Exhibit 96.3

HAMILTON MINE
SEC S-K 1300
TECHNICAL REPORT SUMMARY

PREPARED FOR

Hamilton County Coal, LLC
1146 Monarch Street
Suite 350
Lexington, Kentucky 40513

FEBRUARY 2022

RESPEC.COM

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SEC S-K 1300
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PREPARED BY

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1.0 EXECUTIVE SUMMARY

1.1 PROPERTY DESCRIPTION

Hamilton County Coal, LLC (HCC) owns and operates Hamilton Mine (Hamilton). HCC is a wholly owned subsidiary of Alliance Coal, LLC (Alliance). Hamilton is a longwall mine located in Hamilton County, Illinois and currently has approximately 10,500 underground acres and 1,300 surface acres permitted. The mine property is controlled through both fee ownership and leases of the coal. Surface facilities are controlled through ownership or lease.

1.2 GEOLOGY AND MINERALIZATION

The Herrin (Illinois No. 6) coal seam is mined through longwall and room and pillar methods. The Springfield seam (Illinois No. 5) underlies the Herrin seam and historically has been an economically mineable seam. These seams are in the Illinois Basin which is an interior cratonic basin that formed from numerous subsidence and uplift events. The primary coal-bearing strata is of Carboniferous age in the Pennsylvanian system.

1.3 STATUS OF EXPLORATION

Hamilton has extensively explored the Herrin and Springfield seams through drilling conducted by HCC and previous developers. Drilling records are the primary dataset used in the evaluation of the resource. Drill records have been compiled into a geologic database which include location, elevation, detailed lithologic data and when available coal quality.

1.4 MINERAL RESOURCE AND RESERVE ESTIMATES

This information is used to generate geologic models that identify potential adverse mining conditions, define areas of thinning or thickening coal, and predict coal quality for marketing purposes. This information is used to create a resource model using Carlson's Geology module, part of an established software suite for the mining industry. In addition to coal thickness and quality data, seam recovery is modeled. Classification of the resources is based on distances from drill data. Carlson then estimates in-place tonnages, qualities, and average seam recovery within a set of polygons. These polygons are the result of the intersection of polygons outlining property boundaries, adverse mining conditions, mining method, mine plan boundaries, and resource classification boundaries. These results are exported to a database which then applies the appropriate percent ownership, mine recovery and seam recovery. Table 1-1 is a summary of the coal reserves based on the anticipated life-of-reserve plan and resources. All resources converted to reserves are removed from the resource estimate.

Table 1-1. Summary of Controlled Coal Reserve and Resources Estimates as of December 31, 2021

Seam	Reserves Controlled Recoverable (1,000 tons)	Resources Controlled Recoverable (1,000 tons)
Herrin Seam	128,536	161,643
Springfield Seam	---	276,042
Total	128,536	437,685

1.5 CAPITAL AND OPERATING COST ESTIMATES

Hamilton is an on-going operating coal mine; therefore, the capital and operating cost estimates were prepared with consideration of historical operating performance. Table 1-2 shows the estimated average capital costs and operating costs for the life of reserve plan.

Table 1-2. Capital and Operating Costs

Category	Life of Reserve Estimate 2022-2042 (US$ 000's)
Capital Costs	594,343
Mining and Processing Costs	3,591,537
TOTAL	**4,185,880**

1.6 PERMITTING REQUIREMENTS

Illinois Department of Natural Resources (IDNR), Land Reclamation Division (LRD) is responsible for oversight of active coal mining and reclamation activities. In addition to state mining and reclamation laws, operators must comply with various federal laws relevant to mining. All applicable permits for underground mining, coal preparation, related facilities and other incidental activities have been obtained and remain in good standing.

1.7 QUALIFIED PERSON'S CONCLUSIONS AND RECOMMENDATIONS

It is the Qualified Person's (QP) opinion that the mine operating risks are low. The mining operation, processing facilities, and the site infrastructure are in place. Mining practices are well established. All required permits are issued and remain in good standing. Market risk is discussed in Section 16.1 and could materially impact resource and reserve estimates.

2.0 INTRODUCTION

2.1 ISSUER OF REPORT

Hamilton has retained RESPEC Company, LLC (RESPEC) to prepare this Technical Report Summary (TRS). Hamilton is operated by HCC. HCC is a wholly owned subsidiary of (Alliance.

2.2 TERMS OF REFERENCE AND PURPOSE

The purpose of this TRS is to support the disclosure in the annual report on Form 10-K of Alliance Resource Partners, L.P. (ARLP 10-K) of Mineral Resource and Mineral Reserve estimates for the HCC as of 12/31/2021. This report is intended to fulfill 17 Code of Federal Regulations (CFR) §229, "*Standard Instructions for Filing Forms Under Securities Act of 1933, Securities Exchange Act of 1934 and Energy Policy and Conservation Act of 1975 – Regulation S-K,*" subsection 1300, "Disclosure by Registrants Engaged in Mining Operations." The mineral resource and mineral reserve estimates presented herein are classified according to 17 CFR§229.133 – Item (1300) Definitions.

Unless otherwise stated, all measurements are reported in U.S. imperial units and currency in U.S. dollars ($).

This TRS was prepared by RESPEC. No prior TRS has been filed with respect to Hamilton.

2.3 SOURCES OF INFORMATION

During the preparation of the TRS, discussions were had with several Alliance personnel.

The following information was provided by Alliance and HCC:

- Property history
- Property data
- Laboratory protocols
- Sampling protocols
- Topographic data
- Mining methods
- Processing and recovery methods
- Site infrastructure information
- Environmental permits and related data/information
- Historic and forecast capital and operating costs.

2.4 PERSONAL INSPECTION

A RESPEC QP and Alliance representative conducted a site visit on February 1, 2022. During the site visit, the RESPEC QP visited the preparation plant, the raw coal stockpile, the clean coal stockpile, the mine slope, the mine shaft, load-out structure, and the two refuse impoundments.

Discussions were held with the mine engineer regarding several issues including current markets, coal quality and products, the ability to hire employees, and the life-of-mine plan for refuse disposal.

3.0 PROPERTY DESCRIPTION

3.1 PROPERTY DESCRIPTION AND LOCATION

Hamilton (38.170008N, -88.613155W) is located in Hamilton County, Illinois and currently has approximately 10,500 underground acres and 1,300 surface acres permitted.

Figure 3-1 shows the general location of the Hamilton property.

