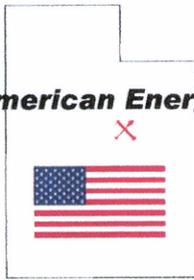


UtahAmerican Energy, Inc.



794 N. 'C' Canyon Road, P.O. Box 910,
East Carbon, UT 84520

#4135

Phone: (435) 888-4000
Fax: (435) 888-4002

α

C/007/041 Incoming

August 27, 2012

Daron R. Haddock, Coal Program Manager
Division of Oil, Gas and Mining
1594 West, North Temple
Suite 1210, PO Box 145801
Salt Lake City, Utah 84114-5801

Subject: 6 Clean Copies of Conditionally Approved West Ridge Midterm Completion Response,
West Ridge Mine, West Ridge Resources, Mine C/007/0041, Task ID #4135

Dear Mr. Haddock:

Enclosed please find 6 clean copies of the West Ridge Mine Midterm Review per your letter dated July 19, 2012.

If you have any questions or need any additional information, please call the engineering department at (435) 888-4000

Thank You,

David Hibbs

David Hibbs
Resident Agent
UEI President

File in:

- Confidential
- Shelf
- Expandable

Date Folder 082912 C/ 0070041

Incoming

RECEIVED

AUG 29 2012

DIV. OF OIL, GAS & MINING

WEST RIDGE MINE
C/007/041

RESPONSE TO DEFICIENCIES
MID-TERM REVIEW
TASK #3930

SUBMITTED: MARCH 9, 2012
 JUNE 11, 2012
Clean Copies August 27, 2012

RJM/JDL

APPLICATION FOR PERMIT PROCESSING

<input type="checkbox"/> Permit Change	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: C/007/041
Title of Proposal: Midterm Review Response Task 3930						Mine: WEST RIDGE MINE
						Permittee: WEST RIDGE Resources, Inc.

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

Instructions: If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation specialist.

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

Attach 6 complete copies of the application.

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. (R645-301-123)

David W. Hobbs, President
Signed - Name - Position - Date
6/11/12

Subscribed and sworn to before me this 11th day of June, 2012.

Linda Kerns
Notary Public
Attest: STATE OF Utah
COUNTY OF Carbon

My Commission Expires: 03-27-13



Received by Oil, Gas & Mining

RECEIVED

JUN 20 2012

AUG 29 2012

DIV. OF OIL, GAS & MINING

ASSIGNED TRACKING NUMBER

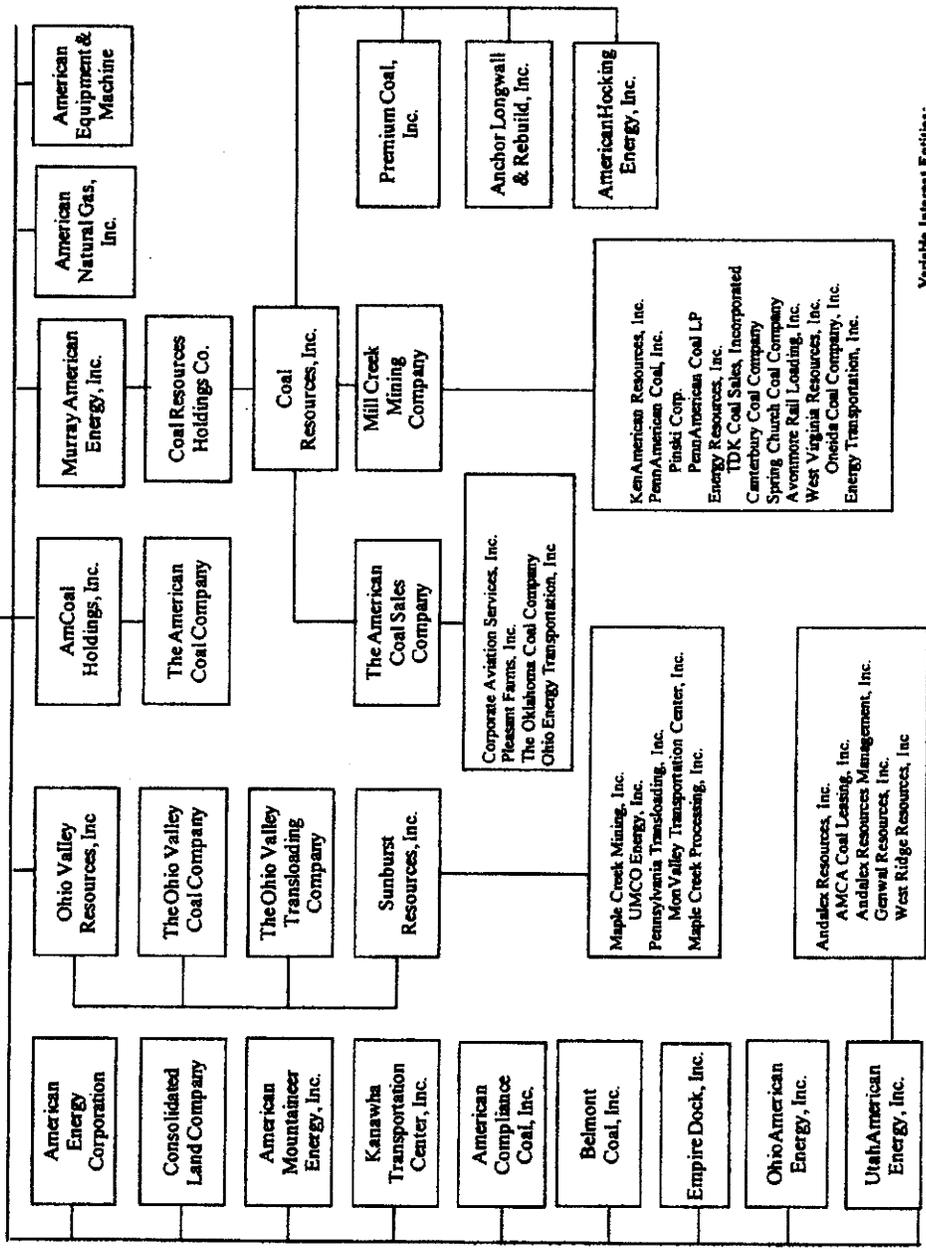
OWNERSHIP AND CONTROL

MARCH 30, 2012



Section 1

Insert Family Tree



Variable Interest Entities:
Chagrin Escrow Office LLC

Section 2

MURRAY ENERGY HOLDINGS CO.

29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Robert E. Murray	President & CEO	06/30/03	
Michael D. Loiacono	Treasurer	01/10/05	
		06/30/03	
Michael O. McKown	Secretary	06/30/03	
Robert D. Moore	Chief Financial Officer	04/23/07	

Incorporation Information:

State of Incorporation Delaware;
Charter No. 3676958

Date of Incorporation June 27, 2003

ID # 20-0100463

Shareholders:

Robert E. Murray, Trustee (Class A stock 100%, Class B stock 20%, originally acquired by Mr. Murray on 06/30/03 and transferred into Trust on 05/10/2010)	05/10/2010
Robert Edward Murray, (20% Class B stock)	06/30/03
Jonathan Robert Murray, (20% Class B stock)	06/30/03
Ryan Michael Murray, (20% Class B stock)	06/30/03
Fifth Third Bank of Northeast Ohio, Trustee, (20% Class B stock)	06/30/03

Directors:

Robert E. Murray	06/30/03	
Michael D. Loiacono	06/30/03	04/23/07
Michael O. McKown	06/30/03	
Robert D. Moore	04/23/07	

Section 3

MURRAY ENERGY CORPORATION

29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Appointment of Officers

		<u>Begin</u>	<u>End</u>
Robert E. Murray	Chairman, President & Chief Executive Officer	02/23/01 02/23/01	
John R. Forrelli	Vice President	09/11/07	
Robert D. Moore	Executive Vice President & Chief Financial Officer	08/01/08 08/01/08	
Robert Edward Murray	Vice President	09/11/07	
Ryan M. Murray	Vice President	09/11/07	
Roy A. Heidelberg	Asst. Vice President	09/11/07	
P. Bruce Hill	Vice President - Human Resources	12/18/03	11/05/09
B.J. Cornelius	Vice President	08/01/08	
Michael D. Loiacono	Treasurer	02/23/01	
Michael D. Loiacono	Chief Financial Officer	12/20/05	04/23/07
Michael O. McKown	Secretary	02/24/01	
	Senior Vice President, General Counsel & Secretary	08/01/08	
	Senior VP – HR & Legal	03/23/10	
G. Christopher Van Bever	Asst. Secretary	10/22/07	

Incorporation Information:

State of Incorporation	Ohio; Charter No. 1211519
Date of Incorporation	February 23, 2001
ID#	34-1956752

Shareholder:

	<u>Begin</u>	<u>End</u>
Murray Energy Holdings Co. (100%)	06/27/03	
Robert E. Murray	02/23/01	10/21/03

Directors:

Robert E. Murray	02/23/01	
Michael D. Loiacono	12/20/05	04/23/07
Henry W. Fayne	01/28/05	
Richard L. Lawson	01/28/05	
Andrew D. Weissman	10/23/03	08/27/09
Robert D. Moore	04/23/07	

Section 4

UTAHAMERICAN ENERGY, INC.

P.O. Box 910

East Carbon, Utah 84520

Officers:

		<u>Begin</u>	<u>End</u>
David W. Hibbs	President	12/11/09	
Peter J. Vuljanic	Interim President	11/06/09	12/11/09
P. Bruce Hill	Chief Executive Officer	08/18/06	11/05/09
P. Bruce Hill	President	12/16/06	11/05/09
Douglas H. Smith	President	08/18/06	12/16/06
Clyde I. Borrell	President	07/31/98	05/19/06
Robert D. Moore	Treasurer	08/18/06	
Michael O. McKown	Secretary	08/18/06	
Marsha Baker Kocinski	Secretary	07/31/98	06/25/02
Barbara Boyce	Secretary	07/31/98	11/01/99
Jay Marshall	Manager	07/31/98	08/18/06
B. J. Cornelius	Senior Vice President	09/12/06	

Directors:

Robert E. Murray	07/31/98	
P. Bruce Hill	08/18/06	11/05/09
David W. Hibbs	11/05/09	

Owner:

Murray Energy Corp.

Section 5

ANDALEX RESOURCES, INC.

P.O. Box 910

East Carbon, Utah 84520

Officers:

		<u>Begin</u>	<u>End</u>
David W. Hibbs	President	12/11/09	
Peter J. Vuljanic	Interim President	11/06/09	12/11/09
P. Bruce Hill	President and Chief Executive Officer	12/16/06	11/05/09
Douglas H. Smith	President	03/07/94	12/16/06
Robert D. Moore	Treasurer	08/18/06	
Michael O. McKown	Secretary	08/18/06	

Former Officers/Directors:

Peter B. Green	Director	01/05/98	08/18/06
Peter B. Green	CB	05/11/90	08/18/06
Peter B. Green	CEO	05/11/90	08/18/06
Ronald C. Beedie	Director	01/05/88	08/18/06
John Bradshaw	Secretary	02/05/90	08/18/06
John Bradshaw	Vice-President	02/05/90	08/18/06
Douglas H. Smith	Director	03/07/94	08/18/06
Samuel C. Quigley	Vice-President	02/24/95	08/18/06
Andalex Hungary Ltd.	Shareholder	12/28/20	08/18/06
Alexander Harold Samuel Green	Director	01/11/02	08/18/06

Directors:

Robert E. Murray		08/18/06	
P. Bruce Hill		08/18/06	11/05/09
David W. Hibbs		12/11/09	

Owner:

UtahAmerican Energy, Inc.	100%	08/18/06
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MSHA Numbers

Apex Mine	42-01750
Pinnacle Mine	42-01474
Aberdeen Mine	42-02028
Wildcat Loadout	42-01864

Section 6

AMCA COAL LEASING, INC.

P.O. Box 910

East Carbon, Utah 84520

Appointment of Officers:

		<u>Begin</u>	<u>End</u>
David W. Hibbs	President	12/11/09	
Peter J. Vuljanic	Interim President	11/06/09	12/11/09
P. Bruce Hill	President and Chief Executive Officer	12/16/06	11/05/09
Douglas H. Smith	President	08/18/06	12/16/06
Robert D. Moore	Treasurer	08/18/06	
Michael O. McKown	Secretary	08/18/06	

Directors:

Robert E. Murray	08/18/06	
P. Bruce Hill	08/18/06	11/05/09
David W. Hibbs	12/11/09	

Owner:

Andalex Resources, Inc., 100% ownership

Section 7

ANDALEX RESOURCES MANAGEMENT, INC.

P.O. Box 910

East Carbon, Utah 84520

Appointment of Officers:

		<u>Begin</u>	<u>End</u>
David W. Hibbs	President	12/11/09	
Peter J. Vuljanic	Interim President	11/06/09	12/11/09
Douglas H. Smith	President	08/18/06	12/16/06
P. Bruce Hill	President and Chief	12/16/06	11/05/09
Robert D. Moore	Treasurer	08/18/06	
Michael O. McKown	Secretary	08/18/06	

Directors:

Robert E. Murray	08/18/06	
P. Bruce Hill	08/18/06	11/05/09
David W. Hibbs	12/11/09	

Shareholders:

Andalex Resources, Inc.	100%	08/18/06
-------------------------	------	----------

Section 8

GENWAL RESOURCES, INC.

