SUPPLEMENTAL PERMIT APPLICATION INFORMATION FOR UNDERGROUND MINES

OPERATION PLAN AND RECLAMATION PLAN:

A. Subsidence Control Plan (880-X-8I-.10)

1. Include a survey which shows what structures or renewable resource lands exist within the proposed permit and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of such structures or renewable resource lands. If it is determined that no material damage will occur to surface structures or renewable resource lands from subsidence, the application shall include supporting evidence of such a finding.

2. If the study shows that structures or renewable resource lands could be adversely effected by subsidence, the applicant shall address the following:

   Within the survey area, does the applicant intend to implement planned subsidence? ( ) Yes ( ) No

   If yes, provide information requested under "Planned Subsidence", Subsection (a).

   If no, provide information requested under "Unplanned Subsidence", Subsection (b).

(a) Planned Subsidence.

(1) Using Maps, plans, or cross-sections, as needed, locate the area(s) where planned subsidence is occurring or is intended to occur. Clearly show on a nap and correlate the information and the relationship to critical surface features, renewable, resources lands and structures called for in Parts (i-v) below:

(i) Provide a detailed mine plan map. Describe the method of mining used to implement planned subsidence, such as longwall, room and pillar - high extraction (pillar removal), or other methods.

(ii) Locate extraction panels, give geometric sizes, dimensions and orientation, and include details of length, width and height of panels. Give percent of coal left as support in ratio to percent of coal removed within the extraction panel. Include similar information concerning any secondary recovery that is planned.

(iii) Provide details locating all permanent coal block and barrier pillars outside the actual extraction panels. Give geometric shapes, dimensions and orientation of these blocks and barrier pillars.

(iv) Give anticipated date (month/year) in which mining, will be conducted in each area and/or panel within the planned s subsidence area(s).

(v) Show areas that will be affected by subsidence. Provide details on the horizontal extent and vertical drop of the surface as it relates to the effectiveness of the proposed Subsidence Control Plan. Supply information detailing expected subsidence profiles.

(2) Provide a detailed description of measures to be taken to prevent planned subsidence from causing material damage or lessening the value or reasonable foreseeable use of the surface. Locate and describe in detail how, when, and where measures, if any, are to be applied. Include the following information:

(i) Locate areas in which coal removal is not planned, including its relationship to overlying area(s) to be protected by leaving coal in place.

(ii) Describe measures to be taken on the surface to prevent material damage or diminution of the value or reasonable foreseeable use of the surface, including, but not limited to:

(A)Reinforcement of sensitive structures or features.

(B)Installation of footers or other techniques designed to reduce damage caused by movement.

(C)Change of location of pipelines, utility lines or other features.

(D)Relocation of moveable improvements to sites outside the angle of draw.

(E)Monitoring, to determine the commencement and degree of subsidence so that appropriate measures can be taken to prevent or reduce damage.

(D)Describe any other prevention measures taken.

(3) Provide a detailed description of measures that are to be taken to mitigate the effects of any material damage or diminution of value or reasonable foreseeable use of lands which may be caused by planned subsidence. Describe how these measures are to be promptly applied in accordance with 880-X-10D-.58. measures include, but are not limited to,
one or more of the following:

(i) Restoration or rehabilitation of damaged structures including surface and underground agricultural drainage systems, features and lands after subsidence to a condition capable of supporting and suitable for foreseeable use, including restoration of approximate land surface contours to premising conditions in order to assure proper surface drainage.

(ii) Replacement of structures, including surface and underground

agricultural drainage systems destroyed or damaged by subsidence.

(iii) Purchase of structures prior to mining or purchase of damaged structures after subsidence at pre-subsidence value.

(iv) Purchase of non-cancelable insurance policies as described in 880-X-10D-.58(3), payable to surface owners in full amount of the possible material damage or other comparable measures.

(v) Describe other mitigation measures that are to be taken.

(4) Provide a detailed description of measures to be taken to determine the degree of material damage or diminution of value or foreseeable use of the surface, including, but not limited to, such measures as:

(i) Conducting pre-subsidence surveys and inventories of all structures and surface features which might be materially damaged by subsidence.

(ii) Monitoring to measure deformations near specified structures or features or otherwise appropriate locations.

(b) Unplanned Subsidence.

(1) Using maps, plans, and cross sections, as needed, locate the areas where coal extraction is to take place and where subsidence, if incurred, cannot be considered planned subsidence. Clearly show on a map the relationship of parts (i - v) below to critical surface features, renewable resource lands, and structures.

(i) Provide a detailed mine plan map. Describe the methods of mining used, such as room and pillar, checker board, blind roam or other methods.

(ii) Locate extraction panels, give geometric sizes, dimensions and orientation, and include details of length, width and height of panels. Give percent of coal left as support in ratio to percent of coal removed within the extraction panel. Provide information on crosscut and room dimensions, and both driven on what centers. Include similar information concerning any secondary recovery that is planned.

(iii) Provide details locating all permanent coal blocks and barrier pillars outside the actual extraction panels. Give geometric shapes, dimensions, and orientation of these blocks and barrier pillars.

