



September 24, 2025

Mr. Wes Brown
Senior Project Manager - Fuels
Homer City Generation LP
1750 Power Plant Road
Homer City, Pennsylvania 15748

Dear Mr. Brown:

Subject: Naturally Occurring Geologic Condition Assessment Report
HCPP Pipeline
Burrell and Black Lick Townships, Indiana County, Pennsylvania
CEC Project 354-010

Civil & Environmental Consultants, Inc. (CEC) presents to Homer City Generation LP (HCG) our Naturally Occurring Geologic Condition Assessment Report (report) for the proposed HCPP Pipeline located in Burrell and Black Lick Townships, Indiana County, Pennsylvania. The proposed limits of disturbance (LOD) are for the installation of one (1), 30-inch proposed buried gas pipeline to be installed within the proposed LOD. The approximate 5.8-mile gas pipeline stationing extends from Station 0+00 at the proposed Metering and Regulation (M&R) and Interconnect Pad where the proposed pipeline ties into an existing TETCO Transmission Line at the southern terminus, to approximate Station 307+00 at the Homer City Power Plant at the northern terminus, respectively. The geotechnical report for the proposed M&R Pad is proposed under a separate cover. The proposed pipeline will be installed via open cut methods, conventional bore, as well as horizontal directional drilling (HDD) from approximate Stations 69+00 to 98+00.

Lastly, the proposed project includes approximately 1,950 feet of high voltage overhead power lines within an approximately 50-foot-wide right-of-way (ROW) at the southern terminus of the pipeline. The proposed overhead power lines extend from the tie in point at Station 0+00 along Country Lane Road to the proposed M&R Pad at approximate Station 19+44. Please note the powerline and the gas pipeline have separate stationing, as indicated herein, as well as on the alignment plans and figures.

CEC performed a desktop literature study to identify and evaluate potentially hazardous naturally occurring geologic formations and soil conditions (also referred to as geohazards herein) at the site. CEC reviewed publicly available documents related to mining, coal outcrops, landslides, slope gradients, soil types, karst/sinkhole, and radioactive or arsenic bearing formations for the purpose of providing recommendations to reduce the risk of ground movement or environmental impact during and after construction due to naturally occurring geohazards. Based on the findings of the desktop review, which are summarized herein, CEC concludes there is a potential for slope movement along the proposed alignment. As such, CEC personnel performed field reconnaissance to further document conditions and elaborate on recommendations to mitigate geohazards at the proposed site.

CEC developed this report to summarize our literature review and field reconnaissance, and to present opinions and recommendations for implementing best management practices (BMPs) to address potential geohazards during construction. Figures 1A through 2D are presented in Appendix A and provide pertinent geologic, topographic, and mining information. Select photographs from CEC's field reconnaissance are included in Appendix B. Details for proposed BMPs to address potentially hazardous naturally occurring geologic features are provided on Drawings C943 through C945 of the permit set. Recommended locations to install various BMPs are indicated on the alignment plans, which make up the permit set based on the findings of this assessment.

Lastly, this report was authored by Mr. Aaron Lavage, P.E. of CEC. Mr. Lavage is a licensed Professional Engineer in the Commonwealth of Pennsylvania with 17 years of experience. His primary focus is geotechnical engineering in the Appalachian regions of Pennsylvania and West Virginia.

1.0 DATA OBTAINED

1.1 DESKTOP LITERATURE REVIEW

CEC reviewed the following publicly available information to identify potential "Geohazard Areas" that may be encountered along the project limits:

- United States Department of Agriculture (USDA), On-line Soil Survey Geographic Database for Indiana County, Pennsylvania;
- United States Department of the Interior, Landslide and Related Features Mapping for Bolivar and Indiana, Pennsylvania Quadrangles;
- Existing topographic contour information from PAMAP Program, Light Detection and Ranging (LiDAR) data, dated 2020;
- Pennsylvania State University (PSU), Pennsylvania Mine Map Atlas (online);
- Pennsylvania Department of Conservation and Natural Resources (PADCNR), Interactive Web Viewer (online);
- Pennsylvania Department of Environmental Protection (PADEP), Interactive eMap (online);
- PADEP, Mine Subsidence Insurance Risk Map (online);
- United States Geological Survey (USGS), Geologic Map of Pennsylvania - Map 1, dated 1980 (online);
- USGS Mineral Resources Report 98, "Coal Resources of Indiana County, Pennsylvania," for Bolivar and Indiana, Pennsylvania Quadrangles, dated 1996 (online);
- United States Environmental Protection Agency (USEPA), Map of Radon Zone (online);
- USGS Scientific Investigation Report 2017-5018, "Evaluation of Radon Occurrence in Groundwater from 16 Geologic Units in Pennsylvania, 1986-2015, with Application to Potential Radon Exposure from Groundwater and Indoor Air," dated 2017;

- USGS Open-File Report 2014-1082 “Geochemical and Mineralogical Maps for Soils of the Conterminous United States,” dated 2014;
- USGS Mineral Resources On-Line Spatial Data (online); and
- Historic Aerial Photography from NETRonline (online) and Google Earth.

Sections 1.1.1 through 1.1.7 present pertinent data obtained from the material referenced above.

1.1.1 Landslide Mapping

The USGS Open File Maps 79-1314 (D-7 and E-7) “Landslides and Related Features of the Bolivar and Indiana, Pennsylvania Quadrangles,” indicate the pipeline is located in areas documented to be least prone to landslides. Portions of the proposed powerline right of way are documented within one (1) “old landslide” from approximate Stations 2+00 to 10+00.

The USGS defines old landslides as “areas of extensive hummocky ground caused by earthflow and earth and rock slump. Lacks clear evidence of active sliding. Relatively stable in natural, undisturbed state...” but “...can be reactivated by extensive, rapid excavations, loading and changes in ground water and surface water conditions...”.

The approximate limits of documented landslides identified by USGS are presented on Figures 1A through 1D. CEC performed field reconnaissance throughout the length of the proposed pipeline. Refer to Section 1.2 for descriptions of field observations.

1.1.2 Mining and Acid Producing Rock (APR) Conditions

According to the USGS Mineral Resources Report 98, “Coal Resources of Indiana County, Pennsylvania, Bolivar and Indiana Quadrangles,” the proposed pipeline is not documented to cross intact outcrops of the Pittsburgh Coal seam, nor any other coal seam based on review of the published references. However, the Pittsburgh Coal once outcropped at various locations but appears to have been previously stripped mined at these areas. Refer to subsequent sections for approximate stationing of strip-mined locations. Additionally, several areas of deep mining of various coal seams were documented and described in the following sections. The stationing of the various mine features presented below were estimated from a combination of published mapping, historic aerial photography, visual observations of ground contours, and test pits performed along the proposed alignment.

Surface Mining: The pipeline will cross areas where the Pittsburgh Seam is documented to have been strip mined. These areas are documented to have been surface mined at the following approximate stations as indicated below and on Figures 2A through 2D. Please note the stationing herein refers to the gas pipeline stationing and excludes strip mining operations (if any) along the overhead powerline ROW due to the lack excavations/trenching in those areas:

- Stations 117+00 to 128+00;
- Stations 137+50 to 138+00;
- Stations 139+00 to 151+50; and
- Stations 172+50 to 175+00.

Trenching operations in the previously strip-mined areas will encounter mine spoil (i.e., soil and rock overburden above the extracted coal) and may have increased potential for the generation of APR.

As part of CEC's services, 22 test pits were excavated in/near areas which were potentially strip mined. The test pit locations are indicated on the alignment plans which comprise the permit set. Test pit logs are attached to this report as Appendix C. Samples were obtained from test pits where mine spoils/natural carbonaceous materials were encountered. These samples were subject to total sulfur testing per the PADEP fact sheet included in Appendix D. Two (2) of these samples exceeded the threshold of 0.5 percent total sulfur indicated in the PADEPs fact sheet. Laboratory testing is included in Appendix E.

Recommendations on how to test, handle, and manage APR materials at strip mine locations are presented in the APR Plan. The APR Plan is appended to the Erosion and Sedimentation Control (E&S) Permit application for this project.

The Upper Freeport and the Pittsburgh Coal seams have both been deep mined underneath various segments of this proposed pipeline.

Deep Mining of Upper Freeport Coal Seam:

The Upper Freeport Coal seam is documented to have been deep mined beneath the proposed pipeline from approximate Stations:

- Stations 0+00 to 4+00;
- Stations 5+00 to 9+00;
- Stations 16+00 to 19+00;
- Stations 102+50 to 106+50;
- Stations 108+50 to 123+50;
- Stations 127+00 to 129+00;
- Stations 132+00 to 134+50;
- Stations 139+50 to 158+50;
- Stations 169+00 to 190+00;
- Stations 200+00 to 248+50;
- Stations 251+50 to 255+00;
- Stations 270+00 to 271+50;

- Stations 291+00 to 298+50;
- Stations 301+00 to 303+50; and
- Stations 306+50 to 307+00.

Further, the Upper Freeport coal seam was deep mined beneath the proposed overhead powerline from approximate powerline Stations 9+00 to 13+00, as shown on Figure 2. Based on the USGS mapping, the base of the Upper Freeport Coal seam is documented to be at approximate Elevations (Els.) 400 to 600 along the pipeline and powerline, trending upwards in the northern direction. Existing ground surface elevations overlying these deep mined areas vary from approximately 920 to 1270, which corresponds with mining depths below existing grade greater than approximately 320 feet below ground surface (bgs).

Deep Mining of Pittsburgh Coal Seam:

The Pittsburgh Coal seam is estimated to have been deep mined from approximate pipeline Stations 128+00 to 137+50 and Stations 151+50 to 172+50, as well as proposed overhead powerline from approximate Stations 0+00 to 5+00. Based on the USGS mapping, the base of the Pittsburgh Coal seam is documented to outcrop at approximate Els. ranging from 1150 to 1200 along the pipeline and powerline. Existing ground surface elevations overlying these deep mined areas vary from approximately 1200 to 1270, which corresponds to depths below existing grade near or less than 50 feet bgs within the above referenced stationing. Deep mine mapping reviewed by CEC indicates the Pittsburgh Coal seam was mined in the 1900s to 1910s, with subsequent strip mining operation permits obtained later in the 1970s. Lastly, various “mine entry” locations were flagged by eMapPA within the vicinity of the documented deep mined areas.

Risk of Mine Subsidence

Based on the research included in the “Study and Analysis of Surface Subsidence over the Mined Pittsburgh Coalbed,” by Gray 1977, the risk of subsidence related incidents increases drastically when mines are located 50 feet or less from the ground surface.

Though it is inconclusive of the exact interface between the strip-mined limits and deep mined areas of the Pittsburgh Coal seam, it is CEC’s opinion there are portions of the pipeline at “medium” to “high” risk of ground subsidence due to mine collapse based on the depth of the mine. Based on a large-scale study of subsidence resulting from the mining of the Pittsburgh Coal seam performed by the United States Bureau of Mines, only 2 percent of recorded subsidence events exceeded 30 feet in diameter. Based on analytical information provided by the HCG project team, the current specified pipe [30-inch diameter, 0.515 to 0.618-inch wall thickness, Grade X70, 1440 pounds per square inch (psi) maximum allowable operating pressure] is anticipated to be capable of safely spanning more than 50 feet even with an added weight of 5 feet of overburden soil on top of the pipe. As such, geotechnical BMPs are not proposed in areas underlain by deep mining operations.

Due to the mine depths of the Upper Freeport Coal seam, it is CEC's opinion there is "low" risk for future mine subsidence at locations underlain by mine workings of the Upper Freeport Coal seam. As such, BMPs are not proposed for these locations.

1.1.3 Topographic Mapping

Topographic mapping was reviewed along the pipeline alignment. Areas where slopes are between 33 to 50 percent [3 Horizontal to 1 Vertical (3H:1V)] as well as areas where slopes are greater than 50 percent (2H:1V) are delineated on Figure 1.

Topography at the proposed pipelines vary with ranges from relatively flat to isolated areas steeper than 2H:1V. In addition to the steep slopes, the alignment appears to traverse over areas of apparent "channelized" regional contours (sags) where the proposed pipelines cross various side slopes with low points along the alignment. CEC performed site reconnaissance throughout the proposed limits of disturbance to evaluate steep slopes. These areas are described in Sections 1.2.

1.1.4 Stratigraphy

According to publicly available mapping from the PADCNr, the stratigraphic rock units present at or near the surface along the pipeline and powerline alignments are generally Pennsylvanian aged and belong primarily to cyclic sequences of the Casselman Formation and Monongahela Group.

The Casselman Formation is characterized by a few locally persistent red beds, calcareous claystones, freshwater limestones, thin sandstones, shales, siltstones, and generally thin, economically insignificant coal beds. The Monongahela Group consists of cyclic sequences of limestone, shale, sandstone, and coal in the Uniontown and Pittsburgh Formations. The Pittsburgh Formation consists chiefly of limestone, shale, sandstone, and coal. It contains three major coal seams, the Sewickley, Redstone, and Pittsburgh.

USGS geologic descriptions for these units were reviewed to assess the potential for karst formations as well as radioactive and arsenic bearing potential, which are summarized in the following sections.

1.1.5 Karst Topography

According to the USGS geologic descriptions, the risk for karst formations in these units is minimal due to the irregularity in distribution, minimal thickness, and composition of the impure non-marine limestone units throughout the transect. Based on PADCNr mapping, there are no documented sinkholes or surface depressions where the proposed pipeline and powerline are located.

1.1.6 Radioactive Soils/Bedrock

Common sources of radioactivity in soil and rock include uranium-bearing minerals and oxides formed by weathering of these units. The largest concentrations of uranium-bearing minerals occur in organic rich black shales, ultramafic igneous rocks, and soils derived from these sources. Of these potential sources, only shales and shale derived soils may be present in the geology local to the pipeline alignment area. The shale units present in the alignment area are typically neither massive (thick beds, without major joints) nor organic rich in nature.

The most common geologic hazard associated with radioactive soils and rock is the occurrence of radon, a naturally occurring daughter product that occurs as an intermediate step in the normal radioactive decay of uranium. Radon is a colorless, odorless gas that can cause health effects due to the release of alpha particles, especially when allowed to accumulate in enclosed spaces. According to the USGS Scientific Investigation Report (2017), only low potential risk to radon exposure in groundwater was detected in the area of the pipeline and powerline alignments. According to the USEPA Map of Radon Zones, Indiana County is only at an intermediate potential risk for radon in indoor air. The proposed activity of open excavation will not allow for the potential accumulation of radon gas, the most common hazard associated with naturally occurring radioactive decay.

Based on the information reviewed, CEC anticipates the soils and rock present within the pipeline and powerline alignment do not contain elevated levels of radioactivity. However, the proposed activity of open excavation will not allow for the potential accumulation of radon gas, the most common hazard associated with naturally occurring radioactive decay.

1.1.7 Arsenic Bearing Soils/Bedrock

Arsenic occurs naturally in soil and rock in Western Pennsylvania. Arsenic concentrations in excess of these natural background levels can occur in pyritic rock and soil, which are often associated with black shales, coal, and coal mine spoils. The higher arsenic concentrations in these materials reflect the larger proportion of sulfide minerals, oxides, organic matter, and clays.

