



AMERICAN COLLOID COMPANY

Permitting & Reclamation Department
P.O. Box 2010 • Belle Fourche, South Dakota 57717
(605) 892.6950 • Fax (605) 892.3178

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JUN 16 2014

MINERALS & MINING PROGRAM

June 12, 2014

Eric Holm, Natural Resources Engineer
Minerals and Mining Program
Dept. of Environment & Natural Resources
Joe Foss Building, 523 E. Capitol
Pierre, SD 57501-3181

Re: Small Scale Mining Permit Application, Kudlock/McAmis Small Scale Mining Permit

Dear Eric:

Enclosed are the drainage and culvert cross section drawings, revised small mine permit application, adjudication information, consent and easement forms, revised mine and reclamation plan and supporting information for the Kudlock/McAmis Small Scale Mining Permit for access road. The enclosed will replace all but the wildlife section of the permit.

Also enclosed is documentation from the Butte County Register of Deeds Office that the above materials that the above materials have been received in their offices.

Please call me at (605) 892-7160 or email me at nick.semenza@colloid.com if you have any questions or require further information during the permit review process.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Nick Semenza'.

Nick Semenza
Environmental Specialist

Enclosures

June 12, 2014

Register of Deeds
839 5th Ave.
Belle Fourche, SD 57717



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AMERICAN COLLOID COMPANY MINERALS & MINING PROGRAM

Permitting & Reclamation Department
P.O. Box 2010 • Belle Fourche, South Dakota 57717
(605) 892.6950 • Fax (605) 892.3178

Re: Kudlock/McAmis – Small Scale Mining Permit for access road

To Whom It May Concern:

American Colloid Company is submitting a small scale mining permit application to the South Dakota Dept. of Environment and Natural Resources, Pierre, SD

Enclosed is a copy of the package which contains adjudication information, wildlife baseline data, mine and reclamation plan, and supporting information.

Please have these documents available in your office for public viewing.

Sincerely,

Nick Semenza
Environmental Specialist

Enclosure

The Butte County Register of Deeds Office has the above information available for public viewing.

Signature

Date

Department of Environment and Natural Resources
Minerals and Mining Program
Joe Foss Building
523 East Capitol Avenue
Pierre, South Dakota 57501-3182
Telephone: (605) 773-4201 Fax: (605) 773-5286

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APPLICATION FOR
SMALL SCALE MINING PERMIT

Pursuant to SDCL 45-6B:
Relating to Mineral Extraction in
Operations Affecting Less Than
10 Acres Per Year & Removing
Less Than 25,000 Tons Per Year

Operator's Name: American Colloid Company

Mailing address:

P.O. Box 2010
Belle Fourche, SD 57717

Telephone:

(605) 892 - 7150

Name and address of surface owner:

Sharon Kudlock and Kenneth N. Kudlock Family Trust
11052 Kudlock Lane
Belle Fourche, SD 57717

Legal description of affected land:

Portions of Sec. 12, T9N, R1E
Portions of Sec. 7 and Sec 18, T9N, R2E

County: Butte County

Minerals to be mined:

NA - Equipment transport road

Size of affected land (acres):

6

Estimated acres disturbed per year:

6

Estimated tonnage mined per year: 0

Estimated tons of ore per year: 0

Overburden/waste tons per year: 0

Physical address:

2870 Forbes Avenue
Hoffman Estates, IL
60192

Telephone:

(800) 426 - 1275

Fax:

(847) 851 - 1275

Name and address of mineral owner:

Bob Shear
17819 Prairie Winds Lane
Belle Fourche, SD 57717

Name and address of operator's resident agent (if
operator is an out-of-state corporation):

CT Corporation
319 Coteau Street
Pierre, SD 57501-3101

Proposed starting date:

Upon permit approval

Proposed completion date:

July 2029

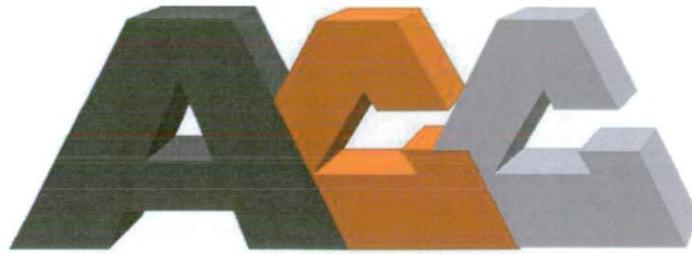
Estimated working days per year:

Road use will be limited and occasional

Estimated duration of operation (years): 15

Reclamation type:

Rangeland for livestock grazing



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American Colloid Company

P.O. Box 2010

Belle Fourche, SD 57717

Phone: 605-892-6950

Fax: 605-892-3178

Kudlock/McAmis Small Scale Mining Permit for access road

Portions of Section 12 T.9N R.1E

Portions of Sections 7, 18 12 T.9N R.2E

Butte County, South Dakota

June, 2014

KUDLOCK-MCAMIS SMALL SCALE MINING PERMIT

MINING AND RECLAMATION PLAN

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I. Consent & Easement Forms

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II. Introduction

SDCL 45-6B-54 (7)

American Colloid Company (ACC) is applying for a small scale mining permit (the Kudlock/McAmis Small Scale Mining Permit) to build an access road between the Shear/Clarkson East Permit #471 and the Kudlock Permit #469 mine sites.

The road will be about 1.1 miles in length and will eliminate the need for ACC to load scrapers and dozers onto trailers and truck them down Highway 212 when moving from site to site, a time consuming and costly task (the cost to ACC is several thousand dollars each time the equipment is moved by truck and trailer on the highway). Road use will be limited and occasional and will not be year round although it could occur at any time of the year.

The small scale permit will cover 20.6 acres on private land in Section 12, Township 9 North Range 1 East and Sections 7 and 18 Township 9 North Range 2 East, Butte County, South Dakota. See the *Legal Descriptions* page in the Land Ownership section of this document for additional information.

Surface ownership is private (Sharon Kudlock and Kenneth N. Kudlock Family Trust and Steve and Renee McAmis) and mineral ownership is private (Bob Shear, Sharon Kudlock, and Norman Durr)