P.O. Box 910

East Carbon, Utah 84520

Officers:

		<u>Begin</u>	<u>End</u>
David W. Hibbs	President	12/11/09	
Peter J. Vuljanic	Interim President	11/06/09	12/11/09
Douglas H. Smith	President	08/18/06	12/16/06
P. Bruce Hill	President and Chief Executive Officer	12/16/06	11/05/09
Robert D. Moore	Treasurer	08/18/06	
Michael O. McKown	Secretary	08/18/06	

Directors:

Robert E. Murray	08/18/06	
P. Bruce Hill	08/18/06	11/05/09
David W. Hibbs	12/11/09	

Former Directors:

Peter B. Green		08/09/06
Ronald C. Beedie		08/09/06
Douglas H. Smith		08/18/06
Gordon Ulrich		10/30/96

Former Officers:

Peter B. Green	Chairman & CEO	08/09/06
Samuel C. Quigley	Vice President	08/18/06
John Bradshaw	Vice President	05/17/05
John Bradshaw	Secretary & Treasurer	08/18/06
Douglas H. Smith	President	12/16/06

Owner:

ANDALEX Resources, Inc. is and remains the sole shareholder of Genwal Resources, Inc.¹

MSHA Numbers

Crandall Canyon Mine 42-01715

¹ Intermountain Power Agency held, as a tenant in common, an undivided 50% interest in certain real property interests regarding the Crandall Canyon Mine. Effective September 29, 2010, Intermountain Power Agency conveyed these interests to ANDALEX Resources, Inc.

Section 9

WEST RIDGE RESOURCES, INC.^I

P.O. Box 910

East Carbon, Utah 84520

Officers:

		<u>Begin</u>	<u>End</u>
David W. Hibbs	President	12/11/09	
Peter J. Vuljanic	Interim President	11/06/09	12/11/09
Douglas H. Smith	President	08/18/06	12/16/06
P. Bruce Hill	President and CEO	12/16/06	11/05/09
Robert D. Moore	Treasurer	08/18/06	
Michael O. McKown	Secretary	08/18/06	

Directors:

Robert E. Murray	08/18/06	
P. Bruce Hill	08/18/06	11/05/09
David W. Hibbs	12/11/09	

Owner:

Andalex Resources, Inc.^{II} 100%

Former Directors^{III}

	<u>Begin Date</u>	<u>End Date</u>
Peter B. Green	04/01/98	08/09/06
Ronald C. Beedie	04/01/98	08/09/06
Douglas H. Smith	04/01/98	09/18/06

Former Officers^{VV}

	<u>Position</u>	<u>Begin Date</u>	<u>End Date</u>
Peter B. Green	Chairman & CEO	04/15/98	08/09/06
Samuel C. Quigley	Vice President	04/15/98	08/18/06
John Bradshaw	Secretary	04/15/98	08/18/06
Douglas H. Smith	President	04/15/98	12/16/06

MSHA Number West Ridge Mine 42-022444

I WEST RIDGE Resources, Inc. ("WRRI") was formed on March 10, 1998. No actions of WRRI occurred before that date.

II ANDALEX Resources is (and remains) the sole shareholder of WRRI. WRRI and the Intermountain Power Agency held certain real property interests as tenants in common, each owning a 50% interest therein. Effective as of September 29, 2010, Intermountain Power Agency conveyed all of its interest in these real property interests to ANDALEX Resources, Inc.

III The initial directors of WRRI (as shown above) were appointed on April 1, 1998; the "Begin Date[s]" for each such director shown on the OFT form are incorrect.

VV The initial officers of WRRI (as shown above) were appointed on April 15, 1998; the "Begin Date[s]" for each such officer shown on the OFT form are incorrect. Also, Christopher G. Van Bever never served as an officer of WRRI; the information shown on the OFT form to the contrary is incorrect.

Section 10

MURRAY ENERGY AFFILIATE COMPANIES

- A. **AMCOAL HOLDINGS, INC.**
101 Prosperous Place, Suite 125
Lexington, Kentucky 40509

- B. **THE AMERICAN COAL COMPANY**
P. O. Box 727
Harrisburg, Illinois 62946

- C. **THE AMERICAN COAL SALES COMPANY**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

- D. **AMERICAN COMPLIANCE COAL, INC.**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

- E. **AMERICAN ENERGY CORPORATION**
43521 Mayhugh Hill Road
Township Highway 88
Beallsville, Ohio 43716

- F. **ANCHOR LONGWALL AND REBUILD, INC.**
One Industrial Park Drive
Wheeling, West Virginia 26003

- G. **AVONMORE RAIL LOADING, INC.**
125 Old Farm Drive,
Pittsburgh, PA 15239

- H. **BELMONT COAL, INC.**
P. O. Box 146
Powhatan, Ohio 43942

- I. **CANTERBURY COAL COMPANY**
125 Old Farm Drive
Pittsburgh, PA 15239

- J. COAL RESOURCES HOLDINGS CO.**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122
- K. COAL RESOURCES, INC.**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122
- L. CONSOLIDATED LAND COMPANY**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122
- M. ENERGY RESOURCES, INC.**
P. O. Box 259
R. D.#2, Fermantown Road
Brockway, PA 15824
- N. KENAMERICAN RESOURCES, INC.**
101 Prosperous Place, Suite 125
Lexington, Kentucky 40509
- O. MAPLE CREEK MINING, INC.**
981 Route 917
Bentleyville, Pennsylvania 15314
- P. MILL CREEK MINING COMPANY**
P. O. Box 259
R. D. #2, Fermantown Road
Brockway, PA 15824
- Q. MONVALLEY TRANSPORTATION CENTER, INC.**
P. O. Box 135
1060 Ohio Avenue
Glassport, Pennsylvania 15045
- R. OHIOAMERICAN ENERGY INCORPORATED**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122
- S. THE OHIO VALLEY COAL COMPANY**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

- T. OHIO VALLEY RESOURCES, INC.**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122
- U. THE OHIO VALLEY TRANSLOADING COMPANY**
56854 Pleasant Ridge Road
Alledonia, Ohio 43902
- V. THE OKLAHOMA COAL COMPANY**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122
- W. ONEIDA COAL COMPANY, INC.**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122
- X. PENNAMERICAN COAL, INC.**
125 Old Farm Drive
Pittsburgh, PA 15239
- Y. PENNAMERICAN COAL LP**
125 Old Farm Drive
Pittsburgh, PA 15239
- Z. PENNSYLVANIA TRANSLOADING, INC.**
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio
- AA. PINSKI CORP.**
125 Old Farm Drive
Pittsburgh, PA 15239
- BB. SPRING CHURCH COAL COMPANY**
125 Old Farm Drive
Pittsburgh, PA 15239
- CC. SUNBURST RESOURCES, INC.**
586 National Road
Wheeling, West Virginia 26003

DD. TDK COAL SALES, INCORPORATED

P. O. Box 259

R. D. #2, Fermantown Road

Brockway, PA 15824

EE. UMCO ENERGY, INC.

29325 Chagrin Boulevard, Suite 300

Pepper Pike, Ohio 44122

FF. WEST VIRGINIA RESOURCES, INC.

953 National Road, Suite 207

Wheeling, West Virginia 26003

GG. MURRAY AMERICAN ENERGY, INC.

29325 Chagrin Boulevard, Suite 300

Pepper Pike, Ohio 44122

A. AMCOAL HOLDINGS, INC.
101 Prosperous Place, Suite 125
Lexington, Kentucky 40509

Officers:

		<u>Begin</u>	<u>End</u>
Robert E. Murray	President	05/23/03	
P. Bruce Hill	Vice President – Human Resources	10/01/98	10/03/09
Robert D. Moore	Treasurer	10/01/98	
Michael O. McKown	Secretary	03/01/05	
Jeffrey L. Cash	Assistant Treasurer	11/01/99	

Incorporation Information:

State of Incorporation: Ohio;
Charter No. 1007981

Date of Incorporation: June 12, 1998

ID #34-1867389

Shareholders: Murray Energy Corporation

Directors: Robert E. Murray

B. THE AMERICAN COAL COMPANY
P. O. Box 727
Harrisburg, Illinois 62946

Officers:

Robert E. Murray	President	11/02/02
John R. Forrelli	Vice President	09/07/04
Michael O. McKown	Vice President, General Counsel and Secretary	03/15/99 03/01/05
Robert D. Moore	Treasurer	10/01/98
Jeffrey L. Cash	Assistant Treasurer and Assistant Secretary	11/01/99 06/01/01

Incorporation Information:

State of Incorporation Delaware;
Charter No. 2881631

Date of Incorporation June 2, 1998

ID #73-1543124

Shareholders: AmCoal Holdings, Inc.

Directors: Robert E. Murray

C. THE AMERICAN COAL SALES COMPANY

29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Robert E. Murray	Chief Executive Officer	11/11/88	
B. J. Cornelius	President	09/08/95	
Edwin D. Lane	Vice President	11/01/99	03/01/05
William E. Hollars	Vice President	03/01/05	
Richard Rice	Vice President	11/11/88	11/01/99
Michael O. McKown	Secretary	03/01/05	
Steven C. Ellis	Secretary	11/10/88	03/01/05
James R. Turner, Jr.	Treasurer and Assistant Secretary	03/01/05	
Duane A. Smith	Assistant Treasurer and Assistant Secretary	06/25/01	03/01/05
Brenda L. Murray	Assistant Secretary	06/25/01	03/01/05
		09/08/95	06/25/01

Incorporation Information:

State of Incorporation Ohio; Charter No. 727836

Date of Incorporation June 29, 1988

ID #34-1603699

Shareholder: Coal Resources, Inc.

Directors: Robert E. Murray 09/08/95

D. AMERICAN COMPLIANCE COAL, INC.
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Stanley T. Piasecki	President	03/01/05	
Charles E. Shestak	Vice President	03/10/03	
Michael O. McKown	Secretary	03/01/05	
Robert D. Moore	Treasurer and Assistant Secretary	06/25/01	
Elmer A. Mottillo	Assistant Treasurer	06/25/01	
Robert L. Putsock	Assistant Treasurer	08/22/03	05/31/08
		06/01/08	

Former Officers:

Clyde I. Borrell	President	06/02/97	03/01/05
William W. Taft	Secretary	05/24/94	03/01/05

Incorporation Information:

State of Incorporation Colorado;
Charter No. 19941059260

Date of Incorporation May 24, 1994

ID #34-1797161

Shareholder:

Murray Energy Corporation (100%)	06/1/01	
Robert E. Murray	05/24/94	06/01/01

Director:

Robert E. Murray	05/24/94
------------------	----------

E. AMERICAN ENERGY CORPORATION

43521 Mayhugh Hill Road
Township Highway 88
Beallsville, Ohio 43716

Officers:

		<u>Begin</u>	<u>End</u>
Robert E. Murray	President	12/15/04	
Robert D. Moore	President	06/25/01	12/15/04
Michael O. McKown	Secretary	11/01/99	
James R. Turner, Jr.	Treasurer	03/1/05	
Robert D. Moore	Treasurer	06/25/01	12/15/04
Robert L. Putsock	Assistant Treasurer	01/27/04	

Incorporation Information:

State of Incorporation Ohio;
 Charter No. 00842695

Date of Incorporation April 12, 1993
ID #31-1550443

Shareholder: Murray Energy Corporation
 (100%)

Director:

Robert E. Murray	12/15/04	
P. Bruce Hill	07/02/01	12/15/04

F. ANCHOR LONGWALL AND REBUILD, INC.
One Industrial Park Drive
Wheeling, West Virginia 26003

Officers:

		<u>Begin</u>	<u>End</u>
P. Bruce Hill	President and	02/16/99	11/10/06
	Assistant Secretary	02/16/99	
Chad Underkoffler	President	11/10/06	
Michael O. McKown	Secretary	11/01/99	
James R. Turner, Jr.	Treasurer	09/16/05	
Duane A. Smith	Assistant Secretary	11/01/99	01/03/06

Incorporation Information:

State of Incorporation West Virginia;
Charter No. 00961100093212818

Date of Incorporation April 18, 1996

ID #55-0749933

Shareholder:

I.D. # 34-1586390
Address: 29325 Chagrin
Boulevard
Suite 300
Pepper Pike, OH 44122

Coal Resources, Inc.

Director:

Charles E. Shestak	11/01/99	
P. McGlilton	11/01/99	08/01/07

G. AVONMORE RAIL LOADING, INC.

125 Old Farm Drive,
Pittsburgh, PA 15239

Officers:

		<u>Begin</u>	<u>End</u>
[VACANT]	President		
Robert D. Moore	Treasurer	06/25/01	
Michael O. McKown	Secretary	03/1/05	
Robert L. Putsock	Assistant Treasurer	01/02/03	
James R. Turner, Jr.	Assistant Secretary	05/31/08	
Elmer A. Mottillo	Assistant Secretary	01/02/03	05/31/08

Incorporation Information:

State of Incorporation	Delaware; Charter No. 0798860
Date of Incorporation	February 19, 1974
Qualified	May 6, 1974 Pennsylvania; PA Entity #000302999

ID #25-1253970

Shareholder: Mill Creek Mining Company

Director: Charles E. Shestak

H. BELMONT COAL, INC.

P. O. Box 146
Powhatan, Ohio 43942

Officers:

		<u>Begin</u>	<u>End</u>
Robert D. Moore	President	06/25/01	
Maynard St. John	Vice-President	01/02/02	06/26/02
James R. Turner, Jr.	Secretary/Treasurer	09/16/05	
Kristi D. Brown	Secretary/Treasurer	11/08/01	09/16/05

Incorporation Information:

State of Incorporation Ohio;
Charter No. 00842697

Date of Incorporation April 12, 1993

ID #31-1536602

Shareholder:

Murray Energy Corporation (100%)	06/01/01	
Robert E. Murray	04/19/93	06/01/01

Director:

Duane A. Smith	04/12/93	12/15/06
Robert E. Murray	12/15/06	

I. CANTERBURY COAL COMPANY

125 Old Farm Drive
Pittsburgh, PA 15239

Officers:

Robert D. Moore	President & Treasurer	05/26/07
Michael O. McKown	Secretary	05/26/07
Robert L. Putsock	Asst Treasurer	01/02/03
James R. Turner, Jr.	Asst Secretary	06/01/08
Neil M. Kok	Vice President	03/08/2010

Incorporation Information:

State of Incorporation Pennsylvania;
 PA Entity #000055242

Date of Incorporation July 26, 1963

ID #25-1127473

Shareholder: Mill Creek Mining Company
 (100%)

Director: Charles E. Shestak

J. COAL RESOURCES HOLDINGS CO.

29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Robert E. Murray	President, CEO, Chairman	03/01/05	
Michael D. Loiacono	Treasurer	01/28/05	
	CFO	12/20/05	04/23/07
Robert D. Moore	CFO	04/23/07	
Scott A. Boyle	Chief Financial Officer	10/29/05	12/20/05
P. Bruce Hill	Secretary	03/01/05	11/01/05
Michael O. McKown	Secretary	11/06/09	
Robert L. Putsock	Assistant Secretary and Assistant	06/25/01	
	-Treasurer	06/25/01	
Michael D. Loicano	Treasurer	01/28/05	

Incorporation Information:

State of Incorporation Delaware;
Charter No. 3676954

Date of Incorporation June 27, 2003

ID #20-0100479

Shareholder: Murray American Energy, Inc.

