MEMORANDUM FOR RICHARD E. STICKLER  
Acting Assistant Secretary for  
Mine Safety and Health  

FROM:  
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Director, Office of Accountability  

SUBJECT:  
MSHA Office of Accountability Audit, Hillsboro, Illinois  
Field Office, and  

Introduction

This memorandum summarizes the Office of Accountability audit of the subject mine and MSHA field office. Although the initial focus was on the high incidence of roof falls and roof related reportable accidents, audit subjects also included the Uniform Mine File (UMF), MSHA field activities, level of enforcement, Field Activity Reviews (FARs), and the conditions and practices in the mine. The audit was conducted the week of [redacted] by Jerry Kissell, Arlie A. Webb, and Charles J. Thomas. Both positive findings and issues requiring attention are included in this audit report.

Overview

The audit revealed several positive findings related to MSHA activities, including documentation indicative of complete, thorough inspections, significant on-site, in-mine, and section times, identification of root causes of violations, and safety talks. Likewise, there were several positive findings regarding the mine operator’s efforts, such as comprehensive and detailed fire drills and escapeway drills, SCSR training, the number of SCSR units in place underground, and well maintained record books in which examinations, hazardous conditions, and corrective actions were well documented.

There were also a number of recommendations that would enhance the inspector’s ability to promote compliance, as well as issues that will require corrective actions. In-mine observations indicate the roof control plan and ventilation plan need to be revised. Inspectors need to increase attention to detail regarding fire suppression and fire fighting equipment, coal dust and float coal dust suppression measures at belt transfer points, level of enforcement, and determination of gravity and negligence.

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Issues were also identified regarding the UMF and the Peer Review process.

**Audit Results (Positive Findings)**

1. All inspection reports, notes, and other documentation indicated the mine was inspected in its entirety;
2. Inspectors spend an average of 66% of the total E01 time on-site, and 26% of the total E01 time was spent on the active sections. 103(i) inspections (E02) were similar in that 64% of the total time was on-site and 44% of the total was on the active sections;
3. Inspectors held safety discussions with miners on multiple shifts. One documented instance identifies the discussion topic as “Red Zone Hazards”;
4. Rock dusting was well above average in most areas of the mine;
5. The two super sections inspected during the audit were adequately ventilated with no accumulations of methane detected. Record books indicated there were no ventilation problems at this time; and
6. In several instances, the inspector identified and documented the “root cause” of violations and discussed the root causes with mine management.

**Emergency Response Plan (ERP)**

1. The tracking system used at this mine is tied directly to the mine’s dual phone system and radio communication network. The system records every conversation conducted over each system. Company policy requires each employee who uses the system to identify themselves by name, where they are located, and their destination;
2. Lifelines are installed in the primary and alternate escapeways from the working sections to the shaft bottom and slope belt;
3. Fire drills were conducted using various scenarios to simulate explosions, fires, and other emergency situations. Mine record books and interviews with miners indicate that drills were alternated between the primary and alternate escapeways, and that all underground employees participated; and
4. SCSR expectation training and underground storage of SCSRs are being conducted in accordance with the ERP. Note: Most SCSRs inspected have a storage life that does not expire until 2016.

**Record Books**

Company record books were found to be in very good condition.

1. Preshift/Onshift record books indicated thorough examinations, with hazards and associated corrective actions listed; and
2. Seal examination records were complete and all observed hazardous conditions were adequately addressed.
Field Activity Reviews (FARs)

During the second half of Fiscal Year 2007, the field office supervisor conducted four FARs (three during E01 inspections, and one during an E02 inspection). In each case, the supervisor traveled underground, accompanying the inspector during the entire day's activities. FARs were adequately documented during this half and indicated the supervisor observed all aspects of the inspector's activities.

Other

This field office uses a bulletin board with inspection activity maps and copies of 104(d) issuances posted as a "D sequence tracking system." It is current and well documented.

