

PART VI

UCM 1 Application Addendum Pursuant to rules enacted March 21, 2000

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I. DRINKING DOMESTIC AND RESIDENTIAL WATER SUPPLIES

A. For all underground operations: Shadow area water supply background information.

1. Compliance with 62 Ill. Adm. Code 1784.14(b)(1): The operator shall provide the location and ownership of all existing drinking, domestic and residential water supplies, including private wells, municipal wells and springs. This information shall be provided for all areas within the proposed shadow area and within 1/2 mile of the boundaries of the proposed shadow area.

RESPONSE: *Refer to Attachment III.2.B.1 — Surface Owners Water Well Survey and Map 4 Hydro-Geological Map for information regarding the location and ownership of existing water supplies within the proposed shadow area and within 1/2 mile of the shadow area boundary. It should be pointed out that the majority of the residents in the vicinity of the shadow area obtain their water supply from rural and municipal water systems that serve the area.*

2. Compliance with 62 Ill. Adm. Code 1784.14(b)(1)(A)(ii): Provide adequate ground water quality descriptions for the shadow area and its adjacent area (1/2 mile). The information shall include at a minimum pH, total dissolved solids, total iron and total manganese. The Department may require additional parameters based on site specific conditions.

RESPONSE: *Pre-mine water well testing will be conducted at least 6-monhs prior to mining of all wells shown as being “in use” on the land owners survey where the land owner has provided permission for the sampling and analytical testing to be performed. While an attempt to conduct these tests described will be made, it can only be done where the owner agrees to allow the collection and testing to be performed.*

Monitoring of water quality within the adjacent, currently approved, shadow area of the Deer Run Mine was initiated for three surface sampling points. Data on pH collected from the surface sampling points indicates the surface water in the vicinity of the shadow area ranges from 7.40 to 8.80. Total dissolved solids results for samples from the on-site wells ranged from 100 to 405 mg/liter total manganese ranged from 0.0 to 2.6 mg/liter, and total iron ranged from 0.21 to 5.05 mg/liter.

In addition, twelve (12) monitoring wells were installed around the perimeter of the surface effects area to gather baseline information about the shallow ground water resources in the permit area. Data on pH collected from the monitoring wells in the surface effects area indicates the ground water in the vicinity of the shadow area ranges from 7.02 to 7.34. Total dissolved solids results for samples from the on-site wells ranged from 392 to 740 mg/liter, total manganese ranged from 1.44 to 62.2 mg/liter, and total iron ranged from 54.8 to 2,550 mg/liter.

Refer to Attachments III.2.C.2 — Baseline Surface Sample Site Data and III.2.B.2 — Schedule B Groundwater Monitoring Well Data in the approved Permit 399 for the detailed data on all water sampling.

Also refer to Attachment III.2.B.2 — Groundwater Quality Summary in this permit application for a summary of groundwater results that were collected and analyzed at the nearby surface facilities site of the Deer Run Mine. This is a collection of groundwater quality data that has been required to be monitored as per the requirements of Permit No. 399.

3. Compliance with 62 Ill. Adm. Code 1784.14(b)(1)(B): Respond to UCM-1 Application Part III(2)(B)(3).

RESPONSE: *See Part III.2.B.3 of the permit application text.*

- B. For all underground operations: Qualification for exemption for performing individual water quantity and quality data collection.

1. Compliance with 62 Ill. Adm. Code 1784.20(b)(7) and (b)(8)(B): Provide sufficient documentation concerning site specific geologic, geotechnical and historical performance to demonstrate that existing wells and springs will not be impacted by the operation. Stratigraphic locations of drinking, domestic and residential water supplies relative to the seam to be mined shall also be discussed in relation to potential impacts from mine level instabilities such as roof falls.

RESPONSE: *Drinking, domestic, and/or residential water supplies have been identified within the Revision No. 2 shadow area.*

As indicated by previously approved submittals, based on the results of the water use survey conducted of residents within the approved permit shadow area and adjacent area (1/2 mile), the majority of the residents obtain their drinking water from rural and municipal water systems that serve the area. Refer to Map 4 — Hydro-Geological Map and Attachment III.2.B.1 — Surface Owners Water Well Survey submitted in this revision for the known locations of private wells within and adjacent to the proposed Shadow Area. The absence of wide spread reliance on ground water for domestic use in such rural areas is indicative of the limited availability and poor quality of the ground water resources in the vicinity of the mining operation.

