

April 19, 2018

Ms. Amy Yeldell  
Division of Reclamation  
Mining and Safety  
1313 Sherman Street, Room 215  
Denver, CO 80203

**RE: Nolte Pit #1  
Permit # M-2012-016**

Dear Amy,

The purpose of this letter follows our receipt of your April 12, 2018 correspondence to us regarding the Nolte Pit, File No. M-2012-016, Technical Revision (TR-3) Adequacy Review. We have identified your questions/concerns as follows and accordingly have responded, in bold following each concern/questions. Please note the following:

Reclamation

- Please state the revised seed mix in the narrative portion of your reclamation plan. The seed mix listed in the original submission differs from that posted on the reclamation map rev. 4/5/2018

**The narrative portion of the reclamation plan has been revised.**

- Note that seeding rates will be doubled for all methods other than drill seeding

**The seeding rates have been adjusted such that the methods other than drill seeding are doubled. This is noted in both the narrative and on the plan.**

- Please provide the Division with the unit cost per acre for Wood Cellulose Fiber mulch and the application rate.

**Cost for the Wood Cellulose Fiber is \$675/acre and it will be applied at 1800 #/acre.**

- On the reclamation plan map rev. 4/5/2018 the Application Methods Table

- No acreage is given for areas to be Drill Seeded

**No drill seeding is proposed.**

- No acreage is given for those areas to have Wood Cellulose Fiber mulch applied

**Table on the reclamation plan has been adjusted. The bare areas in the flat that are to receive seed and fertilizer are to be receiving such. Acreage is 0.17 ac.**

- Under fertilizers a significantly larger area is stated to be hand spread than previous versions, does this mean areas that aren't going to be seeded will also be fertilized?

**This has been modified to match other surface treatments to make sense. A fertilizers will be applied using hydro spreading. Acreage is 1.02 ac.**

- Based on the narrative portion of this revision the entire area will be fertilized/soil amendments applied hydraulically, however the table indicates that only a small portion will utilize this method.

**Clarified in both narrative and on plan.**

#### Stormwater Management Plan

- On the reclamation plan map rev. 4/5/18 the straw waddle placement is based on the attached CDOT specs however no specs were included. Also rather than using a generic 50' spacing of waddles, horizontal placements should determine by slope.

**Drawing has been adjusted to reflect that waddle placement to be per CDOT requirements based upon slope.**

- Rip-Rap channels;
  - Please provide a cross section detail

**A cross section detail has been provided on the drawing.**

- A table summarizing each channel that includes the followings; length, depth, width bottom, and slope (X:1)

**A table has been provided on the drawing and a noted area next to each rip rap channel has been identified to cross reference to the table.**

Upon your receipt and review, if you have any questions, please don't hesitate to call.

Respectfully submitted,  
SGM, Inc.



Jeffrey S. Simonson, PE, CFM  
Principal

Cc: Ray Anderson, PLC  
Chuck Whiteman, PLC

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**RE: Nolte Pit #1**  
**Permit # M-2012-016**  
**Technical Revision Submittal #3**

Dear Amy,

The purpose of this letter is to submit the attached technical revision for the Puckett Land Company Nolte Pit #1. This submittal follows your correspondence of January 4, 2018. From your recent correspondence, this letter is intended to serve as a narrative to the Technical Revision to be used in conjunction with the revised map of the Reclamation Plan Update for 2018. Accordingly, you will find attached the following:

1. A map of the Reclamation Plan Update for 2018

#### **TECHNICAL REVISION NARRATIVE**

The map of the Reclamation Plan Update has been prepared to reflect needed improvements to the seeding, erosion repair, and need for soil amendment application to existing soils unable to sustain vegetation on site. Note that the seed mix noted is changing to incorporate seed types that are more favorable to the observed alkaline soils. The new seed mix is noted as follows:

Common Name	Application Rate (Drill seeding) Pounds/Acre
1. American Sloughgrass	2.4 (in wet areas, omit if not needed)
2. Indian Ricegrass	2.0
3. Bluebunch Wheatgrass	3.3
4. Western Wheatgrass	5.8
5. Galleta Grass	4.2
6. Alkali Sacaton	1.6
7. Winterfat	0.4
8. Rabbit Brush	0.3
9. Triticale	5.0