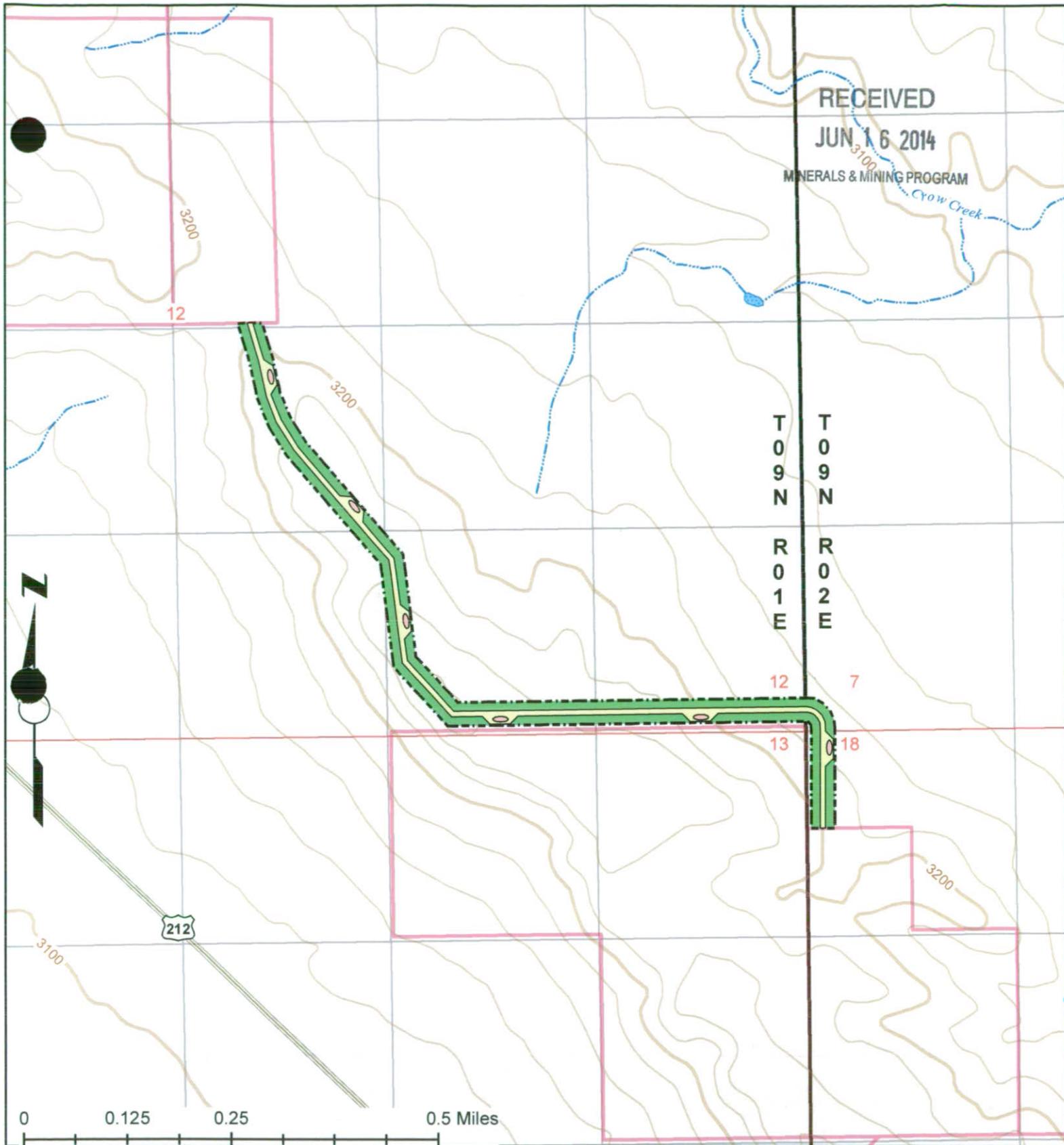
The location is 6-7 miles northwest of Belle Fourche and approximately ½ mile north of Highway 212.

Actual affected acreage will be about 6 acres for a 35'-wide access road and associated topsoil piles.

Topsoil will be stripped and placed in temporary stockpiles along the road. The road will be bladed to have a 15'-wide top and 10'-wide ditches with 3h:1v slopes that will contain water runoff along the roadway. If necessary, culverts will be placed to allow flow to continue in its natural drainage.

The road will be constructed along an existing two-track trail and across pasture land and will be used for moving mining equipment (scrapers and dozers and sometimes dozers on trailers) between the Shear/Clarkson East and Kudlock mine sites but will **not** be used for hauling bentonite. The length of use of the road could be up to 15 years, depending on customer clay needs at the associated mine sites.

Following its use as a mine access road, the road will be reclaimed unless the landowners request that it remain as a two-track trail. In that case, the road will be reduced in width, and the edges reclaimed and seeded.



Legend

-  Disturbance Boundary (35' width) = 6.0 acres
-  Soil Stockpiles
-  Township
-  Permit boundary = 20.6 acres
-  Stream: Intermittent
-  Section
-  Undisturbed-Ext... Reference Area
-  NHDWaterbody: Intermittent
-  Quarter-Quarters
-  Adjacent Permit Boundaries

MAP: PERMIT AREA	
AMERICAN COLLOID COMPANY P.O. Box 2010, Belle Fourche, SD 57717 (605) 892 - 6950	
Kudlock-McAmis Small Scale Mine Permit for access road Sec 12/13, T09N, R01E & Sec 7/18, T09N, R02E Butte County, South Dakota	
Author: NJS	APPROVED BY: ACC
SCALE: 1:10,000	CONTOUR INTERVAL: 20'
DATE: 4/14/2014	DATE REVISED:
FILE: P:\BELLE FOURCHE\Users\Nick\Kudlock-McAmis Access Road.mxd	

III. Proposed Mining and Reclamation Plan

Following is information necessary to address the South Dakota Codified Laws 45-6B-4 to 45-6B-9 inclusive; 45-6B-15, 45-6B-32, 45-6B-33, 45-6B-33.1; 45-6B-37 through 45-6B-46 inclusive; 45-6B-91; and 45-6B-92;

A. Local zoning requirements

SDCL 45-6B-4
ARSD 74:29:02:02

The Butte County Planning Director has stated that there are no ordinances in Butte County pertaining to mining operations nor is there any permitting process or zoning (see document in Consent & Easement Forms section).

B. Previously mined land--Reclamation not required for surface mining

SDCL 45-6B-8

No bentonite mining has previously occurred on the Kudlock/McAmis Small Scale permit lands.

C. Previously mined land--Reclamation not required for underground mining

SDCL 45-6B-9
ARSD 74:29:07:17

There have been no underground mines on the Kudlock/McAmis Small Scale Permit lands.

D. Copy of application filed with department and register of deeds--Public inspection

SDCL 45-6B-15

Copies of the application and attachments are on file at the Butte County Register of Deeds Office, Belle Fourche, SD and SD DENR, Office of Minerals and Mining, Pierre, SD for public viewing.

E. Grant of permit if application in compliance with law--Grounds for denial

SDCL 45-6B-32

- 1) After review by the DENR and Office of Minerals and Mining, the bond calculations will be set and ACC will secure a reclamation bond.
- 2) The fee of \$100.00 is attached to the enclosed permit application.

- 3) The proposed reclamation plan and future land use are in compliance with County, State, and Federal laws.
- 4) The road operation will not adversely affect the stability of any significant, valuable, and permanent man-made structure located within two hundred feet of the affected land.
- 5) There are no county ordinances pertaining to mining operations and there is no county permitting process or zoning for ACC's bentonite operation.
- 6) The proposed road operation and reclamation will be carried out in conformance with State laws regulating mined land reclamation.
- 7) ACC is not in violation of the provisions of this chapter.
- 8) The land is suitable for mining operations; however no mining will occur on the permit lands.

F. Unsuitable land--No permit issued

SDCL 45-6B-33

- 1) Reclamation of the proposed affected land is physically and economically feasible, as demonstrated on ACC's other mine sites.
- 2) If erosion/sediment deposition becomes a concern, ACC may install erosion control devices such as sediment fences, straw bales, and small catch basins.
- 3) The land is not considered to be Special, Exceptional Critical, or Unique as provided in SDDENR correspondence dated December 16, 2013 located in the Consent & Easement Forms section of this document.
- 4) The permit lands will be used for an access road with only shallow surface disturbance. Ground water will not be impacted.
- 5) Threatened or endangered species will not be jeopardized. Baseline information gathered during field surveys did not reveal any concerns about detrimental impacts to threatened or endangered species. See the December 16, 2013 SDDENR approval letter for the Determination of Special, Exceptional or Unique Lands in the Consent & Easement Forms Section of this document
- 6) No adverse socio economic impacts are anticipated from the proposed road operation as neither ACC's work force nor will other community workforces be affected.

