

"Safety as a Value"

Telephone: 970.385.4528 Facsimile: 970.385.4638 GCC Energy, LLC 6473 County Road 120 Hesperus, CO 81326

August 14, 2017

State of Colorado Division of Reclamation, Mining & Safety 1313 Sherman St., Room 215 Denver, CO 80203

Attn: Rob Zuber, Environmental Protection Specialist II

Re: GCC Energy, LLC King II Mine CDRMS Permit # C-81-035 Permit Renewal 07 (RN-07) Adequacy Review #2 Response

Dear Mr. Zuber:

This submittal is in response to your letter of August 14, 2017, "King Coal Mine, Second Adequacy Letter for RN-07".

The Division's adequacy items are reprinted as received, but printed in *italics*. GCC Energy responses to each adequacy item are shown in bold type. A replacement page schedule is attached for your convenience.

CDRMS 8/14/17: Additional items that need to be addressed that have arisen since the previous adequacy letter:

• Please update legal descriptions of the permit area to include areas added with TR-24.

Please find attached King I 2.03.6 pages 1 thru 5. These pages have been updated to clarify which coal leases have been relinquished. Also, metes-and-bounds descriptions are included of the areas added to the permit boundary due to angle-of-draw calculations.

• Please resubmit PAP pages to include edits from recently approved revisions, such as MR-46.

Please find attached pages 2.05.4 pages 6 & 8 which were approved with MR-46. Page footers have been updated to read RN-07 AR#2.

• Please update the Reclamation Cost Estimate appendix to include the most recent estimate performed by the Division (to be sent in separate email).

Please find attached replacement King II "Appendix 12(1), Reclamation Bond Estimate prepared by Colorado Division of Reclamation, Mining & Safety". Please delete Appendix 12(2) in its entirety. Also included is updated King II Table of Contents page iii which changes the obsolete "Appendix 12(2)" designation under Appendix 12 to "Appendix 12(1)".

Adequacy Item #41

KII Section 2.05.3, Page 5

CDRMS 8/14/17: The approved PAP text states that discharges from the SAE by the King II entrance will be sampled. Please explain GCC's rationale for altering this commitment.

<u>GCCE August 14, 2017:</u> Original text concerning SAE sampling has been restored to 2.05.3 page 5.

Adequacy Item #42

<u>KII Section 2.05.3</u>, Page 6 CDRMS 8/14/17: Please add a statement that prior to water being pumped from the pond to the native channel, the water will be sampled, and it will not be discharged to the native channel unless it meets effluent limitations.

GCCE August 14, 2017: 2.05.6 page 6 text has been revised as requested.

Adequacy Item #44

<u>KII Section 2.05.3</u>, Page 7 (formerly page 6a) CDRMS 8/14/17: I believe that you misinterpreted my previous intent for editing this page. Please re-write the fourth paragraph as follows:

"A further discussion of topsoil salvage, protection, and stabilization at exploration drill pads (as well as monitoring well pads) is contained in Sections 2.04.6 and 2.04.9."

GCCE August 14, 2017: King II 2.05.3 page 7, paragraph 4, has been revised as requested.

Adequacy Item #61

CDRMS 8/14/17: The King II Ditch Capacity table in <u>Appendix 11</u> still has some values that do not match the as-built details (Map King II-007B, last updated in December 2015). For example, the bottom width of the lower portion of CWD-1A is 1.6 feet in the table but 1.0 feet in the details on the map. Also, there appears to be a discrepancy for the depths for CWD-1C and 1D. Please check all values and explain or revise.

GCCE August 14, 2017:

The Ditch Capacities table from Appendix 11 has been revised to match the surveyed measurements of Map King II-007B and is included herein.

Adequacy Item #65

CDRMS 8/14/17: <u>Map King II-005</u>

It appears that the area where pillars were pulled in Section 36 (and section to north) has lost the hatching on the map indicating this.

<u>GCCE August 14, 2017:</u> The hatch layer of Map King II-005 has been restored.

Adequacy Item #66

CDRMS 8/14/17: The Map King II-010 series

Please explain the purpose of this series of maps. Are they meant to accurately reflect the reclamation plan, including the post-mining topography and channel configuration, or are they supposed to be a guide only? Please provide an explanation, and we can discuss if it is worth updating these maps.

GCCE August 14, 2017:

The Map King II-010 A-C series show the pre-disturbance topography and crosssections of the King II site, with conceptual notations of various features such as roads, highwall bench, buildings, topsoil storage, etc. While many of the features have been somewhat superseded by the as-built features on Maps King II-007, and King II-007 A thru C, it would seem that retaining the original pre-disturbance maps in the PAP would be useful. We only have access to paper and .pdf copies of these maps, so removing the conceptual notations would require white-out and rescanning.

Map King II-010D shows as-built cut and fill quantities of the highwall bench where the conveyor belt portal and return ventilation portals are located.

Please find attached a page replacement schedule which details the various replacement and newly added text pages, appendices, and maps as modified thus far with RN-07.

Please contact Tom Bird at 970.385.4528 x 6503 with questions or comments.

Sincerely, Tom Bird

Manager of Coal Services GCC Energy, LLC

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		King I 2.03.4 page 1, 07/20/2017		
	King 2.03.4 page 2, 11/29/2016	King I 2.03.4 page 2, 07/20/2017		
	King 2.03.4 page 3, 11/10/2016	King I 2.03.4 page 3, 07/11/2017		
	King 2.03.4 page 4, 11/30/2015	King I 2.03.4 page 4, 07/11/2017		
	King I 2.03.6 page 1, 12/07	King I 2.03.6 page 1, 08/14/2017		
	King 2.03.6 page 2, 12/07	King I 2.03.6 page 2, 08/14/2017		
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	King I 2.05.3 page 2, 08/01/2012	King I 2.05.3 page 2, 07/11/2017		
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	King 2.05.3 page 4, 08/01/2012	King I 2.05.3 page 4, 07/11/2017		
	King 2.05.4 page 1, 08/01/2012	King I 2.05.4 page 1, 07/11/2017		
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	King I 2.05.6 page 3, 02/2007	King I 2.05.6 page 3, 07/11/2017		
	King I 2.05.6 page 4, 02/2007	King I 2.05.6 page 4, 07/11/2017		
	King I 2.05.6 page 5, 02/2007	King I 2.05.6 page 5, 07/11/2017		
	King I 2.05.6 page 9,10/13/2016	King I 2.05.6 page 9, 07/11/2017		
	King I 2.05.6 page 10, 10/13/2016	King I 2.05.6 page 10, 07/11/2017		
(ing I Appendicies				
(ing I Maps	King I-002 Surface Ownership 08/23/16	King I-002 Surface Ownership 07/11/17		
	King I-007 Op. Plan and Surface Feat. 08/23/16	King I-007 Op. Plan and Surface Feat. 07/11/17		
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		King II 2.05.6 page 13, 07/11/2017	
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		Appendix 2(5) Add Monitoring Well Permits	
Appendix 8(3) 05/26/15	Appendix 8(3) 07/11/17		
Appendix 11 Culvert-Ditch Capacity Table 04/25/16	Appendix 11 Culvert-Ditch Capacity Table 08/24/17		
Appendix 12(2) CDRMS Recl. Bond Est. 02/11/2015	Appendix 12(1) CDRMS Recl. Bond Est. 07/21/2017		Appendix 12(2)
King II-001 Permit and Adjacent Areas 08/23/2016	King II-001 Permit and Adjacent Areas 07/11/2017		
King II-002 Surface Ownership 08/23/2016	King II-002 Surface Ownership 07/11/2017		
King II-005 Mine Plan 07/27/2016	King II-005 Mine Plan 08/14/2017		
King II-006 Soils, Veg, Land Use 08/23/16	King II-006 Soils, Veg, Land Use 07/11/2017		

King II Appendicies

King II Maps

GCC ENERGY, LLC KING I MINE PERMIT DOCUMENT CDRMS MINING PERMIT C-1981-035



Permit Renewal RN-07

August 14, 2017 (AR#2)

GCC Energy, LLC King I Mine 4424 County Road 120 Hesperus, Co. 81326

2.03.6 - RIGHT OF ENTRY AND OPERATION INFORMATION

The King I Mine is located in portions of Sections 31 and 32; Township 35 N, Range 11 W, N.M.P.M., Section 36; Township 35 N, Range 12 W, N.M.P.M., and Sections 5 and 6; Township 34 N, Range 11 W, N.M.P.M., all in La Plata County, Colorado. The surface of the area to be mined within the Permit Area is owned by Huntington Ranches, LLC, Crawford Ranches, and the Thomas Lee Compton Revocable Trust. All mining activities of the King I Mine lie to the south side of Hay Gulch, approximately 4.5 miles southwest of Hesperus, Colorado, as identified on U.S.G.S. 7.5 Minute Quadrangles for Hesperus and Kline.

None of the leases or legal right to enter is the subject of pending litigation.

LEGAL DESCRIPTION OF ACCESS ROAD

Tract in Sections 29 and 30, T 35 N., R 11 W., N.M.P.M. Beginning at a point on the South line in said Section 29, whence SW corner of said Section 29 bears West, 9.16 feet; Thence N 22 37' W, 551.30 feet, more or less to south right-of-way in Hay Gulch County Road; Thence N 84 23' E, 82.09 feet, to West right-of-way in Wright Coal Mine Road; Thence S 22 37' E, along said line, 560.0 feet to South line of said Section 29; Thence West along said South line 85.04 feet to point of beginning, approximately .92 acres. (Deed of Trust; Microfilm #403958)

This access road connects County Road 120 with permit area. Also included on Microfilm #403958 are two tracts of land which include much of the surface facility area of the King I Mine.

Map King I-001 shows the location of the King I Mine site. The disturbed area is shown on Map King I-007. Maps King I-002 and King I-003 show the surface ownership and mineral ownership respectively of GCC Energy, LLC and surrounding lands.

SOURCE OF LEGAL RIGHT TO ENTER

GCC Energy, LLC holds the following deeds, perpetual easements and coal leases.

 A) Federal Coal Lease #COC-60941 (194.79 acres; includes Upper Menefee seam only). RELINQUISHED IN 2010 Township 34 North, Range 11 West, N.M.P.M.;

Section 6, Lots 1 - 5 (inclusive): NE/4 SW/4, NW/4 SE/4

Surface owner: Huntington Ranches, LLC Date of execution: 10/1/98

Federal Coal Lease #COC-60941 (Modified 12/1/99 to add 160 acres; includes Upper Menefee seam only). RELINQUISHED IN 2010

Township 34 North, Range 11 West, N.M.P.M.; Section 6; E/2 SW/4 SE/4, SW/4 SW/4 SE/4 Section 7; NE/4 NE/4, NE/4 NW/4 NE/4 Section 8; N/2 NW/4

Surface owner: Ron, Norris and Marc Crawford, et al, Thomas L. & Patricia Compton.

Date of execution: 12/1/99

 B) Federal Coal Lease #P-058300 (160 acres; includes all seams). ALL BUT NW/4 NW/4 SECTION 32 RELINQUISHED IN 2010 Township 35 North, Range 11 West, N.M.P.M.; Section 31: SE/4 NE/4 Section 32: SE/4 NW/4, W/2 NW/4

Surface owner: Huntington Ranches, LLC Date of execution: 9/11/41

C) Federal Coal Lease #COC-29125 (180 acres; includes all seams) RELINQUISHED IN 2010 Township 35 North, Range 11 West, N.M.P.M.; Section 31: N/2 NE/4 SE/4 Section 32: SW/4

Surface owner: Huntington Ranches, LLC Date of execution: 11/1/81

Federal Coal Lease #COC-29125 (Modified 7/1/89 to add 60 acres; includes all seams)

RELINQUISHED IN 2010 Township 35 North, Range 11 West, N.M.P.M.; Section 31: S/2 NE/4 SE/4 Section 31: SE/4 SE/4

Surface owner: Huntington Ranches, LLC

Federal Coal Lease #COC-29125 (Modified 10/1/97 to add 100 acres; includes all seams)

RELINQUISHED IN 2010 Township 34 North, Range 11 West, N.M.P.M.; Section 6: W/2 NE/4 NE/4, W/2 SE/4 NE/4, NE/4 SE/4, SE/4 SE/4 Section 5: W/2 SW/4 SW/4, W/2 NW/4 SW/4

Surface Owners: Huntington Ranches, LLC and Ron, Norris and Marc Crawford.

King I Mine

August 14, 2017 (RN-07)

 D) Federal Coal Lease #COC-49465 (193 acres; includes all seams) RELINQUISHED IN 2010 Township 35 North, Range 11 West, N.M.P.M.; Section 31: Lot 4, SW/4 NE/4, SE/4 SW/4, W/2 SE/4

Surface owner: Huntington Ranches, LLC Date of execution: 9/1/90

Federal Coal Lease #COC-49465 (Modified 5/1/98 to add 160 acres; includes all seams)

RELINQUISHED IN 2010 Township 34 North, Range 11 West, N.M.P.M.; Section 6: E/2 NE/4 NE/4, E/2 SE/4 NE/4 Section 5: S/2 SW/4 NW/4, E/2 NW/4 SW/4, E/2 SW/4 SW/4 Surface Owners: Huntington Ranches, LLC and Ron, Norris and Marc Crawford.

E) State of Colorado Lease #CO-3388 (640 acres; includes all seams) Township 35 North, Range 11 West, N.M.P.M.; Section 36: SE/4

Surface Owner: State of Colorado Date of execution: 08/27/04

F) Private Coal Lease: Huntington (160 acres; includes all seams) RELINQUISHED IN 2010 Township 34 North, Range 11 West, N.M.P.M.; Section 6: E/2 NW/4, W/2 NE/4

Surface owner: Huntington Ranches, LLC Date of execution: 4/25/90

G) Private Coal Lease: Four Daughter's Coal Company (320 acres; includes all seams)

RELINQUISHED Township 35 North, Range 11 West, N.M.P.M.; Section 29: SW/4 SE/4, SE/4 SE/4 Section 32: W/2 NE/4, NE/4 NW/4, a tract of land in the NW/4 NW/4 as described in lease, E/2 NE/4 Section 28: SW/4 SW/4

Surface Owner: Huntington Ranches, LLC Date of execution: 1/20/90

 H) Private Coal Lease: Richard Tipotsch, et al (160 acres; includes all seams) RELINQUISHED IN 2010 Township 34 North, Range 11 West, N.M.P.M.; Section 5: E/2 SW/4, W/2 SE/4

Surface Owner: Ron, Norris and Marc Crawford. Date of execution: 10/25/99

I) Federal Coal Lease #COC-62920 (1304.51 acres; includes Upper Menefee seam only)

Township 35 North, Range 11 West, N.M.P.M.; Section 19 - lots 4, 5, E/2 SW/4, and SE/4,

Township 35 North, Range 12 West, N.M.P.M.; Section 24 - lots 1, 2, and SW/4 SE/4 Section 25 - lots 1, 2, W/2 NE/4, and W/2 Section 26 - SE/4 NE/4, E/2 SE/4, SW/4 SE/4 Section 35 - NE/4, N/2 SE/4

Surface Owner: Bureau of Land Management, Ute Mountain Ute Tribe Date of execution: 11/01/02

Technical Revision TR-24 Angle-of-Draw Areas

As part of Technical Revision TR-24, various areas "affected" by angle-of-draw were added to the permit area. These areas are described as follows:

A parcel of land located within Section 32; T35N, R11W, N.M.P.M. being more particularly described as follows: Beginning at the center point of Section 32, thence to the NE Corner of the NW/4 SE/4 Sec. 32, T35N, R11W, N.M.P.M.; thence 42.88' westward along the north edge of NE/4 SE/4; thence S86°38'09"E 226.78 feet; thence W0°58'32"S 937.39 feet; thence S16°21'05"W 682.83 feet; thence S02°18'35"W 231.22 feet; thence West 182.45 feet; thence S0°19'09"W 1019.242 feet; thence West 58.41 feet to the west edge of SW/4 SE/4 Section 32; thence North to the Point of Beginning.

A parcel of land located within Section 5; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at the NW Corner of the NE/4 NW/4 of Section 5; T34N, R11W, N.M.P.M.; thence South 158.14 feet; thence West 713.68 feet; thence North 158.84 feet; thence East to the Point of Beginning. A parcel of land located within Section 5; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at the NW Corner of Section 5; T34N, R11W, N.M.P.M.; thence West 234.90 feet along the North line of Section 5; thence South 1739.31 feet; thence East 939.48 feet; thence South 248.48 feet; thence West to the NW/4 Corner of SW/4 SW/4 NW/4 of Section 5; thence North to the Point of Beginning.

A parcel of land located within Section 5; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at the SW Corner of SE/4 NW/4 Section 5; T34N, R11W, N.M.P.M.; thence North 583.72 feet along the East line of the SE/4 NW/4 Section 5; thence East 235.332 feet; thence South 374.45 feet; thence East 2669.86 feet; thence South to the southern edge of Section 5; thence West to the SW Corner of the SE/4 SE/4 of Section 5; thence North to the NW Corner of the NE/4 SE/4 Section 5; thence West to the Point of Beginning.

King I Mine August 14, 2017 (RN-07) A parcel of land located within Section 8; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at the NW Corner of NE/4 of Section 8; T34N, R11W, N.M.P.M.; thence eastward 1579.40 feet along the north edge of Section 8; thence South 249.86 feet; thence West to the west edge of NW/4 Section 8; thence North the Point of Beginning.

A parcel of land located within Section 8; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at a point on the west edge of Section 8 2146.11 feet north of the SW Corner Section 8; thence E40°25'59"S 65.75 feet; thence E1°42'01"S 1438.79 feet; thence N40°30'46"E 419.91 feet; thence West to the western edge of Section 8; thence South to the Point of Beginning.

A parcel of land located within Section 7; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at a point on the east edge of Section 7 2146.11 feet north of the SE Corner Section 7; thence N49°34'01"W 360.43 feet; thence West 83.15 feet; thence S42°13'58"W 274.82 feet; thence West 73.03 feet; thence N49°34'01"W 311.47 feet; Thence East along the south line of relinquished federal Lease COC-60941 856.59 feet; thence South to the Point of Beginning.

A parcel of land located within Section 7; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at the SE Corner of the NE/4 NW/4 NE/4 of Section 7; thence South 162.19 feet; thence N49°39'52"W 251.93 feet to the south edge of the NE/4 NW/4 NE/4 of Section 7; thence East to the Point of beginning.

A parcel of land located within Section 7; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at the NW Corner of the NE/4 NW/4 NE/4 of Section 7; thence South 266.32 feet; thence N49°39'52"W to the North edge of Section 7; thence East to the Point of Beginning.

A parcel of land located within Section 6; T34N, R11W, N.M.P.M. being more particularly described as follows: Beginning at the NE Corner of the SW/4 SW/4 SE/4 of Section 6; thence West 152.83 feet; thence N40°26'07"E to the west edge of the E/2 SW/4 SE/4 of Section 7; thence South to the Point of Beginning.

GCC ENERGY, LLC KING II MINE PERMIT DOCUMENT CDRMS PERMIT # C-1981-035



Permit Renewal RN-07

August 14, 2017 (AR#2)

GCC Energy, LLC King II Mine 6473 County Road 120 Hesperus, CO 81326

(11) Water Balance Study for the King II Mine, CDS	
Environmental Services LLC 05/08/2014	
(12) GCC King I & II Water Quality Site & Analytical	
Recommendations, Resource Hydrogeologic Services,	
February 5, 2016	
(13) GCCE King I Upgradient Hay Gulch Alluvial	
Monitoring Well Specifications, Resource Hydrogeologic	
Services, April 28, 2016	F
Climatological Data Summaries	5 6
Soil Resource Data and Analysis	O
(1) Field Data Sheet	
(2) Colorado State University Soil, Water and Plant	
Testing Laboratory Analysis	
(3) Soil Horizon Suitability Criteria for Reclamation	7
Baseline Vegetation Report	1
(1) Baseline Vegetation Report, National King Coal, LLC, King II Mine, Hey Culeb, Colorado, August 2005	
King II Mine, Hay Gulch, Colorado, August 2005 Fish and Wildlife Information	8
(1) La Plata County Wildlife: Known or Likely Species	0
Occurrence	
(2) Natural Diversity Information Source Sample Maps	
(3) Colorado Natural Heritage Program Database Survey	
results	
(4) Colorado Div. of Wildlife Density Standard Approval	
(5) Natural Resource Survey, TR-22 Drill Sites, SWCA	
April 11, 2014	
(6) Natural Resource Survey, TR-26 Drill Sites,	
Ecosphere Environmental Services, October, 2016	
USDA Important Farmlands of La Plata County, Colorado	9
Structure Designs	10
(1) Haul Roads; Description and Certifications	
(2) Access Roads; Certification	
Hydrologic Designs	11
(1) "As-Built" Hydrology Analysis, Stoner Engineering,	
June 30, 2015	
(5) Safety Factor Analysis for Sediment Pond,	
Environmental Industrial Services, November, 2009	
(6) "As-Built" Pond Certification, Fleming Engineering,	
September 15, 2009	
Reclamation Bond Estimate	12
(1) Prepared by Colorado Division of Reclamation,	
Mining & Safety	
Insurance: Personal Injury & Property Damage	14

Water contained in the sediment pond will not be discharged into the Hay Gulch Ditch, but allowed to evaporate. The only water to be discharged from the ponds will be from precipitation events approaching or exceeding the ten year, twenty-four hour storm event. The ponds are described in Section 2.05.6 and are designed to manage the precipitation events as required by regulation and in accordance with the requirements of GCC Energy's N.P.D.E.S permit No. CO-G-850001.

PONDS, IMPOUNDMENTS, AND DIVERSIONS

DRAINAGE PLAN

The drainage plan for the King II Mine consists of diversion of uncontaminated water originating upstream of the mine yard, through the yard to the discharge point at the south end of site. Runoff generated on the yard itself will be collected and routed through the sedimentation pond.

Refer to 2.05.6 (Hydrologic Balance) Appendix 10 & 11 and Maps King II-007 A thru G for a detailed description of Mine Surface Drainage and Sediment Pond design and descriptions.

The sediment control system for the King II Mine is comprised of undisturbed area drainage ditches and one sediment pond. Designs for sediment control system structures are included in Appendix 11.

Small Area Exemption #1 is approximately 1.3 acres of the disturbed area which lies below the sediment pond, consisting of the haul road between County Road 120 and the north end of the Sediment Pond. Runoff from this area will tend to collect and drain along the haul road bypassing the sediment pond. Alternate sediment control measures are used in this area. These measures consist of the use of rock check dams, rock filters and gravel surface. This area is too small and too flat to run a SEDCAD demonstration. Therefore, GCC Energy, LLC commits to sampling any discharge from this area for Total Settable Solids. This runoff flows into the area on either side of the haul road.

UNDISTURBED AREA DRAINAGE DITCHES

Two undisturbed area drainage ditches convey undisturbed surface flow around the disturbed area of the mine surface facilities and return the flow to the native surface drainage channel below the mine bench. The ditches encircle the mine disturbance. One ditch conveys surface flow along the west side of the mine facilities to the native channel, while the corresponding ditch drains east and south above the mine portal and down the east side of the mine bench and surface facilities to the native channel. These open earthen channels are sized to contain the precipitation events as required by regulation. The channels are stabilized with a combination of vegetation and riprap (where necessary).

GCC Energy, LLC Section 2.05.3 Page 5

King II Mine

August 14, 2017 (RN-07 AR#2)

SEDIMENT POND

One sediment pond is utilized for the King II Mine. The sediment pond is located at the southeast corner of the mine bench and sized to contain the precipitation events as required by regulation. Surface runoff reaches the sediment pond through a combination of sheet flow, berms, culverts and "V" ditches. Detailed plans, certifications and maps can be found in Appendix 11 and Maps King II-007, King II-007 A-D & King II-007F-G. The pond contains a primary spillway at elevation 7233' and an emergency spillway at elevation 7234'. The spillways are both vertical 24" CMP risers with oil skimmers constructed as shown on Map King II-007F, Detail 1. The spillways are always open. The minimum magnitudes of storm events that will cause the spillways to discharge, subtracting a 60% sediment clean-out level of 1.5 acre feet, are as follows:

Primary Spillway: 4.36 acre feet – 1.5 acre feet = 2.86 acre feet

Emergency Spillway: 5.22 acre feet – 1.5 acre feet = 3.72 acre feet

Faces of pond embankments are stabilized with vegetation. Due to evaporation and infiltration, water is not normally impounded except immediately following storm events or snowmelt. While there is no mechanism in place to suddenly draw down the water level, standing water can be pumped as necessary to the native channel at the south end of the site. Prior to water being pumped from the pond to the native channel, the water will be sampled, and it will not be discharged to the native channel unless it meets effluent limitations.

TOPSOIL

Sufficient suitable topsoil resources exist in the Umbarg soil map unit to provide topsoil replacement depths of six inches. This replacement depth will require stockpiling and ultimate replacement of 20,570 cubic yards of topsoil from the A and B horizons of the Umbarg series. Topsoil was salvaged and stockpiled using truck/shovel or scraper methods. Topsoil was salvaged and stockpiled during construction in piles constructed adjacent to the sediment pond and north of Coal Stack Tube #2. The topsoil pile is stabilized using the seed mix proposed for final reclamation. To further minimize the potential for accidental contamination, a berm was constructed around the perimeter of the toe of the topsoil piles. The berms are of sufficient size (18" to 24" high, 4' to 6' wide) to prevent machinery from intruding on the topsoil stockpile. Stockpile locations can be found on Map King II-007. Epp & Associates surveyors performed topsoil stockpile volume calculations in March, 2015 using pre-disturbance and as-built aerial surveys. Topsoil Stockpile #1 (south) contains 3,267 cubic yards and Topsoil Stockpile #2 (north) contains 27,435 cubic yards for a total of 30,670 cubic yards on site. The current disturbed area is 22.89 acres. To cover 22.89 acres with 6" of topsoil would require 18,465 cubic yards.

TOPSOIL, EXPLORATION CORE DRILLING

Topsoil will be salvaged and will be replaced at all areas of new disturbance caused by exploration core drilling that may damage existing topsoil, such as "cuttings pits", used to collect drill cuttings. Existing topsoil will be removed from these areas and stockpiled in a nearby area where it can be accessed without causing damage to the stockpile location. The topsoil stockpile will be "bermed", tarped, or otherwise protected to help prevent loss of topsoil due to rain and wind events. Once the cuttings pits have been re-filled with sub-soil material, the topsoil will be returned to its original location, spread evenly, and reseeded as detailed in Section 2.05.4 of this document.

Topsoil for exploration core drilling and/or monitoring well drilling and reclamation will be salvaged from the following soil map units; Big Blue Clay Loam, Pulpit Loam, Umbarg Loam, and Witt Loam. Topsoil for mine reclamation will be salvaged from the following soil map units where suitable material for reclamation (greater than 6" is recoverable through normal means) is present; Zau Stony Loam. Due to limitations for use in reclamation, and an overall lack of suitable material, topsoil for reclamation will not be salvaged for reclamation from the following soil map units: Archuleta-Sanchez Stony Complex, Lazear Stony Loam, and Lazear Rock Outcrop Complex,.

A further discussion of topsoil salvage, protection, and stabilization at exploration drill pads (as well as monitoring well pads) is contained in Sections 2.04.6 and 2.04.9.

OVERBURDEN

Approximately 20,500 cubic yards of material was removed from the portal area and used to construct the mine bench and base for all mine surface facilities. Additional overburden was excavated in the construction of the sediment pond. No overburden will be stockpiled as would occur in surface coal mining operations. There will be no overburden disposal sites at the King II mine.

Surface blasting is addressed in Section 2.05.3(6) of this application.

YY) Sediment Pond and Diversion Ditches: The sediment pond is not intended as permanent feature of the mine site, but will remain intact until the site has been successfully reclaimed.

ZZ) Cattle Guard: The cattle guard will either be removed or cut up for scrap or offered to the surface grazing lease holder of the area.

AAA) Portable Offices and Storage Containers: Until the Executive Offices/Parts Warehouse/Bath House Building is completed, several portable offices and storage containers will be utilized. These units are leased from a 3rd party supplier.

BBB) Waterline to Connect to Huntington Ranch Waterline: The waterline will be buried a minimum of 4 feet deep to avoid freezing. The waterline will be left in place during the reclamation phases to supply water to the site for plant germination and dust control. Upon final reclamation, the valve feeding the pipe will be closed. There are no plans to remove the buried portions of the pipe for reclamation purposes. The surface of the field, once the original trench has been back-filled, will be re-seeded using the approved seed mix.

CCC) Equipment Storage Area: A small area just north of the shop used to store machinery or supplies.

DDD) Return Portal Mine Ventilation Fan: The main mine fan will be a 8' diameter fan as part of a steel structure consisting of air doors for escape purposes, explosion doors which protect the fan in the event of a mine explosion, and a culvert system which connects the fan to the underground workings. The fan and steel structures will be removed for final reclamation, however the concrete footers and pads will remain, as they will be covered by approximately 20-30 feet of backfill

			Stru	ucture				SI	ab	1	Fou	ndatic	n/Foo	ters	
Map Symbol	Structure Description	Volume	Length	Width	Height	Diam.	Length	Width	Thick	Qty	Length	Width	Thick	Qty	Comments
DD	Coal Stack Tube #1, 20,000 Ton Coal Storage Pile	7461			66	12									Steel Structure
DD1	Coal Stack Tube #1 Head House	4350	14.5	12	25										Steel Structure
EE	Magnet Dumpster Pad #2	0					8	8	0.5						Concrete Pad, Thickened Edge
FF	Raw Coal Conveyor	2832	177	4	4										Belt Conveyor, 36"
FF1	Raw Coal Conveyor: Bent 1	9	5	0.75	2.5		7	3	1	1	1.5	1.5	4	2	Steel Structure
FF2	Raw Coal Conveyor: Bent 2	69	8	0.75	11.5		4	4	1	2	1.5	1.5	4	2	Steel Structure
FF3	Raw Coal Conveyor: Bent 3	250	10	1	25		5.5	5.5	1	2	1.5	1.5	4	2	Steel Structure
FF4	Raw Coal Conveyor: Bent 4	360	12	1	30		4	4	1	2	1.5	1.5	4	2	Steel Structure
GG	Crushing/Screening Structure	37100	28	25	53		40	30	0.5						Thickened Edge
GG1	Crushing/Screening Structure Pile Caps	0					6.5	3.5	4	6	1.5	1.5	4	6	Concrete Pads
HH	Lump Conveyor	900	100	3	3										Portable 24" Radial Stacker Belt
	Lump Coal Storage Area	0		-	30	60	1								
JJ	Stoker Conveyor	900	100	3	3										Portable 24" Radial Stacker Belt
KK	Stoker Coal Storage Area	0		-	30	60									
	Crushed Coal Storage Conveyor	10240	320	4	8		7.75	6	1	1	5.75	4	4	1	Belt Conveyor, 36"
LL1	Crushed Coal Storage Conveyor: Bent 1	8	5	0.75	2		7	3	1	1	1.5	1.5	4	2	Steel Structure
LL2	Crushed Coal Storage Conveyor: Bent 2	21	5	0.75	5.5		7	3	1	1	1.5	1.5	4	2	Steel Structure
LL3	Crushed Coal Storage Conveyor: Bent 3	38	5	0.75	10		14	7	1.2	1	1.5	1.5	4	2	Steel Structure
LL4	Crushed Coal Storage Conveyor: Bent 4	3060	17	5	36		8	8	1.5	2	1.5	2.5	4	2	Steel Structure
MM	Coal Stack Tube #2, 20,000 Ton Coal Storage Pile	7461	17	5	66	12	0	0	1.5	2	1.5	2.0		2	Steel Structure
MM1	Coal Stack Tube #2 Head House	4350	14.5	12	25	12									Steel Structure
NN	Cross-Belt Coal Sampler	0	14.5	12	25		20	20	6						Concrete Pad, Thickened Edge
00	Truck Loadout Conveyor	8320	260	4	8	-	20	20	0						Belt Conveyor, 36"
001	Truck Loadout Conveyor: Bent 1	4	5	0.75	1		7	3	1	1	1.5	1.5	4	2	Steel Structure
002	Truck Loadout Conveyor: Bent 2	17	5	0.75	4.5		4	4	1	2	1.5	1.5	4	2	Steel Structure
002	Truck Loadout Conveyor: Bent 3	43	5	0.75	11.5		4	4	1	2	1.5	1.5	4	2	Steel Structure
003	Truck Loadout Conveyor: Bent 4	3864	12	14	23		8	8	1.2	2	1.5	2.5	4	2	Steel Structure
004	Truck Loadout Conveyor: Bent 5	3864	12	14	23		5	5	1.2	2	1.5	2.5	4	2	Steel Structure
005	Truck Loadout Structure & Bins	13500	30	14	30		6.5	3.5	4	6	2	2.5	4	12	Pile Caps
 QQ	Truck Scale	4800	120	20	2		150	16	4	0	2	2	4	12	Thickened Edge
RR	Coal Sales Building	2400	20	12	10		20	10	0.5						Thickened Edge
SS	Coal Sales Building Septic System Drain Field	0	50	30	10		20	12	0.5						Leach Field
	Coal Sales Building Septic System Tank	300	6	10	5										Concrete Tank
UU	Coal Sales Building Parking Area	0	U	10	0										Graveled Area
VV	Main Motor Control Center (Main MCC)	3501	21	16.67	10	<u> </u>	21	20	0.5		84	1.5	2		Block Bldg, Slab Thickened Edge
WW	Bermed Topsoil Storage #1	5000yd3	21	10.0/	10		21	20	0.5		<u>8</u> 4	1.3	2		High quality soil only from lower site
XX	Concrete Truck Wash-Out	5000yd3	12	12											
<u> </u>	Sediment Pond	0	12	12											Bermed area to wash out trucks See Maps King II-007 D,E,F,G
ZZ	Cattle Guard	96	0	24	05										
		90	8	24	0.5										Steel Structure
AAA	Portable Office or Storage Container														Leased from port. building vendor
BBB	Waterline to Connect to Huntington Ranch Waterline	_													6 Inch Pipe Buried >4 Feet Deep
000	Non-Coal Equipment Storage Area	17000	 			<u> </u>		N1/A	NI/A	NI/A	N1/A	N1/A	N1/A	N1/A	Equipment Storage Area
DDD	Mine Ventilation Fan, Return Portal	17302	<u> </u>				8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Steel Structure
*	All dimensions shown in feet, volumes in cubic feet. All concrete is reinforced with rebar.														