Audit Results (Issues Requiring Attention)

Roof Control Plan

In-mine observations indicate the following issues need attention:

Roof Control Procedures:

1. Item 3 (minimum depth of test holes) -

   Attention Required - 30 CFR §75.220, §75.221, and §75.222 provide District Managers wide latitude to require provisions in roof control plans that are compatible with mining conditions on a mine by mine basis. In view of the roof conditions and roof fall history at this mine, the roof control plan should require that test holes be drilled to a minimum depth of 12 inches beyond the anchorage horizon, regardless of the type bolts used, as a means for detecting roof defects and adverse conditions before they can lead to falls and/or injuries.

2. Item 6 (Use of temporary support in intersections) - According to District 8 personnel, this provision is rarely used by the mine operator as they find the restriction in the roof control plan related to setting temporary support more cumbersome than providing permanent support.

   Recommendation - Unnecessary or inapplicable provisions of the roof control plan should be removed.

3. Item 12 (ATRS provisions) -

   Attention Required - The District Manager has the authority under 30 CFR §75.223 to require revisions to the roof control plan to address deficiencies. This provision of
the roof control plan is not sufficiently clear and should be revised to state: "If the ATRS will not reach the roof, approved extensions shall be used. If the ATRS is inoperative, bolting shall be discontinued until the ATRS is repaired." This would be an invaluable aid to ensure that all parties understand the requirement.

4. Item 16 (Supporting a path to an inoperative continuous miner) -

Attention Required - This item is not sufficiently explained so that all parties fully understand the importance of installing permanent support to the greatest extent possible before continuing inby the miner tail with temporary support. In view of the number of roof falls and roof related injuries at this mine, the District Manager should use the provisions of 30 CFR §75.223 to require revisions to the roof control plan to require a detailed explanation of the method for providing safe access to inoperative equipment inby the last row of permanent support.

Roof Control Plan Sketches:

1. Dimensions of bolt patterns and roof bolt installation sequence -

Attention Required - 30 CFR §75.222(a)(5) requires the operator to provide a description and drawings of the sequence of installation and spacing of supports. Dimensions and installation sequences on each sketch would result in miners being more familiar with the roof control plan, and help to reduce violations and injuries.

2. The "Sketches page 19 and page 20" allow all four corners of each intersection to be reduced. In-mine observations and discussions with mine management indicate this provision is seldom used if ever.

Recommendation- Unnecessary or inapplicable provisions of the roof control plan should be removed. For additional information, refer to Program Information Bulletin P03-28, "Best Practices for Turning Crosscuts with Remote Controlled Continuous Mining Machines," dated November 03, 2003.

3. The narrative in the "Three Way Intersection Sketch #3" is unclear.

Recommendation - The audit team feels this provision should be revised to ensure all parties are aware this is a remedial measure only, and is not intended to allow the reduction of corners as a practice.

4. The sketch labeled "Barrier Notch Development Sketch C3 Notch-R" allows haulage past a notch that has been supported only with timbers. District 8 personnel indicated this provision has rarely been used by the company.
Recommendation – The audit team feels that unnecessary or inapplicable provisions of the roof control plan should be removed, especially in view of the roof fall and roof related injury history of this mine.

5. Large mesh screen or “matting” have been installed in portions of the mine’s main haulage roads and portions of the escapeways.

Recommendation – The audit team feels this practice should be extended to protect all long-term entries, travelways, and escapeways.

Ventilation Plan

1. Crown III’s ventilation plan states, in part:

“...During the first 20 feet of development of a room, entry, or crosscut in the solid off a ventilating entry or crosscut, the scrubber can be the sole ventilation control device. A minimum of 6,000 cfm must pass over the machine...”

