0011

ENERGY WEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

Energy West Mining Company
P. O. Box 310
15 No Main Street
Huntington, Utah 84528

February 6, 2007

Utah Coal Program
Utah Division of Oil, Gas, and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

Incoming
C/015/0018
#2748

Re Deficiency Response to Soil Sampling Information, PacifiCorp, Deer Creek Mine, C/015/0018, Task ID #2590

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, hereby responds to the December 21, 2006 deficiency list of the Division of Oil, Gas, and Mining review of the July 20, 2006 amendment to add soil sample analysis results of the 2002 soil sampling program at the Deer Creek Mine.

As explained in the text of the July amendment, 12 sites were sampled to identify the general quality of substitute topsoil and subsoil materials as well as identifying any acid and/or toxic forming characteristics of the subsoil. A total of 37 samples were analyzed.

At the time of the July submittal, it was not noticed that the depth of the samples were not included with the lab report. Included with this submittal are all field data from the sampling program and depth information hand written on the lab sheets.

Attached is the response to the deficiencies received by the Division. The required C1/C2 forms are also included. If you have any questions or concerns with the information submitted, please feel free to contact me anytime at (435) 687-4712.

Sincerely

Kenneth S. Fleck

Kenneth Fleck
Manager of Geology and Environmental Affairs

cc File

Encl C1/C2 Forms
Deficiency Response Document
Appendix A Field Data
Appendix A Amended Lab Reports

RECEIVED
FEB 13 2007
DIV. OF OIL, GAS & MINING

The following responses to deficiencies are formatted as found in the technical analysis document. They are broken down into logical section headings similar to the R645 regulations. In each section, the regulation number along with the associated deficiency is follow by the Permittee's italicized response.

R645-301-233, R645-301-233, Further sampling is required to establish the value of substitute topsoil from the drainage at stations 9+00 to 15+00 and 24+00 to 31+00. • Provide depth information and field notes associated with all sample locations. • Follow the stated protocol for sampling the elk canyon and Deer Creek Canyon refuse sites (MRP Vol. 2, Section R645-301-233 indicates that sample points were to be placed randomly in the refuse areas, and samples would be taken at three-foot intervals to a point four feet below the grade of the proposed final surface configuration.

1) Energy West is confident with the estimates that were made to calculate the amount of substitute topsoil available for reclamation. The areas were chosen based on knowledge of the type of fill material. Two areas exist that contain potential substitute topsoil. These areas are located along the undisturbed culvert that extends throughout the length of the Deer Creek facilities surface area. The areas between 9+00 through 15+00 and 24+00 through 31+00 were chosen because of the native material that exists. The yard area (15+00 through 24+00) contains the material that was excavated from the terrace area above the ROM beltline. This material consists of mostly fragmented rock. Refer to map DS1782D for these cross-sections.

Volumetric calculations for substitute topsoil were conducted in the stations identified above. As shown on Map DS1783D, 1 of 2 and 2 of 2, the cross-sectional area is shaded brown. The total quantity available is estimated to be approximately 58,891.08 yds^3. This value is shown on the mass balance table on Map DS1782D. The quantity of this material is estimated to cover the areas outlined on Map DS1816D with approximately 2.3 feet of substitute topsoil material. The permittee maintains that the sampling program adequately characterizes the topsoil areas for reclamation purposes, and that no further sampling is necessary.

2) The depth information and site number has been hand written on the original copies of the lab sheets. These depth values were inadvertently left off by the analysis. Field notes are also submitted to be incorporated into Appendix A of the Soils Section.

3) The sampling program has already been completed. Samples were taken at intervals which produced sufficient quantities of material to analyze. Although the sample intervals were not followed according to the Soils Section in Volume 2, the intervals sampled are sufficient to determine the general quality and the acid and/or toxic characteristics of the soil materials at the Deer Creek Mine.

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: PacifiCorp

Mine: Deer Creek Mine **Permit Number:** C/015/0018

Title: Deficiency Response to Soil Sampling Information, PacifiCorp, Deer Creek Mine, C/015/0018, Task ID #2590

Description, Include reason for application and timing required to implement:

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ ☐ increase ☐ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☒ Yes ☐ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes ☒ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Kenneth Fleck — Print Name

Kenneth S Fleck — Manager of Geology and Environmental Affairs 2/6/07 — Sign Name, Position, Date