King Coal Mine

King II Ditch Capacities King II Appendix 11

C-1981-035 (RN-07 AR#2) 08/14/2017

Ditch ID	Station	Soil Type	Bottom Width-Ft.	Lin.Ft.	Slope	Hydraulic Radius	Manning's "n"	Required Flow CFS	Velocity	Required Depth	Actual Depth	Туре	Ditch Material
	0+00 to 0+32 (A')	Unbarg Loam	3.6	32	2.92%	0.584	N/A	15.2	1.91	1.22	4.4	Trapezoidal	Grass Mixture
	0+32 to 1+18 (B')	Unbarg Loam	8.7	86	6.84%	0.7	N/A	15.2	2.66	1.47	3.5	Trapezoidal	Grass Mixture
	1+18 to 1+80 (C')	Unbarg Loam	3.3	62	0.10%	0.46	N/A	15.2	4.94	0.93	2.0	Trapezoidal	Grass Mixture
CWD-1A	1+80 to 2+37 (D')	Unbarg Loam	3.3	57	4.24%	1.3	N/A	15.2	1.11	2.57	2.6	Trapezoidal	Grass Mixture
CWD-IA	4+90 to 8+38 (E')	Unbarg Loam	4.3	348	3.72%	0.594	0.038	24.17	5.42	1.08	1.9	Trapezoidal	Rip Rap
	8+38 to 10+81 (F')	Unbarg Loam	2.2	243	6.08%	0.64	0.038	24.17	5.61	1.02	2.1	Trapezoidal	Rip Rap
	10+81 to 12+40 (G')	Unbarg Loam	1.6	159	3.63%	0.548	0.038	24.17	6.48	1.23	2.1	Trapezoidal	Rip Rap
	12+40 to 18+95 (H')	Unbarg Loam	1.0	655	4.05%	0.675	0.036	24.17	6.07	1.59	3.0	Trapezoidal	Rip Rap
CWD-1B	18+95 to 24+01 (I')	Unbarg Loam	2.3	506	4.25%	0.275	0.3	4.38	4.23	0.65	3.0	Trapezoidal	Graded Loam to Cobbles when noncollodial
CWD-1C	24+01 to 27+58 (J')	Unbarg Loam	2.7	357	4.25%	0.221	0.3	3.23	3.74	0.57	1.0	Trapezoidal	Graded Loam to Cobbles when noncollodial
CWD-1D	27+58 to 24+01 (J')	Unbarg Loam	2.7	12	4.25%	0.049	0.3	0.33	2.43	0.35	1.0	Trapezoidal	Graded Loam to Cobbles when noncollodial
Cattle Guard		Steele	6.5	35	0.50%	0.183	0.013	3.37	2.61	0.49	3.0	Trapezoidal	Steel
	0+00 to 0+05 (A')	Unbarg Loam	3.8	5	17.68%	0.11	0.3	2.38	4.98	0.42	3.0	Trapezoidal	Graded Loam to Cobbles when noncollodial
	0+05 to 0+70 (B')	Unbarg Loam	5.79	65	6.20%	0.09	0.3	2.38	4.19	0.39	1.3	Trapezoidal	Graded Loam to Cobbles when noncollodial
	0+70 to 1+60 (C')	Unbarg Loam	3.91	90	1.68%	0.142	0.3	2.38	3.37	0.46	1.07	Trapezoidal	Graded Loam to Cobbles when noncollodial
	1+60 to 4+70 (D')	Unbarg Loam	4.79	310	0.62%	0.193	0.3	2.38	2.15	0.51	2.05	Trapezoidal	Graded Loam to Cobbles when noncollodial
	4+70 to 6+12 (E')	Unbarg Loam	3.11	142	0.85%	0.988	0.3	35.76	3.88	1.59	3.64	Trapezoidal	Graded Loam to Cobbles when noncollodial
	6+12 to 7+90 (F')	Unbarg Loam	7.23	178	2.84%	0.784	0.3	35.76	3.89	1.29	2.98	Trapezoidal	Graded Loam to Cobbles when noncollodial
CWD-2	7+90 to 11+95 (G')	Unbarg Loam	7.62	405	1.78%	0.893	0.3	35.76	2.32	1.56	2.68	Trapezoidal	Graded Loam to Cobbles when noncollodial
CWD-2	11+95 to 14+56 (H')	Unbarg Loam	5.34	261	2.57%	1.113	N/A	35.76	2.33	1.96	1.99	Trapezoidal	Grass Mixture
	14+56 to 18+00 (I')	Unbarg Loam	5.84	344	2.88%	0.699	N/A	35.76	2.58	1.74	1.79	Trapezoidal	Grass Mixture
	18+00 to 20+84 (J')	Unbarg Loam	6.18	284	3.08%	0.979	N/A	35.76	2.8	1.67	3.82	Trapezoidal	Grass Mixture
	20+84 to 22+20 (K')	Unbarg Loam	3.94	136	1.49%	0.719	N/A	35.76	1.38	1.6	1.6	Trapezoidal	Grass Mixture
	22+20 to 25+95 (L')	Unbarg Loam	3.74	375	15.89%	1.206	N/A	76.82	2.37	2.58	2.54	Trapezoidal	Grass Mixture
	25+95 to 26+61 (M')	Unbarg Loam	3.04	66	2.34%	0.814	0.3	76.82	9.25	1.53	7.29	Trapezoidal	Rip Rap
	26+61 to 31+87 (N')	Unbarg Loam	8.34	526	2.34%	0.495	0.03	85.86	4.75	1.11	6.21	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID 00	Minimum	Unbarg Loam	2	9	2.10%	0.26	0.3	2.76	2.95	0.65	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID 0	Minimum	Unbarg Loam	2	210	10.00%	0.13	0.3	1.4	4.03	0.45	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID 1A	Minimum	Unbarg Loam	2	260	7.64%	0.17	0.3	2.14	4.25	0.51	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID 1B	Minimum	Unbarg Loam	2	9	2.22%	0.35	0.3	5.27	3.65	0.79	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID 1C	Minimum	Unbarg Loam	2	20	3.50%	0.31	0.3	5.27	4.29	0.73	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID 1D	Minimum	Unbarg Loam	2	136	2.70%	0.346	0.3	6.18	4.82	0.77	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID 1E	Minimum	Unbarg Loam	8.3	274	6.60%	0.222	0.3	9.39	4.68	0.53	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID-2A	Minimum	Unbarg Loam	1.25	187	2.00%	0.21	0.025	1.09	3.27	0.58	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID-2B	Minimum	Unbarg Loam	0.66	265	4.20%	0.22	0.3	1.83	3.77	0.67	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID-3	Minimum	Unbarg Loam	1		10.00%	0.2	0.03	2.51	5.4	0.59	0.8	Trapezoidal	Graded Loam to Cobbles when noncollodial
ID 4	Minimum	Unbarg Loam	4	128	5.30%	0.372	0.3	10.94	5.05	0.75	0.8	Trapezoidal	Cobbles and Shales
ID-5A Sta. 1	Minimum	Unbarg Loam	3	75	2.00%	0.138	0.3	1.19	2.25	0.46	0.71	Trapezoidal	Shales and Hardpans
ID-5A Sta. 2	Minimum	Unbarg Loam	4	305	1.90%	0.51	N/A	2.07	1	1.07	1.1	Trapezoidal	Grass Mixture
ID 5B	Minimum	Unbarg Loam	3	329	2.00%	0.22	0.025	3.01	3.08	0.57	1.1	Trapezoidal	Shales and Hardpans
ID-6	Minimum	Unbarg Loam	2	160	12.00%	0.062	0.025	0.45	3.25	0.37	0.8	Trapezoidal	Course Gravel noncollidal

COST SUMMARY WORK

Task description: Reclaim re: King Coal Mine		ine Permit Action: RN7		Permit/Job#:	C1981035	
PROJE	T IDENTIFI	CATION				
Task #:	000	State: Colorado		Abbreviation:	None	
Date	7/21/2017	County: La Plata		Filename:	C035-000	
Date						

TASK LIST (DIRECT COSTS)

Tarl		Form	Fleet	Task	
Task	Description	Used	Size	Hours	Cost
001	Demolish King I Structures	DEMOLISH	1	40.00	\$40,750.20
002	King I - Rip 12" in upper facility area	RIPPER	1	2.95	\$610.00
003	King I - push ripped waste to tipple highwall	DOZER	1	16.28	\$3,362.00
004	King I - haul topsoil/growth medium to Upper	TRUCK1	1	4.51	\$972.00
	Facilities Area	25 / 5 55			* * * * *
005	King I - Finish grade upper facilities area	GRADER	1	1.92	\$168.00
006	King I - Revegetate upper facilities area (area #3)	REVEGE	1	4.00	\$1,803.00
008	King I - backfill portals, grade fill slope and topsoil	DOZER	1	1.54	\$307.00
009	King I - revegetate highwall area (Area #4)	REVEGE	1	4.00	\$1,205.00
010	King I - rip and final grade lower facilities area	GRADER	1	1.09	\$97.00
011	King I - revegetate highwall area (Area #4)	REVEGE	1	4.00	\$1,095.00
012	King I - regrade cover of pre-law portion of refuse area	DOZER	1	8.11	\$1,616.00
013	King I - regrade 6" growth medium on pre-law refuse area	DOZER	1	1.16	\$231.00
014	King I - revegetate refuse area (Area #5)	REVEGE	1	2.00	\$534.00
015	King I - Push 3.5' cover to refuse pile	DOZER	1	39.02	\$7,780.00
016	King I - grade 3.5' cover on post-law refuse area	DOZER	1	10.03	\$1,999.00
017	King I - Haul topsoil to post-law refuse area	TRUCK1	1	3.03	\$655.00
018	King I - finish grade post-law refuse area (area #6)	GRADER	1	0.97	\$85.00
019	King I - revegetate refuse area (Area #6)	REVEGE	1	2.00	\$994.00
020	King I - finish grade topsoil area	GRADER	1	1.84	\$161.00
021	King I - revegetate borrow area	REVEGE	1	4.00	\$1,840.00
022	King I - seal vent hole	BOREHOLE	1	8.00	\$1,550.62
023	King I - backfill and regrade east and west sediment ponds	DOZER	1	10.40	\$2,073.00
025	King I - revegetate east and west ponds (Area #6)	REVEGE	1	4.00	\$1,711.00
032	King I -Rill and gully maint. 8 hours every other	SITEMAINT	1	24.00	\$4,258.80
	yr, 10 yrs	ENANCE			
050	King I&II - mobilize for initial reclamation	MOBILIZE	1	8.00	\$10,051.00
051	King I&II - mobilize for rill and gully maintenance, X 3	MOBILIZE	1	8.00	\$5,148.00
052	King I&II - mobilize for second pond cleaning	MOBILIZE	1	8.00	\$2,780.00
060	King II-Rill and gully maint. 8 hours every other	SITEMAINT	1	24.00	\$4,258.80
000	yr, 10 yrs	ENANCE	-		,
062	Weed Control over liability period	REVEGE	1	35.00	\$3,150.00
064	Clean sediment ponds (two cleanings)	EXCAVATE	1	65.13	\$5,126.00
065	King II - haul sediment from ponds to King I site	TRUCK1	1	30.85	\$23,690.00
100	Seal Mine Openings	MINESEAL	1	32.00	\$110,737.60
					
200	King II structural demolition	DEMOLISH	1	140.00	\$207,465.41

300	King II - Haul coal waste rock to King I waste pile	TRUCK1	1	1.06	\$311.00
301	King II - Rip coal sales area	RIPPER	1	1.61	\$334.00
302	King II - Haul gravel from coal sales, portals, rd/wtr tank	TRUCK1	1	14.81	\$4,662.00
303	King II - Haul office fill to portal cuts/acc rd/wtr tank	TRUCK1	1	50.64	\$19,660.00
304	King II - grade portal cuts, access roads, water tank pad	DOZER	1	38.65	\$7,705.00
305	King II-Compact fill on portal cuts/access rd/water tank pad	COMPACT	1	17.23	\$3,514.00
306	King II - Rip portal, access rd., coal sales areas	RIPPER	1	34.32	\$7,092.00
308	King II - remove east and west cleanwater ditches	DOZER	1	8.62	\$1,718.00
309	King II - construct drainage channel in Cochrane Canyon	DOZER	1	3.51	\$699.00
310	King II - construct channel in office drainage	DOZER	1	4.53	\$904.00
311	King II - backfill pond	DOZER	1	18.49	\$3,686.00
312	King II - Rip coal sales area	RIPPER	1	3.43	\$710.00
313	King II - Grade haul road	DOZER	1	13.20	\$2,631.00
314	Water truck for dust control	MISCTRUK	1	240.00	\$10,562.00
401	King II - distribute tosoil from Cochrane stockpile	TRUCK1	1	101.93	\$39,571.00
402	King II - finish grade topsoil area	GRADER	1	20.66	\$1,802.00
403	King II revegetate Rangeland Areas (19.36 acres)	REVEGE	1	20.00	\$35,913.00
404	King II revegetate Pinyon-Juniper areas (3 acres)	REVEGE	1	3.00	\$7,722.00
406	King II-seed water line corridor (0.47 ac)	REVEGE	1	1.25	\$819.00
409	Seal Boreholes CO-14-01 through CO-14-09	BOREHOLE	1	36.00	\$4,632.91
410	Regrade drill pads and pits CO-14-01 through CO- 14-09	DOZER	1	7.06	\$615.00
411	Replace topsoil on CO-14-01 through CO-14-09 disturbance	DOZER	1	3.00	\$261.00
412	King II-Broadcast seed CO-14-01 thru CO-09 disturbance	REVEGE	1	9.00	\$2,198.00
500	King II - seal downgradient monitoring well	BOREHOLE	1	4.00	\$386.16
501	Plug and Seal MW-1, 2, 3 and 4 Clusters (12 Wells) TR26	BOREHOLE	1	53.00	\$9,283.92
502	Remove MW-1,2,3,4 Well Clusters Cement Pads/Poles TR26	DEMOLISH	1	0.00	\$356.19
503	Regrade drill pads and pits (MW-1, 2, 3, 4)	DOZER	1	2.73	\$367.00
504	Replace Topsoil on Well Clusters (TR26)	DOZER	1	1.54	\$200.00
505	Revegetation; MW-1,2,3,4 Well Cluster Pads	REVEGE	1	1.00	\$3,111.00
		<u>SUBTO</u>	TALS:	1264.1	\$619,691

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$12,517.76
Performance bond:	1.05	Total =	\$6,506.76
Job superintendent:	632.05	Total =	\$46,171.25
Profit:	10.00	Total =	\$61,969.10
		TOTAL O & P =	\$127,164.87
		CONTRACT AMOUNT (direct + O & P) = $($	\$746,855.87
LEGAL - ENGINEERING - PE	ROJECT MANA	GEMENT:	

GAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	4.25	Total =	\$31,741.37

Reclamation management and/or administration:	5.00		\$37,342.79
CONTINGENCY:	0.00	Total =	\$0.00
		TOTAL INDIRECT COST =	\$196,749.04
TOTAL BO	OND A	MOUNT (direct + indirect) =	\$816,440.04

DEMOLITION WORK

e: King Coal Mine		Permit	Action: RN7	Pe	rmit/Job#: <u>C1981035</u>
PROJE	CT IDENTIF	ICATION			
Task #:	001	State: Col	orado	Abbreviation:	None
Date:	7/21/2017	County: La	Plata	Filename:	C035-001
	3:52:09 PM				
	JHB				

<u>UNIT COSTS</u> <u>94.00 %</u>

Location adjustment:

<u>94.00 %</u> Structure or						
Item	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Description						
(TR26) 4" x 6' l steel poles MW-1,2,3 &4	24(4" dia. x 6'l)	Pipe, steel, welded connections - 4 in. diameter pipe	144.00	LF	\$1.16	\$167.04
(TR26) disposal of poles	24 poles	Dump fees - Rubbish only	1.05	CY	\$9.45	\$9.92
2 500 gallon fuel tanks	NA	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	2.00	EA	\$760.00	\$1,520.00
Bury debris	10x10x40.5	Push demolished materials/rubble/debris into pit - Max. 200 ft. push	150.00	CY	\$0.83	\$123.90
Cement Pads (TR26) MW- 1,2,3 & 4	3(3' x4' x0.3'th)	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 50 ft. push	36.00	SF	\$0.40	\$14.33
East bins	15x25x50	Bldg. (SN) demo./on- site disposal in existing pit or cut - Max. 200 ft. push	18,750.00	CF	\$0.18	\$3,356.25
Main Conveyor	40	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	40.00	LF	\$44.51	\$1,780.36
Mine fan	8x6x30	Bldg. (SN) demo./off- site disposal in approved landfill - Max. 15 mile haul	1,440.00	CF	\$0.35	\$509.76
Mine fan	8x6x10	Bldg. (SN) demo./off- site disposal in approved landfill - Max. 15 mile haul	480.00	CF	\$0.35	\$169.92
MR46 Fan & housing	sec. 2.05.4 p. 8	Bldg. (SN) demo./on- site disposal in existing pit or cut - Max. 50 ft. push	17,302.00	CF	\$0.17	\$3,010.55
Portal	12x20x8	Bldg. (SN) demo./off-	1,920.00	CF	\$0.35	\$679.68

Building		site disposal in				
		approved landfill -				
		Max. 15 mile haul				
Scale house	40x42x10	Bldg. (SN) demo./on-	16,800.00	CF	\$0.18	\$3,007.20
		site disposal in				
		existing pit or cut -				
		Max. 200 ft. push				
Stacker	300	OBSOLETE-	300.00	LF	\$44.51	\$13,352.70
conveyor		Conveyor, elevated,				
		including supports - 5				
		ft. W x 6 ft. H				
		housing				
Stacker tower	16x16x50/10x10x50	Bldg. (SN) demo./off-	8,900.00	CF	\$0.35	\$3,150.60
#1		site disposal in				
		approved landfill -				
		Max. 15 mile haul				
Stacker tower	8.5x16x25/8.5x5.5x25	Bldg. (SN) demo./off-	2,284.00	CF	\$0.35	\$808.54
#2		site disposal in				
		approved landfill -				
		Max. 15 mile haul				
Tipple	60x65x8	Bldg. (SN) demo./on-	31,200.00	CF	\$0.18	\$5,584.80
Building		site disposal in				
		existing pit or cut -				
		Max. 200 ft. push				
Tipple Lean-	16x44x8	Bldg. (SN) demo./on-	5,632.00	CF	\$0.18	\$1,008.13
to Shed		site disposal in				
		existing pit or cut -				
		Max. 200 ft. push				
Two office	12x120x10	Bldg. (SN) demo./off-	14,400.00	CF	\$0.35	\$5,097.60
trailers		site disposal in				
		approved landfill -				
		Max. 15 mile haul				

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	40.00	(unadjusted):	\$43,351.28	location):	\$40,750.20

BULLDOZER RIPPING WORK

	Task description:	King I - Rip 12" in upper f	acility area			
Site	: King Coal Mine	Permit Action	RN7	Permi	it/Job#: <u>C198103</u>	35
	PROJECT IDENTIFI	CATION				
	Task #: 002	State: Colorado)	Abbrevia	tion: None	
	Date: 5/3/2017	County: La Plata		Filen	ame: C035-002	
	User: JHB					
	Agency or organ	ization name: DRMS				
	HOURLY EQUIPME	NT COST				
	Basic Machine	: Cat D8T - 8SU		Horsepower:	310	
	Ripper Attachment	: 3-Shank Ripper		Shift Basis:	1 per day	
				Data Source:	(CRG)	
	Cost Breakdown:			1		
	0		¢02.01	Utilization %		
		ship Cost/Hour:ating Cost/Hour:	\$83.81 \$66.17	NA 100		
		ship Cost/Hour:	\$7.55	NA		
		ating Cost/Hour:	\$7.21	100		
	Ope	rator Cost/Hour:	\$41.85	NA		
	Total	Unit Cost/Hour:	\$206.59			
	Total	Fleet Cost/Hour: \$2	06.59			
				_		
	MATERIAL QUANT	ITIES	elected estimatir	ng method: Area		
	Alternate Methods:		elected estimatin			
a · · ·		N 1 1 1		DOV		
Seismic: Area:		Bank Volume: res Rip Depth (ft):	NA 1.00	BCY Volume: 3,16	NA 2	BCY or CCY
Alta.					2	ber of cer
	Source	of estimated quantity: Map	King I-007			
	HOURLY PRODUCT	TION				
	Seismic:					
		Seismic Velocity:	NA	feet/second		
	Area:					
		Average Ripping Depth:	1.00	mph		
		Average Ripping Width:	7.08	degrees		
	I	Average Ripping Length:	300.00	feet		
		Average Dozer Speed:	88.00	feet		
		verage Maneuver Time:	0.25	feet		
		Production per unit area:	0.800	acres/hour		
	Job Condition Correction	Factors				
	Unadjusted	Hourly Unit Production:	0.800	Acres/hr		
		Site Altitude:	7,400	feet		
		Altitude Adj:	1.00	(CAT HB)		
		Job Efficiency:	0.83	(1 shift/day)	1	
		Net Correction:	0.83	multiplier		
	A	djusted Hourly Unit Production	.: 0.66	Acres/hr		
	Ad	justed Hourly Fleet Production	.: 0.66	Acres/hr		

JOB TIME AND COST

Fleet size:	1	Grader(s)	Total job time:	2.95	Hours
Unit cost:	\$311.305	Per acre	Total job cost:	\$610	

BULLDOZER WORK

Task description:	I			o tipple highwall		
King Coal Mine		Per	mit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDEN	TIFICATIO	N				
Task #: 003		State:	Colorado		Abbreviation:	None
Date: $\frac{500}{5/3/20}$	17	County:	La Plata		Filename:	C035-003
User: JHB						
Agency or	organization na	me: DF	RMS			
HOURLY EQUI	PMENT COS	<u>5T</u>				
Basic Machine:	Cat D8T - 8S	U		_		
Horsepower:	310			_		
Blade Type:	Semi-Univers			_		
Attachment:	3-shank rippe	r		_		
Shift Basis:	1 per day			_		
Data Source:	(CRG)			_		
Cost Breakdown:			1			
			002 01	<u>Utilization %</u>		
Ownership Cost/Ho			\$83.81	NA		
Operating Cost/Ho			\$66.17	100		
Ripper o Cost/Ho			\$7.55	NA		
Ripper op. Cost/Ho			\$7.21	100		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou	: \$206.59		\$41.85	NA		
Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QU	:: \$206.59 1r: \$206.59 ANTITIES		\$41.85	NA		
Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor:	:: \$206.59 ir: \$206.59		\$41.85 	NA		
Total unit Cost/Hour Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor:	:: \$206.59 Ir: \$206.59 ANTITIES 3,794 1.000 3,794 LCY volume:		 `rom Task 00	NA		
Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	:: \$206.59 Ir: \$206.59 ANTITIES 3,794 1.000 3,794 LCY volume: swell	Volume f	 `rom Task 00			
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD	:: \$206.59 ar: \$206.59 ANTITIES 3,794 1.000 3,794 LCY volume: swell UCTION	Volume f Cat Hand	 `rom Task 00			
Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor:	:: \$206.59 ar: \$206.59 ANTITIES 3,794 1.000 3,794 LCY volume: swell UCTION ce:2	Volume f	 rom Task 00 book			
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly	:: <u>\$206.59</u> Ir: <u>\$206.59</u> ANTITIES 3,794 1.000 3,794 LCY volume: swell UCTION ce: <u>2</u> 4	Volume f Cat Hand 00 feet 91.9 LCY/	 rom Task 00 book			
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distand Unadjusted hourly production: Materials consistenc	:: \$206.59 Ir: \$206.59 ANTITIES 3,794 1.000 3,794 LCY volume: swell UCTION ce:4 y description:	Volume f Cat Hand 00 feet 91.9 LCY/	 `rom Task 00 book /hr			
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distand Unadjusted hourly production:	<pre>:: \$206.59 ir: \$206.59 ANTITIES 3,794 1.000 3,794 LCY volume: swell uction ce: 2 4 y description: int: 0 %</pre>	Volume f Cat Hand 00 feet 91.9 LCY/ Loose s	 `rom Task 00 book /hr			
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly production: Materials consistenc Average push gradie	<pre>:: \$206.59 ir: \$206.59 ANTITIES 3,794 1.000 3,794 LCY volume: swell uction ce:4 y description: int:0 %</pre>	Volume f Cat Hand 00 feet 91.9 LCY/ Loose s et	 `rom Task 00 book /hr			
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distand Unadjusted hourly production: Materials consistenc Average push gradie Average site altitude	:: \$206.59 antifies \$3,794 1.000 3,794 3,794	Volume f Cat Hand 00 feet 91.9 LCY/ Loose s et s/LCY	 `rom Task 00 book /hr	 2, 20% swell		
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distand Unadjusted hourly production: Materials consistenc Average push gradie Average site altitude Material weight: Weight description: Job Condition Correct	\$206.59 antities \$206.59 Antities 3,794 1.000 3,794 1.000 3,794 1.000 3,794 1.000 3,794 LCY volume: swell - UCTION ce: 2 y description: ent: 0 % : 7,400 fe	Volume f Cat Hand 00 feet 91.9 LCY/ Loose s et s/LCY posed rock	 ``rom Task 00 book /hr stockpile 1.2	 2, 20% swell		

1.200	(CAT HB)
1.000	(GEN.)
1.000	(AVG.)
0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
1.000	(CAT HB)
1.000	(CAT HB)
0.793	(CAT HB)
1.000	(PAT)
0.4739	
	1.000 0.830 0.800 1.000 1.000 0.793 1.000

Adjusted unit production:	233.11 LCY/hr
Adjusted fleet production:	233.11 LCY/hr

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.886/LCY

Total job time:	16.28 Hours
Total job cost:	\$3,362

TRUCK/LOADER TEAM WORK

Site: King Coal Mine		Permi	t Actio	n: RN7		Permit/Job#:	C19	81035
PROJECT IDENT	TIFICATION							
Task #:004		State:	Colorad	do	Abl	breviation:	None	
Date: <u>5/3/201</u> User: JHB	.7 C	County:]	La Plat	a		Filename:	C035-	-004
	organization nam	e: DRM	IS					
HOURLY EQUIP	MENT COST				Shift bas	sis: <u>1 per day</u>		
<u>HOUKET EQUI</u>		-	Б			sis. <u>1 per uay</u>		
Tr	uck Loader Tear	n -Truck:		Equipment Descri eric 10-12 cy, 6x4				
		-Loader:		OLETE - CAT 9				
Suppor	rt Equipment -Lo		NA					
Road Mai	-Du	mp Area:	NA NA					
Road Ma		er Truck:	NA					
Cost Breakdown:	Truck/Loa Truck	der Team Loader		Support I Load Area	Equipment Dump Area	Mainte Motor Grad		Equipment Water Truck
		Loader			-		_	
Utilization-machine:	100		100	NA	NA		IA	NA
Ownership cost/hour:	\$18.29		5.66	NA	NA		IA L	NA
Operating cost/hour: %Utilization-riper:	\$39.97 NA	\$3	2.31	NA NA	NA NA		IA IA	NA NA
ipper own. cost/hour:	NA	\$	0.00	NA NA	NA		IA IA	NA
Ripper op. cost/hour:	NA		0.00	NA	NA		IA IA	NA
Operator cost/hour:	\$0.00		1.20	NA	NA		IA	NA
Unit Subtotals:	\$58.26		9.17	NA	NA		IA	NA
Number of Units:	2	Ψ <i>ν</i>	1	0	0		0	0
Group Subtotals:	Work:	\$215.69		Support:	\$0.00	Main	nt: S	\$0.00
Total work team cost	/hour: \$215.60							
Total work team cost	μομι. <u>φωιο.0</u>							
MATERIAL QUA	NTITIES							
Initial volume:	1,581		CCY	Swell	factor: <u>1.165</u>			
Loose volume:	1,842		LCY					
C .	ce of estimated	volume:	1.96 a	cres x 6" depth				
Sour	ee of estimated			- 1				
Source of	of estimated swel Material Purcha	l factor:		andbook				

HOURLY PRODUCTION

<u>Fruck Capacity:</u>						
Truck Payload (weight) Bas	sis:					
Material weight:	2,850	Pounds/LCY				
Description:	User Provided					
Rated Payload:	35,400	Pounds				
Payload Capacity:	12.42	LCY				

Truck Bed (volume) Basis:

10.00	LCY
12.00	LCY
11.00	LCY
12.00	LCY
	12.00 11.00

Final Truck Volume Based on Number of Loader Passes: 11.41 LCY

Site Altitude (ft.): 7400 feet

Loading Tool Capacity

		Bucket Size Class: NA
Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity:	3.803	LCY

Job Condition Corrections:

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Loading Tool Cycle Time: Number of	f Loading Tool Passes Required to Fill	3	passes
Excavators and Front Shovels:	Truck:		
Machine Cycle Time vs. Job Condition Rating:	NA		
Selected Value within this Basic Rating:	NA		
Track Loaders – Material Description:			

Cycle Time Elements (min.):

Load:	NA	Maneuver:	NA	Dump:	0.100	
-------	----	-----------	----	-------	-------	--

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.090	minutes
	Adjusted Loader Cycle Time:	0.393	minutes
	Net Load Time per Truck:	0.885	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.885	Minutes	Adjusted for site altitude:	0.885	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time: penetration 5.0

e

Road Condition:	Rutted dirt,	little maintenance,	no water,	2"	tire

penetration 5.0	
Haul Route:	

1.0000	condition	1.000000	 110010	111001100110010	110	

Huu Route.								
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)		
1	500.00	0.00	5.00	5.00	2218	0.293		

	Return R	oute:				Haul Time:	0.293	minute	S
	Seg #		Distance	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)	
-	1	500.0	0	0.00	5.00	5.00	2814	0.203	
					Total True	Return Time: ck Cycle Time:	0.203 2.781	minu minu	
	oading To Prod Unit Prod	uction	494.19	LCY/Hour		Adjusted for j	ob efficiency:	410.18	LCY/Hour
			246.12	LCY/Hour		Adjusted for j	ob efficiency:	204.28	LCY/Hour
Optima	al No. of T	rucks:	2	Truck(s)		Selected Num	ber of Trucks:	2	Truck(s)
						k team production			Y/Hour
						r team productio			Y/Hour
				Adjusted multipl	e truck/loade	r team productio	on: 408.	<u>55</u> LC	Y/Hour
JOB TIME AND COST									
	Fleet	size:	1	Team(s)	1	Fotal job time:	4.51	H	Iours
	Unit	cost:	\$0.528	/LCY	r	Total job cost:	\$972	2	

