

In the matter of:
Mach Mining, LLC
Mach No. 1 Mine
I. D. No. 11-03141

Petition for Modification

Docket No. M-2007-067-C

PROPOSED DECISION AND ORDER

On November 5, 2007, a petition was filed seeking a modification of the application of 30 C.F.R. § 75.1700 to Petitioner's Mach No. 1 Mine located at Johnson City, Williamson County, Illinois. The petitioner alleges that the alternative method outlined in the petition will at all times guarantee no less than the same measure of protection afforded by the standard.

On April 9, 2008, MSHA conducted an investigation of the petition and filed a report of their findings with the Administrator for Coal Mine Safety and Health. After a careful review of the entire record, including the petition and MSHA's investigative report, this Proposed Decision and Order (PDO) is issued.

The alternative method proposed by the petitioner is similar to that approved under similar petitions for modification; however, MSHA has added certain conditions. Some items listed on the terms and conditions have been added or modified to reflect previously established safety procedures.

Finding of Fact and Conclusion of Law

The alternative method proposed by the Petitioner (as amended by the recommendations of MSHA) will at all times guarantee no less than the same measure of protection afforded the miners under 30 C.F.R. § 75.1700.

The Mach No. 1 Mine operates in the Illinois No. 6 (Herrin) coal seam. The mining height averages approximately 7 feet and continuous mining sections are used to develop panels for longwall retreat mining. Several items in the PDO contain varying changes in the language that were previously developed to assure uniform practices and procedures are applied in the cleaning out and plugging of oil and gas wells. The established procedures were restored to assure uniform application of the granting terms and conditions by all mine operators requesting this modification. These terms and conditions have been applied to modifications for several years.

A few of the proposed requirements were more restrictive, such as allowing GPS coordinates rather than physical monuments to identify the gas/oil well and plugging the degasification boreholes to 100 feet above the highest mineable seam rather than 30 feet. Lastly, the petitioner required a second party to plug viable coal seams for which the petitioner has no mining rights. This is not consistent with resource conservation laws and would allow for a loss of the reserves.

On the basis of the petition and the findings of MSHA's investigation, Mach Mining, LLC is granted a modification of the application of 30 C.F.R. § 75.1700 to its Mach No. 1 Mine.

ORDER

Under the authority delegated by the Secretary of Labor to the Administrator for Coal Mine Safety and Health, and under § 101(c) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 811(c), and 30 C.F.R. Part 44, a modification of the application of 30 C.F.R. § 75.1700 at the Mach No. 1 Mine is hereby:

GRANTED, subject to the following terms and conditions:

1. DISTRICT MANAGER APPROVAL REQUIRED

- a. A safety barrier of 300 feet in diameter (150 feet between any mined area and a well) shall be maintained around all oil and gas wells (defined herein to include all active, inactive, abandoned, shut-in, and previously plugged wells and including water injection wells) until approval to proceed with mining has been obtained from the district manager.
- b. Prior to mining within the safety barrier around any well, the mine operator shall provide to the district manager a sworn affidavit or declaration executed by a company official stating that all mandatory procedures for cleaning out, preparing, and plugging each gas or oil well have been completed as described by the terms and conditions of this order. The affidavit or declaration must be accompanied by all logs described in subparagraphs 2(a)(2) and 2(a)(3) below and any other records described in those subparagraphs that the district manager may request. The district manager will review the affidavit or declaration, the logs, and any other records that have been requested, may inspect the well itself, and will then determine if the operator has complied with the procedures for cleaning out, preparing, and plugging each well as described by the terms and conditions of this Order. If the district manager determines that the procedures have been complied with, he will provide his approval and the mine operator may then mine within the safety barrier of the well, subject to the terms of this Order.

- c. The terms and conditions of this Order apply to all types of coal mining.

