

# **OSM-Western Regional Technical Team Workshop**

**The evolving role of information  
technology in North Dakota's coal  
regulatory program**

Jim Deutsch  
Reclamation Division

# **Overview of Coal Mining in North Dakota**

- All surface mining – currently  
4 large active mines and 2 very  
small mines**
- About 105,000 acres under permit**
- Over 55,000 acres have been  
disturbed**
- Over 35,000 acres of reclaimed  
land under bond**

# Lignite Reserves in ND

- 350 billion tons of lignite in ND
- 25 billion tons can be economically mined
- Enough to last 800 years based on current rate of production of 31 million tons/year
- All mineable are located in the western portion of the state

# Types of Land being Mined

|                        | Premine | Postmining |
|------------------------|---------|------------|
| Cropland               | 57%     | 59%        |
| Native Grassland       | 32%     | 29%        |
| Tame Pastureland       | 2.5%    | 2%         |
| Industrial/Commercial  | 1%      | 4%         |
| Wetlands               | 1.5%    | 1.5%       |
| Woodlands/Shelterbelts | 1%      | 1%         |
| Roads and Farmsteads   | 1.5%    | 1%         |
| Other                  | 3.5%    | 2.5%       |

# Land Ownership

- **Nearly all of the surface of land being mined is privately owned**
- **About 15% of the coal is Federal**
- **No Federal surface is permitted for mining**

# Early 1980's Databases & Postmining Topo Analysis

- “DEAR” (Data Entry and Review) program to generate, manipulate, modify and plot data for analyzing the surface and subsurface topography for mining and reclamation – work began in 1980
- Wang system bought in 1983 for word processing and database development
- Permit Status Report developed in 1984 on the Wang system for tracking permit actions – permits, revisions, renewals, bond releases, etc.
- Programmable calculators used for some hydrology computations

# Mid to late 1980's

- Tried to convert DEAR program to run on the State's mainframe IBM computer
- PSR and other databases converted to mainframe applications
- PC's first used by some staff by the late 1980's
- Database programming by PSC staff
- TIPS hardware and some software provided by OSM – Earth Vision replaced DEAR – Early hydrology applications also were used

# Databases used by the Reclamation Division

- Permit Status Report
- Correspondence log
- Bond Database
- Notices of Violation
- Blaster Certification
- Photo Database
- Case Management

# Permit List

View Show: All Permits Clear Recent Activity Flag Show: Recent Activity PSR Report

| Permit No | Name                | Permit Status | Recent Activity  |
|-----------|---------------------|---------------|------------------|
| 0011      | AMER COLLOID/ULLMAN | Open          | 9 condition(s).  |
|           | BAROID              | Open          | 9 condition(s).  |
| 603       | BEULAH              | Open          | 17 condition(s). |
| 802       | BEULAH              | Open          | 19 condition(s). |

### Permit Change Records

Record#:  Site:  Case#:

Issued:  Issued:  Effective:  Expires:

Fed:  Acres Non Fed:

4, 15, 16, AND 21, T145N, R88W, MERCER COUNTY, (SEC. 14, 'ASSOCIATE DISTURBANCE' IS  
 RAL COAL) BEULAH MINE

---

Record#:  Site:  Case#:

Issued:  Issued:  Effective:  Expires:

Fed:  Acres Non Fed:

FY THE SUITABLE PLANT GROWTH MATERIAL HANDLING PLAN BEULAH

List Permit Conditions

**BEULAH KRSB8603**  
 6 standard conditions.  
 11 special conditions. 4 resolved.

Add NEW Permit

Add Change Record to Selected Permit

- me
- ESS
- A MUD
- PORT
- ON

| Permit No | Permit Status |
|-----------|---------------|
| BNCR8704  | File Closed   |
| BNCR8901  | File Closed   |
| BNCR9401  | Open          |
| BNCR9702  | Open          |

| Bond No   | Bond Type   | Liability Begins | Status |
|-----------|-------------|------------------|--------|
| 400JR4173 | SURETY BOND | 8/2/2000         | OPEN   |
| CB9702-01 | COLLATERAL  |                  | OPEN   |
| SB9702-1  | SELF BOND   | 8/2/2000         | OPEN   |

