



January 29, 2013

Mrs. Pebbles Opp
Montana Department of Environmental Quality
Abandoned Mines Section
1100 N. Last Chance Gulch
P.O. Box 200901
Helena, MT 59620-0901

RE: Montana DEQ Contract 413005
Final Construction Completion Report – Limited Construction
Services –Humboldt Mine Shaft Closure Project

Dear Ms. Opp:

Enclosed please find one copy of the Final Construction Completion Report (CCR) for the Humboldt Mine Shaft Reclamation Project (MDEQ Contract 413005). A CD containing original and read only (pdf) report files, as well as construction photos is attached to the back cover of the report. Trihydro is submitting five (5) copies of this report in fulfillment of Task Order No. 42 under MDEQ Contract 407042.

Please contact the undersigned at (406) 558-4848 if you have questions regarding the final CCR, require additional copies, or to discuss comments you may have. Trihydro will incorporate.

Sincerely,
Trihydro Corporation

A handwritten signature in blue ink, appearing to read "Jamie Mongoven", with a long horizontal line extending to the right.

Jamie Mongoven, P.E.
Project Manager

776-016-003

Enclosures

CONSTRUCTION COMPLETION REPORT
LIMITED CONSTRUCTION SERVICES-HUMBOLDT MINE SHAFT
RECLAMATION PROJECT
LEWIS AND CLARK COUNTY, MONTANA
DEQ CONTRACT NO.413005

January 29, 2013

Trihydro Project #: 776-016-003

SUBMITTED BY: Trihydro Corporation

2707 Broadwater Avenue, Helena, MT 59601



ENGINEERING SOLUTIONS. ADVANCING BUSINESS.

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1.0 INTRODUCTION

Trihydro Corporation (Trihydro) received Work Order number (No.) 8 under the Montana Department of Environmental Quality's Abandoned Mine Lands Bureau (DEQ/AMLB) Contract 407042 to conduct a preliminary review of an open shaft within the immediate vicinity of a public trail and residential area in Lewis and Clark County. Subsequently, DEQ/AMLB issued Task Order No. 42 to Trihydro for the design of shaft closure. Task Order No. 43 was executed for Trihydro to provide construction supervision and prepare a Construction Completion Report (CCR). Construction activities at the site were completed during October 2012. This CCR includes documentation of implemented project reclamation activities.

1.1 PROJECT DESCRIPTION AND RECLAMATION OBJECTIVES

DEQ/AMLB was notified of a collapsed shaft by a Lewis and Clark County Sanitarian in April 2012. The shaft is located within a septic drain field on private property at 1209 Winscott Lane, in Helena, Montana. While the shaft is located on private property, it is also located within 600 feet of the City of Helena's Far East trailhead. Research indicated the shaft is Shaft No. 3 of the Humboldt Lode claim. The Humboldt Lode claim was mined for lead, silver, and gold between 1881 and 1920, and maybe as late as 1950.

DEQ/AMLB undertook this project to alleviate the physical and environmental hazards associated with the open shaft. The project entailed investigation and assessment of the shaft, design of reclamation alternatives to close the collapsed shaft, and reclamation construction. The physical and environmental hazards were alleviated through back-filling the shaft and installing a polyurethane-foam (PUF)/reinforced-concrete plug combination closure.

1.1.1 INVESTIGATION AND DESIGN

DEQ/AMLB conducted a site reconnaissance on April 25, 2012 and began working with the landowner on an acceptable reclamation plan. In May 2012, DEQ/AMLB contracted Trihydro to conduct a preliminary site visit. Trihydro accompanied DEQ/AMLB on the preliminary site visit under Work Order No.8. The site visit was summarized in a recommendation memorandum from Trihydro to DEQ/AMLB, dated May 18, 2012. DEQ/AMLB then contracted Trihydro to provide engineering design and bid document preparation services under Task Order No. 42 in early June 2012. An Environmental Assessment was published by DEQ/AMLB on July 2, 2012. Additional site investigations, including site visits and meetings with the Lewis and Clark County Sanitarian, United States Forest Service (USFS), land owner, and a shaft closure expert were conducted between July and August 2012. During preliminary site visits and additional site investigations, DEQ/AMLB and Trihydro identified the following potential physical and environmental hazards associated with the shaft:



- A falling and entrapment hazard for the property owner, pets, and wildlife due to the open shaft and unstable slopes adjacent to the shaft
- A falling and entrapment hazard for recreationalists using the Far East trailhead
- The possibility for additional subsidence in or adjacent to the shaft to affect nearby structures
- The potential for septic system effluent to directly contact and contaminate groundwater
- The potential for septic system effluent draining into the shaft to cause piping or saturation leading to collapse or subsidence of other mine features

Trihydro prepared engineering designs and subsequently developed a Limited Construction Bid Document Package for the Humboldt Mine Shaft Reclamation Project (project) including construction plans, and bidding and contract documents between May and July 2012.

1.1.2 RECLAMATION

The reclamation construction portion of the project (DEQ/AMLB Contract 413005) was advertised in September 2012, with the bid opening on September 20, 2012. Gruber Excavating, Inc., (Gruber Excavating) of Clancy, Montana was awarded the reclamation construction Contract. The Notice to Proceed was executed on October 16, 2012.

Construction was originally scheduled for 21 consecutive calendar days. Construction activities commenced on October 16, 2012 and were completed on October 22, 2012. The final inspection occurred on October 22, 2012 and the Certificate of Acceptance was also signed on October 22, 2012.

Reclamation activities consisted of clearing and grubbing the staging area, importing backfill material to the staging area, backfilling Shaft No. 3, installing a PUF/reinforced concrete combination plug, and reclaiming the shaft area with native soil. The as-built drawings are included in Appendix A.

Specific construction activities are listed below. A summary of the completed Bid Items is provided in Table 1-1, Summary of Reclamation Quantities.

- Brush and tree clearing and grubbing from staging area
- Establishing access to the shaft
- Importing 370 cubic yards (CY) of pitrun material to the staging area
- Backfilling Shaft No. 3 with pitrun material
- Installing a 20-CY PUF plug
- Installing a 19-CY reinforced-concrete plug



- Grading and reclaiming the staging and backfilled shaft areas
- Seeding and application of straw mulch were completed by DEQ/AMLB and were not included in this Contract. The seed mix applied to the site consisted of a dryland slope mix as follows:
 - 40% Fairway Crested Wheat
 - 30% Hard Fescue
 - 15% Slender Wheat Grass
 - 15% Sodar Streambank

1.2 PROJECT SETTING

The Humboldt Lode claim's Shaft No. 3 is an abandoned hard-rock mine feature located on a residential lot in the South Hills immediately adjacent to lands owned by the City of Helena in Lewis and Clark County, Montana. The street address is 1209 Winscott Lane, which is near the city limits of Helena, Montana. A public trailhead (Far East) is located within 200 yards of the shaft. The site is in close proximity to a residential home and adjacent to the septic drain field associated with the home.

The site occupies the crest and northwestern flank of a prominent north/south trending spur ridge at an elevation of 4,545 feet (ft). To the south is Holmes Gulch, and to the west is Mount Ascension. Most precipitation occurs during May and June, though the area often experiences severe thunderstorms in July and August. Average temperatures fluctuate from 0°F in January to 90°F in July (www.weather.com). A variety of wildlife resides near the project site, including small mammals and birds, whitetail and mule deer, bobcats, and a variety of reptiles.

1.3 MINE HISTORY

The history of the site was researched by Renewable Technologies Inc. (RTI) and documented in their 2012 report, 'Humboldt Lode (MS 2300), Lewis and Clark County, Montana: Cultural Resource Investigation and Evaluation.' A summary of their research follows:

Mineral Survey No. 2300 was recorded in 1888 as the Humboldt Lode (MS2300). The mine primarily produced silver and lead during its limited production from 1882 to the 1920s. There are three known shafts and one adit associated with the mine:

- Shaft No. 1 reached a reported depth of 75 ft. This shaft has since been closed or collapsed.
- Shaft No. 2 reached a reported depth of 45 ft. This shaft has since been closed or collapsed.
- The discovery shaft (aka. Shaft No. 3) was the deepest shaft with an estimated final depth of 315 ft. The closure for this shaft failed and was addressed under this project.
- The mine adit extended an estimated 270 ft and connected with Shafts No. 2 and No. 3 at the 150-ft level. The adit has also been closed or collapsed.

After production stopped, the buildings associated with the mine were removed and the workings were abandoned. Subsequently, the property was subdivided in the 1980s and became residential building sites (RTI, 2012).

Shaft No. 3 was completed to a depth of 300 ft by the spring of 1897. Several car loads of ore shipped to the East Helena Smelter yielded 39 percent lead, 25 ounces in silver, and about \$3 in gold. Humboldt ore was being shipped regularly to the East Helena Smelter and during the period of 1897 to 1903, production reached approximately \$20,000. Ore from the upper workings was principally galena and lead carbonates, although copper bearing ore was encountered at depth. As with many Helena Mining District properties, production at the Humboldt Lode decreased significantly during the first decade of the 20th Century and was sporadic thereafter (RTI, 2012).

No records were found of ore being shipped from the Humboldt Lode during the period of 1920 to the late 1940s. However, a report of zinc-lead smelting ore being shipped from a "Humboldt claim" in the Helena Mining District in 1950 was found. Multiple mining properties named "Humboldt" exist in the district however, and it is unclear if that ore came from MS2300 or from the Humboldt Placer located farther west in Grizzly Gulch (RTI, 2012). RTI's literature review indicates that the Humboldt Lode was likely not mined after the 1950s.

Bernard L. and Ardyth Ann Fisher purchased the Humboldt Lode from Diehl Development Corporation in 1975. In 2004, the Fishers subdivided the Humboldt Lode into three parcels A, B, and C Tracts. Tract C was maintained by the Fishers while Tracts A and B were granted to their daughters. In 2005, Tract B was deeded to Denise V.M. Hubert. Tract B encompasses Shaft No. 3 of the historic Humboldt Lode (RTI, 2012).

2.0 RESPONSIBLE PARTIES

2.1 DEPARTMENT OF ENVIRONMENTAL QUALITY/ABANDONED MINE LANDS BUREAU COORDINATION

DEQ/AMLB Project Managers were Steve Opp (Task Orders No. 42 and No. 43) and Pebbles Opp (Work Order No. 8). DEQ/AMLB contact information is:

DEQ/AMLB
1100 N. Last Chance Gulch
P.O. Box 200901
Helena, MT 59620-0901
Phone: (406) 841-5000
Fax: (406) 841-5024

2.2 SITE ASSESSMENT, RECLAMATION, AND ENGINEERING PLAN

Trihydro was responsible for conducting site assessments, developing construction alternatives, and assisting with development of the Limited Construction Services Bid Documents Packages. Trihydro's Project Manager was Jamie Mongoven. Trihydro's contact information is:

Trihydro Corporation
2707 Broadwater Avenue
Helena, MT 59601
Phone: (406) 558-4848
Fax: (307) 745-7729

2.3 CONSTRUCTION MONITORING

Trihydro performed construction monitoring for this project. Jamie Mongoven was the Engineer's Resident Project Representative (RPR) responsible for monitoring reclamation construction activities.

2.4 CONTRACTOR

The reclamation Contractor was Gruber Excavating of Clancy, Montana (Contractor). The designated on-site superintendent for Gruber Excavating was Bill Gruber. The contact information for Gruber Excavating is:

Gruber Excavating, Inc.
32 Bitterroot Lane
Clancy, MT 59634
Phone: (406) 449-3927



3.0 RECLAMATION CONSTRUCTION EVENTS

The following section presents the notable events and Contract dates for the reclamation construction. Contract dates are summarized in Table 3-1 Contract Dates.

3.1 PRE-BID CONFERENCE

A pre-bid conference to familiarize bidders with project objectives, requirements, features, and the site was held at the Humboldt Lode site on September 12, 2012. The conference was attended by DEQ/AMLB, Trihydro, and potential bidders.

3.2 BID OPENING

Bids were opened by DEQ/AMLB at their office located at 1100 North Last Chance Gulch in Helena, Montana on September 20, 2012. Four qualified bids were received, ranging from \$27,790 to \$39,400, compared to the Engineer's estimate of \$32,295. The bid tabulations are included in Table 3-2 Bid Tabulations.

3.3 CONTRACT AGREEMENT

A Notice of Award was issued to the low bidder, Gruber Excavating, on September 24, 2012; Gruber Excavating executed the notice on September 24, 2012. A Contract Agreement was executed on October 3, 2012, under DEQ/AMLB Contract No. 413005. DEQ/AMLB issued the Notice to Proceed on October 16, 2010 to commence work no later than October 16, 2012. Work under the Contract was to be completed within 21 consecutive calendar days.

3.4 CONSTRUCTION START-UP

The Contractor began mobilizing to the site on October 16, 2012. A pre-construction meeting was held on October 16, 2012 by phone. Meeting attendees included:

- Steve Opp, DEQ/AMLB
- Pebbles Opp, DEQ/AMLB
- Bill Gruber, Gruber Excavating
- Jamie Mongoven, Trihydro

3.5 CHANGE ORDERS AND WORK DIRECTIVES

One work directive and two change orders were issued for the project. Copies of the change orders, work directive, and related documentation are included in Appendix B. Change orders and the work directive issued during the reclamation construction included:

- Work Directive No. 1 – Issued on October 16, 2012, Work Directive No. 1 directed the Contractor to grade and add gravel to the site access road. The Contract time was not increased; the Contract price was increased by \$1,700.
- Change Order No. 1 – Executed on October 22, 2012, Change Order No. 1 incorporated Work Directive No. 1 and increased the Contract amount from \$27,790 to \$29,490.
- Change Order No. 2 – Executed on October 22, 2012, Change Order No. 2 reconciled the difference between the as-constructed, final quantities, and the bid quantities, and revised the final Contract price according to the final quantities, which changed the Contract amount from \$29,490 to \$21,566.

3.6 WEATHER DAYS AND WORK SUSPENSIONS

No weather days were requested for this project.

3.7 REQUESTS FOR PAYMENT

One payment request by Gruber Excavating was made during this project. The Contractor's certified payroll was provided with the payment request. A copy of the payment request is included in Appendix C. The amounts listed in the text below for Payment Request No. 1 match the dollar amounts listed in the final payment request.

Payment Request No. 1 was for the period of October 16, 2012, to October 22, 2012. The total amount earned for this period was \$21,556.00. The net payment request, less a 1% tax withholding of \$215.66, was \$21,350.34. Payment Request No. 1 was approved on October 22, 2012.

3.8 FINAL INSPECTION

The final site inspection was conducted by Trihydro's Project Manager, Jamie Mongoven and DEQ/AMLB Project Managers Steve Opp and Pebbles Opp on October 22, 2012. The project was also accepted by DEQ/AMLB on October 22, 2012. No outstanding issues were found during the final site inspection. DEQ/AMLB agreed to seed the disturbances created during the project. Seeding was not included in the Contract.



3.9 CLOSEOUT DOCUMENTATION

Construction closeout forms were fully executed on or before October 22, 2012. In addition to the final payment request and Change Order Nos. 1 and 2, the following forms were executed:

- Contractor's Certificate of Completion
- Affidavit on Behalf of Contractor
- Consent of Surety Company to Final Payment
- Certificate of Acceptance

Copies of these executed forms, as well as the Notice of Award, Notice to Proceed, Agreement, and insurance and bonds are included in Appendix D.

3.10 FINAL PAYMENT

Gruber Excavating's final payment request (Payment Request No. 1) was approved by DEQ/AMLB on October 22, 2012. The final contract price was \$21,566.00. The total amount paid to Gruber Excavating, less a 1% tax withholding of \$215.66, was \$21,350.34.

4.0 CONSTRUCTION

The following sections provide an abbreviated discussion of construction activities and summarize construction quantities.

4.1 MAJOR EQUIPMENT LIST

A list of major equipment used during the project is included in Table 4-1 Major Equipment List.

4.2 PHOTO LOG

Select photographs documenting construction activities are included in Appendix E. The complete set of construction photographs are included in electronic format on the CD submitted with this report.

4.3 CONSTRUCTION ACTIVITIES

Copies of Trihydro's daily construction reports are included in Appendix F. These daily logs detail site conditions and reclamation activities from October 16, 2012, to October 22, 2012. Weekly construction summaries of reclamation construction activities are provided below.

October 16 to October 19, 2012

The Contractor mobilized a Case-tracked excavator and Caterpillar D5B dozer to the site. The RPR and DEQ/AMLB walked the site with the Contractor. The Contractor cleared and grubbed the staging area and began importing backfill material to the staging area. The Contractor graded additional accesses to the shaft site and to the staging area. The Contractor graded and added gravel to the main site access per Work Directive No 1. The Contractor backfilled the shaft with pitrun material. A PUF plug was installed in the shaft. A reinforced-concrete plug was installed on top of the PUF plug.

October 22

The Contractor completed the shaft backfilling operation and reclaimed staging area, then mobilized off site.

4.4 QUANTITIES COMPLETED

Quantities were measured by Trihydro's onsite RPR. The final quantities for the project are detailed in Table 1-1, Summary of Reclamation Quantities. Bid quantities, actual completed quantities, and the difference between the actual and bid quantities for the project are included in Table 4-2 Project Reconciliation.

The final Contract price varied from the original Contract price. The price variance was due to the original Contract bid estimated material requirements being greater than the actual material needed to complete the project.

Bid Item 3. Provide and Place Pitrun Material

The final quantity of pitrun material was 180 CY less than the original estimated quantity. The discrepancy in the final versus the estimated quantity can be attributed to the shaft containing some backfill from the previous closure that was undetermined from the initial surface assessment.

Bid Item 5. Supply and Place Reinforced Concrete

The Contractor placed the reinforced concrete per the plans and specifications. The estimated volume of concrete was estimated on assumed shaft dimensions. The required thickness of the concrete was achieved with only 19 cubic yards of material versus the original bid estimate of 30 cubic yards.