2. **MANDATORY PROCEDURES FOR CLEANING OUT, PREPARING, PLUGGING, AND REPLUGGING OIL OR GAS WELLS**

- a. MANDATORY PROCEDURES FOR CLEANING OUT AND PREPARING OIL AND GAS WELLS PRIOR TO PLUGGING OR REPLUGGING

- (1) The operator shall completely clean out the well from the surface to at least 200 feet below the base of the lowest mineable coal seam, unless the district manager requires cleaning to a greater depth based on his judgment as to what is required due to the geological strata or due to the pressure within the well (the operator shall provide the district manager with all information it possesses concerning the geological nature of the strata and the pressure of the well). The operator shall remove all material from the entire diameter of the well, wall to wall.
- (2) The operator shall prepare down-hole logs for each well. They shall consist of a caliper survey and log(s) suitable for determining the top, bottom, and thickness of all coal seams and potential hydrocarbon producing strata and the location for a bridge plug. The district manager may approve the use of a down-hole camera survey in lieu of down-hole logs. In addition, a journal shall be maintained describing the depth of each material encountered, the nature of each material encountered; bit size and type used to drill each portion of the hole; length and type of each material used to plug the well; length of casing(s) removed, perforated or ripped or left in place, any sections where casing was cut or milled; and other pertinent information concerning cleaning and sealing the well. Invoices, work-orders, and other records relating to all work on the well shall be maintained as part of this journal and provided to MSHA upon request.
- (3) When cleaning out the well as provided for in subparagraph (a)(1), the operator shall make a diligent effort to remove all of the casing in the well. If it is not possible to remove all of the casing, then the operator must take appropriate steps to ensure that the annulus between the casing and between the casings and the well walls are filled with expanding (minimum 0.5% expansion upon setting) cement and contain no voids. If the casing cannot be removed, it must be cut or milled at all mineable coal seam levels. Any casing that

remains shall be perforated or ripped. Perforations or rips are required at least every 50 feet from 200 feet below the base of the lowest mineable coal seam up to 100 feet above the uppermost mineable coal seam. If the operator, using a casing bond log, can demonstrate to the satisfaction of the district manager that all annuli in the well are already adequately sealed with cement, then the operator shall not be required to perforate or rip the casing for that particular well. When multiple casing and tubing strings are present in the coal horizon(s), any casing that remains shall be ripped or perforated and filled with expanding cement as indicated above. An acceptable casing bond log for each casing and tubing string is needed if used in lieu of ripping or perforating multiple strings.

- (4) If the district manager concludes that the completely cleaned-out well is emitting excessive amounts of gas, the operator must place a mechanical bridge plug in the well. It must be placed in a competent stratum at least 200 feet below the base of the lowest mineable coal seam, but above the top of the uppermost hydrocarbon-producing stratum, unless the district manager requires a greater distance based on his judgment that it is required due to the geological strata or due to the pressure within the well (the operator shall provide the district manager with all information it possesses concerning the geological nature of the strata and the pressure of the well). If it is not possible to set a mechanical bridge plug, an appropriately sized packer may be used.
- (5) If the uppermost hydrocarbon-producing stratum is within 300 feet of the base of the lowest mineable coal seam, the operator shall properly place mechanical bridge plugs as described in subparagraph (a)(4) to isolate the hydrocarbon-producing stratum from the expanding cement plug. Nevertheless, the operator shall place a minimum of 200 feet of expanding cement below the lowest mineable coal seam, unless the district manager requires a greater distance based on his judgment that it is required due to the geological strata or due to the pressure within the well.

b. **MANDATORY PROCEDURES FOR PLUGGING OR REPLUGGING OIL OR GAS WELLS TO THE SURFACE.**

After completely cleaning out the well as specified in paragraph 2(a) above, the following procedures shall be used to plug or replug gas or oil wells to the surface:

- (1) The operator shall pump expanding cement slurry down the well to form a plug which runs from at least 200 feet below the base of the lowest mineable coal seam (or lower if required by the district manager based on his judgment that a lower depth is required due to the geological strata or due to the pressure within the well) to the surface. The expanding cement shall be placed in the well under a pressure of at least 200 pounds per square inch. Portland cement or a lightweight cement mixture may be used to fill the area from 100 feet above the top of the uppermost mineable coal seam (or higher if required by the district manager based on his judgment that a higher distance is required due to the geological strata or due to the pressure within the well) to the surface.
- (2) The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4½-inch or larger casing, set in cement, shall extend at least 36 inches above the ground level with the API well number engraved or welded on the casing. When the hole cannot not be marked with a physical monument (i.e. prime farmland), high-resolution GPS coordinates (one-half meter resolution) are required.

c. MANDATORY PROCEDURES FOR PLUGGING OR REPLUGGING OIL AND GAS WELLS FOR USE AS DEGASIFICATION BOREHOLES.

