

May 27, 2008

Mr. Eric E. Coustry, P.E.  
Mr. Doran H. Stark  
Mikon Corporation Consulting Engineers  
4414 B South 40<sup>th</sup> St.  
St. Joseph, MO 64503

Re: Deer Creek II Reclamation Project  
KS-0165  
Cherokee County, Kansas

Dear Mr. Coustry and Mr. Stark:

I have reviewed the information that you recently sent to the Kansas Geological Survey concerning the proposed reclamation site titled the "Deer Creek II Reclamation Project". This proposed reclamation site is located mainly in the S/2 of Section 28, with small areas along roads for guard rail placement in SW/4 Section 27, and NE/4 Section 33, both small areas are adjacent to Section 28, and all in T. 32 S., R. 22 E., Cherokee County, Kansas.

Strip-mining for coal was completed on all of the S/2 of Section 28 area that you have outlined on your map for planned reclamation efforts. It is believed that the coals that were strip-mined were mainly the Mineral coal bed, the Fleming coal bed, and possibly some Croweburg coal where present and thick enough to be recovered economically from the overburden. These coal beds are all part of the Cabaniss Formation of the Cherokee Group of rocks in southeastern Kansas.

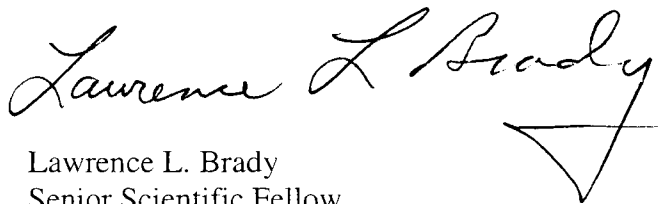
The proposed reclamation efforts of the Deer Creek II Project would correct physical problems created by past strip-mining of the coals, thus making the area safe for persons using the area. The Mineral coal is the most important coal strip-mined in this general area and it was the lowermost of a two-seam, or possibly three-seam mining operation at this site. Underlying the Mineral coal is the Scammon coal that is not mined in this area due to the thin coal bed and quality concerns of the coal. About 80 feet deeper than the Mineral coal at the proposed site is the Weir-Pittsburg coal bed that was deep-mined to the east and northeast about 6 miles, but was non-economic in the proposed reclamation area due to the thin nature of the coal bed in that area.

From review of the maps sent by Mikon, and other map information available at the Kansas Geological Survey, it appears that small areas within both Section 27 and 33 that are adjacent to Section 28, where the proposed culvert guardrails will be placed, are not on previously mined land in either Sec. 27 or Sec. 33. However, the potential that the culvert guardrails would be

disturbed by mining should small mines elect to strip-mine additional coal in the future from these two small unmined areas is very unlikely. The unlikely possibility is due to the small narrow areas for mining, the potential depth to the Mineral coal for a small mining operation would be uneconomic, and small mines are not mining coal in this part of southeast Kansas at the present time or anticipated in the future. The potential for additional strip-mining of coal, or possible deep mining of Weir-Pittsburg coal at this proposed reclamation site should not be a concern and you should continue with your reclamation plans.

The above discussion represents our best assessment based on the information that the Kansas Geological Survey has about this locality and/or proposed project at the time of this writing. Other geologic conditions, not discussed herein, or for which the Kansas Geological Survey has no knowledge, may affect the viability or safe operation of the reclamation of this property.

Sincerely,

A handwritten signature in cursive script that reads "Lawrence L. Brady". The signature is written in black ink and is positioned above the printed name and title.

Lawrence L. Brady  
Senior Scientific Fellow



Consulting Engineers

May 9, 2008

Dr. William E. Harrison, Director  
Kansas Geological Survey  
1930 Constant Avenue – Campus West  
Lawrence, Kansas 66047-3726

RE: Deer Creek II Reclamation Project  
Cherokee County, Kansas

Dear Dr. Harrison:

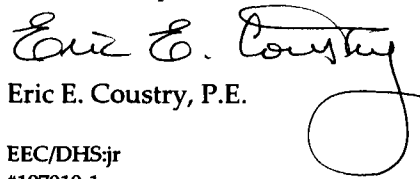
MIKON Corporation was retained to design the reclamation of the Deer Creek II Project (PAD KS-0165) for the Kansas Department of Health and Environment (KDHE), Surface Mining Section (SMS). The project consists of reclaiming an abandoned mine site located in South ½ Section 28, Township 32 South, Range 22 East, Cherokee County, with limited work (culvert, guardrail) in 2 abutting Sections, 27 and 33.

