

Hiawatha Coal Company

P.O. Box 1240
Huntington, UT 84528

Phone (801) 857-0399

February 25, 2020

Steve Christensen
Utah Division of Oil, Gas & Mining
1954 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

Re: **Midterm Permit Review Deficiency Response 2, Task #6044, Hiawatha Coal Company, Hiawatha Mine, C/007/0011**

Dear Mr. Christensen,

Included with this letter is an electronic submittal of Hiawatha's response to your notice of deficiencies dated January 10th, 2020. The submittal includes this cover letter, Forms C1 and C2, all of the pages and Exhibits proposed to be added or changed in the 'Submittal' pdf file, and a file titled "Deficiency Response" which explains the changes in response to each deficiency for the benefit of the reviewers. Pages have been submitted in redline/strikeout format where applicable to assist in the review of the changes. All of the unmodified pages from Task 5975 have also been included with the submittal for completeness.

If you have any questions, please call me at (801) 857-0399 or email me at charles.reynolds@hiawathacoal.com.

Sincerely,



Charles Reynolds, PE
Mine Manager

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Hiawatha Coal Company, Inc.

Mine: Hiawatha Mine Complex

Permit Number: C/007/0011

Title: Task #6044, Midterm Review Deficiency 2 Response

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

This amendment is being submitted in response to the Division's Midterm Review Deficiency document dated 1/10/20.

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

- Yes No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ increase decrease.
- Yes No 2. Is the application submitted as a result of a Division Order? DO# _____
- Yes No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- Yes No 4. Does the application include operations in hydrologic basins other than as currently approved?
- Yes No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
- Yes No 6. Does the application require or include public notice publication?
- Yes No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
- Yes No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
- Yes No 9. Is the application submitted as a result of a Violation? NOV # _____
- Yes No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: Permit Midterm Review.

- Yes No 11. Does the application affect the surface landowner or change the post mining land use?
- Yes No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
- Yes No 13. Does the application require or include collection and reporting of any baseline information?
- Yes No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
- Yes No 15. Does the application require or include soil removal, storage or placement?
- Yes No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
- Yes No 17. Does the application require or include construction, modification, or removal of surface facilities?
- Yes No 18. Does the application require or include water monitoring, sediment or drainage control measures?
- Yes No 19. Does the application require or include certified designs, maps or calculation?
- Yes No 20. Does the application require or include subsidence control or monitoring?
- Yes No 21. Have reclamation costs for bonding been provided?
- Yes No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
- Yes No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach one (1) review 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.

NJ Finley
Print Name

NJ Finley V.P. 2-25-2020
Sign Name, Position, Date

Subscribed and sworn to before me this 25 day of February, 2020

[Signature]
Notary Public

My commission Expires: Sept 15, 2021
Attest: State of Utah } } ss:
County of Salt Lake



For Office Use Only:

Assigned Tracking Number:

Received by Oil, Gas & Mining

APPLICATION FOR COAL PERMIT PROCESSING

Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Hiawatha Coal Company, Inc.

Mine: Hiawatha Mine Complex

Permit Number: C/007/0011

Title: Task #6044 Midterm Review Response 2

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

DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Chapter 1 Table of Contents (1-i thru 1-iv): Page numbering updated.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Pages 1-1 thru 1-11: Chapter 1 information updated (includes elimination of pg 1-2A).
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Page 1-12: Verification of Application moved from page 1-11 to 1-12.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix I-1: Page 9, Right of Entry information updated.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix I-2: Violation Information Appendix Updated.
<input type="checkbox"/> Add	<input type="checkbox"/> Replace	<input checked="" type="checkbox"/> Remove	Appendix I-5, I-7: Appendices removed contained out of date info not required for MRP inclusion.
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	App I-8, Pages I-4 thru I-8: Historic ownership change information updated with current changes.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	PP 2-iv; Chapter 2 TOC Updated to rename Table 2-13.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	PP 2-4 & 2-5: Discussion added on interim 3rd party uses and affect on reclamation subs. topsoil.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	PP 2-25, 2-29, 2-31 thru 2-33: Topsoil Stockpile reclamation usage updated.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	pp 2-35, 2-36, 2-37, 2-41: Acreage numbers and references clarified to eliminate confusion.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	pg 2-42: Table II-13 Changed to clarify all disturbed acreage along with topsoil volumes.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Exhibit 2-4A: RA-1 Areas individually designated and acreage numbers added.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Pg 3-1: A commitment has been added to update reference areas & Table III-9 in 2020.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Pg 3-36: Total affected acres clarified.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Pg 5-10, Appendix V-18 cover sheet: Corrected to reflect Appendix V-18 instead of V-17.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Pg 5-20, 5-35: Temporary Cessation section updated to reflect current activities occurring on site.
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Pp 8-2, 8-4, 8-8 thru 8-74: Bond calculations updated.
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.

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Responses to Task 6044 deficiencies (see text in red below each deficiency):

General Contents

Identification of Interest

R645-301-112.300:

The Permittee must provide an organizational structure for each business entity in the applicant's and operator's organizational structure, up to and including the ultimate parent entity, as well as the required information for every president, chief executive officer, officer, partner, member, director, and person who owns 10 percent or more of the entity.

The historical description has been included in Chapter 1 which explains the historical events involving the Federal Leases and the status of the right to mine coal on the leases (pg 1-1). A description of the relationship between the entities has been added to Section 112 Explaining the hierarchy of entities (pg 1-2).

R645-301-112.320:

The Permittee must provide the percentage of ownership and location in the organizational structure for every person who owns 10 percent or more of the entity.

A description of the relationship between the entities has been added to Section 112 Explaining the hierarchy of entities (pg 1-2).

Violation Information

R645-301-113:

The Permittee must clarify and update the ownership and control under section R645-30-112 in order for the Division to determine violation information.

See response to R645-301-112.320.

Right of Entry

R645-301-114.100:

The Permittee must clarify what rights it maintains, principally the rights to enter and mine coal, regarding the properties and leases associated with permit 007/0011. The Permittee must also update the status of coal leases SL-025431, SL-069985, U-026583-058261.

See response to R645-301-112.300.

Legal Description

R645-301-121.100:

The following inconsistencies must be explained:

- The apparent conflict between Section 333 statements that 252.29 acres will be restored to the post mining land use (less 93.27 acres Phase III bond release is 159.02 acres remaining) and the 173.92 acres remaining listed in Table 11-13.

The majority of the conflict appears to be related primarily to a discrepancy in the South Fork road acres, which were inadvertently subtracted out of the total acres in Table II-13 during the Bond Release application approved in 2009. 16.4 acres were proposed to be removed in 2008 due to the status of the South Fork road as a county road. However, during the permitting process the road was reclassified by the County and so was removed from the bond release application but Table II-13 did not get corrected. HCCI has corrected the RA-16 acres back to 28 acres instead of 11.6, as it existed prior to the 2009 Bond Release approval. A second and smaller discrepancy was the RA-1 reclamation area designations. Prior to the 2009 Bond Release this value was 29.11 acres but in the process of again measuring actual acreage this number has been corrected to 27.47. It is believed that the acres were either incorrect or at the time SMCRA began they were excluded as pre-law but never subtracted from the total disturbed values that excluded pre-law acres. A footnote was added to Table II-13 explaining this but the actual current values were not changed in the Table.

- A table on p. 2-37 also states disturbed and reclaimed acres for selected (but not all) reclamation areas in Hiawatha. This table has incorrect totals for the changes currently being made. i.e. the Total Remaining should be 57.42 acres. Please check the table totals for accuracy and make the appropriate corrections.

The remaining acres value in the table on page 2-37 was corrected to accurately reflect the total of 57.42 acres.

- The discrepancy between the "56.75 acres of non-refuse area associated with the preparation plant and other affected areas" state on (p. 2-41) and the 80.34 total acres (68.34 acres in the Hiawatha area) of non-refuse areas listed in Table II-13. Please Explain.

The discrepancy is the 11.59 acres of Borrow Area "A", which are shown in Table II-13 as disturbed but are not added in to the acres on page 2-41 since it is a "Borrow Area" and was only disturbed for the purpose of borrow material.

- The Division records indicate that there are 197 disturbed acres remaining in the Hiawatha disturbed area. This amendment states there are 173.72 acres remaining disturbed acres. What is the likely source of the discrepancy between the Division's records and information presented with this amendment?

See the previous comments under this section for discrepancies. The corrections have adjusted the 173.72 to 190.12 acres. HCCI is not sure where the Division has determined the 197 acres from but believes it could be related to the acreage discrepancies which previously existed in the RA-1 affected areas and possibly Pre-SMCRA acreage that may have been incorrectly included in the disturbed acreage historically and was since corrected in 1997, 2009, 2017 and the current midterm review. All references to 173.72 acres have been updated to reflect the 190.12 acres.

Reclamation Plan

General Requirements

R645-301-541, 542, 553:

Permittee must provide a plan for reclamation for the flood wash sediments in the vicinity of Middle Fork. Regardless of the surface owner's current use of these sediments, the Division is requesting that the Permittee offer a plan for eventual reclamation once the interim use activities have concluded.

Page 2-25 has been updated to describe how this material will be used in the reclamation plan.

Topsoil and Subsoil

R645-301-242.100:

Table II-13 must designate a location for the redistribution of the Middle Fork topsoil stockpile.

Table II-13 has been updated to reflect the use of this stockpile for the King 4 and 5 pad.

R645-301-121.200:

Middle Fork. Table II-13 itemizes 7,583 CY of substitute topsoil to be recovered from locations A, B & C. However, this conflicts with MRP Section 231.200 p. 2-25 which describes a yield of 10,620 CY

Page 2-25 has been revised to clarify that although 10,620 CY are available only 7,583 are required for reclamation.

South Fork. Table II-13 itemizes 6,712 CY of substitute topsoil to be recovered from areas A & B. However, this conflicts with MRP Section 231.200 p. 2-29 which describes a yield of 6,339 CY.

Table II-13 shows that the South Fork topsoil stockpile will also be used in this reclamation, providing an additional 1,206 CY. This added volume provides adequate material to reclaim the South Fork areas with the existing plan. A description has been added to page 2-29 to clarify this.

Bonding Determination of Amount

R645-301-830:

1. Address errors that are present in the Earthwork calculations of the newly submitted reclamation bond. The Support costs listed on pages 8-59 and 8-69 of the Earthwork section of the PDF submittal as well as the accompanying Excel spreadsheets contain conflicting data that require clarification. The Bond Summary on page 8-8 must also be changed to reflect the corrections once the errors have been addressed within the Earthwork section.

The error has been corrected in the calculations.

2. The Permittee must include a detailed description of costs associated with the reclamation of the flood wash sediments in Middle Fork.

Page 8-63 has been updated to reflect these costs. The bond totals have been adjusted to account for both changes.

CHAPTER I

R645-301-100 GENERAL CONTENTS

HIAWATHA COAL COMPANY, INC.
Hiawatha, Utah

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R645-301-100 GENERAL CONTENTS

R645-301-112 IDENTIFICATION OF INTERESTS

Beginning in 1997, Hiawatha Coal Company, Inc. (HCCI) leased the mine premises from ANR Company Inc.(ANR) fee owner and federal lease holder of all land within the permit area and purchased all interests in the permits and approvals associated with the Hiawatha Mine Complex from United State Fuel Company (USF).

In 1999, Several of ANR's federal coal leases were set to expire due to nonproduction. An agreement, now set to expire in 2024, was signed between ANR, HCCI and C. W. Mining Company (CWM) to include the Federal Leases and connecting Fee Land within the permit area containing the remaining coal reserves in the Bear Canyon LMU to allow the Bear Canyon production to count toward production on the ANR leases. This granted C. W. Mining a leasehold interest in the leases but allowed HCCI to retain the right to operate the leases.

In 2008, CWM was forced into bankruptcy and Castle Valley Mining, LLC (CVM) purchased the rights held by CWM from the bankruptcy. The agreement to count the ANR leases as part of Bear Canyon carried over, however the portion of the agreement allowing HCCI to mine the leases was severed upon the transfer to CVM. These actions removed any right for HCCI, or CVM, to mine coal from the ANR-owned leases until 2024, the expiration of the original agreement.

As of 2020, ANR is still the fee owner and federal lease holder of all land within the permit area. The federal leases owned by ANR are still counted toward the Bear Canyon LMU, owned by CVM, which prevents the leases from expiring. HCCI retains the right of entry to the property as well as the right to collect and sell coal fines from sediment ponds and conduct other operations on site. However, neither HCCI nor CVM currently possess the right to mine coal from the ANR-owned leases until the expiration of the ANR-CVM agreement in 2024. In the interim, ANR has authorized third party uses unrelated to coal mining and reclamation activities within portions of the permit area until at least 2021. The current parties holding interest in the Hiawatha permit C/007/011 are ANR as the land and lease owner, and HCCI as the operator.

In 2021, the ANR/third party agreement is set to expire and likely will not be renewed. Any impacts from the third party to the potential for future mining and reclamation at Hiawatha will be rectified prior to the expiration of the ANR-CVM agreement in 2024. At that time, HCCI will regain the right to enter the coal leases and begin active mining.

Further discussion on these uses is described in R645-301-231.200 and R645-301-515.300. HCCI's right of entry to the premises is contained in Appendix I-1.

112.100 A STATEMENT AS TO WHETHER THE APPLICANT IS A CORPORATION, PARTNERSHIP, SINGLE PROPRIETORSHIP, ASSOCIATION, OR OTHER BUSINESS ENTITY:

Hiawatha Coal Company, Inc. (HCCI) is a corporation, incorporated in the state of Utah. Neither HCCI nor ANR have any owners with a 10% or greater interest in the company or any parent companies with an ownership interest.

112.200 NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF THE APPLICANT, THE OPERATOR (IF DIFFERENT FROM THE APPLICANT) AND THE APPLICANT'S RESIDENT AGENT WHO WILL ACCEPT SERVICE OF PROCESS:

Applicant: Hiawatha Coal Company, Inc.
P.O. Box 1240
Huntington, Ut 84528
Telephone No. (801) 857-0399

Resident Agent: Elliot Finley
(See contact information below)

112.300 FOR APPLICANTS OTHER THAN SINGLE PROPRIETORSHIPS:

112.310 NAME AND ADDRESS OF EACH OFFICER, PARTNER, PRINCIPAL, PRINCIPAL SHAREHOLDER, AND DIRECTOR OR OTHER PERSON PERFORMING A FUNCTION SIMILAR TO A DIRECTOR:

~~ANR Company is the fee area and lease holder of land within the permit area. ANR Company has subleased certain fee and federal coal rights to C. W. Mining Company (DBA Co-Op Mining Company) for inclusion in the Bear Canyon LMU. HCCI holds the right to mine all fee and federal coal under the direction of C. W. Mining Company in accordance with the LMU.~~

Officers authorized to act on behalf of HCCI are:

Name	SS #	Title	Phone #	Start	End
Elliot Finley 3212 S. State St. Salt Lake City, UT	3988 84115	President	(801) 900-6921	6/30/97	Current
Nathaniel Finley 2827 W. Minutet Ave	0524	Vice President Secretary/Treasurer	(801) 718-3052	6/30/97 6/30/08	Current Current

West Valley City, UT 84119

Corporate Office Address: Hiawatha Coal Company, Inc.
3212 South State Street
Salt Lake City, Utah 84115
Federal Id # 84-1418097

Officers authorized to act on behalf of ANR Company, Inc. are:

Name	SS #	Title	Phone #	Start	End
Joseph O. Kingston	0781	President	(801) 466-3361	06/30/99	Current
3212 South State St. Salt Lake City, UT 84115					
Leslie A. Miller	9764	<u>President</u>	(801) 466-3361	<u>08/08/17</u>	<u>Current</u>
3212 South State St.		Vice President		06/30/99	Current
Salt Lake City, UT 84115					
Lori V. Wright	4217	Secretary/Treasurer		06/30/97	Current
3212 South State St.		(801) 466-3361			
Salt Lake City, UT 84115					

Corporate Office Address: ANR Company, Inc.
3212 South State St.
Salt Lake City, UT 84115
Fed Id # 84-1422258
Phone # (801) 466-3361

~~Officers/Individuals authorized to act on behalf of C. W. Mining Co.
are:~~

Charles W. Reynolds	0500	President	(801) 857-0399	6/5/06	Current
P.O. Box 1406 Huntington, UT 84528					
John A. Gustafson	1814	Vice President	(801) 466-3361	6/5/06	Current
1815 South 1100 West Woods Cross, UT 84087					
Maurine O. Gustafson	0793	Secretary/Treasurer	(801) 520-3857	6/19/08	Current
190 East 9100 South Sandy, UT 84070					

~~Corporate Office Address:~~ C. W. Mining Company, Inc.
~~53 West Angelo Avenue~~
~~Salt Lake City, UT 84115~~
~~Fed Id # 87-0399230~~

112.320 ALL NAMES UNDER WHICH THE APPLICANT, PARTNER, OR PRINCIPAL SHAREHOLDER OPERATES OR PREVIOUSLY OPERATED A COAL MINE AND RECLAMATION OPERATION IN THE UNITED STATES WITHIN THE 5 YEARS PRECEDING THE DATE OF APPLICATION:

None

112.400 PENDING, CURRENT AND PREVIOUS COAL MINING AND RECLAMATION OPERATION PERMIT APPLICATIONS:

~~Table I-1 shows the mining permits held by U. S. Fuel Company. These permits have all been assigned to and are being transferred to HCCI. There are currently no other pending, current or previous coal mining and reclamation operation permit applications that HCCI, ANR and their officers and agents control.~~

112.500 THE NAME AND ADDRESS OF EACH LEGAL OR EQUITABLE OWNER OF RECORD OF THE SURFACE AND MINERAL PROPERTY TO BE MINED, EACH HOLDER OF RECORD OF ANY LEASEHOLD INTEREST IN THE PROPERTY TO BE MINED, AND ANY PURCHASER OF RECORD UNDER A REAL ESTATE CONTRACT FOR THE PROPERTY TO BE MINED:

Surface and subsurface ownership can be referenced on Exhibits IV-1 and IV-2. Appendix I-1 lists the ownership of surface, coal and mineral rights in the permit area. The area is broken into five categories based on ownership and lease status. Refer to the legend and summary on page 8 of Appendix I-1 for acreage involved.