According to Illinois State Geological Survey (ISGS) Circular 225, the best potential sources of groundwater are sand and gravel deposits in the major valley systems. However, many of the surficial sand and gravel deposits throughout the county are narrow and discontinuous. The bottomlands of the East Fork Shoal Creek drainage system has been found to contain thicker deposits and has produced sufficient yields for communities such as Witt to the North and Fillmore to the East. It is important to note that the public water supply wells for both of these communities are located approximately nine miles away from the surface facilities of the Deer Run Mine and are not located within the proposed shadow boundary or within 1/2 mile of the proposed shadow boundary. Drift aquifers are generally thin with low yields throughout the permit area. The Pennsylvanian age sandstone bedrock aquifers can usually provide only enough water for individual domestic farm supplies. Yields from wells completed in these formations are usually less than 10 gallons per minute with yields less than 5 gallons per minute common. The mantle of unconsolidated materials at the ground surface (which generally ranges from 110 to 190 feet thick within the proposed shadow boundary area) does not contain substantial sand and gravel deposits capable of yielding sufficient quantities of water for a dependable domestic supply. The shallow drilled wells and cisterns generally have depths of 30 to 40 feet. These wells may tap discontinuous sand lenses contained in the upper part of the unconsolidated strata that are recharged directly by percolation of precipitation within the immediate area. These wells may be supplemented by directing runoff from nearby structures into the well bore.

The other source of ground water is the consolidated rock materials in the Pennsylvanian bedrock. The bedrock surface in the permit area consists of rocks in the Modesto Formation, which overlies the Carbondale Formation, the unit containing the coal seam being mined. In general, rocks of these formations consist of alternating sandstone, limestone, shales and coal. Among these deposits, the best aquifer candidates are the relatively thin sandstones and the fractured or partially dissolved limestone beds. ISGS Circular 225 states that the low permeabilities of the Pennsylvanian System rocks cause the water in the deeper formations to be highly mineralized. Therefore, some deeper bedrock aquifers may contain water whose quality is unsatisfactory without expensive treatment and, generally, are not developed. Recharge to these bedrock aquifers is primarily from precipitation which percolates into and through the overlying unconsolidated materials.

Longwall and other high extraction mining methods cause collapse, fracturing, bed separation, and bedding plane slip in the roof strata above the mined seam. All of these impacts on the overlying strata can result in changes to ground water availability if a major water resource is within reach of the mining disturbance. The height of the disturbed zone depends on the thickness of the mined coal, geometry of the mined panel, the rate of mining face advancement, and the geological characteristics of the overburden. The area of disturbance above a high extraction mining area is generally divided into four zones, based on the extent and type of disturbance. The four zones are: the zone of primary caving where the immediate roof collapses irregularly to fill the mined void; the

fractured zone where strata breakage and bed separation occur along existing bedding planes; the continuous bending or deformation zone where strata between the fractured zone and the surface bend downward without breaking; and the surface zone where tensile strain at the surface causes shallow fractures to develop.

The combined height of the caved and fractured zone where changes in permeability due to subsidence occur has been described by various investigators to range from 30 to 60 times the thickness of the extracted seam. The lower end of this range is typical of areas where the overburden is composed of a high percentage of weak and more elastic strata. On the other hand, the upper end of this range was recorded only in mining with overburden composed entirely of brittle rock (limestone and sandstone). The presence of approximately 310 feet of overburden between the surficial deposits and mined coal, composed of approximately 60% elastic rock types (shales, siltstones and claystones), will limit the height of the caved and fractured zone. Therefore, considering the presence of mostly more elastic shales in the overburden for the Deer Run Mine, it is estimated that the impacts of subsidence on strata permeability could reach up to 40 times the mining height. Based on an average extraction height of approximately 9 feet, this would indicate the zone of disturbance could reach an average of 360 feet above the mine opening.