Although coal associated materials with arsenic levels above background may be encountered in strip mine locations, the coal has likely been removed and/or blended with non-coal bedrock seams and will not likely generate a great deal of material with potentially elevated arsenic.

1.2 FIELD RECONNAISSANCE AND SITE-SPECIFIC RECOMMENDATIONS

Under the supervision of Mr. Lavage, P.E., CEC geotechnical personnel performed field reconnaissance of the proposed pipeline and powerline. During the site visit, CEC walked the length of the proposed ROW, and visually observed and documented areas with pertinent visible features (i.e., hummocky ground, seeps and springs, scarps, erosion, etc.). CEC obtained photographs during the site walk and

appended representative photographs to this report. Pertinent geologic, geotechnical, and/or topographic conditions/features observed during the site walk are described below. The stationing described below is approximate. Please note the stationing herein refers to the pipeline stationing. Due to the lack of proposed excavations/trenching along the overhead powerline ROW, no geotechnical BMPs are recommended in those areas. Apparent geohazards or other pertinent features beyond those indicated below were not observed by CEC. Photographs are appended to this report.

Stations indicated in Section 1.1.2 regarding Upper Freeport Deep Mining: There was no visual evidence of mine subsidence features in the locations where the Upper Freeport Coal seam was documented to be deep mined; as such, no geotechnical BMPs are proposed.

Stations 23+00 to 27+50: During CEC's site reconnaissance, the slopes adjacent to the stream crossing at this location were observed to be as steep as approximately 1.5H:1V. As such, CEC recommends portions of these slopes, which are disturbed during construction, should be reconstructed using cement stabilized fill as indicated on Details G7 and G8 on Drawing C943. Additionally, CEC recommends hydraulically applied slope stabilization (i.e., Flexterra) should be applied in accordance with Detail 8 on Drawing C939 on the southern slope adjacent to the stream crossing. CEC also recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 through G5 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Stations 50+00 to 53+50: During CEC's site reconnaissance, the slopes adjacent to the stream crossing at this location were observed to be as steep as 2H:1V. As such, CEC recommends portions of these slopes, which are disturbed during construction, should be reconstructed using cement stabilized fill as indicated on Details G7 and G8 on Drawing C943 on the southern slope adjacent to the stream crossing. CEC also recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 through G5 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Stations 69+00 to 98+00: This portion of the pipeline alignment is proposed to be drilled under Black Lick Creek utilizing horizontal directional drilling (HDD) methods. The proposed HDD geotechnical design was prepared under a separate cover.

Stations 102+00 to 109+00: Based on the current alignment, the proposed pipeline alignment traverses along a downslope which transitions into a sideslope alignment. CEC recommends the installation of sideslope and outlet drainage in this location as indicated on Details G4 through G6 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Stations 105+00 to 111+00: The Pittsburgh Coal seam is documented to have been strip mined within proximity to this area but not directly overlying the proposed pipeline trench. Test pits and laboratory

testing were performed on mine spoil materials from this area. The proposed pipeline is no longer proposed to extend through the strip mine area, as such, treatment of trench spoils are not proposed.

Stations 117+00 to 128+00: The Pittsburgh Coal seam is documented to have been strip mined in this approximate area. Test pits and laboratory testing were performed on mine spoil materials from these areas. Handle and manage in accordance with the APR Plan under separate cover.

From approximate Stations 121+50 through 127+50, the proposed pipeline alignment traverses along a sideslope topography. CEC also recommends the installation of sideslope and outlet drainage in this location as indicated on Details G4 through G6 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Stations 137+50 to 138+00: The Pittsburgh Coal seam is documented to have been strip mined in this approximate area. Test pits and laboratory testing were performed on mine spoil materials from these areas. Handle and manage in accordance with the APR Plan under separate cover.

Stations 139+00 to 151+50: The Pittsburgh Coal seam is documented to have been strip mined in this approximate area. Test pits and laboratory testing were performed on mine spoil materials from these areas. Handle and manage in accordance with the APR Plan under separate cover.

Stations 159+00 to 160+00: From approximate Stations 159+00 through 160+00, the proposed pipeline alignment traverses along sag topography, with sloughed ground present within the vicinity of the proposed pipeline. As such, CEC recommends the installation of sideslope and outlet drainage in this location as indicated on Details G4 through G6 on Drawing C943.

Stations 172+50 to 175+00: The Pittsburgh Coal seam is documented to have been strip mined in this approximate area. Test pits and laboratory testing were performed on mine spoil materials from these areas. Handle and manage in accordance with the APR Plan under separate cover.

Stations 171+00 to 179+00: The existing slopes at this location were observed to be as steeper than 3H:1V in some areas. As such, CEC recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 through G5 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Station 193+00: During CEC's site reconnaissance, the slopes adjacent to the stream crossing at this location were observed to be as steep as 1.5H:1V. As such, CEC recommends portions of these slopes, which are disturbed during construction, should be reconstructed using cement stabilized fill as indicated on Details G7 and G8 on Drawing C943. CEC also recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 and G3 through G5 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Station 194+00: During CEC's site reconnaissance, the road crossing at this location was observed to have slopes as steep as 1.2:1V slopes and well vegetated. The slope to the east and outside of the LOD at this location was observed to have indications of a historic landslide and an apparent scarp at the crest of the slope. As such, CEC recommends portions of these slopes, which are disturbed during construction, should be reconstructed using exposed rock armor detail as indicated on Detail G14 on Drawing C944.

Stations 221+00 to 226+00: During CEC's site reconnaissance, the southern slope adjacent to the stream crossing at approximate Station 223+00 was observed to be as steep as 2H:1V. As such, CEC recommends portions of these slopes, which are disturbed during construction, should be reconstructed using cement stabilized fill as indicated on Details G7 and G8 on Drawing C943 at the southern slope stream crossing. CEC also recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 and G3 through G5 on Drawing C943.

Stations 231+00 to 238+00: Based on the current alignment, the proposed pipeline alignment traverses a sideslope alignment in this area. CEC recommends the installation of sideslope and outlet drainage in this location as indicated on Details G4 through G6 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Stations 242+00 to 245+50: During CEC's site reconnaissance, this location was observed to have indications of soil creep. As such, CEC recommends portions of these slopes, which are disturbed during construction, should be reconstructed using cement stabilized fill as indicated on Details G7 and G8 on Drawing C943. CEC also recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 through G5 on Drawing C943.

Stations 248+00 to 250+00: The existing slopes at this location were observed to be as steeper than 4H:1V. As such, CEC recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 through G5 on Drawing C943.

Stations 251+00 to 263+00: Based on the current alignment, the proposed pipeline alignment traverses a sideslope alignment in this area. CEC recommends the installation of sideslope and outlet drainage in this location as indicated on Details G4 through G6 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Stations 264+00 to 265+00: During CEC's site reconnaissance, this location was observed to have indications of soil creep. As such, CEC recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 and G3 through G5 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Stations 270+00 to 280+00: Based on the current alignment, the proposed pipeline alignment traverses a sideslope alignment in this area. CEC recommends the installation of sideslope and outlet drainage in

this location as indicated on Details G4 through G6 on Drawing C943. CEC recommends the pipeline be extended into competent material.

Station 281+50: During CEC's site reconnaissance, the slopes adjacent to the stream crossing at this location were observed to be as steep as 1.5H:1V. As such, CEC recommends portions of these slopes and streambanks, which are disturbed during construction, should be reconstructed using cement stabilized fill as indicated on Details G7 and G8 on Drawing C943. Additionally, CEC recommends hydraulically applied slope stabilization (i.e., Flexterra) should be applied in accordance with Detail 8 on Drawing C939 on each slope adjacent to the stream crossing. CEC also recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 and G3 through G5 on Drawing C943.

Stations 281+00 to 285+00: CEC observed hummocky terrain on a regional, concave slope in this area. Previous evidence of slope disturbance in this area is evident on aerial photography. Further, a potential scarp was observed near the top of this regional slope.

Based on the visual observations in this area, deeper seated landslide soils may exist in this location. Though this is recommended in all locations, the recommendation to seat the pipeline in competent material is emphasized in this location. Further, CEC recommends installation of side slope drainage to convey water to the surface in this area, as indicated on Detail G6 on Drawing C943.

Stations 288+00 to 291+00: During CEC's site reconnaissance, this location was observed to have indications of soil creep on the slope to the north of the stream crossing. As such, CEC recommends the installation of drained trench plugs, in trench drainage, and outlet drainage in this location as indicated on Details G1 through G5 on Drawing C943.

2.0 PRELIMINARY OPINIONS

Based on CEC's review of the available information and field reconnaissance, several areas along the proposed pipeline appear at increased risk for slope movement or environmental impact due to the presence of naturally occurring geologic formations. Potentially hazardous locations identified as part of our review are defined by one (1) or a combination of the following conditions:

- Areas where the proposed pipeline runs approximately perpendicular to existing topography steeper than 3H:1V. In these locations, the risk of slope instability is increased due to surface or subsurface water infiltrating into the pipeline trench;
- Presence of areas which display apparent evidence of instability in the field. The introduction of water via the pipeline trench can saturate landslide-prone soils and mobilize/remobilize landslide areas;
- Areas where temporary excavations for travel lane construction will require backfilling to reclaim the site;

- Areas where the alignment traverses steep streambanks or cuts along existing roads;
- Location of the pipeline ROW in relation to water sources such as streams, seeps, and wetlands, particularly those with steep streambanks;
- Areas where deep mine features could lead to ground subsidence due to mine collapse; and
- Areas where the pipeline could encounter APR during trenching operations.

It is CEC's opinion that implementing drainage, minimizing disturbance, and/or controlling backfill at these locations will reduce the risk of ground movement and distress on the pipeline due to ground movement or environmental impact during and after construction. Several areas have been identified to be at elevated risk for slope instability based on desktop research and field observations (see Section 1). Further, it is CEC's opinion there is no to minimal risk of slope movement or environmental impact due to the presence of sinkholes resultant from mining and karst topography, radioactive soils/bedrock, and/or arsenic bearing soils/bedrock.

The opinions presented herein are based on CEC's review of published data and visual observations at select locations. Field conditions must be observed by a Professional Geotechnical Engineer (or designated representative thereof) during construction to verify the opinions presented herein and provide additional recommendations as needed.

2.1 SLOPE STABILITY

Given the steepness of some existing grades (i.e., greater than 2H:1V), CEC recommends the use of cement modified backfill in the trenches and areas laid back during construction. Typically, cement modified soils are able to achieve an unconfined compressive strength value of 50 pounds per square inch (psi) when blended with approximately 6 percent cement.

To estimate whether this compressive strength is sufficient to achieve a Factor of Safety (FOS) of 1.5 within the backfill zone, CEC performed slope stability analyses at a most conservative condition by combining the steepest slope section with the tallest slope section. The steepest slope where cement modified backfill is proposed is 1.2H:1V and the tallest slope where cement modified backfill is proposed is 38 feet.

CEC understands that HCG is proposing the pipeline trench to be approximately 6 feet below existing grade. For conservatism, CEC considered the friction angle of the cement stabilized soils to be zero. CEC also conservatively modeled the groundwater table at the existing ground surface and assumed the top 24 inches of the slope will be untreated soil (including 6 inches of topsoil minimum at the surface). The FOS value of this scenario was 1.9, and the output of this slope stability analysis is presented in Appendix F. As such, backfill with 50 psi compressive strength appears to be conservative.

3.0 GENERALIZED RECOMMENDATIONS

In addition to typical E&S and site restoration practices (erosion control blankets, waterbars, trench plugs, compost filter sock, revegetation/stabilization, etc.), CEC recommends implementing various BMPs to reduce the risk of slope movement and environmental impacts due to geohazards, as detailed below.

- At steep areas and landslide-prone areas, incorporate subsurface drains at trench plugs with corresponding outlet drains to direct water beyond the limits of the ROW. Details for drained trench plugs and in-trench drainage are presented as Details G1 through G3 on Drawing C943. Discharge outlet drains (Detail G4 on Drawing C943) into riprap embedded drain outlet (Detail G5 on Drawing C943). The proposed locations of trench drainage features are presented on the alignment plans;
- Reconstruct steep slopes, including steep slopes within the floodway in order promote long-term global stability, which are laid-back during construction, with cement stabilized fill in accordance with Detail G8 on Drawing C943. For areas where only the trench is excavated through steep slopes, backfill these areas in accordance with Detail G7 on Drawing C943. Only disturbed areas will have cemented modified soils applied. The fill should be native soil and rock excavated during construction, with the exception in steep slope areas where exposed rock armoring is proposed in accordance with Detail G14 Drawing C944;
- Install side slope drainage in accordance with Detail G6 on Drawing C943 for areas shown on the alignment plans;
- Minimize disturbance on steep slopes, particularly at streambank locations;
- Install pipeline into competent material in accordance with Detail G11 on Drawing C944; and
- Handle intact coal/carbonaceous shale seams in accordance with the APR Plan, which is included in the E&S Permit package. An APR management detail is provided as Detail G12 on Drawing C944.

The data collected and opinions presented in this report are based on a review of published documents reviewed by CEC, surficial observations at/near the locations described herein, and based on conditions observed during the existing pipeline construction. It is imperative to have qualified geotechnical personnel on-site during construction in areas where site-specific geotechnical improvements and/or drainage BMPs are recommended to evaluate the actual subsurface conditions encountered during pipeline installation, assess the appropriateness of the recommendations, modify recommendations when required, modify the locations of recommended BMPs where required, and confirm CEC's recommendations are being correctly implemented.

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4.0 LIMITATIONS AND CLOSING

Since it is not practical to perform a subsurface investigation (borings) along a linear project to identify, classify, and describe all subsurface conditions that will be encountered during pipeline construction, this report is intended to assist in locating problematic locations based on generalized information. It should be recognized that this review will neither identify every problematic location nor eliminate the risk of landslides occurring during/after construction as a result of geohazards. However, installation of the appropriate BMPs [as verified during construction quality assurance (CQA)] will reduce the risk of ground movement or environmental impact due to geohazards during and after construction.

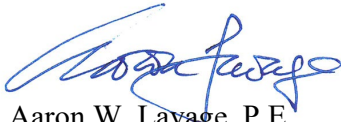
CEC appreciates to be of service to HCG. Should you have any questions or require additional information, please call us at (724) 327-5200.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.