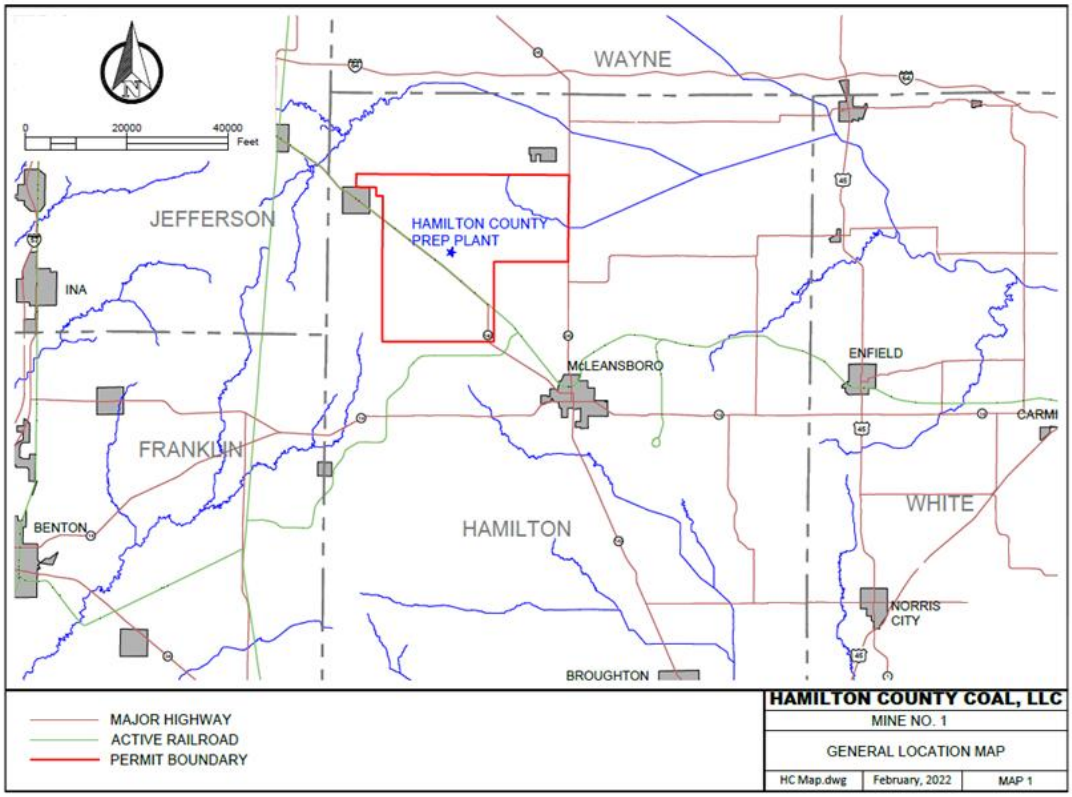


Figure 3-1. General Location Map

3.2 MINERAL RIGHTS

The coal properties are leased or held for lease to Hamilton by Alliance Resource Properties, LLC, or its wholly owned subsidiaries (ARP). HCC and ARP currently control approximately 53,348 acres of coal reserves and subsidence rights, and 1,400 acres of surface properties. The lease boundary encompasses properties in Township 4 South, Ranges 5, 6 and 7 East, and Township 5 South, Range 6 East in Hamilton County, Illinois. HCC has the right to extend the term of the lease through exhaustion of the reserves. The lease requires a production royalty to be paid to ARP for each ton of coal sold from Hamilton, and HCC is required to comply with all terms of the underlying base leases from third parties held by ARP and subleased to HCC, including the payment of all rents and royalties.

For some tracts, HCC has partial control of the mineral rights. The estimated saleable tonnage for each tract is reduced appropriately where control is less than 100%.

3.3 SIGNIFICANT ENCUMBRANCES OR RISKS TO PERFORM WORK ON PERMITS

ARLP's revolving credit facility is secured by, among other things, liens against certain HCC surface properties, coal leases and owned coal. Documentation of such liens is of record in the Office of the Recorder of Hamilton County Clerk. Please refer to "Item [8.] Financial Statements and Supplementary Data—Note 8 – Long-term Debt" of the ARLP 10-K for more information on the revolving credit facility.

The IDNR, LRD is responsible for oversight of active coal mining and reclamation activities. In addition to state mining and reclamation laws, operators must comply with various federal laws relevant to mining. All applicable permits for underground mining, coal preparation, and related facilities and other incidental activities have been obtained and remain in good standing.

4.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

4.1 TOPOGRAPHY AND VEGETATION

Hamilton is located in the Southern Illinoisan Till Plain physiographic region of Illinois per USEPA. This region is glaciated, consists of partly dissected, flat to rolling till plains that become hillier to the south, where bedrock is closer to the surface. Low Illinoisan-age moraines occur. Major streams have broad floodplains. The surface facilities and mine access are located 6.4 miles to the northwest of McLeansboro, IL. The elevation ranges from 425 to 510 feet above mean sea level across the property. The vegetation across the mine area consists primarily of cropland, with some pastureland, deciduous forest, and mixed forest.

4.2 ACCESSIBILITY AND LOCAL RESOURCES

The primary shaft access to Hamilton (38°10’16” N, 88°36’06” W) is located at 18033 County Road 500 E, Dahlgren, IL 62828. It is accessible from McLeansboro, IL, via State Route 142 N to County Road 500 E, and from Mount Vernon, IL, via State Route 142 S to County Road 500 E. Interstate 64 is a major transportation artery passing through the area, which lies about 6.6 miles due north of the mine. The town of McLeansboro, IL, lies about 6.4 miles to the southeast of the mine, the city of Mount Vernon, IL, lies about 19.3 miles to the northwest of the mine, and Rend Lake lies about 17 miles due west of the mine. Coal is transported by belt from the underground mine to the surface at the slope access (38°10’12” N, 88°36’48” W) located about 0.6 miles to the west of the primary shaft access. The coal is processed and loaded into railcars at the mine’s processing facilities (38°10’16” N, 88°37’18” W) located about 0.4 miles to the west of the slope access. Rail service is provided by Evansville Western Railroad (EVWR) with connection to CSX Transportation (CSX). The nearest FAA-designated commercial service airport is Evansville Regional Airport (EVV) located about 59 miles to the southwest of the mine in Evansville, IN.

4.3 CLIMATE

Hamilton and surrounding McLeansboro, IL, area has four distinct seasons with average annual precipitation of 43.9 inches according to U.S. Climate Data. The average annual high temperature is 66°F and the average annual low temperature is 44°F. The average annual snowfall is 11 inches. The climate of the area has little to no effect on underground and surface operations at the mine. The mine operates year-round with exceptions for holiday and vacation shutdowns.

4.4 INFRASTRUCTURE

Hamilton gets its potable and non-potable water from the Hamilton County Water District. Water used for coal processing is supplemented by non-potable water sourced from collection ponds and impoundments. Electricity is purchased from Hoosier Energy and is delivered by Wayne-White Counties Electric Cooperative (WWEC). The transmission lines are routed west from the WWEC substation, located southeast of McLeansboro, IL, then north to the mine through the town of Delafield, IL. Employment in the area is competitive. However, the mine has been able to attract a mixture of

skilled and unskilled labor with its competitive pay package and benefits. Mine personnel primarily come from Hamilton County and surrounding counties in Southern Illinois. The city of Mount Vernon, IL, lies about 19.3 miles to the northwest of the mine. Its population is 14,600 according to the 2020 U.S. Census, making it the most populous city in the area. Most supplies are trucked to the mine from regional vendors.

5.0 HISTORY

5.1 PRIOR OWNERSHIP

There were no previous operations within the Hamilton reserve area prior to its predecessor, White Oak Resources LLC, (WOR) beginning construction in 2011.

5.2 EXPLORATION HISTORY

Over 180 exploration holes have been drilled in the Hamilton reserve area by other companies to assess thickness, quality, and mineability of the Herrin and Springfield seams. In general, holes are cased through the alluvium, rotary drilled to an interval above the coal, and then cored to collect roof, coal, and floor samples. Cores are typically 3 to 4 inches in diameter. Sampling of coal was undertaken on the majority of holes with coal quality analysis completed. Many of the holes include geophysical logs which are used to verify core thicknesses and strata. Old Ben Coal Company (OBCC) conducted an exploration program in the late 1970's and early 1980's. OBCC drilled 50 holes in the reserve area. Energy Plus drilled 16 holes in 2006 and performed geophysical logs and conducted coal quality sampling and analysis. White Oak Resources drilled over 90 holes in the reserve area starting in 2008, which provided additional coal quality, geophysical, and geotechnical data. 30 exploration holes were drilled by various other companies within the reserve area. Over 70 oil/gas well geophysical logs have been interpreted to supplement the exploration drilling. In general, all drilling has shown a highly consistent coal seam of mineable thickness and coal quality for the high sulfur, thermal utility market.

The drilling available in the HCC resource area consists of over 300 exploration holes. The majority were drilled by Inland Steel Coal Company, Consolidated Coal Company, OBCC, and various other companies. The available geophysical logs from oil and gas wells within the resource area have been interpreted to augment the exploratory drilling. In all, there are over 500 drillholes and over 150 oil wells within or adjacent to the HCC reserve and resource areas that show highly consistent coal seams of mineable thickness and quality for the thermal utility market.

See Appendix A for map showing all drill hole locations.

