WEST RIDGE RESOURCES, INC.
P.O. Box 910, East Carbon, Utah 84520 794 North "C" Canyon Rd, East Carbon, Utah 84520
Telephone (435) 888-4000 Fax (435) 888-4002

Utah Division of Oil, Gas & Mining
Utah Coal Program
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

December 13th, 2016

Attn: Daron Haddock
Permit Supervisor

Re: West Ridge Mine C/007/041
WR16-002 Midterm Review

Dear Mr. Haddock,

Please find attached the application to correct deficiencies found for the West Ridge Midterm Review.

Previously, an AVS check showed outstanding violations for our Company. These violations are currently under settlement, as shown in the AVS system as of November 29th, 2016, therefore no action is required.

A deficiency requesting the potential reclamation of the Bear Canyon Gob Vent Holes was listed on page 2/3 in the deficiency letter. This information can be found in the currently approved Appendix 5-14A of the MRP. The current status of these holes has not changed at this time; therefore no changes were made to this Appendix.

Another deficiency on page 3/3 of the details page states that fill is accumulating salt from road de-icing in soil locations T1 and T3, however, according to page 5 of the report completed by Patrick Collins submitted to the division from Mt. Nebo for 2015 states that "all parameters were in the fair to good range" for 2015. In addition, now that West Ridge is under temporary cessation, there is no need to salt the roads in the winter until further notice. At such a time when salting the roads is needed again, we will consider alternative de-icing procedures.

There was also a deficiency listed requesting the Maple/Aspen reference area site to a new location. We had Rick Collins from Mt. Nebo Scientific do a site visit, and during his visit he confirmed that the site listed in the MRP is actually a Doug Fir Maple Reference Area, not a Maple/Aspen area, and by using the maps, he was able to determine that the existing reference area is intact. He acquired GPS coordinates, and included them in his report, which I have attached to this application. All reference areas remain intact and no changes were made to the MRP regarding this.

If you have any questions, or need any additional information regarding this submittal, please contact me directly at 435-888-4000.

Sincerely,

Karin Madsen
Engineering Tech
UtahAmerican Energy, Inc.

APPLICATION FOR PERMIT PROCESSING

Permit Change X	New Permit ☐	Renewal ☐	Transfer ☐	Exploration ☐	Bond Release ☐	Permit Number: ACT/007/41
Title of Proposal: WR 16-002 Midterm Review						Mine: West Ridge
						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*

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

X Attach 1 complete digital copy 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.

Karin Madsen / Engineering Tech. / 12-13-16
Signed - Name - Position - Date

Subscribed and sworn to before me this 13th day of December, 2016.

Linda Kerns
Notary Public

My Commission Expires: March 27, 2017
Attest: STATE OF Utah)
COUNTY OF Carbon)

LINDA KERNS
NOTARY PUBLIC • STATE of UTAH
COMMISSION # 663615
COMM. EXP. 03/27/2017

Received by Oil, Gas & Mining

ASSIGNED TRACKING NUMBER

Application for Permit Processing
Detailed Schedule of Changes to the MRP

WR 16-002 Midterm Review	Permit Number: ACT/007/041
	Mine: West Ridge
	Permittee: West Ridge Resources, Inc.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	☐ REPLACE	☐ REMOVE	Chapter 1 Pages 1-iv, 1-1, 1-19 page number formatting.
☐ ADD	☐ REPLACE	☐ REMOVE	Appendix 2-6, Page 21
☐ ADD	☐ REPLACE	☐ REMOVE	Appendix 5-15 Pages 13, 14, 15
☐ ADD	☐ REPLACE	☐ REMOVE	Appendix 5-19 Page 1
☐ ADD	☐ REPLACE	☐ REMOVE	Appendix 1-2 Violations page
☐ ADD	☐ REPLACE	☐ REMOVE	Complete updated bonding sheets
☐ ADD	☐ REPLACE	☐ REMOVE	
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☐ ADD	☐ REPLACE	☐ REMOVE	

Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

~WEST RIDGE MINE - PERMIT APPLICATION PACKAGE~

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APPENDIX 1-4C	State Lease ML-47711
APPENDIX 1-4D	State Lease ML-49287
APPENDIX 1-4E	State Lease ML-51744
APPENDIX 1-4F:	Penta Creek Fee Lease, which includes
APPENDIX 1-4F(a)	Original Fee Lease
APPENDIX 1-4F(b)	Lease Extension #1, August 24, 2010
APPENDIX 1-4F(c)	Lease Extension #2, March 10, 2011
APPENDIX 1-4G:	Hinkins Fee Lease, which includes:
APPENDIX 1-4G(a)	David P. Hinkins 50%
APPENDIX 1-4G(b)	Emily P. Marston 25%
APPENDIX 1-4G(c)	Leonard J. Pagano 25%
APPENDIX 1-5	Current and Previous Coal Mining Permits
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MAP NUMBER	DESCRIPTION	SCALE
MAP 1-0	**Permit Map**	**1" = 2000'**
MAP 1-1	Location Map	1" = 2000'

R645-301-100 PERMIT APPLICATION REQUIREMENTS: GENERAL CONTENTS

SCOPE

The objective of this chapter is to set forth all relevant information concerning ownership and control of WEST RIDGE Resources, Inc., the ownership and control of the property to be affected by mining activities and all other information and documentation required under Part UMC.

R645-301-112 IDENTIFICATION OF INTERESTS

112.100 WEST RIDGE Resources, Inc. is a corporation organized and existing under the laws of Utah and qualified to do business in Utah.

112.200 The applicant, WEST RIDGE Resources, Inc. will also be the operator.

WEST RIDGE Resources, Inc.
P.O. Box 910
East Carbon, Utah 84520
(435) 888-4000
David Hibbs - President

Employer Identification Number: 87-0585129

112.220 The resident agent of the applicant, WEST RIDGE Resources, Inc., is:

Karin Madsen
WEST RIDGE Resources, Inc.
P.0. Box 910
East Carbon, Utah 84520

(435) 888-4000

112.230 WEST RIDGE Resources, Inc. will pay the abandoned mine land reclamation fee.

112.300 **Ownership and Control** - See Appendix 1-7

WEST RIDGE Resources, Inc. is the permittee and operator of the WEST RIDGE Mine. WEST RIDGE Resources, Inc. is a wholly owned subsidiary of ANDALEX Resources, Inc.. WEST RIDGE Resources, Inc. is a Utah corporation licensed to do business in the State of Utah. All leases associated with the WEST RIDGE Mine are owned by ANDALEX Resources, Inc. ANDALEX Resources, Inc, is a wholly owned subsidiary of UtahAmerican Energy Inc., which in turn is a wholly owned subsidiary of Murray Energy Corporation.

112.340 See Appendix 1-5

112.350 See Appendix 1-5

112.410 See Appendix 1-5

112.420 See Appendix 1-7

112.500 Surface Owners:

Bureau of Land Management
Utah State Office
136 East South Temple
Salt Lake City, Utah 84111

Glen Wells
700 West U.S. Hwy 6
Price, Utah 84501

Penta Creek, LLC
140 S. Newton
Albert Lea, MN 56007

David Hinkins
155 West 100 South
Orangeville, Utah 84537

School and Institutional Trust
Lands Administration
355 West North Temple, Suite 400
Salt Lake City, Utah 84180-1204

Matt Rauhala
1236 East Main
Price, Utah 84501

Subsurface Owners:

Bureau of Land Management
Utah State Office
136 East South Temple
Salt Lake City, Utah 84111

Penta Creek, LLC
140 S. Newton
Albert Lea, MN 56007

School and Institutional Trust
Lands Administration
355 West North Temple, Suite 400
Salt Lake City, Utah 84180-1204

WEST RIDGE Resources, Inc. is the holder of record for federal lease SL-068754 and UTU 78562 (see Table 1-1), state lease ML 47711 and ML 49287 (see Table 1-2A) and the Penta Creek Fee lease (see Table 1-2B).

Proof of lease assignment for all leases (Federal leases SL-068754 and UTU 78562, and State leases ML 47711 and ML 49287), and the Penta Creek fee lease can be found in Appendix 1-4.

112.600 Contiguous surface owners:

Bureau of Land Management
Utah State Office
136 East South Temple
Salt Lake City, Utah 84111

Dave Hinkins
155 West 100 South
Orangeville, Utah 84537

Glen Wells
700 West U.S. Hwy 6
Price, Utah 84501

Penta Creek, LLC
140 S. Newton
Albert Lea, MN 56007

School and Institutional Trust

Lands Administration
355 West North Temple, Suite 400
Salt Lake City, Utah 84180-1204

Contiguous subsurface owners:

School and Institutional Trust
Lands Administration
355 West North Temple, Suite 400
Salt Lake City, Utah 84180-1204

Penta Creek, LLC
140 S. Newton
Albert Lea, MN 56007

David Hinkins
155 West 100 South
Orangeville, Utah 84537

Emily P Marston
843 Genodle Drive
Midvale, Utah 84047

Leonard J. Pagano
55 West main Street
Price, Utah 84501

Bureau of Land Management
Utah State Office
136 East South Temple
Salt Lake City, Utah 84111

112.700 See Appendix 1-5

112.800 There are no pending interests or bids existing on lands contiguous to the present leased area.

112.900 After WEST RIDGE Resources, Inc. is notified that the application is approved, but before the permit is issued, WEST RIDGE Resources, Inc. will update, correct or indicate that no change has occurred in the information previously submitted under R645-301-112.100 through R645-301-112.800.

R645-301-113 VIOLATION INFORMATION

113.100 The applicant or any subsidiary, affiliate or persons controlled by or under common control with the applicant has not had a federal or state permit to conduct coal mining and reclamation operations suspended or revoked in the five years preceding the date of submission of the application.

113.120 The applicant etc. has not forfeited any performance bond or similar security

113.200 Not applicable

113.300 A listing of violations received by the applicant in connection with any coal mining and reclamation operation during the three year period preceding the application date is provided in Appendix 1-2. MSHA numbers for the operations can be found in Appendix 1-5. There have been no unabated violations or cessation orders issued to any affiliated companies during the previous three years.

113.400 After WEST RIDGE Resources, Inc. is notified that the application is approved, but before the permit is issued, WEST RIDGE Resources, Inc. will update, correct or indicate that no change has occurred in the information previously submitted under R645-301-113.

R645-301-114 RIGHT OF ENTRY INFORMATION

114.100 WEST RIDGE Resources, Inc., currently holds 5,736.36 acres of federal coal (3,130.87 acres leased under SL-068754 and 2,605.49 acres leased under UTU 78562) in the Book Cliffs coal field (refer to Maps 1-0 and 5-3). A complete legal description of all Federal leases held by WEST RIDGE is found in Table 1-1. WEST RIDGE currently holds 2162.34 acres of state coal (801.24 acres under ML 47711, 881.10 under ML 49287, and 480 acres under ML 51744. A complete legal description of all State leases held by WEST RIDGE is found in Table 1-2. WEST RIDGE also holds 1189.84 acres leased on contiguous private (fee) coal lands located along the eastern side of the mineable reserve. A complete legal description of this fee lease is found in Table 1-3. None of these leases are the subject of any pending litigation. Proof of lease assignment for all leases can be found in Appendix 1-4.

WEST RIDGE Resources, Inc. bases its legal right to enter and conduct mining activities in the permit area pursuant to the language contained in the Federal Coal Lease, Part I Lease Rights Granted which reads as follows:

"*That the lessor, in consideration of the rents and royalties to be paid and the covenants to be observed as hereinafter set forth, does hereby grant and lease to the lessee the exclusive right and privilege to mine and dispose of all the coal in, upon, or under the following described tracts of land, situated in the State of Utah... together with the right to construct all such works, buildings, plants, structures and appliances as may be necessary and convenient for the mining and preparation of the coal for market, the manufacture of coke or other products of coal, the housing and welfare of employees, and subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted.*"

In addition to the coal leases, WEST RIDGE also holds several surface use permits as part of the operation, including:

1) SITLA Special Use Lease Agreement No. 1163. The substitute topsoil borrow area, which is also included within the permit area, is located on lands administered by the Utah School and Institutional Trust Lands Administration (SITLA). This area is located within the SE1/4 of section 16, T 14 S, R 13 E. SITLA has issued a long term special use permit to WEST RIDGE Resources, Inc. which provides full assurance that the topsoil resource in this area will be available for (and, indeed dedicated to) final reclamation of the West Ridge minesite if needed. This area is not contiguous with the main coal leasehold. (See Appendix 1-10 for details)

2) BLM Right-of-Way UTU-77120 This right-of-way authorizes the installation and operation of a pumping station used to facilitate the delivery of culinary water to the West Ridge Mine. This area is not contiguous with the main coal leasehold. (See Appendix 1-12 for details)

3) BLM Right-of-Way 87110 This right-of way authorizes the installation of three (3 ea.) catchment structures in the C Canyon drainage below the mine. These catchments are designed to provide containment of unanticipated coal-fines accumulations from the mine discharge water. These catchment structures comprises a total of 0.69 acres (Refer to Appendix 5-15 for details).

The total permit area is 8,080.58 acres. Refer to Map 1-1 for the permit area location. Refer to Table 1-4 for the legal description of the permit area by composite leasehold, and Table1-5 for the legal description of the permit area in total area. Table 1-6 describes the surface ownership of the permit area.

The permit area consists of the following areas:

1) all of federal coal leases SL-068754-U-01215 (3,130.87 acres)
2) most of federal coal lease UTU 78562 (2,605.49 acres),
3) all of state coal leases ML-47711 (801.24 acres)
4) all of state coal lease ML-49287 (881.10 acres)
5) much of state coal lease ML-51744 (212.5 acres)
6) much of the Penta Creek fee coal lease (650.49 acres)
7) SITLA surface lease 1163, for topsoil borrow area (9.6 acres).
8) BLM right-of-way UTU-77120, for pumping station (0.23 acres)
9) BLM right-of-way UTU-87110, for catchment structures A, C and E (0.69 acres)
10) Carbon County authorization, road security gate (0.79 acres). See Appendix 1-13

Disturbed area within the permit area consists of the following:

1)	Minesite surface facilities	29.82 acres
2)	Pumping station	0.23 acres
3)	GVH installation (main pad)	0.24 acres
4)	GVH installation (GVH 5 “pullout”)	0.02 acres
5)	GVH topsoil storage	0.1 acres
6)	Catchment structures A	0.12 acres
7)	Catchment structures C	0.23 acres
8)	Catchment structures E	0.23 acres
9)	B Canyon Portal re-opening	0.25 acres
	TOTAL	31.24 acres

See Table 1-7 for complete legal description of disturbed areas.