G. Grading SDCL

SDCL 45-6B-37
ARSD 74:29:07:03
ARSD 74:29:07:04

Slopes will be graded and contoured to blend in with surrounding topography with a D-9 Caterpillar and Caterpillar patrol/blade. Reclaimed land will be structurally stable. No slopes will be steeper than 5:1 which will be easily traversable by livestock.

Final grading will be approximately 15 years from permit approval.

Appropriate sediment control measures will be designed using best management practices.

H. Refuse Disposal

SDCL 45-6B-38
ARSD 74:29:07:05

Trash should not be generated from the road operation. Any waste oil and filters from equipment will be collected and recycled or disposed of according to State and Federal regulations. Any other refuse will be hauled away from site for disposal at an approved facility.

I. Revegetation

SDCL 45-6B-39
ARSD 74:29:02:10
ARSD 74:29:07:06

Areas affected by ACC's road operations will be reclaimed and reseeded as soon as possible. Topsoil and subsoil will be distributed over all areas where removed. Seeding will be done with ACC's modified chisel plow seeder.

In areas where soil compaction is significant, seeding will be preceded by ripping with a caterpillar patrol/blade. Ripping and seeding operations will be done along with the contour or perpendicular to the prevailing winds whenever possible. Generally, seeding will take place between October 1 and May 1. While late fall is the preferred planting season, weather conditions will largely dictate the actual time of seeding. Reseeding or interseeding efforts will be considered after three consecutive years of evidence that the initial seeding attempt has failed or sooner than three years if needed to stabilize any erosional feature.

The approved seed mix is the same as that utilized for the adjacent Kudlock and Shear/Clarkson permit areas will be utilized. The seed mix was developed based on consultation with the landowners and the local NRCS office. The following seed mix will be used:

<u>Species</u>	<u>Lbs. Pure Live Seed/Acre</u>
Pubescent wheatgrass	5.0
Western wheatgrass	4.0
Slender wheatgrass	2.0
Streambank wheatgrass	2.0
Green needlegrass	2.0
Yellow sweetclover	0.5
Cicer milkvetch	0.5
Winter wheat nurse crop	10.0

The use of these plant species should result in a diverse, effective, and long lasting vegetation community that is capable of self-regeneration and provides as much or more cover than the natural vegetation of the area.

Pubescent wheatgrass is a sod-forming, introduced, perennial grass that is well adapted to clay soils. It tolerates a wide range of precipitation, temperature, and elevation, and stays green in the summer months. It is used primarily for permanent seeding in rangeland.

Western wheatgrass is a long-lived, sod forming, drought resistant perennial native grass. It is one of the first grasses to grow on the range in the spring. The grass cures well on the stem and retains its protein content which provides for good winter grazing.

Slender wheatgrass is a perennial native bunchgrass with a fibrous root system. Seedlings are strong and easily established. It is drought tolerant, moderately salt tolerant, and very cold tolerant.

Streambank wheatgrass is a sod-forming perennial native grass. It is drought resistant and moderately tolerant to saline or alkaline soils. It has strong rhizomes and spreads rapidly to form good ground cover. It offers excellent protection against soil erosion.

Green needlegrass is a long-lived perennial native grass. It has short awns which are not harmful to livestock, and it is a valuable component of the native range. It grows to a height of 1½ to 3 feet and it produces a good yield of forage that is palatable and nutritious early in the season.

These grasses have been proven to be very successful in local area reclamation efforts.

Yellow sweetclover is a biennial legume which is distributed throughout the United States on a variety of soils and moisture sites. This species has the ability to produce seed even when the plants are very short and can improve soil conditions. In addition to being a nitrogen fixer, its taproot opens up the subsoil, increasing aeration and water penetration. In addition, the roots break down and decay rapidly at maturity which produces a high amount of organic matter. Yellow sweetclover has historically established relatively well on reclaimed lands in bentonite country.

Cicer milkvetch is a long-lived perennial legume that may be slow to establish but produces an abundance of palatable forage. It is a drought tolerant nitrogen fixer that is best adapted to medium to clayey soil textures.

ACC has used winter wheat as a nurse crop since 1986. The nurse crop concept works well in controlling erosion and weed invasion. Within three years after initial seeding, little evidence is seen of wheat as the perennial grasses become established.

To increase diversity on the reclaimed land, available native forbs will be added to the seed mix each year. Depending on cost and availability, some of the species that may be used include: purple prairie clover, white prairie clover, western yarrow, and annual wild sunflower.

If necessary, ACC will fence reclaimed sites to restrict livestock grazing until vegetative cover is re-established.

ACC will use the "extended reference area" concept of evaluating revegetation success. The extended reference area will be the undisturbed portions of the permit area surrounding the disturbance area. The primary land use on the proposed permit has been for rangeland livestock grazing for many years. Therefore, the extended reference area will be managed as rangeland and no significant changes in the cover, productivity, species diversity, or vegetation composition should occur.

The access road site is similar to surrounding land. The road will follow an existing trail and across pasture land in an upland mixed grass prairie community that is similar in species composition, diversity, and amount of cover to that on adjoining lands.

Vegetation mapping and cover sampling was performed on adjoining lands for the Shear/Clarkson East Permit #471 in 2006 and for the Kudlock Permit #469 in 2001 and is representative of the plant species and amount of cover seen along the proposed access road.

On the Shear/Clarkson East project, absolute canopy cover averaged 27.9% with 52.4% litter and rock, and 30.6% bare ground. On the Kudlock project, absolute canopy cover averaged 30.6% with 44.2% litter and rock, and 42.4% bare ground.

Sample data shows that the following grasses are dominant in the mixed grass prairie on these sites: Western wheatgrass, Wheatgrass species, Japanese brome, Buffalo grass, Blue grama, Prairie Junegrass, and Green needlegrass, all common grasses on native rangeland.

As noted in an independent vegetation study conducted by Plant Ecologist,

Dr. Warren Keammerer (Boulder, CO), in 1987 for the northeastern Wyoming bentonite region, the above species and amount of cover are typical for native lands in the area.

J. Topsoil Management

SDCL 45-6B-40
ARSD 74:29:07:07

The identification and proper management of the topsoil/subsoil resource is essential to the success of revegetation. Kudlock-McAmis road access permit area is located between the Kudlock and Shear/Clarkson permit areas along a ridgeline with similar NRCS soil mapping as the adjoining permit areas. Site specific soil information was extrapolated from that of the adjacent permit areas. The adjacent Kudlock and Shear/Clarkson permit areas were thoroughly mapped and classified in accordance with the standards of the National Cooperative Soil Survey. Soils studies were performed in 2001 for the Kudlock Permit and in 2006 for the Shear/Clarkson East. Lab analyses were conducted by Inter-Mountain Laboratories, Inc., Sheridan, WY. The

The permit area is characterized by Lohmiller clay on the south end and Twotop clay on the north. Salvage depths for both these soils is anticipated to be 22 inches; 10 inches of topsoil and 12 inches of subsoil. All available topsoil and subsoil will be salvaged during mining activity and respread during reclamation activities. An estimated 17,750 cubic yards of usable soil will be salvaged over the entire area to be affected.

Topsoil and subsoil piles will be marked with signs reading "TOPSOIL" and "SUBSOIL" and will be seeded if in place for more than one year. There will be no temporary distribution of topsoil.

Fertilizers or soil amendments will not be used on the respreads soils.

No large objects such as trees or large rocks occur on the permit area.

