COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Arkins Park Quarries	**MINE/PROSPECTING ID#:** M-1985-212	**MINERAL:** Sandstone (silica, sto quartzite)	**COUNTY:** Larimer
INSPECTION TYPE: Monitoring	**INSPECTOR(S):** Brock Bowles	**INSP. DATE:** August 18, 2021	**INSP. TIME:** 09:00
OPERATOR: Arkins Park Stone Corporation	**OPERATOR REPRESENTATIVE:** David Sprague	**TYPE OF OPERATION:** 112c - Construction Regular Operation	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:**	**BOND AMOUNT:** $216,534.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Clear	**INSPECTOR'S SIGNATURE:** 	**SIGNATURE DATE:** October 5, 2021

GENERAL INSPECTION TOPICS

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

(AR) RECORDS---------- N	**(FN) FINANCIAL WARRANTY-------- N**	**(RD) ROADS---------- N**
(HB) HYDROLOGIC BALANCE---------- N	**(BG) BACKFILL & GRADING---------- PB**	**(EX) EXPLOSIVES--------- N**
(PW) PROCESSING WASTE/TAILING---- N	**(SF) PROCESSING FACILITIES------- N**	**(TS) TOPSOIL---------- N**
(MP) GENL MINE PLAN COMPLIANCE- N	**(FW) FISH & WILDLIFE---------- N**	**(RV) REVEGETATION---- N**
(SM) SIGNS AND MARKERS---------- N	**(SP) STORM WATER MGT PLAN---- N**	**(RS) RECL PLAN/COMP-- N**
(ES) OVERBURDEN/DEV. WASTE--------- N	**(SC) EROSION/SEDIMENTATION--- N**	**(ST) STIPULATIONS------- N**
(AT) ACID OR TOXIC MATERIALS------- N	**(OD) OFF-SITE DAMAGE----------N**	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

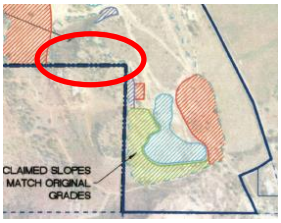
OBSERVATIONS

This inspection was conducted by Brock Bowles of the Division of Reclamation, Mining and Safety (Division). David Sprague of Arkin's Park Stone (Operator) was present for the inspection. The Arkins Park Quarry is located about 7 miles northwest of Loveland. The site is an active 112c operation with 192.4 acres permitted and the post-mining land use is rangeland. This inspection was carried out as a part of the Division's routine monitoring inspection program. At the time of the inspection it was partly cloudy, warm and dry.

Sandstone was being removed from various quarries on the site (photo 1). The stone is removed from the quarry area by a fork lift and transported to one of the several hydraulic cutters around the site. Pallets of stone are stored along the roads and on top of the hill and west side of the mine site.

The top/uphill sections of some of the quarries are being reclaimed. The reclamation areas also have volunteer trees getting established. Topsoil piles are being placed between the reclamation and the top of the quarry areas (photo 2). This is a good place to store topsoil for two reasons: the topsoil is separate from the working areas of the quarry and it will be easy to push the topsoil downhill for reclamation.

An area on the western permit boundary, north of the southernmost quarry, the soil has been excavated within 3 feet of the permit boundary fence (see map at left). The slope of the soil is very steep and due to the rock content, the soil is also very unstable (photo 3). At this time, there are no offsite impacts, however, there is a high probability of a slope failure and off site impact to occur. The permit requires that all slopes will be graded to at least 3h:1v. This area needs to be stabilized by backfilling the highwall to at least a 3h:1v slope to ensure stability. Photo documentation verifying that this area has been backfilled and graded to a 3h:1v slope was submitted to the Division before this report was issued, therefore the possible problem has been abated.



The permit boundary on the western side of the permit was marked by a fence. The fence was in good repair and visible. The southern and northern boundary markers were in place.

The reclamation cost estimated was re-calculated as part of the routine inspection. The reclamation cost estimate increased $86,673, from $216,534 to $303,207.00. The reason for the large cost increase were due to two factors: 1) the number of disturbed acres increased from 54 to 80 acres and 2) equipment cost have increased since the last estimate of 2017. A copy of the cost estimate is included with this report for your review. Comments about the cost estimate can be submitted within 30 days of this report. A Surety Increase will be issued after the 30th day. Arkins Park Stone will then have 60 days to amend or replace the current Financial Warranty.