5.0 PROJECT SUMMARY

Reclamation construction for the Limited Construction Services Humboldt Mine Shaft Reclamation Project commenced October 16, 2012. Reclamation activities were continuous from October 16, 2012 through October 22, 2012, when the project was substantially complete. Closeout documentation was fully executed on October 22, 2012. During the course of the reclamation activities, 370 cubic yards of pitrun material was imported and placed in the shaft, 20 cubic yards of PUF was installed in the shaft, and 19 cubic yards of reinforced concrete was installed in the shaft. Approximately 0.25 acres were disturbed by, and reclaimed under this project. A reconciliation of construction quantities and costs is provided in Table 4-2. This table includes the original bid quantities and bid price, as well as additions under Change Order No. 1 and reconciliations under Change Order No. 2. The actual quantities completed, the resulting total project costs, and the difference between the actual costs and quantities from those bid are also included in Table 4-2. Copies of signed payment request forms are included in Appendix C. The total construction cost was \$21,556. A breakdown of engineering design, construction management, and construction cost relative to the total project cost is provided in Tables 5-1 through 5-3.

6.0 REFERENCE

Renewable Technologies, Inc., 2012. "Humboldt Lode (MS 2300) Lewis and Clark County, Montana: Cultural Resource Investigation and Evaluation." Butte, Montana.

The Weather Channel. 2012. Local Weather Forecast: Lewis and Clark County, Montana. Accessed from: <http://www.weather.com/>.

TABLES

**TABLE 1-1. SUMMARY OF RECLAMATION QUANTITIES
HUMBOLDT MINE SHAFT RECLAMATION PROJECT**

ACTUAL QUANTITIES			
BID ITEM	DESCRIPTION	UNIT	TOTAL
1.	Mobilization, Traffic Control, Demobilization, Bonding, and Insurance*	LS	1
2.	Clearing and Grubbing	LS	1
3.	Supply and Place Pitrun Material	CY	370
4.	PUF Plug installation	LS	1
5.	Supply and Place Reinforced Concrete	CY	19
6.	Obtain and Place Salvaged Backfill Material	LS	1

Notes:

LS = Lump Sum

CY = Cubic Yards

PUF = Polyurethane Foam

**TABLE 3-1. CONTRACT DATES
HUMBOLDT MINE SHAFT RECLAMATION PROJECT**

Description	Date	Days Added	Contract End Date	Comment
Notice of Award	Monday, September 24, 2012	-	-	
Notice to Proceed	Tuesday, October 16, 2012	-	November 7, 2012	
Contract Agreement	Wednesday, October 03, 2012	-	November 7, 2012	
Work Directive No. 1	Tuesday, October 16, 2012		November 7, 2012	Added grading and gravelling of the site access route
Change Order No. 1	Monday, October 22, 2012		November 7, 2012	Incorporated Work Directive No. 1
Final Inspection	Monday, October 22, 2012	-	November 7, 2012	
Change Order No. 2	Monday, October 22, 2012	-	November 7, 2012	Final quantity reconciliation

**TABLE 3-2. BID TABULATIONS
HUMBOLDT MINE SHAFT RECLAMATION PROJECT**

Bid Opening Date, September 20, 2012, 2:00 p.m															
BID TABULATION															
BID ITEM	ESTIMATED QUANTITY	UNIT	DESCRIPTION	ENGINEER'S ESTIMATE		Gruber Excavating, Inc.		Helena Sand & Gravel		Hall Construction Services		Mockel Precast & Excavating		Average Prices	
				UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	Average Unit Price	Average Total Price
1	1	LS	Mobilization, Traffic Control, Demobilization, Bonding, and Insurance*	\$3,500.00	\$3,500.00	\$500.00	\$500.00	\$ 3,500.00	\$3,500.00	\$3,900.00	\$3,900.00	\$3,178.89	\$3,178.89	\$2,769.72	\$2,769.72
2	1	LS	Clearing and Grubbing	\$4,200.00	\$4,200.00	\$500.00	\$500.00	\$0.00	\$0.00	\$1,500.00	\$1,500.00	\$715.00	\$715.00	\$678.75	\$678.75
3	550	CY	Supply and Place Pitrun Material	\$24.50	\$13,475.00	\$31.80	\$17,490.00	\$35.00	\$19,250.00	\$30.00	\$16,500.00	\$30.85	\$16,967.50	\$17,551.88	\$17,551.88
4	1	LS	PUF Plug installation	\$5,500.00	\$5,500.00	\$2,800.00	\$2,800.00	\$3,200.00	\$3,200.00	\$2,500.00	\$2,500.00	\$1,716.00	\$1,716.00	\$2,554.00	\$2,554.00
5	30	CY	Supply and Place Reinforced Concrete	\$150.00	\$4,500.00	\$200.00	\$6,000.00	\$335.00	\$10,050.00	\$450.00	\$13,500.00	\$226.13	\$6,783.90	\$9,083.48	\$9,083.48
6	1	LS	Obtain and Place Salvaged Backfill Material	\$1,120.00	\$1,120.00	\$500.00	\$500.00	\$800.00	\$800.00	\$1,500.00	\$1,500.00	\$2,431.00	\$2,431.00	\$1,307.75	\$1,307.75
TOTAL BIDS				XX	\$32,295.00	XX	\$27,790.00	XX	\$36,800.00	XX	\$39,400.00	XX	\$31,792.29	XX	\$33,945.57

Notes:

LS = Lump Sum

CY = Cubic Yards

PUF = Polyurethane Foam

**TABLE 4-1. MAJOR EQUIPMENT LIST
HUMBOLDT MINE SHAFT RECLAMATION PROJECT**

TYPE	MAKE/MODEL
Bulldozer, 1	Caterpillar D-5 B
Excavator, 1	Case CX210B
End Dumps, 2	Kenworth, International Harvester
Belly Dump, 1	Mack
Water Truck, 1	International Harvester
Motor Grader, 1	Caterpillar 14F

**TABLE 4-2.PROJECT RECONCILIATION
HUMBOLDT MINE SHAFT RECLAMATION PROJECT**

BID ITEM		UNIT	UNIT PRICE	BID QUANTITY	CHANGE ORDER NO. 1	CONTRACT QUANTITY	FINAL QUANTITY	PERCENT OF CONTRACT	BID PRICE	CHANGE ORDER PRICE	FINAL PRICE	ADJUSTMENT IN PRICE
1	Mobilization, Traffic Control, Demobilization, Bonding, and Insurance*	LS	\$ 500.00	1		1	1	100.0%	\$ 500.00	\$ 500.00	\$ 500.00	\$ -
2	Clearing and Grubbing	LS	\$ 500.00	1		1	1	100.0%	\$ 500.00	\$ 500.00	\$ 500.00	\$ -
3	Supply and Place Pitrun Material	CY	\$ 31.80	550		550	370	67.3%	\$ 17,490.00	\$ 17,490.00	\$ 11,766.00	\$ (5,724.00)
4	PUF Plug installation	LS	\$ 2,800.00	1		1	1	100.0%	\$ 2,800.00	\$ 2,800.00	\$ 2,800.00	\$ -
5	Supply and Place Reinforced Concrete	CY	\$ 200.00	30		30	19	63.3%	\$ 6,000.00	\$ 6,000.00	\$ 3,800.00	\$ (2,200.00)
6	Obtain and Place Salvaged Backfill Material	LS	\$ 500.00	1		1	1	100.0%	\$ 500.00	\$ 500.00	\$ 500.00	\$ -
CO1	Change Order No. 1	LS	\$ 1,700.00	0	1	1	1	100.0%	\$ -	\$ 1,700.00	\$ 1,700.00	\$ 1,700.00
									\$ 27,790.00	\$ 29,490.00	\$ 21,566.00	\$ (6,224.00)

Notes:

LS = Lump Sum

CY = Cubic Yards

PUF = Polyurethane Foam

**TABLE 5-1. BREAKDOWN OF ENGINEERING COSTS
HUMBOLDT MINE SHAFT RECLAMATION PROJECT**

Engineering Service	Year	Cost
Preliminary Site Visits (DEQ Contract 407042, WO8)	2012	\$ 689.28
Engineering Design (DEQ Contract 407042, TO 42 and Mod A)	2012	\$ 9,583.62
Construction Management and Observation (DEQ Contract No. 407042, TO 43)	2012	\$ 16,870.98
Total Engineering Services	-	\$ 27,143.88

**TABLE 5-2. BREAKDOWN OF CONSTRUCTION COSTS
HUMBOLDT MINE SHAFT RECLAMATION PROJECT**

DEQ Contract No. 431005	
Gruber Excavating, Inc.	\$ 27,790.00
Change Orders	
Change Order No. 1	\$ 1,700.00
Change Order No. 2	\$ (7,924.00)
Total Change Orders	\$ (6,224.00)
Total Construction Cost	\$ 21,566.00

**TABLE 5-3. BREAKDOWN OF TOTAL PROJECT COSTS
HUMBOLDT MINE SHAFT RECLAMATION PROJECT**

Engineering Services	Amount	Percentage of Total Construction Costs	Percentage of Total Project Costs
Preliminary Site Visits (Work Directive No 7)	\$ 689.28	3.2%	1.4%
Engineering Design (DEQ Contract 407042, TO 42 and Mod A)	\$ 9,583.62	44.4%	19.7%
Construction Management and Observation (DEQ Contract No. 407042, TO 43)	\$ 16,870.98	78.2%	34.6%
Total Engineering Costs	\$ 27,143.88	125.9%	55.7%
Construction Services	Amount	Percentage of Total Construction Costs	Percentage of Total Project Costs
Gruber Excavation, Inc.	\$ 27,790.00	128.9%	57.1%
Change Orders	\$ (6,224.00)	-28.9%	-12.8%
Total Construction Costs	\$ 21,566.00	100.0%	44.3%
Total Project Costs (Engineering + Construction)	\$ 48,709.88	-	100.00%

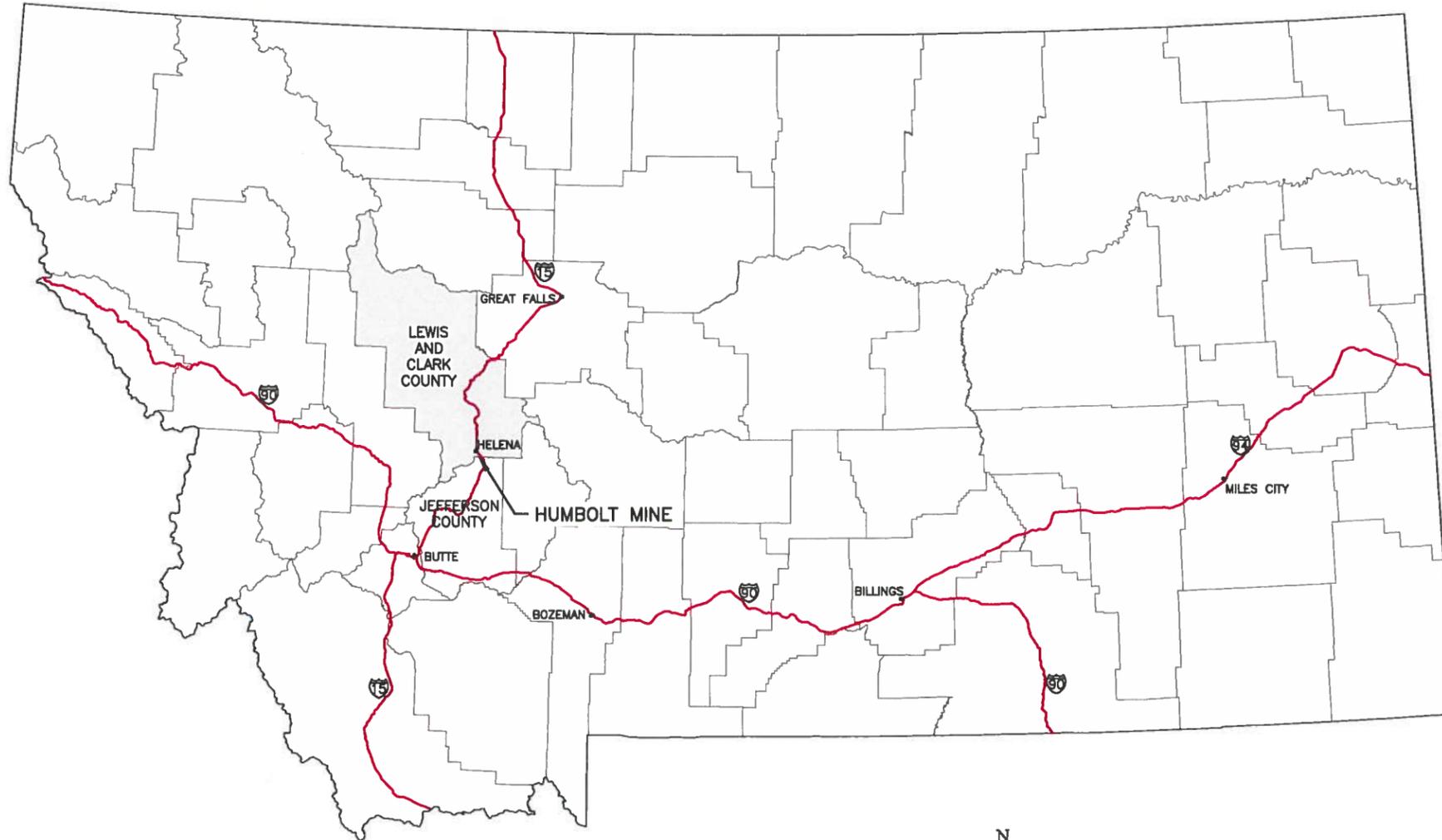
APPENDIX A

AS-BUILT DRAWINGS





**DEPARTMENT OF ENVIRONMENTAL QUALITY
 ABANDONED MINE LANDS BUREAU
 HUMBOLDT MINE SHAFT RECLAMATION PROJECT PLAN SET
 LEWIS AND CLARK COUNTY
 DEQ CONTRACT NO. 413005**



1 MONTANA STATE MAP
 SCALE: NOT TO SCALE



SHEET NO.	TITLE	REV.
1	PROJECT LOCATION MAP AND INDEX OF SHEETS	1
2	EXPLANATION AND NOTES	1
3	SITE MAP	1
4	EXISTING SITE FEATURES	1
5	MINE SHAFT CLOSURE DETAIL	2

2 INDEX OF SHEETS



CERTIFICATE OF ENGINEER:

I, JAMIE MONGOVEN, A REGISTERED PROFESSIONAL MINE ENGINEER IN THE STATE OF MONTANA, DO HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR BY OTHERS UNDER MY DIRECT SUPERVISION AND THAT THESE DRAWINGS ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NOTE:

SITE LEGAL DESCRIPTION:
 HUMBOLDT MINE SITE, SECTIONS 4 AND 5, TOWNSHIP 9 NORTH, RANGE 3 WEST



Source: www.montanaB11.org

SHEET 1 1 OF 5	PROJECT LOCATION MAP AND INDEX OF SHEETS	HUMBOLDT MINE SHAFT RECLAMATION PROJECT	DEQ / ABANDONED MINE LANDS BUREAU	DRAWN BY: KBW	CHECKED BY: MD	DATE: 1/9/2013	SCALE: NONE	FILE: 776-CSHM20121114
				ISSUE FOR RECORD DRAWINGS 1 1/9/2013	ISSUE FOR BID 0 8/30/2012	REV.	DATE	DESCRIPTION
REV: 1								

EXPLANATION

	EXISTING FENCE/DISTURBANCE AREA
	MINERAL SURVEY BOUNDARY
	PROPERTY BOUNDARY
	SECTION LINE
	SITE ACCESS ROUTE
	EXCLUSION ZONE
	SALVAGE BORROW AREA
	CONCRETE
	PITRUN BACKFILL
	PUF CLOSURE
	SALVAGED MATERIAL
CY	CUBIC YARD
FT AMSL	FEET ABOVE MEAN SEA LEVEL
TYP.	TYPICAL
MIN.	MINIMUM
PUF	POLYURETHANE FOAM

GENERAL CONSTRUCTION AND SAFETY NOTES:

GENERAL:

- A. THE CONTRACTOR SHALL CALL MONTANA UTILITY NOTIFICATION CENTER PRIOR TO INTRUSIVE ACTIVITIES. THE CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES.
- B. THE CONTRACTOR SHALL LIMIT THE DISTURBANCE TO THE MINIMUM NECESSARY TO COMPLETE THE SHAFT CLOSURE. THE DISTURBANCE AREA SHALL BE DELINEATED IN THE FIELD AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL REPAIR ALL DISTURBANCE CREATED OUTSIDE THE APPROVED DISTURBANCE BOUNDARY BY THE CONTRACTOR'S EMPLOYEES OR SUBCONTRACTORS AT THE CONTRACTOR'S EXPENSE.
- C. THE CONTRACTOR SHALL USE EXISTING ACCESS ROADS FOR EQUIPMENT, PERSONNEL AND MATERIALS TRANSPORTATION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO ACCESS ROADS CAUSED BY THE CONTRACTOR. IF ANY NEW ACCESS OR HAUL ROADS ARE REQUIRED TO COMPLETE THE WORK, THEY SHALL FIRST BE APPROVED BY THE ENGINEER, AND SHALL BE RECLAIMED ACCORDING TO THE SPECIFICATIONS AT THE COMPLETION OF THE PROJECT.
- D. NO OTHER ACCESS TO THE SITE IS ALLOWED WITHOUT PERMISSION IN WRITING FROM THE ENGINEER AND LANDOWNERS.
- E. THE CONTRACTOR SHALL NOT DISTURB THE SEPTIC TANK, DIVERSION BOX, OR DRAINFIELD LOCATED NEAR THE SHAFT. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE SEPTIC TANK, DIVERSION BOX, OR DRAINFIELD CAUSED BY THE CONTRACTOR AT NO ADDITIONAL COST TO DEQ.
- F. GRADING AREAS SHALL BE GRADED TO CONFORM TO THE SURROUNDING NATIVE TERRAIN.
- G. THE CONTRACTOR WILL NOT HAVE ACCESS TO BACKFILL THE SHAFT WITH HEAVY EQUIPMENT DUE TO THE PRESENCE OF THE DRAIN FIELD. NO HEAVY EQUIPMENT SHALL BE ALLOWED WITHIN THE EXCLUSION ZONE SHOWN ON SHEET 4. THE CONTRACTOR SHALL PROVIDE ALTERNATIVE MEANS TO PLACE MATERIAL IN THE SHAFT.