Recommendation – The audit team is concerned regarding the mining of a 20’ cut without a line curtain, especially on lift 2 of a 2-cut sequence and lifts 2 and 4 of a 4-cut sequence. In light of the methane liberation rate of this mine, the audit team recommends a detailed face ventilation study to determine how well the scrubber will ventilate the freshly mined cuts as stated above during the mining of subsequent cuts.

2. The currently approved ventilation plan, approved on May 02, 2002, still contains provisions for the use of cementitious foam blocks for seal construction.

Attention Required - To avoid confusion by all involved parties, and conflicts between the approved plan and 30CFR §75.335, the ventilation plan needs to be revised as soon as possible to remove provisions for the use of cementitious foam blocks in seal construction.

3. The currently approved ventilation plan, approved on May 02, 2002, does not provide a description of seal sampling protocol.

Attention Required - An acceptable seal sampling protocol that meets the requirements of 30 CFR 75.371(ff), needs to be included in the ventilation plan before continued approval is considered.

4. The currently approved ventilation plan, approved on May 02, 2002, does not state the ambient level of carbon monoxide and the method for determining the ambient level, in all areas where carbon monoxide sensors are installed.
Attention Required - Although the operator does not currently use carbon monoxide sensors as part of the fire detection system, there are several sensors installed underground, and being used to monitor carbon monoxide levels. The ventilation plan needs to be revised to comply with 30 CFR §75.371(hh), which requires a statement of the ambient level of carbon monoxide and the method for determining the ambient level of carbon monoxide “in all areas where carbon monoxide sensors are installed.”

Fire Protection

During this audit, two citations were issued to the operator for failure to maintain fire hoses and fire valves in usable condition. In one instance, company personnel expended more than 90 minutes attempting to connect a fire hose to a fire outlet valve near an underground belt drive. (Citations attached)

Rock Dusting & Control of Coal Dust and Float Coal Dust

There have been multiple instances of citations issued for float coal dust at underground belt conveyor transfer points. The audit team observed float coal dust accumulations at the unit #3 section belt drive area. (Citation is attached) Rock dusting efforts at belt conveyor transfer points is often hampered due to the lack of a dust suppression system (water spray) at each transfer point. Interviews with field office personnel indicated that efforts on their part to encourage the operator to install such a system have been unsuccessful. In addition, field office personnel have been unsuccessful in their attempts to have a dust suppression spray requirement included in the approved ventilation plan.

Attention Required - Sampling for respirable dust and the establishment of a designated area sampling entity is not the only method for requiring dust suppression. The history of citations issued for float coal dust at belt conveyor transfer points at this mine is sufficient to justify requiring a dust suppression system at each belt conveyor transfer point, under 30 CFR §75.371(u), to prevent the accumulation of explosive float coal dust in these areas.

Enforcement

The level of enforcement, gravity, and negligence determinations were not always consistent with the nature of the violation cited. Most notable are the non S&S evaluations for citations issued on poor roof conditions, damaged roof supports, accumulations of combustible materials, and inadequate air quantities in face areas. In some instances, the violation abatement time appeared to have been set for the convenience of the mine operator. In one instance, a citation regarding fire fighting installations was not required to be abated until the end of the shift when an immediate abatement time was more appropriate.


**Recommendation** – Conditions or practices that constitute a violation should be evaluated and documented properly for negligence, gravity, and S&S. The time allowed for abatement should be reasonable and determined by the seriousness of the violation, not by convenience for the mine operator.

**Uniform Mine File (UMF)**

1. The UMF was not being properly maintained in that it contained outdated files such as the “Mine Inspection and Violation History” (MSN065). These files were not removed in a timely manner as required by Chapter 1 of the Uniform Mine File Procedures Handbook (PH94-V-9(2).

2. Rock dust survey results and results of air sample analysis were not found in the UMF, as required by Chapter 2 of the Uniform Mine File Procedures Handbook (PH94-V-9(2).