Table I-1

United States Fuel Company Licenses and Permits

Permit	Permitting Agency	Status
1. NPDES Permit No. UT-0023094	U.S. Environmental Protection Agency Region VIII 1860 Lincoln Street Denver Colorado 80295	Permit Renewed April 1, 1990
2. Water Supply Facilities I.D. No's 04005 & 04045	Utah Division of Environmental Health 150 West North Temple Salt Lake City, Utah 84111	Facilities Approved March 17, 1980
3. Sedimentation Ponds I.D. No's D003 D004 D005 D006 D007 D008 D009 D011	Utah Division of Water Rights 1636 West North Temple Salt Lake City, Utah 84116	Ponds Approved Oct. 21, 1991
4. Refuse Piles and Slurry Impoundments Blanket Coverage	U.S. Army Corps of Engineers 125 South State Salt Lake City, Utah 84111	Permit Granted Under Section 404 WPCA, 1972
5. Refuse Piles and Slurry Impoundments I.D. No's: 1211 UT-09-02157-01 1211 UT-09-02157-03 1211 UT-09-02157-04	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved 1979 (modified 1999) " "
6. USGS & BLM Resource Recovery and Protection Plan No ID Number	U.S. Geological Survey 8426 Federal Building 125 South State Salt Lake City, Utah 84111	Approved Nov. 22, 1978
7. King IV Roof Control Plan ID No. 42-00098	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved Feb. 17, 1989

Table I-1 (Continued)

United States Fuel Company Licenses and Permits

Permit	Permitting Agency	Status
8. King IV Ventilation Plan ID No. 42-00098	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved Mar. 8, 1989
9. King V Roof Control Plan ID No. 42-01389	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved Mar. 24, 1983
10. King V Ventilation Plan ID No. 42-01389	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved Jan. 31, 1983
11. King VI Roof Control Plan ID No. 42-01599	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved Oct. 17, 1985
12. King VI Ventilation Plan ID No. 42-01599	Coal Mine Safety and Health Box 25367 Denver, Colorado 80225	Approved Jan. 23, 1989
13. Air Quality Approval Orders No Numbers Assigned	Utah Bureau of Air Quality 288 North 1460 West Salt Lake City, Ut 84116	Approvals May 20, 1981 Oct. 23, 1986 July 25, 1989

112.600 THE NAME AND ADDRESS OF EACH OWNER OF RECORD OF ALL PROPERTY (SURFACE AND SUBSURFACE) CONTIGUOUS TO ANY PART OF THE PROPOSED PERMIT AREA:

Refer to Exhibits IV-1 and IV-2 for names and addresses of the owners of record.

112.700 THE MSHA NUMBERS FOR ALL MINE-ASSOCIATED STRUCTURES THAT REQUIRE MSHA APPROVAL:

<u>STRUCTURE</u>	<u>MSHA ID No.</u>
King IV Mine	42-00098
King V Mine	42-01389
King VI Mine	42-01599
Refuse Pile No. 1	1211-UT-09-02157-04

112.800 A STATEMENT OF ALL LANDS, INTEREST IN LANDS, OPTIONS, OR PENDING BIDS ON INTERESTS HELD OR MADE BY THE APPLICANT FOR LANDS CONTIGUOUS TO THE AREA DESCRIBED IN THE PERMIT APPLICATION:

ANR will retain the surface and mineral rights to 466.66 acres of land in Section 18, T15S, R8E, SLBM, which Plateau Mining Company purchased the coal rights in December 1985 from U.S. Fuel Company. These rights are also leased by HCCI. There are no other current interests, options or pending bids for lands contiguous to the permit area.

R645-301-113 VIOLATION INFORMATION. AN APPLICATION WILL CONTAIN THE FOLLOWING:

113.100 A STATEMENT OF WHETHER THE APPLICANT OR ANY SUBSIDIARY, AFFILIATE, OR PERSONS CONTROLLED BY OR UNDER COMMON CONTROL WITH THE APPLICANT HAS:

113.110 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; OR:

No.

113.120 FORFEITED A PERFORMANCE BOND OR SIMILAR SECURITY DEPOSITED IN LIEU OF BOND;

No.

113.200 Not Applicable

113.300 A LIST OF ALL VIOLATION NOTICES RECEIVED BY THE APPLICANT OR ANY SUBSIDIARY, AFFILIATE, OR PERSONS CONTROLLED BY OR UNDER COMMON CONTROL WITH THE APPLICANT IN CONNECTION WITH ANY COAL MINING AND RECLAMATION OPERATION DURING THE THREE YEAR PERIOD PRECEDING THE APPLICATION DATE, FOR VIOLATIONS OF ANY PROVISION OF THE FEDERAL ACT, THE ACT; OR ANY LAW, RULE, OR REGULATION PERTAINING TO AIR OR WATER ENVIRONMENTAL PROTECTION. THE APPLICATION WILL ALSO CONTAIN THE FOLLOWING INFORMATION ABOUT EACH VIOLATION NOTICE:

113.310 THE DATE OF ISSUANCE AND IDENTITY OF THE ISSUING REGULATORY AUTHORITY, DEPARTMENT OR AGENCY;

113.320 A BRIEF DESCRIPTION OF THE VIOLATION ALLEGED IN THE NOTICE;

113.330 THE DATE, LOCATION, AND TYPE OF ANY ADMINISTRATIVE OR JUDICIAL PROCEEDINGS INITIATED CONCERNING THE VIOLATION, INCLUDING, BUT NOT LIMITED TO, PROCEEDINGS, INITIATED BY ANY PERSON IDENTIFIED IN R645-301-113.300 TO OBTAIN ADMINISTRATIVE OR JUDICIAL REVIEW OF THE VIOLATION;

113.340 THE CURRENT STATUS OF THE PROCEEDINGS AND OF THE VIOLATION NOTICE; AND

113.350 THE ACTIONS, IF ANY, TAKEN BY ANY PERSON IDENTIFIED IN R645-301-113.300 TO ABATE THE VIOLATION.

Violation information for HCCI required under R645-301-300 through R645-301-113.350 are given in Appendix I-2.

R645-301-114 RIGHT-OF-ENTRY INFORMATION

114.100 ~~Until June 20, 1997, the land, coal and minerals in the permit area were owned by United States Fuel Company or leased from the U.S. Government. In June, 1997, ANR purchased all of United States Fuel Company's right, title and interest in the permit area (including the coal leases) pending the U.D.O.G.M.'s approval of the transfer of this Mining and Reclamation Permit to HCCI (June 20, 1997 Purchase and Sale Agreement). Subsequently, U. S. Fuel Co. designated HCCI as the operator of the property (permit amendment approved Sept. 9, 1997 and notarized letter to the U.D.O.G.M. dated Oct. 2, 1997).~~ On December 12, 1997, U.D.O.G.M. approved the transfer of this Mining and Reclamation Permit to HCCI. HCCI executed a lease agreement with ANR (effective July 26, 1997 ~~until July 25, 2007~~ **until December 31, 2024 for a ten year period until July 25, 2007**) which, in conjunction with the above documents provides HCCI with legal right of entry to the property and coal leases in the permit area. See Appendix I-1.

114.200 **WHERE THE PRIVATE MINERAL ESTATE TO BE MINED HAS BEEN SEVERED FROM THE PRIVATE SURFACE ESTATE, AN APPLICANT WILL ALSO SUBMIT:**

Not applicable.

R645-301-115 STATUS OF UNSUITABILITY CLAIMS

115.100 **AN APPLICATION WILL CONTAIN AVAILABLE INFORMATION AS TO WHETHER THE PROPOSED PERMIT AREA IS WITHIN AN AREA DESIGNATED AS UNSUITABLE FOR COAL MINING AND RECLAMATION OPERATIONS OR IS WITHIN AN AREA UNDER STUDY FOR DESIGNATION IN AN ADMINISTRATIVE PROCEEDING UNDER R645-103-300, R645-103-400, OR 30 CFR PART 769.**

During the permit application process Mr. D. Wayne Hedberg of DOGM (personal communication, 13 October 1983) was contacted regarding this matter. According to him, there were no administrative proceedings occurring at that time to designate as unsuitable for mining any property within the proposed permit area. See Appendix I-3 for additional information.

115.200 AN APPLICATION IN WHICH THE APPLICANT CLAIMS THE EXEMPTION DESCRIBED IN R645-301-333 WILL CONTAIN INFORMATION SUPPORTING THE ASSERTION THAT THE APPLICANT MADE SUBSTANTIAL LEGAL AND FINANCIAL COMMITMENTS BEFORE JANUARY 4, 1977, CONCERNING THE PROPOSED COAL MINING AND RECLAMATION OPERATIONS.

No exemption claimed.

115.300 AN APPLICATION IN WHICH THE APPLICANT PROPOSES TO CONDUCT COAL MINING AND RECLAMATION OPERATIONS WITHIN 300 FEET OF AN OCCUPIED DWELLING OR WITHIN 100 FEET OF A PUBLIC ROAD WILL CONTAIN THE NECESSARY INFORMATION AND MEET THE REQUIREMENTS OF R645-103-230 THROUGH R645-103-238.

All occupied dwellings within 300 feet of any proposed mining operations are owned by ANR. See Appendix I-1 For waivers. All land in the permit area on which surface operations are located are owned by ANR and leased by HCCI. Surface operations have existed within 100 feet of a public road for at least fifty years prior to this application. The interests of the public and the landowner should not be adversely affected.

R645-301-116 PERMIT TERM

116.100 EACH PERMIT APPLICATION WILL STATE THE ANTICIPATED OR ACTUAL STARTING AND TERMINATION DATE OF EACH PHASE OF THE COAL MINING AND RECLAMATION OPERATION AND THE ANTICIPATED NUMBER OF ACRES OF LAND TO BE AFFECTED DURING EACH PHASE OF MINING OVER THE LIFE OF THE MINE.

See Table I-21.

116.200 IF THE APPLICANT REQUIRES AN INITIAL PERMIT TERM IN EXCESS OF FIVE YEARS IN ORDER TO OBTAIN NECESSARY FINANCING FOR EQUIPMENT AND THE OPENING OF THE OPERATION, THE APPLICATION WILL:

A permit term in excess of five years is not requested.

Table I-21

Mining Methods and Estimated Productivity

Mine	Seam	Mining Method	Production Date	Termination Date	Potential Productivity Tons/Year	Acres Affected
King 4	A	Continuous Miner Room and Pillar	Idle <u>Mined Out</u>	Unknown <u>1993</u>	500,000 <u>N/A</u>	476
King 4	B	Continuous Miner Room and Pillar	Idle <u>Mined Out</u>	Unknown <u>1993</u>	500,000 <u>N/A</u>	122
King 5	B	Continuous Miner Room and Pillar	Idle <u>1/1/26 Est</u>	Unknown <u>7/1/30 Est</u>	500,000	878
King 6	Hiawatha	Continuous Miner Room and Pillar	Idle <u>1/1/26 Est</u>	Unknown <u>1/1/34 Est</u>	1,000,000	608

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

117.100 A PERMIT APPLICATION WILL CONTAIN EITHER A CERTIFICATE OF LIABILITY INSURANCE OR EVIDENCE OF SELF-INSURANCE IN COMPLIANCE WITH R645-301-800.

The company's current Certificate of Liability Insurance is filed with Utah DOGM. A copy is included in Appendix VIII-3 of Chapter VIII (Bonding and Insurance).

117.200 A COPY OF THE NEWSPAPER ADVERTISEMENTS OF THE APPLICATION FOR A PERMIT, SIGNIFICANT REVISION OF A PERMIT, OR RENEWAL OF A PERMIT, OR PROOF OF PUBLICATION OF THE ADVERTISEMENTS WHICH IS ACCEPTABLE TO THE DIVISION WILL BE FILED WITH THE DIVISION AND WILL BE MADE A PART OF THE APPLICATION NOT LATER THAN 4 WEEKS AFTER THE LAST DATE OF PUBLICATION AS REQUIRED BY R645-300-121.100.

The newspaper advertisement and proof of publication are included in Appendix I-4.

117.300 THE PLANS OF A FACILITY OR STRUCTURE THAT IS TO BE SHARED BY TWO OR MORE SEPARATELY PERMITTED COAL MINING AND RECLAMATION OPERATIONS.

No facilities or structures are planned to be permanently shared with another permitted operation.

R645-301-120 PERMIT APPLICATION FORMAT AND CONTENTS

121.000 No response necessary.

121.100 No response necessary.

121.200 No response necessary.

121.300 No response necessary.

122.000 No response necessary.

123.000 APPLICATIONS FOR PERMITS; PERMIT CHANGES; PERMIT RENEWALS; OR TRANSFERS, SALES OR ASSIGNMENTS OF PERMIT RIGHTS WILL CONTAIN THE NOTARIZED SIGNATURE OF A RESPONSIBLE OFFICIAL OF THE APPLICANT, THAT THE INFORMATION CONTAINED IN THE APPLICATION IS TRUE AND CORRECT TO THE BEST OF THE OFFICIAL'S INFORMATION AND BELIEF.

Refer to Attachment 1 on the following page.

R645-301-130 REPORTING OF TECHNICAL DATA

131.000 No response necessary.

132.000 No response necessary.

R645-301-140 MAPS AND PLANS

141.000 No response necessary.

142.000 No response necessary.

142.100 No response necessary.

142.200 No response necessary.

142.210 No response necessary.

142.220 No response necessary.

142.300 No response necessary.

142.400 No response necessary.

R645-301-150 COMPLETENESS

No response necessary.

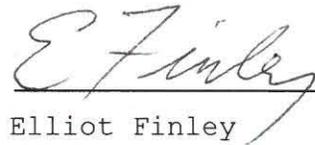
ATTACHMENT 1

VERIFICATION OF APPLICATION

**Hiawatha Coal Company, Inc.
Permit No. ACT/007/011**

I, Elliot Finley, being duly sworn, certify that I am the President of Hiawatha Coal Company, Inc. and that I have reviewed the contents of the Mining and Reclamation Plan for the above-referenced permit submitted to the Utah Division of Oil, Gas & Mining.

I verify the the above mentioned plan is true and correct to the best of my information and belief.



Elliot Finley
President

Subscribed and sworn to before me this 1ST day of December 2019.


Notary Public

ANR COMPANY, Inc.

3212 South State Street
Salt Lake City, Utah 84115

Office (801) 857-0399

November 22, 2019

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

To Whom It May Concern,

ANR company, Inc. signed a lease agreement with Hiawatha Coal Company, Inc. effective July 26, 1997, which has been extend through December 31, 2024. This lease agreement includes all of the property within the Hiawatha permit area (C/007/0011). The lease permits Hiawatha Coal Company, Inc. to use the land for coal mining and related activities, as the permittee and operator of the above-referenced permit number, subject to all other rights granted by ANR Company, Inc. granted to other third party entities.

As the owner of an occupied dwelling within 300 feet of the Hiawatha Complex mining operations, ANR understands its legal right to deny mining within 300 feet of the dwelling and hereby knowingly waives that right and consents to the mining and reclamation activities of Hiawatha Coal Company, Inc.

Sincerely,

A handwritten signature in cursive script that reads "L. A. Miller".

L. A. Miller,
President

APPENDIX I-2

VIOLATION INFORMATION
FOR
HIAWATHA COAL COMPANY, INC.

There are currently no prior or pending violations for Hiawatha Coal Company, Inc.

APPENDIX I-5

~~PERMIT RENEWAL REQUEST AND APPLICATION FEE~~

Removed

APPENDIX I-7

~~UNITED STATES FUEL COMPANY~~

~~PERMIT RENEWAL~~ NOT USED

ANR Company, Inc.
3212 South State Street
Salt Lake City, Utah 84115

November 25, 2019

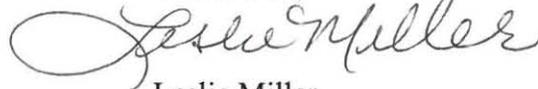
To Whom it May Concern:

Re: Certification in change in officers, Hiawatha Mine Complex, C/007/0011

On August 8, 2017, Leslie Miller replaced Joseph O. Kingston as President of ANR Company, Inc.

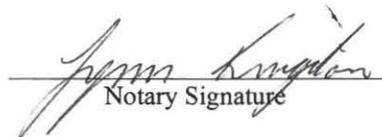
If you have any questions, please call Charles Reynolds at (801) 857-0399.

Thank You,



Leslie Miller
President

Subscribed and sworn before me this 26 day of November, 2019



Notary Signature

C. W. MINING COMPANY

53 West Angelo Ave.
Salt Lake City, Utah 84115

Phone (801) 857-0399

November 25, 2019

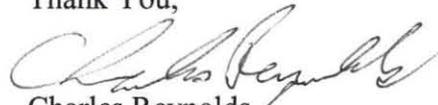
To Whom it May Concern:

Re: Certification of removal of C. W. Mining Company as a Controlling Entity, Hiawatha Mine Complex, C/007/0011

This letter certifies that pursuant to court order Dated July 14, 2010, C. W. Mining Company, as the debtor in Bankruptcy Case No. 08-20105 RKM, has no authority to control or conduct mining operations under Permit C/007/0011 or obligation to conduct any reclamation operations and neither C. W. Mining Company nor its officers, Charles Reynolds, John A. Gustafson and Maurine O. Gustafson are controlling parties over Hiawatha's permit. Attached is the excerpt from the court order authorization this change in authority.

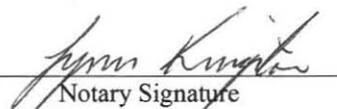
If you have any questions, please call me at (801) 857-0399.

Thank You,



Charles Reynolds
President

Subscribed and sworn before me this 25 day of November, 2019



Notary Signature

52. The Trustee has met the requirements necessary to assume the Mine Operating Agreements pursuant to 11 U.S.C. § 365(a)-(b) and simultaneously assign them to Buyer in accordance with the terms of the Sale Agreement pursuant to 11 U.S.C. § 365(f)(2).