114.200 Not applicable, the fee lease mineral estate is not severed from the surface estate.

TABLE 1-1
FEDERAL LEASE and R.O.W. PROPERTIES

PARCEL	ACREAGE	LEGAL DESCRIPTION	
1) FEDERAL COAL LEASE SL-068754 (SL-068754-U-01215)	3,130.87	T 14 S, R 13 E	
		Section 10:	NE, E2NW, N2SE, SESE
		Section 11:	All
		Section 12:	S2SW, NWSW
		Section 13:	S2, NW, S2NE, NWNE
		Section 14:	E2, N2NW, SENW, SWNW, N2NWSW, E2SW
		Section 15:	NENE, W2NE, E2SENE
		Section 23:	Lot 1, N2NE, SWNE, NENW
		Section 24:	N2, N2SE, NESW, NWSW
2) FEDERAL COAL LEASE UTU-78562	2,605.49	T 13 S, R13 E	
		Section 34:	NESE, S2SE
		Section 35:	All
		T 13 S, R 14 E	
		Section 31:	Lot 4, S2SESW, NESESW, SENWSESW, W2SWSE, S2SESWSE, S2S2SESE
		T 14 S, R 13 E	
		Section 1:	All
		Section 12:	Lots 1 thru 4, S2N2, NESW, SE
		Section 13:	NENE
		T 14 S, R 14 E	
		Section 5:	Lot 4, W2W2SWNW, SWNWSW, W2NWNWSW, W2SWSW
		Section 6:	Lot 6, NESW, NESE
		Section 7:	Lots 3 and 4

		Section 8:	W2NWNW, W2SENWNW, SWNENWNW, W2SWNW, W2E2SWNW, W2NWSW, SWSW
		Section 17:	N2NWNWNE
		Section 18:	Lot 1, E2NW
3) PUMPING STATION (BLM R.O.W. UTU-7712)	0.23	T 14 S, R 13 E	
		Section 21:	NENE (0.23 acres thereof)
4) CATCHMENT STRUCTURE A (BLM R.O.W. UTU-87110)	0.23	T 14 S, R 13 E	
		Section 15:	SESW (0.23 acres therein)
5) CATCHMENT STRUCTURE C (BLM R.O.W . UTU-87110)	0.23	T 14 S, R 13 E	
		Section 28:	NWNW (0.23 acres therein)
6) CATCHMENT STRUCTURE E (BLM R.O.W . UTU-87110)	0.23	T 14 S, R 12 E	
		Section 25:	SESE (0.23 acres therein)
TOTAL FEDERAL	**5,736.36 acres**		

TABLE 1-2
STATE (SITLA) LEASE and SPECIAL USE PROPERTIES

PARCEL	ACREAGE	LEGAL DESCRIPTION	
1) STATE LEASE ML 47711	801.24	T 14 S, R 13 E	
		Section 2:	Lots 1 thru 4, S2N2, S2 (i.e. All)
		T 13 S, R 13 E	
		Section 36:	SW
2) STATE COAL LEASE ML 49287	881.10	T 14 S, R 13 E	
		Section 3:	Lots 1, 2, 3, S2N2, S2
		Section 10:	W2NW, SW, SWSE
3) STATE COAL LEASE ML 51744	480	T 13 S, R 13 E	
		Section 36:	N2, SE
4) STATE SURFACE LEASE SPECIAL USE PERMIT (Agreement #1163)	9.6	T 14 S, R 13	
		Section. 16:	E2NESE (9.6 acres thereof, containing substitute topsil area)
TOTAL STATE	**2171.94**		

TABLE 1-3
FEE LEASE PROPERTIES
(PENTA CREEK)

PARCEL	ACREAGE	LEGAL DESCRIPTION	
1) PENTA CREEK FEE LEASE	382.08	T 14 S, R 14 E	
		Section 6:	Lot 7, SESW
		Section 7*:	Lots 1* and 2*, NENW*, E2SW*, SWSE
		Section 18:	Lots 2 and 3, NWNE

*Less and excepting from the portion of the above legal subdivisions in Section 7, those lands under and around Grassy Trail Dam and Reservoir owned by East Carbon City and Sunnyside City, such lands being more accurately described in Appendix 1-15.

2) PENTA CREEK LEASE EXTENSION (Extension 1, August, 2010)	352.36	T 14 S, R 14 E	
		Section 6:	Lots 2, 3, 4 and 5, SENW, SWNE, NWSE, S2SE
3) PENTA CREEK LEASE EXTENSION (Extension 2, March, 2011)	295.40	T 14 S, R 14 E	
		Section 6:	Lot 1, SENE
		Section 7:	SWNE, NWSE, SESE, SENW
		Section 18:	NENE
4) HINKINS FEE LEASE**	160.00	T 14 S, R 14 E	
		Section 7:	N2NE, SENE, NESE
TOTAL FEE LEASES:	**1189.84**		

** This lease area is held as follows: (individually)

David P. Hinkins, Todd S. Hinkins and Ross D. Hinkins.....50%
Emily P. Marston.....25%
Leonard Pagano.....25%

TABLE 1-4
LEGAL DESCRIPTION OF PERMIT AREA
(BY LEASEHOLD)

PARCEL	ACREAGE	LEGAL DESCRIPTION	
1) FEDERAL LEASE SL-068754 (SL-068754-U-01215)	3,130.87	T 14 S, R 13 E	
		Section 10:	NE, E2NW, N2SE, SESE
		Section 11:	All
		Section 12:	S2SW, NWSW
		Section 13:	S2, NW, S2NE, NWNE
		Section 14:	E2, N2NW, SENW, SWNW, N2NWSW, E2SW
		Section 15:	NENE, W2NE, E2SENE
		Section 23:	Lot 1, N2NE, SWNE, NENW
		Section 24:	N2, N2SE, NESW, NWSW
2) FEDERAL LEASE UTU-78562	2403.07	T 13 S, R13 E	
		Section 34:	NESE, S2SE
		Section 35:	All
		T 13 S, R 14 E	
		Section 31:	Lot 4, S2SESW, NESESW, SENWSESW, W2SWSE, S2SESWSE, S2S2SESE
		T 14 S, R 13 E	
		Section 1:	All
		Section 12:	Lots 1 thru 4, S2N2, NESW, SE
		Section 13:	NENE
		T 14 S, R 14 E	
		Section 5:	W2W2SWNW, W2NWNWSW
		Section 6:	Lot 6, NESW, N2NESE, SWNESE
		Section 7:	Lots 3 and 4
		Section 18:	Lot 1, E2NW

TABLE 1-4 (continued)

3) STATE LEASE ML 47711	801.24	T 14 S, R 13 E	
		Section 2:	Lots 1 thru 4, S2N2, S2
		T 13 S, R 13 E	
		Section 36:	SW
4) STATE LEASE ML 49287	881.10	T 14 S, R 13 E	
		Section 3:	Lots 1, 2 and 3, S2N2, S2
		Section 10:	W2NW, SW, SWSE
5) STATE LEASE ML 51744	212.5	T 13 S, R 13 E	
		Section 36:	SW, SWNWSWNW, S2S2NW, S2SWNE, W2SE, SESE, S2NESE, NWNESE
6) PENTA CREEK FEE LEASE	238.17	T 14 S, R 14 E	
		Section 6:	Lot 7, SESW
		Section 7*:	Lot 1*, SESW, SWNESW
		Section 18:	Lots 2 and 3
7) PENTA CREEK LEASE EXTENSION (Extension #1, August, 2010)	402.32	T 14 S, R 14 E	
		Section 6	Lots 1, 2, 3, 4 and 5, SENW, SWNE, NWSE, SWSE, SENE, NWSESE
8) PUMPING STATION (BLM R.O.W. UTU-7712)	0.23	T 14 S, R 13 E	
		Section 21	NESENE (0.23 acres thereof, containing pumping station)

TABLE 1-4 (continued)

9) TOPSOIL SALVAGE AREA (SITLA special use agreement #1163)	9.6	T 14 S, R 13 E	
		Section 16:	E2NESE (9.6 acres thereof, containing substitute topsoil area)
10) CATCHMENT STRUCTURE A (BLM R.O.W . UTU-87110)		T 14 S, R 13 E	
	0.23	Section 15:	SESW (0.23 acres thereof, containing catchment structure)
11) CATCHMENT STRUCTURE C (BLM R.O.W . UTU-87110)		T 14 S, R 13 E	
	0.23	Section 28:	NWNW (0.23 acres thereof, containing catchment structure)
12) CATCHMENT STRUCTURE E (BLM R.O.W . UTU-87110)		T 14 S, R 12 E	
	0.23	Section 25:	SESE (0.23 acres thereof, containing catchment structure)
13) SECURITY GATE (Carbon County authorization)	0.79	T 14 S, R 13 E	
		Section 15:	NWSENE (0.79 acres thereof, containing security gate)
TOTAL PERMIT AREA	**8080.58 acres**		

*Less and excepting from the portion of the above legal subdivisions in Section 7, those lands under and around Grassy Trail Dam and Reservoir owned by East Carbon City and Sunnyside City, such lands being more accurately described in Appendix 1-15.

TABLE 1-5
LEGAL DESCRIPTION OF PERMIT AREA
(TOTAL AREA)

T13S, R13E	Section 34	NESE, S2SE
	Section 35	All
	Section 36	SW, SWNWSWNW, S2S2NW, S2SWNE, W2SE, SESE, S2NESE, NWNESE,
T13S, R14E	Section 31:	Lot 4, S2SESW, NESESW, SENWSESW, W2SWSE, S2SESWSE, S2S2SESE
T14S, R12E	Section 25	SESE (part thereof containing catchment structure E)
T14S, R13E	Section 1	All
	Section 2	All
	Section 3	Lots 1, 2 and 3, S2N2, S2
	Section 10	All
	Section 11	All
	Section 12	All
	Section 13	All
	Section 14	E2, N2NW, SENW, SWNW, N2NWSW, E2SW
	Section 15	NENE, NWSENE (part thereof, containing security gate) SESW (part thereof, containing catchment structure A), W2NE, E2SENE
	Section 16	E2NESE (part thereof, containing substitute topsoil area)
	Section 21	NESENE (part thereof, containing pumping station)
	Section 23	Lot 1, N2NE, SWNE, NENW
	Section 24	N2, N2SE, NESW, NWSW
	Section 28	NWNW (part thereof, containing catchment structure C)
T14S, R14E	Section 5:	W2W2SWNW, W2NWNWSW
	Section 6	Lots 1, 2, 3, 4, 5, 6 and 7, SENW, E2SW, W2SE, S2NE, N2NESE, SWNESE, NWSESE
	Section 7*	Lots 1*, 3 and 4, SESW, SWNESW
	Section 18	Lots 1, 2 and 3, E2NW

<u>TOTAL PERMIT AREA = 8,080.58 acres</u>.

*Less and excepting from the portion of the above legal subdivisions in Section 7, those lands under and around Grassy Trail Dam and Reservoir owned by East Carbon City and Sunnyside City, such lands being more accurately described in Appendix 1-15.

TABLE 1-6
SURFACE OWNERSHIP OF PERMIT AREA

T(S)/R(E)	Section	BLM	Penta Creek	Hinkins	Wells	Rauhala	SITLA	Total
13/13	34	-	-	-	120.00	-	-	120.00
13/13	35	40.00	-	448.91	151.09	-	-	640.00
13/13	36	-	372.50	-	-	-	-	372.50
13/14	31	108.82	-	-	-	-	-	108.82
14/12	25	0.23	-	-	-	-	-	0.23
14/13	1	283.75	328.68	-	-	39.92	-	652.35
14/13	2	-	641.24	-	-	-	-	641.24
14/13	3	-	-	-	80.66	-	520.44	601.10
14/13	10	360.00	-	-	-	-	280.00	640.00
14/13	11	650.87	-	-	-	-	-	650.87
14/13	12	-	648.96	-	-	-	-	648.96
14/13	13	640.00	-	-	-	-	-	640.00
14/13	14	580.00	-	-	-	-	-	580.00
14/13	15	141.20	-	-	-	-	-	141.20
14/13	16	-	-	-	-	-	9.60	9.60
14/13	21	0.23	-	-	-	-	-	0.23
14/13	23	200.02	-	-	-	-	-	200.02
14/13	24	480.00	-	-	-	-	-	480.00
14/12	28	0.23	-	-	-	-	-	0.23
14/14	5	-	-	15.00	-	-	-	15.00
14/14	6	76.41	478.88	30.00	-	-	-	585.29
14/14	7	74.08	86.69		-	-	-	160.77
14/14	8	-	-		-	-	-	0.00
14/14	18	117.25	74.92	-	-	-	-	192.17
		3753.09	2631.87	493.91	351.75	39.92	810.04	8080.58

TABLE 1-7
DISTURBED AREA WITHIN PERMIT AREA

1) Minesite surface facilities: portions of the following, totaling 29.82 acres (all BLM)

T14S, R13E	Section 10:	SESESE
		NESESE
T14S, R13E	Section 11:	SWNESW
		NWSESW
		NESWSW
		NWSWSW
		SWSWSW
		SESWSW
T14S, R13E	Section 15:	NENENE
		NWNENE
		SWNENE
		SENENE
		NWSENE

2) Pumphouse: portion thereof of the following, containing 0.23 acres (all BLM)

T14S, R13E	Section 21:	NESENE

3) Gob gas vent hole (GVH) installation (main pad): portion thereof of the following, containing 0.24 acres (all SITLA)

T14S, R13E	Section 3:	NESWSE

4) Gob gas vent hole (GVH) installation (GVH 5 “pullout”): portion thereof of the following, containing 0.02 acres (all SITLA)

T14S, R13E	Section 3:	NESWSE

5) Gob gas vent hole (GVH) topsoil pile: portion thereof of the following, containing 0.1 acres (all SITLA)

T14S, R13E	Section 10:	SENWNW

6) Catchment Structure A: portion thereof of the following, containing 0.12 acres (all BLM)

T 14 S, R 13 E Section 15: SESW

7) Catchment Structure C: portion thereof of the following, containing 0.23 acres (all BLM)

T 14 S, R 13 E Section 28: NWNW

8) Catchment Structure E: portion thereof of the following, containing 0.23 acres (all BLM)

T 14 S, R 12 E Section 25: SESE

9) B Canyon Portal Re-Opening: portion thereof of the following, containing 0.25 acres (all BLM)*

T 14 S, R 13 E Section 14 SWNE

TOTAL DISTURBED AREA = 31.24 acres

* Note: All disturbance associated with the B Canyon Portal Re-Opening will be within the area of previous (pre-SMCRA) disturbance.

R645-301-115 STATUS OF UNSUITABILITY CLAIMS

115.100 The proposed permit area is not within an area designated as unsuitable for mining. WEST RIDGE Resources, Inc. is not aware of any petitions currently in progress to designate the area as unsuitable for coal mining and reclamation activities.

The area in which the proposed facility will be located has been evaluated within area management plans. It has not been found unsuitable for mining activities under any categories of examination.

115.200 Not applicable.

115.300 WEST RIDGE Resources, Inc. will not be conducting mining operations within 100 feet of an occupied dwelling. WEST RIDGE Resources, Inc. has received permission from Carbon County to construct facilities and operate coal mining activities within 100 feet of a public road. Refer to the letter from Carbon County in Appendix 1-8.