SAFETY:

- A. THIS PROJECT REQUIRES CONSTRUCTION WORK AROUND AND OVER HAZARDOUS, UNPROTECTED MINE SHAFTS, SLOPES, AND OTHER OPENINGS. THESE OPENINGS MAY BE OPEN TO THE SURFACE OR MAY BE HIDDEN BY THIN OVERBURDEN, DEBRIS, OR VEGETATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THOROUGHLY INVESTIGATING THE SITE CONDITIONS AND SCHEDULING HIS OR HER EQUIPMENT, EQUIPMENT OPERATIONS, PERSONNEL AND SAFETY PROCEDURES TO PREVENT ACCIDENTS AND INJURIES.
- B. THE CONTRACTOR SHALL COMPLETE THE EXCAVATIONS IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION GUIDELINES AND REQUIREMENTS. EXCAVATED SLOPES MAY REQUIRE SLOPING AND OR BENCHING TO PREVENT SLOPE FAILURES. SLOPES SHALL BE CONTINUOUSLY MONITORED FOR SIGNS OF PENDING FAILURE SUCH AS CRACKING, BULGING, SLOUGHING, OR SLIDING.
- C. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF CONTRACTOR'S OWN PERSONNEL AND EQUIPMENT.

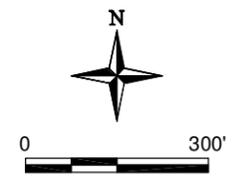
RECORD
DRAWINGS

SHEET	2	EXPLANATION AND NOTES		HUMBOLDT MINE SHAFT RECLAMATION PROJECT DEQ / ABANDONED MINE LANDS BUREAU			
REV: 1	2 OF 5	DRAWN BY: KBW	CHECKED BY: MD	DATE: 1/9/2013	SCALE: NONE	FILE: 776-EXHM20121114	 1252 Commerce Drive Laramie, Wyoming 82070 www.trihydro.com (P) 307.745.7474 (F) 307.745.7729
				1	0	REV.	DATE
				1/9/2013	8/30/2012	ISSUE FOR BID	ISSUE FOR RECORD DRAWINGS
				JM	JM	BY	CHK'D
				KBW	KBW	REVISIONS	DESCRIPTION



Image Cite: ESRI, Microsoft Web Map Bing Maps (c) 2011 Microsoft Corporation and its Data Suppliers

RECORD
DRAWINGS



SHEET 3 3 OF 5	SITE MAP		HUMBOLDT MINE SHAFT RECLAMATION PROJECT		DEQ/ABANDONED MINE LANDS BUREAU	
	REV: 1					
DRAWN BY: KBW		CHECKED BY: JM		DATE: 1/9/2013		ISSUE FOR RECORD DRAWINGS
SCALE: 1" = 300'		FILE: 776-SMH-M20121114		REV: 0	DATE: 8/30/2012	ISSUE FOR BID
				REV: 1	DATE:	DESCRIPTION
				BY:	CHK'D:	REVISIONS

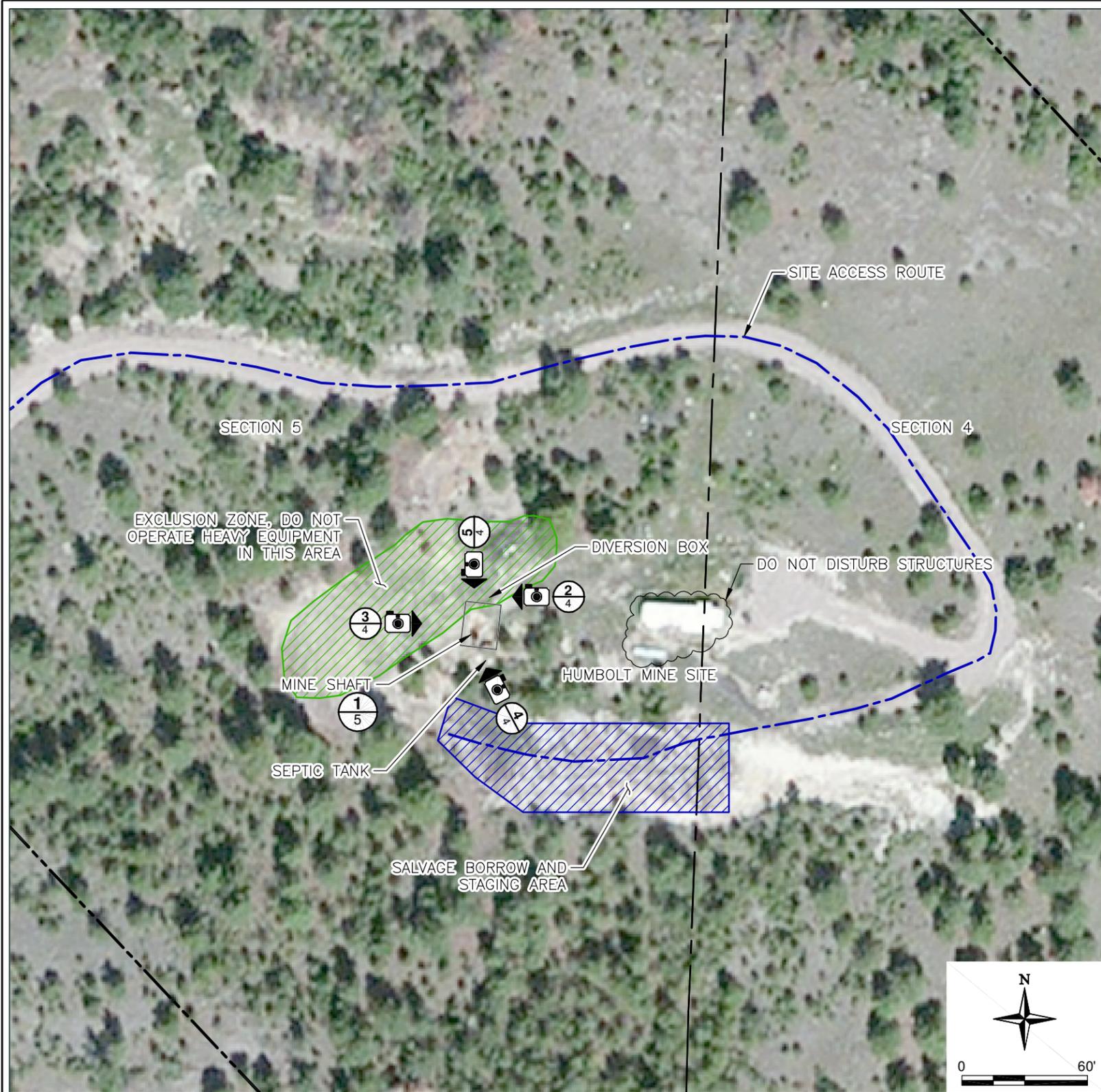


Image Cite: ESRI, Microsoft Web Map Server Bing Maps (c) 2011 Microsoft Corporation and its Data Suppliers

1 HUMBOLDT MINE SITE
SCALE 1" = 60'

NOTES:

1. THE EXISTING FENCE MATERIAL AROUND THE SHAFT AREA SHALL BE SALVAGED AND PLACED IN A SAFE LOCATION, APPROVED BY THE ENGINEER, NEAR THE SHAFT.
2. NO HEAVY EQUIPMENT IS ALLOWED WITHIN THE EXCLUSION ZONE. THE ENGINEER WILL MARK THE LIMITS OF THE EXCLUSION ZONE IN THE FIELD.

RECORD DRAWINGS



Trihydro Site Reconnaissance Field Photo, JUNE 1, 2012

2 DIVERSION BOX
SCALE NONE



Trihydro Site Reconnaissance Field Photo, JUNE 1, 2012

3 FENCE
SCALE NONE



Trihydro Site Reconnaissance Field Photo, JUNE 1, 2012

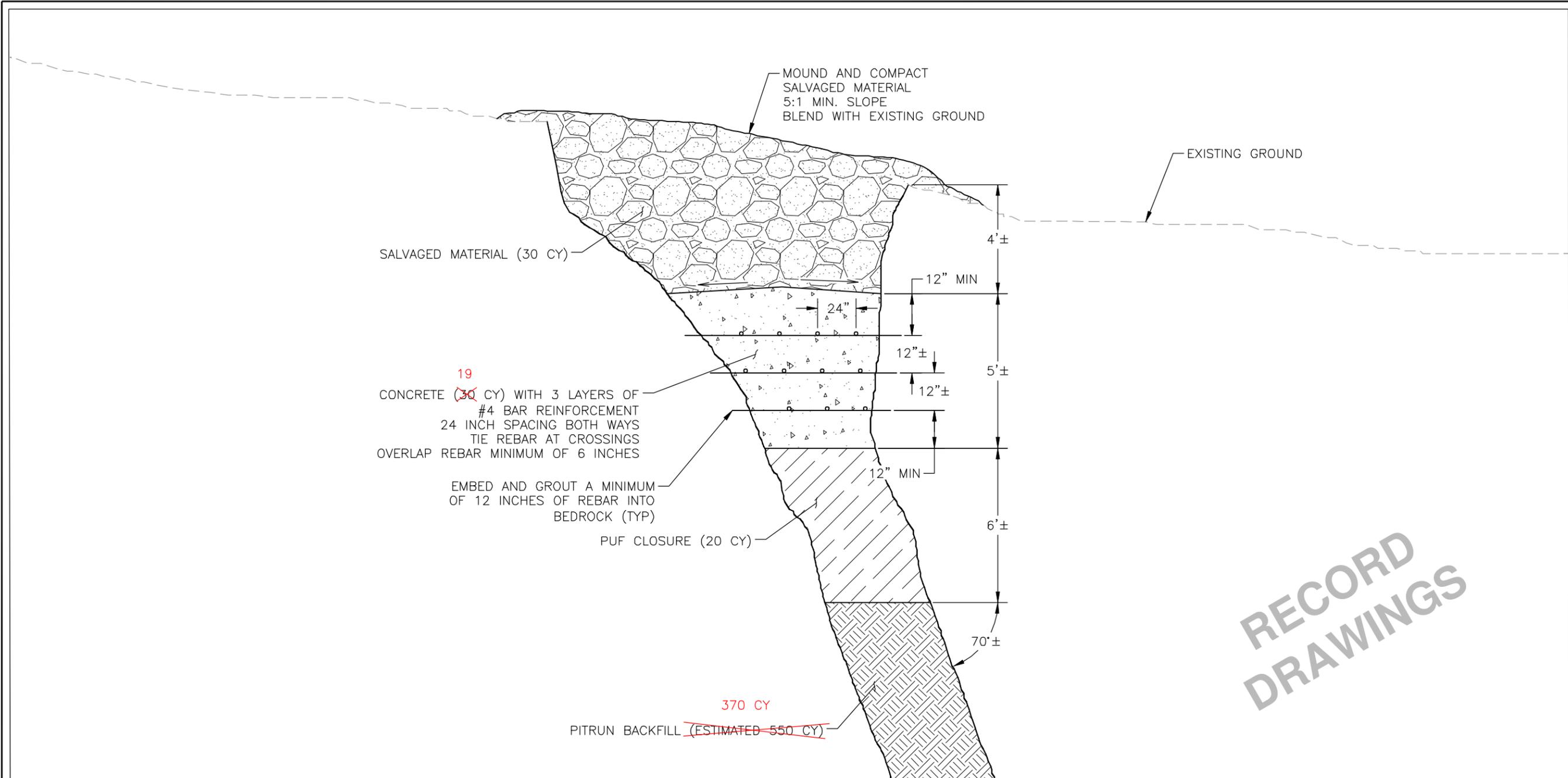
4 SEPTIC TANK
SCALE NONE



Trihydro Site Reconnaissance Field Photo, May 4 2012

5 MINE SHAFT
SCALE NONE

DRAWN BY: KBW	CHECKED BY: JM	DATE: 1/9/2013	SCALE: 1" = 200'	FILE: 776-ESFHM20121114	ISSUE FOR RECORD DRAWINGS	ISSUE FOR BID	DESCRIPTION REVISIONS	
					1	0	BY	
					1/9/2013	8/30/2012	CHK'D	
					JM	KBW	JM	
EXISTING SITE FEATURES	HUMBOLDT MINE SHAFT RECLAMATION PROJECT							BY
SHEET	DEQ/ABANDONED MINE LANDS BUREAU							CHK'D
4								JM
4 OF 5								KBW
REV: 1								JM



RECORD DRAWINGS

1 MINE SHAFT CLOSURE DETAIL
SCALE: NONE

NOTES:

1. THE MINE SHAFT DEPICTION IS APPROXIMATE AND IS BASED ON OBSERVATIONS OF THE SHAFT FROM THE SURFACE.
2. PITRUN MATERIAL SHALL NOT CONTAIN STONES LARGER THAN 24 INCHES NOMINAL DIAMETER AND SHALL CONTAIN SUFFICIENT QUANTITIES OF SMALLER MATERIAL TO FILL VOIDS BETWEEN LARGE STONES AS PROVIDED IN BID ITEM NO. 3 IN THE DESCRIPTION OF WORK.
3. THE UPPER PORTION OF THE MINE SHAFT SHALL BE THOROUGHLY CLEANED BY POWER WASHING OR OTHER ENGINEER-APPROVED METHOD PRIOR TO PLACEMENT OF PUF AND CONCRETE. CLEANING SHALL REMOVE LOOSE STONE AND FINES FROM THE SHAFT WALLS TO ALLOW THE PUF TO ADHERE TO THE SHAFT WALLS.
4. PUF SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURE'S INSTRUCTIONS. PUF SHALL NOT BE APPLIED TO SURFACES WITH RUNNING WATER AND SHALL NOT BE APPLIED DURING RAIN. PUF SHALL BE APPLIED SUCH THAT THE ENTIRE VOID IS FILLED. EACH LIFT OF PUF SHALL BE TACK FREE PRIOR TO INSTALLING THE SUBSEQUENT LIFT.
5. CONCRETE SHALL NOT BE PLACED UNTIL THE PUF HAS CURED IN ACCORDANCE WITH THE MANUFACTURE'S INSTRUCTIONS. CONCRETE SHALL BE INSTALLED IN A MANNER SUCH THAT THE CONCRETE DOES NOT DAMAGE THE PUF. THE CONTRACTOR SHALL REPAIR OR REPLACE PUF DAMAGED THROUGH THE CONTRACTOR'S ACTIONS AT THE CONTRACTOR'S EXPENSE.
6. CONCRETE SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 24 HOURS PRIOR TO PLACEMENT OF SALVAGED MATERIAL. SLOPE CONCRETE TOWARD DRAIN PIPE WITH A MINIMUM GRADE OF 2%.
7. SALVAGED MATERIAL SHALL BE MOUNDED TO PROMOTE DRAINAGE AWAY FROM THE SHAFT CLOSURE.

DRAWN BY: KBW	CHECKED BY: JM	DATE: 1/9/2013	2	1/9/2013	ISSUE FOR RECORD DRAWINGS	KBW	MD
			1	9/07/2012	ISSUE FOR ADDENDUM NO. 1	KBW	MD
			0	8/30/2012	ISSUE FOR BID	KBW	JM
SCALE: NONE			REV.	DATE	DESCRIPTION	BY	CHK'D
FILE: 776-CDHML2012114			REVISIONS				
MINE SHAFT CLOSURE DETAIL		HUMBOLDT MINE SHAFT RECLAMATION PROJECT					
DEQ / ABANDONED MINE LANDS BUREAU							
SHEET	5						REV: 2
		5 OF 5					

APPENDIX B

CHANGE ORDERS AND WORK DIRECTIVES

CHANGE ORDER

ORDER NO. 1

PROJECT TITLE: Limited Construction Services - Humboldt Mine Shaft Reclamation Project

DEQ Contract No. 413005

CONTRACT DATE: October 3, 2012

OWNER: Montana Department of Environmental Quality

CONTRACTOR: Gruber Excavating, Inc.

Change Orders must include an itemized cost breakdown. You shall comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT'LS.	LABOR	EQUIP.	MISC.	UNIT COST	
1-1	Work Directive No. 1: Grade and gravel site access road.	-	-	-	-	LUMP SUM	\$1,700.00
TOTAL COST							\$1,700.00
GRAND TOTAL - THIS CHANGE ORDER							\$1,700.00

TOTAL PRICE (IN WORDS): Twenty three thousand sixty six dollars and no cents

Original Contract Price: \$27,790.00

Current Contract Price Adjusted by Previous Change Order: \$27,790.00

Cost this Change Order (+ or -): + \$1,700.00

New Contract Price including this Change Order: \$29,490.00

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decreased) by 0 calendar days.

The date for completion of all work will be November 7, 2012.

Description and Justification for Change:

1. Work Directive No. 1: Grading of the access road was required to facilitate hauling of materials to site and to repair damage to driveway caused by construction equipment and haul trucks in the course of construction of this project.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by \$_____ (100 percent of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by \$_____ (100 percent of the Change Order amount).

COUNTERSIGNED BY MONTANA
RESIDENT AGENT

SURETY

By: _____ Seal

Recommended by: Jane M 10-22-12
Engineer Date

Accepted by: Chris R 10/22/12
Contractor Date

Approved by: [Signature] 10/22/12
Owner Date

CHANGE ORDER

ORDER NO. 2

PROJECT TITLE: Limited Construction Services - Humboldt Mine Shaft Reclamation Project

DEQ Contract No. 413005

CONTRACT DATE: October 3, 2012

OWNER: Montana Department of Environmental Quality

CONTRACTOR: Gruber Excavating, Inc.

Change Orders must include an itemized cost breakdown. You shall comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT'LS.	LABOR	EQUIP.	MISC.	UNIT COST	
2-1	Reconciliation of Bid Item No. 3: Supply and Place Pitrun Material	-180.0	-	-	-	\$31.80	(\$5724.00)
2-2	Reconciliation of Bid Item No. 5: Supply and Place Reinforced Concrete	-11.0	-	-	-	\$200.00	(\$2200.00)
TOTAL COST							(\$7,924.00)
GRAND TOTAL - THIS CHANGE ORDER							(\$7,924.00)

TOTAL PRICE (IN WORDS): Twenty three thousand sixty six dollars and no cents

Original Contract Price: \$27,790.00

Current Contract Price Adjusted by Previous Change Order: \$29,490.00

Cost this Change Order (+ or -): (\$7,924.00)

New Contract Price including this Change Order: \$21,566.00

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decreased) by 0 calendar days.