53. The Mine Operating Agreements are assignable notwithstanding any provision contained therein to the contrary pursuant to § 365(f) of the Bankruptcy Code. The assumption and assignment of the Mine Operating Agreements are integral to the Sale Agreement, are in the best interests of the Estate, and represent the exercise of sound and prudent business judgment by the Trustee.

Issues Raised by ANR Concerning Hiawatha's Mining Permit and Reclamation Duties

54. Hiawatha holds a mining permit (the "Hiawatha Permit") issued by DOGM (Exh. ANR 13) affecting both the ANR Real Property and a more extensive area of other real property owned or leased by ANR in which the Estate has no interest.

55. The Debtor has never conducted underground mining operations or other activities on the ANR Real Property which require a permit and has no mining permit in force with respect to such property. The Debtor's operations with respect to the ANR Real Property to date have been done in conjunction with the LMU Application to include the ANR Real Property in a logical mining unit with the COP Real Property. All of this has been consistent with the parties' agreements and expectations as previously found by the Court.

56. The Hiawatha Permit is not property of the Estate, and the Debtor has no duty to perform any requirement imposed on Hiawatha by DOGM with respect to the Hiawatha Permit.

57. There is no evidence before the Court that the maintenance or preservation of the Hiawatha Permit would be of any value or benefit to the Estate or to Buyer.

58. There is no evidence that the operation of the ANR Real Property by Buyer or the conducting of Buyer's mining operations will require the maintenance or preservation of the Hiawatha Permit or have any effect on such permit.

59. Any reclamation obligations that Hiawatha may have incurred by obtaining a DOGM permit affecting the ANR Real Property or that otherwise result from the actions of ANR and/or Hiawatha do not result from any act of the Debtor and are the obligations of Hiawatha or ANR and not the Debtor.

60. ANR has demonstrated no standing on its part to complain of reclamation burdens that may fall on Hiawatha. ANR has failed to demonstrate that it has any liability for reclamation work on the ANR Real Property.

61. The Court finds that, to the extent that any reclamation obligations may be imposed on the Debtor or its Estate with respect to the ANR Real Property as a result of Hiawatha's failure to perform its duties under the DOGM Hiawatha Permit, such obligations do not arise under the ANR Mine Operating Agreement.

62. There is nothing in the ANR Mine Operating Agreement that requires the Operator thereunder to post a bond for reclamation work that may be required at some future time on the ANR Real Property as a result of prior mining activities by U.S. Fuels.

71. No permit is required of the Operator with respect to the ANR Real Property under the ANR Mine Operating Agreement until mining activity is to be commenced on such property.

72. Neither the Trustee nor Buyer is required, as part of the assumption and assignment of or as future performance under the ANR Mine Operating Agreement, to perform

any reclamation duties arising from prior mining activities by U.S. Fuels or to compensate ANR or Hiawatha for the cost of any such reclamation work.

Issues Raised by ANR Regarding the Exclusion of 60 Acres from the LMU

73. ANR's federal coal lease no. USL-025431 includes 60 acres (the "60-Acre Parcel") that are not contiguous with any other lands as to which ANR holds any coal rights being leased (or sub-leased) to the Debtor under the ANR Mine Operating Agreement or otherwise (Exh. TR 605).

74. In the ANR Mine Operating Agreement, ANR purported to grant to the Debtor the right to mine coal from a parcel of land marked with pink crosshatching in Exh. TR 605 (the "Bridge Parcel"). If ANR had owned coal rights for the Bridge Parcel, the 60-Acre Parcel would have been contiguous with the remainder of the LMU. In fact, ANR had only surface rights to the Bridge Parcel.

75. The BLM regulations governing logical mining units require that all property included within a logical mining unit be contiguous and under the control of a single operator.

76. Charles Reynolds testified that if he had realized that the 60-Acre Parcel was not contiguous with the remainder of the LMU area, he would not have included it in the LMU Application. He further acknowledged that the LMU Application was required to comply with federal law and that the BLM had the right to exclude the 60-Acre Parcel.

77. The ANR Mine Operating Agreement contains no reference to an LMU and does not state any specific requirements with respect to an LMU.

78. In seeking the BLM's approval of the Debtor's LMU Application, the Trustee (through no fault of his or the Debtor's) could not satisfy the contiguity requirement with respect

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CHAPTER II PERMIT APPLICATION REQUIREMENTS: SOILS

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Topsoil will be removed in a separate layer unless substitute or supplemental materials are approved. If supplemental material is approved, all materials to be redistributed will be removed. Subsoil horizons or other underlying layers will be removed and segregated if necessary or desirable to ensure soil productivity. Soil will be sampled according to DOGMS guidelines or recommendations. In some cases, such as very rocky or limited access areas, or where meager or poor quality soil makes removal unfeasible, substitute materials will be used upon approval. If the topsoil is less than six inches thick, a six inch layer that includes the topsoil and unconsolidated material immediately below the topsoil will be removed and later redistributed as the surface soil layer. In situations such as road cuts on steep slopes, it would be very difficult to remove topsoil in advance of road development due to inaccessibility. In such cases, especially if soils are thin, it may be more feasible to provide substitute materials upon final reclamation.

If removal of vegetation or topsoil results in erosion that causes air or water pollution, the size of the area from which topsoil is removed at any one time will be limited and the soil will be redistributed at a time when physical and chemical properties can be protected and erosion minimized.

Topsoil Storage

Topsoil and other materials will be stockpiled only when it is impractical to promptly redistribute such materials on regraded areas. Existing and proposed topsoil storage sites are shown on Exhibits II-4.

Stockpiled materials will be selectively placed on a stable surface area, not disturbed and protected from wind and water erosion, unnecessary compaction and contaminants that would interfere with revegetation. Protection will be accomplished by loosely piling soil materials, then constructing a temporary berm or diversion around the pile to prevent soil loss and planting an effective cover of non-noxious, quick growing plants during the first normal planting period for favorable planting conditions after removal. The seed mix to be used on the stockpiled topsoil will be determined based on its location. However, it will be one of the four seed mixes designated for final reclamation. No fertilizer has been necessary to establish vegetative cover on the topsoil piles and will not be applied in the future unless deemed necessary. Side slopes of storage piles will be kept to a minimum. Stockpiles will be marked with identification signs to help prevent unnecessary disturbance. Stockpiled topsoil will not be moved until required for redistribution unless approved.

Currently, five topsoil stockpiles containing 8,556 cubic yards of topsoil exist within the permit area. These stockpiles are identified on Exhibits II-4 and discussed individually under R645-301-231.400 "Topsoil Construction, Modification and Maintenance".

In 2012, the Sealy Forest Fire impacted the permit and adjacent areas. This impact resulted in a significant amount of suitable growth material being washed from offsite locations onto Middle Fork area in 2013 and 2014. ANR Company, the surface owner, has informed the Permittee that they intend to use this material to restore offsite impacted areas, develop food plots for wildlife in an attempt to mitigate the property damage from the fire, and repair the Middle Fork Access Road located in the watershed above the Middle Fork pad. In addition, some of the material has already been used by the Permittee to repair onsite erosion in Middle Fork. Excess material not used in 2014 was temporarily stockpiled on the Middle Fork pad pending use by ANR Company in the Spring, 2015. Any of this material left through the winter will be protected by a containment berm to prevent additional erosion until it is used. [ANR intends to use all of the material as a barrier shield for an interim tenant using the Middle Fork bathhouse until April, 2021 and for food plots .](#) In the event ANR Company does not use all of the material for their purposes, any material remaining onsite will be added to the Middle Fork Topsoil Stockpile and stored in accordance with this section. At that time, the Permittee will calculate the volume of material and update the MRP to include the new volumes. Material will be sampled and analyzed for the parameters outlined in Tables 3 and 7 of the 2008 Division Guidelines for topsoil and Overburden.

Upon final reclamation, after topsoil has been spread over regraded surfaces, random samples will be collected to determine the required amounts of nutrients and soil amendments for the redistributed topsoil. A minimum of 12 random samples of the top 12 inches of topsoil will be collected and composited for each reclamation site. Each composite sample will then be submitted for laboratory analyses to determine the availability of macronutrients: nitrogen, phosphorus, and potassium; and micronutrients,

copper, manganese, molybdenum and zinc. This sampling will also serve as a final check to verify that the designated minimum amount of topsoil has been uniformly spread over the area.

231.200 Suitability of Topsoil Substitutes or Supplements

Soils stockpiled or designated to be used as substitute material have been sampled and their chemical and physical properties discussed in the text and presented in table form. Selected overburden materials have been chosen for use as substitute topsoil materials during final reclamation. Most of the sites in the permit area were originally disturbed in the early 1900's and no topsoil was removed and stockpiled. Where no suitable substitute topsoil materials exist on site, substitute materials will be imported from the borrow areas. Some disturbed areas have substitute materials stockpiled in the form of mine pads, berms, embankments or uncontaminated areas. These materials have been tested and appear to be suitable for use as substitute topsoil material based on total depth, texture, percent coarse fragments, PH, areal extent and physical and chemical tests. On site field trials support the conclusion that these soils can successfully be utilized for final reclamation.

Physical and chemical results for each substitute soil site are presented and discussed next.

Hiawatha Area

U.S. Fuel Company proposes to utilize topsoil and substitute topsoil materials from Borrow Areas A, Lower Preparation Plant and Upper Rail Storage Yard (Exhibit II-4A) to reclaim disturbed areas associated with the Hiawatha preparation plant, slurry ponds and coal refuse embankments as well as the North Fork Vent Portal site. Analyses of the substitute soil areas indicate they are suitable for revegetation and their use will cause the least amount of disturbance to achieve compliance with regulatory requirements.

Five potential borrow area sites have also been designated and shown on Exhibit II-4A. These sites would only be utilized in the event the existing proposed sites couldn't provide adequate material. These potential borrow areas are designated B, C, D, E and the Ridge Area.

Information is presented for the borrow areas in Appendix II-4; however, at this time it appears that, of these, only Borrow Areas A and F and the Lower Preparation Plant and Upper Rail Storage Yard will have to be utilized. Borrow Area "F" was utilized to cover Pond 4 and refuse pile #2 and was then reclaimed. Borrow Area "A" was utilized to reclaim Pond 5 main cell and was then reclaimed. The remainder of borrow area "A" will be used to reclaim pond 5A. The Lower Preparation Plant and Upper Rail Storage Yard Borrow Areas should provide the substitute topsoil necessary to complete the Hiawatha Area reclamation. In 2018 and 2019, the landowner elected to allow a third party to utilize the Upper Rail Yard storage area as a gun range for training purposes. Though the majority of shooting activities result in the lead bullets landing well offsite, the Division expressed a concern of lead contamination in the soil. As a result, Hiawatha has requested that the use be discontinued within the substitute topsoil borrow area while the impact on the substitute topsoil is evaluated. Hiawatha commits to meet with the Division staff in the spring, 2020, and establish an adequate procedure to analyze the material and determine the continued suitability of this material.

Middle Fork Area

Middle Fork Substitute Topsoil Sites

Six samples of soils in the Middle Fork area (three from the upper pad and three from the lower pad , Exhibit II-4C) were collected in December 1983 and analyzed for physical and chemical characteristics to determine their suitability for use during reclamation. A discussion of the sampling and the results of the analysis are presented in Appendix II-4, Section 2.

Based on these results, it was concluded that the soils which comprise the King IV and V upper and lower pads are suitable for use in reclamation of that area. Some soil amendments may be required as shown in App. II-4, Table 2.3.

Middle Fork Area: Upper and Lower Pads

The areas delineated on Exhibit II-4C depict the areal extent of the proposed substitute topsoil. The minimum volumes available for the Middle Fork area are shown in Table II-8. It is important to restate that these volumes indicate only the materials that have been identified as suitable on the surface, and that additional suitable materials are expected to be found during regrading and reclamation of the pad areas. These will be temporarily stockpiled during regrading operations to be redistributed to achieve a six inch cover layer after the final grade has been emplaced. Diversions will be used to divert channelized flows away from the stockpiled material. Prior to any stockpiling, adequate diversion designs will be submitted to the Division for the topsoil piles.

Table II-8

Soil Volumes Available From The Middle Fork Pad

Area	Acres	Depth (ft)	Volume (yd)
A	2.55	1.5	6,169
B	0.66	1.5	1,596
C	1.18	1.5	2,855

A total of 10,620 cubic yards is available to cover the 9.4 acre disturbed area at Middle Fork which requires topsoil (See Table II-13). An additional approximately 2,800 cubic yards of additional material the was washed onsite may also be available for topsoil use. Only 7,583 cu yd will be required for reclamation. The volume would allow a minimum cover of 6 inches over the regraded mine pad area. The small storage yards adjacent to the Middle Fork haul road will be reclaimed using on site materials. The haul road itself will not be reclaimed but will be left in place to support the post mining land use (see Chapter IV).

South Fork Area

South Fork Substitute Topsoil Sites

Six soil samples were collected from the South Fork area (Exhibit II-4B) in December 1983 (three from the upper pad and three from the lower pad, areas A and B respectively). These samples were analyzed for physical and chemical characteristics to determine their suitability for use during reclamation. The results of the analyses are presented in Appendix II-4, Section 2.

Based on these results, it was concluded that the soil materials which comprise the upper and lower pads at the King VI mine are suitable for use in reclaiming that area. However, because of the presence of 15 to 20 percent gravels and cobbles, in some locations of the mine pads, it may be necessary to separate the coarse materials.

The South Fork mine yard, conveyor corridor, truck loadout and sediment ponds, as delineated on Exhibit II-4B, contain a total disturbed area of 12.6 acres. Based on the depth of the soil samples and the test results, a total of 6,337~~9~~ cubic yards of substitute topsoil material is available for reclamation of the South Fork mine yard and bathhouse area from areas A and B on Exhibit II-4B. This volume will allow for a minimum of six inches of substitute material to be distributed over the 6.27 acre mine yard area. Refer to Table II-11 for the breakdown according to area. The remaining topsoil material required for reclamation in South Fork will come from the South Fork Topsoil Stockpile (1,206 CY).

Table II-11

Soil Volumes Available From The South Fork Pad

Area	Acres	Depth (ft)	Volume (yd³)
A	1.49	1.5	3,605
B	1.13	1.5	2,734

231.300 Soil Testing Plan

Testing to evaluate the results of topsoil handling will be done during final reclamation to eliminate the potential for excessive compaction and to assess the nutrient level of the soil. A visual examination will be done after the area is scarified and prior to seeding to ensure that seed depth and moisture absorption will not be hindered. A minimum of 12 random samples of the top 12 inches of topsoil will be collected and composited for each major reclamation site. Each composite sample will then be submitted for laboratory analyses to determine the availability of macronutrients: nitrogen, phosphorus, and potassium; and micronutrients, copper, manganese, molybdenum and zinc.

231.400 Construction, Modification and Maintenance

Five topsoil stockpiles have been constructed within the permit area. These stockpiles are identified on Exhibits II-4 and further described below. [Three have been completely used for reclamation as described in their individual sections below](#) Table II-12 summarizes the available topsoil.

Middle Fork Stockpile

The Middle Fork topsoil stockpile is located at the junction of the Middle Fork and North Fork roads (Exhibit II-4A). This stockpile measures 50 feet in diameter and averages 4 feet high. The minimum slope is 0, it is flat on top. The maximum slope of the pile is 30 degrees. Approximately 354 cubic yards of material are stored in the stockpile. It is encircled by a berm-ditch and has been seeded with a seed mix developed for interim revegetation. The seed mix is described in Attachment 1 of Appendix III-4. Laboratory analyses and suitability of the topsoil for reclamation are given in Tables II-9 and II-10. [This material will be used for reclamation in South Fork as shown in Table II-12.](#)

South Fork Stockpile

A topsoil stockpile was created in the South Fork canyon to store soil materials removed from the South Fork Loadout area. It is identified on Exhibit II-4A and is composed of three adjacent stockpiles surrounded by a berm-ditch. The stockpile is located in a relatively flat area and is not subject to erosion from concentrated channel flows. The first pile is 45 feet by 55 feet by six feet high. It is flat on top. Its maximum slope is 25 degrees. The second pile is 35 feet in diameter by 4 feet high. It is flat on top and has a maximum slope of 40 degrees. The last pile is 145 feet long by 52 feet wide. It has an average depth of four feet and a minimum slope of 10 degrees. The maximum slope is 35 degrees. The total volume of soil contained in all three stockpiles is 1,206 cubic yards. The topsoil was seeded with an interim revegetation seed mix discussed in Attachment 1 of Appendix III-4. Grasses and shrubs currently cover the surface.

Topsoil Stockpile East of Slurry Pond No. 4 (Reclaimed)

This stockpile is shown on Exhibit II-4A. It was created in 1988 when Refuse Pile No. 2 was extended north and east of Slurry Pond No. 4. The dimensions of the pile are 130 feet long by 60 feet wide and 6 feet high. The minimum slope of this pile is 0, the top is flat. The maximum slope is 37 degrees. The stockpile contains approximately 1,488 cubic yards of topsoil. The pile has been revegetated with seed mix No. 1 (less shrubs) described in Table III-3 of Chapter III. Prior to placement of the topsoil the existing vegetation was removed and the surface scarified. The new material was then placed with sufficient compaction to ensure long term stability while not creating a deleterious condition to plant root growth. The stockpile is protected by a surrounding berm-ditch structure. This stockpile was utilized on slurry pond #4.

Topsoil Stockpile East of Slurry Pond No. 5 (Reclaimed)

This stockpile was created when the toe of Slurry Pond No. 5 was extended eastward in 1983. The topsoil, located within the bounds of the defined disturbed area and shown on Exhibit II-4A, is protected from erosion by both a primary runoff control diversion which is constructed around the topsoil pile and a diversion ditch further to the west which will intercept all flow from upstream runoff. The pile contained 1,028 cubic yards of topsoil. The pile was revegetated with an approved seed mix on hand at that time. In 2016, the pile was used to reclaim this area in conjunction with Sediment Pond 7 reclamation.