R645-301-116 PERMIT TERM

116.100 The anticipated starting and termination dates of the coal mining and reclamation operation are as follows:

	Begin	Complete
Construction of Mining Pad, Mining Support Structures, and Portals	Apr. 1999	Dec. 1999
Begin Mining	Jan. 2000	
Terminate Longwall Mining		Nov. 2015
Terminate Pillar Mining	July 2018*	July 2019*
Remove Facilities	Jan. 2020*	June 2020*
Regrade Area	July 2020*	Sept. 2020*
Revegetate Site	Oct. 2020*	Nov. 2020*

*This assumes mine life extended through acquisition of adjacent state and federal coal reserves.

116.200 The initial permit application will be for a five year term with successive five year permit renewals.

R645-301-117 INSURANCE, PROOF OF PUBLICATION AND FACILITIES OR STRUCTURES USED IN COMMON

117.100 The Certificate of Liability Insurance is included as Attachment 1-1 in Appendix 1-1.

117.200 A copy of the newspaper advertisement of the application for a permit and proof of publication are included as Attachment 1-2 and 1-3 respectively, in Appendix 1-1. A copy of the newspaper advertisement for the Whitmore lease revision is included as Attachment 1-3 in Appendix 1-1.

117.300 Not applicable.

R645-301-118 FILING FEE

Verification of filing fee payment is included as Attachment 1-4 in Appendix 1-1.

R645-301-123 NOTARIZED STATEMENT

A notarized statement attesting to the accuracy of the information submitted can be referenced as Attachment 1-5 in Appendix 1-1.

R645-301-130 REPORTING OF TECHNICAL DATA

Technical reports prepared by consultants specifically for WEST RIDGE Resources, Inc. are typically presented in an appendix format and, in general, provide the name and address of the person or company (consultant) preparing the report, the name of the report, the date of collection and analysis of the data, and descriptions of the methodology used to collect and analyze the data. The body of the report usually will provide the date the actual field work was conducted and a description of the methodology used to collect and analyze the data. The format of each report may vary depending on the contents of the report and organization preparing it.

For laboratory analyses, such as Appendix 7-2 and 7-3, the company performing the analyses as well as the date of the analyses, is presented on the laboratory report rather than the cover page.

A list of consultants and their appended reports is contained in Appendix 1-6, Consultation and Coordination. Sources used in the preparation of the permit application are referenced in Appendix 1-3. References in all chapters are keyed to this main reference list.

R645-301-142 MAPS AND PLANS

Mining and exploration activities had been conducted in the currently proposed disturbed area prior to August 3, 1977. A road existed into C Canyon in 1952 when drill hole B-6 was drilled in the right fork. A road was also constructed up the left fork of C Canyon to a drill hole site during the same year. In addition to the drill holes, the coal outcrop in the left fork of C Canyon was exposed for sampling purposes. A small pad was built at the outcrop location and it was left in place as were the roads.

In 1986, another drill hole, 86-2, was drilled west of the first drill hole in the right fork. A minor amount of road work was done in conjunction with this second drill hole. Kaiser Coal Company obtained permission from the BLM to grade the existing road and make it passable for the drill rig. The drill hole site was reclaimed but the road, a public road, was left in place.

Through use of aerial photography and site evaluations, it is possible to document previous mining related disturbances in C Canyon. Refer to Map 5-1 for delineation of the disturbance prior to August 3, 1977.

The total of all the previously disturbed areas within the minesite disturbed area is estimated to be as follows:

roads in right and left forks	=	1.27 acres
road culvert	=	.05 acres
water monitoring well	=	.05 acres
material storage pad	=	.05 acres
		1.62 acres

WEST RIDGE Resources, Inc. is proposing to utilize the entire previously disturbed area in their current proposal and to reclaim it upon cessation of mining operations.

In the 1950's a road was constructed in the Right Fork of Bear Canyon to access an exploratory drillhole site. This road now provides access to the site of the Bear Canyon GVH installation. (Refer to Appendix 5-14 for a detailed description of the Bear Canyon GVH facility)

ATTACHMENT 1-5
VERIFICATION STATEMENT

I hereby certify that I am a responsible official (Resident Agent) of the applicant (ANDALEX and IPA for WEST RIDGE Resources, Inc.) 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

_____ **Signed - Name - Position - Date**
Jay Marshall, Resident Agent

Subscribed and sworn to before me this__ day of_____, 20_

_____
Notary Public

My commission Expires: _____, 20___)

Attest: STATE OF _____) ss:

COUNTY OF _____)

Name of Operation	West Ridge
Identifying Number	
Fed/State Permit Number	007/041
MSHA ID Number	42.02233

Date Issued	Violation #	Name of Issuing Agency	Brief Description of Violation	Status	Abatement Action	Appeal Y or N
1/22/2004	NOV4-49-1-1	DOGM	Failure to request renewal	Term		N
4/6/2005	NOV5-39-1-1	DOGM	Failure to submit 4qtr water	Term		N
7/31/2008	10025	DOGM	Coal pushed on topsiol	Term		N
1/29/2009	10033	DOGM	Sediment in Stream	Term		N
4/29/2010	10051	DOGM	Storage shed CO	Term		N
4/29/2010	10052	DOGM	Plugged Culvert	Term		N
7/21/2010	10063	DOGM	Coal Fines in Stream (2nd)	Term		N
9/10/2015	21156	DOGM	Seismic Monitoring	Term		N
9/15/2016	21186	DOGM	Seismic Monitoring	Term		N

3) Straw mulch will be applied over the seed bed of the test plot at a rate of 2,000 pounds per acre. The straw surface will then be sprayed with a mulch and tackifier. This type of application has appeared to be successful at other reclamation sites.

The experimental test plot area will be accessed via the stockpile during late summer or early fall. An effort will be made to stay to the extreme edge of the stockpile and, if possible, utilize a portion of the adjacent cut slope area as part of the access way thus minimizing disturbance to the stockpile. Any compaction or disturbance to the stockpile surface will be ripped and reseeded following completion of the installation of the test plots.

Vegetation monitoring will compare the results of plant growth between the experimental practice in-place soils to replaced topsoil. Monitoring will compare re-vegetation response for each soil type (Strych and Midfork) for each of the two soil surfaces (channel bottom and hillside). For example, comparisons will be made between in-place and replaced soils for the channel bottom soils consisting mainly of Strych; likewise, comparisons will be made for hillside Milfork soils. The experimental test plot area will also be compared with the reference area for the Douglas Fir/Maple vegetation type. Vegetation will be monitored for five years or until a determination of success has been made for the experimental practice. West Ridge will consult closely with the Division regarding the results of the test plot study. Should the results show a need to revise the reclamation plan, West Ridge will work with the Division to amend the plan and incorporate the changes needed to ensure reclamation of the mine yard area will be successful.

It is to be noted that based annual reports prepared by Patrick Collins of Mt. Nebo Scientific, as of 2016 West Ridge Resources has had 10 years of successful revegetation at these test plot sites, and this monitoring commitment has been fulfilled. No further annual monitoring of these sites will be completed.

The proposal to leave the existing topsoil in place and protected by a geotextile barrier or marker strips within the filled areas of the minesite is considered an experimental procedure and defined in section R645-302-210 of the State of Utah Coal Mining Rules and SMCRA. The practice of protecting the topsoil in-place with a geotextile fabric has been previously approved in Utah in steep slope conditions where soil would otherwise not be salvageable (Genwal Resources Crandall Canyon Mine, ACT 015/032).

Based on recommendations from experienced reclamation consultants, there is every reason to believe that this procedure will be successful in meeting the reclamation standards required by SMCRA. However, as an added element of assurance for the success of reclamation at the West Ridge minesite, West Ridge has preserved, under long-term lease, a separate source of high quality topsoil which can be used to reclaim the minesite if needed. This substitute material is located nearby. The sole purpose of this topsoil borrow site is to be used for final reclamation on an as-needed basis in the unlikely event that the left-in-place topsoil at the minesite cannot be sufficiently revitalized and re-utilized at the time of final reclamation. Refer to the following section Reclamation Backup Plan – Topsoil Substitutes and Supplements.

APPENDIX 5-15

COAL-FINES CATCHMENT STRUCTURE
C CANYON DRAINAGE

ATTACHMENTS

Attachment 1	Location Map
Attachment 2	BLM NEPA Document (Catagorical Exclusion)
Attachment 3	BLM Right-of-Way Grant
Attachment 4	Div. Water Rights Channel Alteration Permit
Attachment 5	Catchment Structure A, As-Built Drawing
Attachment 6	Catchment Structure A, As-Constructed Photos
Attachment 7	Pre and Post-Reclamation Photos of Catchment Sites C, E and F
Attachment 8	BLM Seed Mix
Attachment 9	Addendum to Address Second Violation #10063, Issued July 21, 2010
Attachment 10	Catchment Structures C and E, As-Constructed Photos (Re-Constructed, 2010)
Attachment 11	Catchment Structures C and E, As-Constructed Drawings (Re-Constructed, 2010)
Attachment 12	MSDS Sheet for Flocculant 83400
Attachment 13	Soils Information, Catchments C and E

COAL-FINES CATCHMENT STRUCTURE
C CANYON DRAINAGE

1) Introduction:

West Ridge Resources became aware of excessive coal fines in the discharge water from the West Ridge Mine, and subsequent accumulations in the C Canyon drainage beyond the permit area below the minesite, in late January, 2009. The company immediately notified the various state and federal agencies involved, namely Division of Oil, Gas & Mining (DOGM), Division of Water Quality (DWQ), Bureau of Land Management (BLM), Utah School & Institutional Trust Lands Administration (SITLA), and Utah Division of Water Rights (DWRights). On January 29, 2009, DOGM issued Citation No. 10033 for offsite sediment. After that there were a number of on-site meetings to assess the situation, followed by several planning meetings designed to come to a consensus agreement among all the agencies as to the best plan to mitigate the discharge problem from the mine and the accumulations situation in the drainage. At the request of the various regulatory agencies, the accumulation material was sampled and analyzed for RCRA metals, volatile organic compounds, semi-volatile organics, as well as other analytes requested specifically by DOGM, to make sure that the material was not toxic, hazardous, or acid-forming. These analyses were then factored into the formulation of an acceptable containment and clean-up plan. Based on these site inspections and planning meetings, and the results of the analyses, a conceptual plan was then agreed upon. This plan consisted of an initial containment phase, followed later by a clean-up phase, and finally site reclamation. This plan was then formally submitted to DOGM and DWQ on March 27,2009, as part of the abatement requirements for the violations issued by those agencies. The plan was subsequently accepted and the cleanup operation implemented accordingly. The elements of this plan are described below.

2) Containment:

Containment was accomplished by constructing four catchment structures at selected locations within the C Canyon drainage below the mine. These catchments were located at various intervals over a seven-mile stretch of the drainage, and all were accessible by way of pre-existing roads. The location of these structures, at sites A, C, E and F, is shown on Attachment 1. (It was subsequently determined that the catchments at sites B and D would not have to be utilized.)

Due to the urgency of the situation, it was agreed early-on by all parties that a containment plan should be implemented as soon as possible in order to prevent the coal-fines material from migrating any further down the C Canyon drainage. Toward this end, BLM, DWRights, and SITLA all issued expedited approvals to allow immediate construction of the catchment structures, and road access thereto. BLM issued a right-of-way for catchment Site A on Feb. 9, and for the other sites and access roads on Feb. 23; DWRights issued channel alteration permits on Feb. 3; and SITLA issued right-of-entry agreements for the access roads on Feb. 17.

In preparation for issuing the necessary rights-of-way for the catchments, BLM determined under the NEPA review that the sites qualified for a Catagorical Exclusion (CX), as shown in Attachment 2. The following reasons contributed to this determination:

a) The fact that all catchment construction was to be done within the existing drainage channel and adjacent flood-plain, therefore within the zone that is subject to regular flashflood scouring events. Within this flood-plain, vegetation and topsoil resources were not well developed due to the frequent storm-related scouring within the confines of the flood-plain.

b) The fact that each unit was of relatively small size, i.e., less than 10,000 sq. ft. (0.23 acres).

c) The fact that each site was accessed by an existing road which required no upgrade or additional disturbance.

d) The fact that the BLM's current management plan did not identify any environmental issues in the area, such as T&E, visual resources, recreational resources, etc.

e) The fact that on-site cultural resource surveys determined nothing of significance.

Because of prior road authorizations, work was commenced first at Site A on Feb. 11, 2009. All construction of site A was done within the pre-existing right-of-way UTU-1256 for the adjacent road. Work then moved to Site F, the lowest unit downstream. It was felt that this site represented a reasonable line of defense against future downstream fines migration, and was therefore assigned an elevated priority for construction. This facility was completed on March 16. Construction at Site E was completed on March 23, and Site C was completed in mid-April.

All work on the catchments was done under the appropriate permits, rights-of-way, and other authorizations granted from BLM, SITLA and Division of Water Rights (stream alteration). Archeological clearances were completed where necessary. No cultural resource clearance was required for Site A because it was constructed within the right-of-way of the existing road and the area had already been cleared. Refer to Attachment 3 for BLM right-of-way grant for the catchment site. Refer to Attachment 4 for the DWRights channel alteration permit.

Each catchment structure consisted of a small stilling basin excavated out of the natural drainage channel, a small low-lying impoundment dam to contain the basin, and a series of siltation filtering devices installed within the dam. Therefore, each catchment was designed to employ elements of both settling and filtration. A bypass culvert, consisting of a 12" dia. poly-pipe, was constructed around each unit to allow the stream flow to be diverted around the stilling basin and filter boxes at times when the basins were being cleaned or the filters were being replaced. Refer to Attachment 5 for an as-built drawing of Catchment Structure A, and to Attachment 6 for as-constructed photos of the facility.

The filtration devices consist of a series of excelsior log sediment traps, contained within steel

holding boxes. These boxes are designed to hold the filter logs firmly in place and prevent the streamflow from bypassing under the logs or around the ends. The holding boxes are also designed to allow the logs to be quickly and easily replaced as needed with new ones as they fill up with accumulations.

3) Clean-up:

Prior to clean-up operations, the entire C Canyon drainage channel was inspected by representatives of the various state and federal regulatory agencies and company representatives. This inspection tour took place in late April, 2009, after all the catchment structures were in place. The purpose of this inspection tour was to assess the extent and magnitude of the coal-fines accumulation material as part of formulating the final clean-up plan. Most of the accumulations were observed to be between the mine and Site A. Based on the results of the inspection tour it was determined that active cleaning techniques would be more appropriate in the channel immediately below the mine in the area of highest concentrations, while passive, non-invasive natural cleaning processes would be more appropriate in the remaining channel below Site A where the accumulations were less.

In order to facilitate the clean-up effort, the company utilized a flocculant chemical additive during the active portion of clean-up. This involved metering the chemical into the stream-flow immediately above catchment unit A. The flocculant was metered into the flow at a rate determined by previous bench testing on the material. and was only utilized during active portions of the clean-up

The clean-up operations were conducted under complete oversight from the various regulatory agencies,. Active cleaning began on June 30, 2009, at the minesite and proceeded downstream from there. Cleaning involved hand crews utilizing household sweeping brooms to dislodge and break up the accumulated material. The stream-flow then carried the material down to the first catchment structure at Site A, where it was captured and later removed. On August 26, the cleanup was completed, the channel was inspected by officials from DOGM and DWQ, and the violation was officially abated.