MOTOR GRADER WORK

: <u>king Coal Mine</u> Permit Action: <u>RN7</u> Permit/Job# <u>C1981035</u> PROJECT IDENTIFICATION Task # . 005 County: <u>La Plata</u> Abbreviation: <u>None</u> Date: <u>5/4/2017</u> County: <u>La Plata</u> Pilename: <u>C035-005</u> Use: <u>iHB</u> Agency or organization name: <u>DRMS</u> HOURLY EQUIPMENT COST Basic Machine: <u>CAT 12M</u> Horsepower: <u>158</u> Ripper Attachment: <u>Multi-Shank Ripper</u> Data Source: <u> (CRG)</u> Cost Breakdown: <u>Ovenership Cost/Hour: <u>528.02 NA</u> <u>Operator Cost/Hour: <u>528.02 NA</u> <u>Operator Cost/Hour: <u>528.02 NA</u> <u>Operator Cost/Hour: <u>528.09 NA</u> Ripper Onenership Cost/Hour: <u>528.90 NA</u> Total Unit Cost/Hour: <u>587.19</u> MATERIAL QUANTITIES Total Fleet Cost/Hour: <u>587.19</u> MATERIAL QUANTITIES <u>IDURLY PRODUCTION</u> <u>Average Grader Speed: 1.25 mph Selected Application: <u>30</u> degrees <u>Effective Blade Length: 30</u> degrees <u>Effective Blade Length: 30</u> degrees <u>Effective Blade Length: 30</u> degrees <u>Effective Blade Length: 1.2727</u> acres/hour <u>Lody and the overlap per pase: 2.000</u> [cet Net grading or ripping width per pase: <u>8.40</u> [cet <u>Undiguised Hourly Unit Production: 1.2727</u> acres/hour <u>Adjusted Hourly Unit Production: <u>1.0182</u> acres/Hour <u>Adjusted Hourly Unit Production: <u>1.0182</u> acres/Hour <u>Adjusted Hourly Unit Production: <u>1.0182</u> acres/Hour <u>Adjusted Hourly Fleet Production: <u>1.0182</u> acres/Hour</u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u>	Task description:	King I - Finish grade uppe	er facilities area		
Task #: 005 State: County: La Plata	: King Coal Mine	n: <u>RN7</u>	Perm	it/Job#: <u>C1981035</u>	
Date: 5/4/2017 County: La Plata Filename: C035-005 Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: CAT 12M Horsepower: 158 Ripper Attachment: Multi-Shank Ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Utilization % Ownership Cost/Hour: 528.02 NA Operating Cost/Hour: 528.02 100 Ripper Ownership Cost/Hour: 528.00 NA Operating Cost/Hour: 528.00 NA Total Cost/Hour: 528.00 NA Total Cost/Hour: 587.19 acres Source of estimated acreage: Section 2.05.3 of permit application acres MATERIAL QUANTITIES Selected Application: Production Deration - 1.25 selected Application: Selected Blade Angle: 30 degreeses feet Width of blade overlap per pass: 2.00 feet Width of blade overlap per pass: 2.00 feet Undigusted Hourly Unit Production: 1.2727 acres/hour Adjusted	PROJECT IDENTI	FICATION			
Date: 5/4/2017 County: La Plata Filename: C035-005 Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: CAT 12M Horsepower: 158 Ripper Attachment: Multi-Shank Ripper Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Utilization % Ownership Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.00 0 Operating Cost/Hour: \$28.00 0 Operating Cost/Hour: \$28.00 0 Operating Cost/Hour: \$28.00 0 Total Unit Cost/Hour: \$28.00 0 Total Unit Cost/Hour: \$87.19 acres Source of estimated acreage: Section 2.05.3 of permit application acres MOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Selected Application: Selected Application: 1.277 Selected Application: 1.277 acres/hour acres/hour Job Efficiency Blade Length: 1.04 feet Guidi	Task #: 005	State: Colorad	0	Abbrevi	ation: None
User: JHB Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: CAT 12M Basic Machine: CAT 12M Horsepower: 158 Ripper Attachment: Multi-Shank Ripper Shift Basis: Iper day Data Source: (CRG) Cost Breakdown; Utilization % Ownership Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.02 NA Operating Cost/Hour: \$1.99 NA Ripper Operating Cost/Hour: \$28.00 NA Operator Cost/Hour: \$28.90 NA Total Unit Cost/Hour: \$87.19 Mattenta ob graded or ripped: 1.96 acres Source of estimated acreage: Section 2.05.3 of permit application MOURLY PRODUCTION					
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Busic Machine: CAT 12M Horespower:					
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JOB TIME AND COST Fleet size: 1 Grader(s) Total job time: 1.93 Hours					
Fleet size: 1 Grader(s) Total job time: 1.93 Hours	Γ	sugasica mourry meet moducito	1. 1.0102	acres/11001	
	JOB TIME AND CC	<u>DST</u>			
Unit cost:\$85.63per acreTotal job cost:\$168	Fleet size:	1 Grader(s)	Total job time:	1.93	Hours
	Unit cost: \$8	5.63 per acre	Total job cost:	\$168	

REVEGETATION WORK

Task description:		King I - Revegetate upper facilities area (area #3) Permit Action: RN7 Permit/Jo		Permit/Job#:	#: <u>C1981035</u>	
PROJEC ¹	<u>IDENTIF</u>	ICATION				
Task #: Date:	006 5/4/2017	State: <u>Colo</u> County: <u>La</u> F	orado l'ata	Abbreviation: Filename:	None C035-006	

FERTILIZING

Materials Units / Cost / Unit Cost /Acre Description Unit Acre 10-34-0, 18-46-0, 5-10-5 150.00 pound \$0.34 \$51.00 **Total Fertilizer** Materials \$51.00 Cost/Acre

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	1.74	5.59	\$13.35
Switchgrass - Pathfinder	0.75	6.70	\$7.48
Mountain Brome - Bromar	1.82	2.92	\$7.92
Burnett, Small (or Little) - Delar	2.61	3.30	\$6.53
Sheep Fescue - Bighorn	0.31	4.84	\$1.47
Thickspike Wheatgrass - Critana	1.16	4.10	\$6.66
Western Wheatgrass - Native	2.54	6.41	\$17.78
Flax, Lewis Blue	0.46	3.05	\$7.59
Totals Seed Mix	11.39	36.92	\$68.76

Application

Description		Cost /Acre
		\$0.00
	Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
	Total Mulch Application Cost/Acre	\$99.32

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	ek Cost / Acre	\$0.00

JOB TIME AND COST

	No. of Acres:	1.96	Cost /Ac	re: \$885.70	
Estimate	ed Failure Rate:	50%	Cost /Acre	e*: \$68.76	
*Selected Replanti	ng Work Items:	SEEDING			
Initial Job Cost:	/				
Reseeding Job Cost:	\$67.38				
Total Job Cost:	\$1,803				
Job Hours:	4.00				

TRUCK/LOADER TEAM WORK

Site: King Coal Mine		Permit Acti	on: 007		Permit/Job#:	C1981035	
PROJECT IDEN	TIFICATION						
Task #: 007		State: Color	ado	Abl	previation:	None	
Date: 5/4/20 User: JHB	17 0	County: La Pla				C035-007	
Agency or	organization nan	ne: DRMS					
HOURLY EQUI	PMENT COST	<u>r</u>		Shift bas	is: <u>1 per day</u>		
			Equipment Descri	ption			
Т	ruck Loader Tea		neric 10-12 cy, 6x4				
			SOLETE - CAT 9	38H			
Suppo	ort Equipment -L	oad Area: NA Imp Area: NA					
Road Ma	intenance – Moto	1					
Road Ma		ter Truck: NA					
		I.					
Cost Breakdown:	Truck/Loa	ader Team	Support 1	Equipment		enance Equipi	
	Truck	Loader	Load Area	Dump Area	Motor Grade	er Water T	ruck
%Utilization-machine:	100	100	NA	NA	N	A	NA
Ownership cost/hour:	\$18.29	\$25.66	NA	NA	N	A	NA
Operating cost/hour:	\$39.97	\$32.31	NA	NA	N	A	NA
%Utilization-riper:	NA	0	NA	NA	N	A	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	Ν	A	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	N	A	NA
Operator cost/hour:	\$0.00	\$41.20	NA	NA	N	A	NA
	\$58.26	\$99.17	NA	NA	N	A	NA
Unit Subtotals:	φ50.20		1				
Unit Subtotals: Number of Units:	2	1	0	0		0	0

MATERIAL QUANTITIES

CCY Swell factor: 1.000
LCY
1.96 acres, 6" depth
Cat Handbook
\$0.00
\$0.00

HOURLY PRODUCTION

<u>Fruck Capacity:</u>						
Truck Payload (weight) Bas	is:					
Material weight:	2,850	Pounds/LCY				
Description:	User Provided					
Rated Payload:	35,400	Pounds				
Payload Capacity:	12.42	LCY				

Truck Bed (volume) Basis:

10.00	LCY
12.00	LCY
11.00	LCY
12.00	LCY
	12.00 11.00

Final Truck Volume Based on Number of Loader Passes: 11.41 LCY

Site Altitude (ft.): 7500 feet

Loading Tool Capacity

		Bucket Size Class: NA
Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity:	3.803	LCY

Job Condition Corrections:

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Loading Tool Cycle Time: Number of	Loading Tool Passes Required to Fill	3	passes
Excavators and Front Shovels:	Truck:	5	
Machine Cycle Time vs. Job Condition Rating:	NA		
Selected Value within this Basic Rating:	NA		
Track Loaders – Material Description:			

Cycle Time Elements (min.):

Load: NA Maneuver: NA	Dump: 0.100
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Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.090	minutes
	Adjusted Loader Cycle Time:	0.393	minutes
	Net Load Time per Truck:	0.885	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.885	Minutes	Adjusted for site altitude:	0.885	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

<u>Truck Travel (Haul & Return) Time:</u> penetration 5.0 Haul Route:

e

Road Condition:	Rutted dirt,	little maintenance.	no water.	. 2"	' tire

en	e	tra	t 1	<u>on</u>	J. U
т	1	n			

Hau Koue.									
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)			
1	1100.00	-6.00	5.00	-1.00	2938	0.444			
	Return R	oute:				Haul Time:	0.444	minute	s
--------	---------------------------------	--------	----------	------------------	------------------	--------------------------------	-------------------	-------------------------	----------
	Seg #	1	Distance	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)	
-	1	1100.	00	6.00	5.00	11.00	1584	0.702	
					Total True	Return Time: ck Cycle Time:	0.702 3.431	minu minu	
	oading Too Prod Unit Prod	uction	494.19	LCY/Hour		Adjusted for j	ob efficiency:	410.18	LCY/Hour
			199.49	LCY/Hour		Adjusted for j	ob efficiency:	165.58	LCY/Hour
Optima	al No. of T	rucks:	2	Truck(s)		Selected Num	ber of Trucks:	2	Truck(s)
						k team productio			Y/Hour
						r team productio			Y/Hour
				Adjusted multipl	e truck/loade	r team productio	on: 331.	<u>15</u> LC	Y/Hour
	JOB TI	ME AN	ND COST						
	Fleet	size:	1	Team(s)]	Fotal job time:	3.19	<u> </u>	Iours
	Unit	cost:	\$0.651	/LCY	,	Total job cost:	\$688	3	

BULLDOZER WORK

Task description:	I I I I I I I I I I I I I I I I I I I	Ducisini	por tais, gra	ue ini siop	pe and topsoil		
: King Coal Mine		Peri	nit Action:	RN7		Permit/Job#:	C1981035
PROJECT IDENT	TIFICATIO	<u>N</u>					
Task #: 008		State:	Colorado			Abbreviation:	None
Date: $5/4/201$	7	County:	La Plata			Filename:	C035-008
User: JHB		e o unit j t	Bullinu				0000 000
	rganization na	ame: DR	MS				
HOURLY EQUIP	-						
	Cat D8T - 8S						
	310	0		_			
	Semi-Univers	.al		_			
	3-shank rippe			_			
	1 per day	4					
	(CRG)						
				_			
Cost Breakdown:							
				Ut	ilization %		
Ownership Cost/Hou	ur:		\$83.81		NA		
Operating Cost/Hou	ur:		\$66.17		100		
Ripper ow Cost/Hou			\$7.55		NA		
Ripper op. Cost/Hou			\$0.00		0		
Operator Cost/Hou Total unit Cost/Hour: Total Fleet Cost/Hour	\$199.38		\$41.85		NA		
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: _4	\$199.38 r: \$199.38 NTITIES				NA		
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: <u>4</u> Swell factor: <u>1</u>	\$199.38 r: \$199.38				NA		
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: 4 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated sy	\$199.38 \$199.38 NTITIES 00 .000 00 LCY rolume:		 on plan		NA		
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: 4 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated so factor:	\$199.38 \$199.38 NTITIES 400 .000 400 LCY rolume: well	Reclamati	 on plan				
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: 4 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated s factor: HOURLY PRODU	\$199.38 \$199.38 NTITIES 00 00 00 00 CY rolume: well UCTION	Reclamati Cat Handl	 on plan		NA		
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: 4 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated sy factor:	state for the second state of the second state	Reclamati	 on plan book				
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: <u>4</u> Swell factor: <u>1</u> Loose volume: <u>4</u> Source of estimated v Source of estimated v Source of estimated so factor: HOURLY PRODU Average push distance Unadjusted hourly	state	Reclamati Cat Handl	 on plan book				
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: 4 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated set factor: HOURLY PRODU Average push distance Unadjusted hourly production:	\$199.38 \$199.38 \$199.38 \$00 .000 <td>Reclamati Cat Handl</td> <td> on plan book</td> <td></td> <td></td> <td></td> <td></td>	Reclamati Cat Handl	 on plan book				
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: 4 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated so factor: HOURLY PRODU Average push distance Unadjusted hourly production: Materials consistency Average push gradien	\$199.38 \$199.38 \$199.38 \$00 .000 <td>Reclamati Cat Handl 91.9 LCY/ Loose s</td> <td> on plan book</td> <td></td> <td></td> <td></td> <td></td>	Reclamati Cat Handl 91.9 LCY/ Loose s	 on plan book				
Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: 4 Swell factor: 1 Loose volume: 4 Source of estimated v Source of estimated v Source of estimated stactor: HOURLY PRODU Average push distance Unadjusted hourly production: Materials consistency Average push gradien Average site altitude:	$ \begin{array}{rcl} & & & & & \\ & & & & \\ & & & & \\ \hline & & & \\ & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline \\ \hline$	Reclamati Cat Handl 00 feet 91.9 LCY/ Loose s eet ps/LCY	 on plan book				

1.200	(CAT HB)
1.000	(GEN.)
1.000	(AVG.)
0.830	(1 SHIFT/DAY)
0.800	(SSD-AC)
1.115	(CAT HB)
1.000	(CAT HB)
0.793	(CAT HB)
1.000	(PAT)
0.5284	
	1.000 1.000 0.830 0.800 1.115 1.000 0.793 1.000

Adjusted unit production:	259.92 LCY/hr
Adjusted fleet production:	259.92 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.767/LCY

Total job time:	1.54 Hours
Total job cost:	\$307

REVEGETATION WORK

Task description: : King Coal Mine		King I - revegetate h	Ŭ	area (Area #4) RN7	Permit/Job#:	C1981035	
PROJEC ¹	<u>r identif</u> i	CATION					
Task #:	009	State: Co	olorado		Abbreviation:	None	
Task #: Date:	009 5/4/2017		olorado 1 Plata		Abbreviation: Filename:	None C035-009	

FERTILIZING

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	150.00	pound	\$0.34	\$51.00
			Total Fertilizer Materials	
			Cost/Acre	\$51.00

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	1.74	5.59	\$13.35
Switchgrass - Pathfinder	0.75	6.70	\$7.48
Mountain Brome - Bromar	1.82	2.92	\$7.92
Burnett, Small (or Little) - Delar	2.61	3.30	\$6.53
Sheep Fescue - Bighorn	0.31	4.84	\$1.47
Thickspike Wheatgrass - Critana	1.16	4.10	\$6.66
Western Wheatgrass - Native	2.54	6.41	\$17.78
Flax, Lewis Blue	0.46	3.05	\$7.59
Totals Seed Mix	11.39	36.92	\$68.76

Application

Description		Cost /Acre
		\$0.00
	Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
	Total Mulch Application Cost/Acre	\$99.32

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	ek Cost / Acre	\$0.00

	No. of Acres:	1.31	Cos	st /Acre:	\$885.70
Estimate	ed Failure Rate:	50%	Cost	/Acre*:	\$68.76
*Selected Replanti	ng Work Items:	SEEDING			
Initial Job Cost:	\$1,160.27		_		
Reseeding Job Cost:	\$45.04		_		
Total Job Cost:	\$1,205				
Job Hours:	4.00		-		

MOTOR GRADER WORK

Task description:	King I - rip and	final grade l	ower facilities	area		
: King Coal Mine	Per	mit Action:	RN7	Per	mit/Job#: <u>C1981035</u>	
PROJECT IDENTIF	ICATION					
Task #: 010	State:	Colorado		Abbrev	viation: None	
Date: 5/4/2017	County:	La Plata		File	ename: C035-010	
User: JHB	·					
Agency or organ	nization name: DI	RMS				
HOURLY EQUIPME	TNT COST					
					1.50	
Basic Machine				Horsepower:	158	
Ripper Attachment	t: Multi-Shank Ri	pper		Shift Basis:	1 per day	
				Data Source:	(CRG)	
Cost Breakdown:						
				Utilization %		
	ership Cost/Hour:		\$28.02	NA		
	cating Cost/Hour:		\$28.28	100		
	ership Cost/Hour:		\$1.99	NA		
	rating Cost/Hour:		\$2.16	100		
_	erator Cost/Hour:		\$28.90	NA		
Total	Unit Cost/Hour:		\$89.35			
	to be graded or rippe		1 1		acres	
Source	e of estimated acreag	ge: <u>TR-9 s</u> ı	ibmittal			
HOURLY PRODUCT						
HOURLY PRODUC	Average Grader S		1.25	mph		
HOURLY PRODUC	Average Grader S _I Selected Applica	tion:	Prod	uction Deration - 1	.25	
HOURLY PRODUC'	Average Grader S Selected Applica Selected Blade A	tion:	Prod 30	uction Deration - 1 degrees	.25	
	Average Grader Sp Selected Applica Selected Blade A Effective Blade Let	ngle:	Prod 30 10.40	uction Deration - 1 degrees feet	.25	
Width o	Average Grader S Selected Applica Selected Blade A Effective Blade Le of blade overlap per	tion: ngle: ngth: pass:	Prod 30 10.40 2.00	uction Deration - 1 degrees feet feet	.25	
Width o Net grading o	Average Grader Sp Selected Applica Selected Blade A Effective Blade Ler of blade overlap per or ripping width per	tion: ngle: ngth: pass: pass:	Prod 30 10.40 2.00 8.40	uction Deration - 1 degrees feet feet feet		
Width o Net grading o Unadjusted	Average Grader Sp Selected Applica Selected Blade A Effective Blade Les of blade overlap per or ripping width per I Hourly Unit Produc	tion: ngle: ngth: pass: pass:	Prod 30 10.40 2.00 8.40 1.2727	uction Deration - 1 degrees feet feet feet acres/hour		
Width o Net grading o	Average Grader Sp Selected Applica Selected Blade A Effective Blade Les of blade overlap per or ripping width per I Hourly Unit Produc	tion: ngle: ngth: pass: pass: pass:	Prod 30 10.40 2.00 8.40 1.2727	uction Deration - 1 degrees feet feet feet		
Width o Net grading o Unadjusted Job Condition Correction	Average Grader Sp Selected Applica Selected Blade A Effective Blade Le of blade overlap per or ripping width per Hourly Unit Produc	tion: ngle: pass: pass: tion: Source	Prod 30 10.40 2.00 8.40 1.2727 Sit	uction Deration - 1 degrees feet feet feet acres/hour		
Width o Net grading o Unadjusted Job Condition Correction Altitude Adj:	Average Grader Sp Selected Applica Selected Blade A Effective Blade Les of blade overlap per or ripping width per Hourly Unit Produc <u>Factors</u> 1.00	tion: ngle: pass: pass: tion: Source (CAT HB	Prod 30 10.40 2.00 8.40 1.2727 Sin ()	uction Deration - 1 degrees feet feet feet acres/hour		
Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency:	Average Grader Sp Selected Applica Selected Blade A Effective Blade Les of blade overlap per or ripping width per I Hourly Unit Produc <u>n Factors</u> <u>1.00</u> 0.85	tion:	Prod 30 10.40 2.00 8.40 1.2727 Sin ()	uction Deration - 1 degrees feet feet feet acres/hour		
Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	Average Grader Sp Selected Applica Selected Blade A Effective Blade Les of blade overlap per or ripping width per Hourly Unit Produce <u>n Factors</u> <u>1.00</u> 0.85 0.8500	tion:	Prod 30 10.40 2.00 8.40 1.2727 Sin (b) (c)	te Altitude: 7400 fe		
Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	Average Grader Sp Selected Applica Selected Blade A Effective Blade Les of blade overlap per or ripping width per I Hourly Unit Produc <u>n Factors</u> <u>1.00</u> 0.85 0.8500 djusted Hourly Unit	tion:	Prod 30 10.40 2.00 8.40 1.2727 Sit 3) d.) 1.0818	uction Deration - 1 degrees feet feet feet acres/hour		
Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	Average Grader Sp Selected Applica Selected Blade A Effective Blade Les of blade overlap per or ripping width per Hourly Unit Produce <u>n Factors</u> <u>1.00</u> 0.85 0.8500	tion:	Prod 30 10.40 2.00 8.40 1.2727 Sin (b) (c)	te Altitude: 7400 fe		
Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	Average Grader Sp Selected Applica Selected Blade A Effective Blade Let of blade overlap per or ripping width per l Hourly Unit Produce <u>n Factors</u> <u>1.00</u> 0.85 0.8500 adjusted Hourly Unit djusted Hourly Fleet	tion:	Prod 30 10.40 2.00 8.40 1.2727 Sit 3) d.) 1.0818	uction Deration - 1 degrees feet feet feet acres/hour		
Width of Net grading of Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction: A A	Average Grader S Selected Applica Selected Blade A Effective Blade Let of blade overlap per or ripping width per Hourly Unit Produce <u>1 Factors</u> <u>1.00</u> 0.85 0.8500 adjusted Hourly Unit djusted Hourly Fleet <u>ST</u>	tion: ngle: ngth: pass: pass: tion: CAT HB (1sh/d, modention) Production: Production:	Prod 30 10.40 2.00 8.40 1.2727 Sit 3) d.) 1.0818	uction Deration - 1 degrees feet feet feet acres/hour acres/Hour acres/Hour		

REVEGETATION WORK

Task descrij King Coa		King I - revegetate highw Permit Actio	· · · · · ·	Permit/Job#:	C1981035
	F IDENTIF 011			Abbrovistion	None
		State: Colorad	10	Abbreviation:	None
Task #: Date:	5/4/2017	County: La Plat	a	Filename:	C035-011

FERTILIZING

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	150.00	pound	\$0.34	\$51.00
			Total Fertilizer Materials	
			Cost/Acre	\$51.00

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	1.74	5.59	\$13.35
Switchgrass - Pathfinder	0.75	6.70	\$7.48
Mountain Brome - Bromar	1.82	2.92	\$7.92
Burnett, Small (or Little) - Delar	2.61	3.30	\$6.53
Sheep Fescue - Bighorn	0.31	4.84	\$1.47
Thickspike Wheatgrass - Critana	1.16	4.10	\$6.66
Western Wheatgrass - Native	2.54	6.41	\$17.78
Flax, Lewis Blue	0.46	3.05	\$7.59
Totals Seed Mix	11.39	36.92	\$68.76

Application

Description		Cost /Acre
		\$0.00
	Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
	Total Mulch Application Cost/Acre	\$99.32

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	ek Cost / Acre	\$0.00

	No. of Acres:	1.19		Cost /Acre:	\$885.70
Estimate	Estimated Failure Rate:		C	Cost /Acre*:	\$68.76
*Selected Replanti	ng Work Items:	SEEDING			
Initial Job Cost:	\$1,053.98				
Reseeding Job Cost:	\$40.91		_		
Total Job Cost:	\$1,095		_		
Job Hours:	4.00		_		

BULLDOZER WORK

	0	regrade	cover or pre	-law portion of refus	t al ta	
King Coal Mine		Per	mit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDEN	TIFICATIO	N				
Task #: 012		State:	Colorado		Abbreviation:	None
Date: $5/4/20$	17	County:	La Plata		Filename:	C035-012
User: JHB						
	·					
Agency or o	organization n	ame: DR	RMS			
HOURLY EQUI	PMENT CO	<u>ST</u>				
Basic Machine:	Cat D8T - 8S	SU		_		
Horsepower:	310			_		
Blade Type:	Semi-Univer			_		
Attachment:	3-shank rippe	er		_		
Shift Basis:	1 per day			_		
Data Source:	(CRG)			_		
Cost Breakdown:						
				Utilization %		
Ownership Cost/Ho			\$83.81	NA		
Operating Cost/Ho			\$66.17	100		
Ripper or Cost/Ho			\$7.55	NA		
Ripper op. Cost/Ho			\$0.00	0		
Operator Cost/Ho			\$41.85	NA		
1						
		8				
MATERIAL QUA	ANTITIES	-				
	ANTITIES 3,275	-				
Initial Volume:		-	_			
Initial Volume: Swell factor:	3,275					
Initial Volume: Swell factor:	3,275 1.000 3,275 LCY volume:					
Initial Volume:	3,275 1.000 3,275 LCY volume: swell	0.58 acres				
Initial Volume:	3,275 1.000 3,275 LCY volume: swell UCTION	0.58 acres Cat Hand				
Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distance	3,275 1.000 3,275 LCY volume: swell UCTION ce:	0.58 acres Cat Hand	book			
Initial Volume:	3,275 1.000 3,275 LCY volume: swell UCTION ce:	0.58 acres Cat Hand	book			
Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distance	3,275 1.000 3,275 LCY volume: swell UCTION ce:	0.58 acres Cat Hand 100 feet 852.6 LCY/	book			
Initial Volume:	3,275 1.000 3,275 LCY volume: swell UCTION ce: y description:	0.58 acres Cat Hand 100 feet 852.6 LCY/	hr			
Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distand Unadjusted hourly production: Materials consistency	3,275 1.000 3,275 LCY volume: swell UCTION ce: y description: ent:0 %	0.58 acres Cat Hand 100 feet 352.6 LCY/ Loose s	hr			
Initial Volume:	3,275 1.000 3,275 LCY volume: swell UCTION ce: y description: ent:0 %	0.58 acres Cat Hand 100 feet 352.6 LCY/ Loose s	hr			
Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distand Unadjusted hourly production: Materials consistency	3,275 1.000 3,275 LCY volume: swell UCTION ce: y description: ent:0 % ::7,400 fr	0.58 acres Cat Hand 100 feet 352.6 LCY/ Loose s	hr			
Initial Volume:	$3,275 \\ 1.000 \\ 3,275 LCY \\ volume: \\ swell \\ UCTION \\ ce: \\ y description: \\ ent: 0 % \\ :: 7,400 ft \\ 2,900 lt \\ $	0.58 acres Cat Hand 100 feet 852.6 LCY/ Loose s eet bs/LCY	hr	50% Earth		
Initial Volume:	3,275 1.000 3,275 LCY volume: swell UCTION ce: y description: ent:0 % ::7,400 ft 2,900 lt Decom	0.58 acres Cat Hand 100 feet 852.6 LCY/ Loose s eet bs/LCY	hr tockpile 1.2			

Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.4739	

Adjusted unit production:	404.05 LCY/hr
Adjusted fleet production:	404.05 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.493/LCY

Total job time:	8.11 Hours
Total job cost:	\$1,616

BULLDOZER WORK

Task description:	IXIII		U SIOMUII	nedium on pre-law refu	ist al ta	
King Coal Mine		Per	mit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDEN	TIFICATI	<u>ON</u>				
Task #: 013		State:	Colorado		Abbreviation:	None
Date: $5/4/20$	17	County:	La Plata		Filename:	C035-013
User: JHB		j.		,		
Agency or	organization	name: DF	RMS			
HOURLY EQUI	PMENT CO	OST				
Basic Machine:	Cat D8T - 8			_		
Horsepower:	310			_		
Blade Type:	Semi-Unive			_		
Attachment:	3-shank rip	per		_		
Shift Basis:	1 per day			_		
Data Source:	(CRG)			-		
Cost Breakdown:						
				Utilization %		
Ownership Cost/Ho			\$83.81	NA		
Operating Cost/Ho	our:		\$66.17	100		
Ripper o Cost/Ho			\$7.55	NA		
Ripper op. Cost/Ho			\$0.00	0		
	Jui		+			
Operator Cost/Hou Total unit Cost/Hou Total Fleet Cost/Hou	our:	38	\$41.85	NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QU</u> Initial Volume: Swell factor:	our:	38		NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QU</u> Initial Volume: Swell factor:	our:	38		NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	our:	38	\$41.85	NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated	our:	38 	\$41.85	NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	our:	38 	\$41.85	NA		
Operator Cost/Hour Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD	our: r: \$199. ur: \$199. ANTITIES 468 1.000 468 LCY volume: swell UCTION	38 	\$41.85	NA		
Operator Cost/Hour Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor:	our: r: \$199. ur: \$199. ANTITIES 468 1.000 468 LCY volume: swell UCTION	38 	\$41.85	NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated factor: <u>HOURLY PROD</u> Average push distand Unadjusted hourly	our:	38 0.58 acres Cat Hand 100 feet 852.6 LCY/	\$41.85	NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly production: Materials consistenc Average push gradie	pur: \$199. Ir: \$199. ANTITIES 468 468 1.000 468 LCY volume: swell UCTION ce: y description	38 0.58 acres Cat Hand 100 feet 852.6 LCY/ a: Loose s	\$41.85 	NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distand Unadjusted hourly production: Materials consistenc	pur: \$199. Ir: \$199. ANTITIES 468 468 1.000 468 LCY volume: swell UCTION ce: y description	38 0.58 acres Cat Hand 100 feet 852.6 LCY/ a: Loose s	\$41.85 	NA		
Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly production: Materials consistenc Average push gradie	pur: \$199. r: \$199. ANTITIES 468 1.000 468 LCY volume: swell UCTION ce:	38 0.58 acres Cat Hand 100 feet 852.6 LCY/ a: Loose s	\$41.85 	NA		
Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly production: Materials consistenc Average push gradie Average site altitude	pur: \$199. r: \$199. ur: \$199. ANTITIES 468 468 1.000 468 LCY volume: swell UCTION	38 0.58 acres Cat Hand 100 feet 852.6 LCY/ a: Loose s feet lbs/LCY	\$41.85 			
Operator Cost/Ho Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated factor: MOURLY PROD Average push distand Unadjusted hourly production: Materials consistenc Average push gradie Average site altitude Material weight:	Dur:	38 0.58 acres Cat Hand 100 feet 852.6 LCY/ a: Loose s feet lbs/LCY mposed rock	\$41.85			

Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.4739	

Adjusted unit production:	404.05 LCY/hr
Adjusted fleet production:	404.05 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.493/LCY

Total job time:	1.16 Hours
Total job cost:	\$231

REVEGETATION WORK

Task des	cription:	King I - revegetate	refuse area	(Area #5)		
e: King	Coal Mine	Permit	t Action: _ F	RN7	Permit/Job#:	C1981035
PROJI	CT IDENTIF	ICATION				
Task	#: 014	State: 0	Colorado		Abbreviation:	None
Task Da			Colorado La Plata		Abbreviation: Filename:	None C035-014

FERTILIZING

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	150.00	pound	\$0.34	\$51.00
			Total Fertilizer Materials	
			Cost/Acre	\$51.00

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	1.74	5.59	\$13.35
Switchgrass - Pathfinder	0.75	6.70	\$7.48
Mountain Brome - Bromar	1.82	2.92	\$7.92
Burnett, Small (or Little) - Delar	2.61	3.30	\$6.53
Sheep Fescue - Bighorn	0.31	4.84	\$1.47
Thickspike Wheatgrass - Critana	1.16	4.10	\$6.66
Western Wheatgrass - Native	2.54	6.41	\$17.78
Flax, Lewis Blue	0.46	3.05	\$7.59
Totals Seed Mix	11.39	36.92	\$68.76

Application

Description		Cost /Acre
		\$0.00
	Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
	Total Mulch Application Cost/Acre	\$99.32

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	ck Cost / Acre	\$0.00

	No. of Acres:	0.58	Cost /	Acre:	\$885.70
Estimate	d Failure Rate:	50%	Cost /A	cre*:	\$68.76
*Selected Replantin	ng Work Items:	SEEDING			
Initial Job Cost: Reseeding Job Cost: Total Job Cost: Job Hours:	\$19.94 \$534				

BULLDOZER WORK

Task description:	0			efuse pile		
King Coal Mine		Per	mit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDEN	TIFICATIO	ON				
Task #: 015 Date: 5/4/20 User: JHB		State: County:	Colorado La Plata		Abbreviation: Filename:	None C035-015
Agency or	organization	name: DF	RMS			
HOURLY EQUI	PMENT CO	<u>)ST</u>				
Basic Machine: Horsepower: Blade Type: Attachment: Shift Basis: Data Source:	Cat D8T - 8 310 Semi-Unive 3-shank ripp 1 per day (CRG)	rsal		-		
Cost Breakdown:			1			
Ownership Cost/H	our		\$83.81	<u>Utilization %</u> NA		
Operating Cost/H			\$66.17	100		
Ripper of			\$7.55	NA		
Cost/H			\$0.00	0		
Ripper on Cost/H	our.			0		
Ripper op. Cost/H Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Ho	our:		\$41.85	NA		
Operator Cost/H Total unit Cost/Hou	our:			NA		
Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Ho <u>MATERIAL QU</u> Initial Volume: Swell factor:	our: r: \$199.3 ur: \$199.3 ANTITIES 6,098 1.000 6,098 LCY volume:	38	\$41.85			
Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Ho <u>MATERIAL QU</u> Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor:	our: r: \$199.3 ur: \$199.3 ANTITIES 6,098 1.000 6,098 LCY volume: swell	38 3.5' depth	\$41.85			
Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	our: r: <u>\$199.3</u> ur: \$199.3 ANTITIES 6,098 1.000 6,098 LCY volume: swell DUCTION	38 3.5' depth	\$41.85			
Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Ho <u>MATERIAL QU</u> Initial Volume: Swell factor: Loose volume: Source of estimated factor: <u>HOURLY PROE</u> Average push distar Unadjusted hourly	our: r: <u>\$199.3</u> ur: \$199.3 ANTITIES 6,098 1.000 6,098 LCY volume: swell DUCTION nce:	3.5' depth 	\$41.85	es		
Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Ho <u>MATERIAL QU</u> Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: <u>HOURLY PROD</u> Average push distar Unadjusted hourly production:	our:	3.5' depth	\$41.85	es		
Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROE Average push distar Unadjusted hourly production: Materials consistence	our: \$199.3 r: \$199.3 ur: \$199.3 ANTITIES 6,098 6,098 1.000 6,098 LCY volume: swell DUCTION	3.5' depth	\$41.85	es		
Operator Cost/H Total unit Cost/Hou Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly production: Materials consistence Average push gradie Average site altitude	our: r: \$199.3 ur: \$199.3 ANTITIES 6,098 1.000 6,098 LCY volume: swell DUCTION nce: cy description ent: 25 % c; 7,400 2,900	3.5' depth	\$41.85	es 		

Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.422	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.1833	

Adjusted unit production:	156.28 LCY/hr
Adjusted fleet production:	156.28 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$1.276/LCY