Topsoil Stockpile West of Equipment Storage Yard (Reclaimed)

Topsoil in this pile was salvaged prior to construction of the equipment storage yard. It consisted of the upper 6 inches of material removed from the area of the yard. The topsoil was stockpiled in a long low berm immediately west of the yard. It measured 515 feet long, 50 feet wide and had an average height of 4.7 feet giving a total volume of 4,480 cubic yards. The top was flat. The maximum side slope was 27 degrees. The stockpile was located on a relatively flat slope (less than 8 percent). It was emplaced with sufficient compaction to ensure stability but still allow the growth of vegetation. It was protected from erosion by a surrounding containment ditch. This stockpile was gouged, fertilized, reseeded and mulched in April, 1992. The seed mix was seed mix No. 2 described in Table III-4 of Chapter III. This stockpile was utilized on Slurry Pond #5 Main Cell in 1997.

Future reseeding of the stockpiles will be done using seed mix No. 2, excluding shrubs or an approved interim seed mix. The seeds will be hand broadcast using the rates given in Table III-4 of Chapter III. The proposed seed mixture contains legumes for nitrogen fixation, and forbs and grasses for soil stabilization. Regulations permit soil stockpiles in Utah to be stabilized with a single plant species or even none if some other method of soil stabilization and protection is used such as a straw mulch tied down by a nylon net. Any topsoil stockpiles which do not have adequate cover will be revegetated by roughening the surface, reseeding, fertilizing and mulching so as to provide cover equivalent to the reference area for that location.

Table II-12 Topsoil and Topsoil Borrow Volumes

Topsoil Stockpiles	Acreage	Depth (ft)	Volume (yds) Available	Volume (yds) Used
Hiawatha Area				
East of Slurry Pond No. 4	N/A	N/A		1,488
East of Slurry Pond No. 5	N/A	N/A		1,028
West of Equipment Storage Yard				4,480
Middle Fork Area				
Middle Fork Stockpile	N/A	N/A	354	
South Fork Area				
South Fork Stockpile	N/A	N/A	1,206	
Total			1,560	6,996
Topsoil Borrow Areas				
Hiawatha Area				
Borrow Area "A" <u>Remaining</u>	16.87 <u>11.59</u>	7.0	75,697	114,594
<u>Borrow Area "A" Reclaimed</u>	<u>5.28</u>			<u>114,594</u>
Borrow Area "F" <u>Reclaimed</u>	6.7	4.0		42,000
Lower Preparation Plant Borrow Area	3.93	3.33	24,300 ¹	
Upper Rail Storage Yard Borrow Area	6.30	6 avg	75,543 ¹	
Middle Fork Area				
Substitute Topsoil Site "A"	2.55	1.5	6,169	
Substitute Topsoil Site "B"	0.66	1.5	1,596	
Substitute Topsoil Site "C"	1.18	1.5	2,855	
South Fork Area				
Substitute Topsoil Site "A"	1.49	1.5	3,605	
Substitute Topsoil Site "B"	1.13	1.5	2,734	
Total			192,499	156,594
Additional Potential Topsoil Borrow Areas				
Borrow Area "B"	12.35	4.5	89,661	
Borrow Area "C"	8.85	4.5	64,251	
Borrow Area "D "	10.2	1.83	30,114	
Borrow Area "E"	6.6	5.0	53,000	
Ridge Area	0.9	0-24	12,300 ¹	

¹See Appendix II-4, Section 3, for volume calculations.

R645-301-240 RECLAMATION PLAN

R645-301-241 GENERAL REQUIREMENTS

A general plan for the redistribution of soils is discussed under R645-301-242. The use of soil amendments and nutrients is discussed in R645-301-243. A plan for soil stabilization is presented in R645-301-244.

Each significant location of reclamation has addressed the above mentioned plans in the discussion specifically for that site. The disturbed areas have been segregated into specific “reclamation areas”, shown on Exhibits II-4 (designated as RA-1, RA-2, etc.). Soil redistribution, soil stabilization and soil nutrients and amendments are covered in a plan designed for that site and its particular needs. **The total disturbed area which has not been reclaimed as of 2019 is 190.12 acres.** Presented below is a brief scope of the revegetation work to be done and the reclamation plans for the most significant sites. Reclamation of any areas not discussed in the following plans will be conducted according to the general reclamation plan outlined in R645-301-240.

Revegetation

Four seed mixtures intended for revegetation of specific reclamation situations are provided in Chapter III (Tables III-5, III-6, III-7 and III-8). These are for reclamation of (1) substitute borrow areas, (2) the areas affected by coal refuse and other coal materials, (3) the mine pads and approaches in South, Middle and North Fork, (4) riparian areas. Mixture No. 3 also includes nursery grown stock for trees. Mixture No. 4 includes nursery grown stock for both trees and shrubs.

Two basic methods to be used for seed planting are hydroseeding and broadcasting. These are the two preferred methods due to the shallow seeding depth favored by most species.

Drill seeding is another method that could be used. Drilling distributes and covers the seed in one operation. However, prior to drill seeding, the Division will be consulted to determine if any additional measures will be needed during planting recognizing that some species require a shallow seeding depth. The drilling rate is to be one-half the broadcast rate shown in Tables III-5 through III-8.

Planting techniques will include broadcasting by hand, using portable spreaders, or hydroseeding. Where hydroseeding is used, the fertilizer and mulch will be applied separately from the seed.

Any roads that will be reclaimed will be ripped, surface materials removed and planting done according to the procedures described with seed mixture No. 3. Revegetation will achieve the necessary standards provided by the appropriate reference areas except that forage values will be enhanced at the expense of undesirable shrub density as explained in the rationale accompanying the discussion of field trial test plot studies.

North Fork Area Reclamation

The North Fork ventilation portal and stream diversion (Exhibit II-4D) contains 1.5 acres (See Table II-13, RA-26, 27). The ventilation portal (1.0 acres) was reclaimed using in situ soils northeast of the portal. The 0.5 acre area containing the stream diversion and pipeline to the King 2 mine portal was also reclaimed using the in situ soils. The North Fork area is reclaimed and Phase III bond release was approved by DOGM on July 19, 2016 (Task ID# 5114).

Middle Fork Area Reclamation

The Middle Fork mine yard, loadout facility and sediment pond, as delineated on Exhibit II-4C, contains a total disturbed area of 11.8 acres. The storage areas adjacent to the Middle Fork haul road comprises an additional 3 acres **for a total of 14.8 acres**. Reclamation area RA-23 (sediment pond) will use the material in the pond bank for reclamation. The area between the bath house and water tank and the area west of the King 5 mine portals (RA-24) will be reclaimed using in situ material. The 3 acre storage areas (RA-25) will also be reclaimed using in situ material. The remaining 9.4 acres (RA-22) will be reclaimed with material from Middle Fork substitute topsoil areas A, B, and C.

South Fork Area Reclamation

The South Fork mine yard, conveyor corridor, truck loadout and sediment ponds, as delineated on Exhibit II-4B, contain a total disturbed area of 12.6 acres, excluding the haul road. The 0.6 acre area between the bath house and water tank (RA-20) will be reclaimed utilizing in situ soils. Little, if any, regrading will be required in this area. The 1.87 acre area comprising sediment pond D009 and sediment pond D011 (RA-21) will utilize soil material in the pond embankments. The 6.41 acre mine yard and bath house area (RA-19) will be reclaimed with material from the South Fork substitute topsoil areas A and B. The 1.84 acre conveyor corridor will utilize in situ soil materials contained in its embankment. The 1.94 acre coal stockpile and truck loadout area will be reclaimed with topsoil from the South Fork topsoil stockpile at the mouth of the canyon. A strip of land bounded by the conveyor, the coal stockpile and the haul road (approximately 1 acre) has received interim revegetation and will require only minor reclamation. The South Fork haul road occupies approximately 1.93 acres within the South Fork disturbed area. See Appendix II-3 for a discussion of the soil materials available in the vicinity of the conveyor corridor and truck loadout area.

Hiawatha Area Reclamation

There was originally a total of 221.36 disturbed area acres within the lower Hiawatha area, excluding the canyon roads. Unfortunately, due to the age of the facilities, there has been very little topsoil or fill material salvaged and stockpiled for reclamation from these areas. Table II-13 shows the acreage by area. Exhibit II-4A shows the locations of the areas. Some of the area has already been reclaimed since it is no longer needed. On July 19, 2016 DOGM approved Phase III bond release on 76.5 acres in this area (Task ID #5114). On July 12, 2017 DOGM approved Phase III bond release on 10.17 acres (Task ID #5300). The current disturbed acreage in this area is 134.69 acres.

The following is a summary of the status of areas which are currently reclaimed [in the Lower Hiawatha area at this site](#) as of 2017:

	Area	Total Acres	Reclaimed Acres	Topsoiled Acres	Remaining
RA-5	Slurry Pond 4 / Refuse Pile 2	26.37	26.37	26.37	-0-
RA-1	Affected Areas	29.47 29.41	2.00 19.83	-0-	27.47 9.28
RA-7	Preparation Plant Area	23.87	5.51	-0-	18.36
RA-6	Borrow Area "F"	9.12	9.12	-0-	-0-
RA-2	Slurry Pond 5 Main Cell	40.39	40.39	40.39	-0-
RA-4	Borrow Area "A"	16.87	5.28	-0-	11.59
Total		145.73 146.09	88.67 106.5	66.76	57.42 39.23

A complete description of all of the disturbed areas, acreage and topsoil volumes is found in Table II-13.

Slurry Pond "4" has been completely reclaimed. The area on the northeast corner (approx. 1 acre) required recontouring and topsoiling. The topsoil pile East of Slurry Pond No. 4 was used to reclaim this area. An additional 577 yards of substitute material was needed to complete Pond 4, which came from Borrow Area "A". The affected areas were reclaimed by vacuuming coal fines and/or topsoiling the areas. Areas being topsoiled were ripped to a depth of 18" to 24" before topsoil was placed.

The main cell of slurry pond 5 has been completely reclaimed. The reclamation was completed in 1999. An affected area 1.91 acres in size exists West of Slurry Pond "5". Portions of this area may require additional topsoil, which will come from Borrow Area "A". Following topsoiling activities in 1998, Borrow Area "A" was surveyed for remaining volumes (completed 6-6-08). Any areas in Borrow Area "A" which have reached the maximum depth of substitute topsoil were ripped and seeded with the seed mix No. 1 (Table III-6). The remaining areas were seeded with an interim seed mix as described in R645-301-331. Approximately 5.28 acres of borrow area "A" have been reclaimed. The remaining acreage will be used to reclaim slurry pond 5A. Areas that have received bond release are shown on Exhibit II-4A

Non-Refuse Areas

Approximately 5.51 acres ([RA-7](#)) of the preparation plant area have been reclaimed at this time. The remainder of the preparation plant area and affected non-refuse areas will be reclaimed utilizing in-site soils. Where greater than 50% coal (visual estimation) or other contaminants (oil, grease, etc.) are present on the surface, this material will be removed and taken to a Slurry Pond for final burial. The remaining in situ soils will then be graded and prepared for seeding according to the plan.

Reclamation Plan - Substitute Topsoil Requirements

U. S. Fuel Company proposes to use topsoil and substitute topsoil materials from Borrow Area “A”, the Lower Preparation Plant Borrow Area, and the Upper Rail Yard Borrow Area (Exhibit II-4A) to reclaim the remainder of the area associated with the slurry ponds, coal refuse embankments and railroad tracks.

Borrow Area “A” has been approved and designated to provide adequate topsoil covering for Slurry Ponds 5 and 5A. Table II-13 shows the areas to be reclaimed using soil from Borrow Area “A”.

At the request of the Division, 3 additional Borrow Area sites within the disturbed area have been evaluated. Results of the sampling and potential topsoil borrow volumes area provided in Appendix II-4. Based on this report, U. S. Fuel Company proposes to use borrow material from 2 of the 3 sites - the Lower Preparation Plant Area (24,300 cu yds), and the Upper Railroad Yard Area (75,543 cu yds). The projected available material from these 2 sites is 99,843 cubic yards (Table II-12). Table II-13 shows the areas to be reclaimed using soil from these two borrow areas. The total volume needed from Table II-13 is 97,230 cu yds so adequate material exists for reclamation.

The smaller borrow area, referred to as the “Ridge Area” in the report (Appendix II-4) is an area with numerous large trees and boulders. It is proposed not to utilize this area for borrow at this time - rather, this site is one of 5 sites labeled “Potential Borrow Areas” on Exhibit II-4A. These areas would only be utilized in the event the present proposed borrow areas failed to provide adequate material. The Ridge Area would be the first alternate choice, since it is within the existing disturbed boundary.

There are 56.75 acres of non-refuse area associated with the preparation plant and other affected areas (Table II-13). These areas will be reclaimed utilizing in-situ disturbed soils, as previously approved. The 56.75 acre area includes the sediment ponds.

Hiawatha Coal Company proposes to leave the substitute topsoil borrow sites in their current in-situ condition until reclamation activities have commenced. Prior to commencing with soil salvage activities in areas north of Miller Creek or developing the access road through the riparian zone, HCC will consult with the regulatory authority to determine if any design changes in connection with the stream crossing are required.

Each borrow area will be cleared of vegetation immediately prior to utilizing the substitute topsoil material from that area. The vegetation will be stacked near the perimeter of the borrow area to provide for additional wildlife habitat or distributed over reclaimed areas to facilitate moisture retention if deemed desirable.

The top 12 inches of soil will be removed from the borrow area and stockpiled. This material will be returned to the borrow site to be used for reclamation of the borrow area.

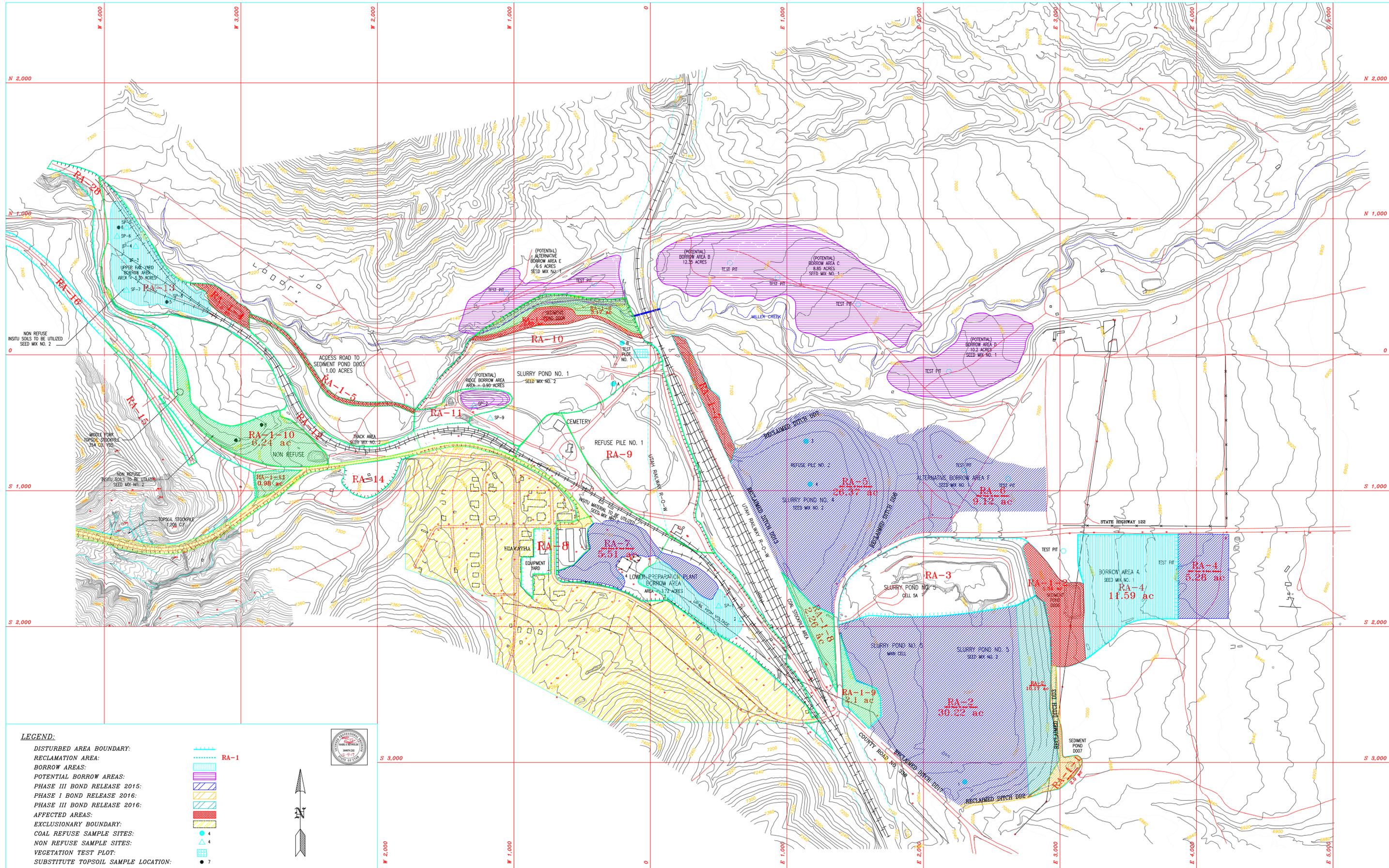
A combination of scrapers, front end loaders, track mounted tractors, belly dump and/or end dump trucks may be used to load, transport and redistribute the substitute topsoil material. When the desired volumes have been obtained and removed from the borrow areas, reclamation procedures will commence.

Topsoil has been removed from several small disturbed sites in the Hiawatha area. The topsoil has been stockpiled and protected. See R645-301-231.400 for a description of each stockpile.