PHOTOGRAPHS

Photo 1 – Southernmost quarry, photo facing northwest

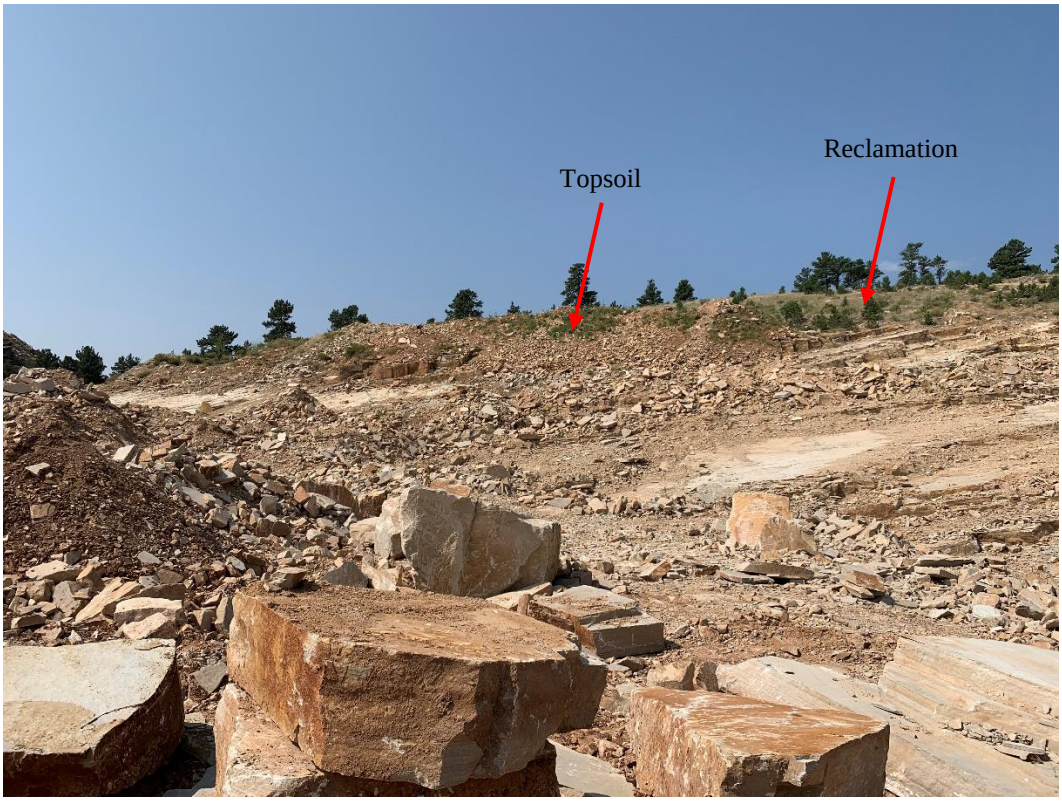


Photo 2 – Reclamation at top of quarry, topsoil pile between quarry and reclamation

Photo 3 – Excavation next to boundary marker fence

Inspection Contact Address
David Sprague
Arkins Park Stone Corporation
5975 NCR 27
Loveland, CO 80538

Enclosures - 2021 Reclamation Cost Estimate, Financial Warranty Review

CC: Michael Cunningham, DRMS

COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

October 5, 2021

David Sprague
Arkins Park Stone Corporation
5975 NCR 27
Loveland, CO 80538

RE: Arkins Park Quarries (Permit No. M-1985-212)
Division's Financial Warranty Cost Estimates

Dear Mr. Sprague,

On August 18, 2021, the Division of Reclamation, Mining and Safety (Division) conducted an inspection of the Arkins Park Quarries, Permit Number M-1985-212. In accordance with Rule 4.2.1, the Division may review a financial warranty at any time to determine if the amount is sufficient to fulfill the reclamation plan. The Division currently holds a financial warranty of $216,534.00. The Division has updated the reclamation cost estimate for the Arkins Park Quarries based on the approved mining and reclamation plans. As discussed in the October 5, 2021 Inspection Report, the Division calculated the updated cost to be $303,207.00. **This is an increase of $86,673.00 from the current financial warranty held.** The cost estimate worksheets are included with this letter for your review.