Right click to filter for closed bonds. ? Print Report

**Maintenance**

- Edit Bonds
- Add Bond
- Tables**
- Entity
- Bonds
- Bond Adjustments
- Multi Permits to Bonds

**Reports**

- Inquiry
- Surety's Bonds
- Bond Summary/Graph
- Mine's Active Bond Report

-1  
Contents of Command line for Search of Bonds

Principal: **BNI Coal, Ltd**

Bond: No: **SB9702-1**

Bond Type: **SELF BOND**

Surety: **Minnkota Power Coop**

Case# **98-56**

Self bond portion of the liability on permit issue; Surety bond 400JR4173 for remaining bond liability

Orig. Total Acres: **8,997.5700**    Orig. Federal Acres: **1,440.5800**    Orig. Penal Sum: **\$14,842,714.00**    Begin Liability: **8/2/2000**  
 Current Acres: **9,558.7000**    Current Fed. Acres: **1,440.5800**    Current Bond: **\$17,347,000.00**    Effective Date: **8/2/2000**

Permit No(s)    BNCR8006    BNCR8106    BNCR8202    BNCR8602    BNCR9702

Adjustments:

| Effective Date       | Change in Acres | Change in Fed. Acres | Change in Bond Amount |   |
|----------------------|-----------------|----------------------|-----------------------|---|
| <b>7/3/2003</b>      | <b>561.1300</b> | <b>.0000</b>         | <b>\$0.00</b>         | Area added to Permit BNCR-9702 by Revision No. 8    |
| Case: Year <b>02</b> | Seq# <b>470</b> |                      |                       |   |
| <b>9/1/2003</b>      | <b>.0000</b>    | <b>.0000</b>         | <b>\$210,762.00</b>   | Increase in bond due to new worst case computation. |
| Case: Year           | Seq#            |                      |                       |   |

# Days Entries



h Add Record 3 records.

Entry No: 29721 Date Entered: 5/19/2006 User Name: Hibl 29721

Received: 5/19/2006 Correspondence Date: 5/17/2006

Company: COTEAU PROPERTIES COMPANY Person: JOE FRIEDLANDER

RESPONSE TO MAY 12, 2006 LETTER REGARDING REVISION 48 TO PERMIT NACT-8102

Addressed To: JIM DEUTSCH

---

Entry No: 29720 Date Entered: 5/19/2006 User Name: Hibl 29721

Received: 5/19/2006 Correspondence Date: 5/16/2006

Company: FALKIRK MINING CO Person: JEREMY ECKROTH

2006 GRAZING PROGRAM ON RECLAIMED NATIVE GRASSLAND IN SECTION 36, T146N, R83W IN AFK-8705

Addressed To: JIM DEUTSCH

Location/Permit/Category  
 06

| Photo Location | Permit   | Category     | Photos |
|----------------|----------|--------------|--------|
| dom            | NACT8503 | grading      | 4      |
| dom            | NACT8503 | revegetation | 1      |
| dom            | NACT8601 | Flyover2000  | 7      |

dw\_location\_x\_category\_list



Photo to clipboard.

Photo's "Message" to clipboard.

Wide Right

Permit NACT-8503. Reclaimed rangeland located south of Ash pit in NW1/4 of Section 30. Area was reseeded in 1999 after original planting failed. Slender & western wheat established well, lodging.

Date 8/8/2000 Location Freedom Permit: NACT8503 Category revegetation 200000002104  
 Name 000808-9.JPG Directory \\COAL\REC DATA\PHOTOS\FREEDOM Photographer welch

Freedom  
 NACT8503.  
 Permit  
 NACT-8503.  
 Reclaimed  
 rangeland  
 located south  
 of Ash pit in  
 NW1/4 of  
 Section 30.  
 Area was  
 reseeded in  
 1999 after  
 original planting  
 failed. Slender  
 & western  
 wheat  
 established

of 1 1 records dw\_photo\_index 5/19/2006

of 1



Updates are ready for your computer

Click here to install these updates.