1. **SR- Surface Roughening-** to consist of raking, plowing, discing or micro-pocketing using hand tools or by mechanical means based upon the area of question and accessibility. The purpose of this will be to eliminate observed rills in the slopes identified, trap sediment, increase infiltration and to aid in the establishment of vegetative cover. The surface roughening will be performed to create horizontal ridges and depressions across the slope. Following the surface roughening, soil treatment will be added at the rate of 4,000 lbs/acre of Triganics, 2,000 lbs/acre of Sulphur, 3,000 lbs of Richlawn 3-6-3 with Mycorrhiza and Humates, 2 gallons per acre of Quantum Growth Light and 2 gallons per acre of Quantum Growth VSC. Subsequently the slope will be hydro seeded at 48 #/acre with the Generic Seed Mix identified on the Reclamation Plan Update for 2018 Map. Eco-Flex will be followed at 3,500 lbs per acre to provide erosion control and amendment cover for the slopes and a wood cellulosic fiber mulch will be applied to currently bare flat areas.
2. **HB- Hand Broadcasting-** to consist of broadcasting the previously referenced Generic Seed Mix at a rate of 50 #/acre using a hand spreader (This is double the rate for drill seeding). The areas identified for this treatment are areas that are in the flat area that are on bare/thin areas. Using equipment to prep the intermittent bare soil areas will likely damage vegetation currently deemed acceptable. Prior to hand broadcasting, hand raking those areas to receive hand broadcasted seed shall be performed to break up the “crust” on the soil followed by soil treatment that will be added at the rate of 4,000 lbs/acre of Triganics, 2,000 lbs/acre of Sulphur, 3,000 lbs of Richlawn 3-6-3 with Mycorrhiza and Humates, 2 gallons per acre of Quantum Growth Light and 2 gallons per acre of Quantum Growth VSC.
3. **TR- Terrace Repair-** to consist of repair of the existing corrugations on the hillside along with surface roughening of slopes into and out of the corrugations. The objective of the surface roughening will be to remove the crust on the surface of the soils, and to provide more “micro-pocketing” of slopes in anticipation of receiving a soil treatment that will be added at the rate of 4,000 lbs/acre of Triganics, 2,000 lbs/acre of Sulphur, 3,000 lbs of Richlawn 3-6-3 with Mycorrhiza and Humates, 2 gallons per acre of Quantum Growth Light and 2 gallons per acre of

Quantum Growth VSC. Subsequently the slope will be hydro seeded at 48 #/acre with the Generic Seed Mix identified on the Reclamation Plan Update for 2018 Map. Eco-Flex will be followed at 3,500 lbs per acre to provide erosion control and amendment cover.

### **Discussion of Application Methods and Acreage of Such**

#### *Surface Roughening/Tilling:*

1. Chisel plowing will be performed in those areas of 3:1 slope or less that are designated to receive surface roughening. The total area of such is 0.28 acres.
2. Micro pocketing will be performed using a backhoe, excavator or similar equipment in those areas of 2:1 slope and subject to terrace repair. A CAT 385 Excavator (or equivalent) is anticipated to have the reach to safely access the upper portions of the slope on the 2:1 slopes in the center of the site. The total area of such is 0.57 acres.
3. Hand raking will be performed in those areas to receive hand broadcast seeding. The total area of such is 0.17 acres.

#### *Fertilizer spreading:*

1. Hydro spreading will be used in all bare areas of slope and flat areas that are to receive seed. The total acreage is 1.02 acres.

#### *Seed spreading:*

1. Hand broadcast seeding will be performed using hand spreaders. The total area of the site to receive hand broadcast seeding is 0.17 acres.
2. Hydro seeding will be performed in those areas receiving surface roughening on slopes of 2:1 and 3:1. The total area of the site to receive hydro seeding is 0.85 acres.

#### *Mulch spreading:*

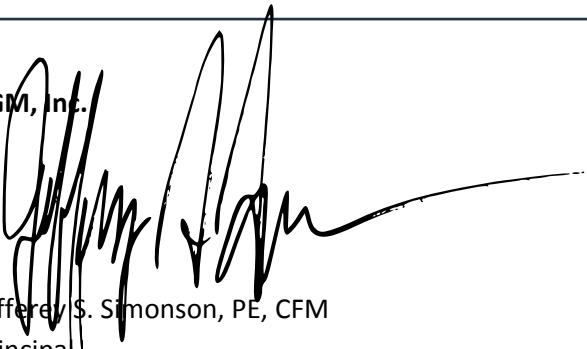
1. Those areas to receive hydro seeding are also to receive hydro mulching. ECO-Flex FMG hydro mulch will be applied to the slope. The area of such will be 0.85 acres.
2. Wood cellulosic fiber mulch will be provided on the hand broadcast areas at a rate of 1800#/acre. The acreage of this is 0.17 acres.

Upon your receipt and review, if you have any questions, please don't hesitate to call.