The date for completion of all work will be November 7, 2012.

Description and Justification for Change:

1. Reconciliation of bid pay quantities to final pay quantities.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by \$ _____ (100 percent of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by \$ _____ (100 percent of the Change Order amount).

COUNTERSIGNED BY MONTANA
RESIDENT AGENT

SURETY

By: _____ Seal

Recommended by: [Signature] Engineer 10-22-12 Date

Accepted by: [Signature] Contractor 10/22/12 Date

Approved by: [Signature] Owner 10/22/12 Date

WORK DIRECTIVE CHANGE

(Instructions on Reverse Side)

No. 01

PROJECT: Limited Construction Services - Humboldt Mine Shaft Reclamation Project
DATE OF ISSUANCE: 10/16/2012

CONTRACTOR: Gruber Excavation, Inc.
32 Bitterroot Lane

PO Helena, Montana

Clancy

OWNER: Montana DEQ

DEQ Contract No.: 413005

CONTRACT FOR: Mine Shaft Closure

ENGINEER: Trihydro Corporation.

You are directed to proceed promptly with the following change(s):

Description: Contractor shall grade, add gravel as directed by Engineer, and compact access route to site. This work shall be completed at a lump sum price of \$1700.00 which shall include wages and benefits.

Purpose of Work Directive Change: Grading of the access road was required to facilitate hauling of materials to site and to repair damage to driveway caused by construction equipment and haul trucks in the course of construction of this project.

Attachments: None

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining change in Contract Price:

- Time and Materials
- Unit Prices
- Lump Sum
- Other _____

Method of determining change in Contract Time:

- Contractor's Records
- Engineer's Records
- Other _____

Estimated Increase in Contract Price: \$1700.00. If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase in Contract Time: 0 days. If the change involves an increase, the estimated time is not to be exceeded without further authorization.

RECOMMENDED:

By: *[Signature]*
Engineer

ACCEPTED:

By: *[Signature]*
Contractor

AUTHORIZED:

By: *[Signature]*
Owner

WORK DIRECTIVE CHANGE

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Time. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a change in the Contract Price or the Contract Time, a Field Order may be issued.

B. COMPLETING THE WORK DIRECTIVE CHANGE

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer to indicate the following and attach the same hereto:

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Indicate the method to be used in determining the final cost of Work involved and the net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed work is completed, another Work Directive Change must be issued to change the time or Contractor may stop the changed Work when the estimated time is reached. If the Work Directive Change is not likely to change the Contract Price, the space for estimated increase (decreased) should be marked "Not Applicable".

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT TIME: Indicate the method to be used in determining the change in Contract Time and the estimated increase or decrease in Contract Time. If the change involves an increase in the Contract Time and the estimated time is approached before additional or changed Work is completed, another Work Directive Change must be issued to change the time or Contractor may stop the changed Work when the estimated time is reached. If the Work Directive Change is not likely to change the Contract Time, the space for estimated increase (decrease) should be marked "Not Applicable".

Once Engineer has completed and signed this form, all copies should be sent to Owner for authorization because Engineer alone does not have authority to authorize changes in Price or Time. Once authorized by Owner, a copy should be sent by Engineer to Contractor.

Once the Work covered by this directive is completed for final cost and time determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR THE CONTRACT TIME. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

APPENDIX C

PAYMENT REQUEST FORMS

DEQ PAYMENT REQUEST

PAYMENT REQUEST NO. 1

PAYMENT PERIOD: 10/16/12-10/22/12

PROJECT NAME: Limited Construction Services - Humboldt Mine Shaft Reclamation Project

DEQ CONTRACT NO.: 413005

NAME OF THE CONTRACTOR: Gruber Excavating, Inc. *clancy*

ADDRESS OF THE CONTRACTOR: 32 Bitterroot Lane, *PO* Montana City, MT 59634

PAYMENT SUMMARY INFORMATION							
DATE	PAYMENT REQUEST #	EARNED	RETAINAGE WITHHELD*	RETAINAGE RELEASED	GROSS PAYMENT	TAX 1%	NET PAYMENT
			\$ -		\$ -	\$ -	\$ -
			\$ -		\$ -	\$ -	\$ -
			\$ -		\$ -	\$ -	\$ -
			\$ -		\$ -	\$ -	\$ -
10/22/2012	FINAL REQUEST	\$ 21,566.00		\$ -	\$ 21,566.00	\$ 215.66	\$ 21,350.34
TOTAL TO DATE		\$ 21,566.00	\$ -	\$ -	\$ 21,566.00	\$ 215.66	\$ 21,350.34

DATE	CONTRACT PRICE SUMMARY	
10/3/2012	Original	\$ 27,790.00
10/22/2012	CO #1	\$ 1,700.00
10/22/2012	CO#2	\$ (7,924.00)
CONTRACT PRICE TO DATE		\$ 21,566.00

MISCELLANEOUS INFORMATION	
TOTAL UNCOMPLETED TO DATE	100.00%
PERCENT COMPLETE TO DATE	0.00%

*RETAINAGE WITHHELD IS 5% PLUS \$1,000

LIGHTLY SHADED AREAS ARE AUTOMATICALLY CALCULATED

CURRENT PAYMENT REQUEST	
EARNED	\$ 21,566.00
RETAINAGE WITHHELD	\$ -
RETAINAGE RELEASED	\$ -
GROSS PAYMENT	\$ 21,566.00
TAX (1%)	\$ 215.66
NET PAYMENT	\$ 21,350.34

REQUESTED BY: CONTRACTOR: ~~Gruber Excavating, Inc.~~ *Clancy* Gruber Excavating, Inc.
SIGNATURE: *Clancy*
DATE: *10/22/12*

RECOMMENDED BY: ENGINEER: *Jim M...*
COMPANY: *TRM YDRO*
DATE: *10-22-12*

APPROVED BY: OWNER: *Montana DEQ*
SIGNATURE: *John Koeltz*
DATE: *10/22/12*

Humboldt Mine Reclamation Project, DEQ Contract No. 413005

BID ITEMS				Gruber Excavating, Inc.		Final Totals			Reconciliation	
<i>Bid Item</i>	<i>ESTIMATED QUANTITY</i>	<i>UNIT</i>	<i>DESCRIPTION</i>	<i>UNIT PRICE</i>	<i>TOTAL PRICE</i>	<i>% Complete</i>	<i>Quantity</i>	<i>Present Dollars</i>	<i>Quantity Change</i>	<i>Cost Change</i>
1	1	LS	Mobilization, Traffic Control, Demobilization, Bonding, and Insurance*	\$ 500.00	\$ 500.00	100.0%	1.0	\$ 500.00	0.0	\$ -
2	1	LS	Clearing and Grubbing	\$ 500.00	\$ 500.00	100.0%	1.0	\$ 500.00	0.0	\$ -
3	550	CY	Supply and Place Pitrun Material	\$ 31.80	\$ 17,490.00	67.3%	370.0	\$ 11,766.00	-180.0	\$ (5,724.00)
4	1	LS	PUF Plug installation	\$ 2,800.00	\$ 2,800.00	100.0%	1.0	\$ 2,800.00	0.0	\$ -
5	30	CY	Supply and Place Reinforced Concrete	\$ 200.00	\$ 6,000.00	63.3%	19.0	\$ 3,800.00	-11.0	\$ (2,200.00)
6	1	LS	Obtain and Place Salvaged Backfill Material	\$ 500.00	\$ 500.00	100.0%	1.0	\$ 500.00	0.0	\$ -
CO #1			WD#1: Grade and gravel site access road			100.0%		\$ 1,700.00		
CO #2			Reconciliation							\$ (7,924.00)
			TOTAL BID		\$ 27,790.00					
			TOTAL COMPLETE					\$ 21,566.00		
			CHANGE ORDER NO. 1 CONTRACT PRICE		\$ 29,490.00					
			CHANGE ORDER NO. 2 CONTRACT PRICE		\$ 21,566.00					
			FINAL CONTRACT PRICE		\$ 21,566.00					

APPENDIX D

PROJECT COMPLETION AND CONTRACT FORMS



CONTRACTOR'S CERTIFICATE OF COMPLETION

TO (Owner): Montana DEQ

DATE: October 22, 2012

PROJECT TITLE: Limited Construction Services -
Humboldt Mine Shaft Reclamation
Project

DEQ Contract No. 413005

ATTN: Engineer, Trihydro,

CONTRACT DATE: October 3, 2012

FROM: Gruber Excavating, Inc.

(Firm or Corporation)

This is to certify that I, ^{Barry}~~Chris Gruber~~, am an authorized official of Gruber Excavating, Inc., working in the capacity of Manager and have been properly authorized by said firm or corporation to sign the following statements pertaining to the subject contract:

I know of my own personal knowledge, and do hereby certify, that the work of the contract described above has been performed, and materials used and installed in every particular, in accordance with, and in conformity to, the Contract Plans and Specifications.

The contract work is now complete in all parts and requirements and ready for your substantial completion inspection.

I understand that neither the determination of the Engineer that the work is complete nor the acceptance thereof by the Owner shall operate as a bar to claim against the Contractor under the terms of the guarantee provisions of the Contract Documents.

CONTRACTOR: _____

Chris Gruber

By: Manager

Title

- Distribution:
1. Project Manager
 2. Engineer
 3. File

AFFIDAVIT ON BEHALF OF CONTRACTOR

STATE OF Montana)
 : ss
COUNTY OF Lewis & Clark)

DEQ Contract No.: 413005

DATE: October 22, 2012

I certify to the best of my knowledge and belief that all work has been performed and materials supplied in strict conformance with the terms and conditions of the corresponding contract documents between Montana Department of Environmental Quality, the Owner, and Gruber Excavating, Inc., the Contractor, dated October 3, 2012 for the Limited Construction Services - Humboldt Mine Shaft Reclamation Project, DEQ Contract No. 413005, and further declare that all bills for materials, supplies, utilities, and for all other things furnished or caused to be furnished by the above-named Contractor and used in the execution of the above Contract have been fully paid, and there are no unpaid claims or demands of State Agencies, subcontractors, material, men, mechanics, laborers or any others resulting from or arising out of work done or ordered to be done by said Contractor under the above-identified Contract.

In consideration of the prior and final payments made and all payments made for authorized changes, the Contractor releases and forever discharges the Owner from any and all obligations and liabilities arising by virtue of said Contract and authorized changes between the parties hereto, either verbal or in writing, and any and all claims and demands of every kind and character whatsoever against the Owner, arising out of or in any way relating to said Contract, and authorized changes.

This affidavit is made for the purpose of inducing the Owner to make Final Payment under the terms of the Contract, relying on the truth and statements contained therein.

Dated this 22nd day of October, 2012, at Helena, Montana.

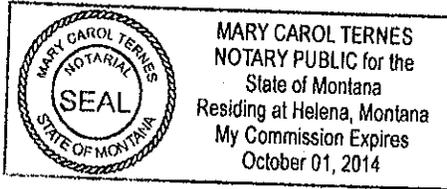
CONTRACTOR: Gruber Excavating, Inc.

By: Walter J. Gruber
Title: President

Subscribed and sworn to before me this 22 day of October, 2012.

Mary Carol Ternes
Notary Public for the State of Montana
Residing at _____
My commission expires _____

(SEAL)



**CONSENT OF
SURETY COMPANY
TO FINAL PAYMENT**
(From AIA Document G707)

OWNER []
ENGINEER []
CONTRACTOR []
SURETY []
OTHER []

PROJECT: Limited Construction Services - Humboldt Mine Shaft Reclamation Project

TO (Owner)

Montana Dept. of Environmental Quality
Remediation Division
Abandoned Mine Lands Bureau
P.O. Box 200901
Helena, MT 59620-0901

DEQ Contract No.: 413005

CONTRACT FOR: Mine Shaft Closure

CONTRACT DATE: October 3, 2012

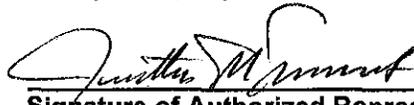
CONTRACTOR:

In accordance with the provisions of the contract between the Owner and the Contractors indicated above,

The, Westchester Fire Insurance Company, 5619 South Curtice Street, Littleton, CO 80120, SURETY COMPANY, on bond of, Gruber Excavating, Inc., CONTRACTOR, hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to Montana Department of Environmental Quality, P.O. Box 200901, Helena, MT 59620-0901, OWNER, as set forth in the said Surety Company's bond.

IN WITNESS WHEREOF, the Surety Company has hereunto set its hand this 22 day of October, 2012.

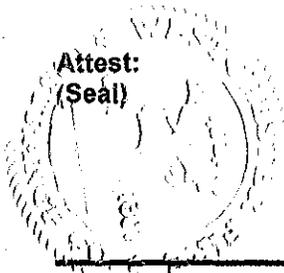
Westchester Fire Insurance Company
Surety Company



Signature of Authorized Representative

ATTORNEY-IN-FACT

Title



Attest:
(Seal)

NOTE: This form is to be used as a companion document to the Affidavit on Behalf of Contractor (current edition)

CERTIFICATE OF ACCEPTANCE

TO: Montana, Department of Environmental Quality (OWNER)

PROJECT TITLE: Limited Construction Services, Humboldt Mine Shaft Reclamation Project

DEQ Contract No. 413005

CONTRACT DATE: October 3, 2012

LOCATION: Lewis & Clark County

County

PROJECT OR PART SHALL INCLUDE: _____

Limited Construction Services -
Humboldt Mine Shaft Reclamation Project

CONTRACTOR: Gruber Excavating, Inc.

ADDRESS: 32 Bitterroot Lane, Montana City, Clancy
MT 59634

TELEPHONE NO: (406) 449-3927

FINAL ACCEPTANCE DATE: October 22, 2012

DEQ INSPECTION DATE: October 22, 2012

ENGINEER: Trihydro

PERFORMANCE BOND NO: KO8612985

DATE OF BOND: September 24, 2012

SURETY: Westchester Fire Insurance Company

MONTANA AGENT: Jonathan Emmons, Payne Financial Group

ADDRESS: 1200 N. Montana Ave., Helena, MT 59601

The Work performed under this Contract has been inspected by authorized representatives of the Owner, Contractor, and Engineer, and the Project (or specified part of the Project, as indicated above) is hereby declared to be totally completed and accepted on the above date.

ENGINEER: Trihydro

By [Signature] 10-22-12
Authorized Representative Date

The Contractor accepts the above Certificate of Acceptance and agrees to abide by the conditions of the one-year warranty period which began on the substantial completion date.

CONTRACTOR: Gruber Excavating, Inc.

By [Signature] 10/22/12
Authorized Representative Date

The Owner accepts the Project as totally complete, and final payment is due to the Contractor as provided in the contract documents.

OWNER: Montana Department of Environmental Quality

By [Signature] 10/22/12
Authorized Representative Date

**STANDARD FORM OF CONTRACT BETWEEN OWNER
AND CONTRACTOR FOR LIMITED CONSTRUCTION
WORK -DEQ Contract No. 413005**

This CONTRACT is between the CONTRACTOR (as stated herein below) and the STATE OF MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY ("DEQ").

WITNESSETH, that CONTRACTOR and DEQ for the consideration hereinafter named agree as follows:

ARTICLE 1. SCOPE OF WORK. CONTRACTOR shall perform the following work procured by limited solicitation and described as follows:

1. This Work consists of mobilization and demobilization to/from the site, traffic control, provide water, clearing and grubbing, and closing an open mine shaft. CONTRACTOR shall fertilize and seed all areas disturbed by construction.
2. "ENGINEER", DEQ's representative during the construction period, will mark in the field the location of tree clearing and clearing and grubbing within the project area and decking and slash pile locations for the CONTRACTOR.
3. The Project Location Map and Index of Sheets is shown on Exhibit A, Sheet 1. The Explanation and Notes are provided on Exhibit A, Sheet 2. The Site Map is shown on Exhibit A, Sheet 3. The Existing Site Features are shown on Exhibit A, Sheet 4. The Construction Detail is shown on Exhibit A, Sheet 5. The Bid Form is provided as Exhibit B; and the Model Contract is Exhibit C.
4. This work includes six (6) separate bid items, of which, quantities are set forth on the Bid Form, Exhibit B.

ARTICLE 2. TIME OF COMPLETION. The effective date of this Contract shall be the latter of the two dates of signature as set forth in Article 13. **The Contract Time will be twenty one (21) consecutive calendar days**, upon which day this Contract will be terminated, unless this Contract is extended by written amendment as set forth in Article 10.

ARTICLE 3. CONTRACT SUM. DEQ shall pay CONTRACTOR:

1. For the mobilization fee(s) in increments of the lump sum price bid. Fifty (50%) percent of the lump sum price bid shall be paid upon submittal of certificates of insurance, approval of all submittals required at the Preconstruction Conference and when fully mobilized to the site. The remaining Fifty percent (50%) of the lump sum price shall be paid when all work and required site cleanup work is one hundred percent (100%) complete and CONTRACTOR has demobilized from the site.
2. DEQ shall pay CONTRACTOR the lump sum unit price for Mobilization, Traffic Control, Demobilization, Bonding, and Insurance; the lump sum unit price for Clear and Grub; per cubic yard unit price for Supply and Place Pitrun Material; the lump sum unit price for PUF Plug Installation; per cubic yard unit price for Supply and Place Reinforced Concrete; and the lump sum unit price for Obtain and Place Salvaged Backfill Material.
3. All pay item measurements shall be made by ENGINEER.
4. All costs in connection with the work, including, but not limited to, furnishing of materials, equipment, tools, supplies, insurance and providing all necessary labor and supervision to fully complete the work, shall be included in the lump sum or unit price bid. No item that is required for the proper and successful completion of the work will be paid for outside or in addition to the unit price bid.

ARTICLE 4. PROGRESS PAYMENTS. DEQ shall pay CONTRACTOR in monthly payments for all satisfactory completed work and shall make final payment after satisfactory completion of the work and demobilization.