Reclamation is being considered by the Surface Mining Section to minimize the hazards typically associated with abandoned mine sites. Attached is a project overview that briefly discusses the reclamation. We are requesting a letter from the Kansas Geological Survey stating whether or not it is considered likely that the area of this project, including affected portions of all 3 Sections, i.e. 27, 28 and 33, will be mined in the future.

We would appreciate a reply at your earliest convenience. If you have any questions, feel free to contact us.

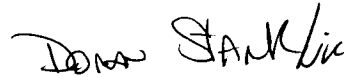
Sincerely,

MIKON Corporation



Eric E. Coustry, P.E.

EEC/DHS:jr  
#107010-1  
harrison l-5\_08



Doran H. Stark

Attachments

Project Overview (incl. location map, aerial image & 11x17 plan overview)

c: Ms. Marlene Spence, KDHE SMS

**Deer Creek II Reclamation Project**  
**Cherokee County, Kansas**  
**Project Overview**

***Introduction***

Deer Creek II Reclamation is an Abandoned Mine Land Project located in the south ½ of Section 28, Township 32 South, Range 22 East, Cherokee County, Kansas as shown on an accompanying Project Location Map. The land is owned by the State of Kansas and is being utilized and maintained by the Kansas Department of Wildlife and Parks (KDWP) as a public use area. The traveling public is exposed to safety hazards (1) along 90<sup>th</sup> Street to the east due to the proximity of Deer Creek, (2) along Lawton Road to the south due to the proximity of Deer Creek and a major pit pond (Pond 1) and highwall, and (3) along 100<sup>th</sup> Street to the west due to the proximity of Pond 1 and highwall. In all, almost 2 miles of potential hazard to vehicular traffic exist around the site.

The primary goal of the reclamation is to address the safety hazards attributable to past mining on the site. The reclamation project is being administered by the Kansas Department of Health and Environment (KDHE), Surface Mining Section (SMS). It is being funded by the U.S. Department of Interior's Office of Surface Mining Reclamation and Enforcement through grants to KDHE, and is being conducted in cooperation with KDWP.

***Background***

Attached is a color aerial photo of the project area, courtesy of MapQuest. This photo provides perhaps the best view of the principal features of the site. The site was mined in 1968 by P&M Coal Company with the famous shovel "Big Brutus." To facilitate the mining, the existing stream, Deer Creek, which cut diagonally through the eastern portion of the property, was diverted to parallel 90<sup>th</sup> Street and Lawton Road. After the mining, the last cut left a highwall along the north edge of Lawton Road and along the west edge of relocated Deer Creek, and also left a major pit pond (Pond 1) over 1-1/2 miles long. The site was later partially regraded by P&M Coal Company in 1974 by leveling the tops of the spoil ridges into the valleys with a dozer equipped with a very large V-shaped plow blade referred to as the "Big Dude Blade." This leveling is evident not only in the photo, but clearly when visiting the site or studying the current topography: existing grades are far

less abrupt than would otherwise be expected on a site mined by Big Brutus, and the regraded portion is visibly less well vegetated (on photo, compare mined land north versus south of Lawton Road, the east-west road).

### ***Hydrology***

At Lawton Road, Deer Creek's watershed, which actually originates where Big Brutus is now parked and where it last mined, is approximately 3,653 acres (5.7 square miles). Hydraulic structures at road crossings upstream and downstream of the site are all of significant size. Only at Lawton Road is the structure (a 6' diameter CMP) grossly undersized for its drainage area. As such, flooding of Lawton Road occurs routinely.

The south half of Section 28, the project site itself, receives virtually no off-site runoff. Furthermore, almost all on-site drainage discharges to a major pit pond (Pond 1), except runoff from a small portion (approximately 13 acres) which discharges via a reinforced concrete box culvert to the northwest. Pond 1 itself discharges into Deer Creek via a 4' diameter CMP just upstream of where Deer Creek crosses Lawton Road. During significant rainfall events (3" and above), Deer Creek backs up at Lawton Road and begins back flowing into Pond 1 via the 4' diameter CMP. But the interconnecting pipe is much too small to relieve Deer Creek sufficiently fast enough, and the stream soon overtops Lawton Road. From a hydrology standpoint, the goal of the reclamation effort is to not alter the present routing of site runoff, i.e. pre- and post-reclamation runoff are essentially the same. Improvements to the hydraulics at Lawton, while perhaps desirable, are not a driving force of the reclamation project and are, therefore, modest in scope.