Numerous studies have been conducted to determine the effects of surface subsidence due to underground mining on unconsolidated and bedrock aquifers. Booth and Spande described the impacts of longwall mining the No. 6 Coal Seam in south-central Illinois. At the subject mine location, the coal seam was about 10 feet thick and was being mined at a depth of about 725 feet. The major aquifers above the mined coal seam included the Mt. Carmel Sandstone and alluvial and glacial sediments. The results of the study indicated some increase in permeability of the sandstone strata after undermining, and a temporary decrease in water levels of up to 36 feet. The water levels recovered gradually after the longwall face passed, and within a month returned to the approximate pre-mining levels. Other studies were conducted of a longwall mining operation in Saline County, Illinois where the No. 6 Coal Seam was 5.6 feet thick and about 400 feet below the ground surface. The studies concluded that the subsidence slightly increased the permeability of the Trivoli Sandstone aquifer, located approximately 213 feet above the mined coal. No impacts on permeability or water levels in the glacial drift aquifer were noticed. A third study was conducted of the impacts of a longwall mining operation on glacial and sandstone aquifers at a mine in western Illinois mining the No. 6 Coal Seam. The coal seam at this mine was 6.5 feet thick and the coal is overlain by 140 to 240 feet of bedrock and 70 to 160 feet of unconsolidated glacial sediments. The Trivoli Sandstone, a major aquifer in the area, is located about 150 feet above the mined coal. This study concluded that the subsidence increased the hydraulic conductivity of the Trivoli Sandstone by about one order of magnitude, and by two to three orders of magnitude in the shales. The study also found water levels in the glacial aquifers were increased due to the impacts of subsidence, and water levels in

the sandstone decreased. It should be pointed out that the sandstone and shales for this latter case were within the caving and fracture zones described above.

No significant, detrimental impacts on drinking, domestic and residential water supplies are anticipated due to the proposed mining operations for several reasons. Although planned subsidence mining methods are proposed, the geologic conditions of Deer Run Mine are favorable for limiting the impacts of any planned subsidence on both surface and ground water hydrology. The unconsolidated soil deposit which lies at the surface is composed of fine-grained materials consisting primarily of clay and silt with lesser amounts of sand. The soil thickness is generally from about 110 to 190 feet and the minimum thickness of the consolidated overburden between the mined coal and the bottom of the surficial deposits is approximately 310 feet. Based on the nature and thickness of the consolidated overburden in the permit area, subsidence is not likely to have significant, long-term impacts on ground water supplies.

Should subsidence affect a ground water supply, the impacts would be expected to be similar to the impacts described in the first two studies discussed above. Therefore, the potential impacts due to planned subsidence on water supply wells located above a mining panel in the bedrock aquifer could be a temporary lowering of water levels. The water levels should recover to pre-mining levels within a few weeks after subsidence occurs. The possibility of decreasing water levels after subsidence has occurred is typically caused by increasing permeability of the water bearing strata. However, the decrease in water level in most wells is compensated for by an increased well yield. Therefore, the slight decrease of water levels after mining in some wells does not materially affect the post-mining water availability. The studies have indicated that aquifers in unconsolidated materials are not typically impacted by subsidence, even if shallow bedrock aquifers are impacted. Therefore, wells completed in the surficial deposits are not expected to be impacted by the planned subsidence mining.

Based on the significant overburden depth and its high percentage of elastic rocks, the distance from the mined coal to the surface deposits and the fine texture of the unconsolidated materials, no significant, long-term impacts to any drinking, domestic or residential water supplies are anticipated due to the planned subsidence resulting from the proposed mining.

2. Provide the locations of any water supplies that will be specifically monitored for water quality and quantity based on the potential for adverse impacts from the underground mining operations. Based on the analysis provided under B above, the Department will determine if any water supplies beyond those proposed to be monitored warrant pre-mining collection of quality and quantity data. In the event the Department determines additional monitoring is required beyond that proposed under B.2. above, the operator will be notified of such determination and will be required to modify the monitoring plan provided under C, below.

RESPONSE: *Monitoring of “in use” wells will be conducted in accordance with any agreements reached with individual residents and landowners if allowed by the landowner.*

The presence of groundwater wells within the subsidence control plan zone have been identified. The groundwater surveys that were returned indicated some structures that used a well as a primary water source. As the mining plan progresses, subsidence agreements will be sought with structure owners and additional information on additional groundwater sources that may exist.