6.0 GEOLOGICAL SETTING, MINERALIZATION AND DEPOSIT

6.1 REGIONAL GEOLOGY

HCC extracts coal from the Herrin (Illinois No. 6) coal seam located in the Illinois Basin. The Illinois Basin is an interior cratonic basin that formed from numerous subsidence and uplift events. The Illinois Basin extends approximately 80, 000 square miles, covering Illinois, southern Indiana, and western Kentucky.

Primary coal-bearing strata, including the Herrin and Springfield (Illinois No 5) seams, are in formations of Pennsylvanian aged rocks, which were deposited about 325 to 290 million years ago. The Pennsylvanian System is characterized by many vertical changes in lithology. There are over five hundred distinct beds of shale, sandstone, sandy shale, limestone, and coal in the Pennsylvanian System in Illinois. Many beds are laterally extensive and can be correlated across much of the Illinois Basin because of their position in relation to distinct marker beds, such as coals and limestones.

Pennsylvanian rocks in Hamilton County consist of shale, sandstone, siltstone, coal, and limestone. Pennsylvanian rocks are classified in Illinois in three groups, the McCormick, the Kewanee, and the McLeansboro. The Kewanee Group contains the most abundant reserves of coal. Within the Kewanee Group is the Carbondale formation. The Herrin and Springfield belong to this formation.

See Figure 6-1 for a stratigraphic column

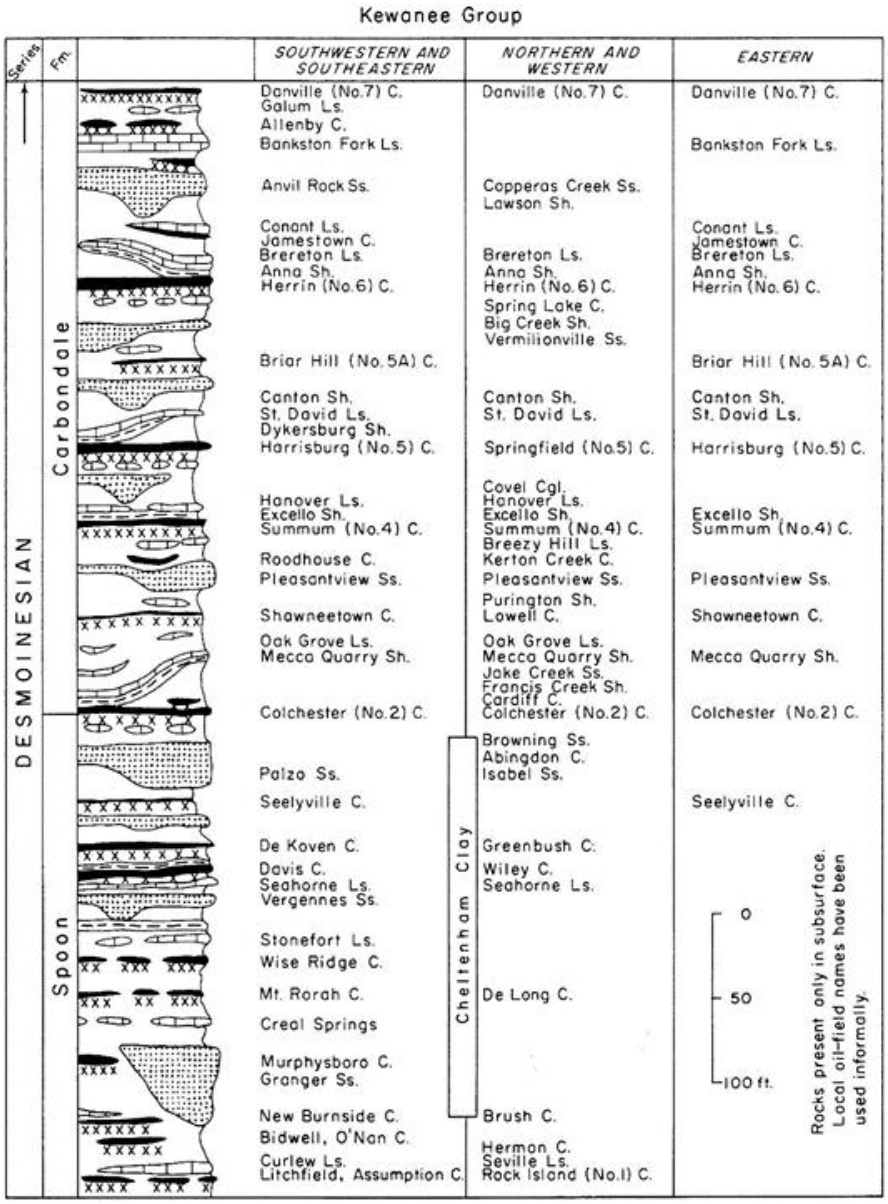


Figure 6-1. Generalized Stratigraphic Column of Pennsylvanian Rocks in Illinois

6.2 LOCAL GEOLOGY

Herrin Seam:

The immediate roof over a vast majority of the reserve is a black, fissile shale known as the Anna Shale. The Anna Shale is generally between one to two feet thick but can thicken to eight feet in some areas. The Anna Shale is overlain by a dark gray, fine grained, argillaceous limestone known as the Brereton Limestone. This limestone is commonly four to five feet thick. In some locations, this limestone is absent. This limestone member is critical in providing roof stability at Hamilton. The Energy Shale, a silty gray shale associated with over bank deposits of the Walshville paleochannel, can form the immediate roof in localized areas. The Energy Shale occurs in lenses and can cause roof instability, requiring additional support.

Springfield Seam:

The silty, gray Dykersburg Shale, ranges from zero to about four feet thick, and forms the immediate roof of the Springfield seam. When the Dykersburg Shale is absent, it is replaced by the black, brittle, Turner Mine Shale, which ranges from about one to three feet thick in the HCC resource area. The thin, argillaceous St. David Limestone lies above the Turner Mine Shale, ranging from zero to about three feet in thickness. The gray, silty Canton Shale separates the St. David Limestone from the Briar Hill (5a) coal seam and Vermillionville Sandstone. The Vermillionville Sandstone occurs in two distinct units which are separated by a shale or sandy shale zone. This water bearing sandstone can encroach on the immediate and main roof of the Springfield seam. In these areas, ground control issues associated with water and differential compaction can occur requiring additional support to maintain roof stability.

A stratigraphic column and a geologic cross sections representing the local geology found in the reserve are included in this report.

See Figure 6-1 for a stratigraphic column and Figures 6-2, 6-3, and 6-4 for geologic cross sections representing the local geology. See Appendix A for a plan view showing the locations of the cross sections.

