.19%	50.00%	6.60%
Debt Rate (Corporate Ba2)	6.13%	50.00%	3.07%
Weighted Average Cost of Capital			**9.67%**
Reconciled Equity Rate	13.19%		
Tax-Adjusted (25.00%)	17.59%	50.00%	8.80%
Industry Debt Rate	6.13%	50.00%	3.07%
Tax-Adjusted Weighted Average Cost of Capital			**11.87%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Crestwood Equity Partners LP	NMF	1.11 (B)	1.50
Energy Transfer LP	NMF	1.00 (B+)	2.05
Holly Energy Part.	NMF	1.11 (B)	0.95
Plains All Amer. Pipe.	NMF	1.00 (B+)	1.45
Summit Midstream Partners LP	NMF	1.33 (C+)	1.50
Tallgrass Energy LP	NMF	1.00 (B+)	1.40
Western Midstream Part.	NMF	1.00 (B+)	1.45
Williams Cos.	21.18%	1.00 (B+)	1.90
Selected	**25.00%**	**1.07**	**1.53**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	7.15%
x Industry Beta	1.53
Industry Risk Premium	10.94%
Add: Risk-Free Rate	2.25%
Indicated Rate	**13.19%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.17%
x Industry Beta	1.53
Industry Risk Premium	9.44%
Add: Risk-Free Rate	2.25%
Indicated Rate	**11.69%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	0.00%
x Industry Beta	1.53
Industry Risk Premium	0.00%
Add: Risk-Free Rate	2.25%
Indicated Rate	**2.25%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	7.15%
x Industry Financial Strength	1.07
Industry Risk Premium	7.65%
Add: Risk-Free Rate	2.25%
Indicated Rate	**9.90%**

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
Crestwood Equity Partners LP	$31.44	-	5.00%	-	5.00%	-
Energy Transfer LP	$13.55	$1.22	13.00%	3.00%	8.00%	17.00%
Holly Energy Part.	$22.79	$2.69	2.00%	2.50%	2.25%	14.05%
Plains All Amer. Pipe.	$18.86	$1.55	12.00%	5.50%	8.75%	16.97%
Summit Midstream Partners LP	$3.27	-	-	-	-	-
Tallgrass Energy LP	$22.11	$2.20	-	10.50%	10.50%	20.45%
Western Midstream Part.	$20.82	$2.48	7.00%	5.50%	6.25%	18.16%
Williams Cos.	$23.59	$1.52	20.00%	6.00%	13.00%	19.44%

Indicated Rate **17.68%**

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
Crestwood Equity Partners LP	$31.44	-	-	-	-	-
Energy Transfer LP	$13.55	$1.22	-	-	-	-
Holly Energy Part.	$22.79	$2.69	-	-	-	-
Plains All Amer. Pipe.	$18.86	$1.55	-	-	-	-
Summit Midstream Partners LP	$3.27	-	-	-	-	-
Tallgrass Energy LP	$22.11	$2.20	-	-	-	-
Western Midstream Part.	$20.82	$2.48	-	-	-	-
Williams Cos.	$23.59	$1.52	-	-	-	-

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
Crestwood Equity Partners LP	2,313.0	-	-	2,313.0	-	-	-	31.44	71.7	2,254.2
Energy Transfer LP	46,854.0	2,315.0	2.47%	40,481.9	-	-	-	13.55	2,619.4	35,492.9
Holly Energy Part.	1,431.9	71.9	2.51%	1,250.3	-	-	-	22.79	105.4	2,402.1
Plains All Amer. Pipe.	10,257.0	416.0	2.03%	7,823.8	-	-	-	18.86	726.4	13,699.9
Summit Midstream Partners LP	1,393.0	-	-	1,393.0	-	-	-	3.27	74.9	244.9
Tallgrass Energy LP	3,451.3	166.5	2.41%	2,935.9	-	-	-	22.11	156.3	3,455.8
Western Midstream Part.	7,739.0	314.0	2.03%	5,904.5	-	-	-	20.82	218.9	4,557.5
Williams Cos.	22,257.0	1,300.0	2.92%	21,521.0	-	-	-	23.59	1,210.0	28,543.9
Total				**83,623.4**		**-**				**90,651.2**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Crestwood Equity Partners LP	50.64%	49.36%
Energy Transfer LP	53.28%	46.72%
Holly Energy Part.	34.23%	65.77%
Plains All Amer. Pipe.	36.35%	63.65%
Summit Midstream Partners LP	85.05%	14.95%
Tallgrass Energy LP	45.93%	54.07%
Western Midstream Part.	56.44%	43.56%
Williams Cos.	42.99%	57.01%
Mean	**50.61%**	**49.39%**
Weighted Mean	**47.98%**	**52.02%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 6.13% (Corporate Ba2)

*** 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	11.47%
CAPM: Supply Side	10.21%
CAPM: Implied ERP	2.25%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	8.76%
DGM: Earnings & Dividend	10.62%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**11.47%**