Subscribed and sworn ~~to before me~~ this 6th day of FEBRUARY, 2007

Notary Public

My commission Expires: 11-23, 2008

Attest: State of UTAH } } ss:
County of EMERY

DON CHILDS
NOTARY PUBLIC • STATE of UTAH
31 NORTH MAIN STREET
HUNTINGTON, UT 84528
COMM. EXPIRES 11-23-2008

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining

Form DOGM- C1 (Revised March 12, 2002)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: PacifiCorp
Mine: Deer Creek Mine **Permit Number:** C/015/0018
Title: Deficiency Response to Soil Sampling Information, PacifiCorp, Deer Creek Mine, C/015/0018, Task ID #2590

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☒ Add	☒ Replace	☐ Remove	Volume 2, Part 4, R645-301-200:Soils, Appendix A, Add Field Data and Replace Amended Lab Sheets
☐ Add	☒ Replace	☐ Remove	Volume 2, Part 4, R645-301-200:Soils, Appendix B, Map DS1810D, (submitted with origional amendment dated July 20, 2006 and not included here)
☐ Add	☐ Replace	☐ Remove	
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.	**Received by Oil, Gas & Mining**

PacifiCorp

Deer Creek Mine

C/015/0018

Deficiency Response to Soil Sampling Information

<u>Sampling Field Data / Laboratory Results</u>
Add to end of R645-301-200 Soils, Appendix A (Seven Clean Copies)