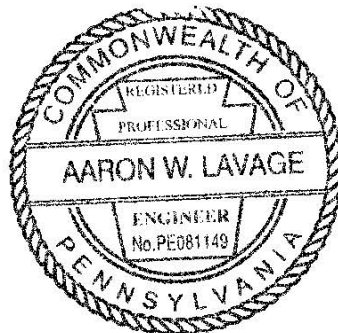
Austin F. Perry, E.I.T.
Project Consultant



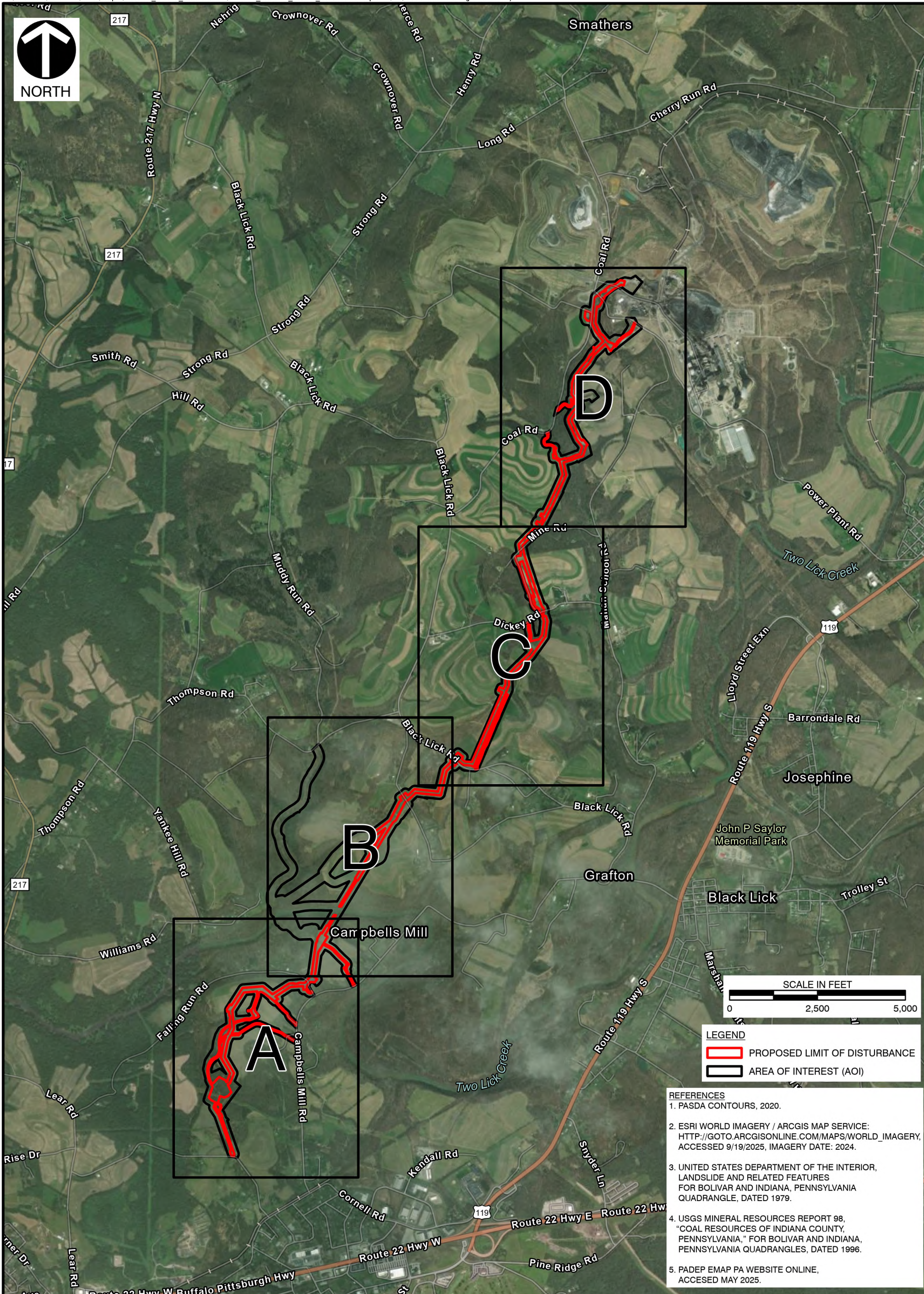
Aaron W. Lavage, P.E.
Principal

AFP:AWL/ad
Attachments

L-354010.S24/P



APPENDIX A
FIGURES



LEGEND

- PROPOSED LIMIT OF DISTURBANCE
- AREA OF INTEREST (AOI)

- REFERENCES**
1. PASDA CONTOURS, 2020.
 2. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: [HTTP://GTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY](http://gto.arcgis.com/maps/world_imagery), ACCESSED 9/19/2025, IMAGERY DATE: 2024.
 3. UNITED STATES DEPARTMENT OF THE INTERIOR, LANDSLIDE AND RELATED FEATURES FOR BOLIVAR AND INDIANA, PENNSYLVANIA QUADRANGLE, DATED 1979.
 4. USGS MINERAL RESOURCES REPORT 98, "COAL RESOURCES OF INDIANA COUNTY, PENNSYLVANIA," FOR BOLIVAR AND INDIANA, PENNSYLVANIA QUADRANGLES, DATED 1996.
 5. PADEP EMAP PA WEBSITE ONLINE, ACCESSED MAY 2025.

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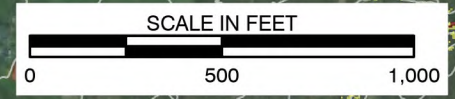
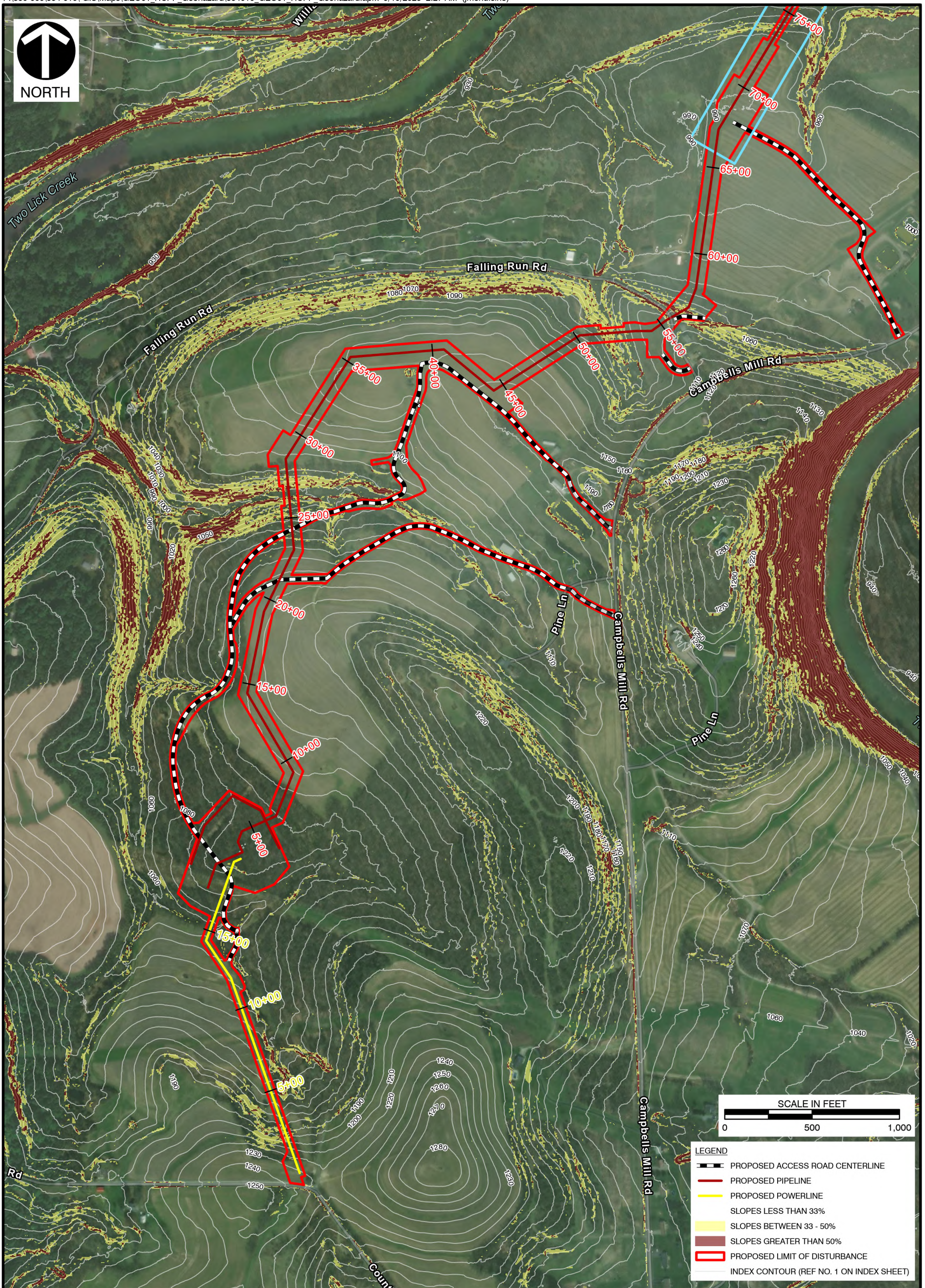
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**HOMER CITY GENERATION LP
HCPP PIPELINE
BLACKLICK AND BURELL TOWNSHIPS
INDIANA COUNTY, PENNSYLVANIA**

GENERAL OVERVIEW MAP

DRAWN BY: JDM	CHECKED BY: TJR	APPROVED BY: AWL*	FIGURE NO: INDEX
DATE: 9/19/2025	SCALE: 1"=2,500'	PROJECT NO: 354-010	

*Hand signature on file

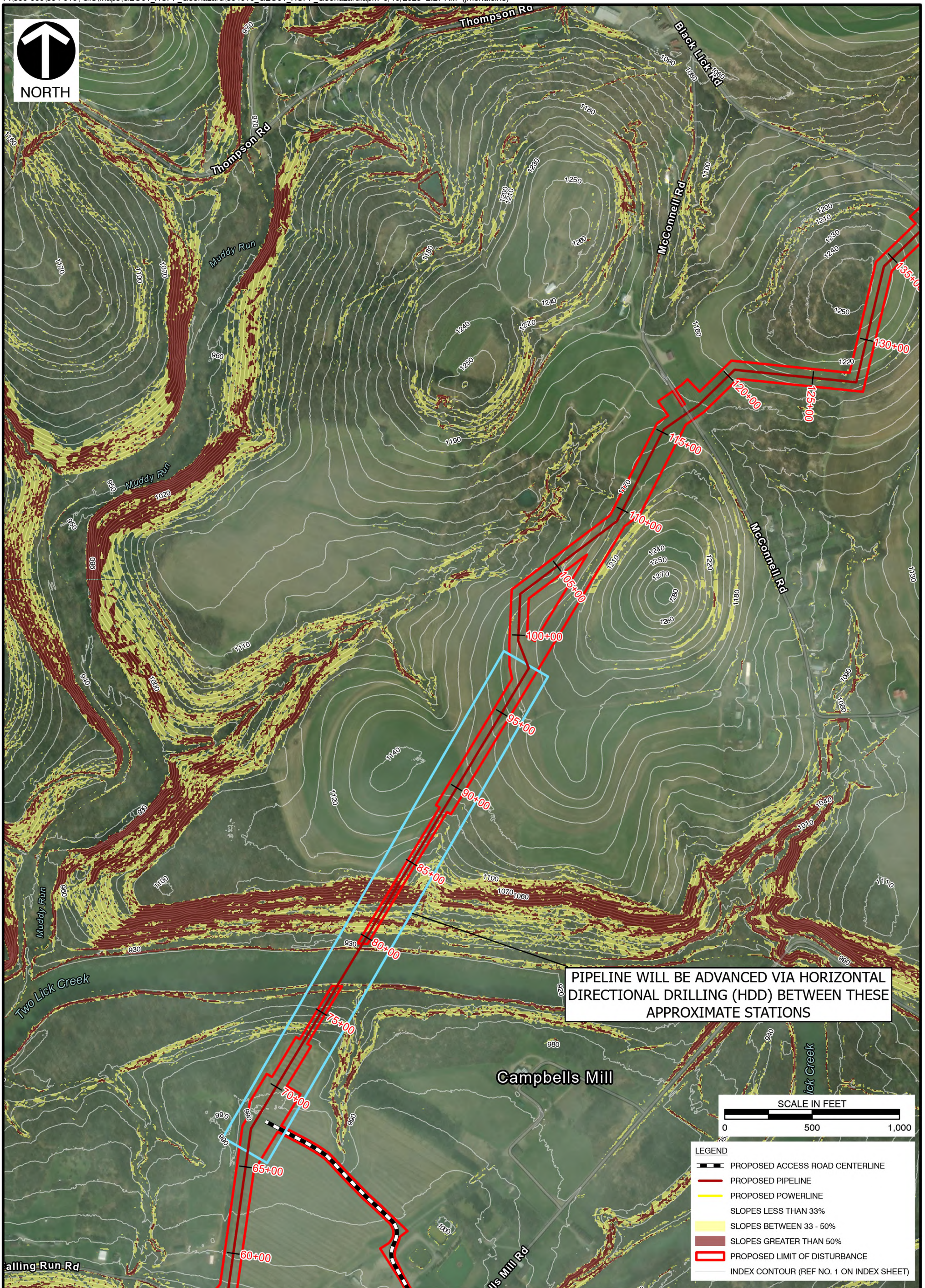


LEGEND	
	PROPOSED ACCESS ROAD CENTERLINE
	PROPOSED PIPELINE
	PROPOSED POWERLINE
	SLOPES LESS THAN 33%
	SLOPES BETWEEN 33 - 50%
	SLOPES GREATER THAN 50%
	PROPOSED LIMIT OF DISTURBANCE
	INDEX CONTOUR (REF NO. 1 ON INDEX SHEET)

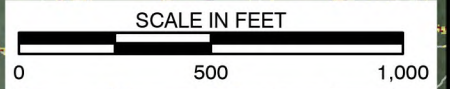
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		TOPOGRAPHIC MAP	
DRAWN BY: JDM DATE: 9/19/2025	CHECKED BY: TJR SCALE: 1"=500'	APPROVED BY: AWL* PROJECT NO: 354-010	FIGURE NO: 1A

*Hand signature on file



PIPELINE WILL BE ADVANCED VIA HORIZONTAL DIRECTIONAL DRILLING (HDD) BETWEEN THESE APPROXIMATE STATIONS



LEGEND	
	PROPOSED ACCESS ROAD CENTERLINE
	PROPOSED PIPELINE
	PROPOSED POWERLINE
	SLOPES LESS THAN 33%
	SLOPES BETWEEN 33 - 50%
	SLOPES GREATER THAN 50%
	PROPOSED LIMIT OF DISTURBANCE
	INDEX CONTOUR (REF NO. 1 ON INDEX SHEET)