K. Hydrologic Balance

SDCL 45-6B-41

ARSD 74:29:02:11

ARSD 74:29:07:08

ARSD 74:29:07:09

ARSD 74:29:07:10

ARSD 74:29:07:11

ARSD 74:29:07:27

The Kudlock-McAmis access road permit area is along a ridgeline. Potential surface water within the permit area consists of ephemeral drainages in which surface flow is minimal and confined to periods of snow melt or rainfall.

The surface water hydrology for the permit area is characterized by a relatively flat ridgeline atop relatively flat to moderately steep terrain with weak ephemeral drainages. Surface flow is minimal and confined to periods of rainfall or snowmelt.

There are no wetland features, intermittent streams or perennial streams within the permit area.

At its nearest point, the road will be approximately 2700 feet from Crow Creek. Crow Creek is classified as marginal for warm water fish life propagation; however, baseline water samples show that total suspended solids (TSS) exceed the standards for a marginal warm water fishery. The high TSS levels may be attributed to active erosion along the streambank and livestock use.

Watersheds will be minimally affected during operations. The road will be bladed to have a 15'-wide top and 10'-wide ditches with 3:1 slopes that will contain water runoff along the roadway. Culverts will be necessary at SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ and S $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ of, Section 12. Culverts may be necessary at other points along the road to allow flow to continue in its natural drainage, and this will be determined during road construction. The sides and, in ditches carrying intermittent discharges, the bottoms will be stabilized by seeding with grasses or other methods specified in the reclamation plan as soon as possible.

Ground water will not be impacted.

The road will be bladed to have a 15'-wide top and 10'-wide ditches with 3h:1v slopes that will contain water runoff along the roadway. Ditches are designed to carry runoff from at least a two-year six-hour storm event. Diversion ditches will be constructed to minimize hazards to humans, wildlife and livestock. This will be accomplished by the shallow depth of construction of the ditches, stabilization as described [below or above], and controlled access to the area.

Diversion ditches will not discharge on topsoil storage areas, unconsolidated material, and/or newly reclaimed lands.

Maximum discharge within the diversion ditches during a two-year, six-hour storm event was calculated using the Carlson Hydrology module in AutoCAD. Precipitation data was gathered from NOAA Atlas 14, Volume 8, Version 2 for the project area. The maximum discharge within the drainage ditches was calculated to be 0.41 cubic feet per second (cfs). Diversion ditches within the permit area are designed to carry discharged up to 8.64 cfs.

If necessary, culverts will be placed to allow flow to continue in its natural drainage.

To aid in sediment and erosion control, the temporary diversions will be seeded with the seed mix described in the Reclamation Plan. Erosion and sediment control structures such as sediment fences, straw bales, and small catch basins will be placed where necessary. Sumps will be installed within the road ditch at all locations where water may naturally discharge from the road ditch to protect areas outside the affected area.

Rock riprap, concrete, geosynthetic liner filter media, soil cement, or other methods will be used where necessary to prevent erosion.

No milling or processing facilities will be constructed in the permit area therefore no surface ditches around such structures will be constructed.

Reclamation operations will include re-establishment of through drainages as appropriate. No permanent surface impoundments or diversion ditches will be created during the final reclamation of the road.

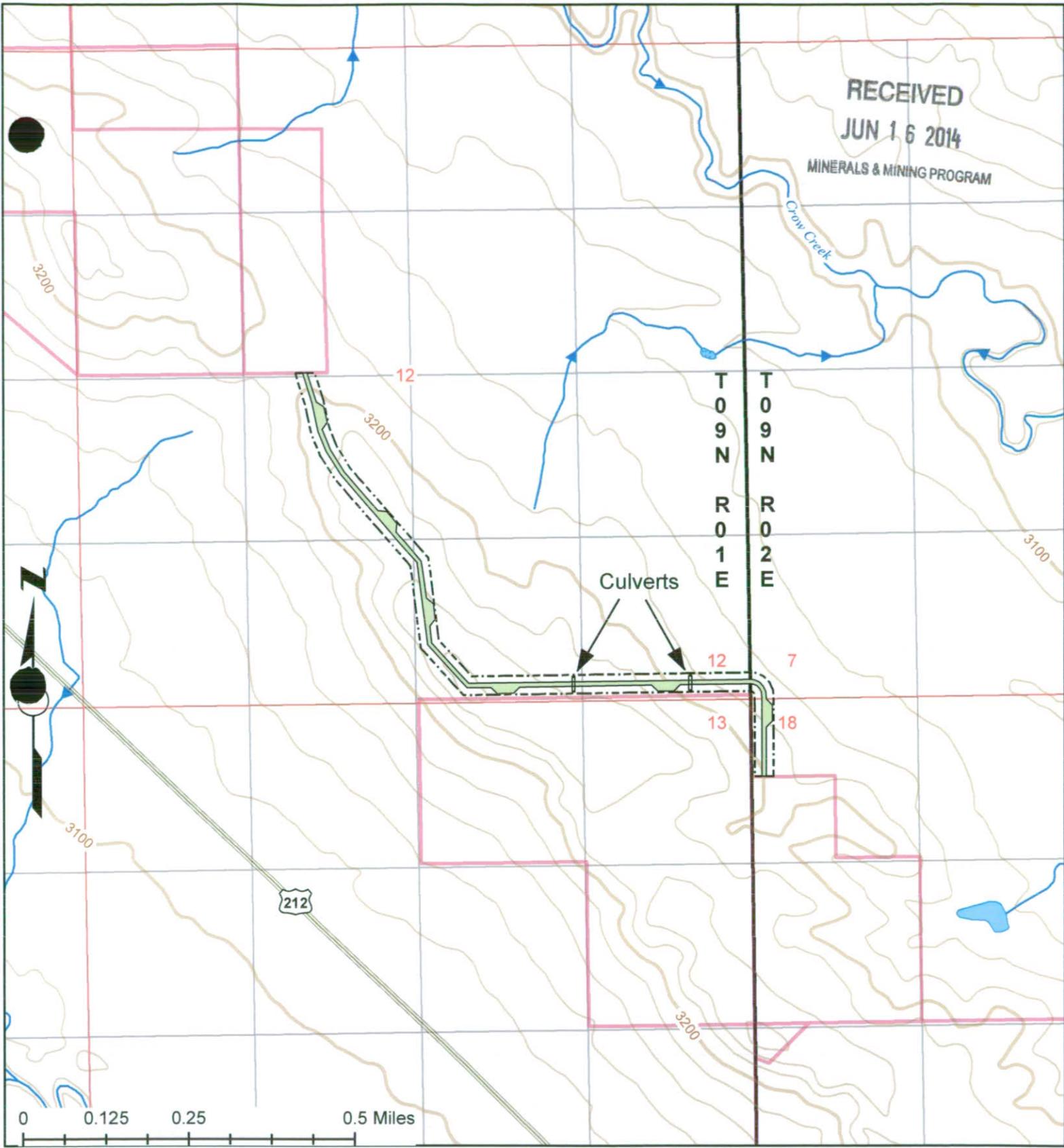
A search was conducted of water rights in the area (through the South Dakota DENR Water Rights Program), and no water rights were found on the Kudlock-McAmis permit area.

All South Dakota water rights laws and regulations will be complied with.

All South Dakota water quality laws and regulations will be complied with.

All dredge and fill laws in Sections 401 and 404 of the Federal Clean Water Act (2/1/87) will be complied with.