4) Reclamation:

After the clean-up was determined successful by the government agencies involved (DOGM, DWQ and BLM), and the violation was formally abated, it was determined that catchment A should be left in-place to provide an element of insurance against unforeseen upset conditions which might possibly arise in the future involving the mine water discharge. Therefore, since this catchment would continue to remain in service as part of the mine operation, it was decided that it should be included in the SMCRA Mining and Reclamation permit and within the permit area.

It was also determined at that time that catchment structures C, E and F should be reclaimed

since they were no longer needed either for containment or cleanup. The company then applied to BLM for relinquishment of the right-of-way for these sites. Based on BLM authorization, reclamation of sites C, E and F were completed in October 2009 under the terms of the right-of-way UTU-87111, and BLM signed-off on the reclamation of these areas for shortly thereafter, subject to demonstration of successful re-vegetation the following summer (2010).

In reclaiming catchments C, E and F, undisturbed segments of the channel above and below the catchment sites were used as a basis of comparison in restoring the areas to an acceptable reclaimed condition. It should be noted that these sites were originally constructed totally within the natural flood-plain of the drainage channel. This was one of the reasons the BLM issued the right-of-way under Catagorical Exclusion (CX), without requiring more extensive environmental analysis. These areas are subject to cyclic regular inundations from high-intensity high volume runoff events which add a natural dynamics toward augmenting successful future reclamation.

Successful reclamation of sites C, D and F can be used as a model for the future reclamation of site A. Therefore the reclamation plan for site A consists of what was done at the other three sites, and is described in more detail below. Pre-reclamation and post-reclamation photos of these sites are included in Attachment 7, since these sites serve as a model for future reclamation of Site A. It should be noted that these photos were taken shortly after reclamation in the fall of 2009. Although reseeding has been done at these sites as per BLM requirements, the vegetation has not yet had a chance to become re-established, but should be evident by the summer of 2010.

Reclamation of site A will begin at such time as the company and the regulatory agencies agree that it is no longer needed as a back-up facility to ensure protection to the drainage channel in the event of a future unforeseen discharge of coal-fines from the mine. This could be when the mine no longer discharges water, or when the mine undergoes final reclamation.

The BLM right-of-way for site A includes 0.23 acres. There is a pre-existing BLM road which runs through the site, which will remain in place after final reclamation. Existing disturbance associated with the installation of site A involves less than 0.12 acres, all located in the stream flood channel north of the existing road. Once started the reclamation will proceed in the following order:

1) The channel flow will be temporarily diverted through the by-pass pipe. The impounded water in the stilling basin will then be drained off, and any remaining coal-fines accumulation material will be cleaned out of the basin and hauled off-site to an approved disposal facility (such as ECDC).

2) The concrete barriers between the road and the basin, which presently serve as a public safety barricade, will be removed and utilized at another location within the company.

3) The steel containment structures for the filter logs will be removed and hauled off-site to an approved disposal site, such as a scrap-metal recycle facility.

4) The low-lying outlet dams (where the filter boxes were located) will be excavated out to the original stream bottom elevation and configuration. The excavated material will be used to help fill up the stilling basin.

5) The rest of the stilling basin will be backfilled with the material from the adjacent equipment storage area, and from the "excess fill storage area" located between the basin and the steep bank immediately to the north. This is the material that was originally dug out of the channel to construct the stilling basin. Additional material from the small material storage pad will also be used to blend back into the excavated channel area. In this manner the stream channel surface can be restored as it is filled back up, and the configuration of the adjacent channel flanks will also be restored at the same time.

6) As the re-contouring process continues, boulders and large rocks will be arranged within the channel and along the channel flanks in an attempt to mimic the pre-existing channel morphology as much as possible, and to blend in with the visual appearance of the natural channel above and below the reclamation site.

7) The boulder placement will be done not only for visual appearance, but also for erosional control. This will be done by placing boulders in and along the reclaimed channel to slow and control the water-flow velocity. Additional armoring will be placed along the outer bank of the curved section of channel in the area where the filter boxes were removed. The boulder placement will be done to match the natural appearance of the area.

8) After the channel has been restored, and the channel flanks have been reclaimed by removing the material storage pad, the by-pass pipe will be removed. The bypass pipe has been installed more-or-less parallel with the channel and buried under the pad and the existing road. Therefore, after the material pad have been reclaimed, the bypass pipe will be easily accessible. Once the channel water-flow has been returned to the newly-reclaimed channel, and the bypass pipe removed, the final re-contouring of the channel flanks will be done.

9) All reconstructed bank areas and flanks will be roughened and scarified in preparation for re-seeding. It should be noted that since the site was constructed within the channel and the immediate flood plain, there was no topsoil salvaging done during initial construction. There was little definable topsoil in the pre-existing site, which consisted primarily of flash-flood alluvial debris, and vegetation was sparse. However, after the pad material is removed, and the excess fill material from the "excess fill material area" is backfilled into the basin area as part of the channel restoration, the original pre-existing flood-plain contour will be re-established.

10) The disturbed areas will then be re-seeded using a seed mix recommended by the

BLM. See Attachment 8 for the proposed seed mix. This is the same seed mix that was used on the reclamation of catchment site C located nearby. Seed will be hand-broadcast and then raked in. After the areas have been re-seeded, a layer of wood straw will be scattered over the reclaimed areas. As required by BLM, re-seeding will be done in to fall of the year (after November) to increase the potential for successful germination.

11) Upon final reclamation, the reclaimed surface soils in the vicinity of the former catchments will be tested for pH, EC and SAR to allow for the evaluation of the salinity and the need for a revision or addition to the final seed mix to enhance germination and establishment.

Note: Catchment A is being left in place as a contingency for potential future cleanup events. In the meantime, the basin is likely to fill up with natural sediment material from normal precipitation events. This material will not be cleaned out unless and until the basin needs to be pressed back into service in the unlikely event of a future coal fines cleanup resulting from an inadvertent discharge. Also, the excelsior logs will not be maintained in the filter boxes until such time as they may be needed for future cleanup efforts.

5) Bonding:

The following bonding calculations are provided:

1) Demolition: a) Remove the steel filter boxes. There are a total of 22 of these filter boxes at the catchment site. They measure 13' long x 2' wide x 2.5' high. They are equipped with lifting lugs and can easily by removed from the site, loaded on a flatbed truck, and hauled off. They are valuable for scrap, and can easily be properly disposed of. Demolition cost is estimated to be about the same as for the powder magazines (bond item 04) at the West Ridge Mine, which have been determined at $154 each. Therefore, the demolition cost associated with the filter boxes is estimated at 22 x $154 = $3,388.

2) Demolition: b) Removal of the bypass pipe. There is a total of 50' of 12" poly pipe installed at this site. This pipe is put together in 20' lengths with removable couplers. It is easy to dis-assemble, and can be re-used after being removed from the sites. Demolition and removal cost of this pipe is estimated to be about the same as for similar culverts (bond item 27) at the West Ridge Mine, which has been determined to be $442.

3) Earthwork: Based on the estimated quantity of backfill required to reclaim comparable sites C, E and F, the estimated time required to backfill and grade the site is about 12 days or 96 working hours. Similar earthwork cost for the West Ridge Mine (i.e., “establish rubbleland surface” bond item) is estimated to be

$19,230/111 hrs = $173/hr. Therefore, it is estimated to cost about $173 x 96 hrs = $16,608 for earthwork reclamation of the catchment site. This is in line with historical costs incurred in reclaiming the lower catchment sites.

4) Revegetation: The total area of the catchment site is 0.92 acres. The existing West Ridge pumphouse, which is located nearby in a similar is 0.9 acres, or 0.21 times larger, and its re-vegetation cost is presently bonded at $4506. Therefore, the re-vegetation cost for the catchment site is estimated to be about $4506.

The total reclamation cost for the catchment site is estimated at:

Demolition	$3,830
Earthwork	$16,608
Re-vegetation	$4,506
Direct Cost	$24,944
Indirect Cost (26.8%)	$6,685
TOTAL	$31,628

The present West Ridge Mine reclamation bond amount is $1,966,000 (as of November 12, 2008), and the bond posted is $2,117,000. In other words, there is presently $151,000 excess bonding currently in place. Therefore, the existing bond should be adequate to include the reclamation of the catchment site.

6) Second Violation:

On July 21, 2010, the company incurred a second violation for additional coal fines accumulations in the drainage below the mine. A complete discussion of this situation is included in Attachment 9 of this Appendix, “Addendum to Address Second Violation #10063, Issued July 21, 2010".

ATTACHMENT 9

ADDENDUM TO ADDRESS SECOND VIOLATION

VIOLATION #10063
ISSUED JULY 21, 2010

ATTACHMENT 9: ADDENDUM TO ADDRESS SECOND VIOLATION VIOLATION 10063, ISSUED JULY 21, 2010

Historical Note: The preceding discussion was approved by the Division and was incorporated into the Mining and Reclamation Plan on May, 2010. Shortly thereafter, on July, 2010, the company incurred a second violation for coal fines accumulations from the mine. The following narrative has been submitted in response to this most recent violation. It is presented in the same format as the preceding discussion.

1a) Introduction:

On July 21, 2010, the company received a second violation for additional accumulations of coal fines in the C Canyon drainage below the West Ridge Mine. The accumulations were the result of non-compliance discharge which occurred after the successful channel cleanup of the previous summer (2009). Representatives from the Division and DWQ inspected the drainage and determined that the coal fines must be cleaned up from the mine down to and including Catchment E. This is a distance of about five miles measured straight-line, and perhaps seven miles total, considering channel meander and sinuosity.

As part of the violation abatement requirements, the Division determined that Catchments C and E would have to be permitted as part of the MRP. It also determined that these catchments could be re-constructed and utilized as part of the required cleanup process prior to having the approval of the MRP amendment. Reconstruction work on the catchments was completed in August, 2010, and cleanup began in September, 2010.

2a) Containment:

After the channel was cleaned in the summer of 2009 and the initial violation was formally abated, the company reclaimed Catchments C and E in November, 2009. The BLM was in the final stages of approving the reclamation when the second violation occurred.

Fortunately, the BLM right-of-way for Catchment C and E is still in place (refer to Attachment 3). Also, Division of Water Rights has approved an Emergency Authorization for the catchments (identical to the one issued previously, refer to Attachment 4) and is proceeding with the extension of the previously-issued stream alteration permit for catchments C and E.

The company reconstructed catchments C and E similar to what was done in 2009 (as described above), and to utilize these re-constructed catchments, as well as existing Catchment A, in the clean-up response to the second violation #10063. As-constructed photos of the catchments during the 2009 clean-up are included as part of this attachment. Photos of the re-constructed catchments are also shown in this attachment. As-built drawings and cross-sections of these catchment structures are included in Attachment 10.

3a) Clean-up:

Based on previous successful clean-up efforts in this drainage during the preceding summer of 2009, the company is utilizing an identical cleaning procedure for the 2010 cleanup. Much of this cleanup has already been accomplished. In summary, this procedure consists of the following:

a) Prior to cleaning, catchment structures will be in place at downstream locations A, C and E, as shown on attachment 1. These structures will all include settling basins and filter containment boxes, as previously described.

b) During cleaning operations, the downstream receiving catchment will be equipped with a flocculant chemical injection system identical to the one used in the previous cleanup. This would include a flocculant storage tote, a metering pump, a make-up water pump, and an application apparatus to inject the floc into the stream. This system would be installed immediately above the inlet of the catchment ponds. The flocculant to be used is Nalco 83400, and the MSDS sheet for this chemical is provided in Attachment 12.

c) Clean-up will be performed by 4-5 man crews using ordinary bristle sweep brooms. Crewmen will sweep the accumulations from the sides of the channel using a swirling sweeping motion. The dislodged accumulations will then be carried downstream by the stream-flow. Crewmen will be instructed to stay within the channel during cleaning operations, rather than sweeping from the banks, in order to minimize damage the riparian plant-life along the channel banks. The brooming method has been previously approved by the regulatory agencies because it is effective in removing the accumulations but is gentle enough not to damage the natural channel armoring.

d) When the dislodged accumulations suspended in the streamflow reaches the downstream catchment structure, the chemical flocculant will be injected into the water. Experience has shown this method to be very effective in quickly dropping out the suspended coal fines. Filter logs will also be maintained at the catchment outlets to provide a secondary means of capturing the coal fines.

e) After the catchment basins have filled up with fines, the stream cleaning operations will be temporarily halted. The channel flow will be diverted around the catchment basin, and the solids allowed to dry out for several days. Experience has demonstrated that within a couple of days the coal fines can then be easily handled. A back-hoe will scoop the fines out of the basin and load it into a dump truck. The material will then be hauled to the West Ridge mine where it will be disposed of at the main coal pile. It will later be blended back into the run-of-mine coal as part of the commercial product.

f) During cleanup operations, crews will exercise caution to prevent damage to riparian vegetation growing along the banks and edges of the channel, based on the protocol established by the regulatory agencies in the previous cleanup efforts. The same contractor involved with the 2009 cleanup, using the same foreman and crew, and familiar with the protocol, will perform the

cleanup.

4a) Reclamation:

The catchments will remain as permitted structures until the Division determines they are no longer required. The catchments were constructed and were utilized during the violation 10063 cleanup operations during August, September and October, 2010. The C Canyon drainage in the area of catchments C and E is subject to violent flash-flooding, especially during late-summer thunderstorm conditions. Catchment structures B, D, and F were never constructed. Catchment Structures C and E were fully reclaimed in the fall of 2009, including re-seeding in November, 2009. In July, 2010, officials from BLM inspected the sites and were satisfied that all components of reclamation had been adequately met according to the terms of the right-of-way grant, including channel restoration, stabilization, and re-vegetation. Based on the success of the previous reclamation of these sites, the company would propose to reclaim Catchment Structure A in a similar manner, under the terms outlined above, upon final reclamation, or at a time when it is no longer needed. The same seed mix would be used (see Attachment 8). Photos of the sites during operation and after reclamation are included as part of this attachment. It should be noted that during final reclamation of these sites, large boulders will be placed in the bottom of basin areas during backfilling operations. This will be done to insure long-term stability of the reclaimed channel against potential erosional effects of normal flash-flooding events in the future. However, they can easily be re-stored to functionality in a matter of three or four days in the future if the need arises. If the catchments are needed in the future they will then be returned to functionality according to this plan.

Final reclamation of the sites will be conducted after the Division determines they are no longer required. Reclamation will proceed as described in the narrative above.

Since the time of the first construction/reclamation additional information has been obtained regarding the soils of the sites. A sampling program was agreed upon in consultation with Division specialist. Composite samples (taken from six individual locations, and then mixed together) were taken from the bottom of the excavated settling basins to approximate the soil characteristic of the disturbed areas. Also, soil samples were taken in undisturbed areas at the perimeter of the sites to better approximate the undisturbed soil characteristics at the site. The undisturbed samples were taken from 0"-7" depth, and from 7"-24" depth. Locations of the sample test pits and lab analysis results are presented in Attachment 13. This soils information will help provide additional guidance for future reclamation efforts if needed.