Total job time:	39.02 Hours
Total job cost:	\$7,780

BULLDOZER WORK

King Coal Mine		Per	mit Action:	RN7	Permit/Job#	C1981035
PROJECT IDENTI	FICATION	<u>1</u>				
Task #: 016		State:	Colorado		Abbreviation:	None
Date: $5/4/2017$		County:	La Plata		Filename:	C035-016
User: JHB	<u> </u>	county.	La Flata		T fieldifie.	0000 010
Agency or org	vanization na	ne: DF	RMS			
HOURLY EQUIPM						
	at D8T - 8SU	J		_		
· ·	10	1		-		
• 1	emi-Universa			-		
	-shank ripper			-		
	per day			_		
Data Source:(CRG)			_		
Cost Breakdown:						
				Utilization %		
Ownership Cost/Hour	:		\$83.81	NA		
Operating Cost/Hour			\$66.17	100		
Ripper own			\$7 EE	NT 4		
Cost/Hour	:		\$7.55	NA		
D: ~ ~ -			\$0.00	0		
Ripper op. Cost/Hour			φ0.00			
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour:	\$199.38 \$199.38		\$41.85	NA		
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume:6,0	: 			NA		
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUAN</u> Initial Volume: <u>6,0</u> Swell factor: <u>1.0</u>	: 			NA		
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUAN</u> Initial Volume: <u>6,0</u> Swell factor: <u>1.0</u>	: \$199.38 \$199.38 VTITIES 998 900 998 LCY lume:	3.5' deptl Cat Hand	\$41.85			
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUAN</u> Initial Volume: 6,0 Swell factor: 1.0 Loose volume: 6,0 Source of estimated vo Source of estimated sw	:		\$41.85			
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,0 Swell factor: 1.0 Loose volume: 6,0 Source of estimated vo Source of estimated vo Source of estimated sw factor: HOURLY PRODUC	:	Cat Hand	\$41.85			
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,0 Swell factor: 1.0 Loose volume: 6,0 Source of estimated vo Source of estimated sw factor:	:		\$41.85			
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,0 Swell factor: 1.0 Loose volume: 6,0 Source of estimated vo Source of estimated vo Source of estimated sw factor: HOURLY PRODUC Average push distance: Unadjusted hourly	: \$199.38 \$199.38 VTITIES 998 900 998 LCY lume: ell CTION 50 1,	Cat Hand	\$41.85	 255		
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,0 Swell factor: 1.0 Loose volume: 6,0 Source of estimated vo Source of estimated vo Source of estimated sw factor: HOURLY PRODUC Average push distance: Unadjusted hourly production:	:	Cat Hand) feet 400.0 LC Partly c	\$41.85	 255		
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,0 Swell factor: 1.0 Loose volume: 6,0 Source of estimated vo Source of estimated vo Source of estimated sw factor: HOURLY PRODUC Average push distance: Unadjusted hourly production: Materials consistency of Average push gradient:	:	Cat Hand) feet 400.0 LC Partly c	\$41.85	 255		
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume: 6,0 Swell factor: 1.0 Loose volume: 6,0 Source of estimated vo Source of estimated vo Source of estimated sw factor: HOURLY PRODUC Average push distance: Unadjusted hourly production: Materials consistency of Average push gradient: Average site altitude:	:	Cat Hand) feet 400.0 LC Partly c et /LCY	\$41.85			
Operator Cost/Hour Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUAN Initial Volume:	:	Cat Hand) feet 400.0 LC Partly c et /LCY osed rock	\$41.85h on 1.08 acro book Y/hr consolidated			

Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
		·
Net correction:	0.4344	

Adjusted unit production:	608.16 LCY/hr
Adjusted fleet production:	608.16 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.328/LCY

Total job time:	10.03 Hours
Total job cost:	\$1,999
°	

TRUCK/LOADER TEAM WORK

Initial volume: Bit of the second secon	Site: King Coal Mine		Permit Acti	on: RN7		Permit/Job#: <u>C</u>	1981035	
Task #: 017 State: Colorado Abbreviation: None Date: 5/4/2017 County: La Plata Filename: C035-017 HB	DDAIECT IDEN	TIFICATION						
Date: 5/4/2017 County: La Plata Filename: C035-017 Agency or organization name: DRMS HOURLY EQUIPMENT COST Shift basis: Lper day Equipment Description Truck Loader Team -Truck: Generic 10-12 cy, 6s4		IIIICATION	-					
User: JHB Agency or organization name: DRMS HOURLY EQUIPMENT COST Shift basis: L per day Equipment Description Truck Loader Team -Truck: Generic 10-12 cy, 6x4 -Loadder: OBSOLETE - CAT 938H OBSOLETE - CAT 938H Support Equipment -Load Area: NA Output Area: NA -Dump Area: NA NA OBSOLETE - CAT 938H OBSOLETE - CAT 938H Cost Breakdown: Truck/Loader Team Support Equipment Maintenance Equipment -Water Truck: NA NA NA -Water Truck: NA NA NA Ownership cost/hour: \$18.29 \$25.66 NA NA NA Operating cost/hour: \$18.29 \$25.66 NA NA NA Maintenance Equipment vultilization-riper: NA 0 NA NA NA NA Maintenance Maintenance Maintenance Generic Truck Maintenance Maintenance Generic Truck Maintenance Generic Truck Maintenance Maintenance Generic Truck Maintenance Suff and NA NA NA </td <td></td> <td>17</td> <td></td> <td></td> <td> Ab</td> <td></td> <td></td>		17			Ab			
Agency or organization name: DRMS Bift basis: 1 per day Equipment Description Truck Loader Team -Truck: Generic 10-12 cy, 6x4 - CAT 938H Support Equipment -Load Area: NA - Dump Area: NA - Obump Area: NA - Na - Water Truck: NA - Na Dump Area Motor Grader Water Tru Utilization-machine: 100 NA NA NA Operating cost/hour: \$18.29 \$22.56 NA NA NA %Utilization-riper: NA 0 NA NA NA NA NA %Utilization-riper: NA 0 NA NA </td <td></td> <td></td> <td>County. La Fla</td> <td>ita</td> <td></td> <td>Filenanie. <u>Co.</u></td> <td>55-017</td>			County. La Fla	ita		Filenanie. <u>Co.</u>	55-017	
Equipment Description Truck Loader Team -Truck: Generic 10-12 cy, 6x4 Support Equipment -Load Area: NA -Dump Area: NA Road MaintenanceMotor Grader: NA -Water Truck: NA -Water Truck: NA -Water Truck: NA -Water Truck: Load Area Utilization-machine: 100 100 NA Operating cost/hour: \$18.29 \$25.66 NA NA NA Operating cost/hour: \$39.97 \$32.31 NA NA NA Operating cost/hour: NA Supper own, cost/hour: NA NA 0 NA 0 NA 0 NA NA Operator cost/hour: NA Support: \$0.00 NA 0 Operator cost/hour: \$0.00 Suce of estimated swell \$25.69 Support: Support cost/hour: \$215.69 Support:		organization nan	ne: DRMS					
Equipment Description Truck Loader Team -Truck: Generic 10-12 cy, 6x4	HOURLY FOUL	- PMFNT COS'	г		Shift has	vis: 1 per dav		
Truck Loader Team -Truck: Loader: -Loader: OBSOLETE - CAT 938H Support Equipment -Load Area: NA NA -Dump Area: NA NA Road Maintenance –Motor Grader:Water Truck: NA NA -Water Truck: NA NA Cost Breakdown: Truck/Loader Team Support Equipment Maintenance Equipment Truck Loader Truck: NA Motor Grader Water Truck: NA Utilization-machine: 100 100 NA NA Operating cost/hour: \$18.29 \$25.66 NA NA %Utilization-riper: NA 0 NA NA %Operator cost/hour: S0.00 \$41.20 NA NA %Operator cost/hour: \$0.00 \$41.20 NA NA %Operator cost/hour: \$215.69 Support: \$0.00 Maint: \$0.00 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Group Subtotals: Work: \$215.69 </td <td><u>HOUKET EQUI</u></td> <td></td> <td></td> <td>E</td> <td></td> <td>sis. <u>1 per day</u></td> <td></td>	<u>HOUKET EQUI</u>			E		sis. <u>1 per day</u>		
-Loader: OBSOLETE - CAT 938H Support Equipment -Load Area: NA -Dump Area: NA -Dump Area: NA -Dump Area: NA -Water Truck: NA Utilization-machine: 100 NA NA NA NA Operating cost/hour: \$\$32.31 NA NA NA NA NA Operating cost/hour: \$\$32.31 NA NA NA NA NA NA NA <th co<="" td=""><td>Т</td><td>ruck Loader Tea</td><td></td><td></td><td></td><td></td><td></td></th>	<td>Т</td> <td>ruck Loader Tea</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Т	ruck Loader Tea					
Support Equipment -Load Area: -Dump Area: NA Road Maintenance -Motor Grader: -Water Truck: NA Cost Breakdown: Truck/Loader Team Support Equipment Maintenance Equipment Utilization-machine: 100 100 NA NA Utilization-machine: 100 100 NA NA Operating cost/hour: \$18.29 \$25.66 NA NA Operating cost/hour: \$39.97 \$32.31 NA NA Operating cost/hour: NA 0 NA NA Pper own. cost/hour: NA \$0.00 NA NA Operator cost/hour: NA \$0.00 NA NA Operator cost/hour: NA \$0.00 NA NA Operator cost/hour: \$0.00 \$41.20 NA NA Unit Subtotals: \$58.26 \$99.17 NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Lose volume	1	ruek Loader rea						
Road MaintenanceMotor Grader: Water Truck: NA Cost Breakdown: Truck/Loader Team Support Equipment Maintenance Equipme Utilization-machine: 100 100 NA NA NA Utilization-machine: 100 100 NA NA NA Ownership cost/hour: \$18.29 \$25.66 NA NA NA Operating cost/hour: \$18.29 \$25.66 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA \$0.00 NA NA NA %Utilization-riper: NA \$0.00 NA NA NA Operator cost/hour: \$0.00 \$41.20 NA NA NA Numb	Suppo	ort Equipment -L	oad Area: NA					
-Water Truck: NA Cost Breakdown: Truck/Loader Team Support Equipment Maintenance Equipment Truck Loader Load Area Dump Area Motor Grader Water Tru Utilization-machine: 100 100 NA NA NA Ownership cost/hour: \$18.29 \$25.66 NA NA NA Operating cost/hour: \$39.97 \$32.31 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA \$0.00 NA NA NA per own. cost/hour: NA \$0.00 NA NA NA Operator cost/hour: S0.00 \$41.20 NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td>			1					
Cost Breakdown: Truck/Loader Team Support Equipment Maintenance Equipment Truck Loader Load Area Dump Area Motor Grader Water Tru Utilization-machine: 100 100 NA NA NA Ownership cost/hour: \$18.29 \$25.66 NA NA NA Operating cost/hour: \$39.97 \$32.31 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA 0 NA NA NA per own. cost/hour: NA \$0.00 NA NA NA Operator cost/hour: NA \$0.00 NA NA NA Operator cost/hour: \$0.00 \$41.20 NA NA NA Unit Subtotals: \$58.26 \$99.17 NA NA NA Number of Units: 2 1 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$215	Road Ma							
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Dwnership cost/hour: \$18.29 \$25.66 NA NA NA Operating cost/hour: \$39.97 \$32.31 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA 0 NA NA NA %Utilization-riper: NA \$0.00 NA NA NA pper own. cost/hour: NA \$0.00 NA NA NA Ripper op. cost/hour: NA \$0.00 NA NA NA Operator cost/hour: \$0.00 \$41.20 NA NA NA Unit Subtotals: \$58.26 \$99.17 NA NA NA Number of Units: 2 1 0 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$1,245 CCY Swell factor: 1.429	Utilization-machine:	100	100	NA	NA	NA	NA	
Operating cost/hour: \$39.97 \$32.31 NA NA NA %Utilization-riper: NA 0 NA NA NA pper own. cost/hour: NA \$0.00 NA NA NA Ripper op. cost/hour: NA \$0.00 NA NA NA Operator cost/hour: NA \$0.00 NA NA NA Operator cost/hour: \$0.00 \$41.20 NA NA NA Unit Subtotals: \$58.26 \$99.17 NA NA NA Number of Units: 2 1 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$215.69 Support: \$0.00 Maint: \$0.00 MATERIAL QUANTITIES							NA	
%Utilization-riper: NA 0 NA NA NA ipper own. cost/hour: NA \$0.00 NA NA NA Ripper op. cost/hour: NA \$0.00 NA NA NA Operator cost/hour: NA \$0.00 NA NA NA Operator cost/hour: \$0.00 \$41.20 NA NA NA Unit Subtotals: \$58.26 \$99.17 NA NA NA Number of Units: 2 1 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$215.69	-						NA	
pper own. cost/hour: NA \$0.00 NA NA NA Ripper op. cost/hour: NA \$0.00 NA NA NA Operator cost/hour: \$0.00 \$41.20 NA NA NA Operator cost/hour: \$0.00 \$41.20 NA NA NA Unit Subtotals: \$58.26 \$99.17 NA NA NA Number of Units: 2 1 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$215.69							NA	
Operator cost/hour: \$0.00 \$41.20 NA NA NA Unit Subtotals: \$58.26 \$99.17 NA NA NA Number of Units: 2 1 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$215.69 Support: \$0.00 Maint: \$0.00 MATERIAL QUANTITIES	•		\$0.00				NA	
Operator cost/hour:\$0.00\$41.20NANANAUnit Subtotals:\$58.26\$99.17NANANANumber of Units:21000Group Subtotals:Work:\$215.69Support:\$0.00Maint:\$0.00Total work team cost/hour: \$215.69 Support:\$0.00Maint:\$0.00MATERIAL QUANTITIESInitial volume:871CCYSwell factor:1.429Loose volume:1,245LCYLCYSwell factor:1.429Source of estimated volume:1.08 acres, 6" depthCat HandbookSourceSource		NA	\$0.00	NA	NA	NA	NA	
Unit Subtotals: \$58.26 \$99.17 NA NA NA Number of Units: 2 1 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$215.69 Support: \$0.00 Maint: \$0.00 MATERIAL QUANTITIES Initial volume: 871 CCY Swell factor: 1.429 Loose volume: 1.245 LCY Source of estimated volume: 1.08 acres, 6" depth Cat Handbook		\$0.00	\$41.20	NA	NA	NA	NA	
Number of Units: 2 1 0 0 0 Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$215.69	1	\$58.26	\$99.17	NA	NA	NA	NA	
Group Subtotals: Work: \$215.69 Support: \$0.00 Maint: \$0.00 Total work team cost/hour: \$215.69							(
MATERIAL QUANTITIES Initial volume: 871 CCY Swell factor: 1.429 Loose volume: 1,245 LCY LCY Source of estimated volume: 1.08 acres, 6" depth Cat Handbook		Work:						
MATERIAL QUANTITIES Initial volume: 871 CCY Swell factor: 1.429 Loose volume: 1,245 LCY LCY Source of estimated volume: 1.08 acres, 6" depth Cat Handbook	T. (.1. (4/1						
Initial volume: 871 CCY Swell factor: 1.429 Loose volume: 1,245 LCY Image: Source of estimated volume: 1.08 acres, 6" depth Source of estimated swell factor: 1.08 acres, 6" depth Cat Handbook	Total work team cos	st/nour: <u>\$215.05</u>	·					
Initial volume: 871 CCY Swell factor: 1.429 Loose volume: 1,245 LCY Image: Source of estimated volume: 1.08 acres, 6" depth Source of estimated swell factor: 1.08 acres, 6" depth Cat Handbook	MATERIAL OU	ANTITIFS						
Loose volume: 1,245 LCY Source of estimated volume: 1.08 acres, 6" depth Source of estimated swell factor: Cat Handbook								
Source of estimated volume: 1.08 acres, 6" depth Source of estimated swell factor: Cat Handbook					factor: <u>1.429</u>			
Source of estimated swell factor: Cat Handbook	Loose volume:	1,24						
	Source							
Material Purchase Cost: \$0.00 Total Cost: \$0.00								

Truck Capacity:		
Truck Payload (weight) Bas	<u>is:</u>	
Material weight:	2,850	Pounds/LCY
Description:	User Provided	
Rated Payload:	35,400	Pounds
Payload Capacity:	12.42	LCY

Truck Bed (volume) Basis:

10.00	LCY
12.00	LCY
11.00	LCY
12.00	LCY
	12.00 11.00

Final Truck Volume Based on Number of Loader Passes: 11.41 LCY

Site Altitude (ft.): 7500 feet

Loading Tool Capacity

		Bucket Size Class: NA
Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity:	3.803	LCY

Job Condition Corrections:

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Loading Tool Cycle Time: Number of	f Loading Tool Passes Required to Fill	3	passes
Excavators and Front Shovels:	Truck:	5	
Machine Cycle Time vs. Job Condition Rating:	NA		
Selected Value within this Basic Rating:	NA		
Track Loaders – Material Description:			

Cycle Time Elements (min.):

Load:	NA	Maneuver:	NA	Dump:	0.100	
-------	----	-----------	----	-------	-------	--

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.090	minutes
	Adjusted Loader Cycle Time:	0.393	minutes
	Net Load Time per Truck:	0.885	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.885	Minutes	Adjusted for site altitude:	0.885	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel (Haul & Return) Time: penetration 5 0

e

H

Road Condition:	Rutted	dirt,	little	maintenance,	no	water,	2"	' tire

Haul Rou	te:					
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	200.00	0.00	5.00	5.00	2218	0.158

	Return R	oute:				Haul Time:	0.158	minutes	3
	Seg #	1	Distance	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)	
-	1	200.0	0	0.00	5.00	5.00	2814	0.097]
					Total True	Return Time: ck Cycle Time:	0.097 2.540	minut	
	oading To Prod Unit Prod	uction	494.19	LCY/Hour		Adjusted for j	ob efficiency:	410.18	LCY/Hour
	0		269.47	LCY/Hour		Adjusted for j	ob efficiency:	223.66	LCY/Hour
Optima	al No. of T	rucks:	2	Truck(s)		Selected Num	ber of Trucks:	2	Truck(s)
						k team production			Y/Hour
						r team productio			r/Hour
				Adjusted multipl	e truck/loade	r team productio	on: 410.	<u>18</u> LC	Y/Hour
	JOB TI	ME AN	ND COST						
	Fleet	size:	1	Team(s)	7	Total job time:	3.03	H	lours
	Unit	cost:	\$0.526	/LCY	-	Total job cost:	\$655	5	

MOTOR GRADER WORK

Task description:	King I - finish gra	ade post-lav	v refuse area (a	area #6)			
E: King Coal Mine	Perm	Permit Action:			Permit/Job#: C1981035		
PROJECT IDENTI	FICATION						
Task #: 018	State:	Colorado		Abbrev	iation:	None	
Date: 5/4/2017	County:	La Plata		File	ename:	C035-018	
User: JHB							
Agency or orga	anization name: DR	MS					
HOURLY EQUIPM	ENT COST						
Basic Machin	e: CAT 12M			Horsepower:		158	
Ripper Attachmer		per		Shift Basis:		er day	
11	D	L		Data Source:	-	CRG)	
Cost Breakdown:							
Orum	anshin Cost/Hours		\$28.02	Utilization %			
	ership Cost/Hour: erating Cost/Hour:		\$28.02 \$28.28	<u>NA</u> 100			
	ership Cost/Hour:		\$28.28	 NA			
	erating Cost/Hour:		\$0.00	0			
11 1	perator Cost/Hour:		\$28.90	NA			
-	al Unit Cost/Hour:		\$87.19				
m .		40	10				
I ota	l Fleet Cost/Hour:	\$87.	.19				
	a to be graded or ripped	-				acres	
Sour	ce of estimated acreage	e: Section	2.05.3 of perm	it application			
HOURLY PRODUC	<u>CTION</u>						
	Average Grader Spe		1.25	mph			
	Selected Applicati			luction Deration - 1.	.25		
	Selected Blade Ang		30	degrees			
Width	Effective Blade Leng of blade overlap per pa		10.40 2.00	feet feet			
	or ripping width per pa		8.40	feet			
	d Hourly Unit Producti		1.2727	acres/hour			
Job Condition Correctio	-			te Altitude: 7400 fe			
		Source					
Altitude Adj:	1.00	(CAT HB	,				
Job Efficiency:	0.85	(1sh/d, mo	<u>, </u>				
Net Correction:	0.8500	multiplier					
	Adjusted Hourly Unit F	Production:	1.0818	acres/Hour			
	Adjusted Hourly Fleet F		1.0818	acres/Hour			
JOB TIME AND CO	<u>DST</u>						
Fleet size:	1 Grader(s)		Total job time	. 0.98		Hours	
Unit cost:\$8	0.60 per acre		Total job cost	: \$85			

REVEGETATION WORK

Task description:		King I - revegeta	King I - revegetate refuse area (Area #6)			ing I - revegetate refuse area (Area #6)		ing I - revegetate refuse area (Area #6)		King I - revegetate refuse area (Area #6)			
ite: King Coal Mine		Per	Permit Action: RN7		Permit/Job#:	C1981035							
F	PROJECT	<u>IDENTIF</u>	ICATION										
	Task #:	019	State:	Colorado		Abbreviation:	None						
	Date:	5/4/2017	County:	La Plata		Filename:	C035-019						
	User:	JHB											

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	150.00	pound	\$0.34	\$51.00
			Total Fertilizer Materials	
			Cost/Acre	\$51.00

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	1.74	5.59	\$13.35
Switchgrass - Pathfinder	0.75	6.70	\$7.48
Mountain Brome - Bromar	1.82	2.92	\$7.92
Burnett, Small (or Little) - Delar	2.61	3.30	\$6.53
Sheep Fescue - Bighorn	0.31	4.84	\$1.47
Thickspike Wheatgrass - Critana	1.16	4.10	\$6.66
Western Wheatgrass - Native	2.54	6.41	\$17.78
Flax, Lewis Blue	0.46	3.05	\$7.59
Totals Seed Mix	11.39	36.92	\$68.76

Application

Description	Cost /Acre
	\$0.00
Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
		1
	Total Mulch Application Cost/Acre	\$99.32

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	k Cost / Acre	\$0.00
			-		•

	No. of Acres:	1.08	Cost	t /Acre:	\$885.70
Estimate	d Failure Rate:	50%	Cost /	/Acre*:	\$68.76
*Selected Replantin	ng Work Items:	SEEDING			
Initial Job Cost:	\$956.56				
Reseeding Job Cost:	\$37.13				
Total Job Cost:	\$994				
Job Hours:	2.00				

MOTOR GRADER WORK

Task description:	King I - finish grade top	soil area		
: King Coal Mine	Permit Acti	on: <u>RN7</u>	Pern	nit/Job#: <u>C1981035</u>
PROJECT IDENT	TIFICATION			
Task #: 020 Date: 5/4/201 User: JHB	State:Colora7County:La Pla		Abbrevi File	iation: None name: C035-020
Agency or o	rganization name: DRMS			
HOURLY EQUIP	MENT COST			
Basic Macl			Horsepower:	158
Ripper Attachn	nent: Multi-Shank Ripper		Shift Basis: Data Source:	1 per day (CRG)
Cost Breakdown:				(CRO)
			Utilization %	
	wnership Cost/Hour:	\$28.02	NA	
	perating Cost/Hour:	\$28.28 \$1.99	100 NA	
	perating Cost/Hour:	\$0.00	0	
	Operator Cost/Hour:	\$28.90	NA	
T	otal Unit Cost/Hour:	\$87.19		
Тс	otal Fleet Cost/Hour:	\$87.19		
MATERIAL QUA	NTTTES			
		20		0.0*00
			nit application	acres
50	urce of estimated acreage: <u>Se</u>	ction 2.05.3 of pern		
HOURLY PRODU	JCTION			
	Average Grader Speed:	1.25	mph	
	Selected Application:	Proc 30	luction Deration - 1.	25
	Selected Blade Angle:	10.40	degrees feet	
Wid	th of blade overlap per pass:	2.00	feet	
	ng or ripping width per pass:	8.40	feet	
Unadjus	sted Hourly Unit Production:	1.2727	acres/hour	
Job Condition Correct	tion Factors	S	ite Altitude: 7400 fe	et
A 14:4-1-2 A 1		urce		
Altitude Adj Job Efficiency		T HB) l, mod.)		
Net Correction				
	Adjusted Hourly Unit Product	•	acres/Hour	
	Adjusted Hourly Fleet Product		acres/Hour	
JOB TIME AND (TOST			
Fleet size:	1 Grader(s)	Total job time	: 1.85	Hours
		-		
Unit cost:	\$80.60 per acre	Total job cost	t: \$161	

REVEGETATION WORK

Task description: King I		King I - revegeta	te borrow a	rea				
Site:	King Coa	al Mine	Per	nit Action:	RN7	Permit/Job#:	C1981035	
Ī	PROJECT	<u>IDENTIFI</u>	CATION					
	Task #:	021	State:	Colorado		Abbreviation:	None	
	Date:	5/4/2017	County:	La Plata		Filename:	C035-021	
	User:	JHB						
	Ag	ency or organ	ization name: DR	MS				

FERTILIZING

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	150.00	pound	\$0.34	\$51.00
			Total Fertilizer Materials	
			Cost/Acre	\$51.00

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	1.74	5.59	\$13.35
Switchgrass - Pathfinder	0.75	6.70	\$7.48
Mountain Brome - Bromar	1.82	2.92	\$7.92
Burnett, Small (or Little) - Delar	2.61	3.30	\$6.53
Sheep Fescue - Bighorn	0.31	4.84	\$1.47
Thickspike Wheatgrass - Critana	1.16	4.10	\$6.66
Western Wheatgrass - Native	2.54	6.41	\$17.78
Flax, Lewis Blue	0.46	3.05	\$7.59
Totals Seed Mix	11.39	36.92	\$68.76

Application

Description		Cost /Acre
		\$0.00
	Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
	Total Mulch Application Cost/Acre	\$99.32

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 1	Nursery Stoc	k Cost / Acre	\$0.00

No. of Acres:	2	Cost /Acre:	\$885.70
Estimated Failure Rate:	50%	Cost /Acre*:	\$68.76
*Selected Replanting Work Items:	SEEDING	<u> </u>	
Initial Job Cost: \$1,771.40			

Reseeding Job Cost:	\$68.76
Total Job Cost:	\$1,840
Job Hours:	4.00

BOREHOLE SEALING WORK

: King Coa	l Mine	Permit Action:	RN7	Permit/Job#: C1981035	
PROJEC	<u>T IDENTIF</u>	FICATION			
	022	State: Colorado		Abbreviation:	None
Date:	5/4/2017 JHB	County: La Plata		Filename:	C035=022

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Seal hole	Portland cement grout - 8 in. (labor, equip, materials)	7	100	100.00	LF	\$11.21	\$1,121.00
Bottom Plug	Stainless steel plug - 8 in. diameter borehole	7	100	1.00	EA	\$192.81	\$192.81
Cut Casing	Exposed casing removal - Calculate Circumference in Linear Feet	7	2	2.00	LF	\$1.77	\$3.54
Mark Hole	Borehole location/identification marker (EA, material cost only)	7	1	1.00	EA	\$3.67	\$3.67
drill rig	SCHRAMM T450WS	7	NA	1.00	hr	\$229.60	\$229.60

 Job Hours:
 8.00
 Total Cost:
 \$1,551.00

BULLDOZER WORK

Task description:	King	g I - Dackim and regrad	e east and west sedimen	t ponds	
King Coal Mine		Permit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDENT	TIFICATI	<u>ON</u>			
Task #: 023		State: Colorado		Abbreviation:	None
Date: 5/4/2017	7	County: La Plata		Filename:	C035-023
User: JHB					
Agency or or	rganization	name: DRMS			
HOURLY EQUIP	MENT CO	<u>DST</u>			
Basic Machine:	Cat D8T - 8	SU			
	310				
	Semi-Unive	ersal			
Attachment:	3-shank rip	per			
	1 per day				
Data Source:	(CRG)				
Cost Breakdown:					
<u></u>			Utilization %		
Ownership Cost/Hot	ır:	\$83.81	NA		
Operating Cost/Hou	ır:	\$66.17	100		
Ripper ow		\$7.55	NA		
Cost/Hou					
Ripper op. Cost/Hou		\$0.00	0		
Operator Cost/Hou	ır:	\$41.85	NA		
Total Fleet Cost/Hour MATERIAL QUA					
	,226				
	.165				
Loose volume: <u>3</u>	,758 LCY				
Source of estimated ve	olume:	Operator estimate			
Source of estimated sy	well	Cat Handbook			
factor:					
HOURLY PRODU	JCTION				
Average push distance	. .	75 feet			
Unadjusted hourly	-	1,017.1 LCY/hr			
production:		-,			
-	-				
Materials consistency	description	: Compacted fill or e	embankment 0.9		
Average push gradien	t: 0 %	^	mbankment 0.9		
	-	^	embankment 0.9		
Average push gradien	t: <u>0 %</u> <u>7,400</u>	^	mbankment 0.9		
Average push gradien Average site altitude:	t: 0 % 7,400 2,900	feet		_	
Average push gradien Average site altitude: Material weight:	t: <u>0 %</u> 7,400 _2,900 	feet lbs/LCY			

Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production:	361.48 LCY/hr
Adjusted fleet production:	361.48 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.552/LCY

Total job time:	10.40 Hours
Total job cost:	\$2,073

REVEGETATION WORK

Г	Task descrip	otion:	King I - revegeta	te east and	west ponds (Area #6)		
Site:	King Coa	al Mine	Perr	nit Action:	RN7	Permit/Job#:	C1981035
Ī	PROJEC1 Task #:	<u>TIDENTIFI</u> 025	CATION State:	Colorado		Abbreviation:	None
	Date: User:	5/4/2017 JHB	County:	La Plata		Filename:	C035-025
	Ag	ency or organi	ization name: DR	MS			

FERTILIZING

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	150.00	pound	\$0.34	\$51.00
			Total Fertilizer Materials	
			Cost/Acre	\$51.00

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	1.74	5.59	\$13.35
Switchgrass - Pathfinder	0.75	6.70	\$7.48
Mountain Brome - Bromar	1.82	2.92	\$7.92
Burnett, Small (or Little) - Delar	2.61	3.30	\$6.53
Sheep Fescue - Bighorn	0.31	4.84	\$1.47
Thickspike Wheatgrass - Critana	1.16	4.10	\$6.66
Western Wheatgrass - Native	2.54	6.41	\$17.78
Flax, Lewis Blue	0.46	3.05	\$7.59
Totals Seed Mix	11.39	36.92	\$68.76

Application

Description	Cost /Acre
	\$0.00
Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
	Total Mulch Application Cost/Acre	\$99.32

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre	
					\$	
	\$0.00					

No. of Acres:	1.86	Cost /Acre:	\$885.70
Estimated Failure Rate:	50%	Cost /Acre*:	\$68.76
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost: \$1,647.40			

minui 300 Cost.	Ψ1,047.40
Reseeding Job Cost:	\$63.95
Total Job Cost:	\$1,711
Job Hours:	4.00

SITE MAINTENANCE

King Coal Mine		Permit Action: RN7		RN7	Permit/Job#: <u>C1981035</u>		
<u>PROJE</u>	CT IDENTIF	TICATION					
TT 1 //	032	State:	Colorado		Abbreviation:	None	
Task #:	052						
Task #: Date:	5/4/2017	County:	La Plata		Filename:	C035-032	

<u>UNIT COSTS</u>

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
D3 Dozer	8.00	Cat D3K LGP - 3P	24.00	EA	\$81.57	\$1,957.68
12M Grader	8.00	CAT 12M	24.00	EA	\$95.88	\$2,301.12

Job Hours: 24.00

Total Cost: \$4,258.80
EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:			ation	
e: King Coal Mine	Permit	Action: <u>RN7</u>	Permit/Job#	#: <u>C1981035</u>
PROJECT IDENTIFI	CATION			
Task #: 050	State: C	Colorado	Abbreviation:	None
Date: 5/4/2017	County: L	a Plata	Filename:	C035-050
User: JHB				
Agency or organi	zation name: DRM	5		
EQUIPMENT TRANS	SPORT RIG COST			
			Shift basis:	1 per day
				·
			Cost Data Source:	CRG Data
Truck Tractor Truck Trailer	• 		Cost Data Source: AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006) OOSENECK, DROP DECK EQ (25T, 50T, AND 100T)	DIESEL POWERED
	• 		AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006) OOSENECK, DROP DECK EQ	DIESEL POWERED
Truck Trailer	Description: GEN		AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006) OOSENECK, DROP DECK EQ	DIESEL POWERED
Truck Trailer <u>Cost Breakdown:</u> Available Rig Capacities Ownership Cost/Ho	Description: GEN	ERIC FOLDING G	AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006) OOSENECK, DROP DECK EQ (25T, 50T, AND 100T)	DIESEL POWERED
Truck Trailer <u>Cost Breakdown:</u> Available Rig Capacities	Description: GEN	ERIC FOLDING GO	AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006) DOSENECK, DROP DECK EQ (25T, 50T, AND 100T) 51+ Tons	DIESEL POWERED
Truck Trailer <u>Cost Breakdown:</u> Available Rig Capacities Ownership Cost/Ho	Oescription: GEN 0-25 Tons 0.00000000000000000000000000000000000	ERIC FOLDING GO 26-50 Tons \$18.37	AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006) DOSENECK, DROP DECK EQ (25T, 50T, AND 100T) 51+ Tons \$22.33	DIESEL POWERED
Truck Trailer Cost Breakdown: Available Rig Capacities Ownership Cost/Ho Operating Cost/Ho	Oescription: GEN 0-25 Tons 000000000000000000000000000000000000	ERIC FOLDING GO 26-50 Tons \$18.37 \$46.13	AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006) DOSENECK, DROP DECK EQ (25T, 50T, AND 100T) 51+ Tons \$22.33 \$50.07	DIESEL POWERED

Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/unit	Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
-	(TONS)				fleet		
Cat D8T - 8SU	47.71	\$62.67	\$117.55	2	\$360.44	\$235.10	\$0.00
CAT 938H	16.34	\$21.63	\$88.67	2	\$220.60	\$177.34	\$0.00
CAT 12M	16.01	\$24.98	\$88.67	1	\$113.65	\$88.67	\$0.00
CAT 825H	36.08	\$62.10	\$117.55	1	\$179.65	\$117.55	\$0.00
Drill/Broadcast	25.00	\$39.59	\$88.67	1	\$128.26	\$88.67	\$0.00
Seeder with							
Tractor							
Power Mulcher	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$0.00
(Reinco M90)							
GENERIC 3.0 in	0.00	\$17.72	\$88.67	1	\$106.39	\$88.67	\$250.00
1, 700 ft. capy.							
					\$1.004.50	#004	

 Subtotals:
 \$1,204.69
 \$884.67
 \$250.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 10-12 cy, 6x4	\$101.68	2	\$203.36	\$203.36
Water Tanker, 2,500 Gal.	\$29.67	1	\$29.67	\$29.67
		Subtotals:	\$233.03	\$233.03

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	DURANGO	
Total one-way travel distance:	20.00	miles
Average Travel Speed:	40.00	mph
Total Non-Roadable Mob/Demob Cost *	\$9,817.50 \$233.03	

Transportation Cycle Time:

Haul Time (Hours):	Non-Roadable Equipment	Roadable Equipment 0.50
Return Time (Hours):	0.50	0.50
Loading Time (Hours):	2.00	NA
Unloading Time (Hours):	1.00	NA
Subtotals:	4.00	1.00

JOB TIME AND COST

Total job time: **8.00** Hours

Total job cost: \$10,051

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	King I&II -	mobilize for rill and gully	maintenance, X 3	
te: King Coal Min	e	Permit Action: <u>RN7</u>	Permit/Job#:	C1981035
PROJECT IDE	NTIFICATION			
Task #: 051 Date: 5/4/2 User: JHB			Abbreviation: Filename:	None C035-051
	or organization name:	DRMS C OST		
				Per day RG Data
Truck	Tractor Description:	GENERIC ON-HIGHW	AY TRUCK TRACTOR, 6X4, D 400 HP (2ND HALF, 2006)	DIESEL POWERED,
Trucl	K Trailer Description:	GENERIC FOLDING G	OOSENECK, DROP DECK EQU (25T, 50T, AND 100T)	JIPMENT TRAILER
Cost Breakdown:				
Available Rig Ca	pacities 0-25 T	Cons 26-50 Tons	51+ Tons	

0-25 Tons	26-50 Tons	51+ Tons
\$16.63	\$18.37	\$22.33
\$44.38	\$46.13	\$50.07
\$27.66	\$27.66	\$27.66
\$0.00	\$25.39	\$25.39
\$88.67	\$117.55	\$125.45
	\$16.63 \$44.38 \$27.66 \$0.00	\$16.63 \$18.37 \$44.38 \$46.13 \$27.66 \$27.66 \$0.00 \$25.39

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D3K LGP - 3P	9.20	\$13.24	\$88.67	3	\$305.74	\$266.01	\$0.00
CAT 12M	16.01	\$24.98	\$88.67	3	\$340.94	\$266.01	\$0.00

Subtotals: \$646.68 \$532.02 \$0.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 2,500 Gal.	\$29.67	3	\$89.01	\$89.01
		Subtotals:	\$89.01	\$89.01

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed:	DURANGO 20.00 40.00	miles mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	\$5,058.78	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$89.01	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.50	0.50
Return Time (Hours):	0.50	0.50
Loading Time (Hours):	2.00	NA
Unloading Time (Hours):	1.00	NA
Subtotals:	4.00	1.00

JOB TIME AND COST

Total job time:	8.00	Hours

Total job cost: \$5,148

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task descri	iption:	Kin	g I&II - mobiliz	e for second p	ond cleanir	ıg			
: King Co	al Mine		Permit	Action: RN7	,	Pe	ermit/Job#	: <u>C198</u>	31035
PROJEC	<u>T IDENTI</u>	FICAT	ION						
Task #:	052		State: C	Colorado		Abbr	eviation:	None	
Date: User:	5/4/2017 JHB		County: L	a Plata		F	ilename:	C035-	052
	gency or org	ganizatior	n name: DRMS	S					
<u>EQUIPM</u>	ENT TRA	NSPOR	<u>AT RIG COST</u>						
						Shift ba Cost Data Sou		1 per da CRG Da	
	Truck Trac	ctor Desc	ription: GEN	ERIC ON-HIG		RUCK TRACTO	, ,	DIESEL	POWERED,
	T 1 T					P (2ND HALF,	,		
	Truck Tra	iller Desc	ription: GEN	ERIC FOLDIN		NECK, DROP I F, 50T, AND 10		UIPMEI	NI IRAILER
Cost Break	<u>down:</u>				(
Available	Rig Capacit	ties	0-25 Tons	26-50 Ton	s 5	l+ Tons			
	nership Cost		\$16.63	\$18.37		\$22.33			
Op	erating Cost	/Hour:	\$44.38	\$46.13		\$50.07			
	perator Cost		\$27.66	\$27.66		\$27.66			
	Helper Cost	t/Hour:	\$0.00	\$25.39		\$25.39			
Tot	al Unit Cost	/Hour:	\$88.67	\$117.55	9	5125.45			
NON RO	ADABLE	EQUIP	MENT:						
Machine	W	/eight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return '		DOT Permit
Description		nit	Cost/hr/unit	Cost/hr/unit	Siza	Cost/hr/	Cost/hr/	fleet	Cost/ fleet

Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/unit	Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
	(TONS)				fleet		
CAT 938H	16.34	\$21.63	\$88.67	2	\$220.60	\$177.34	\$0.00
Cat 312D L 9'-2"	14.83	\$20.89	\$88.67	1	\$109.56	\$88.67	\$0.00
Stick							
				~		*****	* • • • •
				Subtotals:	\$330.16	\$266.01	\$0.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Generic 10-12 cy, 6x4	\$101.68	2	\$203.36	\$203.36
		Subtotals:	\$203.36	\$203.36

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed:	DURANGO 20.00 40.00	miles mph
Total Non-Roadable Mob/Demob Cost *	\$2,577.13	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$203.36	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.50	0.50
Return Time (Hours):	0.50	0.50
Loading Time (Hours):	2.00	NA
Unloading Time (Hours):	1.00	NA
Subtotals:	4.00	1.00

JOB TIME AND COST

Total job time: **8.00** Hours

Total job cost: \$2,780

SITE MAINTENANCE

King Coal Mine		Permit Action: <u>RN7</u>		Pe	rmit/Job#: <u>C1981035</u>
	CT IDENTI				
Task #:	060	State:	Colorado	Abbreviation:	None
		Carrietari	Lo Dioto	Filename:	C035-060
Date:	5/4/2017	County:	La Plata	Thename.	C033-000

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
D3 Dozer	8.00	Cat D3K LGP - 3P	24.00	EA	\$81.57	\$1,957.68
12M Grader	8.00	CAT 12M	24.00	EA	\$95.88	\$2,301.12

Job Hours: 24.00

Total Cost: \$4,258.80

REVEGETATION WORK

Task description:	Weed Control over lia	ability period	1		
King Coal Mine	Permit A	ction: <u>RN7</u>		Permit/Job#	: <u>C1981035</u>
PROJECT IDENTIFI	<u>CATION</u>				
Task #: 062				Abbreviation:	None
Date: 5/4/2017 User: JHB	County: La	Plata		Filename:	C035-062
Agency or organi	ization name: DRMS				
FERTILIZING					
Materials					
Description		Units / Acre	Unit	Cost / Unit	Cost /Acre
				\$	\$
				Total Fertilizer Materials Cost/Acre	\$0.00
Application					<u> </u>
Description					Cost /Acre
					\$
		Total	Fertilizer A	pplication Cost/Acre	\$0.00
TILLING					
Description					Cost /Acre
					\$
			Тс	otal Tilling Cost/Acre	\$0.00

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description		Cost /Acre
		\$
	Total Seed Application Cost/Acre	\$0.00

MULCHING and MISCELLANEOUS

Aaterials					
Description	Units / Acre	Unit	Cost / Unit	Cost /Acre	
	5.00		\$0.00	\$0.00	
Total Mulch Materials Cost/Acre				\$0.00	

Application

Application		
Description		Cost /Acre
Weed spray, hand, non-aquatic area, nox. [DMG]		\$180.00
	Total Mulch Application Cost/Acre	\$180.00

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 2	Nursery Stoc	k Cost / Acre	\$0.00

JOB TIME AND COST

	No. of Acres:	17.5	Cost /Acre:	\$180.00
Estimate	ed Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting	*Selected Replanting Work Items:			
Reseeding Job Cost: Total Job Cost:	Initial Job Cost: Reseeding Job Cost: Total Job Cost: Job Hours: 35.00			

HYDRAULIC EXCAVATOR WORK

Task description:	Clean sediment ponds (two	o cleanings)		
King Coal Mine	Permit Action	: _ RN7	Permit/Job#:	C1981035
PROJECT IDENTIFI	CATION			
Task #: 064 Date: 5/5/2017 User: JHB	State: Colorade County: La Plata	0	Abbreviation: Filename:	None C035-064
Agency or organ	ization name: DRMS			
HOURLY EQUIPME	NT COST			
	Cat 312D L 9'-2" Stick ROPS Cab	Weigh Shif	t (MT): 1 t Basis: 1 p	90 3.48 er day CRG)
Cost Breakdown:				
Ownership Cost/H Operating Cost/H Operator Cost/H Total Unit Cost/H	our: \$19.81 our: \$37.79	Utilization % NA 100 NA		
Total Fleet Cost/I	Hour: \$78.70			
Loose volume: 7 ,	453 CCY 324 LCY		1.135	
	f estimated volume: <u>2 pond</u> imated swell factor: Cat Ha	cleanings, 2 ac ft per cleandbook	inout	
	ad bucket, swing loaded, dum	Condition Description:	AVERAGE AVERAGE 0.256	minutes
Load Bucket Capacity		Buc	ket Size Class: M	edium
Rated Capacity: Bucket Fill Factor: Adjusted Capacity:	0.850 Hard, t			
Job Condition Correction	Factors	Site Altitu	ude: <u>7500</u> feet	
Ac	Sour1.00(CAT)0.83(1 shift)0.83multipliljusted Hourly Unit Productionljusted Hourly Unit Productionjusted Hourly Fleet Production	HB) <u>day)</u> er 135.47 LC 112.44 LC	CY/Hour CY/Hour CY/Hour	
JOB TIME AND COS	<u>T</u>			
Fleet size: 1	Excavator	Total job time:	65.14	Hours

Unit cost:	\$0	0.700	/LCY TRUCK/	LOAI	Total job cos DER TEAM W		126	
Tesle descriptio		17 1						
Task descriptio		King II			rom ponds to Kin			
Site: King Coal N	Mine		Permi	t Actio	n: RN7		Permit/Job#: C	21981035
PROJECT I	DENTI	FICATION	N					
)65		_	Colorad	do	۵b	breviation: No	one
	5/5/2017			La Plata		/10)35-065
User: J	HB		• _					
Agend	cy or org	anization na	me: DRM	IS				
			T			61 • 6 • 1		
HOURLY E	QUIPM	<u>IENT COS</u>	<u>T</u>				sis: <u>1 per day</u>	
	True	k Loader Te	m Truck		Equipment Descrip eric 12-18 cy, 6x4			
	True	K LOAUEI TEA	-Loader:		OLETE - CAT 93			
2	Support 1	Equipment -l		NA				
	136 1		ump Area:		OLETE - CAT 93	38H		
Koa	ad Maint	enance –Mo	ater Truck:	NA NA				
				1.11				,
<u>Cost Breakdov</u>	<u>wn</u> :		ader Team			Equipment		nce Equipmer
		Truck	Loader		Load Area	Dump Area	Motor Grader	Water Truc
%Utilization-machin	ne:	100		100	NA	100	NA	1
Ownership cost/ho		\$22.16		5.66	NA	\$25.66	NA	1
Operating cost/ho		\$42.40	\$3	2.31	NA	\$32.31	NA	1
%Utilization-rip		NA		0	NA	NA	NA	1
Ripper own. cost/hor		NA		0.00	NA	\$0.00	NA	1
Ripper op. cost/hor Operator cost/hor		NA \$30.37		0.00	NA NA	\$0.00 \$41.20	NA NA	1
Unit Subtota		\$94.93		9.17	NA	\$99.17	NA NA	1
Number of Uni		ه94.93 6	\$ 7	1	0	399.17 1	0	1
Group Subtota		Work:	\$668.75	1	Support:	\$99.17	Maint:	\$0.00
					Support.	\$77.17	Ivianit.	\$0.00
Total work tear	m cost/h	our: <u>\$767.9</u>	2					
MATERIAL	OUAN	TITIFS						
				OCV	a 1 a	1 000		
Initial vol Loose vol		6,453 6,45	3	CCY LCY	Swell f	factor: <u>1.000</u>		
		,			l alaanin a Oool			
Sc		of estimated sw		-	d cleanings, 2 ac f andbook	tt each cleanout		
50		aterial Purch		\$0.00	undbook			
		Т	otal Cost:	\$0.00				
	ορορι							
HOURLY H	PRODU	JCTION						
Truck Capaci		D .						
Truck Payload	(weight)				Pounde/I CV			
Truck Payload Mate	(weight) rial weig	ht: 2,700	- Wet excava	ated	Pounds/LCY			
Truck Payload Mate E	(weight)	ht: 2,700 on: Earth	- Wet excava	ated	Pounds/LCY Pounds			

Truck Bed (volume) Basis:

12.00	LCY
18.00	LCY
15.00	LCY
18.00	LCY
	18.00 15.00

 Final Truck Volume Based on Number of Loader Passes:
 15.21
 LCY

Loading Tool Capacity

		Bucket Size Class: NA
Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	0.975	Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity:	3.803	LCY

Job Condition Corrections:

Site Altitude (ft.): 7500 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.830	0.830	

Loading Tool Cycle Time: Number	r of Loading Tool Passes Required to Fill	4	passes
Excavators and Front Shovels:	Truck:		
Machine Cycle Time vs. Job Condition Ratin	ig: NA		

Track Loaders – Material Description:

Cycle Time Elements (min.):

Load:	NA	Maneuver:	NA	Dump:	0.100
-		-		-	

NA

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.080	minutes
	Adjusted Loader Cycle Time:	0.403	minutes
	Net Load Time per Truck:	1.308	minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	1.308	Minutes	Adjusted for site altitude:	1.308	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

(min)

	<u>Truck Tra</u> penetratio	<u>vel (Haul & Return) 7</u> on 5.0	<u>Fime:</u>	Road Conditio	n: <u>Rutted dirt,</u>	little maintena	nce, no water,	<u>2" tire</u>
Haul Route:								
	Seg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	_	(Ft)		(%)	(%)	(fpm)	Time	

[1	1056	0.00	11.50	5.00	16.50	690	15.314]
						Haul Time:	15.314	minutes	3
	Return R	oute:							
ſ	Seg #	Haul	Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel]
	-	(Ft)			(%)	(%)	(fpm)	Time	
							_	(min)	4
	1	1056	0.00	-11.50	5.00	-6.50	2938	3.705	
						Return Time:	3.705	minut	es
					Total Tru	ck Cycle Time:	21.727	minut	es
	oading To Prod Unit Prod	uction	504.90	LCY/Hour		Adjusted for j	job efficiency:	419.06	LCY/Hour
			42.00	LCY/Hour		Adjusted for j	job efficiency:	34.86	LCY/Hour
Optima	al No. of T	rucks:	12	Truck(s)		Selected Num	ber of Trucks:	6	Truck(s)
				Adjuste	d hourly truc	k team productio	on: 209.	18 LC	Y/Hour
				Adjusted singl	le truck/loade	r team production	on: 209.	18 LC	Y/Hour
				Adjusted multipl	le truck/loade	r team production	on: 209.	18 LCY	Y/Hour
				•		-			
	JOB TI	ME AI	ND COST						
	Fleet	size:	1	Team(s)		Fotal job time:	30.8	5 H	lours
	Unit	cost:	\$3.671	/LCY		Total job cost:	\$23,6	90	

SAFEGUARDING UNDERGROUND OPENINGS

Task des	cription:	Seal Mine Op	oenings				
King C	oal Mine	P	Permit Action:		Pe	ermit/Job#:	C1981035
<u>PROJE</u>	CT IDENTI	FICATION					
Task #: Date:	100	State:	Colorado		Abbreviation:	None	<u> </u>
User:	JHB	County.					·
	King C PROJE Task #: Date:	Task #: 100 Date: 5/5/2017	King Coal Mine P PROJECT IDENTIFICATION P Task #: 100 State: Date: 5/5/2017 County:	King Coal Mine Permit Action: PROJECT IDENTIFICATION Providence Task #: 100 State: Colorado Date: 5/5/2017 County: La Plata	King Coal Mine Permit Action: RN7 PROJECT IDENTIFICATION State: Colorado Task #: 100 State: Colorado Date: 5/5/2017 County: La Plata	King Coal Mine Permit Action: RN7 Pe PROJECT IDENTIFICATION State: Colorado Abbreviation: Task #: 100 State: Colorado Abbreviation: Date: 5/5/2017 County: La Plata Filename:	King Coal Mine Permit Action: RN7 Permit/Job#: PROJECT IDENTIFICATION Task #: 100 State: Colorado Abbreviation: None Date: 5/5/2017 County: La Plata Filename: C035-100

UNIT COSTS

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Portal 1 seal	200	Adit closure - bulkhead seal, >= 36 sq. ft. (per sq. ft.)	200.00	SF	\$105.56	\$21,112.00
Portal 1 drain pipe	165	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	165.00	LF	\$9.56	\$1,577.40
Portal 1 backfill	185	Adit closure - backfilling (per cu. yd.)	185.00	CY	\$27.00	\$4,995.00
Portal 2 seal	200	Adit closure - bulkhead seal, >= 36 sq. ft. (per sq. ft.)	200.00	SF	\$105.56	\$21,112.00
Portal 2 drain pipe	165	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	165.00	LF	\$9.56	\$1,577.40
Portal 2 backfill	185	Adit closure - backfilling (per cu. yd.)	185.00	CY	\$27.00	\$4,995.00
Portal 3 seal	200	Adit closure - bulkhead seal, >= 36 sq. ft. (per sq. ft.)	200.00	SF	\$105.56	\$21,112.00
Portal 3 drain pipe	165	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	165.00	LF	\$9.56	\$1,577.40
Portal 3 backfill	185	Adit closure - backfilling (per cu. yd.)	185.00	CY	\$27.00	\$4,995.00
Portal 4 seal	200	Adit closure - bulkhead seal, >= 36 sq. ft. (per sq. ft.)	200.00	SF	\$105.56	\$21,112.00
Portal 4 drain pipe	165	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	165.00	LF	\$9.56	\$1,577.40
Portal 4 backfill	185	Adit closure - backfilling (per cu. yd.)	185.00	CY	\$27.00	\$4,995.00

Job Hours: 32.00

Total Cost: \$110,737.60

DEMOLITION WORK

	Task des	scription:	King II structural demolitie	on			
Site:	King C	Coal Mine	Permit Action:	RN7	Pe	rmit/Job#:	C1981035
	<u>PROJE</u>	CT IDENTIFI	CATION				
	Task #:	200	State: Colorado		Abbreviation:	None	
	Date:	5/5/2017	County: La Plata		Filename:	C035-200)
	User:	JHB					
		Agency or organ	ization name: DRMS				

UNIT COSTS

Location adjustment: 94.00

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Water storage tank	100k gal	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	13,333.00	CF	\$0.20	\$2,666.60
water storage tank slab	24' diam, .75 thick	Demo. and on- site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	613.00	SF	\$0.87	\$532.70
water storage tank	37k gal	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	7,933.00	CF	\$0.20	\$1,586.60
water storage tank slab	32x14x.5	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	448.00	SF	\$0.65	\$292.10
Main pump house	14x10x12.67	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	1,774.00	CF	\$0.20	\$354.80
Shop equipment wash pad slab	20x25x.75	Demo. and on- site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	1,250.00	SF	\$0.87	\$1,086.25
shop equipment wash pad footers	2x1	Demo. and on- site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	150.00	LF	\$2.61	\$391.50
Shop building	60x50x16	Bldg. (SN) demo./on-site disposal in	48,000.00	CF	\$0.20	\$9,600.00

		excavated pit - Max. 10,000 ft. haul				
shop building slab	60x50x.75	Demo. and on- site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	3,000.00	SF	\$0.87	\$2,607.00
shop building footers	2x1	Demo. and on- site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	220.00	LF	\$2.61	\$574.20
Mine fan	28.6x25x10.5	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	7,508.00	CF	\$0.20	\$1,501.60
mine fan slab	4x8x6	Demo. and on- site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	192.00	SF	\$1.30	\$250.18
Retaining wall adjacent to fan	1x60x8	Wall, concrete, demolition only, average reinforcing - 12 in. thick	480.00	SF	\$1.28	\$614.40
retaining wall footers	7x1	Demo. and on- site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	60.00	LF	\$2.82	\$169.20
Fan portal	30x20x8	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,800.00	CF	\$0.20	\$960.00
fan portal slab	30x20	Demo. and on- site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	600.00	SF	\$1.30	\$781.80
fan portal footers	.75x4	Demo. and on- site disposal in excavated pit, 1.5 ft. x 3 ft Max. 200 ft. push	100.00	LF	\$5.86	\$586.00
Travelway portal	30x20x8	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,800.00	CF	\$0.20	\$960.00
travelway portal	14x1	Demo. and on-	60.00	LF	\$2.82	\$169.20

footers Portal Motor Control Center (MCC)	14x10x12.67	site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	1,774.00	CF	\$0.20	\$354.80
MCC slab	14x10	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	140.00	SF	\$0.65	\$91.28
MCC footers	1x2	Demo. and on- site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	48.00	LF	\$2.61	\$125.28
Rock dust storage silo	11' diam x 40'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 200 ft. push	3,799.00	CF	\$0.22	\$835.78
rock dust storage silo slab	12x12	Demo. and on- site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	144.00	SF	\$1.30	\$187.63
rock dust storage silo footers	2x2	Demo. and on- site disposal in excavated pit, 1.5 ft. x 3 ft Max. 200 ft. push	2.00	LF	\$5.86	\$11.72
Concrete retaining wall #2	70x2x4	Wall, block, demolition only, 12 in. thick - Horizontal reinforcing	560.00	SF	\$1.06	\$593.60
Exec. offices/Parts warehouse/Bath house bldgs	150x60x34	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	306,000.00	CF	\$0.23	\$69,156.00
offices/warehouse/bath house slab	150x60	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	9,000.00	SF	\$0.65	\$5,868.00
offices/warehouse/bath house footers	1x4	Demo. and on- site disposal in excavated pit, 1.5 ft. x 3 ft Max. 200 ft.	420.00	LF	\$5.86	\$2,461.20

		push				
Covered storage building	80x20x18.5	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	29,600.00	CF	\$0.20	\$5,920.00
storage building slab	80x26	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	2,080.00	SF	\$0.65	\$1,356.16
storage building footers	1x4	Demo. and on- site disposal in excavated pit, 1.5 ft. x 3 ft Max. 200 ft. push	260.00	LF	\$5.86	\$1,523.60
Main septic system tank	4000 gal	Excavate and load tank onto trailer, non- leaking - 3,000 gal. to 5,000 gal.	1.00	EA	\$571.50	\$571.50
Fuel storage building and apron	45x25x20	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	22,500.00	CF	\$0.20	\$4,500.00
fuel storage building slab	45x27	Demo. and on- site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	1,215.00	SF	\$0.87	\$1,055.84
fuel storage building footers	1x4	Demo. and on- site disposal in excavated pit, 1.5 ft. x 3 ft Max. 200 ft. push	140.00	LF	\$5.86	\$820.40
Belt portal	15x20x10	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	3,000.00	CF	\$0.20	\$600.00
belt portal footers	1x2	Demo. and on- site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	30.00	LF	\$2.61	\$78.30
Return portal	15x20x10	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	3,000.00	CF	\$0.20	\$600.00
return portal footers	1x2	Demo. and on- site disposal in	30.00	LF	\$3.91	\$117.30

Belt portal pump house	20x14x10	excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push Bldg. (SC) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	2,800.00	CF	\$0.25	\$708.40
belt portal pump house slab	20x14	Demo. and on- site disposal in excavated pit, 10 in. thick - Max. 200 ft. push	280.00	SF	\$1.09	\$304.08
belt portal pump house footer	2x1	Demo. and on- site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	68.00	LF	\$2.61	\$177.48
Electrical substation	19x14x10	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	2,660.00	CF	\$0.20	\$532.00
electircal substation slab	19x14	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	266.00	SF	\$0.65	\$173.43
Electrical substation slabs	35x35	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	1,225.00	SF	\$0.65	\$798.70
Main dumpster pad	20x8	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	160.00	SF	\$0.65	\$104.32
Slope conveyor (box truss section)	8x8	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	240.00	LF	\$44.51	\$10,682.16
Slope conveyor (non- box truss section)	4x4	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	110.00	LF	\$44.51	\$4,895.99
Magnet Dumpster Pad #1	8x8	Demo. and on- site disposal in excavated pit, 6 in. thick - Max.	64.00	SF	\$0.65	\$41.73

		200 ft. push				
Coal Stack Tube #1 Head House	14.5x12x25	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,350.00	CF	\$0.23	\$983.10
Magnet Dumpster Pad #2	8x8	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	64.00	SF	\$0.65	\$41.73
Raw Coal Conveyor	4x4	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	177.00	LF	\$44.51	\$7,878.09
Crushing/Screening structure	28x25x53	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	37,100.00	CF	\$0.23	\$8,384.60
crushing/screening slab	40x30	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	7,200.00	SF	\$0.65	\$4,694.40
Crushing/Screening Pile Caps	6 - 4x6.5x3.5	Demo. and on- site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	546.00	SF	\$1.30	\$711.44
Crushing/screening pile footers	1.5x1.5	Demo. and on- site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	24.00	LF	\$3.91	\$93.84
Lump conveyor (radial stacker belt)	3x3	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	100.00	LF	\$17.60	\$1,760.00
Stoker conveyor (radial stacker belt)	3x3	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	100.00	LF	\$17.60	\$1,760.00
Crushed coal storage conveyor	4x8x320	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	320.00	LF	\$44.51	\$14,242.88

crushed coal storage conveyor slab	7.75x6	Demo. and on- site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	47.00	SF	\$1.30	\$61.24
crushed coal storage conveyor footers	4x4	Demo. and on- site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	6.00	LF	\$2.82	\$16.92
Coal Stack Tube #2 Head House	14.5x12x25	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,350.00	CF	\$0.23	\$983.10
Cross-Belt Coal Sampler	20x20	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	400.00	SF	\$0.65	\$260.80
Truck Loadout Conveyor	4x8x260	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	260.00	LF	\$44.51	\$11,572.34
Truck Loadout & Bins	30x15x30	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	13,500.00	CF	\$0.23	\$3,051.00
truck loadout & bins slab	6.5x3.5x4	Demo. and on- site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	273.00	SF	\$1.30	\$355.72
truck loadout & bins footers	2x4	Demo. and on- site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	24.00	LF	\$2.82	\$67.68
Truck scale	120x20x2	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,800.00	CF	\$0.20	\$960.00
truck scale slab	150x16	Demo. and on- site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	2,400.00	SF	\$1.30	\$3,127.20
Coal sales building	20x12x10	Bldg. (SN) demo./on-site disposal in	2,400.00	CF	\$0.20	\$480.00

		excavated pit - Max. 10,000 ft. haul				
coal sales slab	20x12	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 50 ft. push	240.00	SF	\$0.64	\$152.88
Coal Sales Building Septic System Tank	6x10x5	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 200 ft. push	300.00	CF	\$0.19	\$58.20
Main Motor Control Center (Main MCC)	21x16.67x10	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 200 ft. push	3,501.00	CF	\$0.19	\$679.19
Main MCC slab	21x20	Demo. and on- site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	420.00	SF	\$0.65	\$273.84
Main MCC footers	1.5x2	Demo. and on- site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	84.00	LF	\$3.91	\$328.44
Cattle guard	8x24x.5	Demo. and on- site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	96.00	SF	\$1.30	\$125.09
Culvert C-1	48"	Pipe, corrugated metal (CMP) - 48 in. diameter pipe	81.00	LF	\$14.56	\$1,179.28
Culvert C-2	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	48.00	LF	\$6.47	\$310.66
Culvert C-2A	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	48.00	LF	\$4.98	\$238.94
Culvert C-3 (double)	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	120.00	LF	\$6.47	\$776.64
Culvert C-5A	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	63.00	LF	\$6.47	\$407.74
Culvert C-5B	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	40.00	LF	\$6.47	\$258.88

Culvert C-6	24"	Pipe, corrugated metal (CMP) - 24 in. diameter	90.00	LF	\$6.47	\$582.48
Culvert C-7	24"	pipe Pipe, corrugated metal (CMP) -	203.00	LF	\$6.47	\$1,313.82
		24 in. diameter pipe				
Culvert C-8	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	58.00	LF	\$6.47	\$375.38
Culvert C-9	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	201.00	LF	\$6.47	\$1,300.87
Culvert C-10	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	158.00	LF	\$6.47	\$1,022.58
Culvert C-11	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	82.00	LF	\$6.47	\$530.70
West Clearwater Culvert	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	220.00	LF	\$6.47	\$1,423.84
Culvert C-14	18"	Pipe, corrugated metal (CMP) - 18 in. diameter pipe	40.00	LF	\$4.98	\$199.12
Culvert C-14A	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	40.00	LF	\$6.47	\$258.88
Culvert C-14B	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	12.00	LF	\$6.47	\$77.66
Culvert C-15	15"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	60.00	LF	\$6.47	\$388.32
Pond primary spillway	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	120.00	LF	\$6.47	\$776.64
Pond emergency spillway	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	120.00	LF	\$10.09	\$1,210.92
Material and debris removal	NA	Loading and 2 mile haul, no salvage - Machine loading	200.00	CY	\$17.70	\$3,540.00
Remove/dispose of signs and markers	NA	USER PROVIDED ITEM	1.00	EA	\$500.00	\$500.00

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	140.00	(unadjusted):	\$220,707.88	location):	\$207,465.41

TRUCK/LOADER TEAM WORK

Task description: King II - Haul coal waste rock to King I waste pile											
Site: King Coal Mine		Permit Actio	on: <u>RN7</u>		Permit/Job#: <u>C</u>	1981035					
PROJECT IDEN	NTIFICATION	[
Task #: 300		State: Colora		Abl	previation: No						
Date: $5/8/2$	017 0	County: La Plat	ta	Filename: C0	35-300						
User: JHB											
Agency or organization name: DRMS											
HOURLY EQUIPMENT COST Shift basis: <u>1 per day</u>											
Equipment Description											
Truck Loader Team -Truck: Generic 12-18 cy, 6x4											
-Loader: OBSOLETE - CAT 938H											
Support Equipment -Load Area: NA											
Dood M	-Du laintenance –Moto		SOLETE - CAT 9	38H							
Koad IV		ter Truck: NA									
	- v a	ter Huck. IVA									
Cost Breakdown:	Truck/Loa	ader Team	Support	Equipment	Maintena	nce Equipment					
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck					
%Utilization-machine:	100	100	NA	100	NA	NA					
Ownership cost/hour:	\$22.16	\$25.66	NA	\$25.66	NA	NA					
Operating cost/hour:	\$42.40	\$32.31	NA	\$32.31	NA	NA					
%Utilization-riper:	NA	0	NA	NA	NA	NA					
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA					
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA					
Operator cost/hour:	\$30.37	\$41.20	NA	\$41.20	NA	NA					
Unit Subtotals:	\$94.93	\$99.17	NA	\$99.17	NA	NA					
Number of Units:	1	1	0	1	0	0					
Group Subtotals:	Work:	\$194.10	Support:	\$99.17	Maint:	\$0.00					

Total work team cost/hour: \$293.27

MATERIAL QUANTITIES

Initial volume:	37	CCY	Swell factor:	1.000	
Loose volume:	37	LCY			-
Sour	ce of estimated volume:	Assume 100 s	sf x 10 ft high		
Source of	f estimated swell factor:	Cat Handboo	k		
Material Purchase Cost:		\$0.00			
	Total Cost:	\$0.00			