Deer Creek Soil Sampling Program - Field Data
October thru November 2002

Sample ID	Date	Location	Use*	Hole #	Depth (ft.)	Color (Dry)	Color (Wet)	Field pH	Field EC (uS)
DC1902	10/18/2002	Elk Cyn Coal Bin (old wrs)	B	1	0-8	10YR 3/1 DARK GRAY	10YR 2/1 BLACK	9.53	206
DC2002	10/18/2002	Elk Cyn Coal Bin (old wrs)	B	1	8-13	2.5Y 5/1 GRAY	2.5Y 3/1 VERY DARK GRAY	9.48	261
DC2102	10/18/2002	Elk Cyn Coal Bin Access (old wrs)	B	2	0-10	2.5Y 5/1 GRAY	2.5Y 3/1 VERY DARK GRAY	8.81	2080
DC2202	10/18/2002	Elk Cyn Coal Bin Access (old wrs)	B	2	10-16	10YR 6/1 GRAY	10YR 3/1 VERY DARK GRAY	9.21	1590
DC2302	10/18/2002	Deer Creek Cyn Storage Yard (old wrs)	B	5	0-5	10YR 5/1 GRAY	10YR 4/1 DARK GRAY	9.93	525
DC2402	10/18/2002	Deer Creek Cyn Storage Yard (old wrs)	B	5	5-10	10YR 6/1 GRAY	10YR 4/2 DARK GRAY BROWN	9.53	1037
DC2502	10/18/2002	Deer Creek Cyn Storage Yard (old wrs)	B	5	10-15	10YR 6/1 GRAY	10YR 4/2 DARK GRAY BROWN	9.63	833
DC2602	10/18/2002	Deer Creek Cyn Storage Yard (outslope of old wrs)	B	6	0-5	10YR 4/1 DARK GRAY	10YR 2/1 BLACK	9.37	702
DC2702	10/18/2002	Deer Creek Cyn Storage Yard (outslope of old wrs)	B	6	5-10	10YR 5/1 GRAY	10YR 2/1 BLACK	11.65	1500
DC2802	10/18/2002	Deer Creek Cyn Storage Yard (outslope of old wrs)	B	6	10-15	10YR 4/1 DARK GRAY	10YR 2/1 BLACK	10.78	971
DC2902	10/18/2002	Deer Creek Cyn Storage Yard (outslope of old wrs)	B	6	15-20	10YR 4/1 DARK GRAY	10YR 2/1 BLACK	10.09	927
DC3002	10/18/2002	Deer Creek Cyn Storage Yard (outslope of old wrs)	B	6	20-25	10YR 5/1 GRAY	10YR 2/2 VERY DARK BROWN	9.7	997
DC3102	10/18/2002	Deer Creek Cyn Storage Yard (outslope of old wrs)	B	6	25-30	10YR 5/1 GRAY	10YR 4/2 DARK GRAY BROWN	9.67	1001
DC3202	10/18/2002	Deer Creek Cyn Storage Yard (outslope of old wrs)	B	6	30-35	10YR 4/1 DARK GRAY	10YR 3/2 VERY DARK GRAY BROWN	9.47	1310
DC3302	10/18/2002	Deer Creek Cyn Storage Yard (outslope of old wrs)	B	6	35-40	10YR 6/1 GRAY	10YR 3/2 VERY DARK GRAY BROWN	9.59	1170
DC3402	10/18/2002	Deer Creek Cyn Storage Yard	B	7	0-6	10YR 5/4 YELLOWISH BROWN	10YR 5/3 BROWN	9.25	2770
DC3502	10/18/2002	Deer Creek Cyn Storage Yard	B	7	6-11	10YR 6/4 LIGHT YELLOWISH BROWN	10YR 5/4 YELLOWISH BROWN	8.58	4340
DC3602	10/18/2002	Deer Creek Cyn Storage Yard	B	7	11-16	10YR 4/4 DARK YELLOWISH BROWN	10YR 3/4 DARK YELLOWISH BROWN	8.72	2590
DC3702	10/18/2002	Deer Creek Cyn Parking Lot	B	8	0-5	10YR 6/3 PALE BROWN	10YR 4/2 DARK GRAY BROWN	9.73	1970
DC3802	10/18/2002	Deer Creek Cyn Parking Lot	B	8	5-10	7.5 YR 6/4 LIGHT BROWN	7.5 YR 4/4 BROWN	8.94	2710
DC3902	10/18/2002	Deer Creek Cyn Parking Lot	B	8	10-15	10YR 6/3 PALE BROWN	10YR 4/3 BROWN	8.95	2170
DC4002	10/18/2002	Deer Creek Cyn Warehouse Area	B	9	0-4	10YR 6/3 PALE BROWN	10YR 3/2 VERY DARK GRAY BROWN	8.65	1055
DC4102	10/18/2002	Deer Creek Cyn Warehouse Area	B	9	4-8	10YR 6/3 PALE BROWN	10YR 4/3 BROWN	9.14	1680
DC4202	10/18/2002	Deer Creek Cyn Fan Access Road	A	11	0-8	10YR 5/3 BROWN	10YR 4/2 DARK GRAY BROWN	10.27	4400
DC4302	10/18/2002	Deer Creek Cyn Fan Access Road	A	11	8-13	10YR 6/2 LIGHT BROWN GRAY	10YR 4/2 DARK GRAY BROWN	8.69	929
DC4402	10/18/2002	Deer Creek Cyn Fan Access Road	A	11	13-16.5	2.5Y 8/1 WHITE	2.5Y 7/2 LIGHT GRAY	8.95	673
DC4502	10/18/2002	Deer Creek Cyn Fan Access Road	A	11	16.5-22	2.5Y 8/1 WHITE	2.5Y 7/2 LIGHT GRAY	9.47	317
DC4602	10/18/2002	Deer Creek Cyn Fan Access Road	A	12	0-8	10YR 6/3 PALE BROWN	10YR 4/3 BROWN	8.68	11500
DC4702	10/18/2002	Deer Creek Cyn Fan Access Road	A	12	8-13	10YR 6/2 LIGHT BROWN GRAY	10YR 4/3 BROWN	9.17	3640
DC4802	10/18/2002	Deer Creek Cyn Fan Access Road	A	12	13-18	2.5Y 7/2 LIGHT GRAY	2.5Y 6/2 LIGHT BROWN GRAY	8.99	2290
DC4902	10/18/2002	Deer Creek Cyn Shop Area		10	0-8	10YR 5/2 GRAY BROWN	10YR 3/2 VERY DARK GRAY BROWN	9.97	413
DC5002	11/13/2002	Deer Creek Cyn Main Access Road Area	A	3	0-3	5YR 3/1 VERY DARK GRAY	5YR 3/1 VERY DARK GRAY	6.5	1662
DC5102	11/13/2002	Deer Creek Cyn Main Access Road Area	A	3	3-6	5YR 3/1 VERY DARK GRAY	5YR 3/1 VERY DARK GRAY	6.79	2930
DC5202	11/13/2002	Deer Creek Cyn Main Access Road Area	A	3	6-9	5YR 2.5/1 BLACK	5YR 2.5/1 BLACK	6.81	3220
DC5302	11/13/2002	Deer Creek Cyn Main Access Road Area	A	3	9-12	5YR 4/1 DARK GRAY	5YR 4/1 DARK GRAY	6.83	1842
DC5402	11/13/2002	Deer Creek Cyn Main Access Road Area	A	4	0-3	5YR 4/1 DARK GRAY	5YR 4/1 DARK GRAY	6.82	3300
DC5502	11/13/2002	Deer Creek Cyn Main Access Road Area	A	4	3-6	5YR 3/1 VERY DARK GRAY	5YR 3/1 VERY DARK GRAY	6.9	3970
DC5602	11/13/2002	Deer Creek Cyn Main Access Road Area	A	4	6-8	5YR 3/1 VERY DARK GRAY	5YR 3/1 VERY DARK GRAY	6.9	3930

* - This column notes whether the sample was analyzed for subsoil (acid and/or toxic forming characteristics) or substitute topsoil.
The letter "A" denotes substitute topsoil and the letter "B" denotes subsoil.