The Division will allow 30 days to review and comment on the bond estimate prior to issuing a surety increase notice for the Arkins Park Quarries. Once the surety increase is issued by the Division, the Operator will have 60 days to provide the additional financial warranty.

If you have any questions, please contact me at (720) 774-0040 or brock.bowles@state.co.us.

Sincerely,

Brock Bowles
Environmental Protection Specialist

Enclosure: 2021 Reclamation Cost Estimate

CC: Michael Cunningham, DRMS

COST SUMMARY WORK

Task description: **Site Reclamation**

Site: **Arkins Park Quarries** Permit Action: Aug 2021 Permit/Job#: M1985212

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 8/20/2021 County: Larimer Filename: M212-000
User: BFB

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Replacing overburden/waste rock	DOZER	2	84.06	$51,688
002	Replacing Topsoil	DOZER	2	45.70	$28,104
003	Rip storage areas	RIPPER	2	27.71	$18,748
004	Revegetate Active Mining Areas	REVEGE	1	20.00	$142,849
005	Equipment Mobilization/Demobilization	MOBILIZE	1	1.80	$2,020
006	Remove sediment tank	NA	0	0.00	$5,000
007	Remove Fuel tank	NA	0	0.00	$1,000
		SUBTOTALS:		**179.27**	**$249,409**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$5,038
Performance bond:	1.05	Total =	$2,619
Job superintendent:	93.88	Total =	$6,762
Profit:	10.00	Total =	$24,941
		TOTAL O & P =	$39,360
		CONTRACT AMOUNT (direct + O & P) =	$288,769

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$0	Total =	$0
Engineering work and/or contract/bid preparation:	0.00	Total =	$0
Reclamation management and/or administration:	5.00		$14,438
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$53,798
		TOTAL BOND AMOUNT (direct + indirect) =	**$303,207**

BULLDOZER WORK

Task description: **Replacing overburden/waste rock**

Site: **Arkins Park Quarries** Permit Action: Aug 2021 Permit/Job#: M1985212

PROJECT IDENTIFICATION

Task #:	001	State:	Colorado	Abbreviation:	None
Date:	8/20/2021	County:	Larimer	Filename:	M212-001
User:	BFB				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	Cat D9T - 9SU
Horsepower:	405
Blade Type:	Semi-Universal
Attachment:	NA
Shift Basis:	1 per day
Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$126.01	NA
Operating Cost/Hour:	$141.41	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$40.04	NA

Total unit Cost/Hour: $307.46
Total Fleet Cost/Hour: **$614.91**

MATERIAL QUANTITIES

Initial Volume:	56,283
Swell factor:	1.000
Loose volume:	**56,283** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 100 feet
Unadjusted hourly production: 1,243.2 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: 20 %
Average site altitude: 5,480 feet

Material weight: 2,550 lbs/LCY

Weight description: Sandstone

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

Net correction: 0.2693

Adjusted unit production: 334.79 LCY/hr
Adjusted fleet production: **669.58** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.918/LCY

Total job time: **84.06** Hours
Total job cost: **$51,688**

BULLDOZER WORK

Task description: **Replacing Topsoil**

Site: **Arkins Park Quarries** Permit Action: Aug 2021 Permit/Job#: M1985212

PROJECT IDENTIFICATION

Task #:	002	State:	Colorado	Abbreviation:	None
Date:	8/20/2021	County:	Larimer	Filename:	M212-002
User:	BFB				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	Cat D9T - 9SU
Horsepower:	405
Blade Type:	Semi-Universal
Attachment:	NA
Shift Basis:	1 per day
Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$126.01	NA
Operating Cost/Hour:	$141.41	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$40.04	NA

Total unit Cost/Hour: $307.46
Total Fleet Cost/Hour: **$614.91**

MATERIAL QUANTITIES

Initial Volume:	64,533
Swell factor:	1.215
Loose volume:	**78,408** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 200 feet
Unadjusted hourly production: 700.0 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: -20 %
Average site altitude: 5,480 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.2254

Adjusted unit production: 857.78 LCY/hr
Adjusted fleet production: **1715.56** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: $0.358/LCY

Total job time: **45.70** Hours
Total job cost: **$28,104**

BULLDOZER RIPPING WORK

Task description: **Rip storage areas**

Site: **Arkins Park Quarries** Permit Action: Aug 2021 Permit/Job#: M1985212

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 8/20/2021 County: Larimer Filename: M212-003
User: BFB