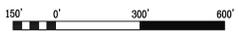
TABLE II-13 Reclamation Area Acres and Topsoil Volumes

Area	Location	Acreage Reclaimed	Acreage Disturbed				Topsoil Depth	Topsoil Volume (cu yd)	Topsoil Source
			Total	Regular	Non-refuse	Not Reclaimed			
RA-1 Total	Sed. Ponds / Misc. Areas	2.00			27.47		N/A	N/A	In Situ Material
RA-1-1	Sed Pond D007, Ditch DD3 and DD2	2.00							2016 Phase I Bond Release
RA-1-2	Sed Pond D006 (Cell 5A)				5.34				In Situ Material
RA-1-3	Sed Pond D004 (Slurry 1)				1.65				In Situ Material
RA-1-4	Sed Pond D003 (Upper Rail Yard)				1.20				In Situ Material
RA-1-5	Access Road to Pond D003				1.00				In Situ Material
RA-1-6	East of Sed Pond D004				3.17				Vacuum / In-Situ if Needed
RA-1-7	Utah Railway Right of Way				3.53				Vacuum / In-Situ if Needed
RA-1-8	South of Slurry Pond 4				2.26				Vacuum / In-Situ if Needed
RA-1-9	West of Slurry Pond 5				2.10				Vacuum / In-Situ if Needed
RA-1-10	North of Middle/South Fork Road Fork				6.24				In Situ Material
RA-1-11	Between Middle/South Fork Road Fork				0.98				In Situ Material
RA-2	Slurry Pond 5 Main Cell	40.39		0			16 in.	0	Reclaimed (2015 & 2016 Bond Release)
RA-3	Slurry Pond Cell 5-A			15.64			16 in.	33,364	Borrow Area A, Pond "5" Topsoil pile
RA-4	Borrow Area A	5.28			11.59		N/A	N/A	In Situ Material (2015 Bond Release)
RA-5	Slurry Pond 4/Refuse Pile 2	26.37		0			16 in.	0	2015 Bond Release
RA-6	Borrow Area F	9.12		0			N/A	N/A	2015 Bond Release
RA-7	Preparation Plan/Depot Area	5.51		5.51	12.85		N/A	N/A	In Situ Material (2015 Bond Release)
RA-8	Warehouse / Equipment Yard				2.87		N/A	N/A	In Situ Material
RA-9	Refuse Pile No. 1			17.51			16 in.	37,666	Lower Preparation Plant Borrow Area Upper Rail Storage Yard Borrow Area
RA-10	Slurry Pond No. 1			19.39			16 in.	41,710	Upper Rail Storage Yard Borrow Area
RA-11	Ridge Borrow - Non-refuse				0.90		N/A	N/A	In Situ Material
	Refuse			1.92			16 in.	4,130	Upper Rail Storage Yard Borrow Area
RA-12	Railroad Tracks West of Shop			6.38			16 in.	13,724	Upper Rail Storage Yard Borrow Area
RA-13	Upper Rail Storage Yard				9.14		N/A	N/A	In Situ Material
RA-14	Truck Shop Yard				2.01		N/A	N/A	In Situ Material
RA-15	Runaway Truck Lane				1.51		N/A	N/A	In Situ Material
Hlawatha Reclamation Area Totals		88.67	134.69	66.35	68.34		66.35	134.69	
RA-16	South/Middle Fork Roads					28	N/A	N/A	Roads to remain in place post-mining
Roads to Remain in Place Totals			28.0			28.0			
RA-17	South Fork Coal Loadout			1.94			6 in.	1,565	South Fork Topsoil Stockpile South Fork Borrow Site B
RA-18	Overland Conveyor Route			1.84			N/A	N/A	In Situ Material
RA-19	King 6 Mine Pad			6.38			6 in.	5,147	South Fork Borrow Sites A and B
RA-20	Water Tank / Access Road				0.6		N/A	N/A	In Situ Material
RA-21	South Fork Sediment Ponds			1.87			N/A	N/A	In Situ Material (Sediment pond banks)
South Fork Area Reclamation Totals		0	12.63	12.03	0.6				
RA-22	King 4 and 5 Mine Pad			9.4			6 in.	7,583	Middle Fork Borrow Sites A, B and C Middle Fork Topsoil Stockpile
RA-23	Middle Fork Sediment Pond				1.22		N/A	N/A	In Situ Material (Sediment pond bank)
RA-24	Water Tank / Access				1.18		N/A	N/A	In Situ Material
RA-25	Timber / Tire Storage Areas				3		N/A	N/A	In Situ Material
Middle Fork Area Reclamation Totals		0	14.8	9.4	5.4	9.4			
RA-26	North Fork Diversion / Pipe	0.5		0			N/A	N/A	Reclaimed (2015 Bond Release)
RA-27	North Fork Ventilation Portal	1		0			N/A	N/A	Reclaimed (2015 Bond Release)
RA-28	North Fork Road	5.1		0			N/A	N/A	Post-Mining Road (2015 Bond Release)
Total Permit Disturbed Acreage		95.27	190.12						

Note: During the bond release approved in 2009, the RA-1 acres was 29.11, 1.64 acres more than currently measured, but are not included in the 95.27 acres.



- LEGEND:**
- DISTURBED AREA BOUNDARY: [Red dashed line]
 - RECLAMATION AREA: [Red solid line]
 - BORROW AREAS: [Purple hatched area]
 - POTENTIAL BORROW AREAS: [Light purple hatched area]
 - PHASE III BOND RELEASE 2015: [Yellow hatched area]
 - PHASE I BOND RELEASE 2016: [Green hatched area]
 - PHASE III BOND RELEASE 2016: [Blue hatched area]
 - AFFECTED AREAS: [Red hatched area]
 - EXCLUSIONARY BOUNDARY: [Black dashed line]
 - COAL REFUSE SAMPLE SITES: [Blue triangle]
 - NON REFUSE SAMPLE SITES: [Red triangle]
 - VEGETATION TEST PLOT: [Blue square]
 - SUBSTITUTE TOPSOIL SAMPLE LOCATION: [Black dot]



NOTE: WHERE RECLAMATION AREA BOUNDARIES COINCIDE WITH THE DISTURBED AREA BOUNDARIES, ONLY THE DISTURBED AREA BOUNDARIES ARE SHOWN.

REVISION DATE: July 25 2019	
AUG 1998	July 19 2016 Bond Release
JAN 26 1999	July 12 2017 Bond Release
JUL 03 2008	July 25 2019 RA-1 Areas
May 18 2013	

HIAWATHA COAL COMPANY
HIAWATHA, UTAH

HIAWATHA PROCESSING PLANT
AND WASTE DISPOSAL SITES

RECLAMATION SOILS
INFORMATION

EXHIBIT
II-4A

R645-301-320 BIOLOGY

R645-301-320 ENVIRONMENTAL DESCRIPTION

321.100 A study of vegetation of the U.S. Fuel mining permit area and adjacent areas was conducted between August 21 and August 27, 1980 and supplementary data was collected October 7, 1980. The purpose of the study was to determine existing conditions of the area in terms of kind and quantities of plants. The study, entitled Vegetation Survey Of U.S. Fuel Company Property, Hiawatha Utah, is located in Appendix III-1 and includes information on the Mohrland area as well. No disturbance is planned for the Mohrland area. In 1981 additional work was done in the permit area and the data from 1980 and 1981 was consolidated into one report entitled Vegetation Of the U.S. Fuel Company Property, Hiawatha, Utah: A Consolidation Of Data Collected During The 1980 and 1981 Field Season. This report is located in Appendix III-2.

During the Mid-Permit Term Technical Deficiency Review (March 4, 1992) the Division requested additional vegetation information to supplement the above mentioned documents and to comply with current regulations for the biological resources. The specific information requested and its procurement along with tabulated results are presented in Appendix III-3 entitled Vegetation Sampling Results and Data Summaries For U.S. Fuel Company Property, 1992.

321.200 Most of the present disturbed area had been disturbed prior to 1979 by previous mining activities and old townsites. In some cases it is impossible to obtain the productivity of the site prior to disturbance. In Appendixes III-1 III-2 and III-3 productivity is estimated for the reference areas in the permit area. **In 2012 an offsite forest fire burned reference area MCR2 and the area adjacent to reference area MBR1. During a 2019 inspection the Division observed that SBR12 has been encroached upon by Pinion-Juniper vegetation. In 2020, a new site will be selected for MCR2 and all three of these areas, along with RR9, will be sampled to update the information for these reference areas. The updated information obtained for SBR3 which was used for evaluation of the Phase III bond release application in 2017 is shown in Appendix VIII-6. Upon completion of the 2020 reference area selection and sampling, Table III-9 will be updated with current locations and descriptions.** Vegetation information is also given in Chapter II, Appendix II-1, Vegetation Survey for U.S. Fuel Company, Appendix II-2, Forest Service Soil Identifications in U. S. Fuel Company's Permit Area and in the publication Soil Survey of Carbon Area, Utah.

R645-301-322 FISH AND WILDLIFE INFORMATION

The following Fish and Wildlife Resource Information was developed to address Division of Oil, Gas and Mining requirements in conjunction with recommendations by the Division of Wildlife Resources. A more general study is provided in Appendix III-4 and is entitled Species List Of Vertebrate Wildlife That Inhabits Southeastern Utah, Publication Number 78-13.

FISH AND WILDLIFE PLAN - ~~U.S. FUEL~~ HIAWATHA PERMIT AREA

Three major concerns must be addressed in a wildlife protection plan for a coal mining facility situated such as the ~~U.S. Fuel~~ operation in Hiawatha. First, one must devise a plan to minimize the destruction of wildlife habitat during facility construction, and determine how to restore that habitat after completion of mining. Second, an assessment of operating impacts to wildlife must be made, and again a mitigation plan to minimize these impacts should be devised. Finally, any unique wildlife impacts (e.g. construction within a critical habitat as defined in section 7 of the Endangered Species Act of 1973) need to be assessed and mitigated.

In the case of King IV, King V and King VI and their associated prep-plant at Hiawatha, most of the options connected with protecting and/or minimizing such wildlife impacts related to construction have been precluded ~~since the mine dates back to pre-law. The facilities are in place and very little additional construction is planned.~~ To date, approximately ~~360~~ 366.89 acres have been disturbed, including borrow areas. ~~Approximately 112~~ 114.6 acres of the ~~360 developed acres~~ will not be reclaimed after the mine closes due to either ~~pre-law exclusion or the Post-Mining use will not require reclamation,~~ see Table III-3. This consists of the town of Hiawatha, railroad (owned by Utah Railway), and paved roads. They are shown on Plate II-4A as exclusion areas, except for 33.1 acres of roads. 5.1 acres were removed from the disturbed area in the 2015 Phase III Bond Release and 28.0 are still actively used. These road areas are shown in Table II-13. Another ~~5327~~ 5327 acres have been identified as potential Borrow Areas, ~~may~~ but will not be disturbed ~~during topsoil borrow operations. These 53 acres, plus the 250 acres of disturbed lands that will not remain as town or roads unless required by the reclamation plan.~~ The remaining 285.39 acres ~~have been or~~ will be reclaimed to wildlife and range habitat.

TABLE III-3

ACREAGES OF AREAS NOT TO BE RECLAIMED WITHIN THE U. S. FUEL PERMIT AREA

<u>HIAWATHA AREA</u>	<u>ACRES</u>
ROADS	30.3 <u>33.1</u>
RAILROAD YARD	15.2
TOWN	<u>66.3</u>
TOTAL	111.8 <u>114.6</u>

Aquatic and Riparian Habitats

There are no fishes residing in the watersheds associated with King IV, V, and VI mines, therefore, the management strategy for aquatic and riparian habitats need be only concerned with protecting wildlife values. The perennial stream flows have limited value as aquatic habitats, but do support furbearers such as beaver; in addition, these flows ensure the continued existence of the narrow riparian habitat alongside the streams. The value of this community is exemplified by the fact that over 50 percent of the species utilizing the U.S. Fuel permit area can be found associated with riparian habitat. Also, U.S. Fuel is aware of Executive Order 11988 that mandates protection of riparian habitat by federal

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CHAPTER 5 PERMIT APPLICATION REQUIREMENTS: ENGINEERING

LIST OF APPENDICES

Appendix 5-1	Slurry Pond Design and Construction Plans
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Appendix 5-3	Refuse Pile Design and Construction Plans
Appendix 5-4	Plan for Extinguishing Fires on Refuse Piles and Slurry Ponds
Appendix 5-5	Program for Inspection and Correction of Hazardous Conditions on Slurry Impoundments
Appendix 5-6	King 4 MSHA Approved Roof Control and Ventilation Plans
Appendix 5-7	Plans for Construction of North Fork Ventilation Portal
Appendix 5-8	Small Area Exemptions
Appendix 5-9	Middle Fork Truck Runaway Road Upgrade Plans
Appendix 5-10	Non-Coal Waste Storage Sites
Appendix 5-11	Mohrland Pipeline Upgrade
Appendix 5-12	Calculations for Stream Crossing to Access Topsoil Borrow Areas
Appendix 5-13	Middle Fork Road Drainage and Erosion Control
Appendix 5-14	Design of North Fork Diversion
Appendix 5-15	Earth Work Area-Volume Balance Sheets
Appendix V-16	Slurry Pond Abandonment
Appendix V-17	Pond 5A Temporary Haul Road
<u>Appendix V-18</u>	<u>Subsidence Data Analysis</u>

On October 11, 2010, Hiawatha notified the Division that the Hiawatha Mine was in temporary cessation. On March 28, 2013, the temporary cessation was modified to allow for recovery of coal fines from the slurry ponds and to conduct reclamation activities on areas not needed for future mining. Coal mining cessation is expected to continue until the year 2025. ~~In the event of temporary cessation of operations,~~ HCC ~~will~~ has effectively ~~support and maintain or~~ sealed all surface access openings to underground operations and secure surface facilities in areas in which there are no current operations, and ~~has continued to maintain the site in compliance with the current operation plan.~~ Prior to resumption of operations in or around 2025, Hiawatha will notify the Division that operations will be resuming ~~but operations are to be resumed~~ under ~~an~~ the approved permit and the MRP will be updated and approval obtained for the resumption of activities. ~~Before temporary cessation of coal mining and reclamation operations for a period of 30 days or more, or as soon as it is known that a temporary cessation will extend beyond 30 days, HCC will submit to the Division a notice of intention to cease or abandon operations. The notice will include a statement of~~ The current MRP includes the exact number of surface acres and the horizontal and vertical extent of subsurface strata which ~~have been~~ are in the permit area ~~prior to cessation or abandonment,~~ and the extent and kind of reclamation of surface areas which ~~will~~ have been accomplished, and identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures and water treatment activities that ~~will~~ continu~~ing~~e during the temporary cessation. The Landowner has currently allowed some third party interim activities on the site during this cessation, which has included gun range training in the Middle Fork Bathhouse and the Upper Rail Yard. This activity is currently anticipated to continue through 2021. HCCI is currently working with the interim tenants to ensure that the site continues to be adequately protect and maintained in accordance with the operation and reclamation plans.

R645-301-520 OPERATION PLAN

R645-301-521 GENERAL

HCC presently has operations at several different sites near Hiawatha, Utah. Because of the complexity of the entire unit, five separate areas of operation and reclamation will be discussed in

coal production. Shortly thereafter, the mine portals were sealed with incombustible material. Nonetheless, about thirty million tons of coal reserves still remain within the permit boundary. U. S. Fuel sold the property and permit to ANR Company and HCC, consecutively. HCC intends to reopen the King 5 and 6 portals by ~~November~~January 1, ~~1999~~2026.

Until that time, HCC intends to:

1. sell pond fines;
2. maintain the hydrologic structures and controls;
3. monitor and inspect the property as required by the permit; and
4. reclaim those portions of the disturbed area that HCC feels is both unnecessary for and would not be affected by the resumption of underground mining operations.

No maintenance of other structures or facilities is anticipated except as needed to provide for the safety of the employees and protection of the environment.

Prior to the sealing of the mine portals, most of the equipment was brought to the surface. Most of the conveyor belt, high voltage cable and pipe was also extricated. Many of these units have been sold. Due to obsolescence, it is doubtful that very much of the remaining equipment will be utilized if or when the underground mine is reopened. However, it is impossible at this time to surmise which units may or may not be needed by a prospective purchaser. For this reason, the equipment will be stored on the property until the equipment is sold, the property is purchased or underground operations have permanently ceased.

Bonding costs have been determined by reference to current (~~2014~~2019) editions of the Rental Rate Blue Book, the Means Site Work Cost Data Book and the Caterpillar Performance Handbook. Other costs, not defined in these books, such as seed mixtures, fertilizer and revegetation equipment are obtained from regional suppliers. Table VIII-1 gives a listing of demolition and equipment unit costs. Hourly equipment costs were derived by dividing the Blue Book monthly rental rates by an average 22 days per month, and eight hours per day. Estimated hourly operating costs, also provided in the Blue Book, and hourly operator costs including profit and overhead provided in the Means Site Work Cost Data book are then added to the hourly rental rates to give the unit costs. Structure removal costs, taken from the ~~2014~~2019 Means Site Work Cost Data book (where listed) are also given in Table VIII-1.

As noted in the reclamation plan, structures such as concrete foundations and slabs and sewer and water lines which exist beneath or will be covered by the final graded surface will be left in place. Building demolition costs expressed in cubic yards of steel or concrete also include disposal costs. (No disposal costs are included for concrete footers or walls which can be easily backfilled along with other material in the cut and fill process.)

The remaining Earthwork area-volume balance calculations for each site are given in Appendix VIII-1. Maps showing existing structures, final surface configurations and final surface cross sections are included in Chapter V (Engineering). Reclamation plans given Under R645-301-240 (Soils), 340 (Biology) and 540 (Engineering) discuss backfilling operations, topsoil removal, storage and replacement and revegetation procedures.

Reclamation areas specified in the cost estimate may not agree exactly with the areas described in the reclamation plans given in other chapters. This is because specific reclamation operations overlap in some cases and in other cases larger areas have been assumed to allow for unforeseen conditions which may occur at the time of reclamation.