Respectfully submitted,

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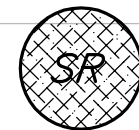
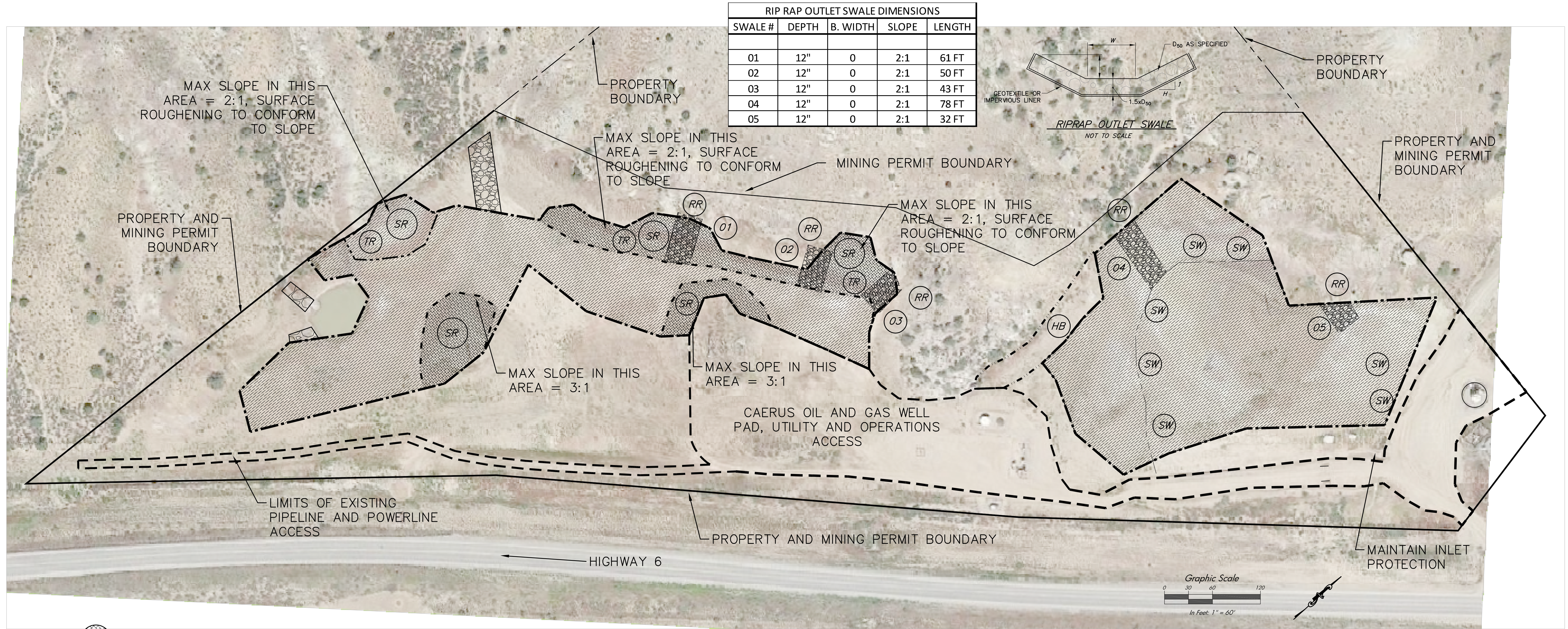
SGM, Inc.



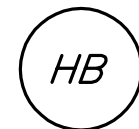
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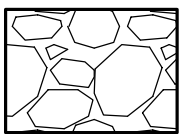




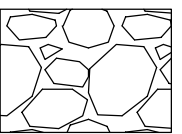
SURFACE ROUGHENING WITH HYDRO SEEDING AND HYDRO MULCHING BETWEEN SEPTEMBER 15 TO APRIL 15 (BOUNDARY IS TOE AND TOP OF SLOPE) (TO CONFORM TO EXISTING SLOPES)



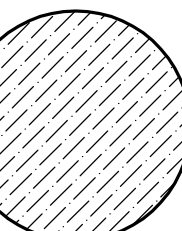
HAND BROADCAST SEED TO STRENGTHEN GROWTH DENSITY OF EXISTING



RIP RAP EROSION PROTECTION - TO BE MAINTAINED



RIP RAP EROSION PROTECTION - TO BE PROVIDED ON SLOPE IN FLOW LINE (5' WIDE) ERODED AREAS WITH MIRAFI 140N FILTER FABRIC UNDER RIP RAP (d50=12")