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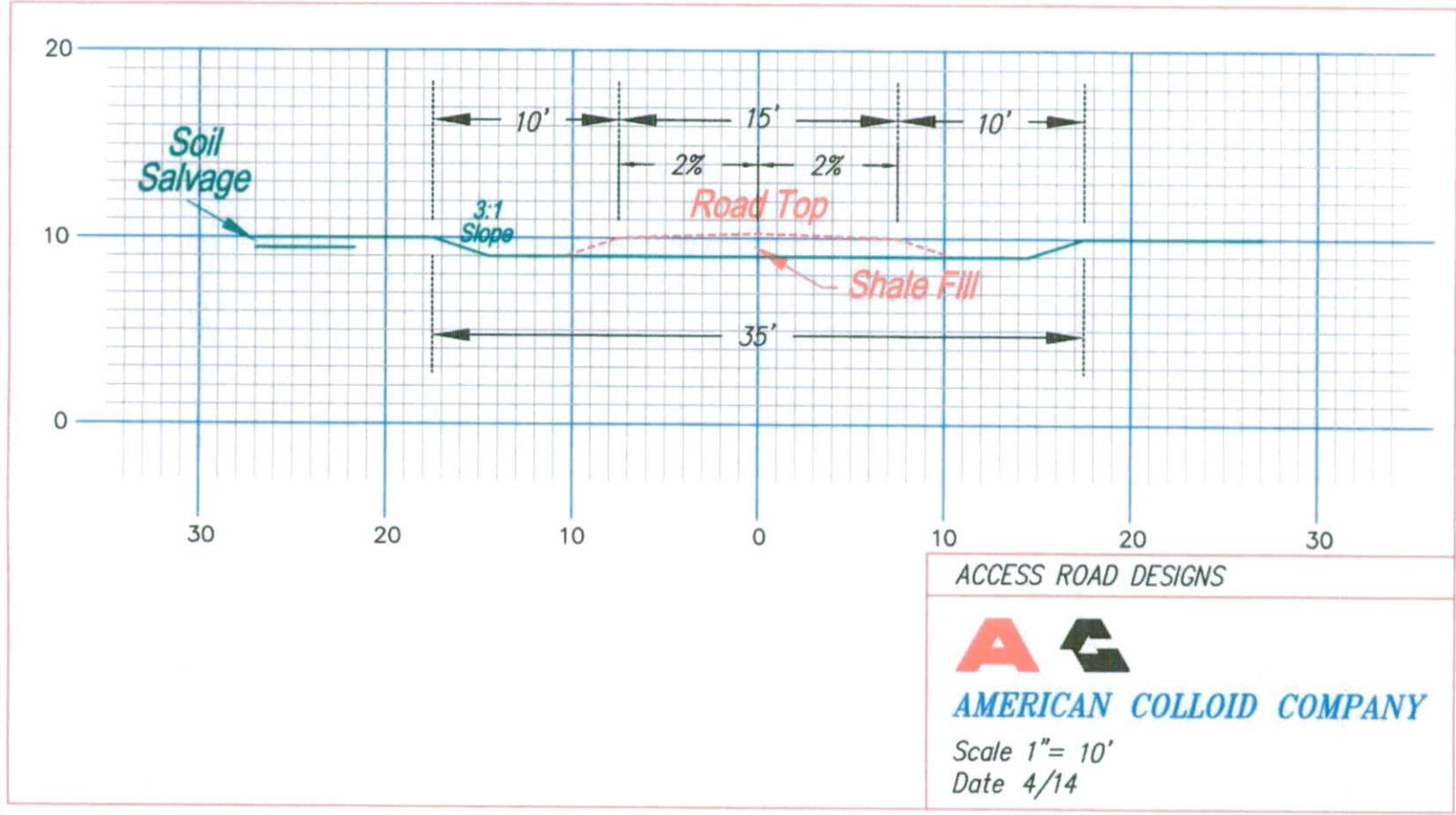


Legend

-  Disturbance Boundary (35' width) = 6.0 acres
-  Pond: Intermittent
-  Township
-  Pond: Perennial
-  Section
-  Permit boundary = 20.6 acres
-  Stream/River: Intermittent
-  Quarter-Quarters
-  Adjacent Permit Boundaries
-  Culverts

MAP: Hydrologic Map	
AMERICAN COLLOID COMPANY P.O. Box 2010, Belle Fourche, SD 57717 (605) 892 - 6950	
Kudlock-McAmis Small Scale Mine Permit for access road Sec 12/13, T09N, R01E & Sec 7/18, T09N, R02E Butte County, South Dakota	
Author: NJS	APPROVED BY: ACC
SCALE: 1:12,500	CONTOUR INTERVAL: 20'
DATE: 3/3/2014	DATE REVISED:
FILE: P:\BELLE FOURCHE\Users\Nick\Kudlock-McAmis Access Road Hydrologic	

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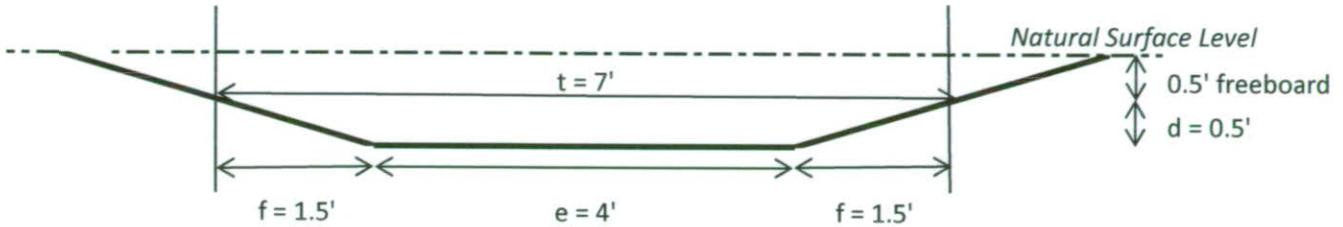


CROSS SECTION OF OVERLAND FLOW CONTRTOL DIVERSION DITCH

Diversion Dimensions

- $d = 0.5$ ft channel depth
 $t = 7$ ft horizontal width across top
 $e = 4$ ft horizontal width

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Channel Capacity using Manning's Equation

$$A = \frac{t + e}{2} \times d = \frac{7 + 4}{2} \times 0.5 = 2.75$$

$$S = 10' / 1000' = 0.01$$

$$P = e + 2\sqrt{f^2 + d^2} = 4 + 2\sqrt{1.5^2 + 0.5^2} = 7.16$$

$$R = \frac{A}{P} = \frac{2.75}{7.16} = 0.384$$

$$V = \frac{1.486}{n} R^{2/3} S^{1/2} = \frac{1.486}{0.025} 0.384^{2/3} 0.01^{1/2} = 3.14$$