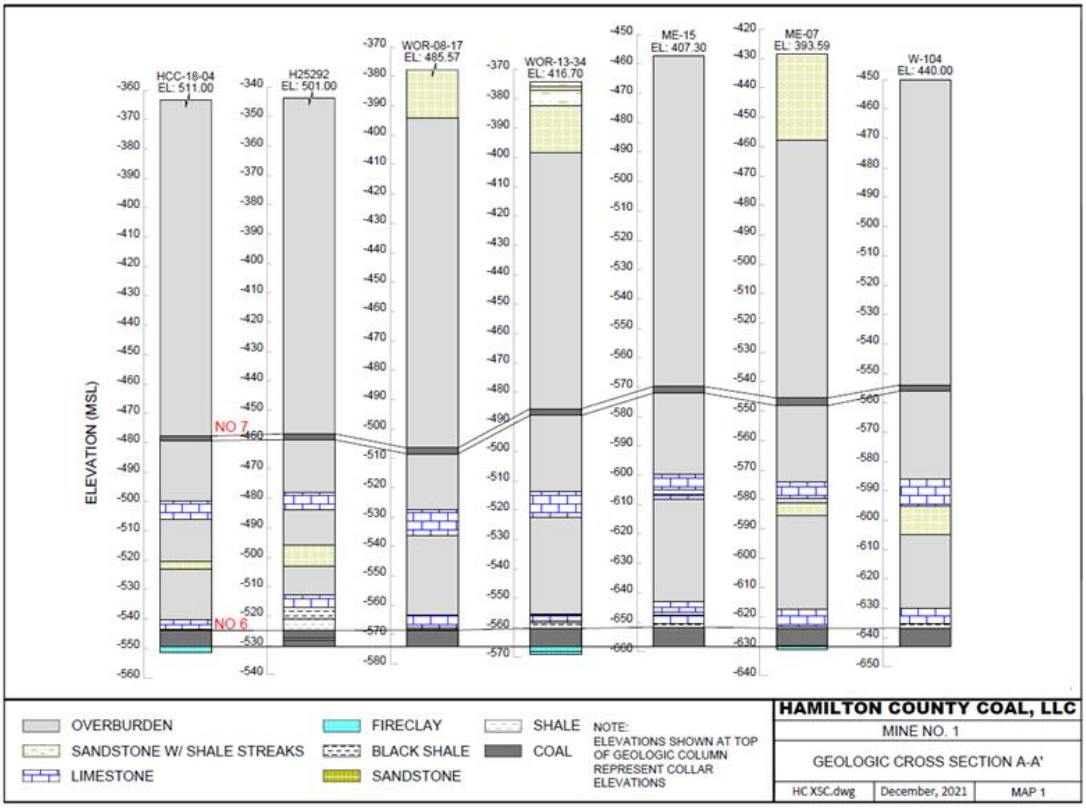


Figure 6-2. Geological Cross-Section A-A'

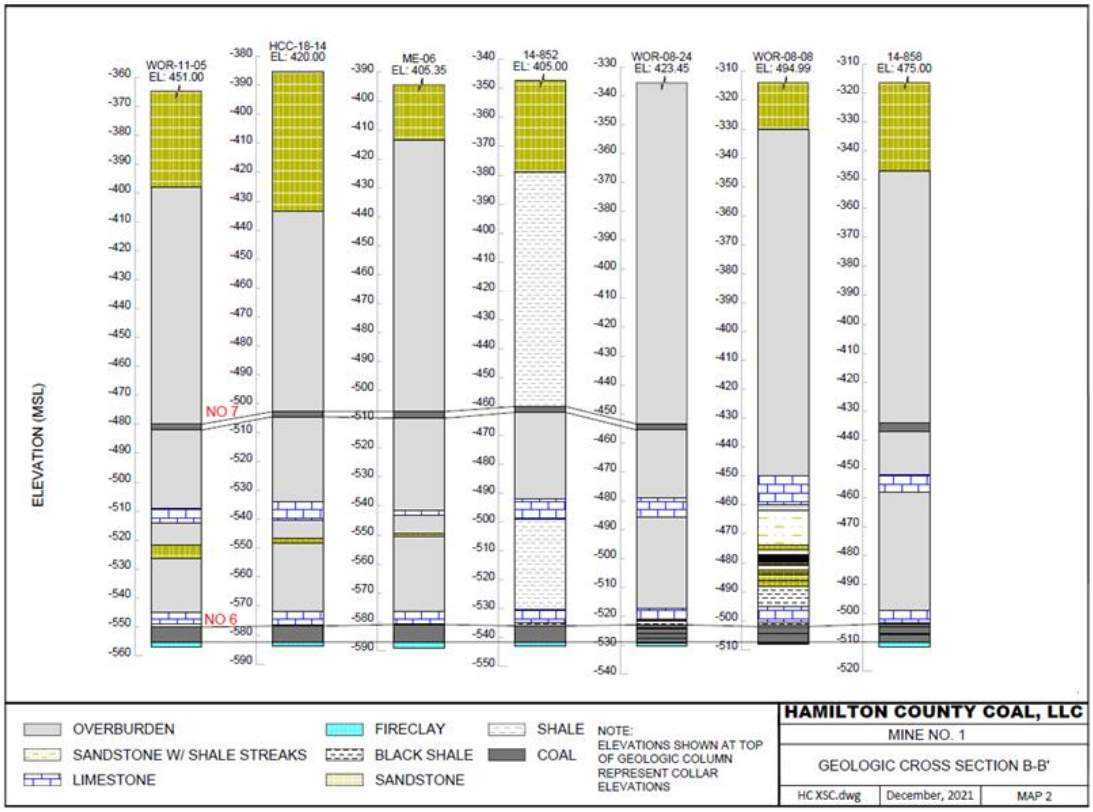


Figure 6-3. Geological Cross-Section B-B'

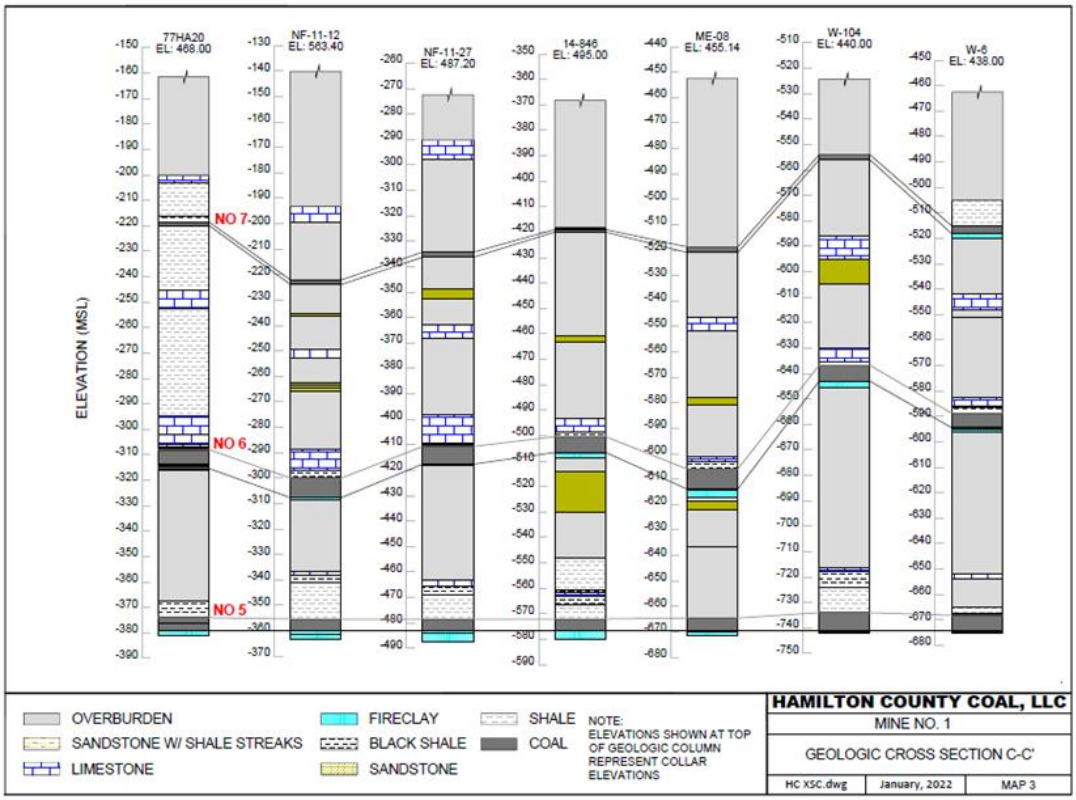


Figure 6-4. Geological Section C-C'

6.3 PROPERTY GEOLOGY AND MINERALIZATION

Hamilton extracts coal from the Herrin seam. The seam lies between 900 and 1100 feet deep and dips gently to the east/southeast. The seam varies in thickness over the reserve area from 5 feet to 9 feet. On a 1.60 float, dry basis, the Herrin seam averages 8.0% ash, 2.8% sulfur, and 13,420 btu/lb. The Herrin seam mineral deposit type (coal rank) is a high volatile bituminous B/C coal.

The Springfield seam underlies the Herrin seam by approximately 100 feet. This seam is extensively mined throughout the Illinois basin. On a 1.60 float, dry basis, the Springfield seam averages 8.1% ash, 1.7% sulfur, and 13,700 btu/lb. The Springfield seam mineral deposit type (coal rank) is a high volatile bituminous B/C coal.