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TOPOGRAPHIC MAP

DRAWN BY: JDM	CHECKED BY: TJR	APPROVED BY: AWL*	FIGURE NO: 1B
DATE: 9/19/2025	SCALE: 1"=500'	PROJECT NO: 354-010	

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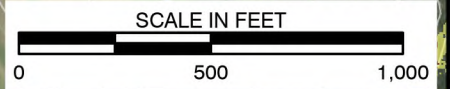
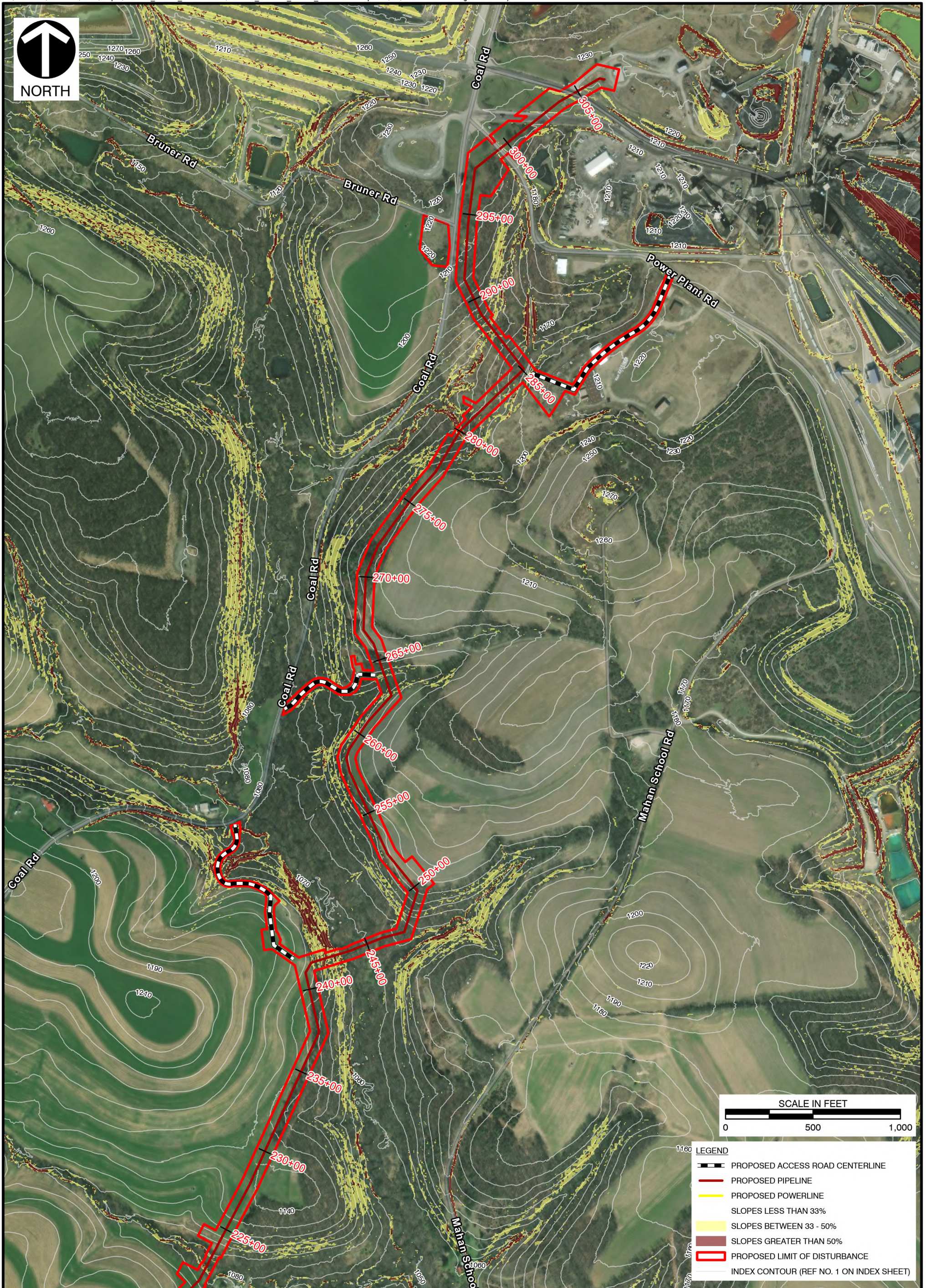
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TOPOGRAPHIC MAP

DRAWN BY:	JDM	CHECKED BY:	TJR	APPROVED BY:	AWL*	FIGURE NO:	1C
DATE:	9/19/2025	SCALE:	1"=500'	PROJECT NO:	354-010		

*Hand signature on file



LEGEND	
	PROPOSED ACCESS ROAD CENTERLINE
	PROPOSED PIPELINE
	PROPOSED POWERLINE
	SLOPES LESS THAN 33%
	SLOPES BETWEEN 33 - 50%
	SLOPES GREATER THAN 50%
	PROPOSED LIMIT OF DISTURBANCE
	INDEX CONTOUR (REF NO. 1 ON INDEX SHEET)

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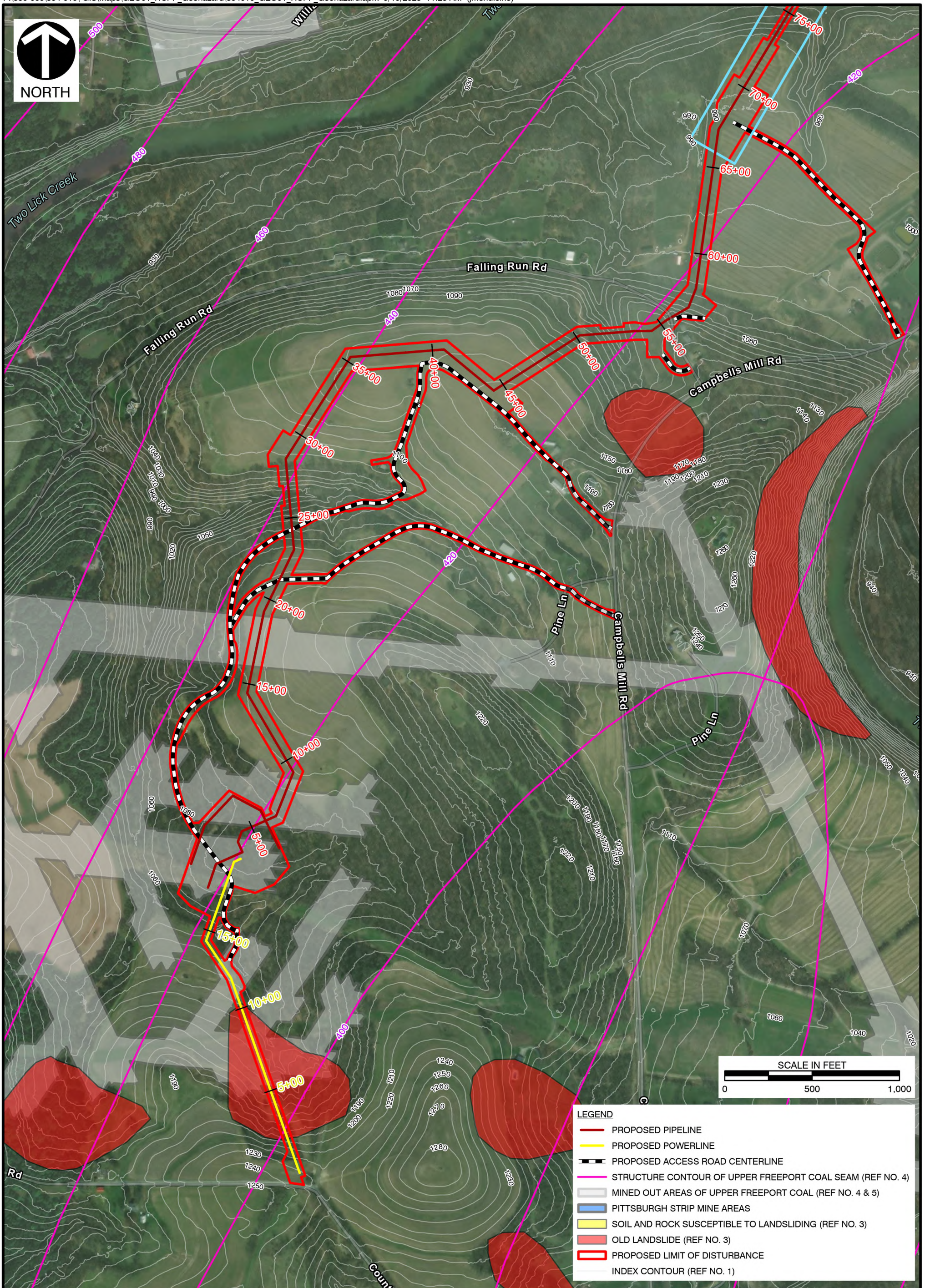
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TOPOGRAPHIC MAP

DRAWN BY: JDM	CHECKED BY: TJR	APPROVED BY: AWL*	FIGURE NO: 1D
DATE: 9/19/2025	SCALE: 1"=500'	PROJECT NO: 354-010	

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LEGEND	
—	PROPOSED PIPELINE
—	PROPOSED POWERLINE
 	PROPOSED ACCESS ROAD CENTERLINE
—	STRUCTURE CONTOUR OF UPPER FREEPORT COAL SEAM (REF NO. 4)
 	MINED OUT AREAS OF UPPER FREEPORT COAL (REF NO. 4 & 5)
 	PITTSBURGH STRIP MINE AREAS
 	SOIL AND ROCK SUSCEPTIBLE TO LANDSLIDING (REF NO. 3)
 	OLD LANDSLIDE (REF NO. 3)
 	PROPOSED LIMIT OF DISTURBANCE
—	INDEX CONTOUR (REF NO. 1)

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GEOHAZARD OVERVIEW MAP

DRAWN BY: JDM	CHECKED BY: TJR	APPROVED BY: AWL*	FIGURE NO: 2A
DATE: 9/19/2025	SCALE: 1"=500'	PROJECT NO: 354-010	

*Hand signature on file

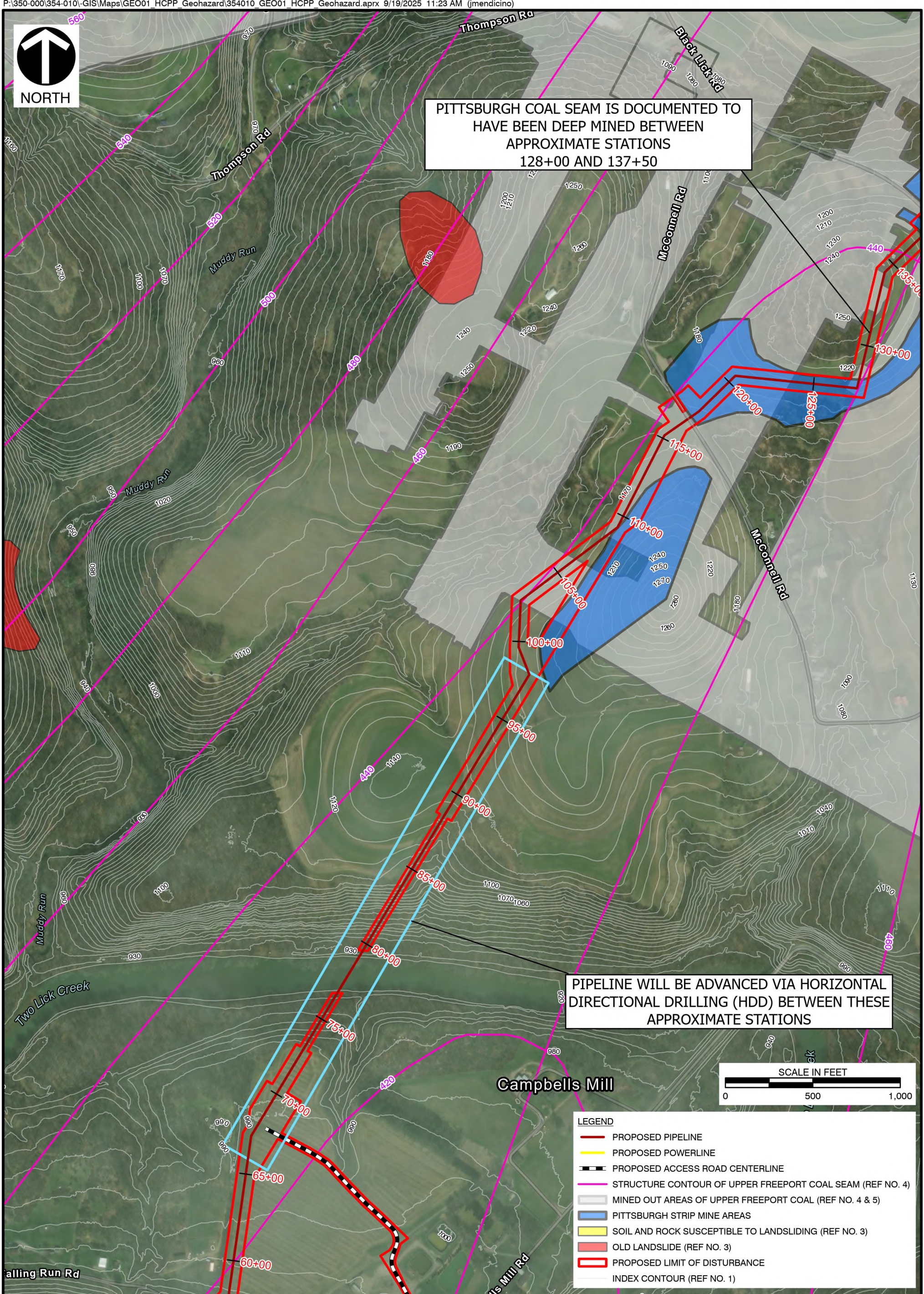


PITTSBURGH COAL SEAM IS DOCUMENTED TO HAVE BEEN DEEP MINED BETWEEN APPROXIMATE STATIONS 128+00 AND 137+50

PIPELINE WILL BE ADVANCED VIA HORIZONTAL DIRECTIONAL DRILLING (HDD) BETWEEN THESE APPROXIMATE STATIONS



- LEGEND**
- PROPOSED PIPELINE
 - PROPOSED POWERLINE
 - PROPOSED ACCESS ROAD CENTERLINE
 - STRUCTURE CONTOUR OF UPPER FREEPORT COAL SEAM (REF NO. 4)
 - MINED OUT AREAS OF UPPER FREEPORT COAL (REF NO. 4 & 5)
 - PITTSBURGH STRIP MINE AREAS
 - SOIL AND ROCK SUSCEPTIBLE TO LANDSLIDING (REF NO. 3)
 - OLD LANDSLIDE (REF NO. 3)
 - PROPOSED LIMIT OF DISTURBANCE
 - INDEX CONTOUR (REF NO. 1)