$$Q = VA = (3.14)(2.75) = 8.64$$

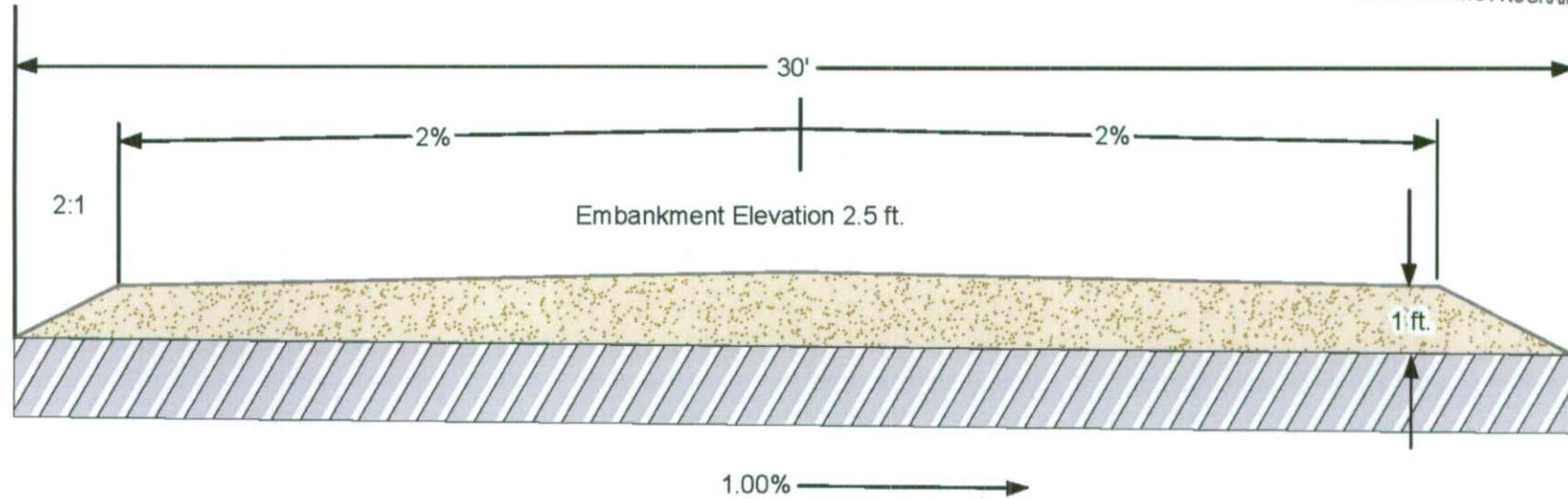
Designed to carry a minimum of a 2-year 6-hour storm event



AMERICAN COLLOID COMPANY
 Belle Fourche, SD 57717
 Scale: None
 Date: 6/3/2014
 Author: N. Semenza
 Overland Flow Diversion Ditch Cross Section

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Culvert Diameter 18.0"
n = 0.0250

Legend

-  18" Culvert
-  Road Surface



Typical Culvert Design: Cross Section View	
AMERICAN COLLOID COMPANY P.O. Box 2010, Belle Fourche, SD 57717 (605) 892 - 6950	Kudlock-McAmis Access Road Section 1, T.09N., R.01E Butte County, South Dakota
Author: NJS	Approved by: ACC
DATE: 6/6/2014	Contour Interval:
Date Revised:	Quad:
Scale: None	Sheet of
Print Scale: 8.5 x 11	PAGE:

L. Sides, Subsidence, or Damage Protection

SDCL 45-6B-42
ARSD 74:29:07:16

No mining activity will be conducted in the permit area.

M. Spoil Piles, Weeds

SDCL 45-6B-43
ARSD 74:29:07:14
ARSD 74:29:07:15

No mining will be conducted in the permit area so no spoil piles will be present.

All affected land will be stabilized and protected to effectively control wind and water erosion. Stabilization efforts will include reduction of reclaimed slopes to at least 5h:1v and the seeding of respread soil as soon as possible.

Dust will be controlled by road watering.

If infestations of noxious weeds appear during the road operation or reclamation, control will follow the guidelines for noxious weed control as published by the Cooperative Extensions Office, SDSU, Brookings, SD and upon recommendations of the Butte County Extension Office, Butte County Weed Board. See Weed Control Section.

N. Landowner Consultation, Reclamation Type Development

SDCL 45-6B-44
ARSD 74:29:06

Lands affected by the road on the Kudlock-McAmis Road Permit (approximately 6.0 acres) will be reclaimed to rangeland for livestock grazing which is the primary pre-road land use unless the landowners request that it remain a two-track trail.

See surface owner consultation and approval of reclamation plan in Legals & Ownership Section of this document.

O. Reclamation Choices, Operator Requirements

SDCL 45-6B-45
ARSD 74:29:07:01
ARSD 74:29:07:18
ARSD 74:29:07:19
ARSD 74:29:07:20
ARSD 74:29:07:21
ARSD 74:29:07:22
ARSD 74:29:07:23
ARSD 74:29:07:24
ARSD 74:29:07:25
ARSD 74:29:07:26

Lands affected by this operation will be reclaimed to rangeland for livestock grazing, unless the landowners request that it remain as a two-track trail. In that case, the road will be reduced in width, and the edges reclaimed and seeded. To this end, the reclaimed land will be contoured to blend in with the surrounding topography, and no slope will be left steeper than 5:1 (H:V) which will be easily traversed by livestock. The topsoil will be replaced by rubber-tired scrapers then bladed in preparation for seeding. Seeding will be completed with a chisel plow seeder in early spring or fall, using the seed mix previously described. If necessary, the reclaimed lands will be fenced at ACC's expense to prohibit livestock use of the land until vegetation cover is reestablished.

The seed mix which approved by the landowners and the NRCS should maintain or increase the livestock carry capacity of the reclaimed lands. Based on the type of range sites, range conditions, and plant species observed on the native land, the suggested livestock stocking rate should be the same or higher in the reclaimed lands. See surface owner consultation and approval of reclamation plan in Legals & Ownership Section of this document and NRCS consultation and approval of the seed mix in the Consent & Easement Forms section of this document.

Reclamation will rehabilitate the affected land to a condition that meets the selected postmining land use of livestock grazing or use as a 2-track road.

All reclamation required by the approved reclamation plan will be completed prior to final and full bond release.

Topsoil and subsoil stockpiles will be in place for the life of the road, therefore the topsoil and subsoil stockpiled will be seeded with the abovementioned seed mix in order to establish a vegetative cover and prevent wind and water erosion.

P. Reclamation Timetable

SDCL 45-6B-46
ARSD 74:29:08:01
ARSD 74:29:08:02

The length of use of the road could be up to 15 years, depending on customer clay needs at the associated mine sites. Reclamation will be carried out to completion with reasonable diligence. Topsoiled areas will be seeded in early spring or fall after the topsoil respread. All disturbance areas will be able to be revegetated.

Interim reclamation will be initiated on affected land if no further disturbance is scheduled to occur on that land within two years. Interim reclamation will be completed within one year thereafter. Where revegetation is required in the interim reclamation plan, seeding shall be done at the earliest favorable planting time. All affected lands requiring interim reclamation will be stabilized and made visually and functionally compatible with the surrounding area by regarding, recontouring, revegetating, and implementing other measures, as necessary, to effectively control drainage and erosion. Interim reclamation will be conducted in accordance with the general and specific reclamation requirements.

Concurrent reclamation will not be conducted as no mining is occurring in this permit area.

Q. Postclosure Plan

SDCL 45-6B-91

- 1) Treatment of tailings – does not apply
- 2) ACC will fence the reclamation if necessary to restrict livestock grazing and allow vegetation to become established. Revegetation will be monitored and reseeding or interseeding efforts will be considered after three consecutive years of evidence that the initial seeding attempt has failed. However, if erosion problems become evident due to lack of vegetation during the three-year evaluation period, efforts to stabilize erosion, including reseeding, will commence as soon as field conditions allow.
- 3 and 4) Reclaimed areas will be inspected regularly by ACC personnel to monitor revegetation success and any erosional concerns. Active erosional features will be corrected.

R. Critical Resources

SDCL 45-6B-92

Critical resources should not be affected:

- 1) NO critical wildlife habitat has been identified in the proposed permit. No threatened or endangered species, or other species of concern, reside on or rely on the area (Thunderbird Wildlife Consulting, Inc. and ACC – see Wildlife section).

Bald eagle roost sites which are located along Crow Creek northeast of the Kudlock-McAmis permit will be approximately 3¼ miles from ACC's road operation and will not be impacted by the activity.

