



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

November 18, 2024

Jason McGraw
General Shale Brick, Inc.
1845 W. Dartmouth
Ave. Denver, CO
80110-1308

**Re: North Chieftain - File No. M-1978-014
General Shale Brick, Inc.
Surety Increase (SI-1)
M1978014 North Chieftain Surety Increase**

Dear Jason McGraw:

On November 18, 2024 the Division of Reclamation, Mining and Safety increased the current Financial Warranty for this permit to \$185,236.00, in accordance with Rule 4.2.1 of the Rules and Regulations. This is an increase of \$111,805.00.

During the review of the North Chieftain Mine, it has come to the Division's attention that the reclamation liability amount has not been updated since 2008. Because the reclamation bond has not been adjusted in some time, the Division has updated the reclamation cost estimate for the North Chieftain Mine to ensure the financial warranty reflects the actual current cost of fulfilling the requirements of the reclamation plan per Rule 4.2.1. The financial warranty increase accounts for the increased cost in the event the state is to perform earthwork and revegetation. The operator has 60 days to post the additional financial warranty from the date of this written notice from the Division per Rule 4.2.1(2).

On November 18, 2024, the Division ordered amendment of the current Financial Warranty or submittal of a new Financial Warranty reflecting the increase, within 60 days.

Please make arrangements with Sara M. Stevenson-Benn at the Division's Denver office for submittal of the financial warranty. Any other questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Sara M. Stevenson-Benn by telephone at (303) 866-3567, or by email at Sara.stevenson-benn@state.co.us.

The Permittee for this site may be scheduled for a Formal Board Hearing for possible revocation of the permit if the amount of any increased Financial Warranty has not been provided by January 17,

Physical Address: 1313 Sherman Street, Room 215, Denver, CO 80203 P 303.866.3567 F 303.832.8106

Mailing Address: DRMS Room 215, 1001 E 62nd Ave, Denver, CO 80216 <https://drms.colorado.gov>

Jared S. Polis, Governor | Dan Gibbs, Executive Director | Michael A. Cunningham, Director



2025.

Bond Held:	\$73,431.00
Prior Liability:	\$73,431.00
Change in Liability:	\$111,805.00
Revised Liability:	\$185,236.00
Prior Permit Acreage:	126.40
Change in Permit Acreage:	0.00
Revised Permit Acreage:	126.40
Prior Affected Acreage:	126.40
Change in Affected Acreage:	0.00
Revised Affected Acreage:	126.40

If you have any questions, please contact me by telephone at (720) 793-2988, or by email at Ben.hammar@state.co.us.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ben Hammar". The signature is fluid and cursive.

Ben E. Hammar
Environmental Protection Specialist

cc: Jason McGraw

M-GR-04

COST SUMMARY WORK

Task description: Cost Estimate

Site: North Chieftain

Permit Action: 2024 Bond Calculation

Permit/Job#: M1978014

PROJECT IDENTIFICATION

Task #: 010

State: Colorado

Abbreviation: None

Date: 9/18/2024

County: Jefferson

Filename: M014-010

User: BEH

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
011	Regrade	TRUCK1	1	44.99	\$38,295
012	Topsoil	TRUCK1	1	88.57	\$75,394
014	Reveg	REVEGE	1	39.00	\$23,533
015	Equipment Mobilization	MOBILIZE	1	1.57	\$3,176
<u>SUBTOTALS:</u>				174.13	\$140,398

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02
Performance bond: 1.05
Job superintendent: 74.07
Profit: 10.00

Total = \$2,836

Total = \$1,474

Total = \$5,872

Total = \$14,040

TOTAL O & P = \$24,222

CONTRACT AMOUNT (direct + O & P) = \$164,620

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 7.22

Total = \$11,886

Reclamation management and/or administration: 5.00

\$8,231

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$44,838

TOTAL BOND AMOUNT (direct + indirect) = \$185,236

TRUCK/LOADER TEAM WORKTask description: **Regrade**Site: **North Chieftain**Permit Action: **2024 Bond Calculation**Permit/Job#: **M1978014****PROJECT IDENTIFICATION**Task #: **011**State: **Colorado**Abbreviation: **None**Date: **9/19/2024**County: **Jefferson**Filename: **M014-011**User: **BEH**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