The primary coal-bearing strata is of Carboniferous age in the Pennsylvanian system.

The geologic model developed to characterize the resource/reserve is a bedded sedimentary deposit model. This is generally described as a continuous, non-complex, typical cyclothem sequence that follows a bedded sedimentary sequence. The geology, including coal thickness and extent has been and continues to be verified by an extensive drilling program.

A stratigraphic column (Figure 6-1) and geologic cross sections (Figures 6-2, 6.-3, and 6-4), representing the local geology, are attached to this report.

6.4 STRATIGRAPHY

6.4.1 KEWANEE GROUP

The Kewanee Group is comprised of the Spoon and Carbondale Formations. The Kewanee can be correlated throughout the entire extent of the Illinois Basin. This group contains the best developed cyclothems and more than 99% of the mapped coal reserves in Illinois. The lateral continuity of the Kewanee Group is remarkably extensive, particularly in terms of lithologic units such as black shales, coals, and limestones. The Spoon Formation extends from the top of the Bernadotte Sandstone to the base of the Colchester (Illinois No.2) seam. The Carbondale Formation contains the principal economic coals in Illinois, including the Herrin and Springfield seams. The Carbondale extends from the base of the Colchester seam to the top of the Danville (Illinois No.7) seam.

7.0 EXPLORATION

7.1 DRILLING EXPLORATION

Hamilton has extensively explored the Herrin and Springfield seams through drilling conducted by HCC and previous developers. Drilling records are the primary dataset used in the evaluation of the resource. Drill records have been compiled into a geologic database which include location, elevation, detailed lithologic data and coal quality data. This information is used to generate geologic models that identify potential adverse mining conditions, define areas of thinning or thickening coal, and predict coal quality for marketing purposes. The drilling density on the controlled property is sufficient to identify and predict geological trends within the resource area.

The geologic database is also supplemented using oil and gas well data from the petroleum industry. Oil and gas well geophysical logs are acquired from the Illinois Geological Survey. The most common geophysical log available is the induction log, which has the spontaneous potential curve and various resistivity and conductivity curves on it. These logs are beneficial in identifying sandstones, coals, and shales. Though less common, geophysical logs that have natural gamma, density and resistivity curves are available. These logs are identified in the geologic database as a "high quality" well. These logs provide much greater detail and can better differentiate between the various lithology. Oil and gas well data are used to verify thickness, identify faulting, and delineate areas with adverse mining conditions.

Exploration also includes channel sampling of mine sections from underground surveys and underground geologic mapping conducted by geologists. Channel samples are samples collected from the seam within the mine. Once a suitable location is found within the mine, equal representative portions of the coal seam are extracted using hand tools from the top of the seam to the bottom. The sample is placed within a heavy-duty plastic bag which is securely sealed with tape. The sample is then transported from the mine to the laboratory where the requested analyses are conducted.

Channel sample data and mine surveys are useful for thickness data and identifying any partings or anomalies within the coal seam. Underground geologic mapping is beneficial for identifying facies changes, poor roof trends, and supplementing hazard maps generated from drilling data.

Hamilton has adequate drilling to define geological trends within the resource/reserve area. Despite this, exploration continues to be added to the geologic database on an annual basis. This occurs when unexpected, adverse mining conditions arise or when it becomes necessary to better define the coal quality in areas that may lack sufficient information.

Drilling on the property targets the Herrin and Springfield coal seams and has been conducted using industry standard methods by a third-party contractor employing qualified personnel. A geologist or other company representative oversees all drilling conducted on the property. Drilling methods include continuous diamond coring, mud rotary, air rotary and spot coring. Spot coring is a method that uses either mud or air rotary drilling to reach a specific depth, usually twenty or thirty feet above the target seam. Once this depth is reached, the drill string is removed, and the rig sets up for core drilling. The core barrel is advanced to the bottom of the hole where coring commences. Core is advanced to about ten feet below the target seam. Once drilling is completed on a hole, a suite of geophysical parameters

is collected for the entire borehole. Parameters such as naturally occurring gamma, resistivity, high resolution density and caliper data are collected. This information is used to verify the lithologic description, coal thickness, and core recovery. Also, the geophysical log is helpful if core isn't collected, such as when only rotary drilling is conducted. The information from the geophysical log is used to determine coal thickness and identify critical strata in the boring.

Continuous coring on the property is generally limited to locations where shafts, fans or other critical infrastructure will be located. All core is described by a geologist, photographed for future reference, and stored until no longer needed.

7.2 HYDROGEOLOGIC INVESTIGATIONS

Hydrologic investigations were conducted prior to developing the mining complex for the purpose of determining the amount of water that would be encountered during slope and shaft construction and longwall mining. The testing targeted three water-bearing sandstones located in the resource area, the Mount Carmel, the Trivoli, and the Anvil Rock. Two field techniques were employed to determine the hydrogeologic characteristics of these sandstones which were a double packer test and a bail test. Core samples from various core holes were taken to Oilfield Research, Inc. for porosity and permeability testing. IDNR, LRD requires a groundwater users survey in and within 1,000' of the permitted boundary. Issuance of the permits need IDNR, LRD to write a Cumulative Hydrologic Impact Assessment (CHIA). Both items were completed for this site and indicated groundwater issues would not be significant and require any sort of aquifer characterization. Groundwater inflow associated with mining has historically not been a significant issue and is dealt with as encountered.

7.3 GEOTECHNICAL INFORMATION

Rock mechanics data is collected from core drilling on an as needed basis. Geotechnical data is derived from core sampling. Once the core is described and photographed by a geologist, the samples are prepared by a geologist or engineer and a representative from the lab transports the sample to the geotechnical lab for analysis. The following parameters are tested by a third-party laboratory:

- Compressive Strength using ASTM Standard D7012 method
- Indirect Tensile Strength using ASTM Standard D3967 method
- Swelling Strain using the (International Society for Rock Mechanics) ISRM method
- Slake Durability using ASTM Standard D4644 method
- Water Content using ASTM Standard D2216 method
- Atterberg Limits using ASTM Standard 4318 method

All rock mechanics data are analyzed by either SGS Laboratories or Standard Laboratories, Inc. No significant disruptions, issues or concerns have ever arisen as a result of processing or laboratory error. Therefore, it's reasonable to conclude that the quality assurance actions employed by these laboratories is adequate to provide reliable results for the requested parameters.

The results from the geotechnical sampling program are adequate to provide guidance for the design of ground control methods.

See Appendix A for a map depicting the location of all drill holes.

8.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

8.1 SAMPLE PREPARATION AND ANALYSIS

Prior to sending samples to the laboratory for analysis, company representatives prepare them for transport. This includes a sample request form that has information such as sample ID, depths, and requested analyses that is placed securely inside the sample container. If the sample is rock core, the core remains sealed in plastic bags and in the box provided by the drilling contractor. The box is secured using heavy duty packing tape. If the sample is a channel sample, the sample is placed in a heavy-duty plastic bag. The bag is clearly labelled with the operation name, sample ID. and location where the sample was collected. Within the sample bag another, smaller plastic bag, contains a form that has the operation name, sample ID, date of sample collection, location where sample was collected, and the requested analyses. Company representatives then arrange for sample pick up by a representative from the laboratory. Once the laboratory takes possession of the sample rigorous quality control and quality assurance standards are strictly adhered to.

HCC contracts with two laboratories, Standard Laboratories and SGS, North America, Inc. Standard Laboratories has two facilities that analyze samples from Hamilton. One lab is located in Evansville, Indiana and the other in Freeburg, Illinois. The laboratory in Freeburg, Illinois is an ISO/IEC 17025 accredited laboratory. The laboratory in Evansville, Indiana, while not accredited, according to a formal statement from its senior management “operates in compliance with International Standard ISO/IEC 17025 General Requirements for Competence and Testing and Calibration Laboratories.”