- C. For all operations where water supplies have not been exempt from monitoring requirements under B, above: Water quality and quantity monitoring plan.
1. Provide a plan for obtaining adequate pre-mining water quality and quantity data from wells and springs potentially impacted by subsidence. Specific parameters to be monitored and method(s) for defining approximate water supply quantities shall be detailed.

RESPONSE: *At least 6 months prior to longwall mining subsidence occurring at a property, the Illinois Department of Natural Resources, Office of Mines and Minerals, Reclamation Division will be notified of any groundwater sources that should be monitored. Quarterly progress reports shall be submitted to IDNR that will describe the location of the longwall face during the previous quarter and the predicted longwall face progress for the following 6 months. Surface property tracts will be identified that have been subsided during the past quarter as well as those tracts anticipated to be subsided in the next 6 months. Within the quarterly report will be information on groundwater wells that have been identified within the shadow area and the plans to monitor prior to and after subsidence.*

Notification of residents will occur at least 6 months prior to subsidence occurring and will be made by certified mail in accordance to 62 Ill. Adm. 1817.122. The notification will contain all items required by the regulation and will also request information on any groundwater sources that the owners and occupants may be aware of on the surface property.

The majority of the residents utilize a public water source for their water supply. However, when sources of groundwater such as water wells, springs and/or cisterns have been identified, pre-subsidence monitoring for quality and quantity will be made, with the permission of the land owners. Data will be collected on the location, the use, the construction, the depth, the elevation, the

capacity, the water quality, the water quantity and the general geology of the water supply.

A pre-subsidence agreement may be entered into to describe what compensation may be provided if a water source is damaged.

Once subsidence has occurred, the water source will be monitored to determine the effect of subsidence. If the water source has been damaged by subsidence, the water source will be repaired or a new water source will be provided or the land owner will be compensated.

As part of the Subsidence Program, a spreadsheet has been developed to track the documentation of structures prior to subsidence occurring. This spreadsheet will be submitted to the local inspector on a quarterly basis to provide the agency with updated progress on the Subsidence Program at this mine.

The tracking template for monitoring of domestic drinking and residential supplies is included in Attachment VI.I.C.1 — Quarterly Subsidence Report Template.

2. Provide a time table for collection of data sufficiently in advance of underground mine development to document pre-mining quality and quantity. Data collection should reflect seasonal fluctuations.

RESPONSE: *At least 6 months prior to longwall mining subsidence occurring at a property, the Illinois Department of Natural Resources, Office of Mines and Minerals, Reclamation Division will be notified of any groundwater sources that should be monitored. Quarterly progress reports shall be submitted to IDNR that will describe the location of the longwall face during the previous quarter and the predicted longwall face progress for the following 6 months. Surface property tracts will be identified that have been subsided during the past quarter as well as those tracts anticipated to be subsided in the next 6 months. Within the quarterly report will be information on groundwater wells that have been identified within the shadow area and the plans to monitor prior to and after subsidence.*

Notification of residents will occur at least 6 months prior to subsidence occurring and will be made by certified mail in accordance to 62 Ill. Adm. 1817.122. The notification will contain all items required by the regulation and will also request information on any groundwater sources that the owners and occupants may be aware of on the surface property.

The tracking template for monitoring of domestic drinking and residential water supplies is included in Attachment VII. — Quarterly Subsidence Report Template.

- D. For all underground operations: Replacement of impacted water supplies.
1. Compliance with 62 Ill. Adm. Code 1784.20(b)(9): Provide a general plan for replacing any contaminated, diminished, or interrupted drinking, domestic or residential water supply. The plan should include possible contingencies for emergency, temporary and permanent replacement of affected water supplies. Replacement of water supplies must comply with the definition found under 62 Ill. Adm. Code 1701. Appendix A Definitions: "Replacement of Water Supply".