Equipment Description	
Truck Loader Team -Truck:	Cat 730
-Loader:	CAT 950H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:**Truck/Loader Team****Support Equipment****Maintenance Equipment**

	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	NA	NA
Ownership cost/hour:	\$108.67	\$36.61	NA	\$173.32	NA	NA
Operating cost/hour:	\$66.26	\$35.43	NA	\$109.71	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:	\$24.82	\$56.64	NA	\$40.04	NA	NA
Unit Subtotals:	\$199.75	\$128.68	NA	\$323.07	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work: \$528.18		Support: \$323.07		Maint: \$0.00	

Total work team cost/hour: **\$851.25****MATERIAL QUANTITIES**Initial volume: **16,000**

CCY

Swell factor: **1.090**Loose volume: **17,440**

LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook**Material Purchase Cost: **\$0.00**Total Cost: **\$0.00****HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: **2,400**

Pounds/LCY

Description: **Clay and gravel - Dry**Rated Payload: **62,000**

Pounds

Payload Capacity: **25.83**

LCY

Truck Bed (volume) Basis:

Struck Volume:	17.10	LCY
Heaped Volume:	22.10	LCY
Average Volume:	19.60	LCY
Adjusted Volume:	22.10	LCY

Final Truck Volume Based on Number of Loader Passes: 18.06 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	4.300	LCY (heaped)
Bucket Fill Factor:	1.050	Other - moist loam (100-110%) 1.050
Adjusted Capacity:	4.515	LCY

Job Condition Corrections:

Site Altitude (ft.): 6000 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 of Loading Tool Passes Required to Fill Truck: 4 passes

Excavators and Front Shovels:

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): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.040	minutes
Adjusted Loader Cycle Time:		0.540	minutes
Net Load Time per Truck:		1.720	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.720	Minutes	Adjusted for site altitude:	1.720	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2183	0.722

Haul Time: **0.722** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2936	0.495

Return Time: **0.495** minutesTotal Truck Cycle Time: **4.537** minutes

Loading Tool unit

Production 467.07 LCY/Hour Adjusted for job efficiency: 387.67 LCY/Hour
Truck Unit Production 238.84 LCY/Hour Adjusted for job efficiency: 198.23 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 396.47 LCY/Hour
Adjusted single truck/loader team production: 387.67 LCY/Hour
Adjusted multiple truck/loader team production: **387.67** LCY/Hour

JOB TIME AND COSTFleet size: 1 Team(s) Total job time: **44.99** HoursUnit cost: \$2.196 /LCY Total job cost: **\$38,295**

TRUCK/LOADER TEAM WORKTask description: TopsoilSite: North ChieftainPermit Action: 2024 Bond CalculationPermit/Job#: M1978014**PROJECT IDENTIFICATION**Task #: 012State: ColoradoAbbreviation: NoneDate: 9/18/2024County: JeffersonFilename: M014-012User: BEHAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 730
-Loader:	CAT 950H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:**Truck/Loader Team****Support Equipment****Maintenance Equipment**

	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	NA	NA
Ownership cost/hour:	\$108.67	\$36.61	NA	\$173.32	NA	NA
Operating cost/hour:	\$66.26	\$35.43	NA	\$109.71	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:	\$24.82	\$56.64	NA	\$40.04	NA	NA
Unit Subtotals:	\$199.75	\$128.68	NA	\$323.07	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work: \$528.18		Support: \$323.07		Maint: \$0.00	

Total work team cost/hour: \$851.25**MATERIAL QUANTITIES**Initial volume: 31,500

CCY

Swell factor: 1.090Loose volume: 34,335

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:**Truck Payload (weight) Basis:Material weight: 2,400

Pounds/LCY

Description: Clay and gravel - DryRated Payload: 62,000

Pounds

Payload Capacity: 25.83

LCY

Truck Bed (volume) Basis:

Struck Volume:	17.10	LCY
Heaped Volume:	22.10	LCY
Average Volume:	19.60	LCY
Adjusted Volume:	22.10	LCY

Final Truck Volume Based on Number of Loader Passes: **18.06** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	4.300	LCY (heaped)
Bucket Fill Factor:	1.050	Other - moist loam (100-110%) 1.050
Adjusted Capacity:	4.515	LCY