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, WY 82801

Report ID: 010223411

Soil Analysis Report

Energy West Mining Co.
P.O. Box 310
Huntington, UT 84528

Client Project ID: Deer Creek Mine
Date Received: 11/21/02

Set #0102S23411
Report Date: 03/06/03

Lab Id	Sample Id	Hole #	Depth (ft.)	pH s.u.	Saturation %	EC @ 25°C mmhos/cm	Calcium meq/L	Magnesium meq/L	Sodium meq/L	SAR
0102S23411	DC1902	1	0 - 8	7.3	25.1	1.90	9.32	9.54	3.69	1.20
0102S23412	DC2002	1	8 - 13	7.1	22.8	2.38	17.6	14.6	3.96	0.99
0102S23413	DC2102	2	0 - 10	7.5	28.2	5.06	20.1	50.5	12.0	2.02
0102S23414	DC2202	2	10 - 16	7.7	28.6	5.47	24.2	45.8	17.0	2.88
0102S23415	DC2302	5	0 - 5	8.2	23.6	5.02	16.5	12.9	31.1	8.13
0102S23416	DC2402	5	5 - 10	7.8	25.1	5.53	5.28	27.2	38.7	9.60
0102S23417	DC2502	5	10 - 15	7.9	26.7	5.56	12.1	27.0	39.7	8.98
0102S23418	DC2602	6	0 - 5	7.1	24.1	6.35	28.8	31.1	26.6	4.86
0102S23419	DC2702	6	5 - 10	9.0	26.4	5.09	38.8	1.19	19.8	4.43
0102S23420	DC2802	6	10 - 15	8.6	30.4	4.77	36.4	4.25	21.8	4.83
0102S23421	DC2902	6	15 - 20	8.2	29.2	5.83	27.5	17.7	25.7	5.41
0102S23422	DC3002	6	20 - 25	8.1	29.5	5.04	12.8	15.7	36.3	9.62
0102S23423	DC3102	6	25 - 30	8.0	29.8	5.71	9.92	12.0	51.8	15.6
0102S23424	DC3202	6	30 - 35	7.9	29.3	7.65	10.6	10.3	68.8	21.3
0102S23425	DC3302	6	35 - 40	8.0	31.6	7.01	8.88	10.6	57.0	18.2
0102S23426	DC3402	7	0 - 6	8.2	33.0	17.7	28.8	17.8	148	30.5

These results only apply to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2OSol= 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, Neut. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed By: RB
Rena Bradley, Assistant Soil Lab Supervisor

Inter-Mou[illegible] Laboratories, Inc.

1633 Terra Avenue
Sheridan, WY 82801

Report ID: 010223411

Soil Analysis Report

Energy West Mining Co.

P.O. Box 310

Huntington, UT 84528

Client Project ID: Deer Creek Mine

Date Received: 11/21/02

Set #0102S23411

Report Date: 03/06/03

Lab Id	Sample Id	Hole #	Coarse Fragments %	Sand %	Silt %	Clay %	Texture	1/3 Bar %	15 Bar
)102S23411	DC1902	1	5.1	66.0	22.0	12.0	SANDY LOAM	7.4	4.6
)102S23412	DC2002	1	6.8	50.0	38.0	12.0	LOAM	9.2	4.2
)102S23413	DC2102	2	7.0	46.0	36.0	18.0	LOAM	14.7	7.3
0102S23414	DC2202	2	3.9	56.0	25.0	19.0	SANDY LOAM	13.3	6.9
0102S23415	DC2302	5	11.8	62.0	24.0	14.0	SANDY LOAM	9.5	4.5
0102S23416	DC2402	5	7.8	54.0	30.0	16.0	SANDY LOAM	9.0	5.9
0102S23417	DC2502	5	5.7	51.0	32.0	17.0	LOAM	12.2	8.3
0102S23418	DC2602	6	18.5	52.0	30.0	18.0	SANDY LOAM	10.7	7.2
0102S23419	DC2702	6	20.2	57.0	31.0	12.0	SANDY LOAM	13.1	8.2
0102S23420	DC2802	6	16.5	54.0	30.0	16.0	SANDY LOAM	13.3	8.3
0102S23421	DC2902	6	28.2	56.0	32.0	12.0	SANDY LOAM	12.3	7.7
0102S23422	DC3002	6	9.3	51.0	33.0	16.0	LOAM	12.1	7.3
0102S23423	DC3102	6	6.1	46.0	38.0	16.0	LOAM	12.1	7.3
0102S23424	DC3202	6	1.3	53.0	31.0	16.0	SANDY LOAM	11.3	7.1
0102S23425	DC3302	6	0.7	38.0	46.0	16.0	LOAM	15.8	8.3
0102S23426	DC3402	7	14.2	40.0	38.0	22.0	LOAM	15.1	8.5