### ***Delineated Waters***

A preliminary jurisdictional determination of the site was performed by Shafer, Kline, & Warren, Inc., Overland Park, Kansas. In all, 77 delineated water features were identified on site:

- 1 intermittent stream (Deer Creek, 3,722 linear feet, considered jurisdictional);
- 27 ephemeral streams (drainage and/or erosion ditches, totaling 14,454 linear feet, some/all possibly jurisdictional but may not need mitigation even if disturbed);
- 10 palustrine emergent wetlands (totaling 1.48 acres, considered jurisdictional);
- 32 palustrine emergent isolated wetlands (totaling 2.50 acres, considered non-jurisdictional); and
- 7 ponds (open waters totaling 34.46 acres).

In regards to delineated waters, the goal of the reclamation is to minimize disturbance to *all* features to the maximum extent possible. Except as necessary to permit construction of a concrete weir for Pond 1 and installation of a new culvert at Lawton Road, no disturbance to Deer Creek is planned. Seventeen of the 27 ephemeral streams totaling 9,267 linear feet will be left undisturbed. Of the 10 jurisdictional wetlands identified, only 2 totaling less than  $\frac{1}{4}$ -acre will be disturbed. Of the 32 isolated wetlands identified, only 10 totaling less than  $\frac{3}{4}$ -acre will be disturbed. And 5 of the 7 ponds, including their individual contributing drainage areas, will be left undisturbed. Pond 1, the major safety concern, will be partially backfilled, but only where deemed necessary by the SMS. Pond 3, a small (less than 0.2 acres), shallow pond with steep banks, is considered marginal in every respect and will be eliminated. In view of the 20 acres of remaining open waters on this site, coupled with the very large amount of open waters existing on adjacent lands, the overall loss in the region of about 15 acres of open waters attributable to the reclamation effort is believed to be acceptable.

### ***Reclamation Plan***

It is desired to address the safety hazards while minimizing impacts to existing vegetation and wildlife and aquatic habitats. To accomplish this goal, considerable earthmoving (in excess of 1.5 million cubic yards) will be required simply to fill a portion of the main pit pond (Pond 1). Existing on-site spoils will provide the necessary fill materials. After final site grading is complete, all disturbed areas will be limed, fertilized, seeded and mulched. Seeding will be a mixture of warm and cool season grasses, together with a mixture of forbs.

Before and during grading operations, as part of the contractor's storm water pollution prevention plan (SWPPP), temporary devices will be used to control erosion and minimize sediment transport. Erosion control devices will remain in place until acceptable vegetative cover has been achieved. Existing ditches which are to remain and newly constructed ditches will be protected with either vegetative cover alone, temporary or permanent erosion control mat and vegetation, or with riprap, depending upon anticipated design flows and velocities. After the grading is complete, "permanent" erosion control devices will be installed as shown on the accompanying 11 x 17 plan overview.

It is recognized the partial filling of Pond 1, if not accompanied by other proposed changes, would significantly impact the hydraulics of Deer Creek at Lawton Road. To replace the lost storage the filling of Pond 1 causes, it is necessary to provide unhindered transfer capability of water between Deer Creek and Pond 1, and vice versa. This is accomplished by constructing a major hydraulic structure, a two-way concrete weir of significant size (almost 60' long) and capacity. And, by replacing the 6' diameter CMP at Lawton Road with a 6' equivalent diameter RCP elliptical culvert, and raising the road a maximum of 1 foot, the hydraulic capacity at Lawton Road essentially remains unchanged, though slightly increased. The *available* storage volume in post-reclamation Pond 1 and Extended Pond 1, which volume is comprised of a smaller horizontal area but a greater usable depth than existing, replaces the *usable* storage volume in pre-reclamation Pond 1 which is significantly curtailed by the limited rate of flow possible through the existing interconnecting 4' diameter CMP. The post-reclamation available storage is restored between rain events by allowing Pond 1 to drain back down, via four 2-foot diameter openings in the concrete weir, at the same rate it is now permitted to do so via the existing 4' diameter CMP which will be removed. The weir elevation is selected to take advantage of *all* storage available in post-reclamation Pond 1, prior to Deer Creek overtopping Lawton Road.