Upon final reclamation, the reclaimed surface soils in the vicinity of the former catchments will be tested for pH, EC and SAR to allow for the evaluation of the salinity and the need for a revision or addition to the final seed mix to enhance germination and establishment.

5a) Bonding:

As detailed in the above narrative, the bonding costs for the catchments is determined to be $31,628 for each site, which includes demolition, earthwork, re-vegetation and indirect costs. This bonding cost has been approved previously by the Division. Therefore, the additional bonding cost associated with reclaiming Catchments C and E would be $63,256. The present West Ridge Mine reclamation cost is $1,998,000 (as of July 27, 2010) and the bond is posted in the amount of $2,184,000. In other words, there is presently $218,000 excess bonding currently in place. Therefore the existing bond should be adequate to include the reclamation of Catchment sites C and E.

6a) Mapping Designations:

The location of Catchment Structures C and E are shown on Map 1-0/1-1. These catchments are located beyond the general area of resource mapping used for the permitting of the primary mining operation. Therefore, pertinent resource mapping information for the catchments is given on the As-Constructed drawings appearing in Attachment 11, and provided herein as well. This information corresponds to the mapping designations for the primary permitting area, as follows:

Map Number	Resource	Designation
Map 2-1	Soils	Catchment C: Soil Unit 36 Catchment E: Soil Unit 49
Map 3-4B	Wildlife-Deer	Catchment C: Winter Range Catchment E: Unclassified
Map 3-4C	Wildlife-Elk	Catchment C: Winter Range Catchment E: Winter Range
Map 3-4D	Wildlife-Antelope	Catchment C: Unclassified Catchment E: Year-long Range
Map 3-1	General Vegetation	Catchment C: Pinyon/Juniper Catchment E: Sagebrush
Map 4-1	Land Use	Catchment C:Mud Springs Allotment Catchment E: Mud Springs Allotment
Map 5-2	Surface Ownership	Catchment C: U.S.A. (BLM) Catchment E: U.S.A. (BLM)
Map 5-3	Sub-Surface Ownership	Catchment C: U.S.A. (BLM) Catchment E: U.S.A. (BLM)
Map 6-1	Regional Geology	Catchment C: Qsw-Slope wash deposits-Quaternary

		Catchment E: Qsw-Slope wash deposits-Quaternary
Map 7-3	Water Rights	Catchment C: None Catchment E: None
Map 7-5	Seep and Spring Survey	Catchment C: None Catchment E: None

APPENDIX 5-19
B CANYON PORTAL OPENING

ATTACHMENTS:

ATTACHMENT 1	MAP OF B CANYON PORTAL REHABILITATION PROJECT
ATTACHMENT 2	AML RECLAMATION INFORMATION FROM DOGM FILES (INCLUDES PRE-RECLAMATION PHOTOS)
ATTACHMENT 3	PHOTOS OF EXISTING PORTAL AREA
ATTACHMENT 4	ORDER 2 SOILS SURVEY (RELEVANT EXCERPTS), LONG RESOURCE CONSULTANTS
ATTACHMENT 5	INSPECTION REPORT AND SOILS RECOMMENDATION
ATTACHMENT 6	APPROVED SEED MIX FROM AML RECLAMATION OPERATION
ATTACHMENT 7	VEGETATION AND SENSITIVE SPECIES REPORT, MT NEBO SCIENTIFIC
ATTACHMENT 8	CULTURAL REPORT, SENCO-PHENIX ARCHEOLOGICAL
ATTACHMENT 9	2011 RAPTOR SURVEY AND AGENCY CORRESPONDENCE REGARDING GOLDEN EAGLE NEST
ATTACHMENT 10	ENGINEERING DRAWINGS: EXISTING PORTAL AREA TOPOGRAPHY PROPOSED PORTAL OPENING PROJECT

INTRODUCTION:

In early 2013, it became necessary to uncover the B Canyon Portal in order to gain access to the old Kaiser mine works. As shown on Map 5-4A, there is a two-entry set of exploratory entries which extend from the old Kaiser mine works and was driven into the coal reserve block now controlled by West Ridge Resources. These entries were mined in the early 1960's, prior to the development of the West Ridge mine. These entries were driven from the underground works basically along strike. However, Kaiser also drove a short set of entries to the surface in order to assist the mine ventilation. These entries broke out to the surface in a single opening in B

canyon, where a steel portal canopy was constructed, which still remains intact (see photo in Attachment 2). After the exploratory project was completed, Kaiser sealed the portal with a concrete barricade and a steel fence across the opening of the steel structure.

In 1998, the Utah Division of Oil,Gas and Mining's Abandoned Mine Lands (AML) group reclaimed the portal site. This was small isolated part of a much larger reclamation project involving the entire Sunnyside Mine site in nearby Whitmore Canyon. Reclamation of the B Canyon portal consisted primarily of backfilling the steel canopy and re-vegetating the site. The steel fence at the end of the canopy was removed, but the main portal structure, consisting of circular steel multi-plate arch sets, was left in place. Part of the steel arch remains visible at present. According to AML records, approximately 10 cubic yards of earthen material was used to backfill the portal. This material was obtained by excavation the nearby bank. Relevant documentation regarding the AML reclamation of the B Canyon Portal, obtained from the Division's public records, is presented in Attachment 2.

As part of the planned West Ridge Mine development, the company then proposed to extend longwall gate entries across these old Kaiser mine exploratory entries (see map in Attachment 1). In order to assess the conditions of the old works, the company uncovered the B Canyon portal and breach the seal. This work was done under the necessary approvals from US Mine Enforcement and Safety Administration (MSHA). The company then inspected the old works and conducted needed re-habilitation work, such as re-bolting the roof in selected areas, and erecting an additional seal in the underground portion of the old works.

Re-opening of the B canyon Portal was a temporary action. It is estimated that it took no longer than two-three days to uncover the portal and breach the seal. To provide the necessary ventilation, a small auxiliary face fan was used, along with a portable generator to provide electrical power. These units were supported by crib blocks. All installation of components were temporary, and there was no concrete foundations used. The drawings in Attachment 10 show the existing area and the reclaimed topographic contours, as well as the proposed equipment layout during the re-habilitation work.

After the mine re-hab work was completed in late 2014, the portal was re-sealed, and the site was reclaimed to the same standard as the previous AML reclamation.

The following discussion provides greater detail of the portal re-opening plan that was proposed. All reclamation work is completed and vegetation has grown in satisfactorily as of Mid 2016.

CHAPTER 1; LEGAL

The B Canyon portal is located approximately one-half mile southeast of the main mine surface facilities in C Canyon, as shown on Map 1-0/1-1. The are has been previously disturbed when Kaiser Coal Company installed the portal in the early 1960's, and again when AML reclaimed the site in 1998. The site is accessed by an existing unimproved dirt road which was initially installed in the 1950's by US Steel to reach a drill site located up-canyon from the portal site.

The road has been sufficiently maintained by local usage, and will not need to be upgraded as part of the portal re-opening project.

The portal site is located on BLM land, and is within federal coal lease SL-068754 which is held by West Ridge Resources (see Maps 5-3 and 5-4). Right of entry to do the portal work is granted under the terms and authority of this lease (see Appendix 1-4A). The site is located within the existing DOGM SMCRA permit area for the West Ridge Mine C/007/041). Total disturbance associated with the previous activities is approximately 0.62 acres, based on ground surveys of the area (see map in Attachment 10). Total disturbance associated with the proposed portal-opening project is estimated at about 0.25 acres, all within the previous disturbed area. Chapter 1 has been updated to reflect the additional disturbance associated with this proposal.

CHAPTER 2: SOILS

As stated above, the site has been previously disturbed on two separate occasions; initially in the early 1960's when Kaiser constructed the portals, and then again in 1998 when DOGM/AML did the partial reclamation. Because of this previous activity, there is no native topsoil remaining in the small area immediately in front of the portal, the area now proposed for disturbance as part of the portal re-opening project. DOGM soils scientist has reviewed the site and concluded that adequate reclamation should be obtained by removing the existing vegetation from the area to be disturbed, and then removing the top 12" of material from this area. The vegetation would be stockpiled separately in a nearby location, and the “topsoil” would likewise be stored in its own separate pile located nearby. The proposed location of these stockpiles is shown on the drawing in Attachment 10. The Division has provided its assessment of the topsoil situation in the form of a pre-construction inspection report, which is included in Attachment 5.

Even though this area has been previously disturbed, the company has recently conducted an on-site soils survey of the area associated with a proposed GVH project in the vicinity. In May, 2010, Long Resource Consultants prepared an Order 2 soils survey of the entire B Canyon road, which included soil samples taken at the portal site, as well as samples taken immediately above and below the site. Relevant sections of this survey report are presented in Attachment 4. In reviewing this report, it may be helpful to note that sample B-06 was taken directly at the portal site, while sample B-05 was taken approximately 300' up-canyon from the site, and sample B-07 was taken about 600' below the site. Therefore, the report is able to give a very accurate description of the soils existing in the area.

It should also be noted that the revegetation that was established at the site after the AML reclamation seems to have been successful, despite the fact that the AML team did not at the time have a designated topsoil resource to re-apply to the backfilled portal site. As the photos in Attachment 3 show, subsequent re-vegetation appears healthy and diverse. Also, Mt Nebo Scientific has conducted an on-site vegetation report (see Attachment 7), which lists the plant species (shrubs, forbs and grasses) which have successfully re-established themselves at the site over the last 12 years since the AML reclamation.

Based on these observations, the company proposes to remove all existing vegetation from the area in front of the portal and store this material in a separate pile. A minimum of 12" of surface "topsoil" material will then be salvaged and stored in a nearby pile. The remaining earthen material in front of portal will be pulled down to construct the access ramp leading to the portal opening. As mentioned previously, the portal re-opening project will be temporary. The company estimates that it should be able to complete all the underground mine safety work in less than six months, at which time the portal would be re–sealed, and the site would then be backfilled and reclaimed to its existing (AML) condition and contour. At the time of reclamation, after the ramp has been removed and the portal has been backfilled, the "topsoil" material will be placed back over-top the backfill, and the vegetation material will then be spread back over the disturbed area as mulch. A 1 T/ac straw mulch will be incorporated into the surface soil and a 1 Ton/ac mulch will be scattered over the surface after the seed and mulch application and scattering of slash on the seeded and mulched surface.

The company proposes to re-seed the disturbed area with the same seed mix which was used by the AML reclamation team in 1998. Attachment 6 includes this seed mix, which was obtained from the Division's public records. As shown on the engineering drawing in Attachment 10, the maximum extent of new disturbance is about 0.25 acres. However, this area includes all the area potentially involved in the re-opening project. Much of this area will not be subject to any earthwork or excavation-type disturbance, but may be involved by placing portable equipment directly on the ground, or by parking vehicles at the existing vehicle turn-around area. In this sense, it could be disturbed, but there would be no vegetation removed nor any kind of invasive earthwork. The area of actual disturbance would be much smaller, and is estimated at about 0.07 acres. This is the area immediately in front of the portal associated with the access ramp. Assuming a salvage depth of 12", approximately 113 cubic yards of topsoil would be removed and stored in the adjacent stockpile. Another 50 cubic yards of underlying earth material would then be reworked to expose the portal and construct the access ramp. These quantities are estimates only, and could vary upon final construction, but it can be safely stated that the quantities involved in this project are small , and the project can be completed with minimal disturbance. Foe example, records from the previous AML backfill efforts indicate that the volume of material used in backfilling the portal was only about 10 cubic yards.

CHAPTER 3: BIOLOGY

As stated previously, the revegetation that has been established at the site after the AML reclamation seems to have been successful, despite the fact that the AML team did not at the time have a designated topsoil resource to re-apply to the backfilled portal site. As the photos in Attachment 3 show, subsequent re-vegetation appears healthy and diverse. Also, Mt Nebo Scientific has conducted an on-site vegetation report (see Attachment 7), which lists the plant species (shrubs, forbs and grasses) which have successfully re-established themselves at the site over the last 12 years since the AML reclamation.

Included in the Mt Nebo report is an updated list of Threatened, Endangered and Sensitive

Species for Carbon County, Utah. The report concludes that there should be no impacts to any of the listed species as a result of re-opening the B Canyon portal.

Based on the 2011 raptor survey, there are several eagle nests in the B Canyon area. In particular, nest 395 (tended in 2011) is located immediately above, and is visible from, the portal site. Nest 1056 (inactive in 2011) is located down-canyon about 2000' from and in line-of-sight of the portal. Nest 398 (tended in 2011) is located about a mile from the portal, but is around the cliff face out of line of site of the portal and the access road leading to the portal. A copy of the 2011 raptor survey is included in Attachment 9.

Due to the proximity of the eagle nests in the B Canyon area, the company has initiated discussions with DOGM biologist, US Fish & Wildlife Service (FWS) officials, and consulting wildlife specialist to determine to best approach to conduct the portal re-opening project so as to minimize the impact to any eagle activity in the area. A record of this correspondence is included in Attachment 9 as well. In summary, there has been eagle activity noted currently (February, 2012) in the vicinity of Nest 395 located above the portal. The current plan is to employ a trained wildlife biologist to monitor eagle activity in the area while the permitting process is underway. At such time as the permit is approved, the biologist would conduct a ground survey of the nests in question. This may also coincide with the regular annual helicopter raptor survey of the area. If there is no activity at the time (eggs, chicks, fledglings), the company would formally seek approval (from the Division and FWS) to begin construction activities at the portal site. However, if there is any eagle activity at that time, the company will wait until subsequent ground surveys of the nests verify that any fledglings have reached maturity and have left the nest.

CHAPTER 4: LAND USE

After the portal re-opening project has been completed (estimated six months after beginning), the site will be reclaimed. Present land use includes wildlife habitat and limited cattle grazing. Recreation use includes hunting and 4-wheeling. All existing land-use activities can continue during and after the completion of the portal project.

As mentioned previously, the site has been disturbed on several occasions in the past. It is assumed that AML provided the necessary cultural clearances prior to there 1998 reclamation work. However, in September, 2009, the company contracted Senco-Phenix Archeological Consultants to conduct an intensive cultural survey of the area as part of a GVH project that was being proposed nearby. The survey included the portal site, and as expected, recommended a finding of no effect and cultural clearance. A copy of this report is included in Attachment 8.`

CHAPTER 5: ENGINEERING

Before any construction starts an identification sign will be posted at the site. This sign will list

the company name as permit holder, the permit number, address and phone number. Disturbed area perimeter markers and stream buffer zone signs will also be established around the construction site prior to any disturbance.

As mentioned above, construction activities associated with the portal re-opening will be minimal. Up to 113 cubic yards of topsoil material will be removed and stckpiled adjacent to the portal. Another 50 cubic yards of earth material will be rework to make a small equipment access ramp leading from the road up to the portal, a distance of about 50'-60'. According to AML records, about 10 cubic yards of material was placed in front of the portal during the 1998 backfill (reclamation) effort. It should be noted that all earth quantities given here are conservatively estimated on the high side. All earthwork can be done using a single small trackhoe, and can be done in less than a day.