ARTICLE 5. FINAL PAYMENT. Final payment shall be made by DEQ to CONTRACTOR under DEQ purchase order in accordance with the time periods specified by state law, when: 1) the work has been completed to DEQ's satisfaction; 2) the Contract is fully performed, and 3) DEQ has measured the actual number of acres upon which work was satisfactorily completed.

ARTICLE 6. MEETINGS. The CONTRACTOR is required to attend a pre-contract meeting with DEQ and ENGINEER in which the procedures for implementing the Contract and Work set for in Article 1 will be discussed. The CONTRACTOR is also required to attend a post-contract meeting with DEQ and ENGINEER to determine that all Work has been completed to DEQ's satisfaction.

CONTRACTOR is required to meet with DEQ and ENGINEER, to resolve technical or contractual problems that may occur during the term of this Contract or to discuss the progress made by CONTRACTOR and DEQ in the performance of their respective obligations, at no additional cost to DEQ. Meetings will occur as requested by DEQ and will be coordinated by DEQ.

ARTICLE 7. JURISDICTION AND VENUE. The laws of Montana govern this Contract. The parties agree that any litigation concerning this contract, unless the parties agree to arbitration or mediation, must be brought in the First Judicial District in and for the County of Lewis and Clark, State of Montana, and the parties consent to personal jurisdiction, subject matter jurisdiction, and venue in that court. Each party shall pay its own costs and attorney fees.

ARTICLE 8. HEALTH AND SAFETY. The Work to be performed under this Contract is inherently hazardous. **CONTRACTOR is responsible for establishing the standards of safety for its employees, landowners, agency representatives, and invitees.**

1. CONTRACTOR shall ensure that all its personnel at the Project Location follow the requirements of a Health and Safety Plan. CONTRACTOR shall submit a site specific Health and Safety Plan to DEQ PRIOR to beginning Work. CONTRACTOR agrees to comply with the site Health and Safety Plan and with the Hazardous Waste Operations and Emergency Response regulations contained at 29 Code of Federal Regulations 1910.120, as well as all other applicable federal or state health or safety laws and regulations, including without limitation, the Montana Safety Act including § 50-71-201, 202 and 203, MCA.
2. CONTRACTOR shall provide written documentation to DEQ, PRIOR to beginning Work, that all employees engaged in Work have received the OSHA 40-hr Hazardous Waste Operations and Emergency Response (HAZWOPER) Training required under 29 CFR 1910.120.

ARTICLE 9. BONDS / RETAINAGE

1. Bid Security. Each Bid must be accompanied by cash, bid bond, or other form of bid security specified in § 18-1-203, MCA, payable to Department of Environmental Quality. **A bid bond will be required if the contract amount is equal to or exceeds \$50,000.** If a bid bond is used, it shall be substantially in the form attached to this contract. Any bond which is signed by an agent, including an attorney-in-fact, must be accompanied by a certified copy of such agent's authority to act on behalf of surety. The Bid Security shall be not less than 10% (ten percent) of the Total Contract Price indicated on the Bid Form. No Bid will be considered unless it is accompanied by the required Bid Security. All Bid Securities except those of the three lowest responsible and eligible Bidders will be returned within five days, Saturdays, Sundays, and legal holidays excluded, after opening of all Bids. All Bid Securities will be returned upon the execution of the Contract or, if no award is made, within 60 days after the actual date of opening of the Bids, unless forfeited under the conditions herein stipulated.

In case a party to whom a Contract is awarded shall fail or neglect to execute the Contract and deliver to OWNER the required bonds within 5 days after receipt of Award, OWNER may determine that the Bidder has abandoned the Contract. In such case the Bid Forms and acceptance shall be null and void and the Bid Security accompanying the Bid Form shall be forfeited to OWNER as liquidated damages for such failure or neglect and to indemnify said OWNER for any loss which may be sustained by failure of the Bidder to execute the Contract and furnish the bonds as aforesaid. If the OWNER actually contracts for the performance of the work with another party, the amount forfeited to OWNER shall not exceed the amount by which the Bid Price of said Bidder was less than the amount for which the OWNER legally contracts with the other party to perform the work. Otherwise, the Bidder's bid security is absolutely forfeited in the full amount of the bid security. In case of death, disability, or other unforeseen circumstances affecting the Bidder, such Bid Security may be returned at the OWNER's discretion. After execution of the contract and acceptance of the bonds by OWNER, the Bid Security accompanying the Bid Form of the Successful Bidder will be returned.

2. Performance, Payment and Other Bonds. CONTRACTOR shall furnish performance and payment Bonds,

each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish any other Bonds required by the Contract Documents.

All Bonds shall be in the form attached hereto and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements above, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of this Article 7.

All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required.

ARTICLE 10. MODIFICATIONS This Contract may not be enlarged, modified, or altered except by a written modification signed by DEQ and CONTRACTOR and attached to the original of this Contract. No handwritten change, addition or erasure of any printed portion of this Contract or on any task order issued pursuant to this Contract shall be valid or binding upon either party.

ARTICLE 11. TERMINATION. This Contract may be terminated by either party in the event of default or by DEQ for its convenience as set forth below:

1. This Contract (or any task order or work order issued under this Contract) may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this Contract through no fault of the terminating party, provided that no termination may be effected unless the other party is given: (1) not less than ten (10) calendar days' actual written notice of intent to terminate, and (2) an opportunity for consultation with the terminating party prior to termination. The notice shall identify the date CONTRACTOR is to stop any or all of the work required under any task order(s) or work order(s). Upon termination for default, the parties shall have such rights and remedies as each would have against the other at law or in equity under the statutes, rules, and case law of the State of Montana. DEQ and CONTRACTOR agree that in the event either of them incurs any legal costs or attorney's fees whatsoever, each party shall pay its own legal costs and attorney's fees.
2. This Contract may be terminated in whole or in part in writing, by the DEQ for its convenience, provided that the CONTRACTOR is given: (1) not less than ten (10) calendar days' actual written notice of intent to terminate, and (2) an opportunity for consultation with DEQ prior to termination. The notice shall identify the date CONTRACTOR is to stop any or all of the work required under any task order(s) or work order(s). Upon termination for DEQ's convenience, CONTRACTOR shall be entitled to payment in accordance with this Contract (or any task order) for services rendered and expenses incurred by CONTRACTOR during the period prior to the effective date of termination.

ARTICLE 12. MISCELLANEOUS.

1. Taxes/Permits/Fees. CONTRACTOR shall secure and pay for all permits and inspections, give all notices, pay all taxes and fees and comply with all laws, ordinances, rules, regulations and lawful orders bearing on the performance of the work.
2. Labor/Materials Equipment. Unless otherwise specified, CONTRACTOR shall provide and pay for all labor, materials, equipment, tools, utilities, transportation, temporary construction and services for the proper execution and completion of the work. Unless otherwise specified, all material and equipment provided shall be new or in good condition. All workmanship shall be of good quality and in keeping with the standard of the respective trades.
3. Indemnification and Insurance. CONTRACTOR shall maintain for the duration of the contract, at its cost and expense, insurance at the limits and types required by DEQ for this Contract, against claims for injuries to persons or damages to property, including contractual liability, which may arise from or in

connection with the performance of the work by CONTRACTOR, its agents, employees, representatives, assigns, or Subcontractors.

a. **Hold Harmless and Indemnification:** CONTRACTOR agrees to protect, defend, and save the state, its elected and appointed officials, agents, and employees harmless from and against all claims, demands, causes of action of any kind or character, including the cost of defense thereof, on account of bodily or personal injuries, death, or damage to property arising out of services or work performed or omissions of work or in any way resulting from the acts, negligent or otherwise, or omissions of CONTRACTOR, its agents, employees, assigns, and/or Subcontractors under this Contract.

b. **CONTRACTOR's Insurance:** Insurance required under all sections herein shall be in effect for the duration of the contract. Insurance required herein shall be provided by insurance policies issued only by companies currently authorized to do business in the state of Montana. No CONTRACTOR or Subcontractor shall commence work under this Contract until all required insurance has been obtained and proof of insurance, in the form of certificates of insurance satisfactory to DEQ, have been delivered to DEQ.

c. CONTRACTOR shall carry **Workers' Compensation Insurance**, maintained at the limits required by statute. Such Workers' Compensation Insurance shall protect CONTRACTOR from claims made by his own employees, the employees of any Subcontractor, and also claims made by anyone directly or indirectly employed by CONTRACTOR or Subcontractor. CONTRACTOR shall require each Subcontractor similarly to provide Workers' Compensation Insurance.

d. CONTRACTOR shall carry occurrence coverage **Commercial General Liability Insurance** including coverage for premises, operations, independent CONTRACTOR's protective, products and completed operations, broad form property damage, and comprehensive automobile liability insurance with not less than the following limits of liability: \$500,000 per occurrence; aggregate limit of \$1,000,000.

i. The Commercial General Liability Insurance shall provide coverage for both bodily injury, including accidental death and property damage which may arise out of the work under this Contract, or operations incidental thereto, whether such work and operations be by CONTRACTOR or by Subcontractor or by anyone directly or indirectly employed by CONTRACTOR or Subcontractor, or by anyone for whose acts any of them may be liable.

ii. CONTRACTOR's liability insurance policies shall list DEQ as an additional insured. Should CONTRACTOR not be able to list DEQ as an additional insured, CONTRACTOR shall purchase a per occurrence OWNER's / CONTRACTOR's Protective Policy (OCP) with DEQ as the insured party in the same occurrence and aggregate limited as indicated above for the CONTRACTOR's Commercial General Liability Policy.

iii. Property damage liability insurance shall be written without any exclusion for injury to or destruction of any building, structure, wires, conduits, pipes, or other property above or below the surface of the ground arising out of the blasting, pile driving, excavation, filling, grading or from the moving, shoring, underpinning, raising or demolition of any building or structure or structural support thereof.

iv. CONTRACTOR's insurance coverage shall be PRIMARY insurance as respects DEQ, its officers, elected and appointed officials, employees and volunteers. Any insurance or self insurance maintained by the state, its officers, elected and appointed officials, employees and volunteers shall be excess of the CONTRACTOR's insurance and shall not be attributable to it.

e. The insurance required under this Contract shall not be cancelled or materially changed unless CONTRACTOR provides at least thirty (30) days prior written notice to DEQ.

4. **Construction CONTRACTOR Registration.** CONTRACTOR must register with the Department of Labor & Industry under 39-9-201 and 39-9-204, MCA, PRIOR to the Contract being executed by the State of Montana for all projects greater than \$2,500.00 and a copy of the registration certificate must be provided DEQ.

5. Gross Receipts Tax. In compliance with 15-50-206, MCA, CONTRACTOR will have 1% of his gross receipts withheld by DEQ from all payments due for Contracts over \$5,000. Each Subcontractor who performs work greater than \$5,000 shall have 1% of its gross receipts withheld by CONTRACTOR. CONTRACTOR shall notify the Department of Revenue on the department's prescribed forms.
6. Equal Employment Opportunity. All hiring and other employment practices shall be non-discriminatory, based on merit and qualifications without regard to race, color, religion, creed, political ideas, sex, age, marital status, physical or mental handicap, or national origin.
7. Record Keeping. Payrolls and basic records pertaining to the project shall be kept on a generally recognized accounting basis and shall be available to the OWNER, Legislative Auditor, the Legislative Fiscal Analyst or his authorized representative at mutually convenient times. CONTRACTOR shall keep accounting records for a period of three years after completion and acceptance of the project by the OWNER.
8. Montana Prevailing Wage Rate Requirements. CONTRACTOR must comply with the requirements for payment of wages set out in Title 18, Chapter 2, Part 4, MCA. The rates applicable to this project will generally be the rates specified for heavy and highway construction. CONTRACTOR agrees to pay required wage rates and comply with all other legal requirements for fringe benefits, hours and working conditions. The rates specified are minimum rates, and where the federal rate differs from the state rate, the higher of the two will be the required minimum. Bidder should, if uncertain of legal requirements or applicable rates for this project or certain categories of workers, seek clarification from the Montana Department of Labor and Industry. (Phone: 406-444-5600 / website: <http://erd.dli.mt.gov/labor-standards-bureau>).

If CONTRACTOR employs any person in a trade or occupation not classified in the wage determinations, such person shall be paid at not less than such rates as shall be determined by the Montana Department of Labor and Industry. Such approved minimum rate shall be retroactive to the time of the initial employment of such person in such trade or occupation. CONTRACTOR shall notify DEQ of its intention to employ persons in trades or occupations not classified in sufficient time to obtain approved rates for such trades or occupations.

Under 18-2-406, MCA, CONTRACTOR must post in a prominent and accessible location at the site, not later than the first day of work, a legible statement of all wages to be paid to employees employed at the site. Under 18-2-423, MCA, any employees receiving an hourly wage are to be paid on a weekly basis.

Under 18-2-422, MCA, CONTRACTOR must maintain payroll records in a manner readily capable of being certified for submission under 18-2-423, MCA, for a period of not less than 3 years after the CONTRACTOR's completion of work on the project.

9. Compliance with Laws. The CONTRACTOR must, in performance of Work under this Contract, fully comply with all applicable federal, state, or local laws, rules and regulations, including the Montana Human Rights Act, the Civil Rights Act of 1964, the Age Discrimination Act of 1975, the Americans with Disabilities Act of 1990, and Section 504 of the Rehabilitation Act of 1973. Any subletting or Subcontractor shall comply with this provision. In accordance with section 49-3-207, MCA, the CONTRACTOR agrees that the hiring of persons to perform this Contract will be made on the basis of merit and qualifications and there will be no discrimination based upon race, color, religion, creed, political ideas, sex, age, marital status, physical or mental disability, or national origin by the persons performing the contract.

ARTICLE 13. EXECUTION. DEQ and CONTRACTOR through their authorized agents have executed this Contract on the dates set out below. The Effective Date of this Contract, shall be the latter of the two dates of signature

CONTRACTOR:

CONTRACTOR's Registration Certificate No. 21975

Company

Shred Excavating Inc 9/24/12
Date

Taxpayer's I.D. No. 81-0467425

OWNER:

STATE OF MONTANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Vicki Woodrow 10/23/12
VICKI WOODROW Date

Contracts Officer
Financial Services
Metcalf Building
1520 East Sixth Avenue
PO Box 200901
Helena, Montana 59620-0901

Approved for Legal Content:

[Signature]

DEQ Legal Counsel

9-27-12

Date

HUMBOLDT MINE RECLAMATION PROJECT, DEQ CONTRACT NO. 413005

BID OPENING DATE, SEPTEMBER 20, 2012, 2:00PM

BID TABULATION													
BID ITEM	DESCRIPTION	Estimated Quantity	Unit	Engineer's Estimate		Gruber Excavating		Helena Sand and Gravel,		Hall Construction Services		Mockel Precast and	
				Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
1	Mobilization, Traffic Control, Demobilization, Bonding, and Insurance*	1	LS	\$ 3,500.00	\$ 3,500.00	\$ 500.00	\$ 500.00	\$ 3,500.00	\$ 3,500.00	\$ 3,900.00	\$ 3,900.00	\$ 3,178.89	\$ 3,178.89
2	Clearing and Grubbing	1	LS	\$ 4,200.00	\$ 4,200.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 1,500.00	\$ 1,500.00	\$ 715.00	\$ 715.00
3	Supply and Place Pitrun Material	550	CY	\$ 24.50	\$ 13,475.00	\$ 31.80	\$ 17,490.00	\$ 35.00	\$ 19,250.00	\$ 30.00	\$ 16,500.00	\$ 30.85	\$ 16,967.50
4	PUF Plug installation	1	LS	\$ 5,500.00	\$ 5,500.00	\$ 2,800.00	\$ 2,800.00	\$ 3,200.00	\$ 3,200.00	\$ 2,500.00	\$ 2,500.00	\$ 1,716.00	\$ 1,716.00
5	Supply and Place Reinforced Concrete	30	CY	\$ 150.00	\$ 4,500.00	\$ 200.00	\$ 6,000.00	\$ 335.00	\$ 10,050.00	\$ 450.00	\$ 13,500.00	\$ 226.13	\$ 6,783.90
6	Obtain and Place Salvaged Backfill Material	1	LS	\$ 1,120.00	\$ 1,120.00	\$ 500.00	\$ 500.00	\$ 800.00	\$ 800.00	\$ 1,500.00	\$ 1,500.00	\$ 2,431.00	\$ 2,431.00
SUBTOTAL				XX	\$ 32,295.00	XX	\$ 27,790.00	XX	\$ 37,800.00	XX	\$ 39,400.00	XX	\$ 31,792.29

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Montana International Ins. A Member of Payne Financial Group P.O. Box 6127 Helena, MT 59604-0638	CONTACT NAME:	
	PHONE (A/C, No, Ext):	FAX (A/C, No):
E-MAIL ADDRESS:		
INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A: Montana State Fund		
INSURER B:		
INSURER C:		
INSURER D:		
INSURER E:		
INSURER F:		

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$	
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$	
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$	
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N (Mandatory in NH) if yes, describe under DESCRIPTION OF OPERATIONS below		N/A	031336530	07/01/2012	07/01/2013	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$500,000 E.L. DISEASE - EA EMPLOYEE \$500,000 E.L. DISEASE - POLICY LIMIT \$500,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER Montana Dept of Environmental Quality PO Box 200901 Helena, MT 59620-0901	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
--	--

NOTICE OF AWARD

TO: Gruber Excavating Inc.

DATE: September 24, 2012

32 Bitterroot Lane
Montana City, Montana 59634

PROJECT: Limited Construction Services-
Humboldt Mine Shaft Reclamation
Project

DEQ Contract No.: 413005

PROJECT DESCRIPTION: The Humboldt Mine Shaft Reclamation Project will consist of the following:

- Constructing a temporary access road to the shaft
- Backfilling the open shaft with imported pitrun material
- Installing a PUF (expandable foam) plug
- Placing reinforced concrete fill on top of the PUF plug
- Mounding on-site material on top of the reinforced concrete
- Removing and reclaiming the temporary access road
- Reclaiming all disturbed surfaces

The Owner has considered the Bid submitted by you for the above-described Work in response to its Bid Opening dated September 20, 2012.

You are hereby notified that your bid has been accepted for items in the amount of \$ 27,790.00.