SGS North America, Inc. has an office in Henderson, Kentucky and is accredited by A2LA under ISO/IED 17025. Their certification number is 3482.03.

Both laboratories prepare, assay, and analyze samples in accordance with approved ASTM international standards.

Coal analysis typically includes some or all of the following:

- Ultimate Analysis using ASTM Method D5373 for percent nitrogen, carbon and hydrogen and ASTM D3176 for the determination of percent oxygen.
- Mineral Analysis of Ash using ASTM Method D4326, D3682, or D6349 for measuring percent silicon dioxide, aluminum dioxide, ferric oxide, calcium oxide, magnesium oxide, potassium oxide, sodium oxide, titanium dioxide, phosphorus pentoxide, magnesium dioxide, barium oxide, strontium oxide, sulfur trioxide.
- Proximate Analysis using ASTM Method D5865 for the determination of thermal caloric value in BTU/LB. ASTM Method D3174 is used for the determination of percent ash. ASTM Method D4239 is used for measuring percent sulfur. Method M-V3175 is used to determine percent volatiles and ASTM D3172 is used to determine percentage of fixed carbon.

- Ash Fusion Temperatures are determined using ASTM Method D1857, Sulfur Forms are determined using ASTM Method D2492 and Water-Soluble Alkalis are determined using ASTM Method D8010.
- The Hardgrove Grindability Index (HGI) is measured using ASTM Method D409 (M) and the percent Equilibrium Moisture is determined using ASTM Method D1412. The Free Swelling Index is determined by ASTM Method D720.
- Trace element analysis to include Antimony, Arsenic, Barium, Beryllium, Boron, Bromine, Cadmium, Chlorine, Chromium, Cobalt, Copper, Fluorine, Germanium, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Strontium, Thallium, Tin, Vanadium, Zinc and Zirconium. ASTM Method D6357, D4208, D3761, or D6722 are typically used.

Hamilton has sufficient drilling across the extent of the reserve to identify general trends in coal quality. The majority of the data comes from samples collected from core drilling. However, on occasion it becomes necessary to collect channel samples in order to delineate local changes in coal quality. The procedure for collecting channel samples was described in a previous section.

8.2 QUALITY CONTROL/QUALITY ASSURANCE (QA/QC)

No significant disruptions, issues or concerns have ever arisen as a result of processing or laboratory error. Therefore, it's reasonable to assume that using these laboratories should provide confidence that the quality assurance actions employed by these laboratories is adequate to provide reliable results for the requested parameters.

8.3 OPINION OF THE QUALIFIED PERSON ON ADEQUACY OF SAMPLE PREPARATION

No significant disruptions, issues or concerns have ever arisen as a result of sample preparation and analysis. Therefore, it's reasonable to believe that sample preparation, security, and analytical procedures in place are adequate to provide a reliable sample in which requested parameters can be analyzed.

The qualified person is of the opinion that the sample preparation, security, and analytical procedures for the samples supporting the resource estimation work are adequate for the statement of mineral resources. Results from different laboratories show consistency and nothing in QA/QC demonstrates consistent bias in the results.

9.0 DATA VERIFICATION

9.1 SOURCE MATERIAL

Hamilton maintains a detailed geologic database used to develop several types of maps used to predict the mineability and coal quality of the Herrin (Illinois No. 6) coal seam and Springfield (Illinois No. 5) coal seam. Data verification of the accuracy of this database is conducted on a regular basis by company engineers and geologists. This includes a detailed review of drilling data, coal quality data and coal seam correlation of all exploration drill holes to what is found in the database. The verification process also entails underground geologic mapping by a geologist to field verify the accuracy of compiled geologic models from drill hole data. Furthermore, maps generated from coal quality data to predict the coal quality across the reserve are checked for accuracy against actual output from the preparation plant.

Alliance contracted Weir International (Weir) to conduct an audit of Alliance's reserve estimates prepared under Industry Guide 7. Weir submitted its findings in a report dated July 23, 2015. Weir's review included methodologies, accuracy of Carlson gridding, and drill hole data. A similar review was conducted by Weir in 2010. During the 2015 audit, 10% to 20% of the new drill hole data was reviewed and confirmed.

RESPEC was provided with e-log data for all new holes or data obtained in 2016 or more recently. RESPEC compared 20% of those e-logs to the Carlson database. RESPEC also verified the thickness and quality grids. As part of the verification process, a new thickness grid was created from the database, and that resultant grid compared to HCC's model using Carlson grid file utilities.

9.2 OPINION OF THE QUALIFIED PERSON ON DATA ADEQUACY

Based on the verification of Hamilton data by the QP and review of prior database audits, the QP deems the adequacy of Hamilton data to be reasonable for the purposes of developing a resource model and estimating resources and subsequent reserves.

10.0 MINERAL PROCESSING AND METALLURGICAL TESTING

10.1 ANALYTICAL PROCEDURES

Hamilton has sufficient drilling across the extent of the reserve to identify general trends in coal quality. The majority of the data comes from samples collected from core drilling. However, on occasion it becomes necessary to collect channel samples in order to delineate local changes in coal quality. The procedure for collecting channel samples was described in a previous section.

10.2 REPRESENTATIVE SAMPLES

The parameters that HCC runs analyses on are adequate to define the characteristics necessary to support the marketability of the coal.

10.3 TESTING LABORATORIES

HCC contracts with two laboratories, Standard Laboratories and SGS, North America, Inc.

Standard Laboratories has two facilities that analyze samples from the Hamilton mine. One lab is located in Evansville, Indiana and the other in Freeburg, Illinois. The laboratory in Freeburg, Illinois is an ISO/IEC 17025 accredited laboratory. The laboratory in Evansville, Indiana, while not accredited, according to a formal statement from Senior Management “operates in compliance with International Standard ISO/IEC 17025 General Requirements for Competence and Testing and Calibration Laboratories.”

SGS North America, Inc. has an office in Henderson, Kentucky and is accredited by A2LA under ISO/IED 17025. Their certification number is 3482.03. Both laboratories provide unbiased, third-party results and operate under a contractual basis.

No significant disruptions, issues or concerns have ever arisen as a result of processing or laboratory error. Therefore, it’s reasonable to assume that using one these laboratories should provide assurance that the data processing and reporting procedures are reliable.

10.4 RESULTS

HCC performed a series of washability tests to develop washability curves. These curves predict coal qualities and recoveries at different specific gravities. The existing plan operates at a specific gravity of approximately 1.5-1.65. The results from the coal quality sampling program are adequate to determine the specification requirements for customers located in both the domestic and export markets.

10.5 OPINION OF QUALIFIED PERSON ON DATA ADEQUACY

It is the opinion of the QP that the coal processing data collected from these analyses is adequate for modeling the resources and reserves for marketing purposes. All analyses are derived using standard industry practices by laboratories that are leaders in their industry.

11.0 MINERAL RESOURCE ESTIMATES

11.1 DEFINITIONS

A mineral resource is an estimate of mineralization, considering relevant factors such as cut-off grade, likely mining dimensions, location, or continuity, that, with the assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable.

Mineral resources are categorized based on the level of confidence in the geologic evidence. According to 17 CFR § 229.1301 (2021), the following definitions of mineral resource categories are included for reference:

An inferred mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. An inferred mineral resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability. An inferred mineral resource, therefore, may not be converted to a mineral reserve.

An indicated mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. An indicated mineral resource has a lower level of confidence than the level of confidence of a measured mineral resource and may only be converted to a probable mineral reserve. As used in this subpart, the term adequate geological evidence means evidence that is sufficient to establish geological and grade or quality continuity with reasonable certainty.

A measured mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. As used in this subpart, the term conclusive geological evidence means evidence that is sufficient to test and confirm geological and grade or quality continuity.