After the portal is uncovered, the mining crews, working under strict oversight from the federal Mine Safety and Health Administration (MSHA) will remove the existing seal and begin to slowly and methodically work their way into the old works. In order to provide the necessary ventilation, a small portable face fan will be set up on the surface and vent tubing will be extended from the fan into the mine opening to provide fresh air. The crews will then advance into the mine, making sure the roof control is adequate as they proceed. This may require installing additional timbers and/or supplemental roof bolts. As shown on the underground drawing in Attachment 1, there are three areas where the West Ridge mine development entries are projected to cross the old Kaiser mine works; two longwall gate entries and one set of bleeder entries. Due to the additional abutment loads imposed during future longwall mining, these areas in particular may require supplemental roof support installed ahead of time, such as roof bolts, cable bolts, cribs and/or cans. Also as shown on the drawing, a set of seals will need to be installed to isolate to remaining old works from the new development district.

All facilities associated with the portal re-opening project will be temporary. The only equipment utilized will be a temporary ventilation fan and associated vent tubing, and a small electrical generator to provide power to the fan. This generator will also provide the power for the roof bolting machine. All equipment will be portable, and will be placed on crib blocks for support and leveling. There will be no concrete used. Equipment can be set along the existing roadway or turn-around area, with no excavation required.

The underground re-habilitation project is expected to require no more than six months to complete. During this time the only day-to-day activity at the B Canyon site will consist of several trips in and out of the portal for the work crew, and to deliver consumable supplies, such as roof bolts, timbers and concrete blocks needed for the re-habilitation work, and to deliver fuel for the generator. All of this deliver of men and materials can be accomplished using small mine-approved diesel pick-up trucks. There will be no storage of supplies or materials on the surface at the site: all materials will be hauled directly underground for storage.

After the underground re-hab work is complete, the seal will be re-constructed at the B Canyon portal. All portable equipment (fan, generator, vent tubing, etc.) will be removed. The steel

canopy will be left in place, just as it is now. The portal opening will be backfilled from the portal opening to a minimum of 25 feet (see Plate 2 of 2), the access ramp will be obliterated, the topsoil material will be laid back, and the stockpiled vegetation mulch material will be spread over the reclaimed area. This will result in achieving approximate original (AML) contour. The surface will be roughened (gouged/pocked) to aid in water retention and to minimize soil lose to erosion. The area will then be re-seeded with the seed mix approved by the previous AML reclamation project. A 1 T/ac straw mulch will be incorporated into the surface soil and a 1 Ton/ac mulch will be scattered over the surface after the seed and mulch application and scattering of slash on the seeded and mulched surface. A row of excelsior logs (sediment control structures) will then be placed around the down-slope toe of the disturbed area for additional erosion control. This row of excelsior logs will be in addition to the excelsior logs placed at the stream buffer prior to initial construction, which will also be left in place after reclamation until the Division has determined that re-vegetation has been established sufficient to provide adequate sediment control.

Due to the small size of the project site, it is estimated that the reclamation work can be completed in 2-3 days. According to AML records, an identification monument was placed on top of the backfill during the 1998 reclamation. If the monument is still there, the company will save it, and replace it after the re-opening reclamation has been completed.

Bonding calculations for reclamation of the site include earthwork and revegatation. Since all equipment used will be mobile, and since the existing steel portal canopy will remain in place (although backfilled and covered), there will be no demolition costs.

1) Earthwork.....Total earthwork volumes are liberally estimated to be no more than 163 cubic yards, including 113 yds for topsoil removal/replacement and 50 yards for ramp construction and portal backfill.

2) Revegetation....The total area to be re-vegetated is about 0.07 acres.

Given the small size of the reclamation requirements for this project, perhaps the most straight-forward means of determining an adequate reclamation cost amount is to compare it to a similar approved amount for a somewhat comparable installation. For example, in November, 2008, the Division approved the Bear Canyon GVH site, which is small isolated disturbed area located nearby within the West Ridge Mine permit area. The total reclamation cost of the Bear Canyon GVH site associated with earthwork is $2143, and for revegetation is $2461, for a total of $4604. This is for a 0.34 disturbed acre site, involving 842 cy of back fill, and 515 cy of topsoil replacement. In comparison the B Canyon portal disturbed area is 0.07 acres, involving 50 cy of backfill, and 113 cy of topsoil replacement. Again, there are no demolition costs associated with the B Canyon project. The Bear Canyon GVH site is obviously a much larger site to reclaim than the B Canyon portal site, with quantities generally about five times greater than for the B Canyon portal site. Therefore, in the interest of expediency, the company would agree to a $4604 reclamation cost for the B Canyon portal job, as determined for the similar but more expansive Bear Canyon GVH installation.

The updated bond information has been included in Attachment #17 of the MRP.

CHAPTER 6: GEOLOGY

The geology of the B Canyon portal area is nearly identical to the geology of the West Ridge minesite surface facilities located about a half mile away in nearby C Canyon. This geology is described in detail in Chapter 6 of the MRP.

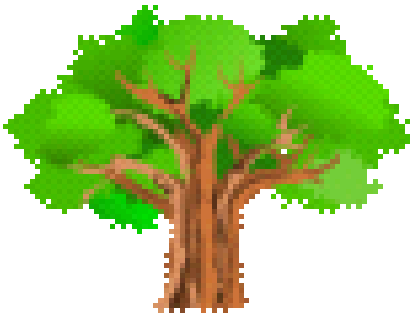
CHAPTER 7: HYDROLOGY

As shown in the drawings in Attachments1 and 10, and the photos if Attachment 3, the B Canyon portal is located in the bottom canyon near the drainage channel. B Canyon is an ephemeral drainage, typical of the Book Cliffs, and similar to the drainages of nearby C Canyon and Bear canyon described in greater detail in Chapter 7 of the MRP. All construction work associated with the re-opening of the B Canyon portal will be done with the area of previous disturbance, including the AML reclamation of 1998. There will be no activity within the drainage channel. In fact, there is an existing sediment-control berm, presumably constructed by AML, that separates the portal site from the drainage. This berm will remain in place during and after the portal re-opening project to provide adequate sediment control protection to the drainage channel. In addition, the company will install additional temporary sediment control protection between the construction area and the drainage, in the form of a continuous row of excelsior logs, as shown in Attachment 10. The company will also install a row of excelsior log sediment control around the base of the topsoil storage pile, even though this pile is temporary and should itself be reclaimed within six months of the re-opening project.

After the re-opening project is completed, the site will be reclaimed to its approximate original (AML) contour, will be covered back over with the topsoil material, and then re-seeded. An additional row of excelsior logs will be installed along the down-slope edge of the reclaimed area. In addition, the row of perimeter excelsior logs (installed during the initial construction) will also remain in place after reclamation of the site until it has been determined that the revegetation has been established sufficiently to provide sediment control. The existing AML berm will not be disturbed.

Vegetation Reference Areas
at the
West Ridge Mine
2016

in
Carbon County
Utah



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INTRODUCTION

In the summer of 2016 representatives from the West Ridge Mine, State of Utah, Division of Oil, Gas & Mining (UDOGM) and U.S. Department of Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE) visited the West Ridge Mine site in Carbon County, Utah. The purpose of the site visit was to locate, inspect and review the plant communities that were chosen during the mine permit process to represent future revegetation success standards at the time of final reclamation. These sites were called "reference areas".

Following the site visit, a recommendation was made to have a qualified botanist re-locate the reference areas, inspect the condition of them and record their GPS coordinates to facilitate future visits.

METHODS

To begin the study, maps that show the locations of the reference areas at the West Ridge Mine were reviewed in the Mining & Reclamation Plan (MRP). The original reports by *Mt. Nebo Scientific, Inc.*[1, 2, 3] were also reviewed; they describe the reference areas, when they were chosen and results from quantitatively sampling them. A topographic map program was then employed to place waypoints on a map to be used in the field. The waypoints were transferred to a hand-held GPS unit, also for field use. A trip to the sites was conducted by the author on September 27, 2016 to revisit and re-locate the reference areas using the GPS unit and aforementioned new field maps. Once the reference areas were found, their general conditions were assessed and the GPS coordinates were adjusted when appropriate.

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[1] Collins, P.D.. 1997. Plant communities of the West Ridge project mine area. A professional report for Andalex Resources, Price, UT. Mt. Nebo Scientific, Research & Consulting, Springville, UT. 36 pp.

[2] Collins, P.D.. 1998. Douglas Fir/Maple reference area (new) , West Ridge Mine project. A professional report for Andalex Resources, Price, UT. Mt. Nebo Scientific, Research & Consulting, Springville, UT. 16 pp.

[3] Collins, P.D.. 1998. Nonvascular plant cover of the Douglas Fir/Rocky Mtn. Juniper community at the West Ridge project . A professional report for Andalex Resources, Price, UT. Mt. Nebo Scientific, Research & Consulting, Springville, UT. 8 pp.

RESULTS

Table 1 lists the reference areas at the West Ridge Mine along with their respective GPS coordinates. Photographs of the reference areas taken during the visit are also shown below.

All reference areas were in good condition and remain viable as revegetation success standards at the time of final reclamation of the mine site. When the site was visited by OSMRE and UDOGM, it was thought that a rock slide may have covered the Douglas Fir/Maple Reference Area. However, when the site was visited by the author, this reference area was located up-canyon and beyond the rock slide area.

Table 1: Reference Areas at the West Ridge Mine, Carbon County, Utah

REFERENCE AREA	**GPS NAME**	**COORDINATES** (UTM NAD 27)
Pinyon-Juniper	WRPJref	12S 547959E 4385364N
Douglas Fir/Rocky Mountain Juniper	WRDFRMJref	12S 548286E 4385192N
Douglas Fir/Maple	WRDFMref	12S 548993E 4385858N

Pinyon-Juniper Reference Area

Douglas Fir/ Rocky Mountain Juniper Reference Area

Douglas Fir/ Maple Reference Area

Bond Amount

Direct Costs		
Subtotal Demolition and Removal	$672,398	
Subtotal Backfilling and Grading	$694,343	
Subtotal Revegetation	$207,129	
Subtotal Direct Costs	$1,573,870	
Indirect Costs		
Mob/Demob	$157,387	10.00%
Contingency	$78,694	5.00%
Engineering Redesign	$39,347	2.50%
Main Office Expense	$107,023	6.80%
Project Management Fee	$39,347	2.50%
Subtotal Indirect Costs	$421,797	26.80%
Total Cost (in 2016 dollars)	$1,995,668	
Escalation Factor		0.01007
Number of Years		5
Escalation	$100,482	
Reclamation Cost (in 2021 dollars)	$2,096,150	
Bond Amount (rounded to nearest $1,000 in 2021 dollars)	$2,096,000	

Cost factors

Means Number	Materials	Unit Cost	Units
02 41 16.13 0100	Mixture of types, average	0.31	CF
03 05 05.10 0050	Concrete Demolition	73.55	CY
31 23 16.42 1300	Front End Loader 3 CY	1.69	CY
31 23 23.20 1025	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	10.80	CY
02 41 16.17 4200	On Site Disposal	9.07	CY
City Sanitation Price	City Sanitation	8.33	CY
JennChem	Seal Portal	4320.00	EA
Nielson Con	Plug Well	185.00	EA
02 41 16.13 0020	Steel Bld. Large	0.28	CF
31 23 16.42 0260	Excavation Bulk Bank 2 CY (322BL)	1.44	CY
31 23 16.13 3080	Backfill Trench Minimal Haul 2 1/4 CY	1.79	CY
26 05 05.10 1910	Electrical Demolition	26.50	CLF
02 41 13.60 1700	Chain link, posts &fabric remove only	3.07	LF
31 37 13.10 0110	Machine placed rip-rap for slope protection	102.85	CY
31 25 14.16 1000	Silt Fence	1.15	LF
Reveg002	Hydro. Spreader (equip. & labor) b-81	21.04	MSF
Reveg001	Hay 1" Material Only	68.00	MSF
WestRidge07411	West Ridge Pinyon/Juniper	511.00	AC
WestRidge07412	West Ridge Douglas Fir/Maple	509.80	AC
WestRidge07413	West Ridge Douglas Fir Mt. Juniper	504.36	AC
WestRidge07414	West Ridge Sagebrush/Grass Comm.	634.75	AC
WestRidge07416	Serviceberry	1.60	EA
WestRidge07417	Mountain Mahogany	1.20	EA
01 54 33.20 4870	988 G II ((6-13) 1H2008) 2005	3085.00	/Day*
01 54 33.20 4870	Hourly Cost		
01 54 33.20 4310	D8R Semi-U EROPS	1887.00	/Day
01 54 33.20 4310	Hourly Cost		
01 54 33.20 0200	CAT 325L (10-24) (2nd2008)	1029.00	/Day
04 54 33.20 0200	Hourly Cost		
01 54 33.20 4110	D3G XL	471.40	/Day
01 54 33.20 4110	Hourly Cost		
01 54 33.20 5600	Off Highway 35 Ton Truck	1529.00	/Day
01 54 33.20 5600	Hourly Cost		
01 54 33.40 6950	6,000 Gal H2O Truck Diesel (2nd2008)	1168.00	/Day
01 54 33.40 6950	Hourly Cost		
01 54 33.40 7200	Pick-up Truck 4x4 1 Ton	156.80	/Day
01 54 33.40 7200	Hourly Cost		
	Forman Average Outside	51.90	
	Labor	37.90	
	Truck Driver (Heavy)	43.20	
	Heavy Equip. Operator (Med)	52.25	
01 54 33.20 4360	D9R Semi-U EROPS (9-52) (2H2007)	2392.00	/Day
01 54 33 4360	Hourly Cost		
23 05 05.10 3600	Mechanical equipment heavy	795.00	TON
Nature Hill	Contained Doug Fir Transplant	0.6	
JennChem	Labor	265	HR.
01 54 33.20 4710	Front End Loader, 4WD, 3.5 CY, 145 HP	516	/Day
Nielson Con	Nielson Construction	7.00	/Ton
02 41 13.40 0230	48" CMP (2)	153.7	EA
02 41 13.40 0220	36" CMP (2)	102.5	EA
02 41 13.40 0220	24" CMP (2)	102.5	EA

02 41 13.40 0210	18" CMP (2)	27.7	EA

*The daily operating cost includes both the rental and operating costs.
Operating costs includes parts and labor for routine servicing.