Within five (5) days after receipt of this Notice of Award (Saturdays, Sundays and legal holidays excluded) or as Owner and Contractor otherwise mutually agree, you shall execute and deliver to Owner a copy of the Acceptance of Notice of Award, all executed copies of the Agreement, and all Certificates of Insurance and copies of applicable insurance policies and/or certificates as set forth in Article 12(3) of the Agreement.

If you fail to execute said Agreement and to furnish said Insurance within five (5) days after receipt of this Notice of Award (Saturdays, Sundays and legal holidays excluded) or as Owner and Contractor otherwise mutually agree, said Owner will be entitled to consider all your rights (arising out of the Owner's acceptance of your Bid) as abandoned. The Owner will be entitled to exercise such other and further rights as may be granted by law.

Please return an acknowledged copy of this Notice of Award to the Owner.

Dated 24th day of September, 2012.

OWNER:

DEPARTMENT OF ENVIRONMENTAL QUALITY

By:

Title:

John Koeth
DBQ - AMCB

ACCEPTANCE OF NOTICE OF AWARD

Receipt of the above Notice of Award is hereby acknowledged this 24th day of September, 2012.

CONTRACTOR:

Gruber Excavating, Inc.

By:

Title:

Victor J. Gruber
President

NOTICE TO PROCEED

TO: Gruber Excavating, Inc.
32 Bitterroot Lane
Montana City, Montana 59634

DATE: October 16, 2012

PROJECT: **Limited Construction Services -
Humboldt Mine Shaft Reclamation
Project**

DEQ Contract No. 413005

In accordance with the Agreement dated October 3, 2012, you are hereby notified to commence Work no later than October 16, 2012. The date of completion of all Work is November 7, 2012.

OWNER:

DEPARTMENT OF ENVIRONMENTAL QUALITY

By: *J. Sta. CM*
Title: Reclamation Specialist

ACCEPTANCE OF NOTICE TO PROCEED

Receipt of the above Notice to Proceed is hereby acknowledged this 16 day of Oct, 2012.

CONTRACTOR:

Gruber Excavating, Inc.

By: *William Gruber*
Title: Owner

Performance Bond

Bond No. KO8612985

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

Gruber Excavating, Inc.
32 Bitterroot Lane
Montana City, MT 59634

SURETY (Name and Address of Principal Place of Business):

Westchester Fire Insurance Company
5619 South Curtice Street
Littleton, CO 80120

OWNER (Name and Address):

Montana Department of Environmental Quality
1100 N. Last Chance Gulch
Helena, MT 59620-0901

CONTRACT

Date: 9/24/2012

Amount: (\$27,790.00) Twenty Seven Thousand Seven Hundred Ninety Dollars and 00/100

Description (Name and Location):

Limited Construction Services-Humboldt Mine Shaft Reclamation Project, DEQ Contract No. 413005

BOND

Date (Not earlier than Contract Date): 9/24/2012

Amount: (\$27,790.00) Twenty Seven Thousand Seven Hundred Ninety Dollars and 00/100

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: _____ (Corp. Seal)
Gruber Excavating, Inc.

Signature: *Vicki J Gruber*

Name and Title: Vicki J Gruber
President

SURETY

Company: _____ (Corp. Seal)
Westchester Fire Insurance Company

Signature: *Jonathan M Emmons*

Name and Title: Jonathan M. Emmons Attorney-in-Fact
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: _____ Seal)

Signature: _____

Name and Title: _____



SURETY

Company: _____ (Corp. Seal)

Signature: _____

Name and Title: _____

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

3.3. The OWNER has agreed to pay the Balance of the Contract Price to:

3.3.1. The Surety in accordance with the terms of the Contract;

3.3.2. Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

4.4.1. After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

4.4.2. Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied

liability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1. Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY--Name, Address and Telephone)

AGENT or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

Payne Financial Group, Inc. 1200 N. Montana Avenue Helena, MT 59604

Payment Bond

Bond No. KO8612985

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

Gruber Excavating, Inc.
32 Bitterroot Lane
Montana City, MT 59634

OWNER (Name and Address):

Montana Department of Environmental Quality
1100 N. Last Chance Gulch
Helena, MT 59620-0901

CONTRACT

Date: 9/24/2012

Amount: (\$27,790.00) Twenty Seven Thousand Seven Hundred Ninety Dollars and 00/100

Description (Name and Location):

Limited Construction Services-Humboldt Mine Shaft Reclamation Project, DEQ Contract No. 413005

SURETY (Name and Address of Principal Place of Business):

Westchester Fire Insurance Company
5619 South Curtice Street
Littleton, CO 80120

BOND

Date (Not earlier than Contract Date): 9/24/2012

Amount: (\$27,790.00) Twenty Seven Thousand Seven Hundred Ninety Dollars and 00/100

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

Company: () (Corp. Seal)

Gruber Excavating, Inc.

Signature: Viaki J. Gruber

Name and Title:

Viaki J. Gruber, President

SURETY

Company: () (Corp. Seal)

Westchester Fire Insurance Company

Signature: Jonathan M. Emmons

Name and Title: Jonathan M. Emmons Attorney-in-Fact
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: () (Corp. Seal)

Signature: _____

Name and Title:



SURETY

Company: () (Corp. Seal)

Signature: _____

Name and Title:

EJCDC No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:
 - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.
3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.
4. The Surety shall have no obligation to Claimants under this Bond until:
 - 4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2. Claimants who do not have a direct contract with the CONTRACTOR:
 1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.
5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.
6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
 - 6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 6.2. Pay or arrange for payment of any undisputed amounts.
7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.
9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.
15. DEFINITIONS
 - 15.1. Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.
 - 15.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.
 - 15.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY--Name, Address and Telephone)

AGENCY or BROKER:

OWNER'S REPRESENTATIVE (Engineer or other party):

Payne Financial Group, Inc.

1200 N. Montana Avenue Helena, MT 59604

Power of Attorney

Westchester Fire Insurance Company

Know all men by these presents: That WESTCHESTER FIRE INSURANCE COMPANY, a corporation of the Commonwealth of Pennsylvania pursuant to the following Resolution, adopted by the Board of Directors of the said Company on December 11, 2006, to wit:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such persons written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested.

Does hereby nominate, constitute and appoint Jonathan M. Emmons all of the City of (Helena), (MT), each individually if there be more than one named, its true and lawful attorney-in-fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding FIVE MILLION DOLLARS (\$5,000,000.00) and the execution of such writings in pursuance of these presents shall be as binding upon said Company, as fully and amply as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office,

IN WITNESS WHEREOF, the said Stephen M. Haney, Vice-President, has hereunto subscribed his name and affixed the Corporate seal of the said WESTCHESTER FIRE INSURANCE COMPANY this 1st day of January, 2011.

WESTCHESTER FIRE INSURANCE COMPANY



Stephen M. Haney
Stephen M. Haney, Vice President

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF PHILADELPHIA ss.

On this 1st day of January AD, 2011 before me, a Notary Public of the Commonwealth of Pennsylvania in and for the County of Philadelphia came Stephen M. Haney, Vice-President of the WESTCHESTER FIRE INSURANCE COMPANY to me personally known to be the individual and officer who executed the preceding instrument, and he acknowledged that he executed the same, and that the seal affixed to the preceding instrument is the corporate seal of said Company; that the said corporate seal and his signature were duly affixed by the authority and direction of the said corporation, and that Resolution, adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of Philadelphia the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
KAREN E. BRANDT, Notary Public
City of Philadelphia, Phila. County
My Commission Expires September 26, 2014

Karen E. Brandt
Notary Public

I, the undersigned Assistant Secretary of the WESTCHESTER FIRE INSURANCE COMPANY, do hereby certify that the original POWER OF ATTORNEY, of which the foregoing is a substantially true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of the Corporation, this 25 day of September 20 12.



William L. Kelly
William L. Kelly, Assistant Secretary

APPENDIX E

PHOTOGRAPHIC LOG



Photo 04-25-12_09-44: Existing shaft, Photo Direction West.



Photo 04-25-12_09-43: Existing shaft with landowner's barriers in place, Photo Direction North.



Photo site 2: Aerial photo provided by DEQ looking Southwest.



Photo 04-25-12_10-18: Existing shaft with landowner's barriers in place, Photo Direction West.



Photo 10-16-12_11-23_337: Staging Area Graded and cleared of debris, Photo Direction: Northwest.
Day 1



Photo: 2012-10-16_12-34-50_293: Access to Shaft cleared and grubbed. Photo Direction: North
Day 1



Photo: 2012-10-17_08-46-52_786: Stockpile of pit-run material in staging area. Photo Direction: Northwest
Day 2



Photo: 2012-10-17_08-47-00_884: Water truck used for dust suppression. Photo Direction: Northeast
Day 2



Photo: 2012-10-17_12-16-28_11: Backfilling shaft with excavator. Photo Direction: East
Day 2



Photo: 2012-10-17_12-16-42_550: Backfilling shaft, dozer pushing material to the excavator. Photo Direction: East
Day 2



Photo: 2012-10-17_14-01-41_518: Backfilling shaft, dozer pushing material to the excavator. Photo Direction: Northwest
Day 2



Photo: 2012-10-17_15-25-06_453: Backfilled shaft, depth of pit-run is 16 feet from collar. Photo Direction: West
Day 2



Photo: 2012-10-18_08-29-11_620: Backfilled shaft, barrier fence installed around shaft on Day 2, Shaft walls cleaned. Photo Direction: West
Day 3



Photo: 2012-10-18_08-40-42_246: PUF Delivered to site. Photo Direction: South
Day 3



Photo: 2012-10-18_09-03-16_988: PUF installation began, mixing material and pouring into shaft. Photo Direction: North
Day 3



Photo: 2012-10-18_09-16-03_243: PUF material pouring into shaft. Photo Direction: Northwest
Day 3



Photo: 2012-10-18_11-58-41_55: PUF material installation complete, elevation is 9 feet below collar. Photo
Direction: West
Day 3



Photo: 2012-10-18_13-49-34_214: PUF material installation completed, installation of rebar began. Photo
Direction: West
Day 3



Photo: 2012-10-18_16-27-21_504: installation of rebar completed. Photo Direction: West
Day 3



Photo: 2012-10-19_13-08-25_783: Installation of concrete after excess foam removed from shaft walls. Photo
Direction: West
Day 4



Photo: 2012-10-19_13-21-10_100: Installation of concrete completed elevation is 4 feet below collar. Photo
Direction: Northwest
Day 4



Photo: 2012-10-22_08-20-52_652: Installation of concrete completed began final backfilling of shaft. Photo
Direction: East
Day 5



Photo: 2012-10-22_08-53-54_381: Final backfilling of shaft preparation for septic system hook up by others.
Photo Direction: South
Day 5



Photo: 2012-10-22_11-05-01_3: Septic system hooked up by others. Photo Direction: West
Day 5



Photo: 2012-10-22_11-48-23_444: Backfill complete and fencing material stockpiled for owner. Photo Direction: Northwest
Day 5



Photo: 2012-10-22_11-05-01_3: Staging area graded to owner's specifications. Photo Direction: Northwest
Day 5



Photo: 2012-10-22_12-50-22_477: Access to drain field graded to owner's specifications. Photo Direction: Northwest
Day 5



Photo: 2012-10-29_10-43-38: Access to drain field, seeding completed by DEQ. Photo Direction: Northwest



Photo: 2012-10-29_10-44-05: Shaft area seeding complete by DEQ. Photo Direction: Northwest



Photo: 2012-10-29_10-44-05: Staging area seeding complete by DEQ. Photo Direction: East

APPENDIX F

DAILY CONSTRUCTION LOGS



Location HUMBOLDT MINEDate 10-16-2012Project / Client HUMBOLDT MINE SHUTT CLOSURE / MDEQCLOUDY - RAIN 50°F - 62°FDAY 1

- 0900 CONSTRUCTION KICK OFF @ THE SITE w/ BILL GRUBER, PEBBLES DPP & JAMIE MASHOUVE
*SIGNED NTP
DISCUSSED: METHOD OF CONSTRUCTION
: WORK SCHEDULE 8:00-4:30
: MATERIAL SOURCE - INSPECTED OK'D
- 1000 CLEARED AREA & PREP'D FOR MATERIAL DELIVERY
- 1030 MDEQ SALVAGED BAT NETTING FROM SHUTT COVER
STOPPED RAINING
CAT D5B DOZER ON SITE @ 0900
- 1130 TRUCK D51' - BLUE KENWORTH
- 1138 TRUCK W/ DOT' 1301098 WHITE IH
- 1208 CLEANED SECONDARY DRIVEWAY TO ~~WATER~~ STAGING AREA w/ DOZER.
- 1215 WHITE IH.
- 1222 BLUE KENWORTH D51'
- 1230 MDEQ & CONTRACTOR DISCUSSED CHANGE ORDER FOR ROAD IMPROVEMENT & DRAIN FIELD WORK
- 1251 WHITE IH. ' - END DUMP
- 1300 BLUE K. ' D51' - END DUMP
- 1338 D51
- 1355 WHITE IH.
- 1412 GRADING ON SITE. GRADING DRIVEWAY & WINSCOTT

Location _____

Date _____

Project / Client _____

LOAD COUNT HHH HHH HHH
14 TICKETS.

1417 D51' WHITE	GREEN WHITE INTERNATIONAL
BILL GRUBER	TARE 23860 lbs
CELL 200-0630	BLUE KENWORTH
CHRIS GRUBER	TARE 26820 lbs
CELL 202-2114	
1430 - WHITE ' IH	
1458 - BLUE ' D51	
1512 - WHITE ' IH	
1539 - BLUE ' D51	
1555 - WHITE I.H.	
1618 BLUE ' D51	LAST TRUCK

TALLY OF TRUCK TICKETS

361,754 lbs + 10,500 = 372,254 ^{3m}

JM

Location HUMBOLDT MINE Date 10-17-2012Project / Client HUMBOLDT MINE SHAFT CLOSURE / MDEQWINDY, PARTLY CLOUDY 41° - 52°f DAY 2

0750 JM ON SITE.

0820 GREEN WHITE IH¹

0822 D-51²

0845 WATER TRUCK ON SITE TO WET ROAD & STAGING AREA

0855 WHITE IH³ & DOZER KNOCKED FENCE DOWN.

0900 D-51⁴

0935 WHITE IH⁵

0940 D-51⁶

1014 WHITE IH⁷

1020 D-51⁸ - STARTED TO TAKE FENCE DOWN AROUND SHAFT.

1054 WHITE IH⁹

1101 D-51¹⁰

1135 WHITE IH¹¹

1142 D-51¹²

1145 EXCAVATOR IS ONSITE CASE CX20B
BEGAN CLEARING TREES & BUILDING PAD TO WORK
OFF. PULLED FENCE FROM SHAFT

1214 WHITE IH¹³

1220 BEGAN BACKFILLING SHAFT

1235 D-51¹⁴

1256 1315 D-51¹⁵

Location _____ Date _____

Project / Client _____

LOAD COUNT ~~HT HT HT HT~~ #
26 TICKETS1327 - BELLY DUMP¹¹1338 - WHITE IH¹⁷1356 - D-51¹³

- BACKFILL IS 22' FROM TOP OF COLLAR.

1414 BELLY DUMP¹⁸

BACKFILL OF PIT RUN IS COMPLETE ENDED @ 16' FROM COLLAR MEASURED FROM NORTH SIDE OF SHAFT.

1430 EXCAVATED DRAINFIELD

1515 WATER TRUCK ONSITE TO CLEAN SHAFT - BELLY DUMP²⁰

1520 ORANGE DUMP TRUCK ONSITE TO HALL OFF

1610 GRUBBER OFFSITE AFTER FENCING OFF SHAFT.

1615 JM OFFSITE

TODAY'S

TOTAL WEIGHT 501660

Location HUMBOLDT MINE Date 10-18-12Project / Client HUMBOLDT MINE SHAFT CLOSURE

Pt. Cloudy 30" - 60" DAY 3

0820 JM ON SITE
GRUBER ON SITE PERFORMING MAINTENANCE ON EQUIPMENT.

0830 MDEQ ON SITE W/ FOAM.
S. OPP WENT THROUGH PROCEDURES ON FOAM IN & MIXING, TAMPING.

0850 BEGAN POURING FOAM.

1016 10 BOXES OF OF FOAM PLACED

1045 P. OPP ON SITE.

1055 14 BOXES PLACED

1152 LAST BAG POURED = 20 BOXES PLACED

1210 GRUBER & MDEQ OFF SITE
FINAL ELEVATION IS 9' BELOW COLLAR.

1315 BACK ON SITE DRILLING HOLES FOR REBAR
DONE BY 1410

1420 MDEQ ON SITE P. OPP & J. KOERTH

1630 FINISHED REBAR

1646 GRUBER OFF SITE JM OFF SITE 1705


Location _____ Date 10-18-12

Project / Client _____

DAY 3

X CEMENT SCHEDULED FOR 1200 FLIDAY
873,914 / 2362 lbs/cy
370 cy DELIVERED TO SITE

10

Location Humboldt Mine Date 10-19-12Project / Client Humboldt Mine Site / MDEQ

Fly Cloud / 34' - 64' DM4

1130 JM ONSITE
 GRABER ONSITE GRADED ROAD ADDED
 4 LOADS OF GRAVEL, WATERED ROAD

1212 CEMENT TRUCK ONSITE
 CALLED CANCELED 3RD TRUCK

1300 CEMENT TRUCK ONSITE w/ MDEQ (P. OFF)

1330 GRABER OFF-SITE

1350 MDEQ OFFSITE
 JM OFFSITE

11

Location _____ Date _____

Project / Client _____

- 19 CY CONCRETE DELIVERED

Location Humboldt Mine Date 10-22-12Project / Client Humboldt Mine Shaft Closure

CLEAR Sunny 25° - 45° f DAY 5

- 0805 JM ON SITE, GRUBER ON SITE
- 0815 - PREP'ING SHAFT FOR MOCKEL PRECAST
To Hook up SEPTIC SYSTEM
- 0935 MOCKEL ON SITE, JAY PLANT ON SITE
- 0945 JAY OFF SITE, GRUBER OFF SITE
SCHEDULED MEETING w/ GRUBER & MDEQ
FOR 11:00 TO SIGN FINAL PAPER WORK
- 10:45 MOCKEL FINISHED PLUMBING OF TANK TO DISTRIBUTION
BOX, TO LATERAL #1. EXTENDED LATERAL
7'. BUTCH LEFT TO RETRIEVE PARTS FOR
TANK (FILTER & PLUG).
- 11:00 CHRIS BEARY w/ GRUBER SIGNED PAPER WORK
- 11:35 MOCKEL FINISHED SEPTIC
- 12:00 EXCAVATOR OFF SITE. 12:30 DOZER OFF SITE
- 12:50 MDEQ & JM OFF SITE
- 

Location _____ Date _____

Project / Client _____

APPENDIX G

MATERIAL SUBMITTALS



Opp, Pebbles

From: Jamie Mongoven [jmongoven@trihydro.com]
Sent: Tuesday, October 23, 2012 8:48 AM
To: Opp, Pebbles
Subject: Humboldt pit run material inspection

Hi Mrs. Opp,

On Oct. 16th at 10:40 am I inspected the source for the import material the contractor would like to use for the Humboldt Mine Shaft Closure Project.