The accompanying plan overview also highlights other aspects of the reclamation. To address the safety concerns posed by the proximity of Deer Creek to the west edge of 90<sup>th</sup> Street and the north edge of Lawton Road, the top of the existing berm beyond the roadside ditch will be raised and where absent, constructed new. So as to not disturb the floodplain of Deer Creek, all work along the berm will be performed road-side rather than stream-side. New guardrail will also be provided at

2 culverts. Other project amenities include improved site access for the public as well as for KDWP, new parking areas, and a new concrete boat ramp to replace the one which the reclamation will destroy.

Any effects to fish and wildlife are expected to be of short duration. To avoid the taking of migratory birds by destruction of nests, no clearing of trees and brush will be allowed between April 1 and July 15. To mitigate loss of wildlife and aquatic habitat, most cleared materials will be piled in specified locations around the site, and some will be placed below water level in Extended Pond 1. A rock toe/cofferdam utilized to initiate stable fill in Pond 1, as well as 2 new shallow water bodies including a 5.3-acre and a 10.6-acre KDWP-managed wetland, will provide additional diverse aquatic habitat. In addition, and at the request of KDWP, the grading contractor will be encouraged to locally push narrow fingers of land part way into Extended Pond 1 for more diversity.

### *Conclusion*

The reclamation of the Deer Creek site, despite its size and cost, is relatively straightforward. Nevertheless, every effort has been made to limit disturbing valuable existing features, while still addressing the important safety issues which make the site eligible for funding. The net increase of 15.6 acres of KDWP-managed wetlands alone makes the project exciting and environmentally attractive. Though only modest improvements to the hydraulics at Lawton Road are planned, the installation of the concrete weir, together with the new culvert and raising the road, all combine to reduce future occurrences of flooding at this location.



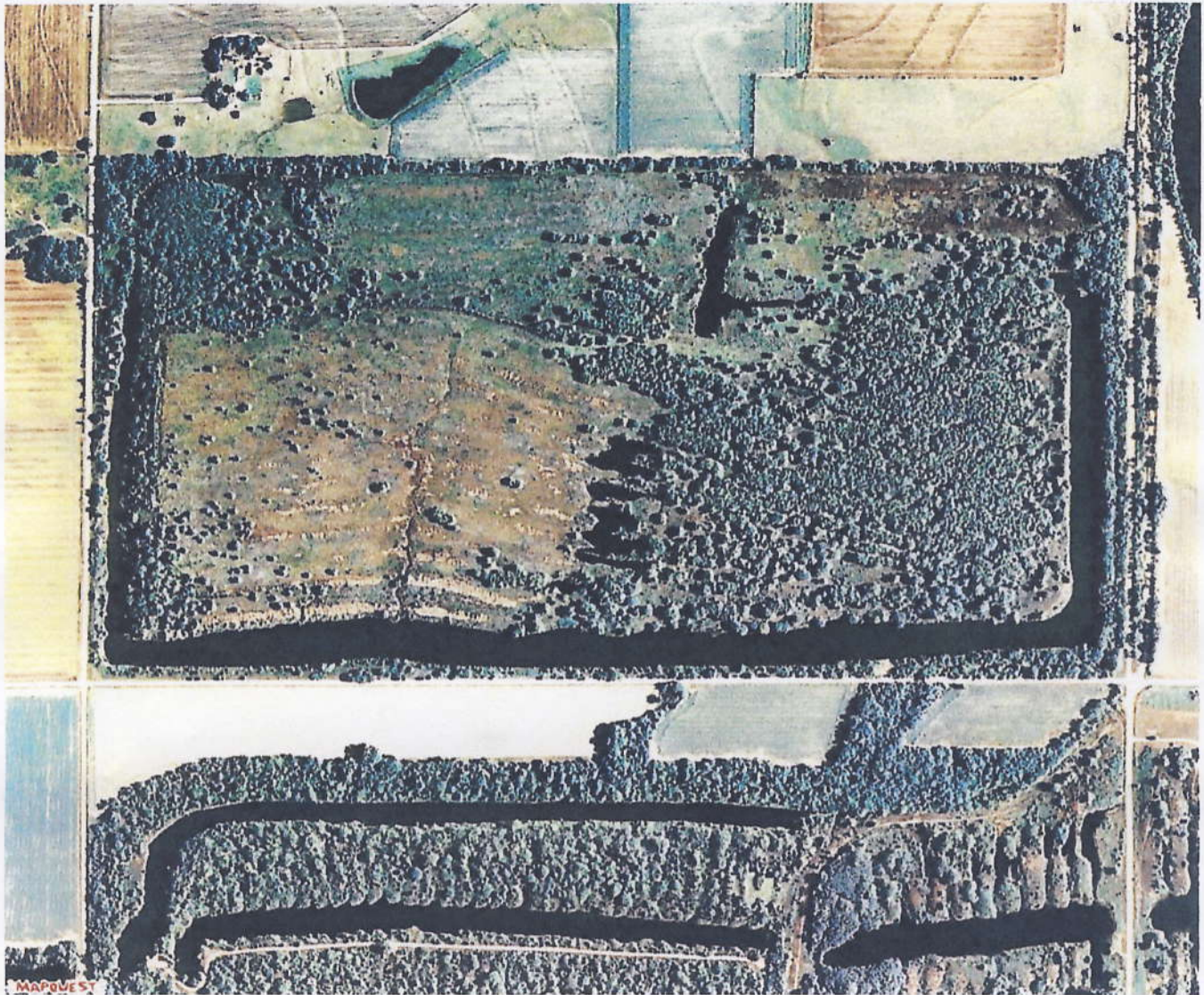
Sorry! When printing directly from the browser your map may be incorrectly cropped. To print the entire map, try clicking the "Printer-Friendly" link at the top of your results page.