Structure removal costs are given in Table VIII-1 and summarized on Page 8-~~89~~. Some structures have been added and others removed since the original plan approval. The unit train loading facility, included in the original bond estimate, was never built and is no longer proposed. A few small buildings in the vicinity of the preparation plant have been removed. A stacking conveyor extending north of the preparation plant and an aerial pipeline between the preparation plant and the resin plant have been added. Additional portals and supporting conveyor structures originally proposed for the Middle Fork mine yard were not constructed and are no longer proposed. Several conveyor support trusses, the belt transfer building and the Foreman's building in the Middle Fork Mine yard have been removed. A new screening, crushing and truck loading silo facility has been added in the Middle Fork truck loadout area. The dimensions of existing structures have been re-examined and cubic foot volumes may differ from the original values in some cases.

TABLE VIII-1

UNIT COST REFERENCE FOR BOND ESTIMATE (RSMEANS ~~2014~~2019 Includes O&P)

	ITEM	UNIT COST	
<u>1. STRUCTURAL REMOVAL</u>			
02 41 16.13 0020	A. STEEL (Demolition & Disposal)	0.270.36	/CF
02 41 16.13 0050	B. CONCRETE (DEMOLITION)	0.390.51	/CF
02 41 13.33 1000	D. MASONARY WALL	2.053.01	/CF
02 41 13.60 1700	E. CHAINLINK FENCE	2.084.42	/LF
02 41 13.80 0100	F. POWER POLES	499.5320	EA
02 41 16.17 4200	G. DISPOSAL ONSITE	8.6511.1	/CY
A-Core Quote	H. FOUNDATION DEMOLITION <45" Thick	13.7518.43	/CY
City Sanitation	I. Offsite Disposal Non-Coal Waste	36.008.87	/CY
<hr/>			
	ITEM	HOURLY OPER. COST	RENT PER MONTH
			EQUIP COST/HR
<hr/>			
<u>2. EQUIPMENT COSTS</u>			
01 54 33.20 4380	A. Dozer, 700 HP (D-11R)	261.35230.17	3590047700
01 54 33.20 4360	B. Dozer, 400 HP (D-9R)	135.65106.74	4990021200
01 54 33.20 4260	C. Dozer, 200 HP (D-6R)	77.3563.16	4060011800
01 54 33.20 3700	D. Scraper 22 CY (631G)	124.80114.62	4650020900
01 54 33.20 1920	E. Grader (14H)	64.6551.89	905011500
01 54 33.20 4810	F. Front End Loader (988G)	116.2591.17	4590015800
01 54 33.20 5600	G. Dump Truck (769D)	83.4067.10	4158014000
01 54 33.40 6950	H. Water Truck 56000 Gallon	43.7571.97	77007275
01 54 33.40 7200	I. Pickup 4X4	15.559.51	660685
01 54 33.50 0580	J. Dozer/Grader Ripper/Scarifier	9.355.87	30651325
01 54 33.20 4310	K. Disc Harrow (D8 Dozer)	100.5580.73	4520017800
01 54 33.20 2860	L. Hydromulcher	45.9518.04	23001975
01 54 33.20 0320	M. Excavator 2 1/2 CY (330D)	68.9082.64	4544511700
	N. GRADER RIPPER/SCARIFIER	7.9	2440
<hr/>			
<u>3. CREW HOURLY RATES</u>			COST/HR
			<u>INCL. O & P</u>
	A. EQUIP. OPER. (MED)		50.2576.81
	B. EQUIP. OPER. (LGHT)		48.9977.55
	C. TRUCK DRIVER (HVY)		54.3870.75
	D. TRUCK DRIVER (LGHT)		37.5568.50
	E. FOREMAN AVG. (2 DOLLARS OVER TRADE)		73.8884.70

Bonding Calculations

Direct Costs

Subtotal Demolition and Removal	\$341,691.00	\$471,955.00
Subtotal Backfilling and Grading	\$471,808.00	\$535,084.00
Subtotal Revegetation	\$328,902.00	\$357,341.00
Direct Costs	\$1,142,401.00	\$1,364,380.00

Indirect Costs

Mob/Demob	\$136,438.00	10.0%
Contingency	\$68,219.00	5.0%
Engineering Redesign	\$34,110.00	2.5%
Main Office Expense	\$92,778.00	6.8%
Project Management Fee	\$34,110.00	2.5%
Subtotal Indirect Costs	\$365,655.00	26.8%

Total Cost in 2014 2019 Dollars	\$1,448,564.00	\$1,730,035.00
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Escalation factor		0.049232
Number of years		5
Escalation	\$142,943.00	\$210,214.00
Reclamation Cost Escalated	\$1,591,507.00	\$1,940,249.00

Bond Amount (rounded to nearest \$1,000) 2019 2024 Dollars	\$1,592,000	\$1,940,000
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Posted Bond 2016 to be posted	\$1,708,000.00	\$1,940,000
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Difference Between Cost Estimate and Bond	\$116,000	
Percent Difference	7.29%	

Demolition Cost Estimate Tables (Con't)

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
	Machine Shop 01																			
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	42	240	12								FT		120960	CF	47174
	Structure's Vol. Demolished																0.35	1568	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													1568	CY	13908
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			61082
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	42	90	0.5								FT		70	CY	1360
	Concrete's Vol. Demolished																1.3	91	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													91	CY	121
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													91	CY	322
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													91	CY	1010
	Subtotal																			2813
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition	A-Core Quote	19.43	/CY	36	144	0.33								FT		63	CY	1224
	Concrete's Vol. Demolished																1.3	82	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													82	CY	109
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													82	CY	290
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													82	CY	910
	Subtotal																			2533
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			66428

Demolition Cost Estimate Tables (Con't)

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
	Warehouse 02																			
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	36	150	15								FT		81000	CF	31590
	Structure's Vol. Demolished																0.35	1050	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													1050	CY	9314
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			40904
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	32	52	0.08								FT		5	CY	97
	Concrete's Vol. Demolished																1.3	7	CY	
	Loading Cost	3.5' below ground - Abandon in place																		
	Transportation Cost																			
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													7	CY	78
	Subtotal																			175
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	32	58	0.33								FT		23	CY	447
	Concrete's Vol. Demolished																1.3	30	CY	
	Loading Cost	3.5' below ground - Abandon in place																		
	Transportation Cost																			
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													30	CY	333
	Subtotal																			780
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			41859

Demolition Cost Estimate Tables (Con't)

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	
	Tipple 2 Operator Bld 03																				
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.3	/CF	11	11	9								FT		1089	CF	327	
	Structure's Vol. Demolished																0.35	14	CY		
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel	City Services	City Service Price	5.07	/CY													14	CY	71	
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			398	
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	11	11	0.5								FT		2	CY	28	
	Concrete's Vol. Demolished																1.3	3	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY														3	CY	3
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	2.95	/CY														3	CY	9
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY														3	CY	26
	Subtotal																			66	
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																			464	

Demolition Cost Estimate Tables (Con't)

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
	Resin Plant 04																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.27	/CF				16	16						FT		3217	CF	869
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			869
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	28	40	0.5								FT		21	CY	289
	Concrete's Vol. Demolished																1.3			
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY													27	CY	26
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	2.95	/CY													27	CY	80
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY													27	CY	234
	Subtotal																			629
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	190	1.5	1								FT		11	CY	151
	Concrete's Vol. Demolished																1.3			
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY													14	CY	13
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	2.95	/CY													14	CY	41
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY													14	CY	121
	Subtotal																			326
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1824

Demolition Cost Estimate Tables (Con't)

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
	Tipple Office Scalehouse 05																			
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	12	28	8								FT		2688	CF	1048
	Structure's Vol. Demolished																0.35	35	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													35	CY	310
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			1358
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	12	28	0.33								FT		4	CY	78
	Concrete's Vol. Demolished																1.3	5	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													5	CY	7
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													5	CY	18
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													5	CY	56
	Subtotal																			159
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1517

Demolition Cost Estimate Tables (Con't)

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
	Heavy Equipment Shop 06																			
	Structure's Demolition Cost 1	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	21	65	14.5								FT		19793	CF	7719
	Structure's Demolition Cost 2	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	12.5	23.5	14.5								FT		4259	CF	1661
	Structure's Vol. Demolished																0.35	312	CY	
	Structure has no interior walls	For bldgs with no int walls, deduct 50%	02 41 16.13 5000																	-4690
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													312	CY	2767
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			7457
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	21	65	0.5								FT		25	CY	486
	Concrete's Vol. Demolished																1.3	33	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													33	CY	44
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													33	CY	117
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													33	CY	366
	Subtotal																			1013
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	12.5	23.5	0.5								FT		5	CY	97
	Concrete's Vol. Demolished																1.3	7	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													7	CY	9
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													7	CY	25
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													7	CY	78
	Subtotal																			209
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			8679

Demolition Cost Estimate Tables (Con't)

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
	Fuel Tank 07																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	20	30	0.5								FT		11	CY	214
	Concrete's Vol. Demolished																1.3	14	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													14	CY	19
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													14	CY	50
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													14	CY	155
	Subtotal																			438
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	100	3	1								FT		11	CY	214
	Concrete's Vol. Demolished																1.3	14	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													14	CY	19
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd.	31 23 23.20 1014	3.54	/CY													14	CY	50
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													14	CY	155
	Subtotal																			438
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			876

Demolition Cost Estimate Tables (Con't)

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	
	Haul Truck Maintenance Shop 08																				
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	22	80	15								FT		26400	CF	10296	
	Structure's Vol. Demolished																0.35	342	CY		
	Structure has no interior walls	For bldgs with no int walls, deduct 50%	02 41 16.13 5000																	-5148	
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													342	CY	3034	
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			8182	
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	22	100	0.5								FT		41	CY	797	
	Concrete's Vol. Demolished																1.3	53	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY														53	CY	70
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip	31 23 23.20 1014	3.54	/CY														53	CY	188
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY														53	CY	588
	Subtotal																			1643	
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																			9825	

Demolition Cost Estimate Tables (Con't)

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	
	Haul Truck Office 09																				
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	14	14	8								FT		1568	CF	612	
	Structure's Vol. Demolished																0.35	20	CY		
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													20	CY	177	
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			789	
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	14	14	0.33								FT		2	CY	39	
	Concrete's Vol. Demolished																1.3	3	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY														3	CY	4
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY														3	CY	11
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY														3	CY	33
	Subtotal																			87	
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																			876	

Demolition Cost Estimate Tables (Con't)

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
	Haul Truck Fuel Containment 10																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	14	33	0.5								FT		9	CY	175
	Concrete's Vol. Demolished																1.3	12	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													12	CY	16
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip	31 23 23.20 1014	3.54	/CY													12	CY	42
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													12	CY	133
	Subtotal																			366
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	94	3	1								FT		10	CY	194
	Concrete's Vol. Demolished																1.3	13	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													13	CY	17
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip	31 23 23.20 1014	3.54	/CY													13	CY	46
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													13	CY	144
	Subtotal																			401
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			767

Demolition Cost Estimate Tables (Con't)

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
	Explosives Magazine Two 11																			
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.3 /CF		14	14	8								2 FT		3136	CF	941
	Structure's Vol. Demolished																0.35	41	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	5.07 /CY														41	CY	208
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			1149
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1149

Demolition Cost Estimate Tables (Con't)

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
	Culverts12																			
	Undisturbed Drain (3)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	725	4	8								FT		859	CY	1546
	North Ramp & Ditch (4)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	28	2	4								FT		8	CY	14
	Ball Field Road & South Fork (14)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	28	6	12								FT		75	CY	135
	So. Load Track & Ditch (2)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	110	3	6								FT		73	CY	131
	Right fork Undisturbed Drain (24)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	330	2	4								FT		98	CY	176
	Left Fork Undisturbed Drain	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	80	2	4								FT		24	CY	43
	Main Undisturbed Drain (25)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	1640	3	6								FT		1093	CY	1967
	Lower Road (55)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	95	2	4								FT		28	CY	50
	Lower Road (56)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	80	2	4								FT		24	CY	43
	Yard Disturbed Drain (62)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	675	2	4								FT		200	CY	360
	Upper Drop Drain (52)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	150	1	2								FT		11	CY	20
	Lower Drop Drain (53)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	120	1	2								FT		9	CY	16
	Upper Truck Entrance (48)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	65	2	4								FT		19	CY	34
	Lower Truck Entrance (47)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	55	2	4								FT		16	CY	29
	Portal Area Undisturbed Drain (26)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	235	6	12								FT		627	CY	1129
	Loadout Undisturbed Drain (60)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	260	2	4								FT		77	CY	139
	D009 Undisturbed Drain (36)	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	250	4	8								FT		296	CY	533
	Upper Ramp to Water Tank	Excavation Bulk Bank 2 CY (322BL)	31 23 16 42 0260	1.80	/CY	22	2	4								FT		7	CY	13
	Total																			6378

Demolition Cost Estimate Tables (Con't)

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
	Power Lines 13																			
	Structure's Demolition Cost	Powerpole	02 41 13.80 0100	320	EA										40	EA		40	EA	12800
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY						14					CY		14	CY	124
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			12924
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			12924

Demolition Cost Estimate Tables (Con't)

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	
	Water Tank A 14																				
	Structure's Demolition Cost																				
	Structure's Vol. Demolished																				
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel																				
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																				
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY			0.5	24							FT		8	CY	155	
	Concrete's Vol. Demolished																	1.3	10	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY														10	CY	13
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY														10	CY	35
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY														10	CY	111
	Subtotal																				314
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																				314

Demolition Cost Estimate Tables (Con't)

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	
	Bath House A 15																				
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	83	150	19								FT		236550	CF	92255	
	Structure's Vol. Demolished																0.35	3066	CY		
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													3066	CY	27195	
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			119450	
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	83	150	0.33								FT		152	CY	2953	
	Concrete's Vol. Demolished																1.3	198	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY														198	CY	263
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY														198	CY	701
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY														198	CY	2198
	Subtotal																			6115	
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																			125565	

Demolition Cost Estimate Tables (Con't)

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
	Bath House Shed 16																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	16	18	10								FT		2880	CF	1037
	Structure's Vol. Demolished																0.35	37	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	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 Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			1037
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	16	18	0.5								FT		5	CY	97
	Concrete's Vol. Demolished																1.3	7	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													7	CY	9
	Transportation Cost	12 CY Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													7	CY	25
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													7	CY	78
	Subtotal																			209
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1246

Demolition Cost Estimate Tables (Con't)

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
	Rock Dust Bin 17																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	9	14	55								FT		6930	CF	2495
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			2495
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	1.5	1.5	3							4 FT			1	CY	19
	Concrete's Vol. Demolished																1.3	1.3	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													1.3	CY	2
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													1.3	CY	5
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													1.3	CY	14
	Subtotal																			40
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			2535

Demolition Cost Estimate Tables (Con't)

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	
	King 4 Steam Cleaner Bld 18																				
	Structure's Demolition Cost																				
	Structure's Vol. Demolished																				
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel																				
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																				
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	22	50	0.33								FT		13	CY	253	
	Concrete's Vol. Demolished																1.3				
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY														17	CY	23
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY														17	CY	60
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY														17	CY	189
	Subtotal																				525
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																				525

Demolition Cost Estimate Tables (Con't)

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Main Substation 19																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	20	45	0.33								FT		11	CY	214
	Concrete's Vol. Demolished																1.3	14	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													14	CY	19
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													14	CY	50
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													14	CY	155
	Subtotal																			438
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			438

Demolition Cost Estimate Tables (Con't)

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	
	Secondary Substation 20																				
	Structure's Demolition Cost																				
	Structure's Vol. Demolished																				
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel																				
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																				
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	10	10	0.33								FT		1	CY	19	
	Concrete's Vol. Demolished																	1.3	1	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY														1	CY	1
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. trip	31 23 23.20 1014	3.54	/CY														1	CY	4
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY														1	CY	11
	Subtotal																				35
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																				35

Demolition Cost Estimate Tables (Con't)

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
	Switch Bld Lower 21																			
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	17.5	18	10								FT		3150	CF	1229
	Structure's Vol. Demolished																0.35	41	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													41	CY	364
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			1593
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	17.5	18	0.33								FT		4	CY	78
	Concrete's Vol. Demolished																1.3	5	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													5	CY	7
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													5	CY	18
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													5	CY	56
	Subtotal																			159
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1752

Demolition Cost Estimate Tables (Con't)

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	
	Switch Buildings Upper 22																				
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	12	17	12								FT		2448	CF	955	
	Structure's Vol. Demolished																0.35	32	CY		
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													32	CY	284	
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																				1239
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	12	17	0.33								FT		2	CY	39	
	Concrete's Vol. Demolished																1.3	3	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													3	CY	4	
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													3	CY	11	
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													3	CY	33	
	Subtotal																				87
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																				1326

Demolition Cost Estimate Tables (Con't)

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	
	Fan Drive Bld 23																				
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.27	/CF	14.5	17	14								FT		3451	CF	932	
	Structure's Vol. Demolished																				
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel																				
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			932	
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	14.5	17	0.33								FT			3	CY	41
	Concrete's Vol. Demolished																1.3		4	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY														4	CY	4
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	2.95	/CY														4	CY	12
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY														4	CY	35
	Subtotal																				92
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																				1024

Demolition Cost Estimate Tables (Con't)

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	
	King 5 Fan 24																				
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	12	12	11								FT		1584	CF	618	
	Structure's Vol. Demolished																0.35	21	CY		
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													21	CY	186	
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																				804
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	12	12	0.33								FT		2	CY	39	
	Concrete's Vol. Demolished																1.3	3	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY														3	CY	4
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY														3	CY	11
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY														3	CY	33
	Subtotal																				87
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																				891

Demolition Cost Estimate Tables (Con't)

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
	King 5 Steam Cleaner 25																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	12	26	0.33								FT		4	CY	78
	Concrete's Vol. Demolished																1.3	5	CY	7
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													5	CY	7
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													5	CY	18
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													5	CY	56
	Subtotal																			159
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			159

Demolition Cost Estimate Tables (Con't)