11.2 LIMITING FACTORS IN RESOURCE DETERMINATION

Resources in the Herrin and Springfield seams are delineated based on the following limitations:

- Mineable thickness
- Marketable quality
- Structural limits, such as faults or sandstone channels, existing mining, and subsidence protection zones
- Government and social approval

11.2.1 MINEABLE THICKNESS

Thicknesses are extracted from the database to create a geologic model. Grids are created using an inverse distance algorithm using a weighting factor of three. The minimum Herrin coal thickness in the database is 3.75 feet and the minimum thickness in the expected mining area is 4.21 feet. The minimum

Springfield coal thickness in the database is zero feet. The Springfield is missing at a single location in the southeastern limit of the resource.

11.2.2 MARKETABLE QUALITY

The primary source of quality data is from core holes drilled for the purpose of coal exploration. The qualities that are of primary interest are ash, sulfur, and BTU. These qualities have limitations which affect the value of the coal. The table below summarized the values and ranges of each in the geologic database. The range of critical qualities in the database indicates that all the coal in the Herrin and Springfield seams is within marketable limits. The potential resource areas are considered to meet the quality standard and no further consideration or analyses of these parameters are made. All resource estimates include average anticipated values for ash, sulfur, and BTU.

Table 11-1. Qualities at 1.6 Specific Gravity – Dry Basis

Seam	Quality	Number of samples	Average	Minimum	Maximum	Standard Deviation
Herrin	Ash	149	8.12	5.94	11.63	0.74
Herrin	Sulfur	149	2.85	1.48	4.39	0.34
Herrin	BTU	149	13,334	12,811	13,629	127
Springfield	Ash	358	8.19	5.05	16.16	1.57
Springfield	Sulfur	357	1.96	0.41	4.07	1.01
Springfield	BTU	357	13,391	11,578	13,939	275

Values in Table 11-1 are dry basis qualities based on laboratory analysis of core or channel samples. Marketable qualities reflect moisture and adjustments for plant variability. Typical as received quality specifications for the Hamilton product are approximately:

- BTU – 11,600 to 11,750
- Moisture – 11.0% to 12.0%
- Ash – 7.5% to 9.0%
- Sulfur – 2.4% to 2.8%
- Volatile Matter - 34.0% to 37.0%

11.2.3 STRUCTURAL LIMITS

There are no geologic features limiting the resources. There are no known faults in the area.

There is an existing underground mine, the Wheeler Creek Mine, in the Springfield seam. This area is excluded from the resources. There are several well fields along the eastern edge of the resources. These wells do not exclude the areas from consideration as a resource. The density of the wells may prohibit the use of longwall mining.

The Herrin and Springfield seams lying under the community of McLeansboro are excluded from the resource estimate.

11.2.4 GOVERNMENT AND SOCIAL APPROVAL

There are no significant limitations to Hamilton obtaining the permits required. Hamilton holds the necessary permits to mine, process, and transport coal from this area. Historically, the company amends, or revises permits as needed. The public is notified of significant permitting actions and may participate in the process.

11.3 CLASSIFICATION RESOURCES

11.3.1 CLASSIFICATION CRITERIA

The identified resources are divided into three categories of increasing confidence: inferred, indicated, and measured. The delineation of these categories is based on the distance from a known measurement point of the coal. The distances used are presented in USGS Bulletin 1450-B, "Coal Resource Classification System of the U.S. Bureau of Mines and U.S. Geological Survey." These distances are presented in the Table 11-2.

Table 11-2. Coal Resource Classification System

Classification	Distance from measurement point
Measured	<1,320'
Indicated	1,320' – 3,960'
Inferred	3,960' – 15,840'

These distances for classification division are not mandatory. However, these values have been used since 1976, have proven reliable in the estimation of coal resources, and are considered reasonable by the QP.

11.3.2 USE OF SUPPLEMENTAL DATA

Due to the continuity of coal seams in the Illinois Basin, mineability limits are the most important factor in resource assessment. Information from oil and gas well e-logs in the vicinity are used as supplemental data to confirm thickness trends, identify structural limits, and characterize adverse geologic conditions. Coal thickness grids are generated from drill hole information, mine measurements, channel samples, and a subset of high-quality oil and gas well e-logs. These are data points in which the company has a high degree of confidence in thickness measurement. These are the data used by the company to generate the model for its internal planning. The combined information increases the overall reliability of the resource estimate, and all data points are included within the classification system.

11.4 ESTIMATION OF RESOURCES

Resource estimates are based on a database of geologic information gathered from various sources. The sources of this data are presented in Section 7 of this report. Thickness and quality data are extracted from the database to create a model using Carlson's Geology module. The model consists of a set of grids, generated using an inverse distance algorithm with a weighting factor of three. In addition to the thickness and quality data, plant recovery is modeled. Quality data and recovery rates

are determined through a set of tests generating washability curves. The current operation washes the run-of-mine coal at a specific gravity of approximately 1.50-1.65. The qualities and seam yield are based on this specific gravity.

Section 12 presents the modifying factors considered in determining whether resources qualify as reserves. Table 11.3 presents all resources. The tonnages are reported on a saleable basis and exclude resources that are converted to reserves.

Table 11-3. Summary of Resources as of December 31, 2021

Resource	Herrin Seam	Springfield Seam	Total
Measured	59,391	127,742	187,133
Indicated	96,180	143,137	239,317
Inferred	6,082	5,163	11,245
Total	**161,643**	**276,042**	**437,685**

11.5 OPINION OF QUALIFIED PERSON

It is the QP's opinion that the risk of material impacts on the resource estimate is low. The mining operations, processing facility, and site infrastructure are in place. Mining practices and costs are well established. The operation has a good track record of HSE compliance. The Energy Information Administration (EIA) predicts that global energy produced by coal will increase through 2050.

Please refer to Item 1A of the ARLP 10-K regarding the significant risks involved in investment in Alliance's operations including Hamilton, and the coal industry in general. It is the QP's opinion that the following technical and economic factors have the most potential to influence the economic extraction of the resource:

- Skilled labor – This site is located near a populated area, which has a history of coal mining.
- Environmental Matters
  - Greenhouse gas emission Federal or State regulations/legislation
  - Regulatory changes related to the Waters of the US.
  - Air quality standards
- Regional supply and demand – Although the US electric utility market has moved to natural gas and renewable forms of energy to provide a higher percentage of electricity production, it is the QP's opinion, coal will continue to serve as a baseload fuel source in the US and other global energy markets.

The potential for changes in the circumstances relating to these factors influencing the prospect of economic extraction exists and could materially adversely impact economic extraction of the resource.

12.0 MINERAL RESERVES ESTIMATES

12.1 DEFINITIONS

A mineral reserve is an estimate of tonnage and grade or quality of indicated and measured mineral resources that, in the opinion of the qualified person, can be the basis of an economically viable project. More specifically, it is the economically mineable part of a measured or indicated mineral resource, which includes diluting materials and allowances for losses that may occur when the material is mined or extracted. Probable mineral reserves comprise the economically mineable part of an indicated and, in some cases, a measured mineral resource. Proven mineral reserves represent the economically mineable part of a measured mineral resource and can only result from conversion of a measured mineral resource.

12.2 KEY ASSUMPTIONS, PARAMETERS AND METHODS

12.2.1 RESERVE CLASSIFICATION CRITERIA

The Herrin and Springfield seam have historically been successfully mined throughout the Illinois basin. Several other mines in the region are currently operating in these seams. Resources are identified as described in Section 11 of this report based on geologic conditions, mineability, and marketability of the coal seam. The two critical factors in converting indicated and measured mineral resources into the mineral reserves are inclusion in an economically feasible mine plan and government approval through the various environmental and operational permits.

Table 17-1 presents the various state and federal environmental permits currently held by the operation. These include the surface mining permit (required for surface operations), air quality permits, and water discharge permits. Approval has already been granted for the required surface disturbance, construction and operation of the preparation facilities, coal refuse disposal, and coal transport. It is noted that not all the anticipated underground mining areas are currently covered under the SMCRA permit. Shadow areas (underground only areas) are extended using permit revisions. This is common practice for underground operations in the Illinois Basin.