These results only apply 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, Neut. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed By: RB

Rena Bradley, Assistant Soil Lab Supervisor

Inter·Mou[illegible] Laboratories, Inc.

1633 Terra Avenue
Sheridan, WY 82801

Report ID: 010223411

Soil Analysis Report

Energy West Mining Co.
P.O. Box 310
Huntington, UT 84528

Client Project ID: Deer Creek Mine
Date Received: 11/21/02

Set #0102S23411
Report Date: 03/06/03

Lab Id	Sample Id	Hole #	TOC %	Total Sulfur %	T.S. AB t/1000t	Neutral. Pot. t/1000t	T.S. ABP t/1000t	TKN %	Boron ppm	Nitrogen Nitrate ppm	Selenium ppm	Available Sodium meq/100g	Exchangeable Sodium meq/100g
0102S23411	DC1902	1	14.6	0.15	4.69	215	211	0.24	1.21	0.96	<0.02	0.18	0.09
0102S23412	DC2002	1	7.6	0.10	3.12	256	252	0.11	0.76	1.20	<0.02	0.14	0.05
0102S23413	DC2102	2	6.8	0.36	11.2	411	400	0.13	0.85	16.5	0.06	0.65	0.31
0102S23414	DC2202	2	17.2	0.49	15.3	357	342	0.20	1.12	20.4	0.04	0.77	0.28
0102S23415	DC2302	5	4.6	0.07	2.19	358	355	0.08	0.79	0.96	<0.02	1.47	0.73
0102S23416	DC2402	5	1.2	0.03	0.94	415	414	0.03	0.40	1.84	0.02	1.67	0.70
0102S23417	DC2502	5	1.9	0.05	1.56	329	327	0.04	0.97	0.88	0.02	1.59	0.53
0102S23418	DC2602	6	6.2	0.02	0.62	384	383	0.11	1.24	3.56	0.04	1.13	0.49
0102S23419	DC2702	6	7.5	0.17	5.31	396	390	0.14	0.77	1.76	0.04	1.01	0.49
0102S23420	DC2802	6	8.5	0.02	0.62	335	335	0.16	1.19	2.84	0.04	1.14	0.48
0102S23421	DC2902	6	6.3	0.11	3.44	318	315	0.14	1.14	2.76	0.02	1.26	0.51
0102S23422	DC3002	6	3.8	0.13	4.06	286	281	0.07	1.14	2.14	0.02	1.78	0.71
0102S23423	DC3102	6	3.7	<0.01	0.00	240	240	0.08	0.79	0.78	0.02	2.51	0.97
0102S23424	DC3202	6	5.2	0.12	3.75	240	237	0.06	0.66	1.86	<0.02	2.99	0.98
0102S23425	DC3302	6	3.4	0.18	5.62	230	224	0.05	0.77	0.48	0.02	2.76	0.96
0102S23426	DC3402	7	0.8	0.05	1.56	372	370	0.04	1.16	0.28	0.02	6.39	1.52

These results only apply to the samples tested.

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Reviewed By: RB
Rena Bradley, Assistant Soil Lab Supervisor