>> Document

Tracks



... \CASELIB\

Search Description:  
FILTER: DIScription LIKE

06-37  
Open

Falkirk Mining Company  
Revision 22, Permit NAFK-8405  
Approval Filed 1/18/2006

03/2006 Copies of the application sent to advisory committee members  
Public Service Commission  
By:  
Exhibit: Pages 6 Certified 0



\\Regulator\Case Mgmt\Orderlib\2006\060037\8.doc 2006 37  
\\Regulator\Case Mgmt\Orderlib\2006\060037\

02/2006 Comments  
Natural Resources Conservation Service  
By:  
Exhibit: Pages 1 Certified 0



\\Regulator\Case Mgmt\Orderlib\2006\060037\7.doc 2006 37  
\\Regulator\Case Mgmt\Orderlib\2006\060037\

01/2006 Comments received from the U.S. Fish & Wildlife Service  
By U.S. Fish & Wildlife Service  
Exhibit: Pages 1 Certified 0



\\Regulator\Case Mgmt\Orderlib\2006\060037\6.doc 2006 37  
\\Regulator\Case Mgmt\Orderlib\2006\060037\

03/2006 Application deemed complete  
Public Service Commission  
By:  
Exhibit: Pages 1 Certified 0



PSC Docket Card

Response to Completeness Deficiency.pdf

[se to Completeness Deficiency.pdf](#)

# Early 1990's

- Most of the databases were converted to in-house applications
- Wang system was discontinued in 1993
- PC's installed for nearly all staff with the use of MS Office
- Additional hardware and software provided by TIPS

# Electronic file transfer from mining companies began in the early 1990's

- Pre and postmining topographic maps
- Geologic maps (coal depth & thickness)
- Used for mass balance calculations to verify the proposed postmining topography
- Compare pre and postmining slope percentages and distribution

# OTT support starting in the mid 90's

- Software and hardware support
- Scanning and converting maps for E-permitting
- E-permitting workshops
- Other technology exchange

# Electronic Permitting

- Preliminary discussion with Falkirk in early 1995
- More serious development started in 1998
- Falkirk's E-application filed in November 1999
- Revision that converted the permit was approved in May of 2000
- All of Falkirk's post-SMCRA permits now in Electronic format as well as two others at other mines



**East Permit NAFK-8405  
Revision 22  
Fifth Addition (Bridge)  
Completeness Review Responses  
Submitted March 16, 2006**

---

**Table of Contents**

- 1.0    Introductory, Legal, Financial, Compliance, and Related Information**
  - 2.0    Environmental Resource Information**
  - 3.0    Operation Plan**
  - 4.0    Reclamation Plans**
  - 5.0    Wetlands**
- 

Install  
VoloView 2

Tips &  
Help Files

Install  
Acrobat 6.0



# Scanning and E-documents

- Most old annual mine maps have been scanned beginning in 2000
- Inspection reports have been e-mailed to companies and others for several years
- Some companies e-mailing grade approval requests and other correspondence
- Most incoming paper correspondence is now scanned
- Application and bond forms are available on the Internet

# GIS

- Work on the conceptual design for the Reclamation Division's GIS began about 3 years ago
- OSM provided ArcGIS training for all staff
- SDE and SQL server software acquired from OSM in 2005
- Staff working on data entry over the past year

# Mobile Computing

- Tablet PC's for field use
- Download of maps and data in the GIS
- Use of ArcPad and GPS for tracking during field inspections
- Note specific locations needing repairs
- Record soil probing locations
- Etc.

# What's in the future

- Re-design of Case Management into a much larger data management and workflow system
- Continue development of the GIS
- Enhanced use of GPS
- Further refining E-permitting
- More efficiencies needed – increased coal development is likely
- ???????

# Reclaimed Native Grassland at Indian Head Mine



# Reclaimed Hayland at BNI's Center Mine