RESPONSE: *If any drinking, domestic or residential water supplies are adversely affected due to the planned subsidence caused by the mining activities, Hillsboro Energy, LLC will provide a suitable alternative water supply of equivalent quantity and quality as the original supply. Emergency or temporary water replacement will be provided within 24 hours and could be established by hauling water in until a permanent supply is established. Owners of adversely affected water supplies will be reimbursed for actual out-of-pocket expenses caused by the temporary disruption of their water supply. Alternative permanent water supplies in the area include extension and connection to a public water supply system, drilled wells in the bedrock aquifer, and surface water impoundments. Permanent replacement includes providing an equivalent water delivery system and reimbursement for operation and maintenance costs in excess of the customary and reasonable delivery costs for the pre-mining water supplies.*

2. Compliance with 62 Ill. Adm. Code 1784.20(b)(9)(A): Provide a procedural plan for determining the existence and degree of material damage, loss or diminution of water quality and quantity. Address resolution of disputes over the existence, amount or level of water quality and quantity such as third party arbitration.

RESPONSE: *If Deer Run Mine personnel are contacted by a resident or owner alleging that a drinking, domestic or residential water supply has been adversely affected by subsidence, mine personnel will meet with the person as soon as practicable to investigate the claim and collect information documenting the details of the claimed damage. Based on the results of the initial investigation and in areas of alleged damages not clearly defined, Deer Run Mine will retain appropriate experts or other qualified persons, such as hydrologists, geologists, well drilling contractors, and plumbers, to inspect and evaluate the property and provide a written report, stating the conditions of the alleged damages. Procedures to determine the existence and degree of material damage, loss or diminution of water quality and quantity will be selected based on the findings of the experts' evaluation. The procedures may include comparing information from unaffected, nearby residents who use the same water source, such as analyzing samples for water quality or conducting pump tests to determine aquifer yield*

characteristics. Once the details of the damage have been identified and documented, Deer Run Mine will appraise the alleged claim and propose a resolution or compensation. If the property owner is dissatisfied with the proposed resolution, differences will be resolved through third party arbitration or litigation.

3. Compliance with 62 Ill. Adm. Code 1784.20(b)(9)(B): Provide a plan for determining the present worth of the cost to replace a water supply if the operator wishes to pursue a one time lump sum payment for costs associated with provisions for an equivalent water delivery system and payment of operation and maintenance costs in excess of customary and reasonable delivery costs for pre-mining water supplies. Any lump sum payments for future costs must be agreed to by the water supply owner.

RESPONSE: *In the event Hillsboro Energy, LLC wishes to pursue a one-time lump sum payment for costs associated with providing an equivalent water delivery system and payment of operation and maintenance costs in excess of customary and reasonable delivery costs for the pre-mining water supply, accepted economic analysis procedures will be used to determine the amount of the lump sum payment. A discounted cash flow analysis using accepted compound interest formulas will be performed to determine the net differences in the present value of the installation, operating and maintenance costs between the pre-mining water supply system and an equivalent water delivery system. Installation costs will be determined based on estimates or bids prepared by qualified contractors experienced in the installation of the selected water supply system. All equipment, components and construction necessary for installation and hookup of the replacement system will be included. Operating and maintenance costs over the expected life of the pre-mining system for both the pre-mining and replacement systems will be computed based on actual costs incurred by the owner, if available, or by estimates provided by a qualified contractor. Operating costs will include the reasonable and customary expenses for power, treatment chemicals, filters, and other consumable items related to the ongoing provision of the water supply. If the replacement system involves connection to a municipal water supply, the operating costs will include the periodic charges imposed by the utility for the expected water usage. Maintenance costs will include expenses required for the repair and replacement of system components such as pumps, pressure tanks, and treatment systems. As indicated in Item I.D.I. in this addendum, the lump sum payment may also include reimbursement for actual out-of-pocket expenses caused by the temporary disruption of the water supply. Any proposal for lump sum payments for future costs will be presented to the water supply owner and their approval obtained.*

II. STRUCTURES, FACILITIES, AND OCCUPIED DWELLINGS

A. For all operations proposing planned subsidence. Compliance with 62 III. Adm. Code 1784.20(b)(8)(A) and 1817.121(a)(3): Provide a general plan for the following:

- a. A description of the methods that will be employed to minimize damage from planned subsidence to structures and facilities.

Please note that if minimization methods are not proposed for a given structure or facility, the written consent of the owner must be obtained and provided to the Department in advance of any planned subsidence impacts.