Job Condition Corrections:

Site Altitude (ft.): 6000 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 of Loading Tool Passes Required to Fill Truck: 4 passes

Excavators and Front Shovels:

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): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.040	minutes
Adjusted Loader Cycle Time:		0.540	minutes
Net Load Time per Truck:		1.720	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.600	Minutes
Truck Load Time:	1.720	Minutes	Adjusted for site altitude:	1.720	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.000	Minutes

Truck Travel (Haul & Return) Time:
maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2183	0.722

Haul Time: **0.722** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2936	0.495

Return Time: **0.495** minutesTotal Truck Cycle Time: **4.537** minutes

Loading Tool unit

Production 467.07 LCY/Hour Adjusted for job efficiency: 387.67 LCY/Hour
Truck Unit Production 238.84 LCY/Hour Adjusted for job efficiency: 198.23 LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 396.47 LCY/Hour
Adjusted single truck/loader team production: 387.67 LCY/Hour
Adjusted multiple truck/loader team production: **387.67** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **88.57** Hours

Unit cost: \$2.196 /LCY Total job cost: **\$75,394**

REVEGETATION WORKTask description: RevegSite: North ChieftainPermit Action: 2024 Bond CalculationPermit/Job#: M1978014**PROJECT IDENTIFICATION**Task #: 014State: ColoradoAbbreviation: NoneDate: 9/18/2024County: JeffersonFilename: M014-014User: BEHAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
13-13-13, 19-9-0	45.00	pound	\$0.72	\$32.45
			Total Fertilizer Materials Cost/Acre	\$32.45

Application

Description	Cost /Acre
Truck whirlwind spreader (MEANS 32 01 90.13 0140)	\$17.86
Total Fertilizer Application Cost/Acre	\$17.86

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$102.41
Total Tilling Cost/Acre	\$102.41

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Crested Wheatgrass - Nordan	4.00	18.37	\$21.25
Pubescent Wheatgrass - Luna	5.40	11.16	\$27.02
Western Wheatgrass - Barton	4.80	12.12	\$45.10
Totals Seed Mix	14.20	41.64	\$93.37

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$236.64

Total Seed Application Cost/Acre	\$236.64
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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 Acres: 39 Cost /Acre: \$482.73
 Estimated Failure Rate: 25% Cost /Acre*: \$482.73
 *Selected Replanting Work Items: FERTILIZING,TILLING,SEEDING

Initial Job Cost: **\$18,826.47**
 Reseeding Job Cost: **\$4,706.62**
 Total Job Cost: **\$23,533**
 Job Hours: **39.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Equipment Mobilization**Site: **North Chieftain**Permit Action: **2024 Bond Calculation**Permit/Job#: **M1978014****PROJECT IDENTIFICATION**Task #: **015**State: **Colorado**Abbreviation: **None**Date: **9/18/2024**County: **Jefferson**Filename: **M014-015**User: **BEH**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:	\$10.44	\$22.18	\$23.94
Operating Cost/Hour:	\$26.48	\$54.55	\$55.65
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$59.44	\$122.78	\$125.64

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 D8T - 8SU	47.71	\$173.32	\$122.78	1	\$296.10	\$122.78	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$41.02	\$59.44	1	\$100.46	\$59.44	\$250.00
Cat 730	25.19	\$108.67	\$59.44	2	\$336.22	\$118.88	\$250.00
CAT 950H	20.13	\$36.61	\$59.44	1	\$96.05	\$59.44	\$250.00

Subtotals: **\$828.83** **\$360.54** **\$1,000.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$24.60	1	\$24.60	\$24.60

Subtotals: **\$24.60** **\$24.60**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: LAKEWOOD
 Total one-way travel distance: 5.00 miles
 Average Travel Speed: 35.00 mph

Total Non-Roadable Mob/Demob Cost * \$3,168.65
 ** two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$7.03
 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.14	0.14
Return Time (Hours):	0.14	0.14
Loading Time (Hours):	0.25	NA
Unloading Time (Hours):	0.25	NA
Subtotals:	0.79	0.29

JOB TIME AND COST

Total job time: 1.57 Hours

Total job cost: \$3,176