After completely cleaning out the well as specified in paragraph 2(a) above, the following procedures shall be utilized when plugging or replugging oil or gas wells that are used as degasification boreholes:

- (1) The operator shall set a cement plug in the well by pumping an expanding cement slurry down the tubing to provide at least 200 feet of expanding cement below the lowest mineable coal seam, unless the district manager requires a greater depth based on his judgment that a greater depth is required due to the geological strata or due to the pressure within the well. The expanding cement shall be placed in the well under a pressure of at least 200 pounds per square inch. The top of the expanding cement shall extend at least 30 feet above the top of the coal seam being mined unless the district manager requires a greater distance based on his judgment that a greater distance is required due to the geological strata or due to the pressure within the well.

- (2) The operator shall securely grout into the bedrock of the upper portion of the degasification well a suitable casing in order to protect it. The remainder of this well may be cased or uncased.
- (3) The operator shall fit the top of the degasification casing with a wellhead, equipped as required by the district manager in the approved ventilation plan. Such equipment may include check valves, shut-in valves, sampling ports, flame arrestor equipment, and security fencing.
- (4) Operation of the degasification well shall be addressed in the approved ventilation plan. This may include periodic tests of methane levels and limits on the minimum methane concentrations that may be extracted.
- (5) After the area of the coal mine that is degassed by a well is sealed or the coal mine is abandoned, the operator must seal degas holes using the following procedures:
 - (i) The operator shall insert a tube to the bottom of the drill hole or, if not possible, to no greater than 100 feet above the Pittsburgh coal seam. Any blockage must be removed to ensure that the tube can be inserted to this depth.
 - (ii) The operator shall set a cement plug in the well by pumping Portland cement or a lightweight cement mixture down the tubing until the well is filled to the surface.
 - (iii) The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4½-inch or larger casing, set in cement, shall extend at least 36 inches above the ground level with the API well number engraved or welded on the casing.

d. MANDATORY ALTERNATIVE PROCEDURES FOR PREPARING AND PLUGGING OR REPLUGGING OIL OR GAS WELLS.

The following provisions apply to all wells that the operator determines, and the MSHA district manager agrees, cannot be completely cleaned out due to damage to the well caused by subsidence, caving, or other factors.

- (1) The operator shall drill a hole adjacent and parallel to the well to a depth of at least 200 feet below the lowest mineable coal seam, unless the district manager requires a greater depth based on his judgment that a greater depth is required due to the geological strata or due to the pressure within the well.
- (2) The operator shall use a geophysical sensing device to locate any casing that may remain in the well.
- (3) If the well contains casing(s), the operator shall drill into the well from the parallel hole. From 10 feet below the coal seam to 10 feet above the coal seam, the operator shall perforate or rip all casings at intervals of at least 5 feet. Beyond this distance, the operator shall perforate or rip at least every 50 feet from at least 200 feet below the base of the lowest mineable coal seam up to 100 feet above the seam being mined, unless the district manager requires a greater distance based on his judgment that a greater distance is required due to the geological strata or due to the pressure within the well. The operator shall fill the annulus between the casings and between the casings and the well wall with expanding (minimum 0.5% expansion upon setting) cement, and shall ensure that these areas contain no voids. If the operator, using a casing bond log, can demonstrate to the satisfaction of the district manager that the annulus of the well is adequately sealed with cement, then the operator shall not be required to perforate or rip the casing for that particular well or fill these areas with cement. When multiple casing and tubing strings are present in the coal horizon(s), any casing that remains shall be ripped or perforated and filled with expanding cement as indicated above. An acceptable casing bond log for each casing and tubing string is needed if used in lieu of ripping or perforating multiple strings.
- (4) Where the operator determines and the district manager agrees that there is insufficient casing in the well to allow the method outlined in subparagraph (d)(3) to be used, then the operator shall use a horizontal hydraulic fracturing technique to intercept the original well. From at least 200 feet below the base of the lowest mineable coal seam to a point at least 50 feet above the seam being mined, the operator shall fracture at least six places at intervals to be agreed upon by the operator and the district manager after considering the geological strata and the pressure within the well. The operator shall then pump expanding cement into the fractured well in sufficient quantities and in a manner that fills all intercepted voids.