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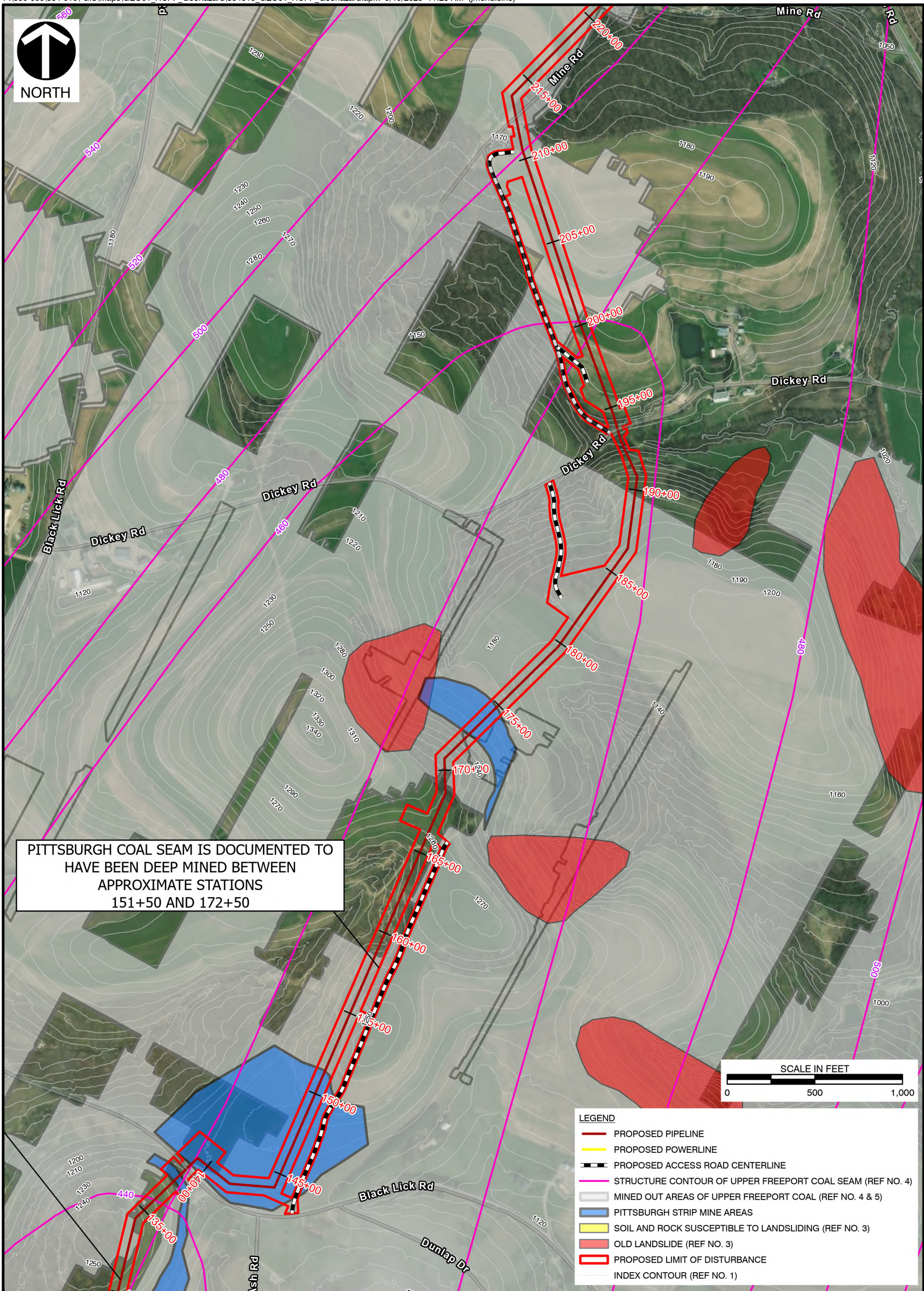
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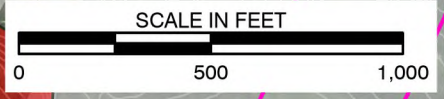
GEOHAZARD OVERVIEW MAP

DRAWN BY:	JDM	CHECKED BY:	TJR	APPROVED BY:	AWL*	FIGURE NO:	2B
DATE:	9/19/2025	SCALE:	1"=500'	PROJECT NO:	354-010		

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PITTSBURGH COAL SEAM IS DOCUMENTED TO HAVE BEEN DEEP MINED BETWEEN APPROXIMATE STATIONS 151+50 AND 172+50



LEGEND	
	PROPOSED PIPELINE
	PROPOSED POWERLINE
	PROPOSED ACCESS ROAD CENTERLINE
	STRUCTURE CONTOUR OF UPPER FREEPORT COAL SEAM (REF NO. 4)
	MINED OUT AREAS OF UPPER FREEPORT COAL (REF NO. 4 & 5)
	PITTSBURGH STRIP MINE AREAS
	SOIL AND ROCK SUSCEPTIBLE TO LANDSLIDING (REF NO. 3)
	OLD LANDSLIDE (REF NO. 3)
	PROPOSED LIMIT OF DISTURBANCE
	INDEX CONTOUR (REF NO. 1)

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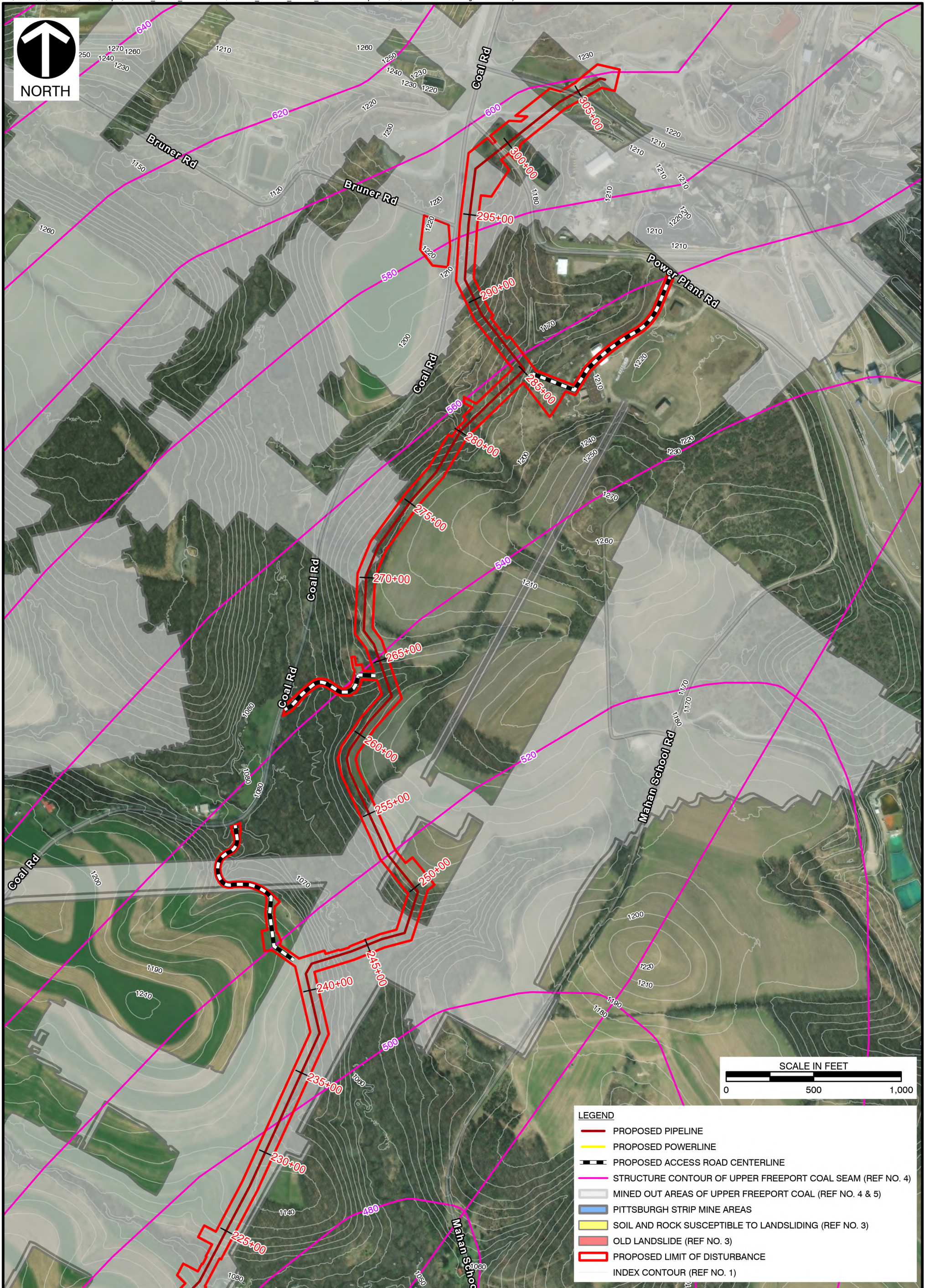
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GEOHAZARD OVERVIEW MAP

DRAWN BY: JDM	CHECKED BY: TJR	APPROVED BY: AWL*	FIGURE NO: 2C
DATE: 9/19/2025	SCALE: 1"=500'	PROJECT NO: 354-010	

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GEOHAZARD OVERVIEW MAP

DRAWN BY:	JDM	CHECKED BY:	TJR	APPROVED BY:	AWL*	FIGURE NO:	2D
DATE:	9/19/2025	SCALE:	1"=500'	PROJECT NO:	354-010		

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APPENDIX B
PHOTOGRAPHS

PHOTOGRAPHS



Photograph 1 – Conditions near approximate Station 10+50.

PHOTOGRAPHS



Photograph 2 – View of stream crossing at approximate Station 26+50.

PHOTOGRAPHS



Photograph 3 – Stream crossing at approximate Station 26+50.

PHOTOGRAPHS



Photograph 4 – Conditions near approximate Station 33+00.

PHOTOGRAPHS



Photograph 5 – Steep slope south of stream crossing at approximate Station 52+50.

PHOTOGRAPHS



Photograph 6 – Existing slope at Falling Road crossing at approximate Station 55+50.

PHOTOGRAPHS



Photograph 7 – View of approximate HDD bore entry pit at approximate Station 69+00.

PHOTOGRAPHS



Photograph 8 – View of just south of HDD bore pit exit looking north at approximate Station 93+50.

PHOTOGRAPHS



Photograph 9 –Road crossing at approximate Station 117+00.

PHOTOGRAPHS



Photograph 10 –View of apparent reclaimed strip mine conditions near approximate Station 123+00.

PHOTOGRAPHS



Photograph 11 –View of conditions near approximate Station 130+50.

PHOTOGRAPHS



Photograph 12 – View of conditions near approximate Station 144+00.

PHOTOGRAPHS



Photograph 13 – View of conditions near approximate Station 153+00.

PHOTOGRAPHS



Photograph 14 – Sag topography at approximate Station 160+00.

PHOTOGRAPHS



Photograph 15 – Sloughing observed upslope of sag topography at approximate Station 160+00.

PHOTOGRAPHS



Photograph 16 – Apparent previous strip mined conditions at approximate Station 174+00.

PHOTOGRAPHS



Photograph 17 – Stream crossing near Station 193+50.

PHOTOGRAPHS



Photograph 18 – Existing Dickey Road crossing cutslope at approximate Station 194+00.

PHOTOGRAPHS



Photograph 19 – Conditions observed at approximate Station 214+00.

PHOTOGRAPHS



Photograph 20 – Stream crossing at approximate Station 223+00.

PHOTOGRAPHS



Photograph 21 – Steep slope with apparent soil creep near approximate Station 243+50.

PHOTOGRAPHS



Photograph 22 – Stream crossing near approximate Station 244+00.

PHOTOGRAPHS



Photograph 23 – Conditions near approximate Station 259+00.

PHOTOGRAPHS



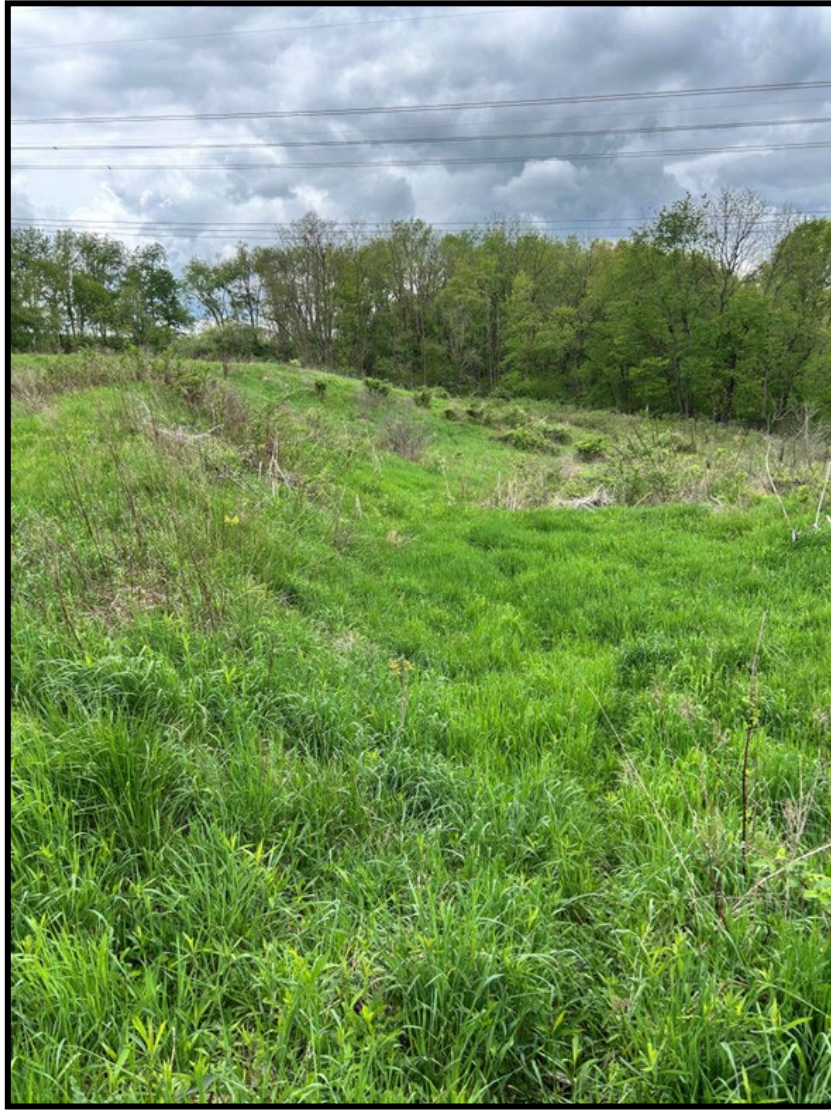
Photograph 24 – Slope with apparent soil creep near approximate Station 265+50.

PHOTOGRAPHS



Photograph 25 – Stream crossing near approximate Station 280+00.

PHOTOGRAPHS



Photograph 26 – Area of sideslope, defined by hummocky ground and previous earthwork within existing utility right-of-way at approximate Station 284+00. CEC emphasizes the need to seat the pipeline in competent material in this location.

PHOTOGRAPHS



Photograph 27 – Stream crossing near approximate Station 288+00.

PHOTOGRAPHS



Photograph 28 – Soil creep observed along slope near approximate Station 290+00.

PHOTOGRAPHS



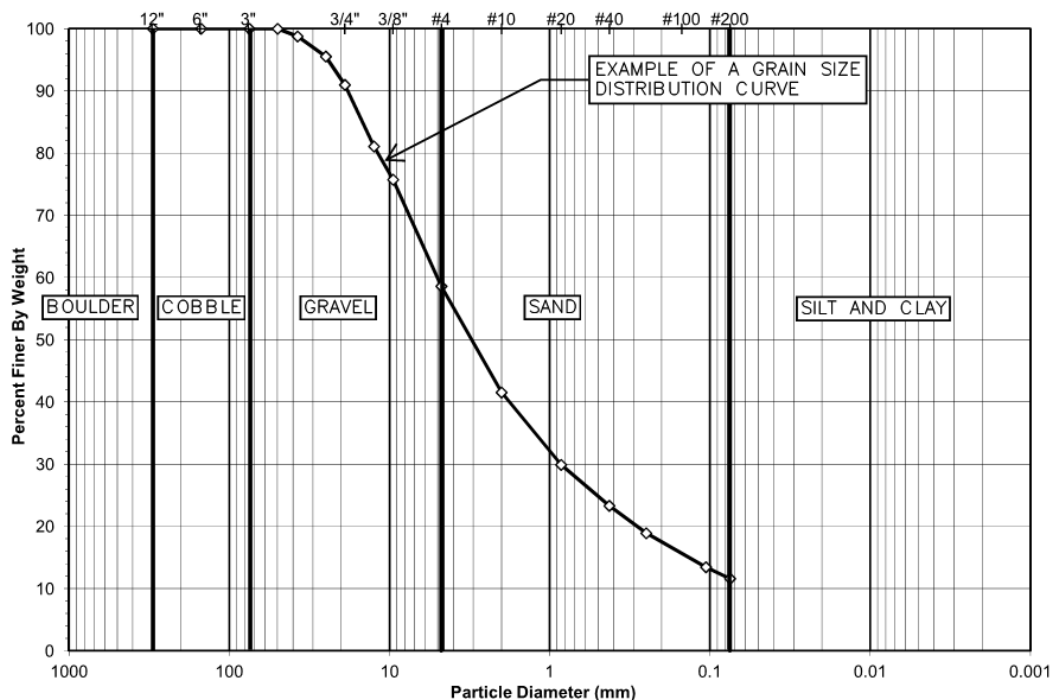
Photograph 29 – Conditions along road toward Power Plant Road near approximate Station 296+00.