**MAPQUEST.**

An AOL Company

## ★ Hallowell, KS US

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SCALE 1" = 2000'  
0 2000'

## OSWEGO & HALLOWELL QUADRANGLES

KANSAS - CHEROKEE CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)



Oswego Quadrangle  
(1974)



Hallowell Quadrangle  
(1974)

## PROJECT LOCATION MAP



**MIKON CORPORATION**  
4414 SOUTH 40th STREET, Suite B  
ST. JOSEPH, MISSOURI 64503  
816-364-2890 fax: 816-364-2126  
email: mikon@mikoncorp.com

### DEER CREEK RECLAMATION

S½ SECTION 28, TOWNSHIP 32 SOUTH, RANGE 22 EAST  
CHEROKEE COUNTY, KANSAS





SCALE 1" = 400'  
2' CONTOUR INTERVAL  
0 400

**POND TABLE**

| POND | M.W.S. | D.W.S. | REMARKS                   |
|------|--------|--------|---------------------------|
| 1    | 831.5  | 832.0  |                           |
| 2    | 855.8  | -      | EX. OVERFLOW ELEV. 857.5± |
| 3    | 839.8  | -      | FILLED BY RECLAMATION     |
| 4    | 845.5  | 850.0  |                           |
| 5    | 846.3  | 850.0  |                           |
| 6    | 846.9  | 850.0  |                           |
| 7    | 847.5  | -      | EX. OVERFLOW ELEV. 852.6± |

M.W.S. = MAPPED WATER SURFACE  
D.W.S. = DESIGN WATER SURFACE

**DRAWING NOTES:**

1. TOPOGRAPHIC MAPPING IN NON-RECLAIMED AREAS BY LAND & MAPPING SERVICES, CLEARFIELD, PA. FLIGHT DATE: 01/18/2006.
2. LANDOWNERS OBTAINED FROM CHEROKEE COUNTY ASSESSOR'S RECORDS.

EPLER TRUST

100th STREET

RENNIE

PROJECT LIMITS

PIONEER STOCK FARM, INC.

SITE ENTRANCE/  
PARKING 3

**WETLAND 2**  
D.W.S. 848.0  
10.6 ACRES

STATE OF KANSAS  
(KDWP)