RESPONSE: *At a minimum, the Company will pursue a premining agreement with the structure owner prior to subsidence occurring. The agreement will allow the implementation of measures designed to prevent or minimize subsidence damages and/or outline an orderly procedure for the repair or replacement of damaged structures following subsidence. These agreements will vary in content in accordance with each structures' site-specific conditions. A site-by-site determination will be made prior to subsidence occurring.*

Pre-subsidence activities could include the following:

- *Reinforcement of sensitive structures or features;*
- *Installation of footers or other techniques designed to reduce damages caused by movement;*
- *Change of location of pipelines, utility lines or other features;*
- *Exposure of buried structures such as water lines or gas lines prior to subsidence;*
- *Relocation of moveable improvements to sites outside the angle of draw;*
- *Monitoring, to determine the commencement and degree of subsidence so that appropriate measures can be taken to prevent or reduce damage;*

- b. A description of the procedure that will be used to demonstrate that the costs of minimizing damages exceeds the anticipated cost of repair. This option is not possible if subsidence material damage would constitute a threat to health or safety.

RESPONSE: *A waiver of the requirements of minimization of subsidence damages may be obtained from the owner of the structure; or,*

The structure will be appraised of its value by a qualified appraiser. An estimate of the cost of minimization of subsidence will be made by a person qualified and experienced in subsidence related construction estimates. If the cost of minimization exceeds the value of the property or the cost of the repair, the Company may opt to not minimize the subsidence damage but may reimburse the owner of the structure.

- c. A time table for submitting to the Department the specific minimization method for each structure or facility sufficiently in advance of underground mine development to comply with 62 III. Adm. Code 1784.20(b)(8)(A).

RESPONSE: *Pre-subsidence agreements are being pursued in advance of mining. The pre-subsidence agreement provides the owners of structures or facilities a means of understanding the effects of subsidence upon their structures or facilities well in advance of the subsidence occurring. The Permittee is provided assurance that mining will continue without interruption.*

The Pre-subsidence Agreement is provided as a means to communicate with the Owner of the structure or facility what events will occur during the subsidence event, what techniques will be utilized to minimize subsidence damage and how the health and safety of the residents of the structure will be assured during the subsidence event.

The negotiation prior to the pre-subsidence agreement between the owner of the structure and facility and the permittee will provide the decision of whether to 1) Minimize the damage to the structure or facility; 2) Provide the owner the opportunity to not have minimization measures taken; or 3) Provide a method to discover if the minimization costs would exceed the anticipated costs of repair.

If a Pre-subsidence Agreement cannot be agreed upon between the structure owner and applicant prior to 120 days before subsidence is to occur, then the Permittee shall submit to the Owner and Illinois Department of Natural Resources, Division of Mines and Minerals a site specific written plan of minimization of damage to surface structures.

- B. For operations proposing planned subsidence: Qualification for exemption from performing individual structural condition surveys.
 1. Compliance with 62 III. Adm. Code 1784.20(b)(7) and (b)(8)(B): Provide sufficient documentation concerning site specific geologic, geotechnical and historical performance to demonstrate that a given structure or facility will not be impacted by the operation.
 2. Provide the locations of any structures and facilities for which an exemption to conduct condition surveys is requested in B.1. above.

Based on the analysis provided under B above, the Department will determine if any structures qualify for an exemption. In the event the Department determines structures can be exempted, the operator will be specifically notified of such determination.

RESPONSE: *An exemption from performing individual structural surveys condition surveys is not requested.*

- C. Compliance with 62 Ill. Adm. Code 1784.20(b)(8)(8): Conducting pre-subsidence condition surveys. Provide a description of procedures to determine the condition of structures and facilities in accordance with 62 Ill. Adm. Code 1817.121(a)(2).