The sage-grouse lek located approximately 1.5 to 2 miles northwest and beyond the view of the road corridor. The sage-grouse lek will not be impacted by the activity.

Only one raptor nest falls within the 0.5-mile monitoring area, however no activity has been monitored from this nest since 2010. Five raptor nest sites were documented in the 1,0-mile survey in 2001. Only two of the five nests were present in 2013 and none of the nest sites were active in 2013. Raptor nests will not be affected by the activity.

NO critical deer winter range has been identified on the permit area.

- 2) The permit area is on a ridgeline drained by ephemeral drainages. ACC will install straw bales, straw wattles, or sediment fences as needed to control erosion and prevent sedimentation.

The road will be approximately ¾ miles from Crow Creek. Crow Creek is classified as marginal for warm water fish life propagation; however, baseline water samples show that total suspended solids (TSS) exceed the standards for a marginal warm water fishery. The high TSS levels may be attributed to active erosion along the Streambank and livestock use.

- 3) The permit area supports vegetation communities similar to the adjoining Kudlock and Shear/Clarkson East permit areas. The vegetation surveys on the adjoining Kudlock and Shear/Clarkson East permit areas not identify any unique vegetation communities or species, nor were any observed on the proposed permit.

There are no riparian zones in the permit area.

There were no threatened or endangered vegetative species or wetlands observed in the area.

- 4) Sources of drinking water are not found on the proposed permit as confirmed through a SD DENR Water Rights Program search in December, 2013.
- 5) Road use will be occasional and limited. Visual impacts of the road operation as viewed from Highway 212 should be minimal. Road operation activities may attract attention from passing motorists and ranchers in the area but should not dominate the scene.
- 6) The permit area has soil types included in the adjoining Kudlock and Shear/Clarkson East permit areas. The soil information for the adjoining Kudlock and Shear/Clarkson East permit areas did not reveal any unique properties of the soils extrapolated to the proposed permit area. The permit area does not contain any highly erosive or low vegetation potential soils
- 7) The South Dakota State Historical Society has reviewed the Cultural Resources Inventory and no significant resources were identified. See Archaeology Section of the *Request for Determination of Special, Exceptional, Critical or Unique Lands* for more information.
- 8) Dust suppression will be accomplished by water spraying to minimize dust.

The nearest residents to the Kudlock-McAmis Permit are the Steve McAmis' who live approximately 1 mile east of the permit area; the McAmis' have been advised of ACC's proposed road operation and signed an adjoining landowner's consent form. See documents in legals and ownership section of this document.

- 9) Noise levels generated by ACC's mining and hauling operations are within acceptable ranges. Noise level measurements are taken periodically by MSHA, and no citations have been issued to ACC for exceeding noise limits. ACC received no complaints from homeowners in the area during past mining operations on the Kudlock Large Scale mining permit.
- 10) The South Dakota Department of Environmental and Natural Resources has determined that the proposed permit area does not have special, exceptional, critical or unique status See letter *Notice of Determination of Special, Exceptional, Critical, or Unique Lands American Colloid Company*, December 16, 2013 in the Consent & Easement Forms section of this document

S. General requirements for determination of reclamation type

ARSD 74:29:06:02

ACC's reclamation efforts and successes can be observed on nearby South Dakota Permits #6, #458, #459, #461, and #463 and on nearby permit #620 in Wyoming. Reclaimed land is released from bond by the respective state's environmental agency upon evaluation of vegetation cover and proven ability to support the identified land use. In 1995 162.5 acres in South Dakota Permit #6 were released from bond. In 1999 43.2 acres in permit #6, 10.3 acres in Permit #458, and 11.7

acres in Permit # 459 were released. In 2000, 78.9 acres in permit #6 were released. In 2001, 127.7 acres in Permit #461 were released. In 2007, 104 acres in permit #463 were released.

This illustrates that ACC's reclamation goals are obtainable and the company is dedicated to reclamation success.

The primary land use on the proposed permit has been for rangeland livestock grazing for many years. The present surface owners and adjoining landowners agree that livestock grazing will be the primary post-road land use

Seeding will be with the seed mix approved by the landowners and the NRCS as presented in the Revegetation Section.

ACC secures a reclamation surety bond or letter of credit before operation activity begins on a new permit, and this ensures that reclamation will be completed. Bond calculations take into consideration the number or acres that will be disturbed, soil volumes, and the cost of topsoiling and seeding. These costs are calculated based on the previous year's reclamation costs.

Topsoiled areas will be seeded the first fall after topsoil is replaced unless seeding cannot occur because of weather conditions. It is anticipated road construction will begin upon permit approval. The anticipated road life is 15-years. After the road is no longer needed the land will be reclaimed. If necessary, the reclaimed land will be fenced at ACC's expense which will restrict livestock use of the land until vegetation cover is re-established and able to meet the post-road land use.

T. Minimizing Adverse Impacts

ARSD 74:29:07:02

- 1) During road construction, a total of 6 acres will be disturbed. Topsoil and subsoil will be stripped and placed in temporary stockpiles.
- 2) Road use will be occasional and limited. Visual impacts of the road operation as viewed from Highway 212 should be minimal. Road operation activities may attract attention from passing motorists and ranchers in the area but should not dominate the scene.
- 3) Surface water resources on the proposed permit consist of ephemeral drainages. There are no perennial or intermittent drainages or wetland features on the permit lands.
 - a. No drinking water wells are located on the permit and, as confirmed through a SD DENR Water Rights program search in December, 2013. Groundwater will not be affected during road operations.

- 4) Primary access to the Kudlock-McAmis Permit lands will be from existing ranch trails and roads. Access can be controlled at the highway approaches in Section 11 and Section 18 on private land, if necessary.
- 5) Baseline information gathered during wildlife field studies for the permit area and of the adjacent Kudlock and Shear/Clarkson East permit areas does not reveal any concerns or detrimental impacts to Threatened or Endangered plant or wildlife species.
- 6) The temporary topsoil/subsoil placement areas will be situated to facilitate reclamation and to minimize environmental impacts. No waste dumps or spoils piles will be created.
- 7) No mine waste or spoils will be created in the permit area.
- 8) No buildings, processing plants, or other facilities will be constructed, used, or improved for this operation.
- 9) Road operations planning is coordinated with reclamation planning.

U. Roads and railroad spurs

ARSD 74:29:07:12

- 1-4) Roads will not be constructed in riparian zones and no streams will be crossed. There are no riparian zones or streams within the permit area.
- 5) If necessary, drainage control structures such as hay bales or silt fences will be installed to control runoff and to minimize erosion and possible sedimentation.
- 6) If necessary, culverts will be installed at prominent drainage ways. Culverts will be protected from erosion by rock, concrete, riprap, or other approved means. Culverts and drainage pipes will be constructed and maintained to avoid plugging, collapsing, or erosion at inlets and outlets.
- 7) Trees and vegetation will be cleared only to the width necessary to maintain slope stability and to serve traffic needs.
- 8) Access and haul road drainage structures will be routinely maintained.
- 9) Other transport facilities and utilities will be constructed and maintained to control degradation of water quality and quantity.
- 10) An applicant may request in writing that a road be permitted to remain unreclaimed if the surface landowner or a local, state, or federal agency requests that the road or spur remain unreclaimed and agrees to be responsible for future maintenance. ACC will furnish proof of such a request if one is made.

V. Buildings and structures

ARSD 74:29:07:13

No buildings, processing plants, or other facilities will be constructed, used, or improved for this operation.