Director: Robert E. Murray 06/27/03

K. COAL RESOURCES, INC.
 29325 Chagrin Boulevard, Suite 300
 Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Robert E. Murray	Chairman, President and Chief Executive Officer	03/01/05	
Michael D. Loiacono	Treasurer	04/08/96	
Robert D. Moore	CFO	12/20/05	04/23/07
Scott A. Boyle	Senior Vice President & CFO	09/11/07	
	Chief Financial Officer	10/17/05	12/20/05
P. Bruce Hill	Secretary	03/01/05	11/01/05
Michael O. McKown	Vice President, General Counsel & Secretary	07/16/07	
Robert L. Putsock	Assistant Secretary and Assistant Treasurer	06/25/01	06/25/01
Robert Edward Murray	Vice President	09/11/07	
Ryan M. Murray	Vice President	09/11/07	
John R. Forrelli	Vice President	09/11/07	
Roy A. Heidelbach	Asst. Vice President	09/11/07	
G. Christopher Van Bever	Asst. Secretary	10/22/07	

Incorporation Information:

State of Incorporation: Ohio;
 Charter No. 717546

Date of Incorporation: January 29, 1988

ID #34-1586390

Shareholder:

Coal Resources Holdings Co.	10/21/03	
Robert E. Murray	01/29/88	10/21/03

Directors:

Robert E. Murray	05/24/88	
Henry W. Fayne	02/05	
Richard L. Lawson	02/05	
Robert D. Moore	04/23/07	
Andrew Weissman	10/20/03	08/27/09

L. CONSOLIDATED LAND COMPANY

29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Robert D. Moore	President	08/11/04	
Robert D. Moore	Treasurer	06/25/01	
Robert L. Putsock	Assistant Secretary	06/01/08	
Michael O. McKown	Secretary	03/01/05	
Elmer A. Mottillo	Assistant Secretary	08/22/03	05/30/08

Incorporation Information:

State of Incorporation Ohio;
Charter No. 00842696

Date of Incorporation April 12, 1993

ID #34-1769562

Shareholder:

Murray Energy Corporation 06/01/01
(100%)

Director:

Robert D. Moore 08/11/04

M. ENERGY RESOURCES, INC.
P. O. Box 259
R. D.#2, Fermantown Road
Brockway, PA 15824

Officers:

		<u>Begin</u>	<u>End</u>
Stanley T. Piasecki	President and Chief Executive Officer	08/11/04	
Elmer A. Mottillo	Treasurer	08/22/03	05/30/08
James R. Turner	Treasurer	06/01/08	
Michael O. McKown	Secretary	03/01/05	
Charles E. Shestak	Assistant Secretary	04/30/93	

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #762734

Date of Incorporation September 14, 1982

ID #31-1044044

Shareholder: Mill Creek Mining Company

Director: Stanley T. Piasecki 08/11/04

N. KENAMERICAN RESOURCES, INC.
101 Prosperous Place, Suite 125
Lexington, Kentucky 40509

Officers:

		<u>Begin</u>	<u>End</u>
Mark Nelson	President	03/18/09	
Robert N. Sandidge	President	12/16/06	12/08/08
Dennis W. Bryant	President/Manager	10/01/05	12/16/06
B. J. Cornellius	Senior Vice-President--Sales	11/01/05	
James R. Turner, Jr.	Treasurer	03/01/05	
Robert D. Moore	Assistant Treasurer	03/01/05	
Michael O. McKown	Secretary	02/13/06	

Incorporation Information:

State of Incorporation Kentucky;
 Charter No. 0331655

Date of Incorporation June 9, 1994

ID #61-1264385

Shareholder: Mill Creek Mining Company

Director: Robert E. Murray 06/01/05

O. MAPLE CREEK MINING, INC.
981 Route 917
Bentleyville, Pennsylvania 15314

Officers:

		<u>Begin</u>	<u>End</u>
[VACANT]	President	11/02/09	
Paul B. Piccolini	—	04/28/06	09/11/08
Ronnie D. Dietz	Vice President and Treasurer	03/01/05	
[VACANT]	Secretary		
Michael B. Gardner	Secretary	03/01/05	05/01/07
Roberta K. Heil	Assistant Secretary	11/01/99	

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #2607113

Date of Incorporation November 9, 1994

ID #25-1755305

Shareholder: Sunburst Resources, Inc. 01/11/95

Director: Robert E. Murray

P. MILL CREEK MINING COMPANY

P. O. Box 259
R. D. #2, Fermantown Road
Brockway, PA 15824

Officers:

		<u>Begin</u>	<u>End</u>
Charles E. Shestak	President	08/18/98	
James R. Turner, Jr.	Treasurer	03/1/05	
Robert D. Moore	Treasurer	06/25/01	03/01/05
Robert D. Moore	Assistant Treasurer	03/01/05	
Michael O. McKown	Secretary	03/01/05	
Michael E. Elliott	Secretary	08-18-98	03/01/05
Robert L. Putsock	Assistant Secretary and Assistant Treasurer	06/25/01 06/25/01	

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #0007447787

Date of Incorporation December 1, 1981

Certificate of Amendment July 7, 1988;
#8854525

ID #31-1040986

Shareholder: Coal Resources, Inc.

Director: Robert E. Murray 05/14/04

Q. MONVALLEY TRANSPORTATION CENTER, INC.
P. O. Box 135
1060 Ohio Avenue
Glassport, Pennsylvania 15045

Officers:

Paul B. Piccolini	President	04/28/06
James R. Turner, Jr.	Secretary and Treasurer	03/01/05

Incorporation Information:

State of Incorporation	Pennsylvania; PA Entity #856918
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Date of Incorporation	February 15, 1985
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ID #25-1490495

Shareholders: Pennsylvania Transloading, Inc.

<u>Directors:</u>	Robert E. Murray and	08/28/95
	Michael D. Loiacono	11/01/99

R. OHIOAMERICAN ENERGY INCORPORATED
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
[VACANT]	President		
D. Michael Jamison		05/01/05	12/01/07
Charles O. Kapp	Vice President	07/15/09	
Stanley T. Piasecki	Vice President	12/01/07	
Mark D. Nelson	Vice President	12/01/07	07/15/09
Michael O. McKown	Secretary	05/02/05	
Robert D. Moore	Treasurer	05/02/05	
Robert L. Putsock	Assistant Treasurer	06/01/08	
Elmer A. Mottillo	Assistant Treasurer	06/30/06	05/30/08

Incorporation Information:

State of Incorporation	Ohio
Date of Incorporation	February 1, 2005
ID # 20-3044610	Ohio Charter No. 1518533

Director: Robert E. Murray 05/01/05

Shareholder: Murray Energy Corporation 05/01/05

S. THE OHIO VALLEY COAL COMPANY
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
[VACANT]	President	11/04/05	
Paul B. Piccolini	Vice President	01/01/07	
Ronnie D. Dietz	Treasurer, Assistant Secretary, Corporate Comptroller	03/01/05	
[VACANT]	Secretary	05/01/07	
Michael B. Gardner	Secretary	03/01/05	05/01/07
Roberta K. Heil	Assistant Secretary	11/01/99	
Bonnie M. Froehlich	Assistant Secretary and Assistant Treasurer	06/25/01 06/25/01	

Incorporation Information:

State of Incorporation Ohio;
Charter No. 384971

Date of Incorporation June 6, 1969

Certificate of Amendment October 4, 1988;
#201274

ID #34-1041310

Shareholder: Ohio Valley Resources, Inc.

Director: Robert E. Murray 03/10/95

T. OHIO VALLEY RESOURCES, INC.
 29325 Chagrin Boulevard, Suite 300
 Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Paul B. Piccolini	President	04/28/06	
John Forrelli	President	11/01/99	04/28/06
Ronnie D. Dietz	Treasurer, Assistant Secretary, Corporate Comptroller	03/01/05	
Michael D. Loiacono	Treasurer, Assistant Secretary, Corporate Comptroller	03/10/95	04/28/06
[VACANT]	Secretary	05/01/07	
Stephen Ellis	Secretary	03/10/95	03/01/05

Incorporation Information:

State of Incorporation Ohio;
 Charter No. 721514

Date of Incorporation March 29, 1988

ID #34-1586391

Shareholders:

Murray Energy Corporation	06/01/01	
(100%)		
Robert E. Murray	03/10/95	06/01/01

Director:

Robert E. Murray	11/01/99
------------------	----------

U. **THE OHIO VALLEY TRANSLOADING COMPANY**
56854 Pleasant Ridge Road
Alledonia, Ohio 43902

Officers:

		<u>Begin</u>	<u>End</u>
[VACANT]	President	11/04/05	
Paul B. Piccolini	Vice-President	01/01/07	
Ronnie D. Dietz	Treasurer, Assistant Secretary, Corporate Comptroller	03/01/05	
Michael B. Gardner	Secretary	03/01/05	05/01/07
Roberta K. Heil	Assistant Secretary	9/01/00	no end date

Incorporation Information:

State of Incorporation Ohio;
Charter No. 727835

Date of Incorporation June 29, 1988

ID #34-1611209

Shareholder: Ohio Valley Resources, Inc.

Director: Robert E. Murray 04/06/93

V. THE OKLAHOMA COAL COMPANY

29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Paul B. Piccolini	President	04/28/06	
Gregory C. Smith	President	11/01/99	04/28/06
Michael O. McKown	Secretary	03/01/05	
Gregory A. Gorospe	Secretary	09/15/94	11/01/99
James R. Turner, Jr.	Treasurer and Assistant Secretary	03/01/05	
Kathleen Bednarek	Treasurer	06/20/00	06/26/00
Robert L. Putsock	Assistant Secretary	01/10/03	
Kathleen Bednarek	Assistant Secretary	09/03/96	06/26/00

Incorporation Information:

State of Incorporation Oklahoma;
Charter No. DB00477836

Date of Incorporation April 17, 1989

Licensed in Ohio February 27, 1991;
FL 790739

ID #34-1673480

Shareholder: The American Coal Sales Company

Director: Robert E. Murray 04/17/92

W. ONEIDA COAL COMPANY, INC.
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Robert D. Moore	President and	06/25/01	
	Treasurer	11/01/99	
Robert L. Putsock	Assistant Secretary	06/25/01	
Michael O. McKown	Secretary	03/1/05	

Former Officers:

John Blaine Earles	Vice-President	02/28/92	07/02/93
Tivis Arnold Graybeal	Secretary	02/28/92	04/28/94
Anthony Carl Laplaca	Secretary	04/28/94	11/1/99
Joseph R. Bourgo	Vice-President	09/01/92	10/20/00
Joseph R. Bourgo	Treasurer	04/28/94	10/20/00
Norma Jean McCourt	Assistant Secretary	04/28/94	11/01/99

Incorporation Information:

State of Incorporation West Virginia;
Charter No.
00000020004097TAX

Date of Incorporation August 29, 1983

ID #62-1011712

Shareholder: West Virginia Resources, Inc. 02/28/92
(100%)

Director: Robert E. Murray 02/28/92

X. PENNAMERICAN COAL, INC.
125 Old Farm Drive
Pittsburgh, PA 15239

Officers:

		<u>Begin</u>	<u>End</u>
Robert D. Moore	President,	08/28/07	
	Treasurer and Secretary	06/25/01	
P. Bruce Hill	President	06/25/01	05/03/07
Robert L. Putsock	Assistant Secretary	06/25/01	

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #2545905

Date of Incorporation September 13, 1993

ID #25-1722115

Shareholder: Mill Creek Mining Co. 11/08/93

Director: Robert E. Murray

Y. PENNAMERICAN COAL LP
125 Old Farm Drive
Pittsburgh, PA 15239

Partners:

Pinski Corp.	Managing Partner	08/19/96
PennAmerican Coal, Inc.	Limited Partner	07/08/98

EIN# 25-1800809
Partnership Effective 07/08/98

Z. PENNSYLVANIA TRANSLOADING, INC.
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
Paul B. Piccolini	President	04/28/06	09/01/08
James R. Turner, Jr.	Treasurer	03/01/05	
Michael O. McKown	Secretary	03/01/05	

Incorporation Information:

State of Incorporation Ohio;
Charter No. 736747

Date of Incorporation November 18, 1988

Qualified: Pennsylvania;
December 28, 1988

Certificate of Authority No. 8898868

ID #34-1603748

Shareholder: Sunburst Resources, Inc. 04/01/96
(100%)

Director: Robert E. Murray 11/18/88

I

I Sunburst Resources, Inc. has always been a shareholder and has no relation to Consolidated Land Company.

AA. PINSKI CORP.
125 Old Farm Drive
Pittsburgh, PA 15239

Officers:

[VACANT]

	President and General Manager	
Robert D. Moore	Treasurer and Secretary	06/25/01 06/25/01
Robert L. Putsock	Assistant Treasurer and Assistant Secretary	06/25/01 06/25/01

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #002710766

Date of Incorporation August 19, 1996

ID #25-1800870

Shareholder: PennAmerican Coal, Inc.