APPENDIX C
TEST PIT LOGS

Rock Types

Rock Name	Characteristics	Symbol
Claystone	Clay sized particles that are consolidated, lacking fissility.	
Coal	Black and shiny, can break into cubes or conchoidally.	
Conglomerate	Gravel sized grains and larger held together by finer material, called a breccia if clasts are angular.	
Limestone	Effervesces w/ diluted HCl, can be composed of clay up to gravel particles (fossils).	
Sandstone	Primarily sand sized particles modified w/ the descriptor fine, medium, or coarse.	
Shale	Clay sized particles, shale has fissility which is a horizontal sheet-like or laminated feature.	
Siltstone	Composed of silt, normally breaks as irregular chunks.	

Grain Size Distribution Curve



Glossary

- Alluvial Soil or Alluvium:** Soil deposited by water in a river, stream, floodplain, or delta.
- Bedrock:** Materials underlying soil or other unconsolidated surficial materials in which refusal is consistently encountered on lithified, undisturbed, natural bedrock.
- Colluvial Soil or Colluvium:** Incoherent soil on or at the base of a slope deposited by gravity or slope movement.
- Fill:** Soil derived from natural soil, rock, or processed materials that was placed by artificial methods, such as construction, waste disposal, or dumping.
- Glacial Outwash:** Soil, typically sand and gravel, deposited by glacial streams or meltwater in a preexisting valley or over a plain.
- Glacial Till:** Soil deposited by and underneath a glacier, generally consisting of a heterogeneous, unstratified mixture of clay, sand, gravel, and boulders.
- N-Value:** The blow count representation of the penetration resistance of the soil determined by the Standard Penetration Test (SPT). It is the sum of the number of blows required to drive the sampler the second and third 6-inch increments (sample depth interval of 6 to 18 inches) and is recorded in blows per foot (bpf). The N-value is considered to be an indication of the relative density of coarse-grained soils (sand and gravel) or consistency of fine-grained soils (silt and clay).
- Pocket Pen (PP):** Field penetration test performed using a hand-held penetrometer that estimates unconfined compressive strength of cohesive soil in tons per square foot (tsf).
- Recovery %:** Total length of rock core or soil sample retrieved divided by the total length of the core run or sample interval, expressed as a percentage.
- Refusal:** The depth at which greater than 50 SPT hammer blows are required to drive the sampling spoon 6 inches or less.
- Residual Soil or Residuum:** Soil derived from the physical or chemical weathering of the underlying parent bedrock, generally with N-values less than 30 and 50 bpf in cohesive and cohesionless materials, respectively.
- Rock Quality Designation (RQD):** The sum of the length of intact rock core pieces longer than 4 inches (excluding mechanical breaks) divided by the total length of the core run, expressed as a percentage.

Rock Quality Descriptions

Weathering

- Completely Weathered:** All rock material is decomposed and/or disintegrated. The original rock structure may still be intact.
- Highly Weathered:** More than half of the rock material is decomposed. Fresh rock is present only as a discontinuous framework or as corestones.
- Moderately Weathered:** Less than half of the rock material is decomposed. Fresh rock is present at a discontinuous framework or as corestones.
- Slightly Weathered:** Discoloration or staining indicates weathering of rock material on discontinuity surfaces. Rock may be discolored and softened.
- Fresh:** No visible signs of rock material weathering.

RQD

Descriptor	%
Very Poor	<25
Poor	25-50
Fair	50-75
Good	75-90
Excellent	>90

Brokenness

Descriptor	Fracture Spacing (in & ft)
Very Broken	<1 (<0.08)
Broken	1-3 (0.08-0.25)
Moderately Broken	3-6 (0.25-0.5)
Slightly Broken	>6 (>0.5)

Rock Hardness

Descriptor	Field Criterion	Relative Unconfined Compressive Strength
Very Hard	Difficult to break w/ Hammer	> 30,000 psi
Hard	Hand-held sample breaks w/ Hammer	8,000 to 30,000 psi
Medium Hard	Cannot scrape surface w/ knife	2,000 to 8,000 psi
Soft	Cutting or scraping w/ knife difficult	500 to 2,000 psi
Very Soft	Can be cut w/ knife	< 500 psi

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

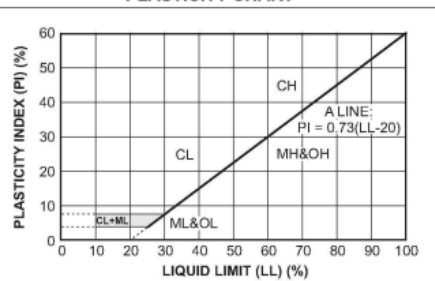
COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)	
Clean Gravels (Less than 5% fines)	
GW	Well-graded gravels, gravel-sand mixtures, little or no fines
GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
Gravels with fines (More than 12% fines)	
GM	Silty gravels, gravel-sand-silt mixtures
GC	Clayey gravels, gravel-sand-clay mixtures
Clean Sands (Less than 5% fines)	
SW	Well-graded sands, gravelly sands, little or no fines
SP	Poorly graded sands, gravelly sands, little or no fines
Sands with fines (More than 12% fines)	
SM	Silty sands, sand-silt mixtures
SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)	
SILTS AND CLAYS	
ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
OL	Organic silts and organic silty clays of low plasticity
MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
CH	Inorganic clays of high plasticity, fat clays
OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	
PT	Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3
GP	Not meeting all gradation requirements for GW
GM	Atterberg limits below "A" line or P.I. less than 4
GC	Atterberg limits above "A" line with P.I. greater than 7
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3
SP	Not meeting all gradation requirements for GW
SM	Atterberg limits below "A" line or P.I. less than 4
SC	Atterberg limits above "A" line with P.I. greater than 7

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:
 Less than 5 percent GW, GP, SW, SP
 More than 12 percent GM, GC, SM, SC
 5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



N-Value Rating

Fine-Grained Soils (Silt and Clay)	Consistency	Blows/ft	PP (tsf)
Very Soft	0-2	<0.25	
Soft	3-4	0.25-0.5	
Medium Stiff	5-8	0.5-1	
Stiff	9-15	1-2	
Very Stiff	16-32	2-4	
Hard	>32	>4	

Coarse-Grained Soils (Sand and Gravel)

Relative Density	Blows/ft
Very Loose	0-4
Loose	5-10
Medium Dense	11-30
Dense	31-50
Very Dense	>50

Unconsolidated Material

Term	Grain Size in mm (in)	Approximate Example Size
Clay and Silt	<.075	can't see grains to barely visible
Fine Sand	0.075 - 0.4	table salt to sugar
Med. Sand	0.4-2.0 (~1/16 - 1/8)	openings in a window screen
Coarse Sand	2.0 - 4.75 (~1/16 - 1/8)	sidewalk salt
Gravel	4.75 - 75 (~1/8 - 3)	pea to tennis ball
Cobble	75 - 300 (3 - 12)	tennis ball to basketball
Boulder	>300 (>12)	larger than a basketball

- Other Features** - Used to describe other identifiable, pertinent features (e.g., angularity of coarse-grained soils, organics, construction debris, etc.)
- | Term | % |
|-------|-------|
| Trace | < 5 |
| Few | 5-15 |
| Some | 15-45 |
- Moisture Content**
 Dry: Sample is dusty or obviously dry.
 Moist: Anything that does not fit the definition of dry or wet.
 Wet: Sample contains free water.



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Definitions of Standard Terms and Symbols



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 Monroeville, PA 15146

TEST PIT NUMBER TP-1

CLIENT Homer City Generation LP **PROJECT NAME** HCPP Pipeline
PROJECT NUMBER 354-010 **PROJECT LOCATION** Burrell and Blacklick Townships, Indiana County, PA
DATE STARTED 5/8/25 **COMPLETED** 5/8/25 **GROUND ELEVATION** 1216 ft **BACKFILL** Excavated Materials
EXCAVATION CONTRACTOR Absolute Reclamation Services **WATER LEVELS:**
EXCAVATION METHOD Excavator **AT END OF EXCAVATION** --- / Dry
CEC REP AFP **CHECKED BY** TJR
NOTES _____ **24hrs AFTER EXCAVATION** --- / Backfilled Immediately

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487								
1215.0		Topsoil - 12 in.	0.0							
1212.5		Dark Brown and Black, Gravelly Lean Clay, CL, Derived from Carbonaceous Shale and Coal Fragments, Moist (FILL)	2.5							
		<i>Bag sample obtained from excavated materials from approximately 1.0 to 6.2 ft.</i>	5.0							
1210.0		Black, Silty Gravel, GM, Derived from Carbonaceous Shale and Coal Fragments, Moist (FILL)	7.5							
		<i>Two bag samples obtained from excavated materials from approximately 6.3 to 7.7 ft.</i>								
		Bottom of test pit at 7.7 feet.								

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TEST PIT NUMBER TP-2

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/8/25</u> COMPLETED <u>5/8/25</u>	GROUND ELEVATION <u>1261 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487								
1260.0	[Topsoil pattern]	Topsoil - 14 in.	0.0							
1257.5	[Clay pattern]	Orangish Brown and Light Gray, Lean Clay, CL, Moist (FILL) <i>Trace roots and organic material observed throughout stratum.</i>	2.5							
1255.0	[Rock pattern]	<i>Bag sample obtained from excavated materials from approximately 1.2 to 6.8 ft.</i>	5.0							
	[Rock pattern]	Light Gray, Completely to Highly Weathered Clayey Limestone, Very Soft to Soft (WEATHERED ROCK) <i>Bag sample obtained from excavated materials from approximately 6.8 to 8.0 ft.</i>	7.5							
		Bottom of test pit at 8.0 feet.								

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TEST PIT NUMBER TP-3

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/8/25</u> COMPLETED <u>5/8/25</u>	GROUND ELEVATION <u>1253 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲
							20 40 60 80
1252.5		Topsoil - 12 in.	0.0				PL MC LL 20 40 60 80
		Tan, Lean Clay with Sand, CL, Moist (RESIDUUM)	2.5				
1250.0		Orangish Brown, Clayey Sand, SC, Moist (RESIDUUM) <i>Bag sample obtained from excavated materials from approximately 1.0 to 5.8 ft.</i>	5.0				
1247.5		Dark Gray to Black, Completely Weathered Carbonaceous Shale, Very Soft (WEATHERED ROCK) <i>Two bag samples obtained from excavated materials from approximately 5.8 to 7.5 ft.</i>	7.5				
		Bottom of test pit at 7.5 feet.					

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TEST PIT NUMBER TP-4

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CLIENT Homer City Generation LP **PROJECT NAME** HCPP Pipeline
PROJECT NUMBER 354-010 **PROJECT LOCATION** Burrell and Blacklick Townships, Indiana County, PA
DATE STARTED 5/8/25 **COMPLETED** 5/8/25 **GROUND ELEVATION** 1216 ft **BACKFILL** Excavated Materials
EXCAVATION CONTRACTOR Absolute Reclamation Services **WATER LEVELS:**
EXCAVATION METHOD Excavator **AT END OF EXCAVATION** --- / Dry
CEC REP AFP **CHECKED BY** TJR
NOTES _____ **24hrs AFTER EXCAVATION** --- / Backfilled Immediately

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487								
		Topsoil - 9 in.	0.0							
1215.0		Brown, Lean Clay with Gravel, CL, Moist (RESIDUUM) <i>Trace tree stumps and organic material observed throughout stratum.</i>								
		<i>Bag sample obtained from excavated materials from approximately 0.8 to 3.6 ft.</i>	2.5							
1212.5		Tan to Dark Gray, Completely to Highly Weathered Clayey Carbonaceous Shale, Very Soft to Soft (WEATHERED ROCK)								
		<i>Bag sample obtained from excavated materials from approximately 3.6 to 7.8 ft.</i>	5.0							
1210.0										
			7.5							
		Bottom of test pit at 7.8 feet.								

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TEST PIT NUMBER TP-5

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/8/25</u> COMPLETED <u>5/8/25</u>	GROUND ELEVATION <u>1246 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲
							20 40 60 80 PL MC LL 20 40 60 80 <input type="checkbox"/> FINES CONTENT (%) <input type="checkbox"/>
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487	0.0				
1245.0	[Topsoil pattern]	Topsoil - 13 in.					
1242.5	[Diagonal hatching pattern]	Orangish Brown to Light Gray, Lean Clay, CL, Moist (RESIDUUM) <i>Bag sample obtained from excavated materials from approximately 1.1 to 4.0 ft.</i>	2.5				
1240.0	[Horizontal hatching pattern]	Tan to Dark Gray, Completely to Highly Weathered Clayey Carbonaceous Shale, Very Soft to Soft (WEATHERED ROCK) <i>Bag sample obtained from excavated materials from approximately 4.0 to 7.1 ft.</i>	5.0				
		Bottom of test pit at 7.1 feet.					

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TEST PIT NUMBER TP-6

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/8/25</u> COMPLETED <u>5/8/25</u>	GROUND ELEVATION <u>1239 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲ 20 40 60 80 PL MC LL 20 40 60 80 ☐ FINES CONTENT (%) ☐ 20 40 60 80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487	0.0				
	[Stippled pattern]	Topsoil - 11 in.					
1237.5	[Diagonal hatching]	Orangish Brown, Gravelly Lean Clay, CL, Moist (RESIDUUM) <i>Trace shale fragments observed throughout stratum.</i>					
		<i>Bag sample obtained from excavated materials from approximately 0.9 to 1.5 ft.</i>					
	[Horizontal hatching]	Reddish Brown to Dark Gray, Completely to Highly Weathered Carbonaceous Shale, Very Soft to Soft (WEATHERED ROCK)	2.5				
1235.0		<i>Bag sample obtained from excavated materials from approximately 1.5 to 6.6 ft.</i>					
	[Vertical hatching]		5.0				
1232.5		<i>Excavator bucket refusal at approximately 6.6 ft.</i> Bottom of test pit at 6.6 feet.					

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TEST PIT NUMBER TP-7

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/8/25</u> COMPLETED <u>5/8/25</u>	GROUND ELEVATION <u>1218 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲						
							20	40	60	80			
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487											
1217.5		Topsoil - 13 in.	0.0										
		Brown, Gravelly Lean Clay, CL, Moist (FILL) <i>Some carbonaceous shale fragments observed throughout stratum.</i> <i>Bag sample obtained from excavated materials from approximately 1.1 to 2.9 ft.</i>	2.5										
1215.0		Dark Gray, Silty Gravel, GM, Derived from Carbonaceous Shale and Coal Fragments, Dry to Moist (FILL) <i>Bag sample obtained from excavated materials from approximately 2.9 to 7.5 ft.</i>	5.0										
1212.5			7.5										
		Bottom of test pit at 7.5 feet.											