- (5) The operator shall prepare down-hole logs for each well. They shall consist of a caliper survey and log(s) suitable for determining the top, bottom, and thickness of all coal seams and potential hydrocarbon-producing strata and the location for the bridge plug. The operator may obtain the logs from the adjacent hole rather than the well if the condition of the well makes it impractical to insert the equipment necessary to obtain the log. The district manager may approve the use of a down-hole camera survey in lieu of down-hole logs if, in his judgment, such logs would not be suitable for obtaining the above-listed data or are impractical to obtain due to the condition of the drill hole. A journal shall be maintained describing the depth of each material encountered; the nature of each material encountered; bit size and type used to drill each portion of the hole; length and type of each material used to plug the well; length of casing(s) removed, perforated, ripped or left in place; and other pertinent information concerning sealing the well. Invoices, work-orders, and other records relating to all work on the well shall be maintained as part of this journal and provided to MSHA upon request.
- (6) After the operator has plugged the well as described in subparagraphs (d)(3) and/or (d)(4), the operator shall plug the open portions of both holes from the bottom to the surface, with Portland cement or a lightweight cement mixture. The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4½-inch or larger casing, set in cement, shall extend at least 36 inches above the ground level

A combination of the methods outlined in subparagraphs (d)(3) and (d)(4) may have to be used in a single well, depending upon the conditions of the hole and the presence of casings. The operator and the district manager should discuss the nature of each hole. The district manager may require that more than one method be utilized.

3. **MANDATORY PROCEDURES AFTER APPROVAL HAS BEEN GRANTED BY THE DISTRICT MANAGER TO MINE WITHIN THE SAFETY BARRIER, OR TO MINE THROUGH A PLUGGED OR REPLUGGED WELL**

- a. A representative of the operator, a representative of the miners, the appropriate State agency, or the MSHA district manager may

request that a conference be conducted prior to mining through any plugged or replugged well. Upon receipt of any such request, the district manager will schedule such a conference. The party requesting the conference shall notify all other parties listed above within a reasonable time prior to the conference to provide opportunity for participation. The purpose of the conference shall be to review, evaluate, and accommodate any abnormal or unusual circumstance(s) related to the condition of the well or surrounding strata when such conditions are encountered.

- b. The operator shall mine through a well on a shift approved by the district manager. The operator shall notify the district manager and the miners' representative in sufficient time prior to mining-through a well in order to provide an opportunity to have representatives present.
- c. When using continuous mining methods, the operator shall install drivage sights at the last open crosscut near the place to be mined to ensure intersection of the well. The drivage sites shall not be more than 50 feet from the well. When using longwall-mining methods, drivage sights shall be installed on 10-foot centers for a distance of 50 feet in advance of the well. The drivage sights shall be installed in the headgate and tailgate.
- d. The operator shall ensure that fire-fighting equipment, including fire extinguishers, rock dust, and sufficient fire hose to reach the working face area of the mine-through (when either the conventional or the continuous mining method is used) is available and operable during all well mine-throughs. The fire hose shall be located in the last open crosscut of the entry or room. The operator shall maintain the water line to the belt conveyor tailpiece along with a sufficient amount of fire hose to reach the farthest point of penetration on the section. When the longwall mining method is used, a hose to the longwall water supply is sufficient. All fire hoses shall be connected and ready for use, but do not have to be charged with water, during the cut-through.
- e. The operator shall ensure that sufficient supplies of roof support and ventilation materials are available and are located at the last open crosscut. In addition, emergency plugs and suitable sealing materials shall be available in the immediate area of the well intersection.
- f. Minimum ventilation air quantities to be maintained in the working face during the period from when mining is within 50 feet of the well location until the post cut-through inspection or mining progresses at least 50 feet past the well location, shall be specified in the approved ventilation plan.