HOURLY PRODUCTION

<u>Truck Capacity:</u> Truck Payload (weight) Bas						
Material weight:	2,900	Pounds	s/LCY			
Description:	User Provide					
Rated Payload: Payload Capacity:	50,300 17.34	Pounds LCY	S			
Fayload Capacity.	17.34					
Truck Bed (volume) Basis:						
Struck Volume:	12.00	LCY				
Heaped Volume:	18.00	LCY				
Average Volume:	15.00	LCY				
Adjusted Volume:	17.34	LCY				
Fina	ll Truck Volum	e Based on Number of	Loader Passes:	15.21	LCY	
Loading Tool Capacity						
	2 000		Buc	ket Size Class: <u>N</u>	A	_
Rated Capacity:	3.900	LCY (heaped)			0.075	
Bucket Fill Factor:	0.975		mixed moist ag	gregates (95-100%)	0.975	
Adjusted Capacity:	3.803	LCY				
Job Condition Correction			te Altitude (ft.):	7 <u>500</u> feet		
A 1.1. 1 1 11	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HE	,		
Job Efficiency:	0.830	0.830	(CAT HE	5)		
Loading Tool Cycle Time	<u>:</u>	Number of Loading Te	ool Passes Requi	ired to Fill Truck:	4 p	asses
Excavators and Front Shov	els:					
Machine Cycle Time Selected Value						
Track Loaders -	- Material Desc	ription:				
Cycle Time Elements (min.)		<u> </u>				
Load: NA	N	Maneuver: NA		Dump: 0.100		
Wheel and Track Loaders	- Unadjusted B	asic Loader Cycle Tin	ne (load, dump, 1	maneuver): 0	.483 minu	ites
Cycle Time Factors				Factor (min.)	Source	_
Material:		" to 3/4" diameter -0.0	2	-0.020	(Cat HB)	_
Stockpile:	Dumped by			0.020	(Cat HB)	
Truck Ownership:		vnership of trucks and	loaders -0.04	-0.040	(Cat HB)	_
Operation:		eration -0.04		-0.040	(Cat HB)	_
Dump Target:	Nominal tar		A directory of the	0.000	(Cat HB)	_
		Net Cycle Tim Adjusted Loade		-0.080	_ minutes	
			me per Truck:	0.403 1.308	minutes	
<u>Truck Cycle Time:</u>						
Truck Exchange Tim	e: 0.50	Minutes	Adjusted	for site altitude:	0.500	Minut
Truck Load Tim	e: 1.308	Minutes	Adjusted	for site altitude:	1.308	Minut
k Maneuver and Dump Tim	e: 0.90	Minutes	Adjusted	for site altitude:	0.900	Minut

Truck Travel (Haul & Return) Time: penetration 5.0

	Haul Rou	te:							
	Seg #	Haul Di	stance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time	
-	1	10560.0	0	11.50	5.00	16.50	690	(min) 15.314	
	1	10500.0	0	11.50	5.00	10.50	090	15.514	
						Haul Time:	15.314	minut	es
r	Return Ro			1					
	Seg #	Haul Di	stance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
-		(Ft)			(%)	(%)	(fpm)	Time (min)	
	1	10560.0	0	-11.50	5.00	-6.50	2938	3.705	
						Return Time:	3.705	min	utes
					Total Truc	ck Cycle Time:	21.727	min	utes
т	oading Too	Junit							
L	0	uction	504.90	LCY/Hour		Adjusted for j	ob efficiency:	419.0	6 LCY/Hour
Truck	Unit Produ	uction					-		
			42.00	LCY/Hour		Adjusted for j	ob efficiency:	34.86	5 LCY/Hour
Optima	al No. of T	rucks:	12	Truck(s)		Selected Num	ber of Trucks:	1	Truck(s)
				Adjuste	d hourly truck	team production	on: 34.8	36 LO	CY/Hour
				Adjusted singl	e truck/loader	team production	on: 34.8	36 LO	CY/Hour
				Adjusted multipl	e truck/loader	team production	on: 34.8	86 LO	CY/Hour
	JOB TI	ME AND	O COST						
	Fleet	size:	1	Team(s)	Т	otal job time:	1.06	j	Hours
	Unit	cost:	\$8.412	/LCY	1	Total job cost:	\$31	l	

BULLDOZER RIPPING WORK

Task description:	King II - Rip coa	l sales area				
Site: King Coal Mine	Peri	mit Action:	RN7	Pe	ermit/Job#:	C1981035
PROJECT IDENTIFI	ICATION					
Task #: 301	State:	Colorado		Abbr	eviation:	None
Date: 5/8/2017	County:	La Plata		F	Filename:	C035-301
User: JHB						
Agency or organ	ization name: DR	MS				
HOURLY EQUIPME	<u>ENT COST</u>					
Basic Machine	: Cat D8T - 8SU			Horsepower:		310
Ripper Attachment	: 3-Shank Ripper			Shift Basis:	1 p	er day
				Data Source:	(0	CRG)
Cost Breakdown:						
				Utilization %		
Owner	rship Cost/Hour:		\$83.81	NA		
	ating Cost/Hour:		\$66.17	100		
Ripper Owner	rship Cost/Hour:		\$7.55	NA		
Ripper Opera	ating Cost/Hour:		\$7.21	100		
Ope	rator Cost/Hour:		\$41.85	NA		
Total	Unit Cost/Hour:		\$206.59			
Total	Fleet Cost/Hour:	\$20	6.59			

	MATERIAL QUANTITIES Selected estimating method: Area										
	Alternate Method	<u>ls:</u>									
Seismic:	NA		Bank Volume:	NA	BCY	NA					
Area:	0.80	acres	Rip Depth (ft):	2.00	Volume: 2,581		BCY or CC				
		Source of estimate	d quantity: <u>Map K</u>	ing II-007							
	HOURLY PR	ODUCTION									
	Seismic:										
		Seis	mic Velocity:	NA	feet/second						
	Area:										
		Average Ri	pping Depth:	1.00	mph						
		Average Ri	pping Width:	7.08	degrees						
		Average Rip	ping Length:	50.00	feet						
		Average	Dozer Speed:	88.00	feet						
		Average Ma	neuver Time:	0.25	feet						
			per unit area:	0.596	acres/hour						
	Job Condition Co	orrection Factors									
	Un	adjusted Hourly Uni	t Production:	0.596	Acres/hr						
			Site Altitude:	7,400	feet						
			Altitude Adj:	1.00	(CAT HB)						
		Jo	b Efficiency:	0.83	(1 shift/day)						
		Ne	et Correction:	0.83	multiplier						
		Adjusted Hou	rly Unit Production:	0.49	Acres/hr						
		Adjusted Hou	rly Fleet Production:	0.49	Acres/hr						
	JOB TIME AN	ND COST									
	Fleet size:	G	rader(s)	Total job time:	1.62	Н	ours				
	Unit cost:	\$417.652 Po	er acre	Total job cost:	\$334						

TRUCK/LOADER TEAM WORK

Task description:King II - Haul gravel from coal sales, portals, rd/wtr tank											
Site: King Coal Mine	2	Permit Action	on: <u>RN7</u>		Permit/Job#:	C1981035					
PROJECT IDE	NTIFICATION										
Task #: 302		State: Colora	ado	Abl	breviation: N	one					
Date: 5/8/2	017 0	County: La Pla	ta		Filename: C	035-302					
User: JHB											
Agency or organization name: DRMS											
HOURLY EQU	IPMENT COST	<u>r</u>		Shift bas	sis: <u>1 per day</u>						
			Equipment Descri	ption							
Truck Loader Team - Truck: Generic 10-12 cy, 6x4											
-Loader: OBSOLETE - CAT 938H Support Equipment -Load Area: NA											
Supp			SOLETE - CAT 9	280							
Road N	laintenance – Moto		JOLETE - CAT J	5611							
1000		ter Truck: NA									
Cost Breakdown:		ader Team		Equipment		ance Equipment					
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck					
%Utilization-machine:	100	100	NA	100	NA	NA					
Ownership cost/hour:	\$18.29	\$25.66	NA	\$25.66	NA	NA					
Operating cost/hour:	\$39.97	\$32.31	NA	\$32.31	NA	NA					
%Utilization-riper:	NA	0	NA	NA	NA	NA					
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA					
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA					
Operator cost/hour:	\$0.00	\$41.20	NA	\$41.20	NA	NA					
Unit Subtotals:	\$58.26	\$99.17	NA	\$99.17	NA	NA					
Number of Units:	2	1	0	1	0	0					
Group Subtotals:	Work:	\$215.69	Support:	\$99.17	Maint	\$0.00					

Total work team cost/hour: \$314.86

MATERIAL QUANTITIES

Initial volume:	4,604		CCY	Swell factor:	1.060	
Loose volume:		4,880	LCY			
Sour	ce of estin	mated volume:	Operator's est	timate PR-8		
Source of estimated swell factor:			Cat Handbook	ĸ		
Material Purchase Cost:		\$0.00				
		Total Cost:	\$0.00			

HOURLY PRODUCTION

<u>Truck Capacity:</u> Truck Payload (weight) Ba	sis						
Material weight:	2,850		Pounds/	LCY			
Description: User Provided		1 Ounds/1					
Rated Payload:	35,400	u	Pounds				
Payload Capacity:	12.42		LCY				
Truck Bed (volume) Basis:							
Struck Volume:	10.00	LCY					
Heaped Volume:	12.00	LCY					
Average Volume:	11.00	LCY					
Adjusted Volume:	12.00	LCY					
Fin	al Truck Volum	e Based on Nu	umber of L	loader Passes:	11.41	LCY	
Loading Tool Capacity				_			
Rated Capacity:	3.900	LCY (he	eaped)	Buck	ket Size Class:	NA	_
Bucket Fill Factor:	0.975			nixed moist ag	gregates (95-100%) 0.975	
Adjusted Capacity:	3.803	LCY				<u></u>	
lob Condition Correction	<u>s:</u>		Site	Altitude (ft.):	7 <u>500</u> feet		
	Truck	Load		Source			
Altitude Adj:	1.000	1.00		(CAT HB	,		
Job Efficiency:	0.830	0.83	0	(CAT HB)		
Net Correction:	0.830	0.83	0				
Loading Tool Cycle Time	<u>):</u>	Number of Lo	oading Too	ol Passes Requi	red to Fill	3 pa	isses
Excavators and Front Show	vels:				Truck:		
Machine Cycle Time Selected Value	vs. Job Condition within this Bas		NA NA				
Track Loaders	– Material Desc	ription:					
Cycle Time Elements (min	.):	·					
Load: NA	1	Maneuver: 1	NA		Dump: 0.10	0	
Wheel and Track Loaders	- Unadjusted B	asic Loader C	ycle Time	(load, dump, r	naneuver):	0.483 minu	tes
Cycle Time Factors					Factor (min.)	Source	
Material:	Material 1/8	" to 3/4" diam	eter -0.02		-0.020	(Cat HB)	-
Stockpile:	Conveyor or	r dozer piled 1	0 ft. high o	or less 0.01	0.010	(Cat HB)	-
Truck Ownership:	Common ov	vnership of tru	cks and lo	aders -0.04	-0.040	(Cat HB)	-
Operation:	Constant op	eration -0.04			-0.040	(Cat HB)	-
Dump Target:	Nominal tar	get 0.00			0.000	(Cat HB)	_
		Net C	ycle Time	Adjustment:	-0.090	minutes	
				Cycle Time:	0.393	minutes	
		Net	Load Tim	ne per Truck:	0.885	minutes	
<u> Fruck Cycle Time:</u>							
Truck Exchange Tin	ne: 0.50	Minutes		Adjusted	for site altitude:	0.500	Minute

Truck Load Time:	0.885	Minutes	Adjusted for site altitude:	0.885	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes
-		_			-

<u>Truck Travel (Haul & Return) Time:</u> penetration 5.0

Road Condition: Rutted dirt, little maintenance, no water, 2" tire

	Haul Rou	te:							
	Seg #	Haul	Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time	
	1	1120.	00	2.00	5.00	7.00	1568	(min) 0.747	
	1	1120.	00	2.00	5.00	7.00	1308	0.747	
						Haul Time:	0.747	minutes	
_	Return Ro	oute:							
	Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time (min)	
	1	1120.	00	-2.00	5.00	3.00	2874	0.415	
						Return Time:	0.415	minutes	
					Total Tru	ck Cycle Time:	3.447	minutes	
Lo	ading Too	ol unit							
Production			494.19	LCY/Hour		Adjusted for job efficiency:		410.18	LCY/Hour
Truck	Unit Produ	uction							
			198.56	LCY/Hour		Adjusted for j	ob efficiency:	164.81	LCY/Hour
Optimal	Optimal No. of Trucks:		2	Truck(s)		Selected Num	ber of Trucks:	2	Truck(s)
Adjusted hourly truck team production: 329.62 LCY/								Hour	
				Adjusted singl	e truck/loade	r team productio	on: 329.	62 LCY/I	Hour
			1	Adjusted multipl	e truck/loade	r team productio	on: 329.	62 LCY/I	Hour
	JOB TI	ME AN	ID COST						
	Fleet	size: _	1	Team(s)]	Fotal job time:	14.8	1 Hou	irs
	Unit	cost:	\$0.955	/LCY		Total job cost:	\$4,66	62	

TRUCK/LOADER TEAM WORK

Task description	King I	- Haul office	fill	to portal cuts/acc	e rd/wtr tank			
Site: King Coal M	ine	Permit	Actio	on: <u>RN7</u>		Permit/Job#:	C	.981035
PROJECT ID	ENTIFICATION	N						
Task #: 30	3	State: Co	olora	ido	Ab	breviation:	Nor	ne
	8/2017	County: La	a Pla	ta		Filename:	C03	5-303
User: JH	IB							
Agency	y or organization na	me: DRMS						
HOURLY EQ	UIPMENT COS	<u>T</u>			Shift ba	sis: <u>1 per day</u>		
				Equipment Descri				
	Truck Loader Te			eric 12-18 cy, 6x4				
		-Loader:		SOLETE - CAT 9	38H			
S	upport Equipment -		NA	SOLETE - CAT 9	2011			
Boa	-L l Maintenance –Mo	tor Grader:	NA	SOLETE - CAT 9	38H			
Koac		ater Truck:	NA					
Cost Breakdow	m: Truck/Lo	ader Team		Support l	Equipment	Maint	tenan	ce Equipment
	Truck	Loader		Load Area	Dump Area	Motor Grae	der	Water Truck
%Utilization-machine	e: 100	1	00	NA	100	l	NA	NA
Ownership cost/hour	r: \$22.16	\$25	.66	NA	\$25.66	1	NA	NA
Operating cost/hour	r: \$42.40	\$32	.31	NA	\$32.31	1	NA	NA
%Utilization-ripe	r: NA		0	NA	NA	1	NA	NA
Ripper own. cost/hour	r: NA	\$0	.00	NA	\$0.00	1	NA	NA
Ripper op. cost/hou	r: NA	\$0	.00	NA	\$0.00	1	NA	NA
Operator cost/hou	r: \$30.37	\$41	.20	NA	\$41.20	1	NA	NA
Unit Subtotals	s: \$94.93	\$99	.17	NA	\$99.17	1	NA	NA
Number of Units			1	0	1		0	0
Group Subtotals	s: Work:	\$289.03		Support:	\$99.17	Ma	int:	\$0.00
Total work team	cost/hour: <u>\$388.2</u>	0						

MATERIAL QUANTITIES

Initial volume: Loose volume:	18,217 21,223	CCY Swell factor: <u>1.165</u> LCY
	ce of estimated volume:	Map King II-007: portal 18148 yds, fan port/wtr tank 4673 yd
	f estimated swell factor: Material Purchase Cost:	Cat Handbook \$0.00
	Total Cost:	\$0.00

HOURLY PRODUCTION

Material weight:		n	I- /I CV			
Description:	2,700 User Provide		ds/LCY			
Rated Payload:	50,300	Pound	10			
Payload Capacity:	18.63	LCY	12			
Tuyloud Cupuchy.	10.05					
Truck Bed (volume) Basis:						
Struck Volume:	12.00	LCY				
Heaped Volume:	18.00	LCY				
Average Volume:	15.00	LCY				
Adjusted Volume:	18.00	LCY				
Fina	al Truck Volun	ne Based on Number o	f Loader Passes:	15.21	LCY	
Loading Tool Capacity						
	2 000		Buc	ket Size Class: <u>N</u>	A	_
Rated Capacity:	3.900	LCY (heaped)	mixed maint an	gregates (95-100%)	0.075	-
Bucket Fill Factor:	0.975		- mixed moist ag	gregates (95-100%)	0.975	-
Adjusted Capacity:	3.803	LCY				
Job Condition Correction			ite Altitude (ft.):	7 <u>500</u> feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HE	,		
Job Efficiency:	0.830	0.830	(CAT HE	3)		
Net Correction:	0.830	0.830				
Loading Tool Cycle Time Excavators and Front Shov		Number of Loading T	1 ool Passes Requi		4 P	asses
Excavators and Front Show	U10.			Truck:	+	
Machine Cycle Time Selected Value	vs. Job Conditi	· · · · · · · · · · · · · · · · · · ·		1 ruck:		
Selected Value	vs. Job Conditi within this Ba	sic Rating: NA				
Selected Value Track Loaders -	vs. Job Conditi within this Ba – Material Desc	sic Rating: NA				
Selected Value Track Loaders -	vs. Job Conditi within this Ba – Material Deso):	sic Rating: NA		Dump:0.100		
Selected Value Track Loaders - Cycle Time Elements (min.	vs. Job Conditi within this Ba – Material Deso):	sic Rating: NA cription: Maneuver: NA	me (load, dump, 1	Dump:0.100		ıtes
Selected Value Track Loaders - Cycle Time Elements (min. Load: <u>NA</u>	vs. Job Conditi within this Ba – Material Desc): - Unadjusted I	sic Rating: <u>NA</u> cription: Maneuver: <u>NA</u> Basic Loader Cycle Ti		Dump:0.100		ıtes
Selected Value Track Loaders - Cycle Time Elements (min. Load: <u>NA</u> Wheel and Track Loaders <u>Cycle Time Factors</u> Material:	vs. Job Conditi within this Ba – Material Desc): – – Unadjusted I	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Ti 8" to 3/4" diameter -0.		Dump: 0.100 naneuver): 0 Factor (min.) -0.020	.483 mint Source (Cat HB)	ites
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile:	vs. Job Conditi within this Ba – Material Desc): – – Unadjusted I – Material 1/3 Dumped by	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Ti 8" to 3/4" diameter -0. 7 truck 0.02	02	Dump: 0.100 naneuver): 0 Factor (min.) -0.020 0.020	.483 mint Source (Cat HB) (Cat HB)	utes
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership:	vs. Job Conditi within this Ba - Material Desc): - Unadjusted H Material 1/8 Dumped by Common or	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Ti 8" to 3/4" diameter -0. 7 truck 0.02 wnership of trucks and	02	Dump: 0.100 naneuver): 0 Factor (min.) -0.020 0.020 -0.040	.483 mint Source (Cat HB) (Cat HB) (Cat HB)	utes
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vs. Job Conditi within this Ba – Material Desc): – Unadjusted H – Material 1/8 Dumped by Common o Constant op	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Tit 8" to 3/4" diameter -0. 7 truck 0.02 wnership of trucks and peration -0.04	02	Dump: 0.100 naneuver): 0 Factor (min.) -0.020 0.020 -0.040 -0.040	.483 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	1tes
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership:	vs. Job Conditi within this Ba – Material Desc): – Unadjusted H – Material 1/8 Dumped by Common o Constant op	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Tir 8" to 3/4" diameter -0. 7 truck 0.02 wnership of trucks and peration -0.04 rget 0.00	02 1 loaders -0.04	Dump: 0.100 naneuver): 0 Factor (min.) -0.020 0.020 -0.040 -0.040 0.000	.483 mint Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	ites
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vs. Job Conditi within this Ba – Material Desc): – Unadjusted H – Material 1/8 Dumped by Common o Constant op	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Ti 8" to 3/4" diameter -0. 7 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin	02 1 loaders -0.04 me Adjustment:	Dump: 0.100 naneuver): 0 Factor (min.) -0.020 0.020 -0.040 -0.040 0.000 -0.080	.483 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	1tes
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vs. Job Conditi within this Ba – Material Desc): – Unadjusted H – Material 1/8 Dumped by Common o Constant op	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Ti 8" to 3/4" diameter -0. 7 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin Adjusted Load	02 1 loaders -0.04	Dump: 0.100 naneuver): 0 Factor (min.) -0.020 0.020 -0.040 -0.040 0.000	.483 mint Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)	ites
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	vs. Job Conditi within this Ba – Material Desc): – Unadjusted H – Material 1/8 Dumped by Common o Constant op	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Ti 8" to 3/4" diameter -0. 7 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin Adjusted Load	02 1 loaders -0.04 me Adjustment: ler Cycle Time:	Dump: 0.100 naneuver): 0 Factor (min.) -0.020 0.020 -0.040 -0.040 0.000 -0.080 0.403	.483 minutes minutes	utes
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:	vs. Job Conditi within this Ba - Material Desc): - Unadjusted I Material 1/3 Dumped by Common or Constant op Nominal tar	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Ti 8" to 3/4" diameter -0. 7 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin Adjusted Load	02 I loaders -0.04 me Adjustment: ler Cycle Time: Time per Truck:	Dump: 0.100 naneuver): 0 Factor (min.) -0.020 0.020 -0.040 -0.040 0.000 -0.080 0.403	.483 minutes minutes	utes
Selected Value Track Loaders - Cycle Time Elements (min. Load: NA Wheel and Track Loaders Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target: Truck Cycle Time:	vs. Job Conditi within this Ba - Material Desc): - Unadjusted H Material 1/8 Dumped by Common or Constant op Nominal tar	sic Rating: NA cription: Maneuver: NA Basic Loader Cycle Ti 8" to 3/4" diameter -0. 7 truck 0.02 wnership of trucks and peration -0.04 rget 0.00 Net Cycle Tin Adjusted Load Net Load T	02 1 loaders -0.04 me Adjustment: ler Cycle Time: Time per Truck: Adjusted	Dump: 0.100 maneuver): 0 Factor (min.) -0.020 0.020 -0.040 -0.040 0.000 -0.080 0.403 1.308	.483 minu Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes minutes	
Truck Travel (Haul & Return) Time: penetration 5.0

	Haul Rou	ite:							
	Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time (min)	
-	1	490.0	0	3.00	5.00	8.00	1381	0.397	
L						Haul Time:	0.397	minut	tes
	Return Re					-			
	Seg #	Haul	Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
-		(Ft)			(%)	(%)	(fpm)	Time (min)	
	1	490.0	0	-3.00	5.00	2.00	2905	0.204	
						Return Time:	0.204	min	utes
					Total Tru	ck Cycle Time:	3.309	min	utes
L	oading Too	ol unit							
	Prod	uction	504.90	LCY/Hour		Adjusted for j	ob efficiency:	419.0	6 LCY/Hour
Truck	Unit Prod	uction	075.00				1 60 1	220.0	
			275.83	LCY/Hour		Adjusted for j	ob efficiency:	228.9	4 LCY/Hour
Optima	al No. of T	rucks:	2	Truck(s)		Selected Num	ber of Trucks:	2	Truck(s)
				Adjuste	d hourly trucl	k team productio	on: 457.	89 LO	CY/Hour
				Adjusted singl	e truck/loade	r team productio	on: 419.	06 LO	CY/Hour
				Adjusted multipl	e truck/loade	r team productio	on: 419.	06 LO	CY/Hour
	JOB TI	ME AN	ND COST						
	Fleet	size:	1	Team(s)]	Fotal job time:	50.64	4	Hours
	Unit	cost:	\$0.926	/LCY	,	Total job cost:	\$19,6	50	

BULLDOZER WORK

Task description:	King	g II - grade po	rtal cuts, a	ccess roads, water tan	k pad	
King Coal Mine		Permi	it Action:	RN7	Permit/Job#:	C1981035
PROJECT IDEN	TIFICATI	<u>ON</u>				
Task #: 304 Date: 5/8/20)17		Colorado La Plata		Abbreviation: _ Filename:	None C035-304
User: JHB					_	
Agency or	organization	name: DRM	1S			
HOURLY EQUI	PMENT CO	DST				
Basic Machine:	Cat D8T - 8	SU		_		
Horsepower:	310	1		_		
Blade Type: Attachment:	Semi-Unive			_		
Shift Basis:	3-shank ripp 1 per day	per		_		
Data Source:	(CRG)			_		
Cost Breakdown:			1			
	r		¢02.01	<u>Utilization %</u>		
Ownership Cost/H Operating Cost/H			\$83.81 \$66.17	<u>NA</u> 100		
Ripper of						
Cost/H			\$7.55	NA		
Ripper op. Cost/H	our:		\$0.00	0		
Operator Cost/H	our:		\$41.85	NA		
Total unit Cost/Hou Total Fleet Cost/Ho MATERIAL QU	ur: \$199.3					
Total unit Cost/Hou Total Fleet Cost/Ho <u>MATERIAL QU</u> Initial Volume: Swell factor:	ur: \$199.3 [ANTITIES] 16,562 1.165					
Total unit Cost/Hou Total Fleet Cost/Ho <u>MATERIAL QU</u> Initial Volume:	ur: \$199.3 ANTITIES 16,562					
Total unit Cost/Hou Total Fleet Cost/Ho <u>MATERIAL QU</u> Initial Volume: Swell factor:	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume:					
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell	38 				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor:	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION	38 Map King I Cat Handbo				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor:	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION	38 	ook			
Total unit Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROI Average push distan Unadjusted hourly	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION hce:	38 	ook	 ile 1.0		
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROI Average push distan Unadjusted hourly production:	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION nce: cy description ent: _5 %	38 Map King I Cat Handbo 50 feet 1,400.0 LCY/ : Consolida	bok hr	 ile 1.0		
Total unit Cost/Hou Total Fleet Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROI Average push distan Unadjusted hourly production: Materials consistent Average push gradi	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION nce: cy description ent: 5 % e: 7,500	38 Map King I Cat Handbo 50 feet 1,400.0 LCY/ : Consolida	bok hr	 ile 1.0		
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor: MOURLY PROI Average push distan Unadjusted hourly production: Materials consistend Average push gradi Average push gradi Average site altitud	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION nce: cy description ent: 5 % e:7,500 2,900	38 Map King I Cat Handbo 50 feet 1,400.0 LCY/ Consolida feet	hr ated stockp 			
Total unit Cost/Hou Total Fleet Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume:	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION nce: cy description ent: 5 % e: 7,500 2,900 Decor ection Factor	38 Map King I Cat Handbo 50 feet 1,400.0 LCY/ Consolida feet lbs/LCY mposed rock - :	hr ated stockp 	50% Earth		
Total unit Cost/Hou Total Fleet Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROI Average push distan Unadjusted hourly production: Materials consistent Average push gradi Average push gradi Average site altitud Material weight: Weight description: Job Condition Corra Ope	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION nce: cy description ent: 5 % e: 7,500 2,900 Decor rator Skill:	38	hr ated stockp 	50% Earth Source (AVG.)		
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROI Average push distan Unadjusted hourly production: Materials consistent Average push gradi Average push gradi Average site altitud Material weight: Weight description: Job Condition Corre Ope Material cor	ur: \$199.3 ANTITIES 16,562 1.165 19,295 LCY volume: swell DUCTION nce: cy description ent: 5 % e: 7,500 2,900 Decor ection Factor	38 Map King I Cat Handbo 50 feet 1,400.0 LCY/ Consolida feet lbs/LCY mposed rock - :	hr ated stockp 	50% Earth		

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.3566	

Adjusted unit production:	499.24 LCY/hr
Adjusted fleet production:	499.24 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.399/LCY

Total job time:	38.65 Hours
Total job cost:	\$7,705

COMPACTION WORK

Task description:	King II-Compa	act fill on porta	l cuts/access	rd/water tank pad		
King Coal Mine	Pe	ermit Action:	RN7	Perr	mit/Job#:	C1981035
PROJECT IDENTIFIC	CATION					
Task #: 305 Date: 5/8/2017 User: JHB	County:			Abbrev File		one 035-305
Agency or organiz	zation name: <u>I</u>	DRMS				
HOURLY EQUIPMEN	<u>NT COST</u>					
Basic Machine:	CAT 825H		_	Horsepower:	354	
Compactor Type:	Soil - tamping	foot	_	Shift Basis:	1 per o (CRO	
Cost Breakdown:						
Owners	hip Cost/Hour:	\$103.	01	Utilization % NA		
	ing Cost/Hour:	\$105.		100		
Öpera	ntor Cost/Hour:	\$26.3		NA		
Total U	Unit Cost/Hour:	\$203.	.90			
Total F	leet Cost/Hour:	\$203.	.90			
MATERIAL QUANTI	TIES					
Loose volume		2,821	LCY	Shrinl	kage factor:	0.750
Compacted volume:	17	,116	_ CCY			
	e of estimated vo		302 and 303			
Source of estin	mated shrinkage	factor: Cat H	andbook			
HOURLY PRODUCTI	<u>ION</u>		Unadjust	ed hourly production	$\mathbf{n} = (\mathbf{W} \mathbf{x} \mathbf{S} \mathbf{x})$	<u>x L x C) / P</u>
	acted width per p		7.34	feet		
	age Compactor S		5.00	mph		
	thickness of each Conversion Cons		<u>10.00</u> 16.3	inches (5.280ft /1	2in./27cu.ft)
	per of machine pa		5	passes	2111./ 2 / Cu.it	•)
*	l Hourly Unit Pro		1,196.42	CCY/hour		
Job Condition Correction F	Factors		Site Altit	ude: <u>7,300</u> feet		
Altitude Adj:	1.00	Source (CAT HB))			
Job Efficiency:	0.83	(1 shift/day				
Net Correction:	0.8300	multiplier	/			
Adi	usted Hourly Un	it Production:	993.03	CCY/Hour		
	usted Hourly Flee		993.03	CCY/Hour		
JOB TIME AND COS	<u>Γ</u>					
Fleet size: 1	Compac	tor(s)	То	tal job time:	17.24	Hours

BULLDOZER RIPPING WORK

Task description: Kin		King II -	King II - Rip portal, access rd., coal sales areas						
Site:	King Coal Mi	ne	Per	mit Action:	RN7	I	Permit/Job#:	C1981035	
]	PROJECT IDI	ENTIFICATION							
	Task #: 306	5	State:	Colorado		Abb	reviation:	None	
	Date: 5/8	/2017 Co	ounty:	La Plata		·	Filename:	C035-306	
	User: JHI	3	-				=		
	Agency	or organization name	: DR	SMS					
]	HOURLY EQ	UIPMENT COST							
	Basic I	Machine: Cat D8T	- 8SU			Horsepower:		310	
	Ripper Atta	achment: 3-Shank	Ripper			Shift Basis:	-	er day	
			••			Data Source:	(C	CRG)	
(Cost Breakdown:								
_						Utilization %			
		Ownership Cost/Ho	our:		\$83.81	NA	_		
		Operating Cost/Ho	our:		\$66.17	100			
	Rippe	er Ownership Cost/Ho	our:		\$7.55	NA			
	Ripp	er Operating Cost/Ho	our:		\$7.21	100			
		Operator Cost/Ho	our:		\$41.85	NA	_		
		Total Unit Cost/Ho	our:		\$206.59				
		Total Fleet Cost/He	our:	\$20	6.59				

	MATERIAL QUAN	<u>TITIES</u>	Selected estimating method: Area					
	Alternate Methods:							
Seismic:	NA		Bank Volume:	NA	BCY		NA	
Area:	16.98 a	acres	Rip Depth (ft):	2.00	Volume:	54,789		BCY or CCY
	Source	ce of estimated qu	antity: Page 2	.05.3-3				
	HOURLY PRODUC	CTION						
	Seismic:							
		Seismic	Velocity:	NA	feet/se	econd		
	Area:							
		Average Rippi	ng Depth:	1.00	mph			
		Average Rippin		7.08	degree	es		
		Average Rippin	g Length:	50.00	feet			
		Average Doz	er Speed:	88.00	feet			
		Average Maneu	ver Time:	0.25	feet			
		Production per	unit area:	0.596	acres/	hour		
	Job Condition Correction	on Factors						
	Unadjuste	ed Hourly Unit Pr	oduction:	0.596	Acres	/hr		
		Site	Altitude:	7,400	feet			
		Alti	tude Adj:	1.00	(CAT	'HB)		
		Job E	fficiency:	0.83	(1 shi	ft/day)		
		Net C	orrection:	0.83	multip	plier		
		Adjusted Hourly		0.49	Acres/hr			
	I	Adjusted Hourly	Fleet Production:	0.49	Acres/hr			
	JOB TIME AND CO	<u>DST</u>						
	Fleet size:	1 Grade	er(s)	Total job time:		34.33	Hou	rs
	Unit cost:\$41	7.652 Per a	cre	Total job cost:		\$7,092		

BULLDOZER WORK

Task description:	King II - grade p	oortal cuts, a	ccess roads, water tank	pad	
: King Coal Mine	Per	mit Action:	Midterm Review No. 7	Permit/Job#:	C1981035
PROJECT IDENTI	FICATION				
Task #: 307	State:	Colorado		Abbreviation:	None
Date: 2/11/201	5 County:	La Plata		Filename:	C035-307
User: SLB					
Agency or org	ganization name:	RMS			
HOURLY EQUIPM	<u>IENT COST</u>				
Basic Machine: C	Cat D8T - 8SU				
-	10		_		
	emi-Universal		_		
	-shank ripper		_		
	per day		_		
<u> </u>	CRG)		_		
Cost Breakdown:			Utilization %		
Ownership Cost/Hour		\$83.81	NA		
Operating Cost/Hour		\$66.17	100		
Ripper owr Cost/Hour		\$7.55	NA		
Ripper op. Cost/Hour		\$0.00	0		
Operator Cost/Hour		\$41.85	NA		
Swell factor: 1.0	.,789 000				
Loose volume: 54	,789 LCY	_			
Source of estimated vo	lume: Page 2.05	5.3-3, 16.98 a	c x 2' depth		
Source of estimated sw			1		
factor:					
HOURLY PRODU	<u>CTION</u>				
Average push distance:	: 50 feet				
Unadjusted hourly	. <u>50 leet</u> 1,400.0 LC	Y/hr			
production:	1,100.0 LC	_ , •••			
-					
Materials consistency of	description: Consol	idated stockp	pile 1.0		
Average push gradient:	: 5 %				
Average site altitude:	7,500 feet				
Material weight:	2,900 lbs/LCY			_	
Weight description:	Decomposed rock	- 50% Rock,	50% Earth		
Job Condition Correcti			Source		
<u>Operate</u>		750	(AVG.)		
Material const		.000	(CAT HB)		
Dozing 1		.000	(GEN.)		
		.000	(AVG.)		