Demolition and Removal

Shop Warehouse 01	197625
Bathhouse 02	46780
Administration Office 03	35617
Powder Magazines 04	683
Overland Conveyor 05	13908
Conveyor Bents 06	3917
Drive Unit 07	4422
Discharge Structure 08	3993
Bent and Bracing 09	1257
Reclaim Conveyor stringers 10	37664
Crusher Building 11	14185
Reclaim Tunnel Headwall 12	3755
Loadout Conveyor 13	1519
Loadout Conveyor Bent 14	366
Mine Fan 15	4489
Ductwork Airlock 16	11910
Motor Room 17	1974
MCC 18	1755
Portals 19	23218
Rock Dust Tank 20	8852
Oil Grease Storage 21	1753
Dumpster Bay 22	5873
Monitoring Well 23	185
Hilfiker Wall 24	19733
Guard Rail 25	25711
Bypass Culvert 26	19872
Culverts 27	661
Water Tank 28	6053
Reclaim Vaults29	9163
Reclaim Tunnel Semisphere 30	6352
Escape Tunnel Vent 31	1448
Truck Loadout 32	18585
Substation Electrical 33	72253
Powerline 69 KV 34	318
Powerline Yard Distribution 35	371
Pavement Truck Loadout 36	14898
Pumphouse 37	6015
Riprap 38	19046
Gob Gas Vent Hole	26219
Storage Shed	22459
	672398

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Shop Warehouse 01																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	160	60	30								FT		288000	CF	89280
		Structure's Vol. Demolished																0.33	95040	Cf	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive	City Service	City Sanitation Price	8.33	CY													7147	CY	59535
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		3516	Ton	24612
		Subtotal																			173427
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	60	160	0.67								FT		238	CY	17521
		Concrete Vol. Demolished																1.3	310	CY	
		Loading Cost	Front End Loader 3 CY		1.69	CY													310	CY	523
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip		10.80	CY													310	CY	3345
		Disposal Cost	On Site Disposal		9.07	CY													310	CY	2809
		Subtotal																			24198
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			197625

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Bathhouse 02																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	40	120	12								FT		57600	CF	17856
		Structure's Vol. Demolished																0.33	19008	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													1429	CY	11904
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		703	Ton	4921
		Subtotal																			34681
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	40	120	0.67								FT		119	CY	8761
		Concrete Vol. Demolished																1.3	155	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													155	CY	262
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													155	CY	1672
		Disposal Cost	On Site Disposal		9.07	CY													155	CY	1404
		Subtotal																			12099
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			46780

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Administration Office 03																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	40	70	18								FT		50400	CF	15624
		Structure's Vol. Demolished																0.33	16632	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													1251	CY	10421
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		615	Ton	4305
		Subtotal																			30350
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	40	70	0.5								FT		52	CY	3814
		Concrete Vol. Demolished																1.3	67	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													67	CY	114
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													67	CY	728
		Disposal Cost	On Site Disposal		9.07	CY													67	CY	611
		Subtotal																			5267
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			35617

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Powder Magazines 04																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	8	8	8								FT		512	CF	159
		Structure's Vol. Demolished																0.33	169	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													13	CY	106
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/ct		6	Ton	42
		Subtotal																			307
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	10	10	0.5							2	FT		4	CY	272
		Concrete Vol. Demolished																1.3	5	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													5	CY	8
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													5	CY	52
		Disposal Cost	On Site Disposal		9.07	CY													5	CY	44
		Subtotal																			376
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			683

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Overland Conveyor 05																			
		Structure's Demolition Costs	Mixture of types, aver	02 41 16.13 0100	0.31	CF	550	7	6								FT		23100	CF	7161
		Structure's Vol. Demolished																0.33	7623	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													573	CY	4773
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		282	Ton	1974
		Subtotal																			13908
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			13908

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Conveyor Bents 06																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	50	15	1.5								FT		4500	CF	1395
		Structure's Vol. Demolished																0.33	1485	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													112	CY	933
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		55	Ton	385
		Subtotal																			2713
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	4	20	1							4	FT		12	CY	872
		Concrete Vol. Demolished																1.3	15	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													15	CY	26
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													15	CY	166
		Disposal Cost	On Site Disposal		9.07	CY													15	CY	140
		Subtotal																			1204
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			3917

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Drive Unit 07																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	20	30	6								FT		3600	CF	1116
		Structure's Vol. Demolished																0.33	1188	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													89	CY	741
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		44	Ton	308
		Subtotal																			2165
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	20	30	1								FT		22	CY	1634
		Concrete Vol. Demolished																1.3	29	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													29	CY	49
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													29	CY	312
		Disposal Cost	On Site Disposal		9.07	CY													29	CY	262
		Subtotal																			2257
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			4422

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Discharge Structure 08																			
		Structure's Demolition Costs	Mixture of types, aver	02 41 16.13 0100	0.31	CF	230	7	8								FT		12880	CF	3993
		Structure's Vol. Demolished																0.33	4250	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		157	Ton	1099
		Subtotal																			3993
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			3993

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Bent and Bracing 09																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	70	20	2								FT		2800	CF	868
		Structure's Vol. Demolished																0.33	924	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation																		
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		34	Ton	238
		Subtotal																			1106
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	2	30	0.67								FT		1	CY	110
		Concrete Vol. Demolished																1.3	2	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													2	CY	3
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													2	CY	21
		Disposal Cost	On Site Disposal		9.07	CY													2	CY	18
		Subtotal																			151
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			1257

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Reclaim Conveyor stringers 10																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	320	5	3								FT		4800	CF	1488
		Structure's Vol. Demolished																0.33	1584	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		59	Ton	413
		Subtotal																			1547
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	60	160	1								FT		356	CY	26151
		Concrete Vol. Demolished																1.3	462	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													462	CY	781
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													462	CY	4992
		Disposal Cost	On Site Disposal		9.07	CY													462	CY	4192
		Subtotal																			36117
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			37664

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Crusher Building 11																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	24	50	30								FT		36000	CF	11160
		Structure's Vol. Demolished																0.33	11880	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation																		
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		440	Ton	
		Subtotal																			11160
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	24	50	0.67								FT		30	CY	2190
		Concrete Vol. Demolished																1.3	39	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													39	CY	65
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													39	CY	418
		Disposal Cost	On Site Disposal		9.07	CY													39	CY	351
		Subtotal																			3025
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			14185

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Reclaim Tunnel Headwall 12																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	20	15	15								FT		4500	CF	1395
		Structure's Vol. Demolished																0.33	1485	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		55	Ton	385
		Subtotal																			1780
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Floor																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	20	15	1								FT		11	CY	817
		Concrete Vol. Demolished																1.3			
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													14	CY	24
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													14	CY	156
		Disposal Cost	On Site Disposal	02 41 16.17 4200	9.07	CY													14	CY	131
		Subtotal																			1129
		Wall's Demo. Cost																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55		15	15	1								FT		8	CY	613
		Concrete Vol. Demolished																1.3	11	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													11		18
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													11	CY	117
		Disposal Cost	On Site Disposal		9.07	CY													11	CY	98
		Subtotal																			846
		Total																			3755

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Loadout Conveyor 13																			
		Structure's Demolition Costs	Mixture of types, ave	02 41 16.13 0100	0.31	CF	160	4	6								FT		3840	CF	1190
		Structure's Vol. Demolished																0.33	1267	CY	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		47	Ton	329
		Subtotal																			1519
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			1519

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Loadout Conveyor Bent 14																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	20	8	1.5								FT		240	CF	74
		Structure's Vol. Demolished																0.33	79	CY	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation																		
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		3	Ton	21
		Subtotal																			95
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	4	12	1.5								FT		3	CY	196
		Concrete Vol. Demolished																1.3	3	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													3	CY	6
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													3	CY	37
		Disposal Cost	On Site Disposal		9.07	CY													3	CY	31
		Subtotal																			271
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			366

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Mine Fan 15																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	12	12	50								FT		7200	CF	2232
		Structure's Vol. Demolished																0.1	720	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation																		
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		27		
		Subtotal																			2232
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	12	50	1								FT		22	CY	1634
		Concrete Vol. Demolished																1.3	29	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													29	CY	49
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													29	CY	312
		Disposal Cost	On Site Disposal		9.07	CY													29	CY	262
		Subtotal																			2257
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			4489

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Ductwork Airlock 16																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	70	20	12								FT		16800	CF	5208
		Structure's Vol. Demolished																0.33	5544	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		205	Ton	1435
		Subtotal																			6643
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	70	20	1								FT		52	CY	3814
		Concrete Vol. Demolished																1.3	67	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													67	CY	114
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													67	CY	728
		Disposal Cost	On Site Disposal		9.07	CY													67	CY	611
		Subtotal																			5267
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			11910

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Motor Room 17																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	16	16	10								FT		2560	CF	794
		Structure's Vol. Demolished																0.33	845	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		31	Ton	217
		Subtotal																			1011
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	16	16	1								FT		9	CY	697
		Concrete Vol. Demolished																1.3	12	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													12	CY	21
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													12	CY	133
		Disposal Cost	On Site Disposal		9.07	CY													12	CY	112
		Subtotal																			963
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			1974

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		MCC 18																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	12	20	9								FT		2160	CF	670
		Structure's Vol. Demolished																0.33	713	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		26	Ton	182
		Subtotal																			852
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	12	20	1								FT		9	CY	654
		Concrete Vol. Demolished																1.3	12	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													12	CY	20
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													12	CY	125
		Disposal Cost	On Site Disposal		9.07	CY													12	CY	105
		Subtotal																			903
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			1755

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Portals 19																			
		Seal Constructiojn	Seal Portal	JennChem	4320.00	EA										4	EA		4	EA	17280
		Labor		JennChem	265											2	Hr		8	Hr.	2120
			Equipment Costt	Front End Loader, 4WD, 3.5 CY, 145 HP	516							111							444	CY	
														60	CY/Hr				7.4	Hr.	3818
		Subtotal																			23218
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			23218

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Rock Dust Tank 20																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF			40	12						2	FT		9048	CF	2805
		Structure's Vol. Demolished																0.33	111	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		4	Ton	28
		Subtotal																			2833
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	20	40	1							2	FT		59	CY	4359
		Concrete Vol. Demolished																1.3	77	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													77	CY	130
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													77	CY	832
		Disposal Cost	On Site Disposal		9.07	CY													77	CY	699
		Subtotal																			6019
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			8852

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Oil Grease Storage 21																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	10	30	10								FT		3000	CF	930
		Structure's Vol. Demolished																0.33	990	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		37		259
		Subtotal																			1189
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	10	30	0.5								FT		6	CY	409
		Concrete Vol. Demolished																1.3	7	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													7	CY	12
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													7	CY	78
		Disposal Cost	On Site Disposal		9.07	CY													7	CY	66
		Subtotal																			564
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			1753

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Dumpster Bay 22																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	30	40	6								FT		7200	CF	2232
		Structure's Vol. Demolished																0.33	2376	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		88	Ton	616
		Subtotal																			2848
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	30	40	0.67								FT		30	CY	2190
		Concrete Vol. Demolished																1.3	39	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													39	CY	65
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													39	CY	418
		Disposal Cost	On Site Disposal		9.07	CY													39	CY	351
		Subtotal																			3025
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			5873

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Monitoring Well 23																			
		Structure's Demolition Costs	Plug Well	Nielson Co	185.00	EA											EA		1	EA	185
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel																			
		Subtotal																			185
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			185

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Hilfiker Wall 24																			
		Structure's Demolition Costs	Steel Bld. Large	02 41 16.13 002	0.28	CF	150	30	12								FT		54000	CF	15120
		Structure's Vol. Demolished																0.33	17820	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		659		4613
		Subtotal																			19733
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			19733

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Guard Rail 25																			
		Structure's Demolition Costs																			
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel																			
		Subtotal																			
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 005	73.55	CY	3400	3	0.67								FT		253	CY	18616
		Concrete Vol. Demolished																1.3	329	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 130	1.69	CY													329	CY	556
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 102	10.80	CY													329	CY	3554
		Disposal Cost	On Site Disposal		9.07	CY													329	CY	2984
		Subtotal																			25711
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			25711

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Bypass Culvert 26																			
		48" Culvert Removal	Excavation Bulk Bank 2 CY (322BL)	31 23 16.42 0260	1.44	CY	4314	4	8								FT		5113	CY	7363
		48" Culvert Backfill	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16.13 3080	1.79	CY	4314	4	8										5113	CY	9152
		36" Culvert Removal	Excavation Bulk Bank 2 CY (322BL)	31 23 16.42 0260	1.44	CY	962	3	6								FT		641	CY	924
		36" Culvert Backfill	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16.13 3080	1.79	CY	962	3	6								FT		641	CY	1148
		24" Culvert Removal	Excavation Bulk Bank 2 CY (322BL)	31 23 16.42 0260	1.44	CY	594	2	4								FT		176	CY	253
		24" Culvert Backfill	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16.13 3080	1.79	CY	594	2	4								FT		176	CY	315
		Subtotal																			19155
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	48" CMP (2)	02 41 13.40 0230	153.7	EA													2	EA	307
		Demolition Cost	36" CMP (2)	02 41 13.40 0220	102.5	EA													2	EA	205
		Demolition Cost	24" CMP (2)	02 41 13.40 0220	102.5	EA													2	EA	205
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			717
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			19872

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Culverts 27																			
		24" Culvert Removal	Excavation Bulk Bank 2 CY (322BL)	31 23 16.42 0260	1.44	CY	160	2	4								FT		47	CY	68
		24" Culvert Backfill	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16.13 3080	1.79	CY	160	2	4										47	CY	85
		18" Culvert Removal	Excavation Bulk Bank 2 CY (322BL)	31 23 16.42 0260	1.44	CY	460	1.5	3								FT		77	CY	110
		18" Culvert Backfill	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16.13 3080	1.79	CY	460	1.5	3								FT		77	CY	137
		Subtotal																			401
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	24" CMP (2)	02 41 13.40 0220	102.5	EA													2	EA	205
		Demolition Cost	18" CMP (2)	02 41 13.40 0210	27.7	EA													2	EA	55
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			260
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			661

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Water Tank 28																			
		Structure's Demolition Costs	Steel Bld. Large	02 41 16.13 0020	0.28	CF			30	12							FT		3393	CF	950
		Structure's Vol. Demolished																0.33	1120	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		41		287
		Subtotal																			1237
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	16	40	1							2	FT		47	CY	3487
		Concrete Vol. Demolished																1.3	62	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													62	CY	104
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													62	CY	666
		Disposal Cost	On Site Disposal		9.07	CY													62	CY	559
		Subtotal																			4816
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			6053

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Reclaim Vaults29																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	15	20	13								FT		3900	CF	1209
		Structure's Vol. Demolished																0.33	1287	CY	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		48	Ton	336
		Subtotal																			1545
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	15	30	1.5							3	FT		75	CY	5516
		Concrete Vol. Demolished																1.3	98	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													98	CY	165
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													98	CY	1053
		Disposal Cost	On Site Disposal		9.07	CY													98	CY	884
		Subtotal																			7618
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			9163

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Reclaim Tunnel Semisphere 30																			
		Structure's Demolition Costs																			
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel																			
		Subtotal																			
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	210	0.5		13							FT				
		Concrete Vol. Demolished																1.3			
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY															
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY															
		Disposal Cost	On Site Disposal		9.07	CY															
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55		210	12	0.67								FT		63	CY	4599
		Concrete Vol. Demolished																1.3	81	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													81		137
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													81	CY	878
		Disposal Cost	On Site Disposal		9.07	CY													81	CY	737
		Subtotal																			6352
		Total																			6352

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Escape Tunnel Vent 31																			
		Structure's Demolition Costs	Mixture of types, aver	02 41 16.13 0100	0.31	CF			250	3.5							FT		2405	CF	746
		Structure's Vol. Demolished																0.33	794	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													60	CY	500
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		29	Ton	203
		Subtotal																			1448
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			1448