Director: Charles E. Shestak

BB. SPRING CHURCH COAL COMPANY

125 Old Farm Drive
Pittsburgh, PA 15239

Officers:

		<u>Begin</u>	<u>End</u>
Robert D. Moore	President	05/26/07	
P. Bruce Hill	President	06/25/01	07/16/07
Robert D. Moore	Secretary/Treasurer	06/25/01	
Michael O. McKown	Secretary	05/26/07	
Robert L. Putsock	Asst Treasurer	01/02/03	
James R. Turner, Jr.	Asst Secretary	06/01/08	
Elmer Motillo	Asst Secretary	01/02/03	05/30/08

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #000696663

Date of Incorporation November 2, 1979

ID #25-1372128

Shareholder: Mill Creek Mining Company

Director: Charles E. Shestak

CC. SUNBURST RESOURCES, INC.
586 National Road
Wheeling, West Virginia 26003

Officers:

		<u>Begin</u>	<u>End</u>
Paul B. Piccolini	President	04/28/06	
Ronnie D. Dietz	Treasurer	03/01/05	
Ronnie D. Dietz	Secretary	10/26/09	
Michael B. Gardner	Secretary	03/01/05	05/01/07

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #2616384

Date of Incorporation January 10, 1995

ID #25-1766427

Shareholder: Ohio Valley Resources, Inc. 04/01/97

Director: Robert E. Murray

DD. TDK COAL SALES, INCORPORATED

P. O. Box 259
R. D. #2, Fermantown Road
Brockway, PA 15824

Officers:

		<u>Begin</u>	<u>End</u>
Stanley T. Piasecki	President and Chief Executive Officer	08/11/04	
Elmer A. Mottillo	Treasurer	08/22/03	05/31/08
James R. Turner, Jr.	Treasurer	06/01/08	
Michael O. McKown	Secretary	03/01/05	
Charles E. Shestak	Assistant Secretary	02/01/99	

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #00758582

Date of Incorporation June 28, 1982

ID #25-1422374

Shareholder: Energy Resources, Inc.

Director: Stanley T. Piasecki 08/11/04

EE. UMCO ENERGY, INC.
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

		<u>Begin</u>	<u>End</u>
[VACANT]	President	11/02/09	
Paul B. Piccolini		04/28/06	09/11/08
Ronnie D. Dietz	Treasurer and Assistant Secretary	03/01/05	
[VACANT]	Secretary	05/01/07	
Michael B. Gardner		03/01/05	05/01/07
Ronnie D. Dietz	Vice-President	07/12/10	
Michael B. Gardner		05/03/05	05/01/07

Incorporation Information:

State of Incorporation Pennsylvania;
PA Entity #1072295

Date of Incorporation December 29, 1988

ID #52-1615668

Shareholder: Maple Creek Mining, Inc.
and Toni J. Southern

Director: Robert E. Murray

FF. WEST VIRGINIA RESOURCES, INC.
953 National Road, Suite 207
Wheeling, West Virginia 26003

Officers:

		<u>Begin</u>	<u>End</u>
Neil Kok	President	10/2/06	
Robert D. Moore	President	10/20/00	10/20/00
Robert E. Murray	President, CEO	12/27/91	10/20/00
Charles E. Shestak	Vice President	10/02/06	
Anne Besece	Treasurer and Secretary	10/2/06	12/01/07
Robert L. Putsock	Treasurer and Secretary	12/01/07	
	Assistant Secretary	06/25/01	10/02/06
Robert E. Murray	Treasurer	12/27/91	06/25/01
Michael O. McKown	Secretary	03/01/05	10/2/06
Anthony Carl Laplaca	Secretary	12/27/91	03/01/05

Incorporation Information:

State of Incorporation: West Virginia;
Charter No.
00913610154813604

Date of Incorporation: December 27, 1991

ID #55-0713676

Shareholder: Mill Creek Mining Company 12/27/91
(100%)

Director: Robert E. Murray

GG. MURRAY AMERICAN ENERGY, INC.
29325 Chagrin Boulevard, Suite 300
Pepper Pike, Ohio 44122

Officers:

Robert D. Moore	President, Treasurer and Secretary	05/03/06
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Incorporation Information:

State of Incorporation	Wyoming; Charter No. 1998003378171
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Date of Incorporation	September 22, 1998
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ID #34-1875051

<u>Shareholder:</u>	Murray Energy Corporation
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<u>Director:</u>	Robert E. Murray
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CHAPTER 6.....REPLACEMENT PAGES

**TABLE OF CONTENTS- MAP LIST
R645-301-600 CHAPTER 6**

MAP NUMBER	DESCRIPTION	SCALE
MAP 6-1*	Regional Geology Map	1"=2500'
MAP 6-1A*	Geologic Cross-Section A-A'	1"=700'
MAP 6-2*	Coal Seam Structure Map	1"=2500'
MAP 6-3*	Lower Sunnyside Coal Seam Isopach Map	1"=2500'

*Not included on disk

R645-301-622**CROSS-SECTIONS, MAPS AND PLANS**

- 622.100 Elevations of the coal seam to be mined and locations of drill holes are shown on Map 6-2, Coal Seam Structure Map. Drill hole collar elevations and intervals cored and plugged are presented in Appendix 6-2 in a table format.
- 622.200 The depth and thickness of surrounding strata are depicted in the stratigraphic column (Table 6-1). For additional information on the typical stratigraphic lithology and coal thickness within the permit area refer to the drill logs contained in Appendix 6-2. The mineable thickness of the Lower Sunnyside Seam is shown on the isopach map (Map 6-3, Lower Sunnyside Coal Seam Isopach Map). Map 6-1A, Geologic Cross-Section A-A', is an east-west cross-sections through the permit area. The depth of the Lower Sunnyside Seam is depicted by overburden contours on Map 5-7.
- Representative drill hole logs depicting the nature, depth and thickness of the coal seam to be mined and rider seams in the overlying strata are presented in Appendix 6-2. The drill holes selected are shown on Map 6-2.
- A detailed cross-section of the lithology in the Whitmore Canyon area depicting the heterogeneous nature of the stratigraphy is included in Appendix 6-2 on Plate 1.
- 622.300 The outcrop line of the seam to be mined (i.e. the Lower Sunnyside Seam) is shown on Map 6-1, Regional Geology Map. The strike and dip of the seam in the permit area is also shown on Map 6-1.
- 622.400 There are a total of four gas wells (GVH wells) located at a common site in Bear Canyon (Section 3, T 14 S, R 13 E. These GVH wells were installed by the company to liberate methane from the West Ridge mine workings (refer to Appendix 5-14 and 5-14A).

R645-301-623**GEOLOGIC INFORMATION**

- 623.100 Acid or Toxic-Forming Strata

Analyses have been performed on strata above and below the coal seam to be mined. This data is presented in Appendix 6-1. Analyses of the rock strata indicate that the potential for acid and/or toxic-forming material is minimal. The guidelines to which the analyses are compared are designed to be used for material in the vegetative rooting zone. WEST RIDGE Resources, Inc. is not

APPENDIX 7-10

UPDES PERMIT

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH
AUTHORIZATION TO DISCHARGE UNDER THE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM
(UPDES)

In compliance with provisions of the *Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated (UCA) 1953, as amended* (the "Act"),

WEST RIDGE RESOURCES, INC.

is hereby authorized to discharge from its facility located on C Canyon Road approximately three miles north of East Carbon, Utah, with outfalls located as indicated in the permit, to receiving waters named

C CANYON EPHEMERAL DRAINAGE

in accordance with discharge point, effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on May 1, 2011.

This permit and the authorization to discharge shall expire at midnight, April 30, 2016.

Signed this 2nd day of May 2011.



Walter L. Baker, P.E.
Executive Secretary
Utah Water Quality Board

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I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Definitions

1. "7-day and weekly average" is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week whichever is applicable. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, beginning on Sunday and ending on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.
2. "10-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable recurrence interval of once in 10 years. This information is available in *Weather Bureau Technical Paper No. 40*, May 1961 and *National Oceanographic and Atmospheric Administration Atlas 2*, 1973 for the 11 Western States, and may be obtained from the National Climatic Center of the Environmental Data Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.
3. "30-day and monthly average" is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
4. "Act" means the "*Utah Water Quality Act*".
5. "Best Management Practices" (BMP's) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMP's also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
6. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
7. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.

8. "Composite samples" shall be flow proportioned. The composite sample shall contain, as a minimum, at least four (4) samples collected over the composite sample period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
- a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;
 - b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;
 - c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,
 - d. Continuous collection of sample, with sample collection rate proportional to flow rate.
9. "CWA" means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
10. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
11. "EPA" means the United States Environmental Protection Agency.
12. "Executive Secretary" means Executive Secretary of the Utah Water Quality Board.
13. "Flow-weighted composite sample" means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.
14. "Grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
15. "Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a UPDES permit (other than the UPDES permit for discharges from the municipal separate storm sewer) and discharges from fire fighting activities, fire hydrant flushing, potable water

sources including waterline flushing, uncontaminated ground water (including dewatering ground water infiltration), foundation or footing drains where flows are not contaminated with process materials such as solvents, springs, riparian habitats, wetlands, irrigation water, exterior building wash down where there are no chemical or abrasive additives, pavement wash water where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used, and air conditioning condensate.

16. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
17. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agriculture storm water runoff.
18. "Runoff coefficient" means the fraction of total rainfall that will appear at a conveyance as runoff.
19. "Section 313 water priority chemical" means chemical or chemical categories which:
 - a. Are listed at *40 Code of Federal Regulations (CFR) 372.65* pursuant to *Section 313 of Title III of the Emergency Planning and Community Right-to-Know Act (EPCRA)* (also known as *Title III of the Superfund Amendments and Reauthorization Act of 1986*);
 - b. Are present at or above threshold levels at a facility subject to *EPCRA, Section 313* reporting requirements, and
 - c. Meet at least one of the following criteria:
 - (1) Are listed in *Appendix D of 40 CFR 122 on Table II* (organic priority pollutants), *Table III* (certain metals, cyanides, and phenols) or *Table IV* (certain toxic pollutants and hazardous substances);
 - (2) Are listed as a hazardous substance pursuant to *Section 311(b)(2)(A)* of the *CWA* at *40 CFR 116.4*; or
 - (3) Are pollutants for which EPA has published acute or chronic toxicity criteria.

20. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
21. "Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under *Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*; any chemical the facility is required to report pursuant to *EPCRA Section 313*; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.
22. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311 of the Clean Water Act (see 40 CFR 110.10 and 40 CFR 117.21)* or *Section 102 of CERCLA (see 40 CFR 302.4)*.
23. "Storm water" means storm water runoff, snowmelt runoff, and surface runoff and drainage.
24. "Time-weighted composite" means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.
25. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
26. "Waste pile" means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Acronym List

BMP	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CFR	Code of Federal Regulations
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
EPCRA	Emergency Planning & Community Right-to-Know Act
TDS	Total Dissolved Solids

TSS	Total Suspended Solids
UAC	Utah Administrative Code
UCA	Utah Code Annotated
UPDES	Utah Pollutant Discharge Elimination System
WET	Whole Effluent Toxicity

Unit List

mg/L	milligrams per liter
MGD	million gallons per day
ml/L	milliliters per liter
SU	standard units
µg/L	micrograms per liter

B. Description of Discharge Points

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are in violation of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

<u>Outfall Number</u>	<u>Location of Discharge Point</u>
001	Two sedimentation ponds in series known as A and B collect runoff from the surface facilities of the mine. The discharge is from sedimentation pond A to C Canyon Drainage; Latitude 39°36'45" and Longitude 110°26'26".
002	Mine water from the Schroeder Industries BH-10 Multi-Bag Filters. Discharge is to a culvert under the mine carrying C Canyon Drainage through the disturbed area. The discharge is upstream of the 001 discharge; Latitude 39°36'58" and Longitude 110°26'10".

C. Narrative Standard

It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or

taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

D. Specific Limitations and Self-monitoring Requirements

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfalls 001 and 002. Such discharges shall be limited and monitored by the permittee as specified below in *Parts I.D.1. through I.D.4.*

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, ¹ MGD	Report	² NA	NA	3.0	Monthly	Continuous Recorder
TSS, mg/L	25	35	NA	70	2/Month	Grab
Total Iron, mg/L	NA	NA	NA	1.00	2/Month	Grab
Total Aluminum, mg/L a/	NA	NA	NA	0.75	2/Month	Grab
Oil & Grease, mg/L b/	NA	NA	NA	10	Monthly	Grab
TDS, mg/L c/	Report	NA	NA	2000	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	2/Month	Grab
Sanitary Waste d/	NA	NA	NA	None	Monthly	Visual
Oil & Grease, floating solids, visible foam b/	NA	NA	NA	None	2/Month	Visual

¹ MGD: million gallons per day ² NA: not applicable

- a/ Total aluminum is limited only at Outfall 002. If the permittee changes from the aluminum based coagulant to another type of coagulant, the permittee can petition the Executive Secretary to remove the total aluminum limit at Outfall 002. If the Executive Secretary grants this petition, the aluminum limit and monitoring can be removed from the permit without the requirement of a public notice.
- b/ In addition to monthly sampling for oil and grease, a visual inspection for oil and grease, floating solids, and visible foam shall be performed at least twice per month at 001 and 002. There shall be no sheen, floating solids, or visible foam in other than trace amounts. If a sheen is observed, a sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration.

- c/ The TDS concentration from each of the outfalls shall not exceed 2000 mg/L as a daily maximum limit. No tons per day loading limit will be applied if the concentration of TDS in the discharge is equal to or less than 500 mg/L as a thirty-day average. However, if the 30-day average concentration exceeds 500 mg/L, then the permittee cannot discharge more than 1 ton per day as a sum from all discharge points. Upon previous determinations by the Executive Secretary that the permittee is not able to meet the 500 mg/L 30-day average or the 1 ton per day loading limit, the permittee is required to continue to participate in and/or fund a salinity offset project to include the TDS offset credits as appropriate.

The salinity-offset project shall include TDS credits on a ton-for-ton basis for which the permittee is over the 1 ton per day loading limit. The tonnage reduction from the offset project must be calculated by a method similar to one used by the Natural Resources Conservation Service, Colorado River Basin Salinity Control Forum, or other applicable agency.

If the permittee will be participating in the construction and implementation of a new salinity-offset project, then a project description and implementation schedule shall be submitted to the Executive Secretary at least six (6) months prior to the implementation date of the project, which will then be reviewed for approval. The salinity offset project description and implementation schedule must be approved by the Executive Secretary and shall be appended to this permit.