REGRADE ALL BARE SURFACES WITHIN THIS BOUNDED AREA TO REMOVE ALL SIGNS OF EROSION. PROVIDE SURFACE ROUGHENING AND MICROPOCKETING TO HOLD SEED, AMENDMENTS AND MULCH. APPLY PROGANICS BIOTIC SOIL MEDIA PER TRITON ENVIRONMENTAL, APPLY 60% OF SEED DENSITY VIA BROADCASTING DIRECTLY TO THE SOIL. MIX ALL AMENDMENTS IN A HYDRO SEEDER TOGETHER WITH THE REMAINING SEED AND APPLY AT RATES PER TRITON ENVIRONMENTAL (BASED ON SOIL TESTING). TOP OFF WITH ECO-FLEX FMG HYDRO MULCH OR FIBER MULCHING AS APPLICABLE)



RETENTION POND - TO BE MAINTAINED BY REMOVING EXCESS SILT/DEBRIS



PROVIDE STRAW WADDLES (DETERMINED PER SLOPE) IN FLOWLINE OF DRAINAGE COURSE AFTER EROSION REPAIRED, SEED ADDED, AMENDMENTS AND MULCH IS ADDED



TERRACE REPAIR (REGRADE) OF EXISTING CORRUGATIONS AND EROSION ON HILLSIDE. PROVIDE MICRO-POCKETING/RETENTION OF SLOPE FOLLOWED BY HYDRO SEEDING GENERIC SEED MIX, AMENDMENT APPLICATION AND HYDRO MULCHING

Applicaton Method Table			
SURFACE ROUGHENING/TILLING		SEED SPREADING	
CHISEL PLOWING	0.28 AC.	HAND BROADCAST	0.17 AC.
HAND RAKING	0.17 AC.	DRILL SEEDING	0 AC.
MICRO POCKETING	0.57 AC.	HYDRO SEEDING	0.85 AC.
FERTILIZER SPREADING		MULCH SPREADING	
HAND SPREADERS	0 AC.	HYDRO MULCHING	0.85 AC.
HYDRO SPREADING	1.02 AC.	FIBER MULCHING	0.17 AC.

### GENERIC SEED MIX

COMMON NAME	SCIENTIFIC NAME	LBS PLS/ACRE
"EGAN" AMERICAN SLOUGHGRASS	BECKMANNIA SYZIGACHNE	2.4 (WET AREAS, OMIT IF NOT NEEDED)
"PALOMA" INDIAN RICEGRASS	ACHNATHERUM HYMENOIDES	2.0
"SECAR" BLUEBUNCH WHEATGRASS	PSEUDOROEGNERIA SPICATA	3.3
"BARTON" WESTERN WHEATGRASS	PASCOPIRUM SMITHII	5.8
GALLETA GRASS	HILARIA JAMESII	4.2
"SALADO" ALKALI SACATON	SPOROBOLUS AIROIDES	1.6
"HATCH" WINTERFAT	KRASCHENINNIKOVIA LANATA	0.4
RABBIT BRUSH	ERICAMERIA NAUSEOSA	0.3
TRITICALE	TRITICALE HEXAPLOIDE	5.0
		25

SEEDING RATE ABOVE TO BE DOUBLED AS A RESULT OF NO DRILL SEEDING REQUIRED.

SOIL TREATMENT (PER ACRE) TO BE 4,000 LBS OF TRIGANICS, 2,000 LBS OF SULPHUR, 3,000 LBS OF RICHLAWN 3-6-3 WITH MYCORRHIZA AND HUMATES, 2 GALLONS PER ACRE OF QUANTUM GROWTH LIGHT AND 2 GALLONS PER ACRE OF QUANTUM GROWTH VSC. PROVIDE ECO-FLEX AT 3,500 LBS PER ACRE TO PROVIDE EROSION CONTROL AND AMENDMENT COVER ON SLOPES AND PROVIDE A WOOD CELLULOUS FIBER MULCH ON FLAT AREAS.

NOTE:  
STRAW WADDLE PLACEMENT AND INLET PROTECTION TO BE PER APPLICABLE DETAIL OF CDOT STD PLAN M-208-1 (SHEET 2 AND 3 OF 12), ATTACHED

Preliminary  
for Review

**SGM**  
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Nolte Pit #1  
Puckett Land Company

#	Revision	Date	By
1	ADDED BMPs PER DRMS LETTER OF 3/15/18	4/5/18	JSS
2	ADDED RIP RAP DETAIL, TABLE AND MADE TABLE REVISIONS	4/19/18	JSS

Reclamation Plan Update  
for 2018

Job No.	2009-115.002
Drawn by:	EKS
Date:	March 2, 2018
QC:	RLM PE: JSS
File:	030218 Nolte Pit Reclamation Plan

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