RENNIE

LAWTON ROAD

EPLER TRUST

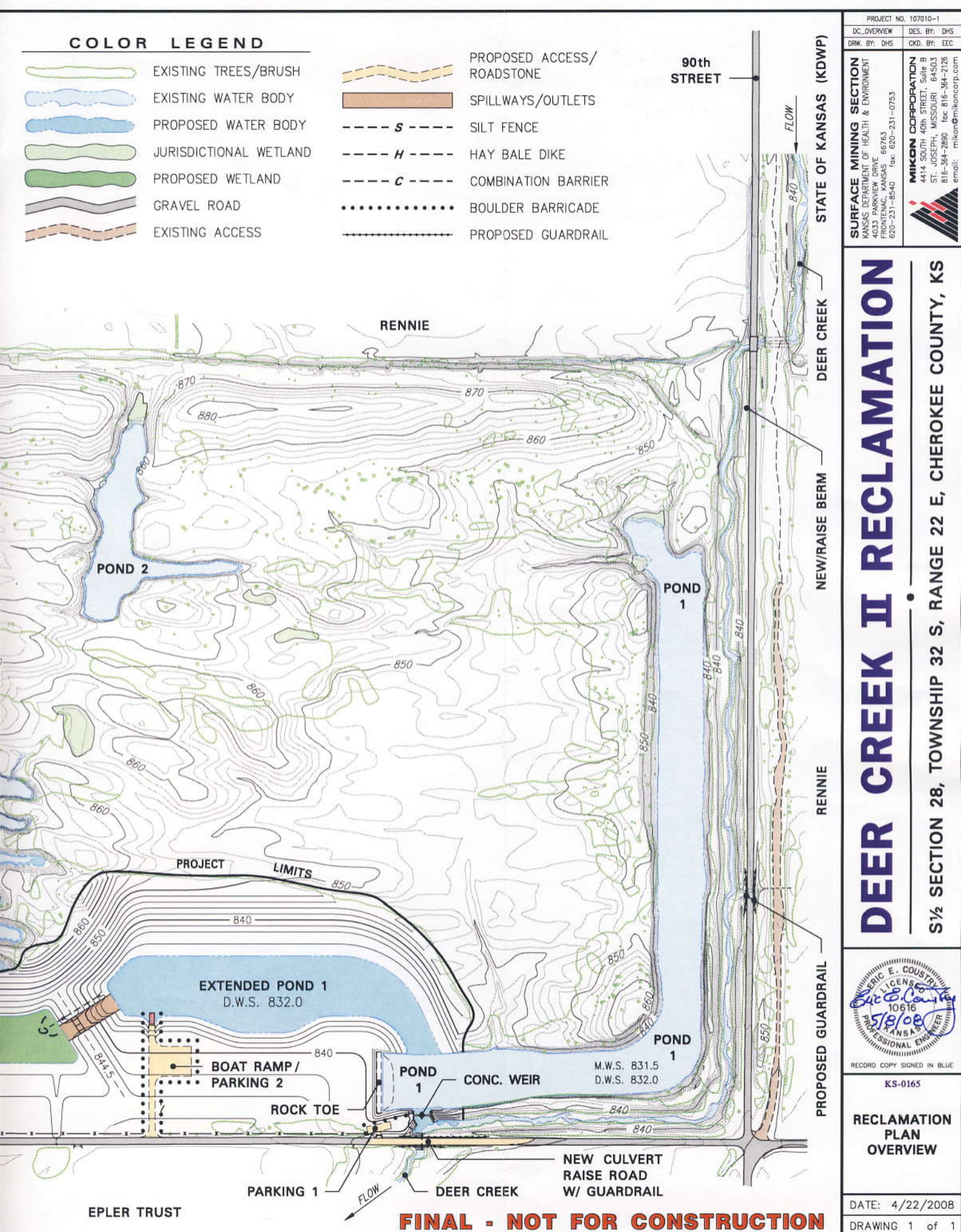
**WETLAND 1**  
D.W.S. 841.0  
5.3 ACRES



## COLOR LEGEND

- EXISTING TREES/BRUSH
- EXISTING WATER BODY
- PROPOSED WATER BODY
- JURISDICTIONAL WETLAND
- PROPOSED WETLAND
- GRAVEL ROAD
- EXISTING ACCESS

- PROPOSED ACCESS/ROADSTONE
- SPILLWAYS/OUTLETS
- SILT FENCE
- HAY BALE DIKE
- COMBINATION BARRIER
- BOULDER BARRICADE
- PROPOSED GUARDRAIL



**FINAL - NOT FOR CONSTRUCTION**

PROJECT NO. 107010-1

DC: OVERVIEW DES. BY: DHS

DRW. BY: DHS CKD. BY: EEC

**SURFACE MINING SECTION**  
 KANSAS DEPARTMENT OF HEALTH & ENVIRONMENT  
 4033 PARKVIEW DRIVE  
 FRONTENAC, KANSAS 66763  
 620-231-8540 fax: 620-231-0753

**MIKON CORPORATION**  
 4414 SOUTH 40th STREET, Suite B  
 ST. JOSEPH, MISSOURI 64503  
 816-364-2890 fax: 816-364-2126  
 email: mikon@mikoncorp.com

# DEER CREEK II RECLAMATION

S½ SECTION 28, TOWNSHIP 32 S, RANGE 22 E, CHEROKEE COUNTY, KS



RECORD COPY SIGNED IN BLUE

KS-0165

**RECLAMATION  
 PLAN  
 OVERVIEW**

DATE: 4/22/2008

DRAWING 1 of 1