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
	King 5 Shop 26																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF		22	40	9							FT		7920	CF	2851
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			2851
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY		22	40	0.33							FT		11	CY	214
	Concrete's Vol. Demolished																1.3	14	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													14	CY	19
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													14	CY	50
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													14	CY	155
	Subtotal																			438
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			3289

Demolition Cost Estimate Tables (Con't)

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
	King 5 Substation 27																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	15	25	25								FT		9375	CF	3375
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			3375
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	15	15	0.33								FT		3	CY	58
	Concrete's Vol. Demolished																1.3	4	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													4	CY	5
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													4	CY	14
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													4	CY	44
	Subtotal																			121
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	15	15	12								FT		100	CY	1943
	Concrete's Vol. Demolished																1.3	130	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													130	CY	173
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													130	CY	460
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													130	CY	1443
	Subtotal																			4019
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			7515

Demolition Cost Estimate Tables (Con't)

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
	Conveyor Control Bld 28																			
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	14	17	9								FT		2142	CF	835
	Structure's Vol. Demolished																0.35	28	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													28	CY	248
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			1083
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	14	17	0.33								FT		3	CY	58
	Concrete's Vol. Demolished																1.3	4	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													4	CY	5
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													4	CY	14
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													4	CY	44
	Subtotal																			121
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	12.5	16.5	0.5								FT		4	CY	78
	Concrete's Vol. Demolished																1.3	5	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													5	CY	7
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													5	CY	18
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													5	CY	56
	Subtotal																			159
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	5	15	0.5								FT		1	CY	19
	Concrete's Vol. Demolished																1.3	1	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													1	CY	1
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													1	CY	4
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													1	CY	11
	Subtotal																			35
	Total																			1398

Demolition Cost Estimate Tables (Con't)

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
	Rail into Mine 29																			
	Structure's Demolition Cost	Rail Road Removal	02 41 13.33 3500	13.45	/LF	350										FT		350	L.F.	4708
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			4708
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			4708

Demolition Cost Estimate Tables (Con't)

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	
	Stacking Conveyor 30																				
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.27	/CF	7.5	175	9								FT		11813	CF	3190	
	Structure's Vol. Demolished																				
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel																				
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			3190	
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	23	23	112								FT		2194	CY	30168	
	Concrete's Vol. Demolished																1.3				
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY													2852	CY	2709	
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	2.95	/CY													2852	CY	8413	
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY													2852	CY	24670	
	Subtotal																			65960	
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	25	28	1								FT		26	CY	358	
	Concrete's Vol. Demolished																1.3	34	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY														34	CY	32
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	2.95	/CY														34	CY	100
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY														34	CY	294
	Subtotal																			784	
	Concrete Demolition																				
	Demolition Cost																				
	Concrete's Vol. Demolished																				
	Loading Cost																				
	Transportation Cost																				
	Disposal Costs																				
	Subtotal																				
	Total																			69934	

Demolition Cost Estimate Tables (Con't)

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
	Stockpile Reclaim Facility 31																			
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF	10	16	2								FT		320	CF	125
	Structure's Vol. Demolished																0.35	4	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													4	CY	35
	Subtotal																			160
	Structure's Demolition Cost	City Services	City Service Price	8.87	/CY	7.5	166	9								FT		415	CY	3681
	Structure's Vol. Demolished																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			3681
	Structure's Demolition Cost	City Services	City Service Price	8.87	/CY	14	17	9								FT		79	CY	701
	Structure's Vol. Demolished																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			701
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	14	17	0.33								FT		3	CY	58
	Concrete's Vol. Demolished																1.3	4	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													4	CY	5
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													4	CY	14
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													4	CY	44
	Subtotal																			121
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Hoe Ram	A-Core Quote	19.43	/CY	8	16	9								FT		43	CY	835
	Concrete's Vol. Demolished																1.3	56	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													56	CY	74
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													56	CY	198
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													56	CY	622
	Subtotal																			1729
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Hoe Ram	A-Core Quote	19.43	/CY	14	17	9								FT		79	CY	1535
	Concrete's Vol. Demolished																1.3	103	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													103	CY	137
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23.20 1014	3.54	/CY													103	CY	365
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													103	CY	1143
	Subtotal																			3180
	Total																			9572

Demolition Cost Estimate Tables (Con't)

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	
	Galley 32																				
	Structure's Demolition Cost	Concrete Bld. Large	02 41 16 13 0050	0.39	/CF	27.5	100	12								FT		33000	CF	12870	
	Structure's Vol. Demolished																0.35	428	CY		
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel	City Services	City Service Price	5.07	/CY													428	CY	2170	
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			15040	
	Equipment 's Disposal Cost																				
	Dismantling Cost																				
	Equipment 's Vol. Demolished																				
	Loading Costs																				
	Transport Costs																				
	Disposal Costs																				
	Subtotal																				
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	12	126	1								FT		56	CY	770	
	Concrete's Vol. Demolished																1.3	73	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY														73	CY	69
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd.	31 23 23.20 1014	2.95	/CY														73	CY	215
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY														73	CY	631
	Subtotal																			1685	
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	20	126	1.17								FT		109	CY	1499	
	Concrete's Vol. Demolished																1.3	142	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY														142	CY	135
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi.	31 23 23.20 1014	2.95	/CY														142	CY	419
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY														142	CY	1228
	Subtotal																			3281	
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Hoe Ram	Nielson Quote	36	/CY	14	17	9								FT		79	CY	2844	
	Concrete's Vol. Demolished																1.3	103	CY		
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY														103	CY	98
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd.	31 23 23.20 1014	2.95	/CY														103	CY	304
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY														103	CY	891
	Subtotal																			4137	
	Total																			24143	

Demolition Cost Estimate Tables (Con't)

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
	Screen Crusher Silo Facility 33																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	4	16	0.5								FT		1	CY	19
	Concrete's Vol. Demolished																1.3	1	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													1	CY	1
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													1	CY	4
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													1	CY	11
	Subtotal																			35
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	8	12	0.5								FT		2	CY	39
	Concrete's Vol. Demolished																1.3	3	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													3	CY	4
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													3	CY	11
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													3	CY	33
	Subtotal																			87
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	22	22	1								FT		18	CY	350
	Concrete's Vol. Demolished																1.3	23	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													23	CY	31
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													23	CY	81
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													23	CY	255
	Subtotal																			717
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	4	8	0.5								FT		1	CY	19
	Concrete's Vol. Demolished																1.3	1	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													1	CY	1
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													1	CY	4
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													1	CY	11
	Subtotal																			35
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	22	22	1								FT		18	CY	350
	Concrete's Vol. Demolished																1.3	23	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													23	CY	31
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													23	CY	81
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													23	CY	255
	Subtotal																			717
	Total																			1591

Demolition Cost Estimate Tables (Con't)

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
	Removed During Backfilling 34																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.27	/CF						15687					FT		15687	CF	4235
	Structure's Vol. Demolished																0.35	203	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	5.07	/CY													203	CY	1029
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			5264
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			5264

Demolition Cost Estimate Tables (Con't)

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
	Power Lines 35																			
	Structure's Demolition Cost	Powerpole	02 41 13.80 0100	320	EA										50	EA		50	EA	16000
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			16000
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			16000

Demolition Cost Estimate Tables (Con't)

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
	Miscellaneous Equipment 36																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF						13500					FT		13500	CF	4860
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			4860
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF						500					FT		500	CF	180
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			180
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			5040

Demolition Cost Estimate Tables (Con't)

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
	Water Tank B 37																			
	Structure's Demolition Cost	Mixed Materials Large Building	02 41 16.13 0100	0.39	/CF			14	20							FT		4398	CF	1715
	Structure's Vol. Demolished																0.35	57	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													57	CY	506
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			2221
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY			0.5	20							FT		6	CY	117
	Concrete's Vol. Demolished																1.3	8	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													8	CY	11
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													8	CY	28
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													8	CY	89
	Subtotal																			245
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			2466

Demolition Cost Estimate Tables (Con't)

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
	Bath House B 38																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	40	160	18.5								FT		118400	CF	42624
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			42624
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	40	107	0.33								FT		52	CY	1010
	Concrete's Vol. Demolished																1.3	68	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													68	CY	90
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													68	CY	241
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													68	CY	755
	Subtotal																			2096
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			44720

Demolition Cost Estimate Tables (Con't)

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
	Storage Shed 39																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	31	31	12								FT		11532	CF	4152
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			4152
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	31	31	0.33								FT		12	CY	233
	Concrete's Vol. Demolished																1.3	16	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													16	CY	21
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													16	CY	57
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													16	CY	178
	Subtotal																			489
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			4641

Demolition Cost Estimate Tables (Con't)

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
	Upper Retaining Wall 40																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	Nelson Quote	13.75	/CY	38	1	10								FT		14	CY	193
	Concrete's Vol. Demolished																1.3	18	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY													18	CY	17
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	2.95	/CY													18	CY	53
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY													18	CY	156
	Subtotal																			419
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			419

Demolition Cost Estimate Tables (Con't)

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
	Shop 41																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	60	62	14								FT		52080	CF	18749
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			18749
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	75	62	0.33								FT		57	CY	1108
	Concrete's Vol. Demolished																1.3	74	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													74	CY	98
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													74	CY	262
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													74	CY	821
	Subtotal																			2289
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			21038

Demolition Cost Estimate Tables (Con't)

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
	Fan 42																			
	Structure's Demolition Cost	Concrete Bld. Large	02 41 16 13 0050	0.51	/CF	60	62	14								FT		52080	CF	26561
	Structure's Vol. Demolished																0.35	675	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													675	CY	5987
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			32548
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	10	10	0.33								FT		1	CY	19
	Concrete's Vol. Demolished																1.3	1	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													1	CY	1
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													1	CY	4
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													1	CY	11
	Subtotal																			35
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	30	32	0.33								FT		12	CY	233
	Concrete's Vol. Demolished																1.3	16	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													16	CY	21
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													16	CY	57
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													16	CY	178
	Subtotal																			489
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			33072

Demolition Cost Estimate Tables (Con't)

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
	Pump Station 43																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	64	10	0.33								FT		8	CY	155
	Concrete's Vol. Demolished																1.3	10	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													10	CY	13
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													10	CY	35
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													10	CY	111
	Subtotal																			314
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			314

Demolition Cost Estimate Tables (Con't)

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
	Substation Shed 44																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	14	16	10								FT		2240	CF	806
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			806
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	A-Core Quote	19.43	/CY	14	16	0.33								FT		3	CY	58
	Concrete's Vol. Demolished																1.3	4	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													4	CY	5
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													4	CY	14
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CF													4	CY	44
	Subtotal																			121
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			927

Demolition Cost Estimate Tables (Con't)

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
	Substation 45																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	12	18	25								FT		5400	CF	1944
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			1944
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	12	18	0.33								FT		3	CY	58
	Concrete's Vol. Demolished																1.3	4	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													4	CY	5
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													4	CY	14
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													4	CY	44
	Subtotal																			121
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			2065

Demolition Cost Estimate Tables (Con't)

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
	Overland Conveyor Shed 46																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Hoe Ram	Nielson Quote	36	/CY	4.5	6.5	3							17	FT		55	CY	1980
	Concrete's Vol. Demolished																1.3	72	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY													72	CY	68
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	2.95	/CY													72	CY	212
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY													72	CY	623
	Subtotal																			2883
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Hoe Ram	Nielson Quote	36	/CY	5	20	3								FT		11	CY	396
	Concrete's Vol. Demolished																1.3	14	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY													14	CY	13
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	2.95	/CY													14	CY	41
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY													14	CY	121
	Subtotal																			571
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Headache Ball	Nielson Quote	13.75	/CY	30	40	0.33								FT		15	CY	206
	Concrete's Vol. Demolished																1.3	20	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	0.95	/CY													20	CY	19
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	2.95	/CY													20	CY	59
	Disposal Costs	Disposal on site	02 41 16.17 4200	8.65	/CY													20	CY	173
	Subtotal																			457
	Total																			3911

Demolition Cost Estimate Tables (Con't)

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
	Stacking Conveyor 47																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	10	275	10								FT		27500	CF	9900
	Structure's Vol. Demolished																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			9900
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	0.5	5	20								4 FT		200	CF	72
	Structure's Vol. Demolished																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			9972
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	1.5	24	70								FT		2520	CF	907
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			907
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Hoe Ram	A-Core Quote	19.43	/CY				3	3						8 FT		6	CY	117
	Concrete's Vol. Demolished																1.3	8	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													8	CY	11
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													8	CY	28
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													8	CY	89
	Subtotal																			245
	Concrete Demolition																			
	Demolition Cost	Concrete Demolition Hoe Ram	A-Core Quote	19.43	/CY	3	24	3								FT		8	CY	155
	Concrete's Vol. Demolished																1.3	10	CY	
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY													10	CY	13
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY													10	CY	35
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY													10	CY	111
	Subtotal																			314
	Total																			21338

Demolition Cost Estimate Tables (Con't)

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	
	Stockpile Reclaim Conveyor 48																				
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	8	110	8								FT		7040	CF	2534	
	Structure's Vol. Demolished																				
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			2534	
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	0.67	8	15								FT		80	CF	29	
	Structure's Vol. Demolished																				
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			29	
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.36	/CF	55	3	15								FT		2475	CF	891	
	Structure's Vol. Demolished																				
	Rubble's Weight (exclude steel)																				
	Truck's Capacity																				
	Steel's Weight																				
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Steel Truck																				
	Transportation Cost Steel Truck Drive																				
	Disposal Cost Steel																				
	Subtotal																			891	
	Structure's Demolition Cost	Concrete Bld. Large	02 41 16 13 0050	0.51	/CF	12	42	12								FT		6048	CF	3084	
	Structure's Vol. Demolished																				
	Rubble's Weight (exclude steel)																0.35	78	CY		
	Truck's Capacity																				
	Haulage																				
	Transportation Cost Non Steel Truck																				
	Transportation Cost Non Steel Drive																				
	Disposal Cost Non Steel	City Services	City Service Price	8.87	/CY													78	CY	692	
	Subtotal																			3776	
	Concrete Demolition																				
	Demolition Cost	Concrete Demolition Headache Ball	A-Core Quote	19.43	/CY	1.5	10	5								FT		3	CY	58	
	Concrete's Vol. Demolished																				
	Loading Cost	Front end loader 3 CY	31 23 16.42 1601	1.33	/CY														4	CY	5
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rd. trip	31 23 23.20 1014	3.54	/CY														4	CY	14
	Disposal Costs	Disposal on site	02 41 16.17 4200	11.10	/CY														4	CY	44
	Subtotal																			121	
	Total																			7351	

Demolition Cost Estimate Tables (Con't)

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
	North Fork Pipeline 51																			
	Structure's Demolition Cost	Concrete Pipe 12"	02 41 13 38 0480	5.31	/LF	1500										FT		1500	FT	7965
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			7965
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			7965

Earthwork Cost Calculation Tables

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 and Grade South Fork 001															19877
Topsoil South Fork 003															7763
Stream South Fork 004															13568
Backfill Middle Fork 005															34847
Timber Yard Middle Fork 006															3412
Topsoil Middle Fork 008															4761
Backfill Prep Plant 009															139135
Topsoil Prep Plant 011															149599
Topsoil Borrow Area 012															0
Support 013															124285
Middle Fork Stream 014															37837
Total															535084

Earthwork Cost Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 and Grade South Fork 001															
Remove Contaminated Material															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	5147	CY	2322	cy/hr	2.2	HR	1384
Remove and Stockpile Topsoil 1.5' Deep from Areas A & B															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	5506	CY	2322	cy/hr	2.4	HR	1510
Cut and Fill Site															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	42300	cy	1569	cy/hr	27	HR	16983
Subtotal															19877

Earthwork Cost Calculations Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 South Fork 003															
Mine Site Only															
Grade															
C. Dozer, 200 HP (D-6R) 01 54 33.20 4260	11800	63.16	0.1	77.55	220.8	1	221	\$/HR	6712	CY	415	cy/hr	16.2	HR	3580
Area RA-17 and RA-19															
Load Topsoil on Dump Truck															
F. Front End Loader (988G) 01 54 33.20 4810	15800	91.17	0.1	76.72	275.8	1	276	\$/HR	1206	CY	340	cy/hr	3.5	HR	966
Haul Topsoil to South Fork Pad															
G. Truck (769D) 01 54 33.20 5600	14000	67.1	0.1	68.50	229.8	4	919	\$/HR	1206	CY	340	cy/hr	3.5	HR	3217
Subtotal															7763

Earthwork Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Stream South Fork 004															
Place Rip Rap															
Excavator 2 1/2 CY Cap (330C)	11700	82.64	0.1	76.72	240.7	1	241	\$/HR	373	sy	53	sy/day	56.3	HR	13568
Subtotal															13568

Earthwork Cost Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 Middle Fork 005															
Remove Contaminated Material (6" deep)															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	7583	CY	2322	cy/hr	3.3	HR	2076
Remove and Stockpile Topsoil up to 1.5 feet deep from Areas A, B and C															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	7229	CY	2322	cy/hr	3.1	HR	1950
Cut and Fill Site															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	74115	CY	1569	cy/hr	47.2	HR	29689
Additional cut and fill wash material volume															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	2800	CY	1569	cy/hr	1.8	HR	1132
Subtotal															34847

Earthwork Cost Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Timber Yard Middle Fork 006															
Remove And Stockpile Topsoil (6" deep)															
B. Dozer, 400 HP (D-9R) 01 54 33.20 4360	21200	106.74	0.1	77.55	327.5	1	328	\$/HR	2420	CY	747	cy/hr	3.2	HR	1050
RA-25															
Cut and Fill Sites															
B. Dozer, 400 HP (D-9R) 01 54 33.20 4360	21200	106.74	0.1	77.55	327.5	1	328	\$/HR	3000	CY	747	cy/hr	4	HR	1312
Replace Topsoil															
B. Dozer, 400 HP (D-9R) 01 54 33.20 4360	21200	106.74	0.1	77.55	327.5	1	328	\$/HR	2420	CY	747	cy/hr	3.2	HR	1050
Subtotal															3412