RESPONSE: *The pre-subsidence survey will be conducted by a person qualified in evaluating structures and the effects of subsidence on structures. The survey must be performed with the consent of the Property Owner. The survey will be performed at least 120 days prior to subsidence occurring unless approved by the Department after justification by the Permittee in writing. The survey will include a detailed documentation of the condition of the structure supported by either photographs and/or drawings. The Permittee shall provide the Department verification that copies of the survey and technical assessment or engineering evaluation have been provided to the Owner.*

Much of the shadow area above the Deer Run Mine is supplied by a public water supply system. If a property owner utilizes other water sources, the condition of the drinking, domestic and residential water supply will be conducted and submitted at least 120 days prior to the water delivery system being undermined. A lesser time may be approved by the Department if justified by the Permittee in writing. A copy of the water survey will be provided to the property owner and to the Department.

- D. For all underground operations, compliance with 62 Ill. Adm. Code 1817.121(c)(3): Adjustment of bond due to material damage from subsidence. When material damage resulting from subsidence occurs to land, structures and facilities, the operator must comply with 1817.121(c)(3). Describe how the operator will adjust the bond or alternatively assure financial responsibility with appropriate liability insurance if repair, replacement or compensation is not accomplished within the allocated time frames.

RESPONSE: *Where practicable, repair, replacement, or compensation for damage to land, structures, and facilities will be completed within 90 days of the damage. However, if repair, replacement, or compensation of material damage resulting from subsidence cannot be accomplished within 90 days of the occurrence of such damage, Hillsboro Energy, LLC will rely on the property damage provisions of its liability insurance to demonstrate the required assurance of financial responsibility. Hillsboro Energy, LLC will maintain its general liability insurance required by 62 IAC 1800.60 in full force and affect for the duration of its mining operations and until all subsidence related damage is repaired, replaced, or compensated. When a claim is paid, the insurance company is obligated to pay the damaged party the full amount of the agreed settlement up to the policy limits. The \$5,000 deductible will be paid by the insured (Hillsboro Energy, LLC) to the insurance company, and whether or not it is paid, it will have no effect on the claimant's settlement. Refer to Attachment I.10.C — Insurance Certificate.*

III. MINING OPERATIONS BLASTING

- A. Will the applicant be conducting any surface blasting activities incident to underground mining, including, but not limited to, initial rounds of slopes or shafts that are within 50 vertical feet of the original ground surface? ☐ Yes ☒ No

RESPONSE: *No blasting activities within 50 feet of the ground surface are being proposed in this application revision.*

- B. If the answer to the above is yes, please describe how the applicant will comply with 62 111. Adm. Code 1817.61 through 68.

RESPONSE: *No blasting activities within 50 feet of the ground surface are being proposed in this application revision.*

- 1) A copy of the proposed blasting schedule(s) and a list of persons to whom the schedule will be distributed for each blasting area described.

RESPONSE: *N/A*

- 2) A copy of the format used to notify persons within one-half (1/2) mile of the permit area as to how to obtain a pre-blast or condition survey.

RESPONSE: *N/A*

- 3) A brief description of procedures to be used to perform pre-blast or condition surveys and for distributing copies of the survey reports to owner's residents and the Department.

RESPONSE: *N/A*

- 4) A copy of the blasting report form.

RESPONSE: *N/A*

- 5) The distance to, and the names and addresses of the owners of, all dwellings or other structures within one half (1/2) mile of the proposed permit area.

RESPONSE: *N/A*

- 6) a.) Will blasting be conducted within one thousand (1,000) feet of any building used as a dwelling, public building, school, church community building or institutional building outside the permit area?

Yes _____ No X _____

- b.) Will blasting be conducted within five hundred (500) feet of an active or

abandoned underground mine?

Yes _____ No **X** If the answer to a) and b) is NO, then continue to Item c) below; if the answer to either a) or b) is YES, an anticipated blast design shall be submitted as described below:

RESPONSE: N/A

The blast design shall contain sketches of the drill patterns, delay periods, and decking and shall indicate the type and amount of explosives to be used, critical dimensions and the location and general description of the structures to be protected, as well as a discussion of the design factors to be used, which protect the public man meet the application air blast, flyrock, and ground vibration standards in Section 1819.67.

The blast design shall be prepared and signed by a certified blaster.

RESPONSE: N/A

If the blast design is not included with this application please state when you plan to submit the blast design:

- c. Include information setting forth the limitations the operator will meet with regard to ground vibration and airblast, the basis for those limitations, and the methods to be applied in controlling the adverse effects of blasting operations.