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, WY 82801

Report ID: 010223411

Soil Analysis Report
Energy West Mining Co.
P.O. Box 310
Huntington, UT 84528

Client Project ID: Deer Creek Mine
Date Received: 11/21/02

Set #0102S23411
Report Date: 03/06/03

Lab Id	Sample Id	Hole #	Depth (ft.)	pH s.u.	Saturation %	EC @ 25°C mmhos/cm	Calcium meq/L	Magnesium meq/L	Sodium meq/L	SAR
0102S23427	DC3502	7	6-11	7.8	36.3	18.2	21.6	41.3	138	24.5
0102S23428	DC3602	7	11-16	7.8	34.9	11.8	21.3	76.1	54.9	7.86
0102S23429	DC3702	8	0-5	8.6	27.5	9.14	4.80	4.91	96.0	43.6
0102S23430	DC3802	8	5-10	7.9	32.5	12.2	9.75	26.0	105	24.8
0102S23431	DC3902	8	10-15	7.8	30.1	9.72	11.2	28.5	77.2	17.3
0102S23432	DC4002	9	0-4	8.6	29.1	19.1	43.7	4.41	179	36.6
0102S23433	DC4102	9	4-8	7.5	26.3	9.32	12.3	29.5	70.5	15.4
0102S23434	DC4202	11	0-8	7.5	31.5	4.00	7.56	12.1	23.7	7.56
0102S23435	DC4302	11	8-13	7.2	23.5	4.63	11.6	15.6	23.3	6.31
0102S23436	DC4402	11	13-16.5	7.6	24.2	3.13	5.62	13.3	14.0	4.57
0102S23437	DC4502	11	16.5-22	7.6	23.9	2.67	3.50	9.71	8.08	3.14
0102S23438	DC4602	12	0-8	7.8	24.3	31.4	12.9	13.3	367	101
0102S23439	DC4702	12	8-13	7.5	25.7	19.4	19.2	15.0	190	46.0
0102S23440	DC4802	12	13-18	7.6	26.2	10.9	12.9	14.2	97.5	26.5
0102S23441	DC4902	10	0-8	7.9	32.2	7.62	7.67	8.02	67.4	24.1
0102S23442	DC5002	3	0-3	7.6	32.6	10.6	19.8	31.0	87.7	17.4

These results only apply to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
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Energy West Mining Co.
P.O. Box 310
Huntington, UT 84528

Client Project ID: Deer Creek Mine
Date Received: 11/21/02

Set #0102S23411
Report Date: 03/06/03

Lab Id	Sample Id	Hole #	Coarse Fragments %	Sand %	Silt %	Clay %	Texture	1/3 Bar %	15 Bar
0102S23427	DC3502	7	2.1	29.0	45.0	26.0	LOAM	20.2	9.1
0102S23428	DC3602	7	2.3	32.0	46.0	22.0	LOAM	19.0	7.6
0102S23429	DC3702	8	11.0	44.0	36.0	20.0	LOAM	18.1	7.2
0102S23430	DC3802	8	1.3	33.0	44.0	23.0	LOAM	18.4	7.6
0102S23431	DC3902	8	<0.5	40.0	38.0	22.0	LOAM	17.1	7.0
0102S23432	DC4002	9	9.8	50.0	28.0	22.0	SANDY CLAY LOAM	19.1	7.3
0102S23433	DC4102	9	4.2	52.0	32.0	16.0	SANDY LOAM	18.5	6.7
0102S23434	DC4202	11	1.2	44.0	36.0	20.0	LOAM	19.4	6.8
0102S23435	DC4302	11	2.0	58.0	26.0	16.0	SANDY LOAM	12.2	4.1
0102S23436	DC4402	11	<0.5	44.0	44.0	12.0	LOAM	17.5	2.4
0102S23437	DC4502	11	<0.5	42.0	47.0	11.0	LOAM	18.2	2.1
0102S23438	DC4602	12	41.8	56.0	30.0	14.0	SANDY LOAM	14.1	4.8
0102S23439	DC4702	12	8.6	54.0	30.0	16.0	SANDY LOAM	14.8	5.1
0102S23440	DC4802	12	0.9	47.0	37.0	16.0	LOAM		
0102S23441	DC4902	10	6.1	45.0	37.0	18.0	LOAM	19.8	6.4
0102S23442	DC5002	3	51.6	44.0	34.0	22.0	LOAM	16.3	8.0

These results only apply to the samples tested.

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Reviewed By: RB
Rena Bradley, Assistant Soil Lab Supervisor

Inter-Mou[redacted]Laboratories, Inc.