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Truck Loadout 32																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	20	20	30								FT		12000	CF	3720
		Structure's Vol. Demolished																0.33	3960	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													298	CY	2482
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		147	Ton	10878
		Subtotal																			17080
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	20	20	1								FT		15	CY	1090
		Concrete Vol. Demolished																1.3	19	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													19	CY	33
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													19	CY	208
		Disposal Cost	On Site Disposal		9.07	CY													19	CY	175
		Subtotal																			1505
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			18585

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Substation Electrical 33																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	50	100	20								FT		100000	CF	31000
		Structure's Vol. Demolished																0.33	33000	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													2481	CY	20667
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		1221	Ton	8547
		Subtotal																			60214
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	40	80	1								FT		119	CY	8717
		Concrete Vol. Demolished																1.3	154	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													154	CY	260
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													154	CY	1664
		Disposal Cost	On Site Disposal		9.07	CY													154	CY	1397
		Subtotal																			12039
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition																		
		Concrete Vol. Demolished																			
		Loading Cost	Front End Loader 3 CY																		
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip																		
		Disposal Cost	On Site Disposal																		
		Subtotal																			
		Total																			72253

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Powerline 69 KV 34																			
		Structure's Demolition Costs	Electrical Demolition	26 05 05.10 1910	26.50	CLF	1200										LF		12	CLF	318
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel																			
		Subtotal																			318
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			318

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Powerline Yard Distribution 35																			
		Structure's Demolition Costs	Electrical Demolition	26 05 05.10 1910	26.50	CLF	1400										LF		14	CLF	371
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel																			
		Subtotal																			371
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			371

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Pavement Truck Loadout 36																			
		Structure's Demolition Costs																			
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel																			
		Subtotal																			
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	100	120	0.33								FT		147	CY	10787
		Concrete Vol. Demolished																1.3	191	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													191	CY	322
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													191	CY	2059
		Disposal Cost	On Site Disposal		9.07	CY													191	CY	1729
		Subtotal																			14898
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			14898

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Pumphouse 37																			
		Structure's Demolition Costs	Mixture of types, average	02 41 16.13 0100	0.31	CF	20	20	8								FT		3200	CF	992
		Structure's Vol. Demolished																0.33	1056	CF	
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel	City Sanitation	City Sanitation Price	8.33	CY													79	CY	658
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton								74			lb/cf		39	Ton	2886
		Subtotal																			4536
		Equipment's Disposal Cost	Chain link, posts &fabric remove only	02 41 13.60 1700	3.07	LF	250									LF			250	LF	768
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			768
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY						31.48					CF		31	CY	2315
		Concrete Vol. Demolished																1.3	41	CY	
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													41	CY	69
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													41	CY	442
		Disposal Cost	On Site Disposal	02 41 16.17 4200	9.07	CY													41	CY	371
		Subtotal																			3198
		Concrete Demolition																			
		Demolition Cost	Concrete Demolition	03 05 05.10 0050	73.55	CY	20	20	0.5										7	CY	515
		Concrete Vol. Demolished																1.3			
		Loading Cost	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY													9.1	CY	15
		Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY													9.1	CY	98
		Disposal Cost	On Site Disposal	02 41 16.17 4200	9.07	CY													9.1	CY	83
		Subtotal																			711
		Total																			6015

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Riprap 38																			
		Structure's Demolition Costs																			
		Structure's Vol. Demolished																			
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel																			
		Subtotal																			
		Riprap									10						Sq. Ft.				
		Place Riprap	Machine placed rip-rap for slope protection	31 37 13.10 0110	102.85	CY	500										Ft.		185	CY	19046
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			19046

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Gob Gas Vent Hole																			
		Structure's Demolition Costs	Mechanical equipment heavy	23 05 05.10 3600	795.00	TON							4			8	Ton		32	Tons	25440
		Structure's Vol. Demolished	Plug Well	Nielson Con	185.00	EA										3			3	EA	555
		Rubble's Weight (exclude steel)																			
		Truck's Capacity																			
		Transportation Cost Non Steel Truck																			
		Transportation Cost Non Steel Drive																			
		Disposal Cost Non Steel																			
		Steel's Weight																			
		Truck's Capacity																			
		Haulage																			
		Transportation Cost Steel Truck																			
		Transportation Cost Steel Drive																			
		Disposal Cost Steel	Nielson Construction	Nielson Con	7.00	/Ton													32	Ton	224
		Subtotal																			26219
		Equipment's Disposal Cost																			
		Dismantling Cost																			
		Equipment's Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Costs																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Concrete Demolition																			
		Demolition Cost																			
		Concrete Vol. Demolished																			
		Loading Cost																			
		Transportation Cost																			
		Disposal Cost																			
		Subtotal																			
		Total																			26219

Ref.	Task	Description	Materials	Means Reference Number	Unit Costs	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
		Storage Shed																			
		Structure's Demolition Costs	Steel Bld. Large	02 41 16.13 0020	0.28	CF	40	60	20			48000					EA		48000	CF	13440
		Disposal Cost Non Steel		City Sanitation Price	8.33	CY						1778						0.33	587	CY	4887
		Concrete Demolition																			
		BLDG Footers		03 05 05.10 0050	73.55	CY						3.5					CY	1.33	5	CY	342
		BLDG Floor		03 05 05.10 0050	73.55	CY	40	60	0.33			29					CY	1.33	39	CY	2869
		Subtotal DEMO																			3212
		On Site Disposal	Front End Loader 3 CY	31 23 16.42 1300	1.69	CY						33					CY	1.3	43	CY	72
			12 CY (16 Ton) Dump Truck 1/2 mi. rod. Trip	31 23 23.20 1025	10.80	CY															461
			On Site Disposal	02 41 16.17 4200	9.07	CY															387
		Subtotal Disposal																			920
		Subtotal																			
		Total																			22459

Backfilling and Grading

Remove Cap Layer	16708
Remove Excess Pad Fill	373108
Remove Remaining Backfill	64833
Backfill Highwall	852
Topsoil	18274
Expose Topsoil	49766
Establish Rubbleland Surface	15318
Pump House	503
Gob Vent Wells	7310
Support Personnel and Equipment	147671
	694343

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Remove Cap Layer																
988 G II ((6-13) 1H2008) 2005			257.08		52.25	309.33	1	309.33	$/HR	4466	CY	727	CY/HR	6.1	HR	1900
Off Highway 35 Ton Truck			127.42		43.20	170.62	13	2,218.02	$/HR					6.1	HR	13530
D8R Semi-U EROPS			157.25		52.25	209.50	1	209.50	$/HR					6.1	HR	1278
Subtotal																16708

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Remove Excess Pad Fill																
Left Fork																
Off Highway 35 Ton Truck			127.42		43.20	170.62	6	1,023.70	$/HR	13614	CY	380	CY	35.8	HR	36675
988 G II ((6-13) 1H2008) 2005			257.08		52.25	309.33	1	309.33	$/HR					35.8	HR	11074
Right Fork																
Off Highway 35 Ton Truck			127.42		43.20	170.62	6	1,023.70	$/HR	3916	CY	380	CY	10.3	HR	10549
988 G II ((6-13) 1H2008) 2005			257.08		52.25	309.33	1	309.33	$/HR					10.3	HR	3186
Main Canyon																
Off Highway 35 Ton Truck			127.42		43.20	170.62	6	1,023.70	$/HR	88829	CY	380	CY	233.8	HR	239301
988 G II ((6-13) 1H2008) 2005			257.08		52.25	309.33	1	309.33	$/HR					233.8	HR	72322
Subtotal																373108

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Remove Remaining Backfill																
Left Fork 21+50 to 23+00																
988 G II ((6-13) 1H2008) 2005			257.08		52.25	309.33	1	309.33	$/HR	2857	CY	440	CY	6.5	HR	2009
Right Fork Upper Canyon 28 to 35																
988 G II ((6-13) 1H2008) 2005			257.08		52.25	309.33	1	309.33	$/HR	16604	CY	391.5	CY	42.4	HR	13119
Off Highway 35 Ton Truck			127.42		43.20	170.62	6	1023.70	$/HR					42.4	HR	43405
Right Fork Upper Canyon @ 35+00																
D9R Semi-U EROPS (9-52) (2H2007)			199.33		52.25	251.58	1	251.58	$/HR	16604	CY	663	CY	25.0	HR	6301
Subtotal																64833

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Backfill Highwall																
CAT 325L (10-24) (2nd2008)			85.75		52.25	138.00	1	138	$/HR	1481	CY	240	CY/HR	6.2	HR	852
Subtotal																852

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Topsoil																
988 G II ((6-13) 1H2008) 2005			257.08		52.25	309.33	1	309.33	$/HR	6506	CY	220	CY	29.6	HR	9148
Off Highway 35 Ton Truck			127.42		43.20	170.62	1	170.62	$/HR					29.6	HR	5046
CAT 325L (10-24) (2nd2008)			85.75		52.25	138.00	1	138.00	$/HR					29.6	HR	4081
Subtotal																18274

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Expose Topsoil																
Labor						37.90	10	379.00	$/HR	3226	CY	40	CY	80.7	HR	30566
D3G XL		471.40	39.28		52.25	94.21	1	94.21						80.7		7598
CAT 325L (10-24) (2nd2008)		1029.00	85.75		52.25	143.85	1	143.85						80.7		11601
Subtotal																49766

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Establish Rubbleland Surface																
CAT 325L (10-24) (2nd2008)			85.75		52.25	$138.00	1	138	$/HR					111	HR	15318
Subtotal																15318

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Pump House																
D9R Semi-U EROPS (9-52) (2H2007)			199.33		52.25	$251.58	1	251.5833	$/HR					2	HR	503
Subtotal																503

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Gob Vent Wells																
Grading																
Backfilling and rough grade bench area																
D9R Semi-U EROPS (9-52) (2H2007)			199.33		52.25	251.58	1	251.58	$/HR	842	CY	250	CY/HR	3.4	HR	847
Subtotal																847
Haul and spread topsoil																
988 G II ((6-13) 1H2008) 2005			3085.00		52.25	3137.25	1	3137.25	$/HR	515	CY	250	CY/HR	2.1	HR	6463
Off Highway 35 Ton Truck			1529.00		43.20	1572.20	1							2.1	HR	0
D9R Semi-U EROPS (9-52) (2H2007)			2392.00		52.25	2444.25	1							2.1	hR	0
Subtotal																6463
Subtotal																7310

	Task	Equipment Cost	Hourly Operating Rate	Equipment Overhead	Operator's Hourly Rate	Hourly Cost	Number of Men Or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip + Labor Time/Dis.	Units	Cost
Support Personnel and Equipment																
Forman Average, Outside						51.90	1	51.90	$/HR					606.7	HR	31488
Pick-up Truck 4x4 1 Ton			13.07			13.07	1	13.07	$/HR					606.7	HR	7928
6,000 Gal H2O Truck Diesel (2nd2008)			97.33		43.20	140.53	1	140.53	$/HR					606.7	HR	85262
Labor						37.90	1	37.90	$/hr					606.7	HR	22994
Subtotal																147671

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
	Mine Site																			
	Pinyon Juniper Community																			
	Mulch Material	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					13						AC		566	MSF	11915
	Mulch Labor and Equipment	Hay 1" Material Only	Reveg001	68.00	MSF					13						AC		566	MSF	38507
	Seeding Material	West Ridge Pinyon/Juniper	WestRidge07411	511.00	AC					13						AC		13	AC	6643
	Seeding Equipment and Labor	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					13						AC		566	MSF	11915
	Pocking	Excavation Bulk Bank 2 CY (322BL)	31 23 16.42 0260	1.44	CY							340				CY		340	CY	490
	Douglas Fir Maple Community																			
	Mulch Material	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					10						AC		436	MSF	9165
	Mulch Labor and Equipment	Hay 1" Material Only	Reveg001	68.00	MSF					10						AC		436	MSF	29621
	Seeding Material	West Ridge Douglas Fir/Maple	WestRidge07412	509.80	AC					10						AC		10	AC	5098
	Seeding Equipment and Labor	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					10						AC		436	MSF	9165
	Transplant																			
			Serviceberry	1.60	EA					10					930	AC		930	EA	1488
			Mountain Mahogany	1.20	EA					10					930	AC		930	EA	1116
	Douglas Fir Rock Mountain Juniper																			
	Mulch Material	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					5						AC		218	MSF	4583
	Mulch Labor and Equipment	Hay 1" Material Only	Reveg001	68.00	MSF					5						AC		218	MSF	14810
	Seeding Material	West Ridge Douglas Fir Mt.Juniper	WestRidge07413	504.36	AC					5						AC		5	AC	2522
	Seeding Equipment and Labor	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					5						AC		218	MSF	4583
	Sagebrush Grass Community																			
	Mulch Material	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					1						AC		44	MSF	917
	Mulch Labor and Equipment	Hay 1" Material Only	Reveg001	68.00	MSF					1						AC		44	MSF	2962
	Seeding Material	West Ridge Douglas Fir Mt.Juniper	WestRidge07414	634.75	AC					1						AC		1	AC	635
	Seeding Equipment and Labor	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					1						AC		44	MSF	917
		Contained Doug Fir Transplant	Nature Hill	0.6						5			300			AC		1500	Trees	900
	Pumphouse																			
	Mulch Material	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					0.9						AC		39	MSF	825
	Mulch Labor and Equipment	Hay 1" Material Only	Reveg001	68.00	MSF					0.9						AC		39	MSF	2666
	Seeding Material	West Ridge Pinyon/Juniper	WestRidge07411	511.00	AC					0.9						AC		1	AC	460
	Seeding Equipment and Labor	Hydro. Spreader (equip. & labor) B-81	Reveg002	21.04	MSF					0.9						AC		39	MSF	825
	Place Silt Fence	Silt Fence	31 25 14.16 1000	1.15	LF	150										FT		150	FT	173
	Pocking	Excavation Bulk Bank 2 CY (322BL)	31 23 16.42 0260	1.44	CY						340					CY		340	CY	490
	Gob Vent Wells																			
	Ground Preparation																			
	Goughing/Pocking	Excavation Bulk Bank 2 CY (322BL)	31 23 16.42 0260	1.44	CY						340					CY		340	CY	490
	Seeding Material	West Ridge Pinyon/Juniper	WestRidge07411	511.00	AC					0.3						AC		0.3	AC	174
	Seeding Equipment and Labor	Hydro. Spreader (equip. & labor) b-81	Reveg002	21.04	MSF					0.3						AC		15	MSF	312
	Mulch Material	Hydro. Spreader (equip. & labor) b-81	Reveg002	21.04	MSF					0.3						AC		15	MSF	312
	Mulch Labor and Equipment	Hay 1" Material Only	Reveg001	68.00	MSF					0.3						AC		15	MSF	1007
	Subtotal Seeding																			164528
	Subtotal Pocking																			1469
	Mine Site																			
	Reseeding 25%																			41132
	Subtotal																			41132
	Total																			207129