Earthwork cost Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 Middle Fork 008															
Grade															
C. Dozer, 200 HP (D-6R) 01 54 33.20 4260	11800	63.16	0.1	77.55	220.8	1	221	\$/HR	7583	cy	415	ac/hr	18.3	HR	4044
Load Topsoil on Dump Truck															
F. Front End Loader (988G) 01 54 33.20 4810	15800	91.17	0.1	76.72	275.8	1	276	\$/HR	354	CY			0.6	HR	166
Haul Topsoil to Middle Fork Pad															
G. Truck (769D) 01 54 33.20 5600	14000	67.1	0.1	68.5	229.8	4	919	\$/HR	354	CY	552	cy/hr	0.6	HR	551
Subtotal															4761

Earthwork cost Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 Prep Plant 009															
Cut and fill Sites															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629 \$/HR		513648	cy	2322	cy/hr	221.2	hr	139135
Sediment Pond Regrading															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629 \$/HR		0	cy	2322	cy/hr	0	hr	0
Subtotal															139135

Earthwork Cost Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 Prep Plant 011															
Waste Removal Nonrefuse Areas															
Cut and Fill Sites															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	28177	cy	2322	cy/hr	12.1	HR	7611
Ripping (nonrefuse areas)															
RA-1-2, RA-1-3, RA-1-4	See Table II-13								8.19	ac					
RA-1-1 (2016 Phase 1 Bond Release)	See Table II-13, Exhibit 2-4A (Pond 007=1.09 acre, DD2=0.27 acre, DD3=0.64 acres)								2.00	ac	4.09	ac			
RA-4 Borrow Area A	See Table II-13								11.59	ac					
RA-8 Warehouse/Equipment Yard	See Table II-13								2.87	ac					
RA-11 Ridge Borrow Area (Non-refuse only)	See Table II-13								0.9	ac					
RA-13 Upper Rail Storage Yard (except borrow Area)	See Table II-13 and Exhibit 2-4A								2.84	ac					
RA-14 Truck Shop Yard	See Table II-13								2.01	ac					
RA-15 Runaway Truck Lane	See Table II-13								1.51	ac					
DD2 and DD3	See Exhibit 2-4A (DD2=0.27 acre, DD3=0.64 acres)								0.94	ac					
Total non-Refuse Acres															
B. Dozer, 400 HP (D-9R) 01 54 33.20 4360	21200	106.74	0.1	77.55	327.5	1	328	\$/HR	31.91	ac	1.56	ac/hr	20	HR	6560
J. Grader/Dozer Ripper/Scarifier (01 54 33.50 0580)	1325	5.87	0.1		14.7	1	15	\$/HR	31.91	ac	1.56	ac/hr	20	HR	300
Topsoil Recovery (borrow area)															
RA-4 Borrow Area A	See Table II-13								11.59	ac					
RA-11 Ridge Borrow Area (Non-refuse only)	See Table II-13								0.9	ac					
RA-13 Upper Rail Storage Yard (borrow area only)	See Exhibit 2-4A								6.3	ac					
RA-7 part Lower Prep Plant Borrow Area	See Exhibit 2-4A								3.72	ac					
Total Borrow Area Acres															
remove and stockpile 12 inch topsoil from borrow area (see page 2-41)									12	in					
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	36316	cy	2322	cy/hr	16	HR	10064
Haul 16 in Topsoil from Borrow Area A to Pond 5A															
RA-3 Slurry Pond 5 Cell 5A	See Table II-13								16	in					
B. Dozer, 400 HP (D-9R) 01 54 33.20 4360	21200	106.74	0.1	77.55	327.5	1	328	\$/HR	11.59	ac	1.56	ac/hr	7.4	HR	2427
J. Grader/Dozer Ripper/Scarifier (01 54 33.50 0580)	1325	5.87	0.1		14.7	1	15	\$/HR	11.59	ac	1.56	ac/hr	7.4	HR	111
D. Scraper, Self-Propelled 22 CY (01 54 33.20 3700)	20900	114.62	0.1	76.72	333.4	4	1334	\$/HR	33,536	cy	1512	cy/hr	22	HR	29348
Haul 16 in Topsoil from Borrow Area at Prep Plant to															
RA-9 Refuse Pile 1 and RA-8 Warehouse/Equip	See Table II-13								20.38	ac					
B. Dozer, 400 HP (D-9R) 01 54 33.20 4360	21200	135.65	0.1	77.55	359.3	1	359	\$/HR	3.72	ac	1.56	ac/hr	2.4	HR	862
J. Grader/Dozer Ripper/Scarifier (01 54 33.50 0580)	1325	5.87	0.1		14.7	1	15	\$/HR	3.72	ac	1.56	ac/hr	2.4	HR	36
D. Scraper, Self-Propelled 22 CY (01 54 33.20 3700)	16500	121.8	0.1	76.72	313.8	4	1255	\$/HR	43,840	cy	2384	cy/hr	18	HR	22590
Haul 16 in from Upper Rail Yard to Pond 1															
RA10, RA11 (refuse) and RA12	See Table II-13								27.69	ac					
B. Dozer, 400 HP (D-9R) 01 54 33.20 4360	21200	135.65	0.1	77.55	359.3	1	359	\$/HR	6.3	ac	1.56	ac/hr	4	HR	1436
J. Grader/Dozer Ripper/Scarifier (01 54 33.50 0580)	1325	5.87	0.1		14.7	1	15	\$/HR	6.3	ac	1.56	ac/hr	4	HR	60
D. Scraper, Self-Propelled 22 CY (01 54 33.20 3700)	16500	121.8	0.1	76.72	313.8	4	1255	\$/HR	59,564	cy	1460	cy/hr	41	HR	51455
Replace topsoil recovered from borrow areas															
A. Dozer, 700 HP (D11 R) 01 54 33.20 4380	47700	230.17	0.1	77.55	628.9	1	629	\$/HR	36,316	cy	2322	cy/hr	16	HR	10064
Spread/Place topsoil to grade stakes (3 passes) (refuse areas)															
RA-3 Slurry Pond 5 Cell 5A	See Table II-13								15.51	ac					
RA-9 Refuse Pile 1	See Table II-13								17.51	ac					
RA-10 Slurry Pond 1	See Table II-13								19.39	ac					
RA-11 Refuse Area	See Table II-13								1.92	ac					
RA-12 RR Track West of Shop	See Table II-13 and Exhibit 2-4A								6.38	ac					
Total Refuse Area Acres															
E. Grader 40,000 lb (14H) 01 54 33.20 1920	11500	51.89	0.1	76.72	205.7	1	206	\$/HR	60.71	ac	5.6	ac/hr	10.8	HR	2225
E. Grader 40,000 lb (14H) 01 54 33.20 1920	11500	51.89	0.1	76.72	205.7	1	206	\$/HR	60.71	ac	5.6	ac/hr	10.8	HR	2225
E. Grader 40,000 lb (14H) 01 54 33.20 1920	11500	51.89	0.1	76.72	205.7	1	206	\$/HR	60.71	ac	5.6	ac/hr	10.8	HR	2225
Subtotal															
															149599

Earthwork Cost Calculation Tables (Con't)

All regrading completed in Borrow Area	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 Borrow Area 012															
Grading															
B. Dozer, 400 HP (D-9R) 01 54 33.20 4360	21200	106.74	0.1	77.55	327.5	1	328	\$/HR	0	cy	1106	CY/HR	0	HR	0
Install Channel Collector in Borrow Area															
C. Dozer, 200 HP (D-6R) 01 54 33.20 4260	10800	61.36	0.1	77.55	212.5	1	213	\$/HR					0	HR	0
24" Riprap									0	CY			15.05	/CY	0
Filter Gravel									0	CY			13.85	/CY	0
Subtotal															0

Earthwork Cost Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage 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 013															
South Fork															
6,000 gal H2O truck (01 54 33.40 6950)	7275.00	71.97	0.10	70.75	195.4	1	195	\$/HR					27	HR	5265
Pickup 4x4 (01 54 33.40 7200)	685.00	9.51	0.10	0.00	14.74	1	15	\$/HR					27	HR	405
Foreman Average, Outside					84.70	1	85	\$/HR					27	HR	2295
Middle Fork															
6,000 gal H2O truck (01 54 33.40 6950)	7275.00	71.97	0.10	70.75	195.4	1	195	\$/HR					80.4	HR	15678
Pickup 4x4 (01 54 33.40 7200)	685.00	9.51	0.10	0.00	14.74	1	15	\$/HR					80.4	HR	1206
Foreman Average, Outside					84.70	1	85	\$/HR					80.4	HR	6834
North Fork (2015 Final Bond Release)															
6,000 gal H2O truck (01 54 33.40 6950)	7275.00	71.97	0.10	70.75	195.4	4	195	\$/HR					0	HR	0
Pickup 4x4 (01 54 33.40 7200)	685.00	9.51	0.10	0.00	14.74	4	15	\$/HR					0	HR	0
Foreman Average, Outside					84.70	4	85	\$/HR					0	HR	0
Prep Plant															
6,000 gal H2O truck (01 54 33.40 6950)	7275.00	71.97	0.10	70.75	195.4	1	195	\$/HR					221.2	HR	43134
Pickup 4x4 (01 54 33.40 7200)	685.00	9.51	0.10	0.00	14.74	1	15	\$/HR					221.2	HR	3318
Foreman Average, Outside					84.70	1	85	\$/HR					221.2	HR	18802
Topsoil															
6,000 gal H2O truck (01 54 33.40 6950)	7275.00	71.97	0.10	70.75	195.4	1	195	\$/HR					92.7	HR	18077
Pickup 4x4 (01 54 33.40 7200)	685.00	9.51	0.10	0.00	14.74	1	15	\$/HR					92.7	HR	1391
Foreman Average, Outside					84.70	1	85	\$/HR					92.7	HR	7880
Subtotal															124285

Earthwork Cost Calculation Tables (Con't)

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Middle Fork Stream 014															
Place Rip Rap															
Excavator 2 1/2 CY Cap (330C)	11700	82.64	0.1	76.72	240.7	1	241	\$/HR	1040	sy	53	sy/day	157	HR	37837
Subtotal															37837

Revegetation Cost Calculation Tables

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	
	South Fork Veg 001																				29725
	Middle Fork Veg 002																				87926
	Prep Plant Veg 004																				188186
	Topsoil Borrow 005																				51504
	Total																				357341

Revegetation Cost Calculation Tables (Con't)

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	
	South Fork Veg 001																				
	Scarify total area to be reclaimed	75 HP Dozer w/scarifiers	32 91 13 23 3100	5.95	/MSF					12.63						AC		550	MSF	3273	
	Apply Fertilizer	Fertilizer Tractor Spread	32 01 90 13 0130	3.43	/MSF					12.63						AC		550	MSF	1887	
	Disc harrow along contour	300 H. P. (D8)	01 54 33 20 4310	1831	/day									1.9		HR		0.2	day	366	
		Eq. Op., Medium Equipment (Eqmd)	Eq. Op. Med.	76.81	/HR									1.9		HR		1.9	HR	146	
	Drill Seeding	Tractor Spreader (equip. & labor) B-66	SRCE		15	/AC				11.58						AC		11.6	AC	174	
		South and Middle Forks	HiawathaVeg003		726	/AC				11.58						AC		11.6	AC	8422	
		#3 SEED MIX																			
	Mulch																				
	2 tons per acre	Hay bale	Reveg007		170	/ton				12.63						AC		25.3	tons	4301	
	Hydroseed steep areas	Hydro Spreader (equip. & labor) B-81	Reveg005		223	/AC				1.05						AC		1.1	AC	245	
		Riparian South and Middle Forks	HiawathaVeg004		385	/AC				1.05						AC		1.1	AC	424	
		#4 SEED MIX																			
	Plant Nursery Grown Trees	Bare root seedlings, 11" to 16" med. soil	32 93 43 10 0140	2.37	Ea										312	EA		312	EA	739	
		Transplants South and Middle Fork	Reveg005		1252	/AC				0.58						AC		0.6	AC	751	
		ASSUME MIX #3																			
	Plant Nursery Grown Shrubs	Bare root seedlings, 11" to 16" med. soil	32 93 43 10 0140	2.37	Ea										1272	EA		1272	EA	3015	
		Transplants Riparian South and Middle Fork	HiawathaVeg006		74	/AC				0.48						AC		0.5	AC	37	
		ASSUME MIX #4																			
	Subtotal																			23780	
	Reveg Assume 25% reseeding																			5945	
	Subtotal																			5945	
	Total																			29725	

#3 TREES & SHRUBS	DENSITY/ACRE	538	RA-17	LOADOUT	1.94	#3	1.94	#4	0	#3 TREES	#4 TREES	0	0
#4 TREES & SHRUBS		2650	RA-18	CONVEYOR	1.84		1.84		0			0	0
			RA-19	MINE PAD	6.38		6.38		0	0.58		0	0
			RA-20	WTER TANK	0.6		0.6		0			0	0
			RA-21	SED PONDS	1.87		0.82		1.05			0	0.48
				TOTAL ACREAGE	12.63		11.58		1.05	0.58		0.48	

Revegetation Cost Calculation Tables (Con't)

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
	Prep Plant Veg 004																			
	RA-1 Sed. Ponds/Misc. Areas	See Table II-13 (pg 2-42)	D006 = 5.34 acre, D004 = 1.65acre, D003 = 1.2 acre							8.19							AC			
	RA-1 Sed. Pond D07		D007 = 1.09 acre							1.09										
	Ditches DD2 and DD3	See Exhibit 2-4A	DD2 = 0.27 acre, DD3 = 0.64 acre							0.91										
	RA-1 Misc. Areas	See Exhibit 2-4A	W of Slry Pnd 5 = 2.1, S of Slry Pnd 4 = 1.83, E of Track = 1.9, Rd to Pnd D003 = 1							6.83							AC			
	RA-1 Misc. Areas	See Exhibit 2-4A	N of Sed Pnd 4 = 2.17, btwn MF/SF Rd = 0.98, btwn MF/NF road = 3.15							6.3							AC			
	RA-3 Slurry Ponda 5 Cell 5A	See Table II-13 (pg 2-42)								15.51							AC			
	RA-8 Warehouse/Equipment Yard	See Table II-13 (pg 2-42)								2.87							AC			
	RA-9 Refuse Pile 1	See Table II-13 (pg 2-42)								17.51							AC			
	RA-10 Slurry Pond 1	See Table II-13 (pg 2-42)								19.39							AC			
	RA-12 RR Track West of Shop	See Table II-13 (pg 2-42)								6.38							AC			
	RA-13 Upper Rail Storage Yard	See Table II-13 (pg 2-42) and Exhibit 2-4A	9.14 acres - Borrow Area* (6.3 acres) (*see borrow area worksheet)							2.84							AC			
	RA-14 Truck Shop yard	See Table II-13 (pg 2-42)								2.01							AC			
	RA-15 Runaway Truck Ramp	See Table II-13 (pg 2-42)								1.51							AC			
	Total Acreage									91.34							AC			
	Scarify total area to be reclaimed	75 HP Dozerw/scarifiers	32 91 13 23 3100	5.95	/MSF					91.34							AC	3979	MSF	23675
	Apply Fertilizer	Fertilizer Tractor Spread	32 01 90 13 0130	3.43	/MSF					91.34							AC	3979	MSF	13648
	Disc harrow along contour	300 H. P. (D8)	01 54 33 20 4310	1831	/day									16			HR	1.9	Day	3479
		Eq. Op., Medium Equipment (Eqmd)	Eq. Op. Med.	76.81	/HR									16			HR	1.9	Day	146
	Drill Seeding	Tractor Spreader (equip. & labor) B-66	SRCE	15	/AC					84.34							AC	84.34	AC	1265
		Ponds, Refuse Area	HiawathaVeg002	855	/AC					84.34							AC	84.34	AC	72111
	Mulch																			
	2 tons per acre	Hay bale	Reveg007	170	/ton					84.34							AC	168.7	tons	28679
	Hydroseed steep areas	Hydro Spreader (equip. & labor) B-81	Reveg005	223	/AC					7							AC	7	AC	1561
		Ponds, Refuse Area	HiawathaVeg002	855	/AC					7							AC	7	AC	5985
	Subtotal																			150549
																				37637
	Reveg Assume 25% reseeding																			
	Subtotal																			37637
	Total																			188186

Revegetation Cost Calculation Tables (Con't)

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
	Topsoil Borrow 005																			
	RA-4 Borrow Area A	See Table II-13 (pg 2-42)								11.6						AC				
	RA-11 Ridge Borrow Area	See Table II-13 (pg 2-42)	(Refuse and non-refuse areas)							2.82						AC				
	Lower Prep Plant Borrow Area	See Exhibit 2-4A								3.72						AC				
	Upper Rail Yard Borrow Area	See Exhibit 2-4A and Table II-13								6.3						AC				
	Total Borrow Area Acres									24.4						AC				
	Scarify total area to be reclaimed	75 HP Dozerw/scarifiers	32 91 13 23 3100	5.95	/MSF					24.4						AC		1064	MSF	6331
	Apply Fertilizer	Fertilizer Tractor Spread	32 01 90 13 0130	3.43	/MSF					24.4						AC		1064	MSF	3650
	Disc harrow along contour	300 H. P. (D8)	01 54 33 20 4310	1831	/day									5.2		HR		0.7	Day	1282
		Eq. Op., Medium Equipment (Eqmd)	Eq. Op. Med.	76.81	/HR									5.2		HR		5.2	HR	399
	Drill Seeding	Tractor Spreader (equip. & labor) B-66	SRCE	15	/AC					24.4						AC		24.4	AC	366
		Ponds, Refuse Area	HiawathaVeg002	855	/AC					24.4						AC		24.4	AC	20862
	Mulch																			
	2 tons per acre	Hay bale	Reveg007	170	/ton					24.4						AC		48.9	tons	8313
	Subtotal																			41203
	Reveg Assume 25% reseeding																			10301
	Subtotal																			10301
	Total																			51504