Other issues regarding the UMF that can not be corrected at the field office or district level include:

1. The current Retention Schedule for underground mine files (MSHA Form 2000-166) and the Retention Schedule for surface mines (MSHA Form 2000-167) were last updated in December 1992 and May 1989 respectively.

2. The instructions for content and maintenance of the UMF, found in the Uniform Mine File Procedures Handbook (PH94-V-9(2), are not compatible with the current type, number, or nature of plans and information required for inspector review.

Field office clerical personnel, inspectors and specialists face conflicts in the written instructions regarding the type of files to be maintained as well as the length of time those files are to be retained. This creates the potential for loss of valuable information and incorrect information to be used by inspection when conducting inspections.

**Recommendation** – The Uniform Mine File Procedures Handbook should be revised and maintained current to accurately reflect the plans districts are required to keep in the UMF.

**Peer Reviews**

The Peer Review process with regard to Coal District 8 is inadequate. No headquarters reviews were conducted in District 8 during 2007. In addition, numerous issues identified by the Office of Accountability audit had not been identified and addressed by District Peer Reviews. Those issues include:

1. Recurring instances of citations that were not adequately evaluated for gravity and negligence.
2. Recurring instances of deficiencies in note-taking, including numerous instances where “unknown” and “undetermined” were used in response to questions regarding who knew a violation existed and for how long.

3. Failure to identify and address deficiencies in approved plans and whether or not those plans were applicable to actual mining conditions.

Attention Required – Peer Reviews should be conducted as per the current handbook, with an attention to detail regarding proper enforcement level and adequate documentation of the facts surrounding each violation. The district needs to monitor the progress of action plans and ensure that deficiencies do not recur.

Attachments

A. Review of E01 inspection report for 1st quarter CY2006 (2nd quarter FY2006)
B. Review of E01 inspection report for 2nd quarter CY2006 (3rd quarter FY2006)
D. Citation issued during this audit on accumulations of combustibles at belt transfer points
E. Citations on fire hoses and valves issued during this audit
Attachment A

District 8 Hillsboro, IL FO Audit

CY2006 Quarter 1 Review

Positive Comments

1. Entries in the company’s examination record books indicate that observed hazards are being recorded, corrected, and the corrective actions recorded on a routine basis mine wide.
2. Field notes indicate the CMI assigned to the mine conducted a complete inspection of the entire mine.
3. Safety talks were held on all shifts, with various subjects discussed.

Issues Requiring Attention

1. Citation termination was not always timely. Three citations issued for accumulations of combustible materials were 18, 21, and 12 days past due when terminated.
2. Gravity and negligence determinations did not always appear consistent with the narrative of the citation and the supporting field notes.
3. In many instances, the facts relative to conditions or practices cited were not recorded in the inspector’s field notes as required by the Coal General Inspection Procedures Handbook. Specifically, the questions regarding “Who knew the violation existed?” and “How long has the violation existed?” were answered with the words “unknown” or “undetermined.” In many of the instances cited, an examination of company record books would have allowed the inspector to answer both questions accurately.
Attachment B

District 8 Hillsboro, IL FO Audit

CY2006 Quarter 2 Review

Positive Comments

1. Entries in the company's examination record books indicate that observed hazards are being recorded, corrected, and the corrective actions recorded on a routine basis mine wide.
2. Field notes indicate all areas of the mine were inspected.
3. All shifts were inspected as required by the Act.

Issues Requiring Attention

1. Gravity and negligence evaluations appear questionable. Example: Inspector's notes indicated that "Foremen know that this was not acceptable," and yet negligence is marked "moderate." (Citation issued

2. Supporting documentation in the field notes for some citations were deficient in providing information to reflect the inspector's reasoning for determining exposure and likelihood.
3. In numerous instances, the facts relative to conditions or practices cited were not recorded in the inspector's field notes as required by the Coal General Inspection Procedures Handbook. Specifically, the questions regarding "Who knew the violation existed?" and "How long has the violation existed?" were answered with the words "unknown" or "undetermined." In many of the instances cited, an examination of company record books would have allowed the inspector to answer both questions accurately.
Attachment C