The pit run material was consistent with the requirements identified in the contract documents. The material was classified as: sandy, clayey, gravel with cobbles, dark grayish brown, damp. The max size of the cobbles was estimated at 10" in the largest dimension. The material source is located at the City Count Sanitation landfill, located at 300 US Hwy 518, East Helena, MT 59635.

Jamie Mongoven, PE
Mining Engineer



OUR SAFETY IS MY RESPONSIBILITY

2707 Broadwater Ave
Helena, Montana 59601
(406) 558-4848 (Office)
(406) 558-4181 (Fax)
(406) 439-4502 (Cell)
jmongoven@trihydro.com
www.trihydro.com

Connect with us on:



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FOAM CONCEPTS, LLC

29 9th Street, PO Box 217

Cloquet, MN 55720

1-888-744-7584

www.foamconceptsllc.com

FOAM CONCEPTS POUR SYSTEM ES 24-005

DESCRIPTION:

FC ES 24-005 is a two component, water blown, all PMDI based low density pour-in-place polyurethane foam system designed for void filling. FC ES 24-005 has been specifically formulated to facilitate hand bag mixing for specialty applications in the mining industry. FC ES 24-005 is formulated to be mixed 1/1 by volume.

DISTINGUISHING CHARACTERISTICS:

- Ease of Mix
- High Closed Cell Content
- Good Dimensional Stability

TYPICAL RESIN PROPERTIES:

	<u>ES 24-005 R</u>	<u>ES 24-005 A</u>
Viscosity	550 cps	200 cps
Lbs./Gallon	8.8 lbs.	10.2 lbs.
Appearance	transparent, amber liquid	transparent, brown liquid
Shelf Life (varies by size)	Up to 3 years	Up to 3 years

MIX RATIO:

	<u>ES 24-005 R</u>	<u>ES 24-005 A</u>
By Weight	100 parts	117 parts
By Volume	100 parts	100 parts

TYPICAL REACTION PROPERTIES:

Hand Mix @ 72°F

Cream Time (sec) 45
Gel Time (sec) 200
Rise Time (sec) 330
Density (FRC) 2.6 pcf

TYPICAL PHYSICAL PROPERTIES:

Core Density 2.6 pcf
Closed Cell Content >90%
Compressive Strength 35 psi
Moisture Vapor Transmission 2-4 perm in.
Water Absorption, ASTM D2842 =0.06 lbs/ft²
Resistance to Solvents Excellent
Resistance to Mold and Mildew Excellent
Maximum Service Temperature 200°F

*The above values are average values obtained from laboratory experiments and should serve only as guide lines.

FC ES 24-005 APPLICATION INFORMATION

EQUIPMENT AND COMPONENT RATIOS:

FC ES 24-005 can be mixed by hand (either mechanically or by bag kneading). Chemicals should be brought to at least 70°F for optimum performance. Materials should be weighed out at the prescribed weight ratio.

FOAMING RECOMMENDATION:

To obtain optimum yield, consistent foam quality and quick set times, the surrounding ground temperature should be 70°F or higher and as free of water as possible.

STORAGE AND USE OF CHEMICALS:

Store chemicals in a cool, dry place out of direct sunlight. Storage temperature should not exceed 100°F. If storing bulk chemicals (drums or totes) keep containers tightly closed when not in use and, if possible, under nitrogen pressure of 2 - 3 psi after they have been opened.

Bagged product shelf life may increase if stored with a desiccant type material such as AN or salt. Periodically rolling over the boxes has shown to increase shelf life as well. Remember to rotate your stock and use older product first.

SAFE HANDLING OF LIQUID COMPONENTS:

Use caution in removing bungs from the container. Loosen the small bung first and let any built up gas escape before completely removing. Avoid prolonged breathing of vapors. In case of chemical contact with eyes, flush with water for at least 15 minutes and get medical attention. For further information refer to "MDI-Based Polyurethane Foam Systems: Guidelines for Safe Handling and Disposal" publication AX-119 published by Alliance For The Polyurethanes Industry 1300 Wilson Blvd, Suite 800, Arlington, VA 22209.

Caution:

Polyurethane products manufactured or produced from this liquid system may present a serious fire hazard if improperly used or allowed to remain exposed or unprotected. The character and magnitude of any such hazard will depend on a broad range of factors which are controlled and influenced by the manufacturing and production process, by the mode of application or installation and by the function and usage of the particular product. *Any flammability rating contained in this literature is not intended to reflect hazards presented by this or any other material under actual fire conditions. These ratings are used solely to measure and describe the product's response to heat and flame under controlled laboratory conditions.* Each person, firm or corporation engaged in the manufacture, production, application, installation or use of any polyurethane product should carefully determine whether there is a potential fire hazard associated with such product in a specific usage, and utilize all appropriate precautionary and safety measures.

The information on our data sheets is to assist customers in determining whether our products are suitable for their applications. The customers must satisfy themselves as to the suitability for specific cases. Foam Concepts, LLC, warrants only that the material shall meet its specifications; this warranty is in lieu of all other written or unwritten, expressed or implied warranties and North Carolina Foam Industries expressly disclaims any warranty of merchantability, fitness for a particular purpose, or freedom from patent infringement. Accordingly, buyer assumes all risks whatsoever as to the use of the material. Buyer's exclusive remedy as to any breach of warranty, negligence or other claim shall be limited to the purchase price of the material. Failure to adhere strictly to any recommended procedures shall relieve Foam Concepts, LLC and North Carolina Foam Industries of all liability with respect to the material or the use thereof.

Equipment-less Foam Sealant™ from Foam Concepts, LLC

Storage, Mixing and Installation Instructions

1. Store Equipment-less Foam Sealant™ (EFS) in a dry, temperate location out of the sun, preferably below 85 degrees F. Allow head space above boxes or drums to help moderate large changes in temperature over time.
2. Wear chemical eye protection and gloves (nitrile preferred) when handling. The dark brown A part does stain and can irritate your skin.
3. If a bag is leaking, you can recover much of the foam by mixing all the remaining liquids in a separate container such as a bucket or garbage bag.
4. Secure your work area and don any protective or fall arresting equipment as required.
5. Install your form work and any drain or vent pipes as required.
6. Use care when cutting open the boxes and the outer protective bag.
7. Remove the seal between the two chemicals in the bag by pulling out the rubber insert from the hard plastic channel. Pour one side into the other and repeat.
8. Hold two adjacent corners in each hand and knead the bag vigorously for about 30-45 seconds until there is a consistent, cream color throughout the bag. Mix time will vary with ambient and chemical temperature. Chemicals must be above freezing when mixed, above 40F preferred.
9. After mixing, make a 3" to 5" tear or cut in one corner. This is to prevent the bag from rupturing and to help accurately pour the foam in place. **The reaction is much faster in hot weather, be prepared to pour!**

THE BAG THAT HOLDS THE CHEMICALS IS NOT LARGE ENOUGH TO CONTAIN THE EXPANDING FOAM AND WILL RUPTURE IF NOT CUT OPEN

10. Let the foam stand in the bag until it achieves the desired thickness, then pour the foam onto your form work. If the ambient temperature is below 60F, allow the temperature of the rising foam to reach 80F before pouring, or let the foam rise out of the cut open bag by itself before pouring. This will improve the yield at lower temperatures. A larger opening in the bag will also help the yield.
11. Do not pour more than 18" of risen (expanded) foam per lift or layer.
12. Let each 18" layer of foam cool for twenty (20) minutes or more, depending on site conditions, and become "tack-free" before pouring the next layer. If possible shade the chemicals and the site itself in hot weather or under high angle sunlight.
13. For adits or horizontal entries, incline the front form towards the back form to facilitate placement of backfill or concrete veneer.
14. After mixing, cut the last bag of foam in an adit or portal completely across the long side and place the entire bag in the opening facing the back form. Hold the bag in place with cardboard or plastic to force the expanding foam back and up to fill the remaining space.
15. Cover all exposed foam with 2-3 feet of dirt or other fireproof material such as concrete or plaster. For shafts, allow at least one hour of curing before backfilling.

Equipment-less Foam Sealant™ is normally ready to support backfill after 60 minutes, depending on temperature. Consult your regulator or project inspector.

For visual instructions on using Equipment-less Foam Sealant™
visit www.foamconceptsllc.com



HELENA

SAND & GRAVEL

October 18, 2012

Gruber Excavating
Attn: Chris
Helena, MT 59601

Project: **AML – Humbolt Shaft
Mine Shaft Reclamation
Helena, Montana
Mix Design # 385567**

Dear Chris,

Helena Sand & Gravel completed a Portland Cement Concrete Mix Design for the above referenced project. This mix design was developed for **mine shaft mass concrete** in compliance with the project specifications. Included in this report are the component proportions, aggregate specific gravity and sieve analysis results, and compressive strength test results. The mix design was performed in accordance with the Portland Cement Association's "Design and Control of Concrete Mixtures", American Concrete Institute (ACI) "Proportioning of Concrete Mixtures" and applicable ASTM Testing Procedures. The test results are reported on the following pages.

Technician: Ron Albrecht

Jeremiah B. Bowser, P.E.
Materials Manager

SIEVE ANALYSIS**¾" to No. 8 Aggregate****ASTM C 33
Size No. 67****Sieve Size****Percent Passing**

1"	100	100
¾"	90	90-100
½"	46	
¾"	22	20-55
No. 4	1	0-10
No. 8	1	0-5
Specific Gravity, Bulk SSD	2.65	
Absorption, %	1.8	

¾" to No. 8 Aggregate**ASTM C 33
Size No. 89****Sieve Size****Percent Passing**

½"	100	100
¾"	100	90-100
No. 4	45	20-55
No. 8	8	5-30
No. 16	4	0-10
No. 30	2	0-5
Specific Gravity, Bulk SSD	2.67	
Absorption, %	2.0	

**Fine Aggregate
(C Sand)****ASTM C 33****Sieve Size****Percent Passing**

¾"	100	100
No. 4	100	95-100
No. 8	86	80-100
No. 16	60	50-85
No. 30	32	25-60
No. 50	12	5-30
No. 100	2	0-10
No. 200	0.5	0-3
Fineness Modulus	3.04	2.3-3.1
Specific Gravity, Bulk SSD	2.647	
Absorption, %	1.3	

Mix No. 385567

Mix Data: 28-day compressive strength 3,000 psi, 5.5 sacks cementitious material per cubic yard (minimum 500 pcy), 3/4" nominal maximum size aggregate, slump 2" - 4", no entrained air content required, w/c ratio 0.50 (maximum 60 gpy)

Trial Mix:

Component	Batch Weights, p.c.y. Aggregates, SSD	Source
Cement	439	Ash Grove Type I & II
Fly Ash	78	ISG Resources, Inc.
Water	254 (30.5 gal.)	Well
Coarse Aggregate Size No. 67	1149	Canyon Ferry Pit
Intermediate Aggregate Size No. 89	499	Canyon Ferry Pit
Sand	1458	Canyon Ferry Pit
Micro Air (0.50 oz./cwt.)	2.6 oz.*	Master Builders
Polyheed 1025 (6.0 oz./cwt.)	10.3 oz.*	Master Builders
Pozzolith NC534 (0.0 oz./cwt.)	0.0 oz.	Master Builders

Trial Mix Results:

Slump, Inches	3 ¼"
Air Content	6.0 %
Wet Unit Weight, pcf	143.4
Yield, cf / cy	26.9
Water Cement Ratio, lb/ lb	0.49

* The dosage rates of Polyheed 1025 and Micro Air may need to be adjusted for ambient conditions and in order to meet the contractor's requirements for pumpability and workability of the mix. For desired slumps greater than 6", Polyheed 1025 (mid range water reducer) will be replaced or used in conjunction with Glenium 3030 (high range water reducer).

Mix No. 385567

COMPRESSIVE STRENGTH, PSI

	<u>3 Day</u>	<u>7 Day</u>	<u>28 Day</u>
	1570	2460	3890
		2560	4350
		3030	4240
Average	1570	2680	4160

ASH GROVE CEMENT COMPANY



WESTERN REGION
100 HWY. 518
CLANCY, MT 59634-9701
PHONE 406 / 442-8855
FAX 406 / 442-9262

MILL TEST REPORT NO: 05-12-04

Silo: 5

Plant: Montana City

Cement Type: HI, low alkali

Date: 24-Jul-12

Standard requirements: ASTM C 150-11, CSA-A3001-08 (Type 10, GU)

STANDARD REQUIREMENTS

ASTM C 150-11 Tables 1 and 3, CSA-A3001-08 (Type 10, GU)

Chemical (Test Method C114)			Physical		
Item	Spec. Limit	Test Result	Item	Test Method	Spec. Limit / Test Result
SiO ₂ (%)	a	19.7	Air content of mortar, %	C185	12.0 max. / 7.8
Al ₂ O ₃ (%)	6.0 max.	3.6	Blaine Fineness, m ² /kg		
Fe ₂ O ₃ (%)	6.0 max.	3.1	Air permeability test	C204	280 min. / 401
CaO (%)	a	62.9			420 max.
MgO (%)	6.0 max.	3.8	Autoclave Expansion, %	C151	0.80 max. / 0.06
SO ₃ (%)	3.0 max.	2.8	Normal Consistency, %	C187	a / 27.0
Loss on Ignition (%)	3.0 max.	2.7	Compressive Strengths, psi (MPa)	C109	
Na ₂ O (%)	a	0.1	1 - Day		a / 1742 (12.0)
K ₂ O (%)	a	0.4	3 - Day		1740 (12.0) min. / 3543 (24.4)
Insoluble Residue (%)	0.75 max.	0.35	7 - Day		2780 (18.0) min. / 4721 (32.6)
CO ₂ (%)	a	1.6			
Limestone (%)	5.0 max.	4.1	Setting Times, minutes	C191	
CaCO ₃ in Limestone (%)	70 min.	87	Vicat Initial		48 min. / 136
			Vicat Final		375 max. / 269
<i>Potential Compound Composition (%) - b</i>			Pass 325 mesh, %		72 min. / 99.4
C3S	a	62	Heat of hydration (cal/g) - 7 days		c / 85
C2S	a	8			
C3A	8.0 max.	4.2			
C4AF	a	9			
C4AF + 2(C3A)	a	18			
C3S + 4.76(C3A)	100 max.	82			

a - not applicable.

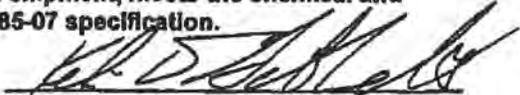
b - adjusted per A1.8

OPTIONAL REQUIREMENTS

ASTM C 150-11 Tables 2 and 4, AASHTO M 85-07

Chemical (Test Method C114)			Physical		
Item	Spec. Limit	Test Result	Item	Test Method	Spec. Limit / Test Result
Tot. Alkalies (% as Na ₂ O)	0.60 max.	0.34	False Set, %	C451	50 min. / 86

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of ASTM C 150-11 and AASHTO M 85-07 specification.


Kelvin D. Gebhardt
Chief Chemist

PCA
Portland Cement Association
MEMBER

ASTM C618 / AASHTO M295 Testing of
J.E. Corette Fly Ash

Sample Type: Monthly Report Date: 9/13/2012
 Sample Date: July 2012 MTRF ID: 1615CO
 Sample ID: CO-07-12

Chemical Analysis		ASTM / AASHTO Limits		ASTM Test Method
		Class F	Class C	
Silicon Dioxide (SiO ₂)	<u>29.53</u> %			
Aluminum Oxide (Al ₂ O ₃)	<u>16.15</u> %			
Iron Oxide (Fe ₂ O ₃)	<u>6.02</u> %			
Sum of Constituents	<u>51.70</u> %	70.0% min	50.0% min	D4326
Sulfur Trioxide (SO ₃)	<u>2.72</u> %	5.0% max	5.0% max	D4326
Calcium Oxide (CaO)	<u>31.38</u> %			D4326
Moisture	<u>0.07</u> %	3.0% max	3.0% max	C311
Loss on Ignition	<u>1.25</u> %	6.0% max 5.0% max	6.0% max 5.0% max	C311 AASHTO M295
Available Alkalies, as Na ₂ O When required by purchaser	<u>1.92</u> %	not required 1.5% max	1.5% max	C311 AASHTO M295
Physical Analysis				
Fineness, % retained on #325	<u>9.43</u> %	34% max	34% max	C311, C430
Strength Activity Index - 7 or 28 day requirement				C311, C109
7 day, % of control	<u>112</u> %	75% min	75% min	
28 day, % of control	<u>101</u> %	75% min	75% min	
Water Requirement, % control	<u>96</u> %	105% max	105% max	
Autoclave Soundness	<u>0.07</u> %	0.8% max	0.8% max	C311, C151
Density	<u>2.87</u>			C604

Headwaters Resources certifies that pursuant to current ASTM C618 protocol for testing, the test data listed herein was generated by applicable ASTM methods and meets the requirements of ASTM C618 for Class C fly ash.


 Bobby Bergman
 MTRF Manager



Materials Testing & Research Facility
 2850 Old State Highway 113
 Taylorsville, Georgia 30178
 P: 770.684.0102
 F: 770.684.5114

**MASTER
BUILDERS**
AIR-ENTRAINING
ADMIXTURES

degussa.