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU Horsepower: 405
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$126.01	NA
Operating Cost/Hour:	$141.41	100
Ripper Ownership Cost/Hour:	$19.26	NA
Ripper Operating Cost/Hour:	$11.48	100
Operator Cost/Hour:	$40.04	NA
Total Unit Cost/Hour:	$338.20	

Total Fleet Cost/Hour: **$676.39**

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 38.00 acres Rip Depth (ft): 1.00 Volume: 61,307 BCY or CCY

Source of estimated quantity: DRMS Estimate

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	2.63	feet/pass
Average Ripping Width:	7.67	feet/pass
Average Ripping Length:	175.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.826	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.826 Acres/hr

Site Altitude:	5,480	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production: 0.69 Acres/hr
Adjusted Hourly Fleet Production: **1.37** Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **27.72** Hours

Unit cost: $493.381 Per acre Total job cost: **$18,748**

REVEGETATION WORK

Task description: **Revegetate Active Mining Areas**

Site: **Arkins Park Quarries** Permit Action: Aug 2021 Permit/Job#: M1985212

PROJECT IDENTIFICATION

Task #: 004 State: Colorado Abbreviation: None
Date: 8/20/2021 County: Larimer Filename: M212-004
User: BFB

Agency or organization name: DRMS

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
Indiangrass - Cheyenne	0.80	2.44	$9.04
Switchgrass - Blackwell	0.80	7.14	$9.20
Big Bluestem - Native	0.64	1.91	$7.56
Priarie Dropseed	0.48	5.30	$66.96
Blue Grama - Native	1.60	26.12	$21.96
Indian Ricegrass - Native	1.28	4.14	$8.32
Sand Dropseed	0.16	19.10	$1.56
Little Bluestem - Native	1.60	9.55	$21.71
Sideoats Grama - Vaughn	2.24	7.35	$18.76

Slender Wheatgrass - Native	1.60	5.84	$7.40
Western Wheatgrass - Native	2.40	6.06	$14.40
Needlegrass, Green - Lodorm	0.80	3.32	$9.42
Totals Seed Mix	14.40	98.29	**$196.29**

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	$307.02	$614.04
Total Mulch Materials Cost/Acre				**$614.04**

Application

Description	**Cost /Acre**
Crimping, with tractor {DMG survey data}	$71.57
Power mulcher (MEANS 32 91 13.16 0350)	$106.29
Total Mulch Application Cost/Acre	**$177.86**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
Juniper, Rocky Mountain	6	Container, 1 gallon (MEANS)	$23.20	$0.00	$139.20
Pine, Ponderosa	6	Container, 1 gallon (MEANS)	$23.32	$0.00	$139.92
Totals Nursery Stock Cost / Acre					**$279.12**

JOB TIME AND COST

No. of Acres: 80 Cost /Acre: $1,534.53
Estimated Failure Rate: 20% Cost /Acre*: $1,255.41
*Selected Replanting Work Items: SEEDING,MULCHING

Initial Job Cost: **$122,762.40**
Reseeding Job Cost: **$20,086.56**
Total Job Cost: **$142,849**
Job Hours: **20.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Equipment Mobilization/Demobilization**

Site: **Arkins Park Quarries** Permit Action: Aug 2021 Permit/Job#: M1985212

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 8/20/2021 County: Larimer Filename: M212-005
User: BFB

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)

Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	$21.28	$37.94	$47.67
Operating Cost/Hour:	$26.55	$50.48	$56.21
Operator Cost/Hour:	$20.54	$20.54	$20.54
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$68.37	$132.49	$147.95

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 D9T - 9SU	60.01	$126.01	$147.95	2	$547.92	$295.90	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$7.98	$68.37	1	$76.35	$68.37	$250.00
Subtotals:					**$624.27**	**$364.27**	**$500.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Subtotals:			**$0.00**	**$0.00**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	LOVELAND	
Total one-way travel distance:	7.00	miles
Average Travel Speed:	35.00	mph

Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$2,019.69
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$0.00

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.20	0.20
Return Time (Hours):	0.20	0.20
Loading Time (Hours):	0.25	NA
Unloading Time (Hours):	0.25	NA
Subtotals:	0.90	0.40

JOB TIME AND COST

Total job time:	**1.80**	Hours
Total job cost:	**$2,020**	