RESPONSE: N/A

- d. Include a description of any system to be used to monitor compliance with the standards of 62 Ill. Adm. Code 1816.67, including the type, capability, and sensitivity of any blast monitoring equipment and proposed procedures and locations of monitoring.

RESPONSE: N/A

- e. Blasting operations within five hundred (500) feet of active underground mines require approval of the Department and Federal Mine Safety and Health Administrations (MSHA). If blasting operations are expected to occur within five hundred (500) feet of an active underground mine, please include the written approvals of the Department and MSHA, or state when the written approvals will be submitted prior to conducting blasting operations.

RESPONSE: N/A

ATTACHMENT VI.1.C.1
QUARTERLY SUBSIDENCE REPORT TEMPLATE

Received Electronically
Dept of Natural Resources
Aug 26, 2020
Office of Mines and Minerals
Land Reclamation Division

Company:
Mine:
Permit:

Quarterly Planned Subsidence Report

3rd Quarter 2018

Received Electronically
Dept of Natural Resources
Aug 26, 2020

Date:

Office of Mines and Minerals Land Reclamation Division

[illegible]

[COMPANY]
[MINE]
[1st Quarter 2018]

Received Electronically
Dept of Natural Resources
Aug 26, 2020
Office of Mines and Minerals
Land Reclamation Division

I. Structures and Facilities Mitigation - Required 120 Days Prior to Subsidence

- 1) Date Company performs or schedules the Pre-Subsidence Condition Survey.
NOTE: Required by regulations 120 days prior to subsidence per 1817.121 a) 2) A)
- 2) Date landowner denies access to perform Pre-Subsidence Condition Survey.
- 3) Date the Pre-Subsidence Condition Survey was provided to the landowner
NOTE: Required by regulations 120 days prior to subsidence per 1817.121 a) 2) A)
- 4) Date Company obtains Agreement to Compensate in lieu of Preventive or Post-Mining Repairs.
NOTE: Commonly referred to as the damage minimization plan waiver.
- 5) Date the Damage Minimization Plan was provided to the landowner.
NOTE: Required by regulations 120 days prior to subsidence per 1817.121 a) 3)
- 6) Date the Damage Minimization Plan was provided to the Department
NOTE: Required by permit 120 days in advance of planned subsidence
- 7) Structures Purchased by Company
- 8) Preventive and/or Post-Mining Repairs to be Performed by Company

II. Drinking, Domestic and Residential Water Supply Survey - Required 120 Days Prior to Subsidence

Required within Permit Area, Subsidence Shadow Area and Adjacent Areas that could be contaminated, diminished or interrupted by subsidence.

- PWS Is the land owner serviced by Public Water Supply
- Waiver Date Company obtains a waiver of drinking, domestic and residential water replacement
- 1) Date Water Supply Condition Survey was performed. If no well is present, respond with "n/a".
NOTE: Required by regulations 120 days prior to subsidence per 1817.121 a) 2) B)
 - 2) Date the Water Supply Condition Survey was provided to the landowner
NOTE: Required by regulations 120 days prior to subsidence per 1817.121 a) 2) B)
 - 3) Date the Water Supply Condition Survey is provided to the Department.
NOTE: Typically, this information does not need to be provided to the Department.

III. National Register of Historic Places - Required 180 Days Prior to Impacts of Planned Subsidence

Can be performed by Company; archaeologist not required.

Limited to structures believed to be more than 40 years old.

NOTE: See Operator Memorandum 2006-03

- 1) Date Historic Places Survey was performed
NOTE: If this does not apply to the landowner, indicate with "n/a".
- 2) Date a copy of digital photos provided to the Department.
NOTE: Provide CD with photos cross-referenced to the mine plan base map.
- 3) Date of required follow-up as determined by the Department.

IV. Infrastructure Agreements - Required 60 Days Prior to Subsidence

1) [Name of Utility/Municipality/Township/etc]

a)	Agreement In Place	Y _____	N _____	Date: _____
b)	Mapping Obtained	Y _____	N _____	

VI. Quarterly Reports

All of the above data is required to be updated for reporting to IDNR on a quarterly basis, beginning 90 days after start of mining. Routine quarterly reports are due 30 days after the end of each quarter.