Construction Chemicals

MICRO AIR®

Superior admixture for freeze/thaw durability

Applications

Recommended for use in:

- Concrete exposed to freeze/thaw cycles
- Production of high-quality normal or lightweight concrete (heavyweight concrete normally does not contain entrained air)

Description

Micro Air air-entraining admixture provides concrete with extra protection by creating ultrastable air bubbles that are strong, small and closely spaced — a characteristic especially useful in the types of concrete known for their difficulty to entrain and maintain the air content desired.

Even when used at a lower dosage rate than standard air-entraining admixtures, Micro Air meets the requirements of ASTM C 260, AASHTO M 154, CRD-C 13 and other Federal and State specifications.

Features

- Ready-to-use — in the proper concentration for rapid, accurate dispensing
- Greatly improved stability of air-entrainment
- Ultra-stable air bubbles

Benefits

- Increased resistance to damage from freezing and thawing
- Increased resistance to scaling from deicing salts
- Improved plasticity and workability
- Improved air-void system in hardened concrete
- Improved ability to entrain and retain air in low-slump concrete; concrete containing high-carbon content fly ash, concrete using large amounts of fine materials; concrete using high-alkali cements; high-temperature concrete; and concrete with extended mixing times
- Reduced permeability — increased watertightness
- Reduced segregation and bleeding

Performance Characteristics

Concrete durability research has established that the best protection for concrete from the adverse effects of freeze/thaw cycles and deicing salts results from: proper air content in the hardened concrete; a suitable air-void system in terms of bubble size and spacing and adequate concrete strength, assuming the use of sound aggregates and proper mixing, placing, handling and curing techniques.

When unusually low or high amounts of an air-entraining admixture are required to achieve normal ranges of air content or if the required amount of air-entraining admixture necessary to achieve required levels of air content is observed to change significantly under given conditions, the reason should be investigated. In such cases, it is especially important to determine: (a) that a proper amount of air is contained in the fresh concrete at the point of placement and (b) that a suitable air-void system (spacing factor) is being obtained in the hardened concrete.

AIR CONTENT DETERMINATION

The total air content of normal weight concrete should be measured in strict accordance with ASTM C 231, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method" or ASTM C 173, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method." The air content of lightweight concrete should only be determined using the Volumetric Method.

The air content should be verified by calculating the gravimetric air content in accordance with ASTM C 138, "Unit Weight, Yield, and Air Content (Gravimetric) of Concrete." If the total air content, as measured by the Pressure Method or Volumetric Method and as verified by the Gravimetric Method, deviates by more than 1½%, the cause should be determined and corrected through equipment calibration or by whatever process is deemed necessary.



Guidelines for Use

DOSAGE

There is no standard dosage rate for Micro Air[®] admixture. The exact quantity of air-entraining admixture needed for a given air content of concrete is not predictable because of differences in concrete making materials. Typical factors which might influence the amount of air entrained are: temperature, cement, sand grading, mix proportions, slump, means of conveying and placement, use of extra fine materials such as fly ash, etc.

The amount of Micro Air admixture used will depend upon the amount of entrained air required under actual job conditions. In a trial mix, use $1/8$ - $1/2$ fl oz/cwt (8-98 mL/100 kg) of cement. In mixes containing water-reducing, set-controlling admixtures, the amount of Micro Air admixture needed is somewhat less than the amount required in plain concrete. In mixes requiring a higher or lower dosage to obtain the desired air content, consult your local Master Builders representative.

MIXING

Add Micro Air admixture to the concrete mix using a dispenser designed for air-entraining admixtures; or add manually using a suitable measuring device that ensures accuracy within plus or minus 3% of the required amount.

Measure the air content of the trial mix and either increase or decrease the quantity of Micro Air admixture to obtain the desired air content in the production mix. Check the air content of the first batch and make further adjustments if needed. Due to possible changes in the factors that affect the dosage rate of Micro Air admixture, frequent checks should be made during the course of the work. Adjustments to the dosage should be based on the amount of entrained air in the mix at the point of placement.

APPLYING

For optimum, consistent performance, the air-entraining admixture should be dispensed on damp, fine aggregate or with the initial batch water. When using lightweight aggregate, field evaluations should be conducted to determine the best method to dispense the air-entraining admixture.

Recommendations

CORROSIVITY

NON-CHLORIDE, NON-CORROSIVE

Micro Air admixture will not initiate or promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Calcium chloride is not an added ingredient in the manufacture of this admixture.

COMPATIBILITY

Micro Air admixture may be used in combination with any Master Builders admixtures. When used in conjunction with other admixtures, each admixture must be dispensed separately into the mix.

TEMPERATURE

Micro Air admixture should be stored and dispensed at 35 °F (2 °C) or higher. Although freezing does not harm this product, precautions should be taken to protect it from freezing. If it freezes, thaw and reconstitute by mild mechanical agitation. Do not use pressurized air for agitation.

SHELF LIFE

Micro Air admixture has a minimum shelf life of 18 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your Master Builders representative regarding suitability for use and dosage recommendations if the shelf life of Micro Air admixture has been exceeded.

SAFETY

Micro Air admixture is a caustic solution. Chemical goggles and gloves are recommended if transferring or handling large quantities of material. (See MSDS and/or product label for complete information.)

Packaging

Micro Air admixture is supplied in 55 gal (208 L) drums, 275 gal (1018 L) totes and bulk delivery.

Related Documents

Material Safety Data Sheet — Micro Air admixture

Additional Information

For suggested specification information or for additional product data on Micro Air admixture, contact your Master Builders representative.



MASTER BUILDERS, INC.

United States

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Cleveland, Ohio 44122-5554
Phone 800-MBT-9990
Fax 216-839-8821

Canada

1800 Clark Boulevard
Brampton, Ontario L6T 4M7
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Fax: 905-792-0651

www.masterbuilders.com

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MASTER BUILDERS

MID-RANGE
WATER-REDUCING
ADMIXTURE

POLYHEED® 1025

Superior pumping/finishing admixture

degussa.
Construction Chemicals

Applications

Recommended for use in:

- Conventionally-placed concrete mixtures containing a wide range of cements, granulated slag, Class C and F fly ashes, silica fume and manufactured sands
- Reinforced, precast, pre-stressed, lightweight or normal-weight concrete and pumped concrete
- Residential/commercial flatwork and formed surfaces
- Concrete where 5 to 20% water reduction is desired
- Concrete where normal setting times are required
- Concrete where enhanced finishability is desired
- Concrete where flowability and increased durability are needed

Description

PolyHeed 1025 is a ready-to-use mid-range water-reducing admixture. PolyHeed 1025 admixture, based on Glenium® technology, is very effective in producing concrete with different levels of workability for applications such as pumping and flatwork. PolyHeed 1025 admixture is also very effective in producing concrete with enhanced finishing characteristics. PolyHeed 1025 admixture will meet ASTM C 494 requirements for Type A, water-reducing, and Type F, high-range water-reducing, admixtures.

Features

- Can be used in a wide variety of concrete mixtures as a multi-purpose admixture meeting the performance requirements for ASTM Type A or Type F admixtures
- Dosage flexibility - provides up to 20% water reduction
- Reduced water content for a given level of workability
- Provides better slump retention
- Provides excellent workability of plastic concrete
- Enhanced later-age strength
- Excellent finishability, even with manufactured sands and in lean mixes

Benefits

- Faster setting at higher dosages compared to other water-reducing admixtures
- Enhanced concrete strength and durability
- Increased ease in finishing concrete
- Provides lower in-place cost
- Increases service life of structures

Performance Characteristics

MIXTURE DATA

517 lb/yd³ (307 kg/m³) of Type I/II cement; slump 8 in. (200 mm); non-air-entrained concrete; Admixture dosage adjusted for 5 - 6% water reduction.

SETTING TIME

Concrete produced with PolyHeed 1025 admixture sets faster than a mixture containing a typical mid-range water-reducing admixture

SETTING TIME (h:min.)

MIXTURE	INITIAL	DIFFERENCE
Reference	4:40	
Reference Mid-Range Water-Reducer	5:35	+ 0:55
PolyHeed 1025	5:05	+ 0:25

MIXTURE DATA

517 lb/yd³ (307 kg/m³) of Type I/II cement; slump 8 in. (200 mm); non-air-entrained concrete; Admixture dosage adjusted for 16 - 17% water reduction.

COMPRESSIVE STRENGTH

Concrete produced with PolyHeed 1025 admixture achieves higher compressive strength at later ages compared to plain concrete and concrete mixtures produced with a typical mid-range water-reducing admixture.

COMPRESSIVE STRENGTH psi (MPa)

MIXTURE	1 DAY	7 DAY	28 DAY
Plain	1340 (9.2)	3490 (24.1)	4570 (31.5)
Reference Mid-Range Water-Reducer	1840 (12.7)	4840 (33.4)	6180 (42.6)
PolyHeed 1025	2080 (14.3)	4960 (34.2)	6520 (45.0)

Note: The data shown are based upon controlled laboratory tests. Reasonable variations from the results shown here may be experienced as a result of differences in concrete-making materials and jobsite conditions





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Guidelines for Use

DOSAGE

PolyHeed® 1025 admixture has a recommended dosage range of 3 to 12 fl oz/cwt (195 to 780 mL/100 kg) of cementitious materials for most concrete mixtures. A dosage range of 3 to 5 fl oz/cwt (195 to 325 mL/100 kg) is typical for Type A applications and up to 12 fl oz/cwt (780 mL/100 kg) for mid-range and high-range applications. Because of variations in concrete materials, job site conditions, and/or applications, dosages outside of the recommended range may be required. In such cases, contact your Master Builders representative.

MIXING

PolyHeed 1025 admixture can be added anywhere in the batching process.

Recommendations

**CORROSIVITY
NON-CHLORIDE, NON-CORROSIVE**

PolyHeed 1025 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the manufacture of PolyHeed 1025 admixture. In all concrete applications, PolyHeed 1025 admixture will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

COMPATIBILITY

PolyHeed 1025 admixture is compatible with most admixtures used in the production of quality concrete including normal, other mid-range and high-range water-reducing admixtures, accelerators, retarders, extended set-control admixtures, corrosion inhibitors, and shrinkage reducers.

PolyHeed 1025 admixture is designed to be used with Micro Air synthetic air-entraining admixture when the production of air-entrained concrete is desired.

PolyHeed 1025 admixture is compatible with slag and pozzolans such as fly ash and silica fume.

Do not use PolyHeed 1025 admixture in combination with naphthalene-based admixtures.

Erratic performance in slump may be experienced

TEMPERATURE

The recommended storage conditions for PolyHeed 1025 admixture should be between 35 and 105 °F (2 and 41 °C). If PolyHeed 1025 admixture freezes, thaw at 40 °F (5 °C) or above and completely reconstitute using mild mechanical agitation.

Do not use pressurized air for agitation.

DISPENSING

No special dispensing equipment is needed for PolyHeed 1025 admixture. Consult your Master Builders representative for the proper dispensing equipment for PolyHeed 1025 admixture.

SHELF LIFE

PolyHeed 1025 admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your Master Builders representative regarding suitability for use and dosage recommendations if the shelf life of PolyHeed 1025 admixture has been exceeded.

Packaging

PolyHeed 1025 admixture is supplied in 55 US gallon (208 L) drums, 275 US gallon (1040 L) totes, and by bulk delivery.

Related Documents

Material Safety Data Sheet — PolyHeed 1025 admixture

Additional Information

For additional information on PolyHeed 1025 admixture or on its use in developing concrete mixtures with special performance characteristics, contact your Master Builders representative.

MASTER BUILDERS

ACCELERATING ADMIXTURES

degussa.

Construction Chemicals

POZZOLITH® NC 534

Early strength, cold weather admixture

Applications

Recommended for use in:

- Reinforced, precast, pumped, flowable, lightweight or normal weight concrete and shotcrete (wet mix)
- Concrete placed on galvanized steel floor and roof systems which are left in place
- Prestressed concrete
- Fast-track concrete construction
- Concrete subject to chloride ion constraints

Description

Pozzolith NC 534 is a patented ready-to-use, liquid admixture formulated to accelerate time of setting and to increase early concrete strengths.

Pozzolith NC 534 admixture does not contain calcium chloride and is formulated to comply with ASTM C 494 Type C accelerating admixture requirements.

Features

- Accelerated setting time across a wide range of temperatures
- Increased early compressive and flexural strength

Benefits

- Earlier finishing of slabs — reduced labor costs
- Reduced in-place concrete costs
- Reduced or eliminated heating and protection time in cold weather
- Earlier stripping and reuse of forms
- Superior finishing characteristics for flatwork and cast surfaces

Performance Characteristics

MIX DATA

564 lb (335 kg) of Type I cement/yd³ (m³); 8-6 1/4 in. (150-160 mm) slump; concrete temperature 65-70 °F (18-21 °C); ambient temperature 40 and 50 °F (4 and 10 °C); Non-air-entrained concrete

SETTING TIME PERFORMANCE¹

MIX @ 40 °F (4 °C)	INITIAL SET h:min	DIFFERENCE h:min
Plain	9:36	-
Pozzolith NC 534 @		
13 fl oz/cwt (845 mL/100 kg)	6:30	- 3:06
26 fl oz/cwt (1690 mL/100 kg)	4:53	- 4:43
MIX @ 50 °F (10 °C)		
Plain	6:50	-
Pozzolith NC 534 @		
13 fl oz/cwt (845 mL/100 kg)	5:07	- 1:43
26 fl oz/cwt (1690 mL/100 kg)	3:48	- 3:02

COMPRESSIVE STRENGTH PERFORMANCE¹

	1 DAY [40 °F (4 °C)]			3 DAY [50 °F (10 °C)]			7 DAY [70 °F (21 °C)]		
	psi	MPa	%	psi	MPa	%	psi	MPa	%
Plain	260	1.8	100	1830	12.6	100	4350	26.7	100
Pozzolith NC 534 @									
13 fl oz/cwt (845 mL/100 kg)	720	4.9	277	2150	14.8	117	4810	33.2	111
26 fl oz/cwt (1690 mL/100 kg)	400	2.8	154	2220	15.3	121	5170	35.7	119

Note: Dosage rate per cwt (100 kg) of cement.



Guidelines for Use

DOSAGE

Pozzolith® NC 534 admixture is used at the rate of 16-64 fl oz/100 lb (1-4 L/100 kg) of cement for most concrete mixes using average concrete ingredients. Because of variations in job conditions and concrete materials, dosage rates other than the recommended amounts may be required. In such cases, contact your Master Builders representative.

Recommendations

CORROSIVITY

NON-CHLORIDE, NON-CORROSIVE.

Pozzolith NC 534 admixture will not initiate or promote corrosion of reinforcing steel in concrete.

COMPATIBILITY

Pozzolith NC 534 admixture may be used in combination with any Master Builder admixture. When used in conjunction with other admixtures, each admixture must be dispensed separately into the mix.

TEMPERATURE

Store at 5 °F (-15 °C) or above. If Pozzolith NC 534 admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. Do not use pressurized air for agitation.

SHELF LIFE

Pozzolith NC 534 admixture has a minimum shelf life of 18 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your Master Builders representative regarding suitability for use and dosage recommendations. If the shelf life of Pozzolith NC 534 admixture has been exceeded.

Packaging

This product is supplied in 55 gal (208 L) drums, 275 gal (1018 L) totes and by bulk delivery.

Related Documents

Material Safety Data Sheet — Pozzolith NC 534

Additional Information

For additional information on Pozzolith NC 534 admixture or on its use in developing a concrete mixture with special performance characteristics, contact your Master Builders representative.



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PASTURE MIXES

DRYLAND

NORTHERN DRYLAND PASTURE

35% Intermediate Wheatgrass
30% Nordan Crested Wheatgrass
25% Pubescent Wheatgrass
10% Russian Wildrye

DRYLAND SLOPE MIX

40% Fairway Crested Wheatgrass
30% Hard Fescue
15% Slender Wheatgrass
15% Sodar Streambank

**Northern Dryland Pasture: Well adapted for use on most dryland sites. Varieties in this blend are all drought tolerant, palatable types. Generally, this mix does well as a general purpose blend where season long grazing is desired. Grasses tend to be in clumps due to the variety of wheatgrasses. General height of this mix is about 18".*

**Dryland Slope Mix: Intended for use on disturbed areas where little or no vegetation currently exists. It provides quick cover to avoid soil loss. Works well for grazing purposes where as it contains Sodar Streambank which is sod bearing and fills in between the clumpiness of wheat grasses. General height of this mix is about 18" with the Sodar being lower growing.*

IRRIGATED

FAIRFIELD HAY FIELD MIX

40% Orchardgrass
25% Tall Fescue
25% Smooth Brome
10% Timothy

** Fairfield Mix is one of the most popular irrigated pasture mixes used throughout Montana. It is adapted to a wide variety of conditions, and the species used all have a high yield potential when properly managed. When not being grazed, this pasture mix produces a nice grass hay crop.*

** 90% of all Seed Varieties are Montana-grown, and contain no fillers!*

** Don't see a mix that you want? Let us know, we can custom blend any seed mix that you would like!*

AGRI-FEEDS, SEED & FERTILIZER

DRYLAND SLOPE MIX	% Variety	Germ
Purity: 99.01	40 Fairway Crested Wheatgrass	92
Crop: .11	30 Hard Fescue	91
Weed: .02	15 Slender Wheatgrass	97
Noxious: 0 found	15 Sodar Streambank Wheatgrass	97
Inert: .86	Origin: CAN, WA, ND	
	Tested: 03/12	Net Weight: 50#



TREASURE STATE SEED INC.
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NOTICE: Alternative Dispute Resolution Required By State Law. Under Montana agricultural seed laws, alternative dispute resolution is required as a prerequisite to maintaining a legal action based upon the failure of the agricultural seed to which the notice is attached to produce as represented. The consumer shall file a complaint along with the filing fee, when applicable, with the Director of the Department of Agriculture allowing sufficient time to permit inspection of the crops, plants, or trees by the designated agency and the seller from whom the agricultural seed was purchased. A copy of the complaint must be sent to the seller by certified mail, or as otherwise provided by state law.

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