RA ATTACHMENT 5-4
WASTE ROCK ANALYSIS

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RA ATTACHMENT 5-4
WASTE ROCK ANALYSIS

Inter-Mountain Laboratories, Inc.
1673 Terra Avenue, Sheridan, Wyoming 82801
(307) 672-8945

Soil Analysis Report

Canyon Fuel Company
Dugout Canyon Mine
P.O. Box 1029
Wellington, UT 84542

Report ID: S0707474001

Project: Dugout Canyon Mine
Date Received: 7/26/2007

Date: 8/24/2007
Work Order: S0707474

Lab ID	Sample ID	Depths cm	pH s.u.	Saturation %	Electrical Conductivity dS/m	Field Capacity %	Wilt Point %
S0707474-001	Staging Area SP-1	0-18	6.4	48.4	0.54	17	14
S0707474-002	Staging Area SP-1	18-61	6.5	35.4	0.31	15	11
S0707474-003	Staging Area SP-1	61-162	6.8	37.1	0.28	15	12
S0707474-004	WR-July	-	7.4	25.4	2.12	9.4	5.5
S0707474-005	G-15 Topsoil	-	7.7	32.0	0.42	15	10

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A Secor
Karen Secor, Soil Lab Supervisor

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Lab ID	Sample ID	Depths cm	Calcium meq/L	Magnesium meq/L	Sodium meq/L	Potassium meq/L	SAR	Available Sodium meq/100g	Exchangeable Sodium meq/100g
S0707474-001	Staging Area SP-1	0-18	4.03	1.40	0.27	0.75	0.17	0.02	<0.01
S0707474-002	Staging Area SP-1	18-61	2.14	0.74	0.29	0.42	0.25	0.02	0.01
S0707474-003	Staging Area SP-1	61-162	1.72	0.67	0.19	0.37	0.17	0.02	0.01
S0707474-004	WR-July	-	10.4	12.1	4.28	0.99	1.28	0.24	0.13
S0707474-005	G-15 Topsoil	-	2.73	0.98	0.86	0.25	0.63	0.03	<0.01

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Lab ID	Sample ID	Depths cm	Sand %	Silt %	Clay %	Texture	Coarse Fragment %
S0707474-001	Staging Area SP-1	0-18	40.0	35.0	25.0	Loam	32.1
S0707474-002	Staging Area SP-1	18-61	45.0	29.0	26.0	Loam	40.5
S0707474-003	Staging Area SP-1	61-162	47.0	25.0	28.0	Sandy Clay Loam	30.4
S0707474-004	WR-July	-	76.0	15.0	9.0	Sandy Loam	76.8
S0707474-005	G-15 Topsoil	-	40.0	36.0	24.0	Loam	25.7

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Lab ID	Sample ID	Depths cm	Boron ppm	TKN %	Nitrogen Nitrate ppm	Phosphorus ppm	Selenium ppm
S0707474-001	Staging Area SP-1	0-18	0.43	0.23	9.11	28.8	<0.02
S0707474-002	Staging Area SP-1	18-61	0.24	0.07	3.29	2.92	<0.02
S0707474-003	Staging Area SP-1	61-162	0.24	0.06	1.66	2.12	<0.02
S0707474-004	WR-July	-	0.94	0.19	0.24	0.51	0.03
S0707474-005	G-15 Topsoil	-	0.36	0.08	3.76	1.81	<0.02

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Project: Dugout Canyon Mine
Date Received: 7/26/2007

Lab ID	Sample ID	Depths cm	Total Carbon %	TOC %	Total Sulfur %	T.S. AB t/1000t	Neut. Pot. t/1000t	T.S. ABP t/1000t
S0707474-001	Staging Area SP-1	0-18	3.0	2.9	0.02	0.72	5.41	4.69
S0707474-002	Staging Area SP-1	18-61	1.0	0.9	<0.01	<0.01	4.20	4.20
S0707474-003	Staging Area SP-1	61-162	0.6	0.5	0.01	0.40	6.57	6.17
S0707474-004	WR-July	-	11.7	11.0	0.63	19.7	54.1	34.4
S0707474-005	G-15 Topsoil	-	4.1	1.3	0.02	0.51	232	231

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INTER-MOUNTAIN LABS

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1673 Terra Avenue, Sheridan, Wyoming 82801
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Soil Analysis Report

Canyon Fuel Company, LLC.
HCR 35, Box 380
Helper, UT 84526

Report ID: S0612270001

Project: Dugout Canyon Mine
Date Received: 12/14/2006

Date: 3/2/2007
Work Order: S0612270

Lab ID	Sample ID	pH	Saturation	Electrical Conductivity	Field Capacity	Wilt Point	Calcium	Magnesium	Sodium	Potassium	SAR
		s.u.	%	dS/m	%	%	meq/L	meq/L	meq/L	meq/L	
S0612270-001	WS Nov.	7.3	27.1	1.63	14	7.1	7.00	8.16	5.57	1.41	2.02
S0612270-002	WS Dec.	7.9	25.3	1.27	14	6.8	2.04	1.86	11.7	0.92	8.35

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Karen Barten, Soil Lab Supervisor

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Report ID: S0612270001

Project: Dugout Canyon Mine
Date Received: 12/14/2006

Date: 3/2/2007
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Lab ID	Sample ID	Available Sodium meq/100g	Exchangeable Sodium meq/100g	Sand %	Silt %	Clay %	Texture
S0612270-001	WS Nov.	0.36	0.21	62.0	28.0	10.0	Sandy Loam
S0612270-002	WS Dec.	0.86	0.57	70.0	19.0	11.0	Sandy Loam

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Date: 3/2/2007
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Lab ID	Sample ID	Boron	TKN	Nitrogen Nitrate	Phosphorus	Selenium
		ppm	%	ppm	ppm	ppm
S0612270-001	WS Nov.	0.99	2.59	0.37	0.57	0.06
S0612270-002	WS Dec.	1.41	0.80	0.35	1.09	0.05

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Lab ID	Sample ID	Total Carbon %	TOC %	Total Sulfur %	T.S. AB t/1000t	Neut. Pot. t/1000t	T.S. ABP t/1000t
S0612270-001	WS Nov.	2.0	1.2	0.44	13.9	67.3	53.4
S0612270-002	WS Dec.	4.9	4.4	1.46	45.7	41.5	-4.21

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