Job efficie	J	830	(1 SHIFT/DAY)		
Spoil	·	800	(FND-RF)		
Push grad		903	(CAT HB)		
Altit		000	(CAT HB)		
Material We	ight:0.	793	(CAT HB)		
Blade	type: 1.	000	(PAT)		
Net correc	tion: 0.3566				
Adjusted unit production: Adjusted fleet production:					
JOB TIME AND COS	<u>T</u>				
	Dozer(s) 60.399/LCY				
	09.74 Hours 621,880				
		BULLDOZ	ER WORK		
Task description:	King II - remove	east and we	st cleanwater ditches		
te: King Coal Mine		mit Action:		Permit/Job#:	C1981035
PROJECT IDENTIFI	CATION				
Task #: 308	State:	Colorado		Abbreviation:	None
Date: 5/8/2017	County:	La Plata		Filename:	C035-308
User: JHB					
Agency or organ	ization name: DR	MS			
	NT COST				
HOURLY EQUIPME					
	D8T - 8SU		=		
Horsepower: 310	• • • • • •		_		
• •	i-Universal		-		
	ank ripper		_		
Data Source: (CR	r day G)		-		
	~,		-		
Cost Breakdown:		1	Utilization %		
Ownership Cost/Hour:		\$83.81	NA		
Operating Cost/Hour:		\$66.17	<u> </u>		
Ripper own.					
Cost/Hour:		\$7.55	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.85	NA		
· .	¢100.29				
Total unit Cost/Hour: Total Fleet Cost/Hour:	\$199.38 \$100.38				
i otal rieet Cost/Hour:	\$199.38				
MATERIAL QUANT	<u>ITIES</u>				
Initial Volume: 3,235	i				
Swell factor: 1.330					
	LCY				

Source of estimated volume:

West:4x3x2480 - East: 10x3x1920

Source of estimated swell	Cat Handbook	
factor:		

HOURLY PRODUCTION

Average push distance: Unadjusted hourly production:	50 feet 1,400.0 LCY/hr					
Materials consistency descript	ion: <u>Consolidated stockpile 1</u>	0				
Average push gradient: $5 \ 9$ Average site altitude: $7,5$	6 00 feet					
Material weight:2,9	00 lbs/LCY					
Weight description: De	composed rock - 50% Rock, 50%	Earth				
Job Condition Correction Fact	or	Source				
Operator Skill		(AVG.)				
Material consistency:	1.000	(CAT HB)				
Dozing method:	1.000	(GEN.)				
Visibility	1.000	(AVG.)				
Job efficiency:	0.830	(1 SHIFT/DAY)				
Spoil pile	0.800	(FND-RF)				
Push gradient:	0.903	(CAT HB)				
Altitude	1.000	(CAT HB)				
Material Weight:	0.793	(CAT HB)				
Blade type:	1.000	(PAT)				
Net correction: 0.3566						
Adjusted unit production:	499.24 LCY/hr					
Adjusted fleet production:	199.24 LCY/hr					

Fleet size: Unit cost:	1 Dozer(s) \$0.399/LCY
Total job time:	8.62 Hours
Total job cost:	\$1,718

BULLDOZER WORK

Task description:	King	g II - constru	ict drainage	channel in Cochrane C	Canyon	
: King Coal Mine	!	Per	mit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDEN	NTIFICATI	<u>ON</u>				
Task #: 309	017	State:	Colorado		Abbreviation:	None
Date: $5/8/20$ User: JHB	017	County:	La Plata		Filename:	C035-309
Agency or	organization	name: DR	RMS			
HOURLY EQUI	PMENT C	<u>OST</u>				
Basic Machine:	Cat D8T - 2	BSU		_		
Horsepower:	<u>310</u>			_		
Blade Type: Attachment:	Semi-Univ			_		
Shift Basis:	3-shank rip 1 per day	per		_		
Data Source:	(CRG)			_		
Cost Breakdown:						
	r		002 01	<u>Utilization %</u>		
Ownership Cost/H Operating Cost/H			\$83.81 \$66.17	<u>NA</u> 100		
Ripper of						
Cost/H			\$7.55	NA		
Ripper op. Cost/H	Iour:		\$0.00	0		
Operator Cost/H	lour:		\$41.85	NA		
Initial Volume: Swell factor: Loose volume:	2,133 1.000 2,133 LCY					
-	·					
Source of estimated Source of estimated factor:		Mp King Cat Hand		st-Mining X-Section Plan	1	
HOURLY PROI	DUCTION					
Average push dista	nce:	50 feet				
Unadjusted hourly production:	-	1,400.0 LC	Y/hr			
Materials consisten	cy description	n: Partly c	consolidated	stockpile 1.1		
Average push gradi Average site altitud		feet				
Material weight:	2,900	lbs/LCY				
Weight description:	Deco	mposed rock	- 50% Rock,	50% Earth		
Job Condition Corr			750	Source		
	erator Skill:		.750 .100	(AVG.)		
	onsistency: _ ng method:		.100	(CAT HB) (GEN.)		
DUZI	Visibility:		.000	(AVG.)		

Job effici	ency: 0	.830	(1 SHIFT/DAY)		
		.800	(FND-RF)		
Push grad		.000	(CAT HB)		
•	-	.000	(CAT HB)		
Material We		.793	(CAT HB)		
Blade		.000	(PAT)		
Diude			(1111)		
Net correc	ction: 0.4344				
Adjusted unit production	: 608.16 LCY/hr				
Adjusted fleet production	608.16 LCY/hr				
JOB TIME AND CO	<u>ST</u>				
Fleet size:	1 Dozer(s)				
	\$0.328/LCY				
Total job time:	3.51 Hours				
	\$699				
		BULLDOZ	FR WORK		
		DOLLDOL			
Task description:	King II - constru	ict channel ii	n office drainage		
e: King Coal Mine	Per	mit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDENTIF	ICATION				
Task #: 310	State:	Colorado		Abbreviation:	None
Date: $5/8/2017$	County:	La Plata		Filename:	C035-310
User: JHB				=	
Agency or orga	nization name: DF	RMS			
μοιήρι ν εοιήρμα					
HOURLY EQUIPME					
	D8T - 8SU		_		
Horsepower: 310 Blade Type: Sen	ni-Universal		_		
71	nank ripper		_		
	er day		_		
Data Source: (CF			_		
Cost Breakdown:			=		
COSt DICARGOWII.			Utilization %		
Ownership Cost/Hour:		\$83.81	NA		
Operating Cost/Hour:		\$66.17	100		
Ripper own.		\$7.55	NA		
Cost/Hour:					
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.85	NA		
Total unit Cost/Hour:	\$199.38				
Total Fleet Cost/Hour:	\$199.38				
MATERIAL QUANT	TTIES				
Initial Values 0.77	C				
Initial Volume: 2,75 Swell factor: 100					
Swell factor: 1.00					

Source of estimated volume: Mp King II-011A, Post-Mining X-Section Plan,

Source of estimated swell factor:	10x3x2480 Cat Handbook	
HOURLY PRODUCTION		
Average push distance: Unadjusted hourly production:	50 feet 1,400.0 LCY/hr	_
Materials consistency descriptio	n:Partly consolidated stoc	ckpile 1.1
<u> </u>) feet) lbs/LCY	
Weight description:Decc	omposed rock - 50% Rock, 50	% Earth
Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.4344	
Adjusted unit production: 60	8.16 LCY/hr	
Adjusted fleet production: 60	8.16 LCY/hr	

Fleet size:	1 Dozer(s)
Unit cost:	\$0.328/LCY
Total job time: Total job cost:	4.53 Hours \$904

BULLDOZER WORK

Task description:	King L	l - backfill pond			
King Coal Mine		Permit Action: R	N7	Permit/Job#	C1981035
PROJECT IDEN	FIFICATIO	N			
Task #: 311		- State: Colorado		Abbreviation:	None
Date: $5/8/201$	7				C035-311
User: JHB	. 1	County: La Plata		Filename:	0000-011
	rganization na	me: DRMS			
	-				
HOURLY EQUIP					
	Cat D8T - 8S	J			
Horsepower:	310				
Blade Type:	Semi-Univers				
Attachment:	3-shank rippe	:			
Shift Basis:	1 per day				
Data Source:	(CRG)				
Cost Breakdown:		1	Utilization %		
Ownership Cost/Ho	1117.	\$83.81	NA		
Ownership Cost/Ho Operating Cost/Ho		\$66.17	100		
Ripper ov					
Cost/Ho		\$7.55	NA		
Ripper op. Cost/Ho		\$0.00	0		
Operator Cost/Ho		\$41.85	NA		
MATERIAL QUA					
	9,993				
	.125 1 1,242 LCY				
Source of estimated v	,	Pond design			
Source of estimated v		Cat Handbook			
factor:	wCII	Cat Handbook			
	-				
HOURLY PRODU					
Average push distanc) feet			
Unadjusted hourly production:	1	400.0 LCY/hr			
Materials consistency	description:	Partly consolidated sto	ckpile 1.1		
Average push gradier	nt: 0%				
Average push gradier Average site altitude:		et			
Average site attitude:	7,500 18				
Material weight:	2,900 lb	s/LCY			
Weight description:	User Pro	ovided			
Job Condition Correc			Source		
	tor Skill:	0.750	(AVG.)		
Material cor		1.100	(CAT HB)		
	g method:	1.000	(GEN.)		
V	/isibility:	1.000	(AVG.)		

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.4344	

Adjusted unit production:	608.16 LCY/hr
Adjusted fleet production:	608.16 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.328/LCY

Total job time:	18.49 Hours
Total job cost:	\$3,686

BULLDOZER RIPPING WORK

Task description:	King II - Rip coa	l sales area				
Site: King Coal Mine	Per	mit Action:	RN7	P	ermit/Job#:	C1981035
PROJECT IDENTIFI	CATION					
Task #: 312	State:	Colorado		Abbı	eviation:	None
Date: 5/8/2017	County:	La Plata		F	Filename:	C035-312
User: JHB						
Agency or organ	ization name: DR	RMS				
HOURLY EQUIPME	NT COST					
Basic Machine:	Cat D8T - 8SU			Horsepower:		310
Ripper Attachment:	3-Shank Ripper			Shift Basis:	1 p	er day
				Data Source:	(0	CRG)
Cost Breakdown:						
				Utilization %		
Owner	ship Cost/Hour:		\$83.81	NA		
Opera	ting Cost/Hour:		\$66.17	100		
Ripper Owner	ship Cost/Hour:		\$7.55	NA		
Ripper Opera	ting Cost/Hour:		\$7.21	100		
Oper	ator Cost/Hour:		\$41.85	NA		
Total	Unit Cost/Hour:		\$206.59			
Total H	Fleet Cost/Hour:	\$20	6.59			

	MATERIAL Q	UANTITIES	Sel	ected estimating me	ethod: Area		
	Alternate Methods	<u>s:</u>					
Seismic:	NA		Bank Volume:	NA	BCY	NA	
Area:	1.70	acres	Rip Depth (ft):	2.00	Volume: 5,485		BCY or CCY
		Source of estimat	ed quantity: <u>Map K</u>	ing II-007			
	HOURLY PRO	DUCTION					
	Seismic:						
		Sei	smic Velocity:	NA	feet/second		
	Area:						
		Average F	Ripping Depth:	1.00	mph		
			Lipping Width:	7.08	degrees		
		Average R	pping Length:	50.00	feet		
		Average	Dozer Speed:	88.00	feet		
		Average M	aneuver Time:	0.25	feet		
		Production	n per unit area:	0.596	acres/hour		
	Job Condition Cor	rection Factors					
	Una	djusted Hourly U	nit Production:	0.596	Acres/hr		
			Site Altitude:	7,400	feet		
			Altitude Adj:	1.00	(CAT HB)		
		J	ob Efficiency:	0.83	(1 shift/day)		
		Ν	let Correction:	0.83	multiplier		
			ourly Unit Production:	0.49	Acres/hr		
		Adjusted Ho	urly Fleet Production:	0.49	Acres/hr		
	JOB TIME AN	D COST					
	Fleet size:	1 0	Grader(s)	Total job time:	3.44	Ηοι	ırs
	Unit cost:	\$417.652	Per acre	Total job cost:	\$710		
			BULLDOZ	<u>ER WORK</u>			

Task description:	King II - Grade	e haul road			
: King Coal Mine	Pe	ermit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDENT	IFICATION				
Task #: 313	State:	Colorado		Abbreviation:	None
Date: $5/8/201^{\circ}$				Filename:	C035-313
User: JHB	<u>/</u> County.	La Tlata		Thename.	0000-010
Agency or or	rganization name: <u>D</u>	ORMS			
HOURLY EQUIP	MENT COST				
	Cat D8T - 8SU		_		
	310				
Blade Type:	Semi-Universal				
Attachment:	3-shank ripper				
Shift Basis:	1 per day				
	(CRG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hou	ır:	\$83.81	NA		
Operating Cost/Hou		\$66.17	100		
Ripper ow					
Cost/Hou		\$7.55	NA		
Ripper op. Cost/Hou	ır:	\$0.00	0		
Operator Cost/Hou	ır:	\$41.85	NA		
	¢100.20				
Total unit Cost/Hour:	\$199.38				
Total Fleet Cost/Hour	: \$199.38				
MATERIAL QUA	NTITIES				
	,485				
	.330				
	.330 . 295 LCY				
Loose volume: 7	,295 LC I				
Source of estimated ve	olume: 1.7 acre	s x 2' depth			
Source of estimated sy	well Cat Han	dbook			
factor:					
	ICTION				
HOURLY PRODU					
Average push distance					
Unadjusted hourly	1,400.0 LC	CY/hr			
production:					
Materials consistency	description: <u>Consc</u>	olidated stock	pile 1.0		
Avaraga puch gradien	t: 0.%				
Average push gradien					
Average site altitude:	7,500 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed roc	k - 50% Rock	, 50% Earth		
Job Condition Correct			Source		
		0.750	(AVG.)		
Material con	sistency:	1.000	(CAT HB)		
material con					

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3949

Adjusted unit production:	552.86 LCY/hr
Adjusted fleet production:	552.86 LCY/hr

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.361/LCY

Total job time:13.20 HoursTotal job cost:\$2,631

MISCELLANEOUS TRUCK WORK

	cription:	Water truck for dus	st control		
: King C	oal Mine	Permit Activ	on: <u>RN7</u>	Permit/Job#:	: C1981035
<u>PROJEC</u>	T IDENTIF	ICATION			
Task #: Date: User:	314 5/8/2017 JHB	State: Colo County: La P		Abbreviation: Filename:	None C035-314
Agenc	y or organizat				
Make Att	achment 1:	Water Tanker, 2,500 (Gal.	Horsepow Shift Bas	sis: 1 per day
La	achment 2: bor Unit 1: bor Unit 2:	Tanker Driver - 1 rear	axle	Weig	ht:5.25 (US Tons)
~ -	kdown				
Cost Brea	<u>ikuowii.</u>				
Owner Opera	ship Cost/Hou ting Cost/Hou	ır: \$14.74	Utilization % NA 100		
Owner Opera Oper	ship Cost/Ho	ır: \$14.74 ır: \$21.39	NA		
Owner Opera Oper Total	ship Cost/Hou ting Cost/Hou ator Cost/Hou	ar: \$14.74 ar: \$21.39 ar: \$44.01	NA 100		
Owner Opera Oper Total Total	ship Cost/Hou ting Cost/Hou ator Cost/Hou Unit Cost/Hou	ur: \$14.74 ur: \$21.39 ur: \$44.01 our: \$44.01	NA 100		
Owner Opera Oper Total Total	ship Cost/Hou ting Cost/Hou ator Cost/Hou Unit Cost/Hou Fleet Cost/Hou 1E AND CO S	ur: \$14.74 ur: \$21.39 ur: \$44.01 our: \$44.01	NA 100	240.00	Hours

TRUCK/LOADER TEAM WORK

Task description:	King II	- distribute top	soil from Cochrar	ne stockpile		
Site: King Coal Mine	2	Permit Ac	tion: <u>RN7</u>		Permit/Job#: <u>C</u>	1981035
PROJECT IDE	NTIFICATION					
Task #: 401			rado	Ab	breviation: No	
Date: 5/8/2	017	County: La P	lata		Filename: C0	35-401
User: JHB						
Agency of	r organization nan	ne: DRMS				
HOURLY EQU	IPMENT COST	<u>r</u>		Shift bas	sis: <u>1 per day</u>	
			Equipment Descr			
, ,	Truck Loader Tea		eneric 12-18 cy, 6x			
	ort Equipment -L		BSOLETE - CAT 9	938H		
Subt			BSOLETE - CAT 9	938H		
Road M	laintenance – Moto			5011		
	-Wa	ter Truck: N.	4			
Cost Breakdown:	Tmalt/Lo	ader Team	Sumport	Equipment	Maintana	a Equipment
Cost Dreakuowii:	Truck	Loader	Load Area	Dump Area	Motor Grader	nce Equipment Water Truck
				•	Wiotor Grader	
%Utilization-machine:	100	100		100	NA	NA
Ownership cost/hour:	\$22.16	\$25.66	NA	\$25.66	NA	NA
Operating cost/hour:	\$42.40	\$32.31	NA	\$32.31	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Operator cost/hour:	\$30.37	\$41.20	NA	\$41.20	NA	NA
Unit Subtotals:	\$94.93	\$99.17	NA	\$99.17	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work:	\$289.03	Support:	\$99.17	Maint:	\$0.00

Total work team cost/hour: \$388.20

MATERIAL QUANTITIES

Initial volume: Loose volume:	27,699 33,654	CCY Swell factor: 1.215 LCY	
Sour	ce of estimated volume:	22.36 ac - 1.5 ponds	
Source of	f estimated swell factor:	Cat Handbook	
	Material Purchase Cost:	\$0.00	
	Total Cost:	\$0.00	

HOURLY PRODUCTION

Truck Payload (weight) Ba	SIS:						
Material weight:	1,600		Pounds/L	.CY			
Description:	Top Soil						
Rated Payload:	50,300		Pounds				
Payload Capacity:	31.44		LCY				
Fruck Bed (volume) Basis:	<u>.</u>						
Struck Volume:	12.00	LCY					
Heaped Volume:	18.00	LCY					
Average Volume:	15.00	LCY					
Adjusted Volume:	18.00	LCY					
Fin	al Truck Volum	e Based on Nur	nber of L	oader Passes:	15.21	LCY	
Loading Tool Capacity							
Rated Capacity:	3.900	LCY (hea	aned)	Buc	ket Size Class:	NA	
Bucket Fill Factor:	0.975	,	1 /	ixed moist an	gregates (95-100	%) 0 975	
Adjusted Capacity:	3.803	LOOSE III		incu moist ag	gregates (95-100	(70) 0.975	
Aujusted Capacity.	5.005						
lob Condition Correction	<u>15:</u>		Site .	Altitude (ft.):	<u>7500</u> feet		
	Truck	Loade		Source			
Altitude Adj:	1.000	1.000		(CAT HE			
Job Efficiency:	0.830	0.830		(CAT HE	3)		
Net Correction:	0.830	0.830					
Loading Tool Cycle Time	e:	Number of Loa	iding Too	1 Decces Decu	ired to Fill		passes
				i Passes Requ		1	
				i Passes Requ	Truck:	4	
Excavators and Front Shov	vels:		A	i Passes Requ		4	
Excavators and Front Shov Machine Cycle Time	vels:	on Rating: <u>N</u>		rasses kequ		4	
Excavators and Front Shov Machine Cycle Time Selected Value	vels: vs. Job Conditi	on Rating: <u>N</u> sic Rating: <u>N</u>				4	
Excavators and Front Shov Machine Cycle Time Selected Value Track Loaders	v <u>els:</u> vs. Job Conditi e within this Bas – Material Desc	on Rating: <u>N</u> sic Rating: <u>N</u>				4	_
Excavators and Front Shov Machine Cycle Time Selected Value Track Loaders	vels: vs. Job Conditi within this Bas – Material Desc .):	on Rating: <u>N</u> sic Rating: <u>N</u> cription:			Truck:	4	
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min	vels: vs. Job Conditi e within this Bas – Material Desc .):	on Rating: <u>N</u> sic Rating: <u>N</u> cription: Maneuver: <u>N</u>	A A		Truck:		minutes
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: <u>NA</u>	vels: vs. Job Conditi e within this Bas – Material Desc .): s - Unadjusted F	on Rating: <u>N</u> sic Rating: <u>N</u> cription: Maneuver: <u>N</u>	A A		Truck: Dump:0.1 maneuver):	0.483	
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: <u>NA</u> Wheel and Track Loaders	vels: vs. Job Conditi e within this Bas – Material Desc .): 	on Rating: <u>N</u> sic Rating: <u>N</u> cription: Maneuver: <u>N</u>	A A cle Time		Truck:	0.483	ce
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: <u>NA</u> Wheel and Track Loaders Cycle Time Factors	vels: vs. Job Conditi e within this Bas – Material Desc .): s - Unadjusted F s Material 1/8	on Rating: <u>N</u> sic Rating: <u>N</u> cription: <u></u> Maneuver: <u>N</u> Basic Loader Cy 3" to 3/4" diame	A A cle Time		Truck: Dump:0.1 maneuver): Factor (min.)	100 0.483	ce B)
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: <u>NA</u> Wheel and Track Loaders Cycle Time Factors Material	vels: vs. Job Conditie within this Bas – Material Desc .): s - Unadjusted F s - Material 1/8 : Dumped by	on Rating: <u>N</u> sic Rating: <u>N</u> cription: <u></u> Maneuver: <u>N</u> Basic Loader Cy 3" to 3/4" diame	A A cle Time ter -0.02	 (load, dump, 1	Truck: Dump:0.1 maneuver): Factor (min.) -0.020	100 0.483 0 Source (Cat H	ce B) B)
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loaders Cycle Time Factors Material Stockpile	vels: vs. Job Conditi e within this Bas – Material Desc .): s - Unadjusted F s : Material 1/8 : Dumped by : Common ov	on Rating: <u>N</u> sic Rating: <u>N</u> cription: <u></u> Maneuver: <u>N</u> Basic Loader Cy 3" to 3/4" diame truck 0.02	A A cle Time ter -0.02	 (load, dump, 1	Truck: Dump: maneuver): Factor (min.) -0.020 0.020	0.483 0 Source 0 (Cat H 0 (Cat H	ce (B) (B) (B)
Excavators and Front Shov Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loaders Cycle Time Factors Material Stockpile Truck Ownership	vels: vs. Job Conditi e within this Bas – Material Desc .): s - Unadjusted F s - Material 1/8 : Dumped by : Common ov : Constant op	on Rating: <u>N</u> sic Rating: <u>N</u> cription: <u></u> Maneuver: <u>N</u> Basic Loader Cy <u>3" to 3/4" diame</u> truck 0.02 wnership of truc eration -0.04 get 0.00	A A cle Time ter -0.02 ks and loa	(load, dump, 1	Truck: Dump: maneuver): Factor (min.) -0.020 0.020 -0.040	0.483 0 Source 0 (Cat H 0 (Cat H 0 (Cat H	B) B) B) B) B) B)
Excavators and Front Shov Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loaders Cycle Time Factors Material Stockpile Truck Ownership Operation	vels: vs. Job Conditi e within this Bas – Material Desc .): s - Unadjusted F s - unadjusted F s - Unadjusted F s - Common ov Common ov	on Rating: <u>N</u> sic Rating: <u>N</u> cription: <u></u> Maneuver: <u>N</u> Basic Loader Cy 3" to 3/4" diame truck 0.02 wnership of truc peration -0.04 get 0.00 Net Cyo	A A cle Time ter -0.02 ks and loa	(load, dump, 1 aders -0.04 Adjustment:	Truck: Dump:0.1 maneuver): Factor (min.) -0.020 0.020 -0.040 -0.040 0.000 -0.080	100 0.483 0 Source (Cat H (Cat H (Cat H (Cat H (Cat H (Cat H (Cat H	ce B) B) B) B) B) cs
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loaders Cycle Time Factors Material Stockpile Truck Ownership Operation	vels: vs. Job Conditi e within this Bas – Material Desc .): s - Unadjusted F s - unadjusted F s - Unadjusted F s - Common ov Common ov	on Rating: <u>N</u> sic Rating: <u>N</u> cription: <u>Stription</u> Maneuver: <u>N</u> Basic Loader Cy Basic Loader Cy 3" to 3/4" diame truck 0.02 wnership of truc veration -0.04 reget 0.00 Net Cyo Adjusted	A A cle Time ter -0.02 ks and loa cle Time A d Loader ((load, dump, 1 aders -0.04 Adjustment: Cycle Time:	Truck: Dump:0.1 maneuver): Factor (min.) -0.020 0.020 -0.040 -0.040 0.000 -0.040 0.000 -0.080 0.403	100 0.483 0 Source 0 (Cat H) 0 (Cat H)	ce B) B) B) B) CB) es es
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loaders Cycle Time Factors Material Stockpile Truck Ownership Operation	vels: vs. Job Conditi e within this Bas – Material Desc .): s - Unadjusted F s - unadjusted F s - Unadjusted F s - Common ov Common ov	on Rating: <u>N</u> sic Rating: <u>N</u> cription: <u>Stription</u> Maneuver: <u>N</u> Basic Loader Cy Basic Loader Cy 3" to 3/4" diame truck 0.02 wnership of truc veration -0.04 reget 0.00 Net Cyo Adjusted	A A cle Time ter -0.02 ks and loa cle Time A d Loader ((load, dump, 1 aders -0.04 Adjustment:	Truck: Dump:0.1 maneuver): Factor (min.) -0.020 0.020 -0.040 -0.040 0.000 -0.080	100 0.483 0 Source (Cat H (Cat H (Cat H (Cat H (Cat H (Cat H (Cat H	ce B) B) B) B) ces es
Excavators and Front Show Machine Cycle Time Selected Value Track Loaders Cycle Time Elements (min Load: NA Wheel and Track Loaders Cycle Time Factors Material Stockpile Truck Ownership Operation	vels: vs. Job Conditi e within this Bas – Material Desc .): s - Unadjusted F s - unadjusted F s - Unadjusted F s - Common ov Common ov	on Rating: <u>N</u> sic Rating: <u>N</u> cription: <u>Stription</u> Maneuver: <u>N</u> Basic Loader Cy Basic Loader Cy 3" to 3/4" diame truck 0.02 wnership of truc veration -0.04 reget 0.00 Net Cyo Adjusted	A A cle Time ter -0.02 ks and loa cle Time A d Loader ((load, dump, 1 aders -0.04 Adjustment: Cycle Time:	Truck: Dump:0.1 maneuver): Factor (min.) -0.020 0.020 -0.040 -0.040 0.000 -0.040 0.000 -0.080 0.403	100 0.483 0 Source 0 (Cat H) 0 (Cat H)	ce B) B) B) B) ces es

Truck Load Time:	1.308	Minutes	Adjusted for site altitude:	1.308	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes
					-

<u>Truck Travel (Haul & Return) Time:</u> penetration 4.0

Road Condition: <u>Rutted dirt, little maintenance, no water, 1" tire</u>

Haul	Route:							
Seg #		aul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(F	t)		(%)	(%)	(fpm)	Time (min)	
1	20	00.00	2.00	4.00	6.00	1855	1.158	
					Haul Time:	1.158	minutes	
	rn Route:							
Seg #	# Ha	aul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(F	,		(%)	(%)	(fpm)	Time (min)	
1	20	00.00	-2.00	4.00	2.00	2905	0.723	
					Return Time:	0.723	minutes	
				Total True	ck Cycle Time:	4.589	minutes	
Loading	g Tool un	it						
	Productio		LCY/Hour		Adjusted for j	job efficiency:	419.06	LCY/Hour
Truck Unit I	Productio							
		198.89	LCY/Hour		Adjusted for j	job efficiency:	165.08	LCY/Hour
Optimal No.	of Truck	s: <u>3</u>	Truck(s)		Selected Num	ber of Trucks:	2	Truck(s)
			Adjusted	d hourly truck	k team productio	on: 330.	15 LCY/H	Hour
			Adjusted singl	e truck/loade	r team productio	on: 330.	15 LCY/H	Hour
			Adjusted multipl	e truck/loade	r team productio	on: 330.	15 LCY/F	Hour
JOB	B TIME	AND COST						
F	Fleet size	. 1	Team(s)	Т	Fotal job time:	101.9	3 Hou	irs
τ	Unit cost	\$1.176	/LCY		Total job cost:	\$39,57	71	

MOTOR GRADER WORK

PROJECT IDENTIFICATION Task #: 402 State: Colorado Abbre	mit/Job#: <u>C1981035</u> viation: <u>None</u> ename: <u>C035-402</u> <u>158</u> <u>1 per day</u> (CRG)
Task #: 402 State: Colorado Abbre Date: 5/8/2017 County: La Plata Fil User: JHB Agency or organization name: DRMS Fil HOURLY EQUIPMENT COST Basic Machine: CAT 12M Horsepower: Shift Basis: Ripper Attachment: Multi-Shank Ripper Shift Basis: Data Source: Cost Breakdown: Utilization % NA NA Operating Cost/Hour: \$28.02 NA NA Ripper Ownership Cost/Hour: \$1.99 NA NA Ripper Operating Cost/Hour: \$28.90 NA NA Total Unit Cost/Hour: \$87.19 NA NA Total Fleet Cost/Hour: \$87.19 Section 2.05.3 of permit application MATERIAL QUANTITIES Section 2.05.3 of permit application Mount of blade acreage: Section 2.05.3 of permit application HOURLY PRODUCTION Selected Application: Production Deration - Selected Application: Section 2.00 degrees Effective Blade Length: 10.40 feet Gegrees 2.00 feet	Ename: C035-402 158 1 per day (CRG) (CRG)
Date: 5/8/2017 County: La Plata Fil User: JHB Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: CAT 12M Horsepower: Ripper Attachment: Multi-Shank Ripper Shift Basis: Data Source:	Ename: C035-402 158 1 per day (CRG) (CRG)
Date: 5/8/2017 County: La Plata Fil User: JHB Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: CAT 12M Horsepower: Ripper Attachment: Multi-Shank Ripper Shift Basis: Data Source:	Ename: C035-402 158 1 per day (CRG) (CRG)
Agency or organization name: DRMS HOURLY EQUIPMENT COST Basic Machine: CAT 12M Horsepower: Ripper Attachment: Multi-Shank Ripper Shift Basis: Data Source: Cost Breakdown: Cost Breakdown: Ownership Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.28 100 Ripper Ownership Cost/Hour: \$28.28 100 Ripper Ownership Cost/Hour: \$1.99 NA Ripper Operating Cost/Hour: \$28.90 NA Total Unit Cost/Hour: \$28.90 NA Total Unit Cost/Hour: \$887.19 MATERIAL QUANTITIES MATERIAL QUANTITIES Average Grader or ripped: 22.36 Source of estimated acreage: Section 2.05.3 of permit application HOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Production Deration - Selected Appleation: 30 degrees Effective Blade Length: 10.40 feet Width of blade overlap per pass: 2.00 feet	1 per day (CRG)
HOURLY EQUIPMENT COST Basic Machine: CAT 12M Horsepower: Shift Basis: Data Source: Multi-Shank Ripper Ripper Attachment: Multi-Shank Ripper Shift Basis: Data Source: Streakdown: Cost Breakdown: Ownership Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.28 Ripper Ownership Cost/Hour: \$1.99 NA Ripper Operating Cost/Hour: \$0.00 0 Operator Cost/Hour: \$28.90 NA Total Unit Cost/Hour: \$87.19 Total Fleet Cost/Hour: \$87.19 Total Area to be graded or ripped: 22.36 Source of estimated acreage: Section 2.05.3 of permit application HOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Production Deration - Selected Blade Angle: 30 degrees Effective Blade Length: 10.40 feet 6 30 degrees	1 per day (CRG)
Basic Machine: CAT 12M Horsepower: Shift Basis: Data Source: Ripper Attachment: Multi-Shank Ripper Data Source: Data Source: Data Source: Cost Breakdown: Utilization % NA Overating Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.28 100 NA Overating Cost/Hour: \$1.99 NA Ripper Ownership Cost/Hour: \$1.99 NA NA Overating Cost/Hour: \$1.99 NA Ripper Operating Cost/Hour: \$1.99 NA NA NA NA Total Cost/Hour: \$1.99 NA NA NA NA Total Unit Cost/Hour: \$87.19 NA NA NA Total Fleet Cost/Hour: \$87.19 NA NA MATERIAL QUANTITIES Source of estimated acreage: Section 2.05.3 of permit application HOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Production Deration - Selected Application: Selected Blade Angle: 30 degrees Effective Blade Length: Width of blade overlap per pass:	1 per day (CRG)
Ripper Attachment: Multi-Shank Ripper Shift Basis: Cost Breakdown: Utilization % Ownership Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.28 100 Ripper Ownership Cost/Hour: \$28.28 100 Ripper Ownership Cost/Hour: \$28.28 100 Ripper Operating Cost/Hour: \$1.99 NA Ripper Operating Cost/Hour: \$0.00 0 Operator Cost/Hour: \$28.90 NA Total Unit Cost/Hour: \$87.19 \$30.00 Total Fleet Cost/Hour: \$87.19 \$36 MATERIAL QUANTITIES \$22.36 \$30 Source of estimated acreage: \$26ction 2.05.3 of permit application HOURLY PRODUCTION \$22.36 \$30 Average Grader Speed: \$1.25 mph Selected Application: \$Production Deration - \$28.edd Angle: Selected Application: \$10.40 feet Width of blade overlap per pass: \$2.00 feet	1 per day (CRG)
Ripper Attachment: Multi-Shank Ripper Shift Basis: Cost Breakdown: Utilization % Ownership Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.28 100 Ripper Ownership Cost/Hour: \$28.28 100 Ripper Ownership Cost/Hour: \$28.28 100 Ripper Operating Cost/Hour: \$1.99 NA Ripper Operating Cost/Hour: \$0.00 0 Operator Cost/Hour: \$28.90 NA Total Unit Cost/Hour: \$87.19 \$30.00 Total Fleet Cost/Hour: \$87.19 \$36 MATERIAL QUANTITIES \$22.36 \$30 Source of estimated acreage: \$26ction 2.05.3 of permit application HOURLY PRODUCTION \$22.36 \$30 Average Grader Speed: \$1.25 mph Selected Application: \$Production Deration - \$28.edd Angle: Selected Application: \$10.40 feet Width of blade overlap per pass: \$2.00 feet	1 per day (CRG)
Data Source:	(CRG)
Ownership Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.28 100 Ripper Ownership Cost/Hour: \$1.99 NA Ripper Operating Cost/Hour: \$0.00 0 Operator Cost/Hour: \$0.00 0 Operator Cost/Hour: \$28.90 NA Total Unit Cost/Hour: \$87.19 Total Fleet Cost/Hour: \$87.19 MATERIAL QUANTITIES Section 2.05.3 of permit application MOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Selected Application Production Deration - Selected Blade Angle: 30 degrees Effective Blade Length: 10.40 feet Width of blade overlap per pass: 2.00 feet	
Ownership Cost/Hour: \$28.02 NA Operating Cost/Hour: \$28.28 100 Ripper Ownership Cost/Hour: \$1.99 NA Ripper Operating Cost/Hour: \$0.00 0 Operator Cost/Hour: \$0.00 0 Operator Cost/Hour: \$28.90 NA Total Unit Cost/Hour: \$87.19 Total Fleet Cost/Hour: \$87.19 MATERIAL QUANTITIES Section 2.05.3 of permit application MOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Selected Application Production Deration - Selected Blade Angle: 30 degrees Effective Blade Length: 10.40 feet Width of blade overlap per pass: 2.00 feet	acres
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Total Fleet Cost/Hour: \$87.19 MATERIAL QUANTITIES 22.36 Total Area to be graded or ripped: 22.36 Source of estimated acreage: Section 2.05.3 of permit application HOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Production Deration - Selected Blade Angle: 30 degrees Effective Blade Length: 10.40 feet Width of blade overlap per pass: 2.00 feet	acres
MATERIAL QUANTITIES Total Area to be graded or ripped: 22.36 Source of estimated acreage: Section 2.05.3 of permit application HOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Production Deration - Selected Blade Angle: 30 degrees Effective Blade Length: 10.40 feet Width of blade overlap per pass: 2.00 feet	acres
MATERIAL QUANTITIES Total Area to be graded or ripped: 22.36 Source of estimated acreage: Section 2.05.3 of permit application HOURLY PRODUCTION Average Grader Speed: 1.25 mph Selected Application: Production Deration - Selected Blade Angle: 30 degrees Effective Blade Length: 10.40 feet Width of blade overlap per pass: 2.00 feet	acres
HOURLY PRODUCTION Average Grader Speed: 1.25 Selected Application: Production Deration - Selected Blade Angle: 30 Effective Blade Length: 10.40 Width of blade overlap per pass: 2.00	
Average Grader Speed:1.25mphSelected Application:Production Deration -Selected Blade Angle:30degreesEffective Blade Length:10.40feetWidth of blade overlap per pass:2.00feet	
Selected Application:Production Deration -Selected Blade Angle:30Effective Blade Length:10.40Width of blade overlap per pass:2.00	
Selected Blade Angle:30degreesEffective Blade Length:10.40feetWidth of blade overlap per pass:2.00feet	
Effective Blade Length:10.40feetWidth of blade overlap per pass:2.00feet	.25
Width of blade overlap per pass:2.00feet	
Unadjusted Hourly Unit Production: 1.2727 acres/hou	
Job Condition Correction Factors Site Altitude: 7400 f	
Source	
Altitude Adj: 1.00 (CAT HB)	
Job Efficiency: 0.85 (1sh/d, mod.)	
Net Correction: 0.8500 multiplier	
Adjusted Hourly Unit Production: 1.0818 acres/Hour	
Adjusted Hourly Fleet Production: 1.0818 acres/Hour	
JOB TIME AND COST	
Fleet size: 1 Grader(s) Total job time: 20.67	
Unit cost:\$80.60per acreTotal job cost:\$1,802	Hours