District 8 Hillsboro, IL FO Audit

CY2006 Quarter 3 Review

Positive Comments

1. Enforcement actions were timely abated for E01 inspection reports reviewed.
2. Root causes of hazards and violations were often identified in the inspector’s field notes or in the body of the enforcement action. Example: Citation [redacted] issued on [redacted] for a violation of 75.400 was abated when the accumulations were removed and the causative factor (a hydraulic leak) was repaired.
3. Mine site examination books have multiple entries of hazards being observed, recorded, and corrected.
4. The CMI inspecting the mine conducted meaningful safety meeting on “Red Zone” with all crews on all shifts.

Issues Requiring Attention

1. Two citations [redacted] were issued on [redacted] and [redacted] respectively, for violations of 30 CFR §75.202(a). The citations and accompanying field notes indicated that eight roof bolts were sheared off and four bolts were either loose or nearly sheared off, and that the violation was obvious. The extent of damaged roof support resulted in a total of 421 square feet of unsupported roof in three different locations. Although the condition or practice was widespread, there was no accompanying citation issued for an inadequate examination.
2. Citation [redacted] was issued on [redacted] for accumulations of combustible materials (oil and coal dust) on the valve bank of a feeder, a violation of 30 CFR §75.400. The abatement time did not appear to be a “reasonable amount of time” as specified by the Mine Act, but appeared to be set for the operator’s convenience.
**Attachment D**

**Mine Citation/Order**

<table>
<thead>
<tr>
<th>Section I: Violation Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>1. Date</td>
<td></td>
</tr>
<tr>
<td>2. Description of Violation</td>
<td></td>
</tr>
<tr>
<td>3. Conditions of Practice</td>
<td></td>
</tr>
</tbody>
</table>

**U.S. Department of Labor**

**Mine Safety and Health Administration**

**9. Violation**

- A. Health
- B. Section of Law
- C. Penalties
- D. Final Order

**10. Injury or Illness (check one)**

- A. Injry or Illness (last 12 mos)
- B. Injury or Illness (5 yrs)

**11. Types of Action (check one)**

- A. Notice
- B. Order
- C. Safeguard
- D. Written Notice

**12. Type of Action**

- 104(a)

**13. Area of Equipment**

**14. Final Order**

- A. Citation
- B. Order
- C. Safeguard
- D. Written Notice

**15. Area or Equipment**

**16. Terminated Due**

- A. Date
- B. Time (24 hr, Clock)

**Section II: Termination Action**

**17. Action for Termination**

**Section III: Assessment of Systems Data**

**18. Type of Violation**

- A. Final Order
- B. Written Notice
- C. Safeguard

**19. Final Order Number**

- A. Final Order
- B. Written Notice
- C. Safeguard

**20. Violation Number**

**21. Primary or Mill**

**22. Signatures**

**23. AR Number**

**U.S. Department of Labor**

**Mine Safety and Health Administration**

**Combustible material in the form of float coal dust has been allowed to accumulate on previously rock dusted surfaces along and under the unit III belt from the head roller inby for approximately 210 feet (3 x-cuts). This material is rib to rib, black in color, dry and up to approximately one eighth inch thick.**
Fire fighting equipment at the unit III belt drive is not being maintained in operable condition. When the inspection team attempted to test a section of fire hose, the provided fittings to hook the fire hose to the fire tap could not be hooked up. The fitting and the fire tap were rusty and it took three men one and one half hours to clean and hook up the fittings.
Fire fighting equipment along the unit 1 belt line is not being maintained in operable condition. At x-cut 7 the fire tap is not provided with a handle to turn the valve on. At x-cut 8 and one half there is another tap with the spindle for the handle broken off. These broken valves are rusty and have been broken for more than one or two days. This condition would be obvious to the casual observer.