Reconciled Equity Rate	11.47%	85.00%	9.75%
Debt Rate (Corporate Ba1)	5.69%	15.00%	0.85%
Weighted Average Cost of Capital			**10.60%**
Reconciled Equity Rate	11.47%		
Tax-Adjusted (25.00%)	15.29%	85.00%	13.00%
Industry Debt Rate	5.69%	15.00%	0.85%
Tax-Adjusted Weighted Average Cost of Capital			**13.85%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Eagle Materials	21.05%	0.89 (B++)	1.35
Granite Construction	NMF	1.00 (B+)	1.25
Martin Marietta	NMF	0.78 (A)	1.10
Summit Materials	62.19%	1.00 (B+)	1.60
Vulcan Materials	NMF	0.89 (B++)	1.15
Selected	**25.00%**	**0.91**	**1.29**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	7.15%
x Industry Beta	1.29
Industry Risk Premium	9.22%
Add: Risk-Free Rate	2.25%
Indicated Rate	**11.47%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.17%
x Industry Beta	1.29
Industry Risk Premium	7.96%
Add: Risk-Free Rate	2.25%
Indicated Rate	**10.21%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	0.00%
x Industry Beta	1.29
Industry Risk Premium	0.00%
Add: Risk-Free Rate	2.25%
Indicated Rate	**2.25%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	7.15%
x Industry Financial Strength	0.91
Industry Risk Premium	6.51%
Add: Risk-Free Rate	2.25%
Indicated Rate	**8.76%**

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	$90.94	$0.40	6.50%	7.00%	6.75%	7.19%
Granite Construction	$27.94	$0.52	19.00%	3.50%	11.25%	13.11%
Martin Marietta	$275.79	$2.22	9.50%	6.50%	8.00%	8.80%
Summit Materials	$23.33	-	23.00%	-	23.00%	-
Vulcan Materials	$142.10	$1.24	14.50%	10.50%	12.50%	13.37%

Indicated Rate **10.62%**

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	$90.94	$0.40	-	-	-	-
Granite Construction	$27.94	$0.52	-	-	-	-
Martin Marietta	$275.79	$2.22	-	-	-	-
Summit Materials	$23.33	-	-	-	-	-
Vulcan Materials	$142.10	$1.24	-	-	-	-

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	966.9	40.0	2.07%	788.9	-	-	-	90.94	45.1	4,101.4
Granite Construction	403.1	20.0	2.48%	368.3	-	-	-	27.94	46.7	1,304.8
Martin Marietta	2,922.9	123.0	2.10%	2,409.5	-	-	-	275.79	62.5	17,236.9
Summit Materials	1,859.8	116.0	3.12%	1,980.4	-	-	-	23.33	111.7	2,606.0
Vulcan Materials	2,783.1	138.0	2.48%	2,541.8	-	-	-	142.10	131.8	18,728.8
Total				**8,088.9**		**-**				**43,977.9**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Eagle Materials	16.13%	83.87%
Granite Construction	22.01%	77.99%
Martin Marietta	12.26%	87.74%
Summit Materials	43.18%	56.82%
Vulcan Materials	11.95%	88.05%
Mean	**21.11%**	**78.89%**
Weighted Mean	**15.54%**	**84.46%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 5.69% (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	10.47%
CAPM: Supply Side	9.35%
CAPM: Implied ERP	2.25%
CAPM: Total NYSE	N/A
CAPM: Deciles 1 & 2	N/A
Division's Risk Premium	9.40%
DGM: Earnings & Dividend	0.93%
DGM: Plowback Ratio	N/A
Reconciled Equity Rate	**10.47%**

Reconciled Equity Rate	10.47%	85.00%	8.90%
Debt Rate (Corporate C)	10.09%	15.00%	1.51%
Weighted Average Cost of Capital			**10.41%**
Reconciled Equity Rate	10.47%		
Tax-Adjusted (25.00%)	13.96%	85.00%	11.87%
Industry Debt Rate	10.09%	15.00%	1.51%
Tax-Adjusted Weighted Average Cost of Capital			**13.38%**

GUIDELINE COMPANY INFORMATION SUMMARY

Company Name	Tax Rate	Relative Financial Strength	Beta
Cameco Corp.	NMF	1.00 (B+)	1.15
Selected	**25.00%**	**1.00**	**1.15**

CAPM: RULE 62 COMPLIANT

Item	Rate
Market Risk Premium	7.15%
x Industry Beta	1.15
Industry Risk Premium	8.22%
Add: Risk-Free Rate	2.25%
Indicated Rate	**10.47%**

CAPM: SUPPLY SIDE

Item	Rate
Market Risk Premium	6.17%
x Industry Beta	1.15
Industry Risk Premium	7.10%
Add: Risk-Free Rate	2.25%
Indicated Rate	**9.35%**

CAPM: IMPLIED ERP

Item	Rate
Market Risk Premium	0.00%
x Industry Beta	1.15
Industry Risk Premium	0.00%
Add: Risk-Free Rate	2.25%
Indicated Rate	**2.25%**

DIVISION'S RISK PREMIUM

Item	Rate
Market Risk Premium	7.15%
x Industry Financial Strength	1.00
Industry Risk Premium	7.15%
Add: Risk-Free Rate	2.25%
Indicated Rate	**9.40%**

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.	$11.73	$0.08	20.00%	-19.50%	0.25%	0.93%

Indicated Rate **0.93%**

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.	$11.73	$0.08	-	-	-	-

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.	996.6	75.0	3.76%	778.7	-	-	-	11.73	395.8	4,642.7
Total				**778.7**		**-**				**4,642.7**

CAPITAL STRUCTURE

Company Name	Percent Debt & Preferred Equity	Percent Common Equity
Cameco Corp.	14.36%	85.64%
Mean	**14.36%**	**85.64%**
Weighted Mean	**14.36%**	**85.64%**

REMARKS

* Implied Coupon Rate is a semi-annual rate.

** Market Value of Debt: 10.09% (Corporate C)

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

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