W. Requirements for specific types of reclamation

ARSD 74:29:07:18

ACC personnel have several years of experience in developing mining and reclamation plans. Mining and reclamation success is exemplified on ACC's existing mine sites (South Dakota Permits #6, #458, #459, #461, #463)

X. Rangeland

ARSD 74:29:07:20(1)

Pre-mine land use on the Kudlock-McAmis permit area has been primarily for livestock grazing, and with the concurrence of the landowners, the NRCS, and adjoining landowners, reclamation (approximately 6 acres) will restore the land to rangeland for livestock grazing. Slopes will not exceed 5h:1v and will be easily traversable by livestock.

The seed mix which has been approved by the landowners and the NRCS should maintain or increase livestock carrying capacity on the reclaimed lands. Based on the type of range sites, range condition, and the plant cover observed on the native land, the suggested livestock stocking rate should be the same or higher on the reclaimed lands.

The permit area has similar vegetation and ground cover to the adjacent Kudlock and Shear Clarkson East permit areas. The average of the two adjacent areas of 0.2 - 0.4 AUM/acre. The Kudlock-McAmis permit area lies on a ridge top and we anticipate the carrying capacity to be 0.2 AUM/acre.

Z. Technical revisions to mining operation permits

74:29:03:16

ACC requests that the following technical revision options be listed with the permit conditions:

- Seeding mixtures and rates
- Topsoil stripping and storage
- Modification or relocation of erosion, sedimentation, or drainage control
- Implementing new and improved reclamation techniques as they are developed
- Modification of operating timetables for proposed operation
- Modification of the reclamation plan

IV. Legal Description

The following legal descriptions identify lands under private ownership included in this permit allowing the development of an access road between the Shear/Clarkson East and the Kudlock mine sites. The road will be used for moving mine equipment between the mine sites but will not be used for hauling bentonite, nor will any mining occur under this permit.

The permit encompasses a 150' wide corridor including a 35' wide access road and associated soil stockpiles. The permit consists of 20.6 acres of which 6.0 acres are disturbance.

Township 9 North, Range 1 East, Butte County, South Dakota

Kudlock ownership:

Section 12

A portion of the NE $\frac{1}{4}$ SE $\frac{1}{4}$

A portion of the NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$

A portion of the SW $\frac{1}{4}$ SE $\frac{1}{4}$

McAmis ownership

A portion of the S $\frac{1}{2}$ S $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$

Township 9 North, Range 2 East, Butte County, South Dakota

Kudlock ownership

Section 7:

A portion of the SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$

Section 18"

A portion of the NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$

V. Metes and Bounds

Commencing at the rock marker at the west quarter corner of Section 12, Township 9 North, Range 1 East, Butte County, SD,

Thence North 89 degrees, 10 minutes, 38 seconds East a distance of 1,807.29 feet which is the point of beginning of an access road corridor which lies 75' on either side of the following described centerline:

Thence South 16 degrees, 47 minutes, 12 seconds East a distance of 245.84 feet

Thence South 12 degrees, 1 minute, 1 second East a distance of 237.09 feet

Thence South 21 degrees, 59 minutes, 11 seconds East a distance of 174.14 feet

Thence South 31 degrees, 28 minutes, 54 seconds East a distance of 206.62 feet

Thence South 40 degrees, 22 minutes, 7 seconds East a distance of 776.56 feet

Thence South 41 degrees, 20 minutes, 38 seconds East a distance of 160.48 feet

Thence South 8 degrees, 46 minutes, 53 seconds East a distance of 93.23 feet

Thence South 7 degrees, 1 minute, 39 seconds East a distance of 575.37 feet

Thence South 42 degrees, 10 minutes, 38 seconds East a distance of 451.55 feet

Thence North 89 degrees, 9 minutes, 30 seconds East a distance of 2,250.66 feet

Thence South 83 degrees, 49 minutes, 0 seconds East a distance of 26.12 feet

Thence South 63 degrees, 43 minutes, 21 seconds East a distance of 34.40 feet

Thence South 44 degrees, 45 minutes, 51 seconds East a distance of 42.14 feet

Thence South 24 degrees, 17 minutes, 50 seconds East a distance of 38.64 feet

Thence South 4 degrees, 7 minutes, 57 seconds East a distance of 48.06 feet

Thence South 0 degrees, 0 minutes, 44 seconds West a distance of 630.79 feet to the end point in the NW4NW4, Section 18, T9N, R2E, totaling 5,991.69 feet in length.

VI. Weed Control Plan

Noxious weeds are non-native species that are a concern to South Dakota land owners and managers. They can seriously impact the native plant community.

The South Dakota noxious weed list contains the following species (South Dakota Department of Agriculture):

Leafy spurge (*Euphorbia esula*)
Canada thistle (*Cirsium arvense*)
Perennial sow thistle (*Sonchus arvensis*)
Hoary cress (*Cardaria draba*)
Russian knapweed (*Centaurea repens*)
Purple loosestrife (*Lythrum salicaria*)
Salt cedar (*Tamarix aphylla* *T. chinensis* *T. gallica* *T. parviflora* and *T. ramosissima*)

In addition, the following weeds may be locally noxious or pests in certain counties in South Dakota:

Absinth wormwood (*Artemisia absinthium*)
Black henbane (*Hyoscyamus niger*)
Bull thistle (*Cirsium vulgare*)
Chicory (*Cichorium intybus*)
Common Burdock (*Arctium minus*)
Common mullein (*Verbascum thapsus*)
Common tansy (*Tanacetum vulgare*)
Dalmatian toadflax (*Linaria dalmatica*)
Diffuse knapweed (*Centaurea diffusa*)
Field Bindweed (*Convolvulus arvensis*)
Giant Knotweed (*Polygonum sachalinense*)
Houndstongue (*Cynoglossum officinale*)
Musk thistle (*Carduus nutans*)
Ox Eye Daisy (*Leucanthemum vulgare*)
Phragmites (*Phragmites australis*)
Plumeless thistle (*Carduus acanthoides*)
Poison Hemlock (*Conium maculatum*)
Puncturevine (*Tribulus terrestris*)
Scotch thistle (*Onopordum acanthium*)
Spotted knapweed (*Centaurea maculosa*)
Sulfur cinqufoil (*Potentilla*)
St. Johnswort (*Hypericum perforatum*)
Yellow toadflax (*Linaria vulgaris*)

If infestations of noxious weeds appear during ACC's road operations or on the reclamation, ACC will contract out the services of a licensed professional weed sprayer. Control will follow

the guidelines for noxious weed control as published by the Cooperative Extensive Service (SDSU) and upon recommendations by the Butte County Weed Board.

VII. Spill Prevention Plan and Spill Contingency Plan

American Colloid Company (ACC) has a detailed Spill Prevention, Control and Countermeasure (SPCC) plan for the mine sites and processing plants. To briefly summarize the document:

Fuel will be delivered to the mine sites and stored in mobile tanks that will be relocated as necessary as mining equipment moves. Containment berms will be constructed around the mobile fuel tanks which will be located in areas where topsoil has been removed, thereby creating a secondary containment basin. If a spill were to occur, mine personnel are instructed to make sure the site is safe, stop additional spillage, ensure containment of spilled materials, and contact the company's environmental representative. The cleanup process would be completed with appropriate earth-moving equipment depending on the size of the spill. Disposal of contaminated material would be coordinated by ACC environmental personnel at an approved landfarm in accordance with State and Federal regulations.

In the event of a spill, ACC environmental personnel will contact the SD DENR.



VIII. Wildlife