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Sheridan, WY 82801

Report ID: 010223411

Soil Analysis Report
Energy West Mining Co.
P.O. Box 310
Huntington, UT 84528

Client Project ID: Deer Creek Mine
Date Received: 11/21/02

Set #0102S23411
Report Date: 03/06/03

Lab Id	Sample Id	Hole #	TOC %	Total Sulfur %	T.S. AB t/1000t	Neutral. Pot. t/1000t	T.S. ABP t/1000t	TKN %	Boron ppm	Nitrogen Nitrate ppm	Selenium ppm	Available Sodium meq/100g	Exchangeable Sodium meq/100g
0102S23427	DC3502	7	0.8	0.03	0.94	374	373	0.04	0.69	0.20	0.02	7.26	2.26
0102S23428	DC3602	7	0.5	0.01	0.31	410	410	0.03	0.50	0.42	0.02	2.64	0.72
0102S23429	DC3702	8	2.2	<0.01	0.00	373	373	0.04	0.83	0.34	<0.02	4.96	2.32
0102S23430	DC3802	8	0.6	0.01	0.31	376	376	0.02	0.46	0.26	<0.02	5.09	1.68
0102S23431	DC3902	8	0.6	0.02	0.62	446	445	0.02	0.40	1.26	0.02	3.30	0.98
0102S23432	DC4002	9	0.9	0.03	0.94	389	388	0.03	1.03	6.34	0.02	8.44	3.22
0102S23433	DC4102	9	2.5	0.01	0.31	362	361	0.03	0.59	0.60	<0.02	2.93	1.08
0102S23434	DC4202	11	0.6	0.02	0.62	299	299	0.07	0.41	6.12	<0.02	1.32	0.57
0102S23435	DC4302	11	1.0	0.02	0.62	295	294	0.02	0.26	5.82	<0.02	0.87	0.32
0102S23436	DC4402	11	<0.1	0.01	0.31	289	289	0.01	0.11	1.66	<0.02	0.44	0.10
0102S23437	DC4502	11	<0.1	0.01	0.31	272	272	0.01	0.07	0.90	<0.02	0.27	0.08
0102S23438	DC4602	12	0.3	0.03	0.94	274	273	0.03	0.39	3.70	<0.02	13.2	4.31
0102S23439	DC4702	12	0.6	0.02	0.62	369	368	0.03	0.21	1.74	<0.02	7.48	2.59
0102S23440	DC4802	12	0.2	0.02	0.62	352	352	0.02	0.17	2.14	<0.02	4.28	1.73
0102S23441	DC4902	10	2.7	0.04	1.25	317	316	0.05	1.46	0.46	<0.02	3.90	1.73
0102S23442	DC5002	3	3.3	0.05	1.58	319	317	0.09	0.87	1.66	0.02	4.74	1.88

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Rena Bradley, Assistant Soil Lab Supervisor

Inter-Mou[illegible] Laboratories, Inc.

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Soil Analysis Report
Energy West Mining Co.
P.O. Box 310
Huntington, UT 84528

Client Project ID: Deer Creek Mine
Date Received: 11/21/02

Set #0102S23411
Report Date: 03/06/03

Lab Id	Sample Id	Hole #	Depth (ft)	pH s.u.	Saturation %	EC @ 25°C mmhos/cm	Calcium meq/L	Magnesium meq/L	Sodium meq/L	SAR
0102S23443	DC5102	3	3-6	7.4	26.2	10.9	10.4	12.6	115	33.9
0102S23444	DC5202	3	6-9	7.4	36.5	10.9	15.7	46.1	79.5	14.3
0102S23445	DC5302	3	9-12	7.6	32.0	7.40	11.6	24.4	55.5	13.1
0102S23446	DC5402	4	0-3	7.6	27.3	21.7	10.6	7.49	242	80.6
0102S23447	DC5502	4	3-6	7.6	34.0	10.8	16.7	34.0	73.5	14.6
0102S23448	DC5602	4	6-8	7.7	31.0	20.8	19.0	16.6	206	48.8

These results only apply to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
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Set #0102S23411
Report Date: 03/06/03

Lab Id	Sample Id	Hole #	Coarse Fragments %	Sand %	Silt %	Clay %	Texture	1/3 Bar %	15 Bar
0102S23443	DC5102	3	55.5	50.0	31.2	18.8	LOAM	15.7	7.6
0102S23444	DC5202	3	42.3	48.0	32.0	20.0	LOAM	20.1	10.0
0102S23445	DC5302	3	46.8	45.0	32.5	22.5	LOAM	17.2	8.4
0102S23446	DC5402	4	50.0	56.0	28.0	16.0	SANDY LOAM	13.9	6.5
0102S23447	DC5502	4	40.6	48.0	32.0	20.0	LOAM	18.2	8.1
0102S23448	DC5602	4	47.8	54.0	28.0	18.0	SANDY LOAM	16.6	8.1

These results only apply 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, Neut. Pot.= Neutralization Potential
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Date Received: 11/21/02