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TEST PIT NUMBER TP-8

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CLIENT Homer City Generation LP	PROJECT NAME HCPP Pipeline
PROJECT NUMBER 354-010	PROJECT LOCATION Burrell and Blacklick Townships, Indiana County, PA
DATE STARTED 5/8/25 COMPLETED 5/8/25	GROUND ELEVATION 1208 ft BACKFILL Excavated Materials
EXCAVATION CONTRACTOR Absolute Reclamation Services	WATER LEVELS:
EXCAVATION METHOD Excavator	∇ AT END OF EXCAVATION 5.8 ft / Elev 1202.2 ft
CEC REP AFP CHECKED BY TJR	
NOTES	24hrs AFTER EXCAVATION --- / Backfilled Immediately

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487								
1207.5		Topsoil - 8 in.	0.0							
		Brown, Sandy Lean Clay with Gravel, CL, Moist (FILL) Trace roots, tree stumps, and carbonaceous shale fragments observed throughout stratum. Bag sample obtained from excavated materials from approximately 0.7 to 3.5 ft.	2.5							
1205.0		Dark Brown, Gravelly Silt with Sand, ML, Moist to Wet (FILL) Trace tree stumps, organic material, carbonaceous shale fragments, and coal fragments observed throughout stratum.	5.0							
1202.5		Bag sample obtained from excavated materials from approximately 3.5 to 7.0 ft.								
		Bottom of test pit at 7.0 feet.								

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TEST PIT NUMBER TP-9

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/7/25</u> COMPLETED <u>5/7/25</u>	GROUND ELEVATION <u>1194 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	<u>∇ AT END OF EXCAVATION</u> <u>4.9 ft / Elev 1189.1 ft</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487								
	Topsoil - 7 in.		0.0							
1192.5	Orangish Brown, Lean Clay, CL, Moist (FILL)									
	Black, Completely to Highly Weathered Coal, Very Soft (WEATHERED ROCK)		2.5							
1190.0	Two bag samples obtained from excavated materials from approximately 2.1 to 4.9 ft.									
	∇		5.0							
1187.5	Two bag samples obtained from excavated materials from approximately 4.9 to 7.3 ft.									
	Bottom of test pit at 7.3 feet.									

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TEST PIT NUMBER TP-10

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/7/25</u> COMPLETED <u>5/7/25</u>	GROUND ELEVATION <u>1200 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲													
							20	40	60	80										
1200.0		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487	0.0				PL MC LL 20 40 60 80													
	[Hatched Box]	Topsoil - 7 in.					□ FINES CONTENT (%) □													
		Brown, Silty Gravel, GM, Moist (FILL) <i>Some carbonaceous shale fragments observed throughout stratum.</i>																		
1197.5		<i>Bag sample obtained from excavated materials from approximately 0.6 to 2.8 ft.</i>	2.5																	
		Tannish to Dark Gray, Poorly-Graded Gravel with Clay, GP-GC, Derived from Coal and Carbonaceous Shale Fragments, Moist (FILL)																		
1195.0		<i>Two bag samples obtained from excavated materials from approximately 2.8 to 7.2 ft.</i>	5.0																	
		Bottom of test pit at 7.2 feet.																		

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TEST PIT NUMBER TP-11

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/7/25</u> COMPLETED <u>5/7/25</u>	GROUND ELEVATION <u>1205 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲
							20 40 60 80
1205.0		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487	0.0				PL MC LL 20 40 60 80
	[Hatched Pattern]	Topsoil - 8 in.					□ FINES CONTENT (%) □
1202.5	[Cross-hatched Pattern]	Brown, Gravelly Silt with Sand, ML, Moist (FILL) <i>Trace carbonaceous shale fragments and cobbles observed throughout stratum.</i>	2.5				
	[Cross-hatched Pattern]	<i>Bag sample obtained from excavated materials from approximately 0.7 to 6.1 ft.</i>					
1200.0	[Cross-hatched Pattern]	Dark Gray and Black, Clayey Gravel, GC, Derived from Carbonaceous Shale and Coal Fragments, Moist (FILL) <i>Bag sample obtained from excavated materials from approximately 6.1 to 7.2 ft.</i>	5.0				
		Bottom of test pit at 7.2 feet.					

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TEST PIT NUMBER TP-12

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/7/25</u> COMPLETED <u>5/7/25</u>	GROUND ELEVATION <u>1245 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲											
							20	40	60	80								
Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487							PL MC LL 20 40 60 80											
☐ FINES CONTENT (%) ☐							20 40 60 80											
1245.0	[Topsoil - 11 in.]	Topsoil - 11 in.	0.0															
1242.5	[Tannish Brown to Gray, Sandy Lean Clay with Gravel, CL, Moist (RESIDUUM)]	Tannish Brown to Gray, Sandy Lean Clay with Gravel, CL, Moist (RESIDUUM) <i>Bag sample obtained from excavated materials from approximately 0.9 to 4.1 ft.</i>	2.5															
1240.0	[Dark Gray to Black, Clayey Gravel, GC, Moist (RESIDUUM)]	Dark Gray to Black, Clayey Gravel, GC, Moist (RESIDUUM) <i>Some carbonaceous shale fragments observed throughout stratum.</i> <i>Bag sample obtained from excavated materials from approximately 4.1 to 5.3 ft.</i>	5.0															
1237.5	[Two bag samples obtained from excavated materials from approximately 5.3 to 7.5 ft.]	<i>Two bag samples obtained from excavated materials from approximately 5.3 to 7.5 ft.</i>	7.5															
		Bottom of test pit at 7.5 feet.																

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TEST PIT NUMBER TP-13

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/7/25</u> COMPLETED <u>5/7/25</u>	GROUND ELEVATION <u>1209 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487	0.0							
	[Symbol]	Topsoil - 11 in.								
1207.5	[Symbol]	Brown, Clayey Gravel, GC, Moist (RESIDUUM) <i>Bag sample obtained from excavated materials from approximately 0.9 to 2.4 ft.</i>								
	[Symbol]	Tan and Dark Gray, Completely to Highly Weathered Clayey Shale, Very Soft to Soft (WEATHERED ROCK) <i>Bag sample obtained from excavated materials from approximately 2.4 to 5.1 ft.</i>	2.5							
1205.0	[Symbol]	<i>Excavator bucket refusal at approximately 5.1 ft.</i> Bottom of test pit at 5.1 feet.	5.0							

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TEST PIT NUMBER TP-14

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/7/25</u> COMPLETED <u>5/7/25</u>	GROUND ELEVATION <u>1192 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487								
		Topsoil - 15 in.	0.0							
1190.0	[Cross-hatched pattern]	Dark Brown, Gravelly Silt with Sand, ML, Moist (FILL) <i>Some carbonaceous shale fragments and red discolorations observed throughout stratum.</i>	2.5							
1187.5		<i>Bag sample obtained from excavated materials from approximately 1.3 to 4.9 ft.</i>								
1185.0		Brown, Gravelly Lean Clay with Sand, CL, Moist (FILL) <i>Trace carbonaceous shale fragments observed throughout stratum.</i>	5.0							
		<i>Bag sample obtained from excavated materials from approximately 4.9 to 8.1 ft.</i>	7.5							
		Bottom of test pit at 8.1 feet.								

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TEST PIT NUMBER TP-15

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/7/25</u> COMPLETED <u>5/7/25</u>	GROUND ELEVATION <u>1174 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	∇ AT END OF EXCAVATION <u>6.9 ft / Elev 1167.1 ft</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				
							20	40	60	80	
							PL MC LL 20 40 60 80				
							□ FINES CONTENT (%) □	20	40	60	80
	[Topsoil pattern]	Topsoil - 9 in.	0.0								
1172.5	[Cross-hatch pattern]	Grayish to Orangish Brown, Sandy Lean Clay with Gravel, CL, Moist (FILL) <i>Trace coal and carbonaceous shale fragments observed throughout stratum.</i>									
		<i>Bag sample obtained from excavated materials from approximately 0.8 to 3.9 ft.</i>	2.5								
1170.0	[Horizontal line pattern]	Gray, Completely to Highly Weathered Clayey Shale, Very Soft to Soft (WEATHERED ROCK)									
		<i>Bag sample obtained from excavated materials from approximately 3.9 to 5.7 ft.</i>	5.0								
1167.5	[Vertical line pattern]	Dark Gray to Black, Completely to Highly Weathered Carbonaceous Shale, Very Soft (WEATHERED ROCK)									
		<i>Bag sample obtained from excavated materials from approximately 5.7 to 7.2 ft.</i>									
		Bottom of test pit at 7.2 feet.									

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/6/25</u> COMPLETED <u>5/6/25</u>	GROUND ELEVATION <u>1178 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲						
							20	40	60	80			
1177.5		Topsoil - 8 in.	0.0										
1175.0		Brown, Lean Clay with Gravel, CL, Moist (RESIDUUM) <i>Bag sample obtained from excavated materials from approximately 0.7 to 2.2 ft.</i>	2.5										
1172.5		<i>Bag sample obtained from excavated materials from approximately 2.2 to 7.5 ft.</i>	5.0										
		Bottom of test pit at 7.5 feet.	7.5										

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TEST PIT NUMBER TP-17

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/6/25</u> COMPLETED <u>5/6/25</u>	GROUND ELEVATION <u>1190 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	▽ AT END OF EXCAVATION <u>2.3 ft / Elev 1187.7 ft</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
1190.0		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487	0.0							
	▾	Topsoil - 9 in.								
1187.5	▽	Dark Brown, Gravelly Lean Clay, CL, Moist to Wet (FILL) <i>Some coal and carbonaceous shale fragments observed throughout stratum.</i>								
	▽	<i>Bag sample obtained from excavated materials from approximately 0.8 to 3.8 ft.</i>	2.5							
1185.0	▽	<i>Bag sample obtained from excavated materials from approximately 3.8 to 5.7 ft.</i>	5.0							
	▾	Black, Completely to Highly Weathered Coal, Very Soft (WEATHERED ROCK)								
	▾	<i>Two bag samples obtained from excavated materials from approximately 5.7 to 8.0 ft.</i>	7.5							
1182.5		Bottom of test pit at 8.0 feet.								

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/6/25</u> COMPLETED <u>5/6/25</u>	GROUND ELEVATION <u>1198 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲						
							20	40	60	80			
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487											
1197.5		Topsoil - 6 in.	0.0										
		Dark Brown, Gravelly Silt, ML, Moist (FILL) <i>Trace coal and carbonaceous shale fragments observed throughout stratum.</i> <i>Bag sample obtained from excavated materials from approximately 0.5 to 3.0 ft.</i>	2.5										
1195.0		Brown, Clayey Gravel, GC, Moist (FILL) <i>Trace carbonaceous shale fragments observed throughout stratum.</i> <i>Bag sample obtained from excavated materials from approximately 3.0 to 7.0 ft.</i>	5.0										
1192.5													
		Bottom of test pit at 7.0 feet.											

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Monroeville, PA 15146

TEST PIT NUMBER TP-19

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CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/6/25</u> COMPLETED <u>5/6/25</u>	GROUND ELEVATION <u>1206 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487								
		Topsoil - 7 in.	0.0							
1205.0		Dark Brown, Sandy Silt with Gravel, ML, Moist (FILL) <i>Trace coal and carbonaceous shale fragments observed throughout stratum.</i> <i>Bag sample obtained from excavated materials from approximately 0.6 to 2.7 ft.</i>	2.5							
1202.5		Orange and Dark Gray, Clayey Gravel with Sand, GC, Derived from Coal and Carbonaceous Shale Fragments, Moist (FILL) <i>Bag sample obtained from excavated materials from approximately 2.7 to 6.7 ft.</i>	5.0							
1200.0		Bottom of test pit at 6.7 feet.								

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TEST PIT NUMBER TP-20

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/6/25</u> COMPLETED <u>5/6/25</u>	GROUND ELEVATION <u>1231 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲ 20 40 60 80 PL MC LL 20 40 60 80 <input type="checkbox"/> FINES CONTENT (%) <input type="checkbox"/> 20 40 60 80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487	0.0				
	Topsoil - 8 in.						
1230.0	Orangish Brown, Gravelly Lean Clay, CL, Moist (FILL) <i>Some cobbles observed throughout stratum.</i>						
	<i>Bag sample obtained from excavated materials from approximately 0.7 to 3.5 ft.</i>		2.5				
1227.5	Orangish Tan and Dark Gray, Completely Weathered Sandy Carbonaceous Shale, Very Soft (WEATHERED ROCK)						
	<i>Bag sample obtained from excavated materials from approximately 3.5 to 8.0 ft.</i>		5.0				
1225.0							
			7.5				
		Bottom of test pit at 8.0 feet.					

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TEST PIT NUMBER TP-21

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/6/25</u> COMPLETED <u>5/6/25</u>	GROUND ELEVATION <u>1232 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	AT END OF EXCAVATION <u>--- / Dry</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲			
							20	40	60	80
		Soil classifications were derived using the general methodologies presented in ASTM D2488, except where capitalized USCS group names are indicated hereon, if any. Capitalized USCS group names denote the classifications were derived using the general methodologies presented in ASTM D2487								
	[Topsoil pattern]	Topsoil - 5 in.	0.0							
1230.0	[Gravelly Lean Clay pattern]	Orangish Brown to Dark Gray, Gravelly Lean Clay, CL, Moist (FILL) <i>Trace cobbles observed throughout stratum.</i> <i>Bag sample obtained from excavated materials from approximately 0.4 to 3.6 ft.</i>	2.5							
1227.5	[Weathered Rock pattern]	Tan and Dark Gray, Completely Weathered Sandy Shale, Very Soft (WEATHERED ROCK) <i>Bag sample obtained from excavated materials from approximately 3.6 to 7.1 ft.</i>	5.0							
1225.0		Bottom of test pit at 7.1 feet.								

CEC CUSTOM LOG 202405_346-002 APR TEST PIT LOGS.GPJ CEC.GDT 7/31/25



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 Monroeville, PA 15146

TEST PIT NUMBER TP-22

CLIENT <u>Homer City Generation LP</u>	PROJECT NAME <u>HCPP Pipeline</u>
PROJECT NUMBER <u>354-010</u>	PROJECT LOCATION <u>Burrell and Blacklick Townships, Indiana County, PA</u>
DATE STARTED <u>5/6/25</u> COMPLETED <u>5/6/25</u>	GROUND ELEVATION <u>1237 ft</u> BACKFILL <u>Excavated Materials</u>
EXCAVATION CONTRACTOR <u>Absolute Reclamation Services</u>	WATER LEVELS:
EXCAVATION METHOD <u>Excavator</u>	<u>∇ AT END OF EXCAVATION</u> <u>6.8 ft / Elev 1230.2 ft</u>
CEC REP <u>AFP</u> CHECKED BY <u>TJR</u>	
NOTES	24hrs AFTER EXCAVATION <u>--- / Backfilled Immediately</u>

ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				
							20	40	60	80	
							PL MC LL 20 40 60 80				
							□ FINES CONTENT (%) □	20	40	60	80
	[Diagonal Hatching]	Topsoil - 13 in.	0.0								
1235.0	[Cross-hatching]	Red and Tan, Lean Clay with Gravel, CL, Moist (FILL) <i>Some carbonaceous shale fragments observed throughout stratum.</i> <i>Bag sample obtained from excavated materials from approximately 1.1 to 2.1 ft.</i>	2.5								
1232.5	[Cross-hatching]	Light Brown and Gray, Sandy Lean Clay with Gravel, CL, Moist to Wet (FILL) <i>Bag sample obtained from excavated materials from approximately 2.1 to 7.1 ft.</i>	5.0								
1230.0	∇	Bottom of test pit at 7.1 feet.									