If the permittee will be funding any additional salinity-offset projects through third parties, the permittee shall provide satisfactory evidence to the Executive Secretary that the required funds have been deposited to the third party within six (6) months of project approval by the Executive Secretary. A monitoring and adjustment plan to track the TDS credits shall continue to be submitted to the Executive Secretary for each monthly monitoring period during the life of this permit. Any changes to the monitoring and adjustment plan must be approved by the Executive Secretary and upon approval shall be appended to this permit.

- d/ There shall be no discharge of sanitary waste and visual observations performed at least monthly shall be conducted.

2. Samples collected in compliance with the monitoring requirements specified above shall be collected at outfalls 001 and 002 prior to mixing with the receiving water.
3. Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at outfall 001, substitute the following limitations for the TSS and pH limitations contained in *Part I.D.1*:

Effluent Characteristics	Daily Minimum	Daily Maximum
Settleable solids (SS), milliliter/liter	NA	0.5
pH, SU	6.0	9.0

In order to substitute the above limitations, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.D.1.* (excepting TSS). Such analyses shall be conducted on either grab or composite samples.

Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at outfall 001, comply with the following pH limitation instead of the limitation contained in *Part I.D.1.*:

Effluent Characteristics	Daily Minimum	Daily Maximum
pH, SU	6.0	9.0

In order to substitute the above limitation, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.D.1.* Such analyses shall be conducted on either grab or composite samples.

4. The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in *Part I.D.3.* The alternate limitation in *Part I.D.3* shall not apply to treatment systems that treat exclusively underground mine water (i.e. outfall 002).

II. STORM WATER DISCHARGE REQUIREMENTS

A. Coverage of This Section

1. Discharges Covered Under This Section. The requirements listed under this section shall apply to storm water discharges from the industrial facility.

a. Site Coverage. This section covers discharges of storm water associated with industrial activity to waters of the State from the confines of the facility listed on the cover page. Specific monitoring requirements have been included and are based on the requirements of the UPDES Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity, Permit No. UTR000000.

B. Prohibition of Non-Storm Water Discharges

The following non-storm water discharges may be authorized under this permit provided the non-storm water component of the discharge is in compliance with this section; discharges from fire fighting activities; fire hydrant flushing; potable water sources including waterline flushing; drinking fountain water; irrigation drainage and lawn watering; routine external building wash down water where detergents or other compounds have not been used in the process; pavement wash waters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

C. Storm Water Pollution Prevention Plan Requirements

The plan shall include, at a minimum, the following:

1. Pollution Prevention Team. Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.

2. Description of Potential Pollutant Sources. Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials, which may be reasonably expected to have the potential as a significant pollutant source. Each plan shall include, at a minimum:
 - a. Drainage. A site map must be maintained indicating drainage areas and storm water outfalls. For each area of the facility that generates storm water discharges associated with the waste water treatment related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an identification of the types of pollutants that are likely to be present in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified. The site map shall include but not be limited to:
 - (1) Drainage direction and discharge points from all wastewater associated discharges.
 - (2) Location of any erosion and sediment control structure or other control measures utilized for reducing pollutants in storm water runoff.
 - (3) Location of any handling, loading, unloading or storage of chemicals or potential pollutants such as caustics, hydraulic fluids, lubricants, solvents or other petroleum products, or hazardous wastes and where these may be exposed to precipitation.
 - (4) Locations where any major spills or leaks of toxic or hazardous materials have occurred
 - (5) Location of any sand or salt piles.

- (6) Location of fueling stations or vehicle and equipment maintenance and cleaning areas that are exposed to precipitation.
 - (7) Location of receiving streams or other surface water bodies.
 - (8) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.
- b. Inventory of Exposed Materials. An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the effective date of this permit; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the effective date of this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.
- c. Spills and Leaks. A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.
- d. Sampling Data. A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.
- e. Summary of Potential Pollutant Sources and Risk Assessment. A narrative description of the potential pollutant sources from the following activities associated with treatment works: access roads/rail lines; loading and unloading operations; outdoor storage activities; material handling sites; outdoor vehicle storage or maintenance sites; significant dust or particulate generating processes;

and onsite waste disposal practices. Specific potential pollutants shall be identified where known.

3. Measures and Controls. The facility shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:
 - a. Good Housekeeping. All areas that may contribute pollutants to storm waters discharges shall be maintained in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Areas where good housekeeping practices should be implemented are storage areas for raw materials, waste materials and finished products; loading/unloading areas and waste disposal areas for hazardous and non-hazardous wastes. Examples of good housekeeping measures include; sweeping; labeling drums containing hazardous materials; and preventive monitoring practices or equivalent measures.
 - b. Preventive Maintenance. A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.
 - c. Spill Prevention and Response Procedures. Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points, shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures and equipment for cleaning up spills shall be identified in the plan and made available to the appropriate personnel.

- d. Inspections. In addition to the comprehensive site evaluation required under *Part II.D.*, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility on a periodic basis. The following areas shall be included in all inspections: loading and unloading areas for all significant materials; storage areas, including associated containment areas; waste management units; and vents and stacks from industrial activities. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the facility is encouraged.
- e. Employee Training. Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify how often training will take place, but training should be held at least annually (once per calendar year). Employee training must, at a minimum, address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and control; fueling procedures; general good housekeeping practices; proper procedures for using fertilizers, herbicides and pesticides.
- f. Record Keeping and Internal Reporting Procedures. A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under *Part II.C.* Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.
- g. Non-storm Water Discharges.
- (1) Certification. The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of

potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part V.G.* of this permit.

- (2) Exceptions. Except for flows from fire fighting activities, sources of non-storm water listed in *Part II.B. (Prohibition of Non-storm Water Discharges)* that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
 - (3) Failure to Certify. Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the Executive Secretary within 180 days of the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the State that are not authorized by a UPDES permit are unlawful, and must be terminated.
- h. Sediment and Erosion Control. The plan shall identify areas, which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.
 - i. Management of Runoff. The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants)

used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity (*see Part II.C.2, Description of Potential Pollutant Sources*) shall be considered when determining reasonable and appropriate measures. Appropriate measures or other equivalent measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, wet detention/retention devices and discharging storm water through the waste water facility for treatment.

D. Comprehensive Site Compliance Evaluation

Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:

1. Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.
2. Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with *Part II.C.2. (Description of Potential Pollutant Sources)* and pollution prevention measures and controls identified in the plan in accordance with *Part II.C.3. (Measures and Controls)* shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.

3. A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with *Part II.C.3.i.* shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with *Part IV.G (Signatory Requirements)* of this permit.
4. Deadlines for Plan Preparation and Compliance. The facility shall prepare and implement a plan in compliance with the provisions of *Part II* of this permit within 270 days of the permit effective date.
5. Keeping Plans Current. The facility shall amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the state or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified by the plan, or in otherwise achieving the general objective of controlling pollutants in storm water discharges associated with the activities at the facility.

E. Monitoring and Reporting Requirements

1. Quarterly Visual Examination of Storm Water Quality. The facility shall perform and document a visual examination of a storm water discharge associated with industrial activity from each outfall, except discharges exempted below. The examination must be made at least once in each of the following designated periods during daylight hours unless there is insufficient rainfall or snow melt to produce a runoff event: January through March; April through June; July through September; and October through December.
 - a. Sample and Data Collection. Examinations shall be made of samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm

water pollution. The examination must be conducted in a well-lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Where practicable, the same individual should carry out the collection and examination of discharges for entire permit term.

- b. Visual Storm Water Discharge Examination Reports. Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.
- c. Representative Discharge. If the permittee reasonably believes multiple outfalls discharge substantially identical effluents, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by an outfall, the permittee may collect a sample of effluent from one such outfall and report that the observation data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan.
- d. Adverse Conditions. When a discharger is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the results of the visual examination. Adverse weather conditions, which may prohibit the collection of samples,

include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

- e. Inactive and Unstaffed Site. When a discharger is unable to conduct visual storm water examinations at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the pollution prevention plan stating that the site is inactive and unstaffed so that performing visual examinations during a qualifying event is not feasible.

F. EPCRA Section 313 Requirements

- 1. In areas where *Section 313* water priority chemicals are stored, processed or otherwise handled, appropriate containment, drainage control and/or diversionary structures shall be provided. At a minimum, one of the following preventive systems or its equivalent shall be used:
 - a. Curbing, culverting, gutters, sewers, or other forms of drainage control to prevent or minimize the potential for storm water run-on to come into contact with significant sources of pollutants; or
 - b. Roofs, covers or other forms of appropriate protection to prevent storage piles from exposure to storm water and wind.
- 2. No tank or container shall be used for the storage of a *Section 313* water priority chemical unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.

Liquid storage areas for *Section 313* water priority chemicals shall be operated to minimize discharges of *Section 313* chemicals. Appropriate measures to minimize discharges of *Section 313* chemicals may include secondary containment provided for at least the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation, a strong spill contingency and integrity testing plan, and/or other equivalent measures.

3. Material storage areas for *Section 313* water priority chemicals other than liquids that are subject to runoff, leaching, or wind shall incorporate drainage or other control features that will minimize the discharge of *Section 313* water priority chemicals by reducing storm water contact with *Section 313* water priority chemicals.
4. Truck and rail car loading and unloading areas for liquid *Section 313* water priority chemicals shall be operated to minimize discharges of *Section 313* water priority chemicals. Protection such as overhangs or door skirts to enclose trailer ends at truck loading/unloading docks shall be provided as appropriate. Appropriate measures to minimize discharges of *Section 313* chemicals may include: the placement and maintenance of drip pans (including the proper disposal of materials collected in the drip pans) where spillage may occur (such as hose connections, hose reels and filler nozzles) for use when making and breaking hose connections; a strong spill contingency and integrity testing plan; and/or other equivalent measures.
5. Processing equipment and materials handling equipment shall be operated so as to minimize discharges of *Section 313* water priority chemicals. Materials used in piping and equipment shall be compatible with the substances handled. Drainage from process and materials handling areas shall minimize storm water contact with *Section 313* water priority chemicals. Additional protection such as covers or guards to prevent exposure to wind, spraying or releases from pressure relief vents from causing a discharge of *Section 313* water priority chemicals to the drainage system shall be provided as appropriate. Visual inspections or leak tests shall be provided for overhead piping conveying *Section 313* water priority chemicals without secondary containment.
6. Drainage from areas covered by *Parts II.F. 1, 2, 3, or 4* should be restrained by valves or other positive means to prevent the discharge of a spill or other excessive leakage of *Section 313* water priority chemicals. Where containment units are employed, such units may be emptied by pumps or ejectors; however, these shall be manually activated.

Flapper-type drain valves shall not be used to drain containment areas. Valves used for the drainage of containment areas should, as far as is practical, be of manual, open-and-closed design. If facility drainage is not engineered as above, the final discharge of all in-facility storm sewers shall be equipped to be equivalent with a diversion system that could, in the event of an uncontrolled spill

of *Section 313* water priority chemicals, return the spilled material to the facility.

Records shall be kept of the frequency and estimated volume (in gallons) of discharges from containment areas.

7. Other areas of the facility (those not addressed in *Parts II.F. 1, 2, 3, or 4*, from which runoff that may contain *Section 313* water priority chemicals or spills of *Section 313* water priority chemicals could cause a discharge shall incorporate the necessary drainage or other control features to prevent discharge of spilled or improperly disposed material and ensure the mitigation of pollutants in runoff or leachate.
8. All areas of the facility shall be inspected at specific intervals identified in the plan for leaks or conditions that could lead to discharges of *Section 313* water priority chemicals or direct contact of storm water with raw materials, intermediate materials, waste materials or products. In particular, facility piping, pumps, storage tanks and bins, pressure vessels, process and material handling equipment, and material bulk storage areas shall be examined for any conditions or failures that could cause a discharge. Inspection shall include examination for leaks, wind blowing, corrosion, support or foundation failure, or other forms of deterioration or non-containment. Inspection intervals shall be specified in the plan and shall be based on design and operational experience. Different areas may require different inspection intervals. Where a leak or other condition is discovered that may result in significant releases of *Section 313* water priority chemicals to waters of the State, action to stop the leak or otherwise prevent the significant release of *Section 313* water priority chemicals to waters of the State shall be immediately taken or the unit or process shut down until such action can be taken. When a leak or non-containment of a *Section 313* water priority chemical has occurred, contaminated soil, debris, or other material must be promptly removed and disposed in accordance with Federal, State, and local requirements and as described in the plan.
9. Facilities shall have the necessary security systems to prevent accidental or intentional entry that could cause a discharge. Security systems described in the plan shall address fencing, lighting, vehicular traffic control, and securing of equipment and buildings.
10. Facility employees and contractor personnel that work in areas where *Section 313* water priority chemicals are used or stored shall

be trained in and informed of preventive measures at the facility. Employee training shall be conducted at intervals specified in the plan, but not less than once per year. Training shall address: pollution control laws and regulations, the storm water pollution prevention plan and the particular features of the facility and its operation that are designed to minimize discharges of *Section 313* water priority chemicals. The plan shall designate a person who is accountable for spill prevention at the facility and who will set up the necessary spill emergency procedures and reporting requirements so that spills and emergency releases of *Section 313* water priority chemicals can be isolated and contained before a discharge of a *Section 313* water priority chemical can occur. Contractor or temporary personnel shall be informed of facility operation and design features in order to prevent discharges or spills from occurring.

III. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling

Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Sludge samples shall be collected at a location representative of the quality of sludge immediately prior to the use-disposal practice.

B. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under *Utah Administrative Code (UAC) R317-2-10*, unless other test procedures have been specified in this permit.

C. Penalties for Tampering

The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Reporting of Monitoring Results

Monitoring results obtained during the previous month shall be summarized for each month and reported on a DMR Form (EPA No. 3320-1), post-marked no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports shall be signed and certified in accordance with the requirements of *Signatory Requirements (Part V.G.)*, and submitted by NetDMR, or submitted to the Division of Water Quality at the following address:

original to: Department of Environmental Quality
Division of Water Quality
195 North 1950 West
PO Box 144870
Salt Lake City, Utah 84114-4870

E. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. Additional Monitoring by the Permittee

If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* or as otherwise specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

G. Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

H. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Executive Secretary at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location.

I. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall (orally) report any noncompliance that may seriously endanger health or environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of circumstances. The report shall be made to the Division

of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
 - a. Any noncompliance that may endanger health or the environment;
 - b. Any unanticipated bypass that exceeds any effluent limitation in the permit (*see Part IV.G, Bypass of Treatment Facilities.*);
 - c. Any upset which exceeds any effluent limitation in the permit (*see Part IV.H, Upset Conditions.*); or,
 - d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected; and,
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
4. The Executive Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.
5. Reports shall be submitted to the addresses in *Part III.D, Reporting of Monitoring Results.*

J. Other Noncompliance Reporting

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part III.D* are submitted. The reports shall contain the information listed in *Part III.I.3*.

K. Inspection and Entry.

The permittee shall allow the Executive Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location.

IV. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions

The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions of the Act is subject to a fine not exceeding \$25,000 per day of violation; Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding \$50,000 per day. Except as provided at *Part IV.G, Bypass of Treatment Facilities* and *Part IV.H, Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar

systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances

Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities

1. **Bypass Not Exceeding Limitations.** The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to *Parts IV.G.2. and IV.G.3.*
2. **Prohibition of Bypass.**
 - a. Bypass is prohibited, and the Executive Secretary may take enforcement action against a permittee for bypass, unless:
 - (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
 - (3) The permittee submitted notices as required under *Part IV.G.3.*
 - b. The Executive Secretary may approve an anticipated bypass, after considering its adverse effects, if the Executive Secretary determines that it will meet the three conditions listed in *Part IV.G.2a. (1), (2) and (3).*

3. Notice.

- a. Anticipated bypass. Except as provided in *Part IV.G.2. and Part IV.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Executive Secretary:
- (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
 - (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Executive Secretary in advance of any changes to the bypass schedule;
 - (3) Description of specific measures to be taken to minimize environmental and public health impacts;
 - (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;
 - (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and
 - (6) Any additional information requested by the Executive Secretary.
- b. Emergency Bypass. Where ninety days advance notice is not possible, the permittee must notify the Executive Secretary, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Executive Secretary the information in *Part IV.G.3.a.(1)* through (6) to the extent practicable.
- c. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass to the Executive Secretary as required under *Part III.I., Twenty-four-Hour Notice of Non-Compliance Reporting*. The permittee shall also

immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of *Part IV.H.2.* are met. Executive Secretary's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.
2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - b. The permitted facility was at the time being properly operated;
 - c. The permittee submitted notice of the upset as required under *Part III.I, Twenty-four Hour Notice of Noncompliance Reporting*; and,
 - d. The permittee complied with any remedial measures required under *Part IV.D, Duty to Mitigate*.
3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Toxic Pollutants

The permittee shall comply with effluent standards or prohibitions established under *Section 307(a) of The Water Quality Act of 1987* for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

J. Changes in Discharge of Toxic Substances

Notification shall be provided to the Executive Secretary as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - a. One hundred micrograms per liter (100 µg/L);
 - b. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(7)* or (10); or,
 - d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - a. Five hundred micrograms per liter (500 µg/L);
 - b. One milligram per liter (1 mg/L) for antimony;
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(9)*; or,
 - d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.

K. Industrial Pretreatment

Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to *Section 307 of The Water Quality*

Act of 1987, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

V. GENERAL REQUIREMENTS

A. Planned Changes

The permittee shall give notice to the Executive Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Executive Secretary of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance

The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

C. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information

The permittee shall furnish to the Executive Secretary, within a reasonable time, any information which the Executive Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Executive Secretary, upon request, copies of records this permit requires to be kept.

F. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Executive Secretary, it shall promptly submit such facts or information.

G. Signatory Requirements

All applications, reports or information submitted to the Executive Secretary shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.
2. All reports required by the permit and other information requested by the Executive Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Executive Secretary, and,
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. Changes to authorization. If an authorization under *Part V.G.2.* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *Part V.G.2.* must be submitted to the Executive Secretary prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under *Part V.G.* shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a

system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports

The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports

Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Executive Secretary. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential

J. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers

This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Executive Secretary at least 20 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
3. The Executive Secretary does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in *Part V.M.2.*

N. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117.*

O. Water Quality-Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.

3. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.

P. Toxicity Limitation-Re-opener Provision

This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

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Bonding Calculations

Direct Costs

Subtotal Demolition and Removal	\$394,222.00	
Subtotal Backfilling and Grading	\$861,754.27	
Subtotal Revegetation	\$160,236.00	
Direct Costs	\$1,416,212.27	

Indirect Costs

Mob/Demob	\$141,621.00	10.0%
Contingency	\$70,811.00	5.0%
Engineering Redesign	\$35,405.00	2.5%
Main Office Expense	\$96,302.00	6.8%
Project Maignement Fee	\$35,405.00	2.5%
Subtotal Indirect Costs	\$379,544.00	26.8%

Total Cost	\$1,795,756.27	
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Escalation factor		0.012
Number of years		5
Escalation	\$110,362.00	

Reclamation Cost	\$1,906,118.27	
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Bond Amount (rounded to nearest \$1,000) 2012 Dollars	\$1,906,000.00	
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Bond Posted 2004	\$2,117,000.00	
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Difference Between Cost Estimate and Bond	\$211,000.00	
Percent Difference	11.07%	

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Shop Warehouse 01																			
		Structure Demolition Cost	Mixed Materials Big Large	02 41 16 13 D100	0.35/CF	CF	160	60	30									0.33	264000	CF	102900
		Structure Demolition Cost	Rebar's Weight (excludes steel)																		
		Structure Demolition Cost	Truck's Capacity																		
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35'x8'5 Truck)																			
		Steel's Weight		Scamp	4/CF	CF															14050
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			114950
		Equipment's Disposal Cost																			
		Demolition Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transportation Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	02 41 16 17 0440 - 18	10.05/CF	CF	60	160	0.67												2352
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92/CF	CF															52
		Transportation Cost	12 CY (16 Ton) Dump Truck 112 ml. mt.	31 23 23 20 1014	3.19/CF	CF															312
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2/CF	CF															
		Subtotal																			7128
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
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		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			122003

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Bathroom 02																			
		Structure's Demolition Cost	Mixed Materials Bld. Large	02 41 16 13 0 00	0.35 /CF	CF	40	120	12									0.35	5160 /CF	CF	2150
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Dump																			
		Transportation Cost Non Steel (35x85 Truck)		Scamp	4 /CY	CY															
		Steel's Weight																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			22978
		Equipment's Disposal Cost																			
		Demolition Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Concrete's Vol. Demolished	Concrete demolition	02 41 16 17 04 40 - U	10.05 /CY	CY	40	120	0.57												1122
		Loading Cost	Front end loader 3 CY		1.62 /CY	CY															234
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd.	1 31 23 16 42 1300	3.19 /CY	CY															494
		Disposal Costs	Disposal on site	02 41 16 17 4 200	10.2 /CF	CF															1531
		Subtotal																			3969
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Costs																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Costs																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			26948

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swall Factor	Quantity	Unit	Cost	
		Administration Office 03																				
		Structure's Demolition Cost	Mixed Materials Bld. Large	02.41.16.13.0100	0.35/ICF		40	70	18									0.33	5322.0CF		17642	
		Rubble's Weight (exclude steel)																	515.0CY			
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel 12500 Truck																				
		Steel's Weight	Scrap		4/ICY															815.0CY	252	
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				20104
		Equipment's Disposal Cost																				
		Demolition Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transport Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				21662

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Height	Density	Time	Number	Unit	Swall Factor	Quantity	Unit	Cost
		Powder Magazine D4																			
		Structure's Demolition Cost																			
		Rubble's Vol. Demolished	Mixed Materials Bld. Large	02 41 16 13 0100	0.35 /CF	CF	8	8	8										124	CF	33
		Rubble's Weight (excl. steel)																	13	CF	
		Truck's Capacity																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35x8.5 Truck)		Scamp		4 /CY															
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			410
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241 16 17 0440 - U	10.05 /CY	CY	10	10	0.5												
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92 /CY	CY															
		Transportation Cost	12 CY (15 Ton) Dump Truck 1/2 mi. rtd.	43 1 23 23 20 1014	3.19 /CY	CY															
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2 /CF	CF															
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			537

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swail Factor	Quantity	Unit	Cost
		Overhead Conveyor 05																			
		Structure's Demolition Cost																			
		Structure's Vol. Demolished	Mixed Materials Bld. Large	02 41 16 13 0100	0.35 /CF	CF	550	7	6									0.35	2520 CF	CF	2025
		Rubble's Weight (excl. steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35x85 Truck)		Scamp		4 /CY															
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			2213
		Equipment's Disposal Cost																			
		Demolishing Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolishing Cost																			
		Concrete's Vol. Demolished																			
		Loading Costs																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolishing Cost																			
		Concrete's Vol. Demolished																			
		Loading Costs																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolishing Cost																			
		Concrete's Vol. Demolished																			
		Loading Costs																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			2213

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swall Factor	Capacity	Unit	Cost
		Conveyor Belts 06																			
		Structure's Vol. Demolished	Mixed Materials Blr. Large	02.41.16.13.0100	0.35	CF	50	15	1.5							4	FT	0.33	2500	CF	1573
		Rubble's Weight (exclude steel)																			
		Hydraz																			
		Hydraulic Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35x45 Truck)		Scamp		4															
		Steel's Weight																			
		Truck's Capacity																			
		Hydraz																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			1795
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	02.41.16.17.0440 - 0	10.05	CY	4	20	1							4	FT				121
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31.23.16.42.1300	1.92	CY															
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd.	31.23.23.20.1014	3.18	CY															
		Disposal Costs	Disposal on site	02.41.16.17.4200	10.2	CF															
		Subtotal																			395
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			2191

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Ohio LR 07																			
		Structure Demolition Cost	Mixed Materials Bld. Large	02.41.16.13.0100	0.35/CF		20	30	6									0.33	35.01 CF		12.25
		Structure's Vol. Demolished																	44.01 CF		
		Truck's Weight (exclude steel)																			
		Truck's Capacity																			
		House																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35'x8'5" Truck)		Scamp																	
		Steel's Weight																			
		Truck's Capacity																			
		House																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			14.96
		Equipment's Disposal Cost																			
		Demolition Cost																			
		Equipment's Vol. Demolished																			
		House																			
		Truck's Capacity																			
		House																			
		Truck's Capacity																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241.16.17.0440 - U	10.05/CF		20	30	1												
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31.23.16.42.1900	1.92/CF																
		Transportation Cost	12 CY (16 Ton) Dump Truck (12 mi. rd.	31.23.23.20.1014	3.19/CF																
		Disposal Costs	Dispose on site	02.41.16.17.4200	10.2/CF																
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			2102

Ref.	Task	Description	Materials	Mears Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Scale Factor	Quantity	Unit	Cost
		Discharge Structure 08																			
		Structure's Demolition Cost	Mixed Materials Bld. Large	02.41.16.13.0100	0.35	ICF	230		7	6							FT	0.33	952	ICF	335.1
		Structure's Vol. Demolished																			
		Rubble's Weight (excludes steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Transportation Cost Steel Truck Drive																			
		Steel's Weight (S&S Truck)		Scamp																	
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			3553
		Equipment's Disposal Cost																			
		Equipment's Vol. Demolished																			
		Equipment's Weight																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Costs																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Costs																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			3553

Demolition Costs

West Ridge C/0070041 Task 3930

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Bent Angle Bracing 09																			
		Structure's Demolition Cost	Mixed Materials Bld. Large	02 41 16 13 0100	0.35	/CF	70	20	2									0.33	2322	CF	825
		Structure's Vol. Demolished																			
		Robble's Weight (excl. steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35x8.5 Truck)		Scamp	4	/CY															
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			1119
		Equipment's Disposal Cost																			
		Demolition Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	02 41 16 17 0440 - L	10.05	/CY	2	30	0.57												
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92	/CY															
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd.	31 23 23 20 1014	3.19	/CY															
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2	/CF															
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			1141

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost	
		Reclaim Conveyor Stringers 10																				
		Structure's Demolition Cost	Mixed Materials Bld. Large	02 41 16 13 0100	0.35 /CF		320	5	3										1550	CF	1550	
		Rubble's Vol. Demolished																	59	CF		
		Rubble's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Steel's Weight (3283 Truck)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																			1916	
		Equipment's Disposal Cost																				
		Dismantling Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transport Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost	Concrete demolition	0241 16 17 0440 - 1	10.09 /CY		60	160	1													
		Concrete's Vol. Demolished																				
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92 /CY																	
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23 20 1014	3.19 /CY																	
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2 /CF																	
		Subtotal																			3278	
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																			10667	
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																			12583	
		Total																			12583	

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swall Factor	Quantity	Unit	Cost
		Crusher Building 11																			
		Structure's Demolition Cost	Mixed Materials BH Large	02 41 16 13 0100	0.35/CF		24	50	30										36500 CF		12500
		Structure's Vol. Demolished																	440 CF		
		Rubble's Weight (excludes steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35.85 Trucks)		Scrap		4/CF															
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			14390
		Equipment's Disposal Cost																			
		Demolition Cost																			
		Equipment's Vol. Demolished																			
		Scrap Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost		0241 16 17 0440 - U	10.05/CF		24	50	0.67												
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost		31 23 16 42 1300	1.97/CF																
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost		02 41 16 17 4200	10.2/CF																
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			15299