Set #0102S23411
Report Date: 03/06/03

Lab Id	Sample Id	Hole #	TOC %	Total Sulfur %	T.S. AB t/1000t	Neutral. Pot. t/1000t	T.S. ABP t/1000t	TKN %	Boron ppm	Nitrogen Nitrate ppm	Selenium ppm	Available Sodium meq/100g	Exchangeable Sodium meq/100g
0102S23443	DC5102	3	9.5	0.09	2.81	266	264	0.10	1.11	6.98	<0.02	9.44	6.43
0102S23444	DC5202	3	2.1	<0.01	0.00	356	356	0.06	0.97	13.2	0.02	5.22	2.32
0102S23445	DC5302	3	2.6	0.02	0.62	337	336	0.05	1.51	4.16	<0.02	3.98	2.20
0102S23446	DC5402	4	3.2	0.05	1.56	284	283	0.04	0.86	3.80	<0.02	10.8	4.21
0102S23447	DC5502	4	<0.1	0.03	0.94	321	320	0.08	17.4	<0.02	0.02	4.52	2.02
0102S23448	DC5602	4	10.4	0.11	3.44	288	285	0.07	1.19	7.24	<0.02	10.2	3.84

These results only apply to the samples tested.

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Set #0102S23411

Report Date: 03/06/03

Lab Id	Sample Id	Hole #	pH	Saturation	EC @ 25°C	Calcium	Magnesium	Sodium	SAR
			s.u.	%	mmhos/cm	meq/L	meq/L	meq/L	
0102S23431	DC3902	8	7.8	30.1	9.72	11.2	28.5	77.2	17.3
0102S23431D	DC3902	8	7.8	28.9	9.76	11.7	29.1	79.9	17.7
0102S23440	DC4802	12	7.6	26.2	10.9	12.9	14.2	97.5	26.5
0102S23440D	DC4802	12	7.6	26.0	10.7	12.7	12.9	97.2	27.2
0102S23443	DC5102	3	7.4	26.2	10.9	10.4	12.6	115	33.9
0102S23443D	DC5102	3	7.4	27.2	11.5	9.90	10.8	115	35.7
0102S23445	DC5302	3	7.6	32.0	7.40	11.6	24.4	55.5	13.1
0102S23445D	DC5302	3	7.6	30.4	7.33	11.1	23.4	54.8	13.2

These results only apply to the samples tested.

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Report Date: 03/06/03

Lab Id	Sample Id	Hole #	Coarse Fragments %	Sand %	Silt %	Clay %	Texture	1/3 Bar %	15 Bar
0102S23431	DC3902	8	<0.5	40.0	38.0	22.0	LOAM	17.1	7.0
0102S23431D	DC3902	8		38.0	40.0	22.0	LOAM		
0102S23440	DC4802	12	0.9	47.0	37.0	16.0	LOAM		
0102S23440D	DC4802	12		45.0	39.0	16.0	LOAM		
0102S23443	DC5102	3	55.5	50.0	31.2	18.8	LOAM	15.7	7.6
0102S23443D	DC5102	3		52.5	30.0	17.5	SANDY LOAM		
0102S23445	DC5302	3	46.8	45.0	32.5	22.5	LOAM	17.2	8.4
0102S23445D	DC5302	3		43.8	33.7	22.5	LOAM		

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Set #0102S23411

Report Date: 03/06/03

Lab Id	Sample Id	Hole #	TOC %	Total Sulfur %	T.S. AB t/1000t	Neutral. Pot. t/1000t	T.S. ABP t/1000t	TKN %	Boron ppm	Nitrogen Nitrate ppm	Selenium ppm	Available Sodium meq/100g	Exchangeable Sodium meq/100g
0102S23431	DC3902	8	0.6	0.02	0.62	446	445	0.02	0.40	1.26	0.02	3.30	0.98
0102S23431D	DC3902	8	0.7	0.02	0.62	439	439	0.03	0.44	1.18	<0.02	3.28	0.97
0102S23440	DC4802	12	0.2	0.02	0.62	352	352	0.02	0.17	2.14	<0.02	4.28	1.73
0102S23440D	DC4802	12	0.5	0.02	0.62	353	352	0.02	0.16	2.06	<0.02	4.31	1.78
0102S23443	DC5102	3	9.5	0.09	2.81	266	264	0.10	1.11	6.98	<0.02	9.44	6.43
0102S23443D	DC5102	3	8.7	0.09	2.81	270	268	0.08	1.17	7.18	<0.02	9.74	6.61
0102S23445	DC5302	3	2.6	0.02	0.62	337	336	0.05	1.51	4.16	<0.02	3.98	2.20
0102S23445D	DC5302	3	2.2	0.02	0.62	346	346	0.06	1.45	3.80	<0.02	3.83	2.16

These results only apply to the samples tested.

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