(iv) Give anticipated date (month/year) in which mining will be conducted in each area and/or Panel.

(v) Characterize variations in claystone layers immediately below the extracted coal seam(s). Include data on varying claystone thicknesses throughout the area covered by the subsidence control plan. Provide assurances that measures

have been adopted concerning the maximization of mine stability as it relates to claystone floor conditions.

(2) Provide a detailed description of measures to be taken to prevent unplanned subsidence from causing material damage or lessening the value or reasonable foreseeable use of the surface. Describe how these measures are to be applied. Include the following information.

(i) Locate area(s) in which coal removal is not planned, including its relationship to overlying area(s) to be protected by leaving coal in place.

(ii) Locate area(s) to be backfilled or backstowed.

(iii) Describe measures to be taken on the surface to prevent material damage or diminution of the value or reasonable foreseeable use of the surface including, but not limited to:

(A) Reinforcement of sensitive structures or features;

(B) Installation of footers or other techniques designed to reduce damage caused by movement;

(C) Change of location of pipelines, utility lines or other features;

(D) Relocation of moveable improvements to sites outside the potential angle-of-draw;

(E) Monitoring to determine the commencement and degree of subsidence so that appropriate measures can be taken to prevent or reduce damage; and

(F) Describe any other prevention measures to be taken.

(3) Provide a detailed description of measures that are to be taken to mitigate the effects of any material damage or diminution of value or foreseeable use of lands which may occur as a result of unplanned subsidence. Describe how these measures are to be promptly applied in accordance with 817.124. Measures include, but are not limited to, one or more of the following:

(i) Restoration or rehabilitation of damaged structures (including surface and underground agricultural drainage systems), features and lands after subsidence to a condition capable of supporting and suitable for foreseeable use including restoration of approximate land surface contours to premining conditions in order to assure proper surface drainage.

(ii) Replacement of structures, including surface and underground agricultural drainage systems destroyed or damaged by subsidence.

(iii) Purchase of structures prior to mining or purchase of damaged structures at pre-subsidence value.

(iv) Purchase of non-cancelable insurance policies, as described in

817.124(c), payable to the surface owner in the full amount of the possible material damage or other comparable measures.

(v) Describe other mitigation measures to be taken.

(4) Provide a detailed description of measures to be taken to determine the degree of material damage or diminution of value or foreseeable use of the surface, including, but not limited to such measures as:

(i) Conducting of pre-subsidence surveys of all structures and surface features which might be materially damaged by subsidence.

(ii) Monitoring to measure deformation near specified structures or features or other appropriate locations.

B. **Underground Mine Supplement:Surface disposal of excess spoil and underground development waste.(880-X-8I-.09, 880-X-8I-.16, 880-X-10D-.33)**

Is excess spoil proposed to be stored in surface fills?
( ) Yes ( ) No

If yes, complete the following:

(a) Show on a map the location of all proposed fills and provide cross-sections of the proposed site and design plans of the disposal structures.

(b) Include the results of the geotechnical investigation showing:

(1) A description of physical characteristics of bedrock and geologic conditions in the disposal area;

(2) A determination of possible adverse affects from subsidence due to past, present or future underground mining.

(3) Location of springs, seeps or other ground water observed or anticipated in the disposal area;

(4) A technical description of the rock to be used in construction of rock chimney cores or rock drainage blankets, if applicable;

(5) Results of stability analyses including strength parameters, pore pressures and long term seepage conditions:

(6) Engineering design assumptions, calculations, and any alternatives considered.

(C) Describe the construction, operation, maintenance and removal (if applicable) of the structure.

(D) Include a surface water drainage and control plan for the fill.

(e) Are rock-toe buttresses or keyway cuts to be used?
( ) Yes ( ) No

If yes, describe or show:

(1) The number, location and depth of test borings or test pits used in describing subsurface conditions; and

(2) Engineering specifications used in the design.

C. **Underground disposal of coal processing waste, excess spoil and underground development waste.**

Is coal processing waste, excess spoil and/or underground development waste proposed to be disposed of in underground fills?
( ) Yes ( ) No

If yes, complete the following:

(a) Show on a map the location of the proposed fill(s) including a flow diagram showing the source of the material.

(b) Describe in detail the design, operation and maintenance of the proposed fill.

(c) Describe the quality of the material to be stored and identify any potentially acid-forming and toxic-forming materials.

(d) Describe the area to be backfilled, percent of the mine void to be filled, and method of constructing retaining walls, if required.

(e) Describe the influence of the backfilling operation on active underground mine operations.

(f) Describe the surface area to be supported by the backfill and any anticipated surface effects following backfilling.

(g) Describe the source of the hydrologic transport mediums and the method of dewatering the backfill, if applicable. If water is to be released to the surface, describe treatment plans.

(h) Describe the anticipated effect of the backfill on the hydrologic regime.

(i) Describe each permanent monitoring well, if required, to be located in the backfilled area, the stratum underlying the mined coal, and gradient from the backfilled area.

(j) Attach a copy of MSHA approval of the proposed fill.

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