- g. On the shift prior to mining through the well, the operator shall service all equipment and check it for permissibility.
- h. The operator shall calibrate the methane monitor(s) on the longwall, continuous mining machine, or cutting machine and loading machine on the shift prior to mining through the well.
- i. When mining is in progress, the operator shall perform tests for methane with a handheld methane detector at least every 10 minutes from the time that mining with the continuous mining machine or longwall face is within 30 feet of the well until the well is intersected and immediately prior to mining through it. During the actual cutting process, no individual shall be allowed on the return side until the mine-through has been completed and the area has been examined and declared safe. All workplace examinations shall be conducted on the return side of the shearer while the shearer is idle.
- j. When using continuous or conventional mining methods, the working place shall be free from accumulations of coal dust and coal spillages and rock dust shall be placed on the roof, rib, and floor to within 20 feet of the face when mining through the well. On longwall sections, rock dusting shall be conducted and placed on the roof, rib, and floor up to both the headgate and tailgate gob.
- k. When the well is intersected, the operator shall de-energize all equipment, thoroughly examine it, and determine the area is safe before mining is resumed.
- l. After a well has been intersected and the working place determined safe, mining shall continue in by the well a sufficient distance to permit adequate ventilation around the area of the well.
- m. If the casing is cut or milled at the coal seam level, the use of torches should not be necessary. However, in rare instances, torches may be used for inadequately or inaccurately cut or milled casings. No open flame shall be permitted in the area until adequate ventilation has been established around the well bore and methane levels of less 1.0% are present in all areas that will be exposed to flames and sparks from the torch. The operator shall apply a thick layer of rock dust to the roof, face, floor, ribs, and any exposed coal within 20 feet of the casing prior to any use of torches.
- n. Non-sparking (brass) tools shall be located on the working section and shall be used to expose and examine cased wells.
- o. No person shall be permitted in the area of the mine-through operation except those actually engaged in the operation, including

company personnel, representatives of the miners, personnel from MSHA, and personnel from the appropriate State agency.

- p. The operator shall alert all personnel in the mine to the planned intersection of the well prior to their going underground if the planned intersection is to occur during their shift. This warning shall be repeated for all shifts until the well has been mined through.
- q. The mine-through operation shall be under the direct supervision of a certified individual. Instructions concerning the mine-through operation shall be issued only by the certified individual in charge.
- r. The provisions of this Order do not impair the authority of representatives of MSHA to interrupt or halt the mine-through operation and to issue a withdrawal order when they deem it necessary for the safety of the miners. MSHA may order an interruption or cessation of the mine-through operation and/or a withdrawal of personnel by issuing either a verbal or a written order to that effect to a representative of the operator, which order shall include the basis for the order. Operations in the affected area of the mine may not resume until a representative of MSHA permits resumption of mine-through operations. The mine operator and miners shall comply with verbal or written MSHA orders immediately. All verbal orders shall be committed to writing within a reasonable time as conditions permit.
- s. A copy of this Order shall be maintained at the mine and be available to the miners.
- t. Within 30 days after this Order becomes final, the operator shall submit proposed revisions for its approved 30 C.F.R. Part 48 training plan to the district manager. These proposed revisions shall include initial and refresher training regarding compliance with the terms and conditions stated in the Order. The operator shall provide all miners involved in the mine-through of a well with training regarding the requirements of this Order prior to mining within 150 feet of the next well intended to be mined through.
- u. The responsible person required under 30 C.F.R. § 75.1501 shall be responsible for well intersection emergencies. The well intersection procedures must be reviewed by the responsible person prior to any planned intersection.
- v. Within 30 days after this Order becomes final, the operator shall submit proposed revisions for its approved mine emergency evacuation and firefighting plan required by 30 C.F.R. § 75.1501. The operator shall revise the plans to include the hazards and

evacuation procedures to be used for well intersections. All underground miners shall be trained in this revised plan within 30 days of the submittal of the revised evacuation plan.

Any party to this action desiring a hearing on this matter must file in accordance with 30 C.F.R. § 44.14, within 30 days. The request for hearing must be filed with the Administrator for Coal Mine Safety and Health, 1100 Wilson Boulevard, Arlington, Virginia 22209-3939. If a hearing is requested, the request shall contain a concise summary of position on the issues of fact or law desired to be raised by the party requesting the hearing, including specific objections to the proposed decision. A party other than Petitioner who has requested a hearing may also comment upon all issues of fact or law presented in the petition, and any party to this action requesting a hearing may indicate a desired hearing site. If no request for a hearing is filed within 30 days after service thereof, the Decision and Order will become final and must be posted by the operator on the mine bulletin board at the mine.

Kenneth A. Murray
Deputy Administrator for
Coal Mine Safety and Health