CEC CUSTOM LOG 202405_346-002 APR TEST PIT LOGS.GPJ CEC.GDT 7/31/25

APPENDIX D

PADEP APR HANDLING FACT SHEET

FACT Sheet

Encountering acid-producing rock during construction activities

Many areas of Pennsylvania are underlain by rock types (typically associated with coal) that contain pyrite – a mineral composed of iron and sulfur. When exposed to air or water, pyrite weathers, producing sulfuric acid and iron minerals. The sulfuric acid can also free other undesirable metals from the rock that may result in acid drainage that pollutes nearby groundwater and streams. Rocks containing significant pyrite are referred to as *acid-producing rock* (APR), which can include coal.

Persons excavating rock for construction projects should be aware of the possibility of APR as part of their earth disturbance plans to avoid delays or potential pollution incidents. Excavation exposes the pyritic material to the environment and requires extra planning for handling to prevent the potential for water pollution. This fact sheet explains the best management practices for when APR or coal may be encountered while carrying out earth disturbance for construction activity. The most important step in avoiding project delays or potential pollution is diligence during site characterization and a plan to properly address APR material or encountered coal.

The information in this fact sheet is not an adjudication or regulation but provides a general discussion of typical situations and the most common responses. The necessary permits and approvals depend on the type of activity undertaken (construction project, well pad, surface mining permit, etc.). Additionally, the plans and approvals depend on consideration of site-specific circumstances (e.g., size of area, amount of material, pollution potential).

The Pennsylvania Clean Streams Law imposes obligations on persons not to engage in conduct that allows pollutants to be released into the waters of the Commonwealth, or that creates a danger of pollution to surface waters and groundwater.

Site characterization

Due diligence during the planning phase by the land developer should include a check for the presence of APR and coal seams/waste coal. Use [eMapPA](#), [Pennsylvania Mine Map Atlas](#) and other resources to conduct an initial desktop assessment. A qualified licensed professional should also conduct site-specific testing to characterize the site material. Planning ahead will lessen the potential extra costs and time that may be incurred to properly address the APR material encountered.

Bedrock geologic maps will give a general idea of where pyrite-rich rock and coal are located. The areas of known APR are shown on Ref. 2 below. Sources of site-specific data also include DEP permit files, records maintained by the Pennsylvania Geologic Survey, or mine maps. Site specific data should be obtained or supplemented by test pits or drilling the site to determine if and where APR is present.

Site specific details for removal, handling, storage, and management of APR should be included in the erosion and sedimentation plans and material handling plans for the construction activity. If incidental coal mining or removal of coal for offsite disposal will occur, these plans should also be included with appropriate detail.

Testing and Management of APR

The best practice to avoid creating pollution is to not disturb APR. If it is known that APR will be encountered, the DEP recommends excavating in a different location, or managing the APR in a way that reduces the risk of pollution.

Streams and groundwater may be affected by acid drainage that could develop subsequently if APR is not properly managed. Soil, fill, and unconsolidated material from historically coal-mined lands, and consolidated rock within 25 feet of the surface, are not as likely to produce acid drainage, except for in-place coal seams and some unglaciated regions of Pennsylvania. In these situations, percent sulfur should be the default test to determine if a potential concern exists.

All soil handling and environmental management plans are approved by the County Conservation District or DEP Regional Office as part of the construction permit review. DEP District Mining Offices do not issue authorizations or approve plans for construction activities that encounter APR. However, upon request of a conservation district, the District Mining Offices will provide technical support to the conservation district by reviewing and providing comments on plans that reference APR or encountered coal.

To determine if rock has the potential to cause acid drainage, it should be analyzed for total percent sulfur. The testing procedures may vary depending on the size of the site. The methods for testing should be explained in the soil management plans. For a small area, a 5-gallon bucket full of material should be collected for every 2,000 tons of potential APR. Each

bucket should represent a different area of the site and analyzed separately, not combined. Reference no. 3 below provides details on sampling and testing methods. If a sample contains more than 0.5 percent sulfur, it constitutes APR and should be segregated and handled appropriately. See Ref. 3.

When potential APR is encountered unexpectedly, this material should be segregated, preferably covered, and tested for sulfur to determine if it needs special handling.

Off-Site Disposal of APR

In instances where APR cannot be appropriately managed or neutralized on-site, APR may be taken to a permitted landfill that is authorized by DEP in writing to accept this material, or to a permitted coal refuse disposal area that agrees to accept it. All records of off-site disposal should be retained.

On-Site Management and Neutralization of APR

On-site handling and neutralization of APR (excavation, treatment, encapsulation, and/or burying) may be suitable only where a plan can be developed that prevents pollution or potential pollution to waters of the Commonwealth. In those situations, experienced personnel may design, construct, implement, and monitor site-specific soil management plans that could include alkaline addition to neutralize APR, or to encapsulate the material, to reduce the risk of pollution. A licensed engineer or professional geologist should certify that the APR material was placed according to the site-specific soil management plan.

Incidental Coal Extraction Permit

When coal is extracted for commercial use incidental to another activity, DEP will require a permit under the Pennsylvania Surface Mining Conservation and Reclamation Act before coal is removed. Extracting coal is also contingent upon having the rights to the mineral.

A streamlined Incidental Coal Extraction permit is available for coal extraction that is secondary to a primary activity, such as housing developments, large building construction, oil and gas well pads, landfills, or correction of a safety or environmental problem. This is a streamlined process whereby the DEP District Mining Office issues a coal mining permit to conduct minimal disturbance to mine coal as part of the approved plans for the primary activity. Acres authorized to be disturbed under the Incidental Coal Extraction permit are limited to the necessary coal extraction and support area. Requirements for public notice and bonding will apply, and the Incidental Coal Extraction operation must be conducted in compliance with all statutory and regulatory requirements pertaining to surface coal mining under the Surface Mining Conservation and Reclamation Act (52 P.S. § 1396 *et seq.*) and 25 Pa. Code Chapters 86, and 87 (bituminous) or 88 (anthracite). See the application and instructions for Incidental Coal Extraction ([5600-PM-BMP0165](#)) for additional details on using this permit type.

Off-Site Disposal of Coal

The owner of the coal rights or their designee can also choose to dispose of any coal encountered during development. The material can be taken to a landfill or coal refuse disposal area that is authorized by DEP in writing to accept coal/APR for disposal. Proof of off-site disposal should be retained. Each facility's ability to accept the material should be verified prior to transportation.

References

1. *Coal Mine Drainage Prediction and Pollution Prevention in Pennsylvania*. Available at files.dep.state.pa.us/mining/bureauofminingprograms/bmportalfiles/coal_mine_drainage_prediction_and_pollution_prevention_in_pennsylvania.pdf
2. *Geologic Units Containing Potentially Significant Acid-Producing Sulfide Minerals*, PA Geologic Survey Open- File Report OFMI-05-01.1. Available at maps.dcnr.pa.gov/publications/Default.aspx?id=636
3. *Overburden Sampling and Testing Manual* (1988) D.A. Noll, et al., Available at files.dep.state.pa.us/Mining/BureauOfMiningPrograms/BMPPortalFiles/Overburden_Sampling_and_Testing_Manual.pdf

For more information, contact RA-EPMININGPERMITS@pa.gov. visit www.dep.pa.gov.

APPENDIX E

LABORATORY TEST RESULTS



Conti Testing Laboratories

PO Box 174, Bethel Park, PA 15102
 412-833-7766 (o), 412-854-0373 (f)
contilab@contitesting.com

PA DEP Reg 02-00869, EPA PA01711, ISO/IEC 17025:2017-97677, SBA ID KS8JWRGVKEK9

Civil & Environmental Consultants, Inc.

Mr. Tyler Reynolds

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 Monroeville, PA 15146
 412-849-1787 (m)
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Received: 5/9/2025
 Sampled by: client

HCPP Pipeline

wt. lbs received	CTL ID	SAMPLE ID	DRY			
			Total Sulfur (wt%)	Pyritic (wt%)	Organic (wt%)	Sulfate (wt%)
8.2	351466	TP-1, 1.0-6.2' 5/9/2025	0.092	---	---	---
7.7	351467	TP-3, 5.8-7.5' 5/9/2025	0.316	0.00	0.19	0.13
8.4	351468	TP-4, 3.6-7.8' 5/9/2025	0.040	---	---	---
9.1	351469	TP-5, 4.0-7.1' 5/9/2025	0.028	---	---	---
7.8	351470	TP-6, 1.5-6.6' 5/9/2025	<0.01	---	---	---
9.0	351471	TP-7, 1.1-2.9' 5/9/2025	0.050	---	---	---
9.2	351472	TP-7, 2.9-7.5' 5/9/2025	0.114	0.04	0.05	0.03
6.2	351473	TP-8, 3.5-7.5' 5/9/2025	0.143	0.01	0.11	0.02
5.9	351474	TP-9, 4.9-7.3' 5/9/2025	0.519	0.21	0.28	0.03
8.3	351475	TP-10, 2.8-7.2' 5/9/2025	0.151	0.00	0.14	0.01
9.8	351476	TP-11, 0.7-6.1' 5/9/2025	0.126	0.00	0.10	0.02
7.6	351477	TP-12, 5.3-7.5' 5/9/2025	0.260	0.00	0.24	0.02
7.6	351478	TP-14, 1.3-4.9' 5/9/2025	0.139	0.00	0.10	0.04
7.5	351479	TP-14, 4.9-8.1' 5/9/2025	0.040	---	---	---
7.2	351480	TP-15, 5.7-7.2' 5/9/2025	0.051	---	---	---
8.5	351481	TP-17, 0.8-3.8' 5/9/2025	0.156	0.02	0.12	0.01
5.9	351482	TP-17, 5.7-8.0 5/9/2025	0.520	0.16	0.35	0.02
8.0	351483	TP-18, 0.5-3.0 5/9/2025	0.094	---	---	---
6.9	351484	TP-19, 2.7-6.7' 5/9/2025	0.033	---	---	---
8.4	351485	TP-20, 3.5-8.0' 5/9/2025, received 5-12-25	<0.01	---	---	---
8.9	351486	TP-21, 3.6-7.1' 5/9/2025	<0.01	---	---	---
6.2	351487	TP-22, 1.1-2.1' 5/9/2025	0.148	0.00	0.10	0.05

Dry Basis

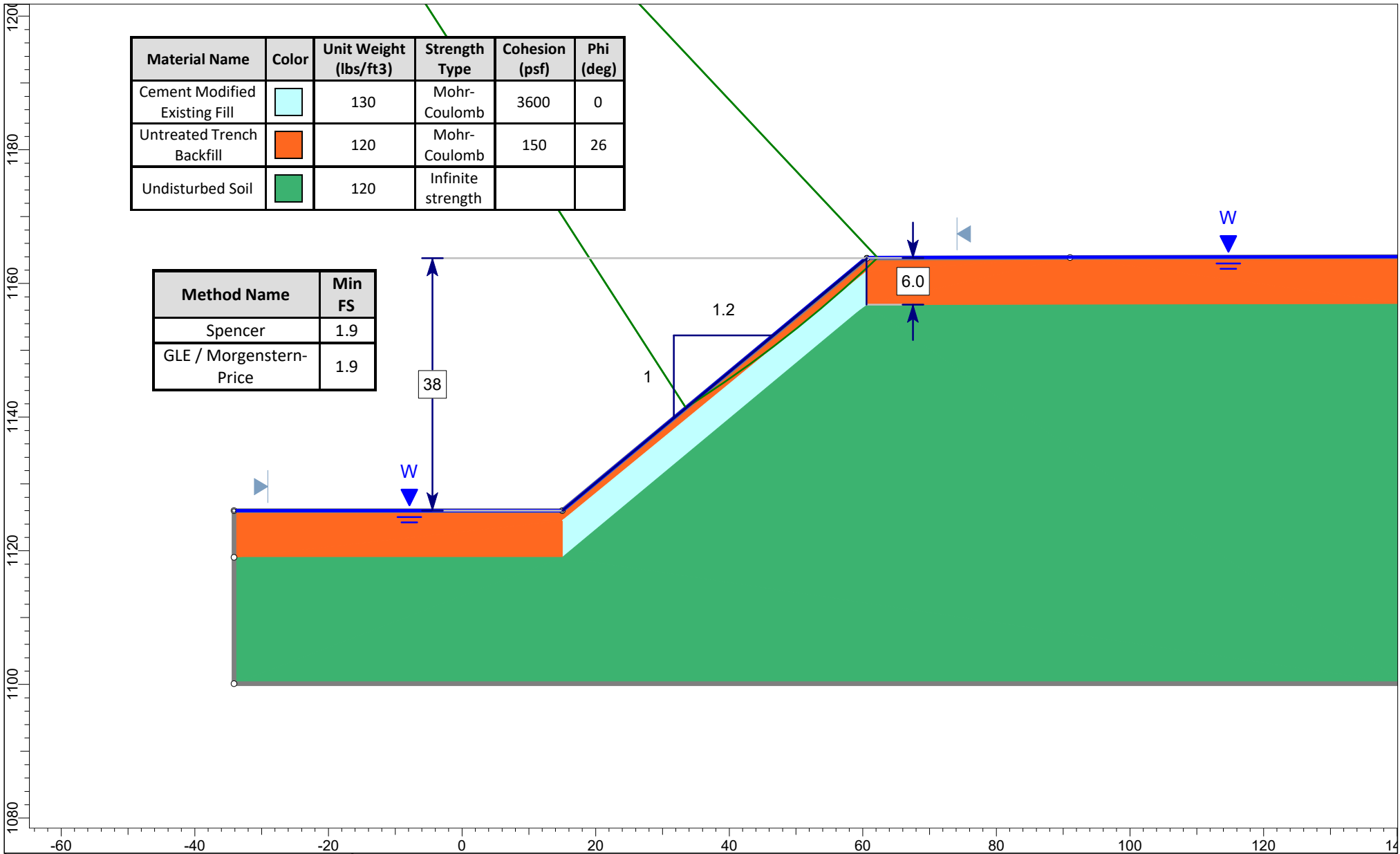
Total Sulfur D 4239

Pyritic Sulfur D 8214

Approved by: P.Conti Otroba
 Chemist

APPENDIX F

SLOPE STABILITY ANALYSIS OUTPUT



Project		Homer City Generation - HCPP Pipeline - Cement Modified Slope	
Group		Scenario	
Drawn By	SRM Checked by: TJR	Company	Civil & Environmental Consultants, Inc.
Date	August 2025	File Name	Cement modified slope.slmd