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Units	Swall Factor	Quantity	Unit Cost	
		Reclaim Tunnel Headwall 12																			
		Structure's Demolition Cost	Mixed Materials Bld. Large	02 41 16 13 0100	0.35/CF		20	15	15								FT		4200 CF	1575	
		Structure's Vol. Demolished																	38 C.Y.		
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Dump																			
		Disposal Cost Non Steel (35.85 Truck)																			
		Steel's Weight	Scamp		4/ICY																
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Special																			
		Floor																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241 16 17 0440 -L	10.05/ICY		20	15	1												
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92/ICY																
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip	31 23 23 20 1014	3.19/ICY																
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2/CF																
		Subtotal																			
		Wall's Demo. Cost																			
		Concrete Demolition	Concrete demolition	0241 16 17 0440 -L	10.05/ICY		15	15	1												
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92/ICY																
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip	31 23 23 20 1014	3.19/ICY																
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2/CF																
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swill Factor	Quantity	Unit	Cost	
		Loadout Conveyor 13																				
		Structure's Demolition Cost																				
		Structure's Vol. Demolished	Mixed Materials Bld. Large	02-41.16.13.0100	0.35/CF	CF	160	4	6									0.33	3450	CF	13.53	
		Rubble's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Scrap (Non Steel) (3.282 Truck)		Scrap		4/CFY																
		Stack's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				1832
		Equipment's Disposal Cost																				
		Dismantling Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transport Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				1832

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Skull Parts	Quantity	Unit	Cost
		Loadout Conveyor Bent 14																			
		Structure's Demolition Cost	Mixed Materials Bld. Large	02 41 16 13 0100	0.35	ICF	20	8	1.5										240	CF	84
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35'x8'5" Truck)																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			96
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241 16 17 0440 - 1	10.05	ICY	4	12	1.5												32
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 43 1300	1.85	ICY															3
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23 26 1014	3.10	ICY															3
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.7	ICF															41
		Subtotal																			52
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			198

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Misc Fan 15																			
		Mixed Materials Bld Large		02 41 16 13 0100	0.39	/CF	12	12	12	50											
		Structure's Vol Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35x85 Truck)		S-camp																	
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			2872
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost		02 41 16 17 0440 - 1	10.05	/CY	12	50	1												
		Concrete's Vol Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			3533

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Units	Swell Factor	Quantity	Unit	Cost
		Ductwork Ailcock 16																			
		Structure's Demolition Cost																			
		Structure's Vol. Demolished	Steel Bld. Large	02 41 16 13 0020	0.33/CF		70	20	12								FT		19800 CF		6232
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Transportation Cost Non Steel (3.29 Truck)																			
		Sheek's Weight	Scamp		4/CF																
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			6594
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241 16 17 0440 -L	10.06/CF		70	20	1								FT	1.3	870 CF		8765
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost	Front end loader 3 CY	31 23 16 42 1300	1.92/CF																
		Disposal Cost	12 CY (16 Top) Dump Truck 1/2 mi. md. trip	31 23 23 20 1014	3.19/CF																
		Subtotal	Disposal on site	02 41 16 17 4200	10.2/CF																1556
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			7929

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Small Factor	Quantity	Unit	Cost
		Motor Room 17																			
		Structure's Demolition Cost	Steel Bldg. Large	02 41 16 13 0020	0.33/CF		16	16	10									0.33	2920 CF	31 C'	342
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35'x85' Truck)																			
		Steel's Weight	Scrap																		
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			969
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	02 41 16 17 0440 - L	10.05/CY		16	16	1												92
		Loading Cost																			
		Transportation Cost	Front end loader 3 CY	31 23 16 42 1300	1.82/CY																21
		Disposal Costs	12 CY (16 Ton) Dump Truck 1/2 mi. rd. off	31 33 23 20 1014	3.19/CY																38
		Subtotal	Disposal on site	02 41 16 17 4200	10.2/CF																273
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			1242

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Smell Factor	Quantity	Unit	Cost
	MCC 18	Structure's Demolition Cost	Steel Bld. Large	02 41 16 13 0020	0.37/CF		12	20	9										2.56/CF		7.1
		Structure's Vol. Demolished																	2.56/CF		7.1
		Subble's Weight (exclude steel)																	2.56/CF		7.1
		Truck Capacity																	2.56/CF		7.1
		Haulage																	2.56/CF		7.1
		Transportation Cost Non Steel Truck																	2.56/CF		7.1
		Transportation Cost Non Steel Drive																	2.56/CF		7.1
		Disposal Cost Non Steel (35x85 Trucks)		Scamp	4/CF														2.56/CF		7.1
		Steel's Weight																	2.56/CF		7.1
		Truck's Capacity																	2.56/CF		7.1
		Haulage																	2.56/CF		7.1
		Transportation Cost Steel Truck																	2.56/CF		7.1
		Transportation Cost Steel Truck Drive																	2.56/CF		7.1
		Disposal Cost Steel																	2.56/CF		7.1
		Subtotal																	2.56/CF		7.1
		Equipment's Disposal Cost																	2.56/CF		7.1
		Demolition Cost																	2.56/CF		7.1
		Equipment's Vol. Demolished																	2.56/CF		7.1
		Loading Costs																	2.56/CF		7.1
		Transport Costs																	2.56/CF		7.1
		Disposal Costs																	2.56/CF		7.1
		Subtotal																	2.56/CF		7.1
		Concrete Demolition																	2.56/CF		7.1
		Demolition Cost																	2.56/CF		7.1
		Concrete's Vol. Demolished																	2.56/CF		7.1
		Loading Cost																	2.56/CF		7.1
		Transportation Cost																	2.56/CF		7.1
		Disposal Costs																	2.56/CF		7.1
		Subtotal																	2.56/CF		7.1
		Concrete Demolition																	2.56/CF		7.1
		Demolition Cost																	2.56/CF		7.1
		Concrete's Vol. Demolished																	2.56/CF		7.1
		Loading Cost																	2.56/CF		7.1
		Transportation Cost																	2.56/CF		7.1
		Disposal Costs																	2.56/CF		7.1
		Subtotal																	2.56/CF		7.1
		Concrete Demolition																	2.56/CF		7.1
		Demolition Cost																	2.56/CF		7.1
		Concrete's Vol. Demolished																	2.56/CF		7.1
		Loading Cost																	2.56/CF		7.1
		Transportation Cost																	2.56/CF		7.1
		Disposal Costs																	2.56/CF		7.1
		Subtotal																	2.56/CF		7.1
		Concrete Demolition																	2.56/CF		7.1
		Demolition Cost																	2.56/CF		7.1
		Concrete's Vol. Demolished																	2.56/CF		7.1
		Loading Cost																	2.56/CF		7.1
		Transportation Cost																	2.56/CF		7.1
		Disposal Costs																	2.56/CF		7.1
		Subtotal																	2.56/CF		7.1
		Concrete Demolition																	2.56/CF		7.1
		Demolition Cost																	2.56/CF		7.1
		Concrete's Vol. Demolished																	2.56/CF		7.1
		Loading Cost																	2.56/CF		7.1
		Transportation Cost																	2.56/CF		7.1
		Disposal Costs																	2.56/CF		7.1
		Subtotal																	2.56/CF		7.1
		Total																	2.56/CF		7.1

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Quantity	Unit Cost	
		Portals 19																		
		Structure's Demolition Cost																		
		Structure's Vol. Demolished																		
		Rubble's Weight (exclude steel)																		
		Truck's Capacity																		
		Haulage																		
		Transportation Cost Non Steel Truck																		
		Transportation Cost Non Steel Dump																		
		Disposal Cost Non Steel (35x35 Truck)																		
		Steel's Weight		Scrap																
		Truck's Capacity																		
		Haulage																		
		Transportation Cost Steel Truck																		
		Transportation Cost Steel Truck Drive																		
		Disposal Cost Steel																		
		Subtotal																		
		Equipment's Disposal Cost																		
		Disarming Cost																		
		Equipment's Vol. Demolished																		
		Loading Costs																		
		Transport Costs																		
		Disposal Costs																		
		Subtotal																		
		Concrete Demolition																		
		Demolition Cost																		
		Concrete's Vol. Demolished																		
		Loading Cost																		
		Transportation Cost																		
		Disposal Costs																		
		Subtotal																		
		Concrete Demolition																		
		Demolition Cost																		
		Concrete's Vol. Demolished																		
		Loading Cost																		
		Transportation Cost																		
		Disposal Costs																		
		Subtotal																		
		Concrete Demolition																		
		Demolition Cost																		
		Concrete's Vol. Demolished																		
		Loading Cost																		
		Transportation Cost																		
		Disposal Costs																		
		Subtotal																		
		Concrete Demolition																		
		Demolition Cost																		
		Concrete's Vol. Demolished																		
		Loading Cost																		
		Transportation Cost																		
		Disposal Costs																		
		Subtotal																		
		Total																		

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Line	Swall Factor	Quantity	Unit	Cost
		Rock Dust Tanks 20																			
		Structure's Demolition Cost	Mixed Materials Bid, Large	02 41 16 13 0100	0.35	ICF		40	12						2 FT		0.35	9243			3197
		Structure's Vol. Demolished																			
		Rubble's Weight (excl. steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (37.83 Truck)																			
		Steel's Weight	Scrap		4	ICY															
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			3611
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241 16 17 0440 -1	10.05	ICY	20	40		1					2 FT						552
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92	ICY															123
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23 20 1014	3.19	ICY															359
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2	ICF															1112
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			5505

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Oil Grease Storage 21																			
		Structure's Demolition Cost	Mixed Materials Bld. Large	02 41 16 13 0100	0.35 /CF		10	30	10										3000 CF		1260
		Structure's Vol. Demolished																			
		Structure's Weight (exclude steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35 x85 Truck)		Scamp	4 /CY																
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			1196
		Equipment & Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241 16 17 0440 - U	10.09 /CY		10	30	0.5												57
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92 /CY																15
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip	31 23 33 30 1014	3.19 /CY																29
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2 /CF																22
		Subtotal																			152
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			1351

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Weld Factor	Quantity	Unit	Cost	
		Dumper Bay 22																				
		Structure's Demolition Cost	Mixed Materials Bld. Large	02 41 16 13 0100	0.35 /CF		30	40	6										7200 CF		2520	
		Structure's Vol. Demolished																	58 C.Y.			
		Structure's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (35'x8'5"Truck)		Scamp	4 /CY																	352
		Steel's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				2872
		Equipment & Disposal Cost																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost	Concrete demolition	0241 16 17 0400 - U	10.05 /CY		30	40	0.67													302
		Concrete's Vol. Demolished																				
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92 /CY																	
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip	31 23 23 10 14	3.19 /CY																	
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2 /CF																	
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				3171

Ref	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Small Factor	Quantity	Unit	Cost
		Monitoring Well 23																			
		Structure's Demolition Cost																			
		Structure's Vol. Demolished																			
		Rubble's Weight (excludes steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (35'x8'5" Truck)		Scrap																	
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			5000
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			5000

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Lim	Soil Factor	Capacity	Unit Cost
	Hilker Wall 24	Structure's Demolition Cost	Steel Bld. Large	02.41.16.13.0012	0.33	CF	150	30	12										5000	17522
		Structure's Vol. Demolished																	950	
		Rubble's Weight (exclude steel)																		
		Truck's Capacity																		
		Haulage																		
		Transportation Cost Non Steel Truck																		
		Transportation Cost Non Steel Drive																		
		Disposal Cost Non Steel (35'x95' Truck)		Scamp		4	ICY													
		Steel's Weight																		
		Truck's Capacity																		
		Haulage																		
		Transportation Cost Steel Truck																		
		Transportation Cost Steel Truck Drive																		
		Disposal Cost Steel																		
		Subtotal																		20450
		Equipment's Disposal Cost																		
		Demolition Cost																		
		Equipment's Vol. Demolished																		
		Loading Cost																		
		Transportation Cost																		
		Disposal Costs																		
		Subtotal																		
		Concrete Demolition																		
		Demolition Cost																		
		Concrete's Vol. Demolished																		
		Loading Cost																		
		Transportation Cost																		
		Disposal Costs																		
		Subtotal																		
		Concrete Demolition																		
		Demolition Cost																		
		Concrete's Vol. Demolished																		
		Loading Cost																		
		Transportation Cost																		
		Disposal Costs																		
		Subtotal																		
		Concrete Demolition																		
		Demolition Cost																		
		Concrete's Vol. Demolished																		
		Loading Cost																		
		Transportation Cost																		
		Disposal Costs																		
		Subtotal																		
		Total																		20450

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Steel Factor	Quantity	Unit	Cost	
		Guard Rail 25																				
		Structure's Demolition Cost																				
		Structure's Vol. Demolished																				
		Rubble's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (35'x6'57' Truck)		Scamp																		
		Steel's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				
		Equipment's Disposal Cost																				
		Dismantling Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transport Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Costs																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Spall Factor	Quantity	Unit	Cost
		Brass Culvert 26"																			
		24" culvert backfill	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.8	ICY	4314	4	4	8									5113	CY	9203
		48" culvert backfill	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16 13 3090	2.17	ICY	4314	4	4	8									5113	CY	11092
		36" culvert removal	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.8	ICY	962	3	3	6									541	CY	1154
		36" culvert backfill	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16 13 3090	2.17	ICY	962	3	3	6									541	CY	1324
		24" culvert removal	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.8	ICY	594	2	2	4									176	CY	317
		24" culvert backfill	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16 13 3090	2.17	ICY	594	2	2	4									176	CY	322
		Disposal Cost Non-Steel (35'x57'Truck)		Scrap																	
		Subtotal																			23542
		Equipment & Disposal Cost																			
		Dismantling Cost																			
		Equipment & Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			23542

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Scale Factor	Quantity	Unit	Cost
		Culverts 27																			
		24" culvert removal	31.23, 16.42, 0.260		1.8	1.86 /CY	160	2	4	4						4			47	CY	97
		24" culvert backfill	31.23, 16.13, 3.090		2.17	1.71 /CY	160	2	4	4						4			47	CY	90
		18" culvert removal	31.23, 16.42, 0.260		1.8	1.86 /CY	460	1.5	3	3						4			77	CY	142
		18" culvert backfill	31.23, 16.13, 3.090		2.17	1.71 /CY	460	1.5	3	3						4			77	CY	132
		Disposal Cost Non Steel (Truck 35'x8'x5')		Scamp																	
		Subtotal																			422
		Equipment & Disposal Cost																			
		Demarlling Cost																			
		Equipment & Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			422