REVEGETATION WORK

Task description:		King II revegetate Rangeland Areas (19.36 acres) Permit Action: RN7		Permit/Job#:	C1981035	
PROJECT	[IDENTIF]	CATION				
Task #: Date:	403 5/8/2017		olorado 1 Plata		Abbreviation: _ Filename:	None C035-403

FERTILIZING

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	150.00	pound	\$0.34	\$51.00
			Total Fertilizer Materials	
			Cost/Acre	\$51.00

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Native	0.60	9.79	\$8.70
Indian Ricegrass - Native	1.45	4.69	\$10.15
Mountain Brome - Bromar	1.74	2.80	\$7.57
Sideoats Grama - Butte	1.00	3.28	\$9.67
Burnett, Small (or Little) - Delar	2.90	3.66	\$7.25
Slender Wheatgrass - Native	1.24	4.53	\$3.50
Western Wheatgrass - Native	2.18	5.51	\$15.26
Globemallow, Scarlet (or copper)	0.44	4.98	\$59.62
Totals Seed Mix	11.55	39.24	\$121.72

Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$232.00
	Total Seed Application Cost/Acre	\$232.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$66.02
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
	Total Mulch Application Cost/Acre	\$165.34

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	ek Cost / Acre	\$0.00

	No. of Acres:	19.36	Cost /Acre:	\$1,236.68
Estimate	ed Failure Rate:	50%	Cost /Acre*:	\$1,236.68
*Selected Replanti	ng Work Items:	FERTILIZING,SE	EDING, MULCHING	
Initial Job Cost:	\$23,942.12			
Reseeding Job Cost:	\$11,971.06			
Total Job Cost:	\$35,913			
Job Hours:	20.00			

REVEGETATION WORK

Task description: e: King Coal Mine		King II revegetate Pinyon-Juniper areas (3 acres) Permit Action: RN7		Permit/Job#:	C1981035	
C	IDENTIF	ICATION	-			
Task #: Date: User:	404 5/9/2017 JHB	State: C	olorado a Plata		Abbreviation: Filename:	None C035-404

FERTILIZING

Materials Units / Description Cost / Unit Cost /Acre Unit Acre 10-34-0, 18-46-0, 5-10-5 150.00 pound \$0.34 \$51.00 **Total Fertilizer** Materials \$51.00 Cost/Acre

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bitterbrush, Antelope	8.71	2.68	\$169.85
Blue Grama - Native	0.60	9.79	\$8.70
Indian Ricegrass - Native	1.45	4.69	\$10.15
Mountain Brome - Bromar	1.74	2.80	\$7.57
Sideoats Grama - Butte	1.00	3.28	\$9.67
Burnett, Small (or Little) - Delar	2.90	3.66	\$7.25
Slender Wheatgrass - Native	1.24	4.53	\$3.50
Mahogany, Mountain	4.84	6.56	\$178.16
Western Wheatgrass - Native	2.18	5.51	\$15.26
Globemallow, Scarlet (or copper)	0.44	4.98	\$59.62
Sumac, Skunkbrush	4.36	2.04	\$91.56
Winter Fat	1.94	4.94	\$39.77

	\$601.05
	Cost /Acre
	\$232.00

Total Seed Application Cost/Acre \$232.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$66.02
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
То	tal Mulch Application Cost/Acre	\$165.34

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
Totals Nursery Stock Cost / Acre				\$0.00	

	No. of Acres:	3	Cost /Acre:	\$1,716.01
Estimate	ed Failure Rate:	50%	Cost /Acre*:	\$1,716.01
*Selected Replanti	ng Work Items:	FERTILIZING,SE	EEDING, MULCHING	
Initial Job Cost:	\$5,148.03			
Reseeding Job Cost:	\$2,574.02			
Total Job Cost:	\$7,722			
Job Hours:	3.00			

REVEGETATION WORK

Task des	scription:	King II-seed water line corr	idor (0.47 ac)		
Site: King	Coal Mine	Permit Action:	RN7	Permit/Job#:	C1981035
<u>PROJE</u>	CT IDENTIFI	CATION			
Task	#: 406	State: Colorado		Abbreviation:	None
Dat	te: 5/9/2017	County: La Plata		Filename:	C035-406
Use	er: JHB				
<u>FERTI</u>	Agency or organ LIZING	ization name: <u>DRMS</u>			

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
10-34-0, 18-46-0, 5-10-5	150.00	pound	\$0.34	\$51.00
			Total Fertilizer Materials Cost/Acre	\$51.00

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$144.62
	Total Fertilizer Application Cost/Acre	\$144.62

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	1.74	5.59	\$13.35
Switchgrass - Pathfinder	0.75	6.70	\$7.48
Mountain Brome - Bromar	1.82	2.92	\$7.92
Burnett, Small (or Little) - Delar	2.61	3.30	\$6.53
Sheep Fescue - Bighorn	0.31	4.84	\$1.47
Thickspike Wheatgrass - Critana	1.16	4.10	\$6.66
Western Wheatgrass - Native	2.54	6.41	\$17.78
Flax, Lewis Blue	0.46	3.05	\$7.59
Totals Seed Mix	11.39	36.92	\$68.76

Application

Description Tractor spreader (MEANS 32 92 19.14 0100)		Cost /Acre \$548.86
11actor spreader (WEANS 52 52 19.14 0100)		\$348.80
	Total Seed Application Cost/Acre	\$548.86

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
	Total Mulch Application Cost/Acre	\$99.32

NURSERY STOCK PLANTING

<u> </u>	Common Name	No / Acre	Type and Size	Cost /Acre		
				\$		
Totals Nursery Stock Cost / Acre \$0.00	Totals Nursery Stock Cost / Acre					\$0.00

No. of Acres:	0.47	Cost /Acre:	\$1,434.56
Estimated Failure Rate:	50%	Cost /Acre*:	\$617.62
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost: \$674.24			

Reseeding Job Cost:	\$145.14
Total Job Cost:	\$819
Job Hours:	1.25

BOREHOLE SEALING WORK

,	Task description:	Seal Boreho	oles CO-14-01 tl	hrough CO-14-09			
Site:	King Coal Mine		Permit Action:	RN7	Permit/.	Job#:	C1981035
<u>PROJE</u>	CT IDENTIFICATION	<u>N</u>					
Task #: Date:		State: County:	Colorado La Plata		Abbreviation: Filename:	Non C03	e 5-409
User:		e o unity i				000	
	Agency or organizat	ion name:	DRMS				

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plugs	Stainless steel plug - 6 in. diameter borehole	6	NA	18.00	EA	\$140.75	\$2,533.50
Seal Holes	Portland cement grout (Bag, material cost only94 lb. bag)	6	27	27.45	bag	\$10.55	\$289.60
Cut Casing	Exposed casing removal - Calculate Circumference in Linear Feet	6	14.14	14.14	LF	\$1.77	\$25.03
Hole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	9.00	EA	\$3.67	\$33.03
Drill Rig Time	GENERIC 3.0 in 1, 700 ft. capy.	NA	NA	36.00	EA	\$26.04	\$937.44
Water Truck Time	Water Tanker, 2,500 Gal.	NA	NA	36.00	EA	\$22.62	\$814.32

 Job Hours:
 36.00
 Total Cost:
 \$4,633.00
Task description:	Regrade dri	ll pads and	pits CO-14-01 th	rough CO-14-09		
te: King Coal Mine		Permit Act	ion: <u>RN7</u>	Permit/Job#	C1981035	
PROJECT IDENTIF	ICATION					
Task #: 410		State:	Colorado		Abbreviation:	None
Date: 5/9/2017	7	County:	La Plata		Filename:	C035-410
User: JHB		·				
Agency	or organization n	ame: DR	MS			
	-					
HOURLY EQUIPM						
	Cat D5K XL - 5	Р				
· · ·	96 Dowon Angle Til	14				
	Power Angle Til NA	ll				
	1 per day					
	(CRG)					
Cost Breakdown:	(CRO)					
<u>Cost Dicardown</u> .				Utilization %		
Ownership Cost/He			\$22.82	NA		
Operating Cost/He			\$22.47	100		
Ripper own. Cost/He			\$0.00	NA		
Ripper op. Cost/He			\$0.00	0		
Operator Cost/He	our:		\$41.85	NA		
Total unit Cost/Hour:	\$87.14					
Total Fleet Cost/Hour:	\$87.14					
MATERIAL QUAN	<u>FITIES</u>					
Initial Volume: 8	333					
	1.165					
Loose volume: 9	971 LCY		_			
Source of estimated volu Source of estimated swe		9 pads, 50' Cat Handbo	x 50', 1' depth ook			
HOURLY PRODUC	TION					
Average push distance:) feet				
Unadjusted hourly produ		54.3 LCY/hr				
Materials consistency de	escription:	Consolid	ated stockpile 1.0)		
Average push gradient: Average site altitude:	0 % 7,500 feet	t				
Material weight:	2,900 lbs/	LCY				
Weight description:	Decompo	sed rock - 50	0% Rock, 50% Ea	arth		
Job Condition Correction				Source		
	erator Skill:		750	(AVG.)		
	onsistency:		000	(CAT HB)		
Dozi	ng method:		000	(GEN.)		
	Visibility:		000	(AVG.)		
Job	efficiency:		830	(1 SHIFT/DAY)		
	Spoil pile:	0.	600	(FND-SF)		

1.000	(CAT HB)
1.000	(CAT HB)
0.793	(CAT HB)
1.000	(PAT)
	1.000 0.793

Net correction: 0.2962

Adjusted unit production:	137.53 LCY/hr
Adjusted fleet production:	137.53 LCY/hr

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.634/LCY

Total job time:7.06 HoursTotal job cost:\$615

Task description: Re	eplace topsoil on CO-14-01 through C	O-14-09 disturbance		_
King Coal Mine	Permit Action: <u>RN7</u>	Permit/Job#:	C1981035	
PROJECT IDENTIFICAT	ΓΙΟΝ			
Task #: 411 Date: 5/9/2017 User: JHB	State:ColoradoCounty:La Plata	A	bbreviation: Filename:	None C035-411
	nization name: DRMS			
HOURLY EQUIPMENT				
Basic Machine: Cat D Horsepower: 96	5K XL - 5P			
1	r Angle Tilt			
Attachment: NA				
Shift Basis: 1 per	day			
Data Source: (CRG				
Cost Breakdown:		Utilization %		
Ownership Cost/Hour:	\$22.82	NA		
Operating Cost/Hour:	\$22.47	100		
Ripper own. Cost/Hour:	\$0.00	NA		
Ripper op. Cost/Hour:	\$0.00	0		
	\$41.85	NA		
Operator Cost/Hour: _ Total unit Cost/Hour: _ Total Fleet Cost/Hour: _ MATERIAL QUANTITIE	\$87.14 \$87.14 <u>ES</u>			
Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUANTITIE</u> Initial Volume: <u>417</u> Swell factor: <u>1.125</u>	\$87.14 <u>ES</u>			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC	\$87.14 <u>ES</u> 			
Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUANTITIE</u> Initial Volume: <u>417</u> Swell factor: <u>1.125</u>	\$87.14 <u>ES</u> <u>CY</u> <u>9 pads, 50' x 50', 0.5' depth</u>			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor	\$87.14 <u>ES</u> <u>Y</u> <u>9 pads, 50' x 50', 0.5' depth</u> Cat Handbook			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION	\$87.14 ES 			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor	\$87.14 ES CY 9 pads, 50' x 50', 0.5' depth Cat Handbook 50 feet			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance:	\$87.14 ES CY 9 pads, 50' x 50', 0.5' depth Cat Handbook SO feet 464.3 LCY/hr			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance: Unadjusted hourly production:	\$87.14 ES CY 9 pads, 50' x 50', 0.5' depth Cat Handbook SO feet 464.3 LCY/hr			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency descripti Average push gradient:	\$87.14 ES 2Y 9 pads, 50' x 50', 0.5' depth Cat Handbook N 50 feet 464.3 LCY/hr con: Consolidated stockpile 1.0 0 %			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency descripti Average push gradient:	\$87.14 ES Y pr:9 pads, 50' x 50', 0.5' depth Cat Handbook N <u>50 feet</u> <u>464.3 LCY/hr</u> on:Consolidated stockpile 1.0 <u>0 %</u> 7,500 feet			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency descripti Average push gradient: Average site altitude:	\$87.14 ES 			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency descripti Average site altitude: Average site altitude:	\$87.14 ES)		
Total unit Cost/Hour: Total Fleet Cost/Hour: Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency descripti Average push gradient: Average site altitude: Material weight: Using met	\$87.14 ES $2Y$ 9 pads, 50' x 50', 0.5' depth Cat Handbook $464.3 LCY/hr$ con: Consolidated stockpile 1.0 0 % 7,500 feet 2,550 lbs/LCY Earth - Dry packed Or Skill: 0.750 ency: 1.000			
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTITIE Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency descripti Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Factor Operator S Material consistency Dozing met Visib	\$87.14 ES $2Y$ 9 pads, 50' x 50', 0.5' depth Cat Handbook N 50 feet 464.3 LCY/hr con: Consolidated stockpile 1.0 $0 %$ $7,500$ feet $2,550$ lbs/LCY Earth - Dry packed Or Skill: 0.750 ency: 1.000 thod: 1.000			
Total unit Cost/Hour: Total Fleet Cost/Hour: Initial Volume: 417 Swell factor: 1.125 Loose volume: 469 LC Source of estimated volume: Source of estimated swell factor HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency descripti Average push gradient: Average site altitude: Material weight: Using met	\$87.14 ES $2Y$ 9 pads, 50' x 50', 0.5' depth Cat Handbook N 50 feet 464.3 LCY/hr con: Consolidated stockpile 1.0 $0 %$ $7,500$ feet $2,550$ lbs/LCY Earth - Dry packed Or Skill: 0.750 ency: 1.000 thod: 1.000			

Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3369

Adjusted unit production:	156.42 LCY/hr
Adjusted fleet production:	156.42 LCY/hr

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.557/LCY

Total job time:3.00 HoursTotal job cost:\$261

REVEGETATION WORK

Task descripti	on:	King II-Broadcast seed	CO-14-01 thru CO-	09 disturbance	
Site: King Coal	Mine	Permit Act	ion: <u>RN7</u>	Permit/Job#: <u>C1981035</u>	
PROJECT 1 Task #:	IDENTIFIC	CATION State:	Colorado	Abbreviation:	None
Date:	5/9/2017	County:	La Plata	Filename:	C035-412
User:	JHB Agency or o	organization name: DR	MS		

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials	
			Cost/Acre	\$0.00

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description		Cost /Acre
		\$
	Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bluebunch Wheatgrass - Secar	3.48	11.18	\$26.69
Switchgrass - Pathfinder	1.50	13.40	\$14.96
Mountain Brome - Bromar	3.64	5.85	\$15.83
Burnett, Small (or Little) - Delar	5.22	6.59	\$13.05
Sheep Fescue - Bighorn	0.62	9.68	\$2.93
Thickspike Wheatgrass - Critana	2.32	8.20	\$13.32
Western Wheatgrass - Native	5.08	12.83	\$35.56
Flax, Lewis Blue	0.92	6.10	\$15.18
Totals Seed Mix	22.78	73.83	\$137.52

Application

Description		Cost /Acre
Broadcast seeding [DMG]		\$267.22
Tot	al Seed Application Cost/Acre	\$267.22

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Hand spread, 1" deep (MEANS 32 91 13.16 0200)		\$3,097.60
	Total Mulch Application Cost/Acre	\$3,097.60

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre			
					\$			
	\$0.00							

JOB TIME AND COST

	No. of Acres:	0.52	Cost /Acre:	\$4,024.34
Estimate	ed Failure Rate:	50%	Cost /Acre*:	\$404.74
*Selected Replanti	ng Work Items:	SEEDING		
Initial Job Cost:	\$2,092.66			
Reseeding Job Cost:	\$105.23			
Total Job Cost:	\$2,198			
Job Hours:	9.00			

BOREHOLE SEALING WORK

	Task description:	King II - se	al downgradien	t monitoring well			
Site:	King Coal Mine		Permit Action:	RN7	Permit/	Job#:	C1981035
PROJE	CT IDENTIFICATIO	<u>DN</u>					
Task #:	500	State:	Colorado		Abbreviation:	Non	e
Date:	5/9/2017	County:	La Plata		Filename:	C03	5-500
User:	JHB						
	Agency or organiz	ation name:	DRMS				

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Seal Hole	Granular bentonite (Bag, material cost only50 lb. bag)	4	15	10.00	bag	\$18.60	\$186.00
Cut Casing	Exposed casing removal - Calculate Circumference in Linear Feet	4	1.05	1.05	LF	\$1.77	\$1.86
Mark Hole	Borehole location/identification marker (EA, material cost only)	4	1	1.00	EA	\$3.67	\$3.67
Drill Rig Time	GENERIC 3.0 in 1, 700 ft. capy.	4	15	4.00	EA	\$26.04	\$104.16
Water Truck Time	Water Tanker, 2,500 Gal.	4	15	4.00	EA	\$22.62	\$90.48

Job Hours: 4.00

Total Cost: \$386.00

BOREHOLE SEALING WORK

Task description:Plug and Seal MW-1, 2, 3 and 4 Clusters (12 Wells) TR26							
Site:	King Coal Mine		Permit Action:	RN7	Permit/	Job#:	C1981035
<u>PROJEC</u>	CT IDENTIFICATIO	<u>N</u>					
Task #: Date: User:	501 5/9/2017 JHB	State: County:	Colorado La Plata		Abbreviation: Filename:	Non C03	e 5-501
	Agency or organiza	tion name:	DRMS				

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Install Plugs, Cliffhouse SS, 4 x 6" wells	PVC plug - 6 in. diameter borehole	6	NA	4.00	EA	\$54.14	\$216.56
Install Plugs, "A: Coal Seam and Menefee Interburden, 8 x 2" Wells	PVC plug - 2 in. diameter borehole	2	NA	8.00	EA	\$21.67	\$173.36
Seal Wells	Portland cement grout (Bag, material cost only94 lb. bag)	4x6" & 8x2"	1031	68.00	bag	\$10.55	\$717.40
Cut Casings	Exposed casing removal - Calculate Circumference in Linear Feet	7"	4 x 7"	7.30	LF	\$1.77	\$12.92
Cut Casings	Exposed casing removal - Calculate Circumference in Linear Feet	6"	8x6"	12.60	LF	\$1.77	\$22.30
Install Markers	Borehole location/identification marker (EA, material cost only)	NA	NA	12.00	EA	\$3.67	\$44.04
Drill Rig	ATLAS COPCO ROC D7-11,4.0 in.	NA	NA	53.00	EA	\$130.16	\$6,898.48
Water Truck	Water Tanker, 2,500 Gal.	NA	NA	53.00	EA	\$22.62	\$1,198.86

Job Hours: 53.00

Total Cost: \$9,284.00

DEMOLITION WORK

Task description: Remove MW-1,2,3,4 Well Clusters Cement Pads/Poles TR26							
Site:	King Coal Mine	Permit Action:	RN7	Permit/Jo	ob#: <u>C1981035</u>		
<u>PROJE(</u>	CT IDENTIFICAT	ION					
Task #:	502	State: Colorado		Abbreviation:	None		
Date:	5/10/2017	_ County: <u>La Plata</u>		Filename:	C035-502		
User:	JHB						
	Agency or organ	ization name: DRMS					
UNIT CO	<u>INSTS</u>			Location adjus	tment: 93.10 %		

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Cement Pads	3'x3'x4"	Demo. and on-site	72.00	SF	\$0.40	\$28.66
3'x3'x4" Pads x 6	Pad/well	disposal in existing				
Pads		pit, 4 in. thick - Max.				
		50 ft. push				
4" x 6' Steel poles	48(4" dia. X	Pipe, steel, welded	288.00	LF	\$1.16	\$334.08
	6' poles)	connections - 4 in.				
		diameter pipe				
disposal of poles	48 poles	Dump fees - Rubbish	2.10	CY	\$9.45	\$19.85
		only				

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	0.00	(unadjusted):	\$382.59	location):	\$356.19

Task description:	Regrade drill pa	ds and pits (MW-1, 2, 3, 4)		
: King Coal Mine	Per	mit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDENTIF	ICATION				
Task #: 503	State:	Colorado		Abbreviation:	None
Date: $5/10/2017$	County:	La Plata		Filename:	C035-503
User: JHB	County:			T nonune.	0000 000
Agency or orga	nization name: DF	RMS			
HOURLY EQUIPMI	ENT COST				
	D6T XL		_		
Horsepower: 185			_		
	ni-Universal		_		
	hank ripper		_		
	er day		_		
Data Source: (CI	RG)		_		
Cost Breakdown:					
COSt Divardo will.			Utilization %		
Ownership Cost/Hour:		\$46.87	NA		
Operating Cost/Hour:		\$41.52	100		
Ripper own.					
Cost/Hour:		\$3.40	NA		
Ripper op. Cost/Hour:		\$1.00	50		
Operator Cost/Hour:		\$41.85	NA		
MATERIAL QUANT Initial Volume: 370 Swell factor: 1.16					
	LCY				
Source of estimated volu Source of estimated swel factor:		s, 50' x50', 1 book	' depth		
HOURLY PRODUC	TION				
Average nuch diston	50 feet				
Average push distance: Unadjusted hourly	444.6 LCY	hr			
production:	444.0 LUY/	111			
Materials consistency de	scription: Compa	cted fill or en	nbankment 0.9		
	-		nounkinent 0.7		
Average push gradient:	0 %				
Average site altitude:	7,500 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	- 50% Rock,	50% Earth		
Job Condition Correction	Factor		Source		
<u>Operator</u>		750	(AVG.)		
Material consist		.900	(CAT HB))		
iviateriai consisi	U	.700	(САТ ПВ))		

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	158.01 LCY/hr
Adjusted fleet production:	158.01 LCY/hr

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.852/LCY

Total job time:2.73 HoursTotal job cost:\$367

	I.C.	place Topsoil				
King Coal Mine		Per	mit Action:	RN7	Permit/Job#:	C1981035
PROJECT IDEN	TIFICAT	TION				
Task #: 504		State:	Colorado		Abbreviation:	None
Date: $5/10/2$	2017	County:	La Plata		Filename:	C035-504
User: JHB	2017		Lu I Iutu		-	0000 001
Agency or	organizatio	n name: DR	RMS			
HOURLY EQUI	PMENT (COST				
Basic Machine:	Cat D6T	XL				
Horsepower:	185			_		
Blade Type:	Semi-Uni	versal		_		
Attachment:	NA			_		
Shift Basis:	1 per day			_		
Data Source:	(CRG)			_		
-	(0110)			_		
Cost Breakdown:			1			
				<u>Utilization %</u>		
Ownership Cost/H			\$46.87	NA		
Operating Cost/H			\$41.52	100		
Ripper o Cost/H			\$0.00	NA		
Ripper op. Cost/H	our:		\$0.00	0		
Operator Cost/H	our:		\$41.85	NA		
-						
	¢10	0.04				
Total unit Cost/Hou Total Fleet Cost/Ho		0.24 0.24				
Total Fleet Cost/Ho	ur: \$13	0.24				
	ur: \$13	0.24				
Total Fleet Cost/Ho	ur: \$13	0.24				
Total Fleet Cost/Ho	ur: <u>\$13</u> ANTITIE	0.24				
Total Fleet Cost/Ho <u>MATERIAL QU</u> Initial Volume:	ur: \$13 ANTITIE 539	0.24				
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated	ur: \$13 ANTITIE 539 1.000 539 LCY volume:	0.24		.04.9		
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume:	ur: \$13 ANTITIE 539 1.000 539 LCY volume:	0.24		.04.9		
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	ur: \$13 ANTITIE 539 1.000 539 LCY volume: swell	0.24		.04.9		
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Cose volume: Source of estimated Source of estimated factor: HOURLY PROD	ur: \$13 ANTITIE 539 1.000 539 LCY volume: swell DUCTION	0.24 <u>S</u> <u>Depths fro Cat Hand</u>		.04.9		
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor:	ur: \$13 ANTITIE 539 1.000 539 LCY volume: swell DUCTION	0.24	book	.04.9		
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly	ur: \$13 ANTITIE 539 1.000 539 LCY volume: swell DUCTION hce:	0.24 <u>S</u> <u>Depths freend</u> <u>Cat Hand</u> <u>50 feet</u> <u>444.6 LCY/</u>	book			
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly production: Materials consistence	ur: \$13 ANTITIE 539 1.000 539 LCY volume: swell DUCTION nce: cy description	0.24 S Depths free Cat Hand 50 feet 444.6 LCY/ on: Partly c	book			
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly production:	ur: \$13 <u>ANTITIE</u> 539 1.000 539 LCY volume: swell DUCTION nce: cy description ent: 0 %	0.24 S Depths free Cat Hand 50 feet 444.6 LCY/ on: Partly c	book			
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROE Average push distant Unadjusted hourly production: Materials consistence Average push gradie	ur: $\$13$ $ANTITIE$ 539 1.000 539 LCY volume:swell DUCTION nce:cy descriptione: 0% e: $0,05$	0.24 S Depths fro Cat Hand 50 feet 444.6 LCY/ on: Partly c	book			
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated factor: HOURLY PROD Average push distant Unadjusted hourly production: Materials consistence Average push gradie Average site altitude	ur: $$13$ 539 1.000 539 LCY volume:swell $0UCTION$ nce:cy descriptione: 0.05 1.60	0.24 <u>S</u> <u>Depths fro Cat Hand <u>50 feet</u> <u>444.6 LCY/</u> on: <u>Partly c</u> <u>50 feet</u></u>	book			
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distar Unadjusted hourly production: Materials consistence Average push gradie Average site altitude Material weight: Weight description:	ur: $\$13$ $ANTITIE$ 539 1.000 539 539 LCY volume:swell DUCTION nce:cy descriptionent: 0% $0,05$ $1,60$ Top	0.24 2.5 Depths fro Cat Hand 50 feet 444.6 LCY/ 50 feet 50 feet 50 feet 00 lbs/LCY 50 Soil	book			
Total Fleet Cost/Ho MATERIAL QU Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: HOURLY PROD Average push distar Unadjusted hourly production: Materials consistence Average push gradie Average site altitude Material weight: Weight description: Job Condition Correct	ur: $\$13$ $ANTITIE$ 539 1.000 539 539 LCY volume:swell DUCTION nce:cy descriptionent: 0% $0,05$ $1,60$ Top	0.24 	book	stockpile 1.1		

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	350.21 LCY/hr
Adjusted fleet production:	350.21 LCY/hr

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.372/LCY

Total job time:1.54 HoursTotal job cost:\$200

REVEGETATION WORK

		Revegetation; MW-1,2,3,4 W ne Permit Action:		IXIN/	Permit/Job#:	C1981035
PROJEC [®]	<u>r identifi</u>	CATION				
Task #: Date: User:	505 5/10/2017 JHB	State: County:	Colorado La Plata		Abbreviation: Filename:	None C035-505
Ag	gency or organ	ization name: DR	RMS			

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials Cost/Acre	\$0.00

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Hand raking (MEANS 32 91 13.23 0250)	\$1,328.58
Total Tilling Cost/Acre	\$1,328.58

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	1.20	19.59	\$19.50
Indian Ricegrass - Paloma	2.90	9.39	\$28.28
Bitterbrush, Antelope	17.42	5.36	\$339.69
Mountain Brome - Bromar	3.48	5.59	\$15.14
Sideoats Grama - Butte	2.00	6.57	\$19.34
Burnett, Small (or Little) - Delar	5.80	7.32	\$14.50
Slender Wheatgrass - San Luis	2.48	9.05	\$8.04
Mahogany, Mountain	9.68	13.11	\$356.32
Western Wheatgrass - Arriba	4.36	11.01	\$35.23
Globemallow, Scarlet (or copper)	0.88	9.96	\$119.24
Sumac, Skunkbrush	8.72	4.08	\$183.12
Winter Fat	3.88	9.89	\$79.54
		110.92	\$1,217.93

CIRCES Cost Estimating Software

Totals Seed Mix 62.80

Application Cost /Acre Description \$267.22 Broadcast seeding [DMG] \$267.22 Total Seed Application Cost/Acre

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description		Cost /Acre
		\$
	Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
Totals Nursery Stock Cost / Acre			\$0.00		

JOB TIME AND COST

No. of Act	es: 1	Cost /Acre:	\$2,813.73
Estimated Failure Ra	ate: 20%	Cost /Acre*:	\$1,485.15
*Selected Replanting Work Iter	ns: SEEDING	· ·	·
Initial Job Cost: \$2,813.73			
Reseeding Job Cost: \$297.03			
Total Job Cost: \$3,111			
Job Hours: 1.00			



	REVISIONS
DATE	DESCRIPTION
04/30/15	TR-24/MT-07 Mid-Term Review Updates
07/14/15	TR-24/MT-07 Adequacy Review #1 Updates
03/22/16	TR-24/MT-07, Surface Disturbance Boundary Correction
07/28/16	TR-24/MT-07, Clarify Disturbed Area & Affected Area Po
07/11/17	RN-07 Preliminary Adequacy Review #1 Updates
08/14/17	RN-07 Adequacy Review #2 Updates

Scale: $1'' = 300'$		Designed By:	Tom	Bi
Date: $08/14/17$		Drawn By:	Tom	Bi
File Path:	Environment	tal\King	II\Pe	\mathbf{rn}
File Name:	King II-005	Mine Pla	n	
Plot Date:	08/14/17			
Plot Time:	9:55 am			