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost	
		Water Tanks 28																				
		Structure's Demolition Cost	Steel Bld. Large	02 41 16 13 0020	0.37 /CF				30	12						3	CF	0.33	10179		3352	
		Structure's Vol. Demolished																				
		Structure's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (Truck 35'x8'x5')		Scamp																		
		Steel's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				3059
		Equipment & Disposal Cost																				
		Dismantling Cost																				
		Equipment & Vol. Demolished																				
		Loading Costs																				
		Transport Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost	Concrete demolition	02 41 16 17 0440 - U	10.05 /CY		16	40	1							2	CF	1.3	57	CF	472	
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost	Front end loader 3 CY	31 23 16 42 1300	1.92 /CY																	
		Disposal Cost	1/2 CY (16 Ton) Dump Truck 1/2 mi. ind. trip	31 23 23 20 1014	3.19 /CY																	
		Subtotal	Disposal on site	02 41 16 17 4200	10.2 /CF																	
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Costs																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				4155

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swall Factor	Quantity	Unit	Cost
		Reclaim Voids 29																			
		Structure Vol Demolished																			
		Rubbish's Weight (excludes steel)	Mixed Materials Bld. Large	02 41 16 13 0100	0.35/CF		15	20	13							3	CF	0.33	11700	CF	4235
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (Truck 35'x8'x5')																			
		Steel's Weight		Scrap																	
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			4957
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241 16 17 0440 - U	10.05/ICY		15	30	1.5							3	CF	1.3	55	CF	75
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92/ICY																
		Transportation Cost	12 CY (16 Ton) Dump Truck 42 mi. rd. trip	31 23 23 1014	3.19/ICY																
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.7/CF																
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			6922

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Small Factor	Quantity	Unit	Cost	
		Reclaim Tunnel Samsphere 30																				
		Structure's Demolition Cost																				
		Structure's Vol. Demolished																				
		Rubble's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (Truck 35'x8'x5')		Scamp																		
		Steel's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				
		Equipment & Disposal Cost																				
		Demolition Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transportation Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Cost																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Cost																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Cost																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Cost																				
		Subtotal																				
		Total																				

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Escape Tunnel Vent 31																			
		Structure's Demolition Cost	Mixed Materials Bld. Large	02.41.16.13.01.00	0.35	ICF			250	3.5								2403	CF		342
		Structure's Vol. Demolished																0.33	29	CY	
		Rubble's Weight (excludes steel)																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non-Steel Truck																			
		Transportation Cost Non-Steel Drive																			
		Disposal Cost Non-Steel (Truck 35'x8'x5')																			
		Steel's Weight		Scamp		4	ICY														115
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			
		Equipment's Disposal Cost																			
		Demolition Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			958

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Truck Loadout 32																				
	Structure Demolition Cost		Mixed Materials Bld. Large	02 41 16 13 0100	0.35	ICF	20	20	30									0.35	12000	CF	4200
	Structure's Vol. Demolished																				
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel (Truck 35'x6'5")			Scamp	4	ICY															533
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																				4799
	Equipment's Disposal Cost																				
	Dismantling Cost																				
	Equipment's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost		Concrete demolition	0241 16 17 0440 - U	10.05	ICY	20	20	1												157
	Concrete's Vol. Demolished																				
	Loading Cost		Front end loader 3 CY	31 23 16 02 1300	1.92	ICY															32
	Transportation Cost		12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 03 1014	3.19	ICY															54
	Disposal Costs		Disposal on site	02 41 16 17 4200	10.2	ICF															207
	Subtotal																				457
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																				5245

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Weight Factor	Quantity	Unit	Cost
		Substation Electrical 33																			
		Structure's Demolition Cost	Mixed Materials Bld. Large	02 41 16 13 0100	0.35/CF	CF	50	100	20										100000 CF		35000
		Structure's Vol. Demolished																	1223 CY		
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Truck's Weight																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Truck																			
		Disposal Cost Non Steel (Truck 35'x8'x5')																			
		Disposal Cost Non Steel (Truck 35'x8'x5')																			
		Steel's Weight																			
		Truck's Capacity																			
		Truck's Weight																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			39865
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete demolition	0241 16 17 0440 -U	10.05/CF	CF	40	80	1												1195
		Concrete's Vol. Demolished																			
		Loading Cost	Front end loader 3 CY	31 23 16 42 1300	1.92/CF	CF															292
		Transportation Cost	12 CY (16 Ton) Dump Truck 42 mi. rd. trip	31 23 20 1014	3.19/CF	CF															252
		Disposal Costs	Disposal on site	02 41 16 17 4200	10.2/CF	CF															252
		Subtotal																			3952
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			43457

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swall Factor	Quantity	Unit	Cost	
		Powerline 69KV 24																				
		Structure's Demolition Cost	Wire Removal	26 05 05 10 1900	27.5 CLF	CLF	1200												12	CLF	330	
		Structure's Vol. Demolished																				
		Rubble's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (Truck 35'x8'x5')																				
		Steel's Weight		Scamp																		
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				330
		Equipment's Disposal Cost																				
		Demolition Cost																				
		Equipment's Vol. Demolished																				
		Trailing Costs																				
		Transportation Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				330

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost	
		Powerline Yard Distribution 35																				
		Structure's Demolition Cost	Wire Removal	26 05 05 10 1900	27.5	CLF	1400												1.4	CLF	353	
		Structure's Vol. Demolished																				
		Rubble's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (Truck 35'x8'5")		Scamp																		
		Steel's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				395
		Equipment & Disposal Cost																				
		Dismantling Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transport Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				395

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Steel Factor	Quantity	Unit	Cost	
		Pavement Rail Loadout 36																				
		Structure's Demolition Cost																				
		Structure's Vol. Demolished																				
		Rubble's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (Truck 35'x8'x5')		Scamp																		
		Steel's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				
		Equipment's Disposal Cost																				
		Dismantling Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transport Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost		0241 16 17 0440 - L	10.05	ICY	100	120	0.33													
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				4401

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Soil Factor	Quantity	Unit	Cost
	Pumphouse 37																				
	Structure's Demolition Cost		Mixed Materials Blk. Large	02 41 16 13 0100	0.35	CF	20	20	8										3250	CF	1.20
	Structure's Vol. Demolished																				
	Rubber's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Dump Truck																				
	Disposal Cost Non Steel (Truck 35'x8'x5')																				
	Sheet's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																				1276
	Equipment's Disposal Cost		Chain link remove 8'-10'	02 41 13 60 1700	3.99	LF	250														
	Demolition Cost																				
	Equipment's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Asphalt Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Front end loader 3 CY																				
	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip																				
	Disposal on site																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Front end loader 3 CY																				
	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip																				
	Disposal on site																				
	Subtotal																				
	Total																				2908

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost	
2233	Riprap	Riprap 38																				
		Structure's Demolition Cost																				
		Structure's Vol. Demolished																				
		Rubble's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (Truck 35'x8'x5')		Scamp																		
		Steel's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				
	Riprap	Place Riprap	Machine placed rip-rap slope protection		63.5	CY	500					10					sq ft		435	CY	11725	
		Subtotal																				11725
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				11725

Task ID	Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Ball Factor	Quantity	Unit	Total
		Gas Vent Hole																			
		Structural Demolition Cost		15055 300 3600	805 Non											5	EA		21.275		21.275
		Structural Vol. Demolished	Mechanical equipment heavy	AML3	5000 EA											3	EA		3		3
		Rubble's Weight (excludes steel)																			15.000
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel (Truck 35'x8'x5')																			
		Steel's Weight		Scrap																	
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Truck Drive																			
		Disposal Cost Steel																			
		Subtotal																			40760
		Equipment & Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Costs																			
		Transport Costs																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Total																			40760

Ref.	Task	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swall Factor	Quantity	Unit	Cost	
		B Canyon Portal Remediation		DOGMI T1.4010	4604																\$4,500	
		Structure's Demolition Cost																				
		Subtotal's Weight (exclude steel)																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Non Steel Truck																				
		Transportation Cost Non Steel Drive																				
		Disposal Cost Non Steel (Truck 35'x8'x5')		Scamp																		
		Steel's Weight																				
		Truck's Capacity																				
		Haulage																				
		Transportation Cost Steel Truck																				
		Transportation Cost Steel Truck Drive																				
		Disposal Cost Steel																				
		Subtotal																				\$4,500
		Equipment's Disposal Cost																				
		Demantling Cost																				
		Equipment's Vol. Demolished																				
		Loading Costs																				
		Transport Costs																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Concrete Demolition																				
		Demolition Cost																				
		Concrete's Vol. Demolished																				
		Loading Cost																				
		Transportation Cost																				
		Disposal Costs																				
		Subtotal																				
		Total																				\$4,500

	Means Reference Number	Hourly Operating Costs	Rent Per Day	Operator's Hr Cost Inc. O&P	Total Hourly Cost	Number of Men or Eq.	Total Eq. & Lab Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/D's	Units	Cost
Remove Excess Pad Fill															
Left Fork															
Off Highway Rear Dump 65 ton	01 54 33 20 1	85.4	1572	52.10	235.75	6	1414.50 \$/HR		13614 CY	380 CY/HR		35.8 HR	50639		
988G	01 54 33 20 1	98.35	1775	70.25	279.54	1	279.54 \$/HR					35.8 HR	10035		
Right Fork															
Off Highway Rear Dump 65 ton	01 54 33 20 1	85.4	1572	52.10	235.75	6	1414.50 \$/HR		3916 CY	380 CY/HR		10.3 HR	14569		
988G	01 54 33 20 1	98.35	1775	70.25	279.54	1	279.54 \$/HR					10.3 HR	2879		
Main Canyon															
Off Highway Rear Dump 65 ton	01 54 33 20 1	85.4	1572	52.10	235.75	6	1414.50 \$/HR		88829 CY	380 CY/HR		233.8 HR	330710		
988G	01 54 33 20 1	98.35	1775	70.25	279.54	1	279.54 \$/HR					233.8 HR	65356		
Subtotal															474161.1

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost	
	Main Site																				156531
	Pumphouse																				4745
	Geo Hole Vent																				3179
	Pooling	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.54/OCY	OCY						340					CY		340	CY		
	Total																				163438

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost	
	Main Site																				
	Phylon Juniper Community																				
	Mulch Material Labor and Equipment	Hay 1" Large Power Mulcher (865 Crew)	32 91 13.16 0350	43.00/MSF																	
	Seeding Material	West Ridge Phylon/Juniper		550.36/AC																	24333
	Seeding Equipment and Labor	Hydro Spreader (Labor and Equipment)	32 92 19.14 0200	21.4/MSF																	7152
	Packing	Excavation Bulk Bank 2CY (B12C Crew)	31 23 16.42 0280	1.80/CY							340										12112
																					512
	Douglas Fir Maple Community																				
	Mulch Material Labor and Equipment	Hay 1" Large Power Mulcher (865 Crew)	32 91 13.16 0350	43.00/MSF																	
	Seeding Material	West Ridge Douglas Fir Maple		777.35/AC																	15738
	Seeding Equipment and Labor	Hydro Spreader (Labor and Equipment)	32 92 19.14 0200	21.4/MSF																	7774
	Transplants	Serviceberry		4.15/EA											300	AC					9330
		Mountain Mahogany		4.15/EA												AC					
	Douglas Fir Rocky Mountain Juniper																				
	Mulch Material Labor and Equipment	Hay 1" Large Power Mulcher (865 Crew)	32 91 13.16 0350	43.00/MSF																	
	Seeding Material	West Ridge Douglas Fir Mt Juniper		550.36/AC																	9374
	Seeding Equipment and Labor	Hydro Spreader (Labor and Equipment)	32 92 19.14 0200	21.4/MSF																	2752
	Sagebrush Grass Community																				
	Mulch Material Labor and Equipment	Hay 1" Large Power Mulcher (865 Crew)	32 91 13.16 0350	43.00/MSF																	
	Seeding Material	West Ridge Douglas Fir Mt Juniper		631.00/AC																	1852
	Seeding Equipment and Labor	Hydro Spreader (Labor and Equipment)	32 92 19.14 0200	21.4/MSF																	531
																					942
	Subtotal																				125225
	Main Site																				
	Reseeding 25%																				
	Subtotal																				31305
	Total																				156531

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost	
	Pumphouse																				
	Mulch Material Labor and Equipment	Hay 1" Large Power Mulcher (B65 Crew)	32 91 13 16 0350	43.00/MSF	MSF						0.9					AC		39	MSF	1977	
	Seeding Material	West Ridge Pinyon/Juniper		550.36/AC	AC						0.9					AC		0.9	AC	485	
	Seeding Equipment and Labor	Hydro Spreader (Labor and Equipment)	32 92 19 14 0200	21.4/MSF	MSF						0.9					AC		39	MSF	535	
	Place Silt Fence	Silt Fence	31 25 14 16 1100	1.19/LF	LF	150										FT		150	FT	179	
	Packing	Excavation Bulk Bank, ZC.Y. (B12C Crew)	31 23 16 42 0260	1.80/CY	CY						340					CY		340	CY	612	
	Subtotal																			3798	
	Mine Site																				
	Reseeding 25%																				950
	Subtotal																				950
	Total																				4748

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost	
	Gas Hole Vent																				
	Mulch Material Labor and Equipment	Hay 1 Large Power Mulcher (B&S Crew)	32 91 13 16 0350	43.00/MSF	MSF					0.34						AC		15	MSF	645	
	Seeding Material	West Ridge Phylon/Jumper		550.36/AC	AC					0.34						AC		0.3	AC	165	
	Seeding Equipment and Labor	Hydro Sprayer (Labor and Equipment)	32 92 19 14 0200	21.4/MSF	MSF					0.34						AC		15	MSF	321	
	Packing	Excavation Bulk Bank 20-T (B12C Crew)	31 23 16 42 0260	1.80/CCY	CCY						340					CY		340	CY	612	
	Subtotal																			1743	
	Mine Site																				
	Reseeding 25%																				439
	Subtotal																				439
	Total																				2179