12.2.2 NON-CONTIGUOUS PROPERTIES

The operation currently has mineral rights to 2,649 properties. Some of these properties are non-contiguous. Securing additional mineral rights is a routine ongoing activity with an emphasis on obtaining rights to tracts to fill any gaps in the mine plan. Should the operation encounter a tract for which mineral rights cannot be obtained, modifications can be made to the longwall panels as needed to avoid these tracts. Any modification to the mining plan would result in lower recovery within the reserve area.

12.2.3 CUT-OFF GRADE

The coal bed consistently exhibits qualities that make the product marketable. No reduction is made to the resources or reserves due to quality.

12.2.4 MARKET PRICE

The EIA reported the average weekly coal commodity spot price for Illinois Basin coal (the EIA price) on February 4, 2022, to be $75.50/ton (11,800 Btu, 5.0 lbs SO2 basis). The reference price used in the economic analysis is $36.27 which is based on the simple average of the five-year actual Hamilton realization per ton, proprietary third-party pricing forecasts, and the simple average of the EIA Price as reported for the first Friday of each month for calendar years 2020 and 2021 (the 2-year average). The revenue projection in the economic analysis is based on this estimate of coal price and is assumed to be real 2021 US dollars.

12.3 MINERAL RESERVES

12.3.1 ESTIMATE OF MINERAL RESERVES

The existing plant operates at a specific gravity of approximately 1.50 to 1.65. The qualities and recovery at a 1.6 specific gravity are added as attributes to the applicable drill holes from which samples were collected. Those values are then modeled using Carlson, gridding these attributes using the inverse distance algorithm with a weighting factor of three.

The current operation uses the longwall mining method with continuous miner development. The approved ground control plan results in a 70% combined mining recovery of the in-place reserves. The typical mining recovery of 40% is used for continuous mining only areas.

The coal testing included density calculations. The operation uses an average in-situ density of 84.9 lbs/cubic foot for the Herrin seam and 86.18 lbs/cubic foot for the Springfield seam. These values are within the expected range of coal density.

All coal tonnages are reported as clean controlled coal. Carlson's Surface Mine Module is used to estimate in-place tonnages, qualities, and average seam recovery within a set of polygons. These polygons are the result of the intersection of polygons outlining property boundaries, adverse mining conditions, mining method, mine plan boundaries, and resource classification boundaries. The Carlson results are exported to a database, which then applies the appropriate percent ownership, mine recovery, and seam recovery. The basic calculation is:

Tons = Area * Thickness * Density * Mine Recovery * Seam Recovery * Percent Ownership

Table 12-1. Summary of Coal Reserves as of December 31, 2021

Reserve Category / Seam	Controlled Recoverable (1,000 tons)	Sulfur (%)	Ash (%)	BTU
Herrin Seam				
Proven	57,635	2.82	8.04	13,406
Probable	70,901	2.84	7.99	13,421
Herrin	**128,536**	**2.83**	**8.01**	**13,421**
Total Reserves	**128,536**	**—**	**—**	**—**

Values in Table 12-2 are based on a washed, dry basis.

12.4 OPINION OF QUALIFIED PERSON

It is the QP's opinion that the risk of material impacts on the reserve estimate is low. The mining operations, processing facility, and site infrastructure are in place. Mining practices are well established. The operation has a good track record of HSE compliance. The Energy Information Administration (EIA) predicts that global energy produced by coal will increase through 2050.

Please refer to Item 1A of the ARLP 10-K regarding the significant risks involved in investment in Alliance's operations including Hamilton, and the coal industry in general. It is the QP's opinion that the following technical and economic factors have the most potential to influence the economic extraction of the resource:

- Extension of permitted area – Not all the Reserves are currently permitted. Underground operations in Illinois have traditionally been able to extend the permitted shadow areas as needed. No change is anticipated in the issuance of these permit modifications. It is expected that the shadow area of the permit will be expanded as needed.
- Subsidence – HCC must obtain subsidence rights from surface owners in advance of longwall mining.
- Skilled labor – This site is located near a populated area, which has a history of coal mining. Although there is competition from other underground operators for skilled labor, HCC has been successful in attracting and retaining skilled staff and has programs for training less experienced miners. Should HCC not be able to maintain as skilled a labor pool as anticipated, this could impact productivity. However, economic evaluation indicates Hamilton mine remains economic with modest downturns in productivity.
- Environmental Matters
  - Greenhouse gas emission Federal or State regulations/legislation may impact the domestic electric utility market, which is a major customer for Hamilton coal. While many proposed changes have been suggested, the horizon for these changes severely impacting the market is anticipated to be beyond the current planning horizon supporting the reserve estimate.
  - Regulatory changes related to the Waters of the US (WOTUS). The interpretation of the regulation and enforcement of the Clean Water Act with respect to the jurisdictional waters of the US have been modified multiple times through regulatory actions and court decisions. It is likely that further reinterpretation will occur. This could affect future modifications such as new or expanded stockpile areas, transportation areas, and refuse disposal areas. The coal industry has become experienced in adapting to these regulatory changes.
  - Miscellaneous regulatory changes. The coal industry has been subjected to many changes in regulation and enforcement in the recent past. In addition to new regulations related to greenhouse gas emissions and WOTUS, it is expected that further change will occur. The underground coal mining industry has proven adept at modifying operations to comply with these changes while continuing operations.
- Regional supply and demand – Although the US electric utility market has moved to natural gas and renewable forms of energy to provide a higher percentage of electricity production, it is the QP's opinion, coal will continue to serve as a baseload fuel source in the US and other global energy markets.

The potential for changes in the circumstances relating to these factors influencing the prospect of economic extraction exists and could materially adversely impact economic extraction of the reserve

13.0 MINING METHODS

13.1 GEOTECHNICAL & HYDROLOGICAL MODELS

The underground mining permit issued by IDNR requires coreholes and their corresponding geotechnical sampling to be performed within the reserve area. The geotechnical data obtained from the coreholes is submitted to the IDNR as a requirement of an approved Subsidence Control Plan. Corehole density is sufficient to define coal quality parameters of the coal seam.

Hydrologic investigations were conducted prior to developing the mining complex for the purpose of determining the amount of water that would be encountered during slope and shaft construction and longwall mining. The testing targeted three water-bearing sandstones located in the resource area, the Mount Carmel, the Trivoli, and the Anvil Rock. Two field techniques were employed to determine the hydrogeologic characteristics of these sandstones which were a double packer test and a bail test. Core samples from various core holes were taken to Oilfield Research, Inc. for porosity and permeability testing.

13.2 PRODUCTION RATES & EXPECTED MINE LIFE

HCC extracts coal from the Herrin seam utilizing the longwall and room and pillar method of underground mining. The dual-split ventilation system allows two continuous mining machines to operate on mains and submains. The sweep ventilation system allows one continuous miner to operate on the longwall gate entries. With the installation of a bleeder shaft and fan in each longwall district, the ventilation goes from the headgate to the tailgate of the longwall and to the inby bleeder shaft. Infrastructure within the mine includes conveyors, ventilation, power, fresh water, and compressed air systems, one longwall face and the associated development units. Longwall panels are approximately 1,400 feet wide and up to 18,770 feet in length.

Planned production varies according to contracted sales volume and expectations of market condition and on an annual basis ranged between 2.9 million and 6.3 million tons over the 2017 through 2021 period. The forecasted production contained in the economic analysis is shown in Table 13.1. The annual minimum listed below includes a partial last year of production.

Table 13-1. Life of Reserve Production Estimate

Life of Reserve Estimate 2022-2042 (US 000's)				
Category	Annual Minimum	Annual Maximum	Annual Average	Total
RAW Tons	2,428	12,074	10,295	216,204
Saleable Tons	1,581	6,957	6,124	128,536

Typical reserve recovery rates for Hamilton range from 21%-100%. Pillar size varies throughout the reserve typically ranging between 232' x 102' (250' centers) and 82' x 82' (100' centers). Entries and crosscuts are driven approximately 18' wide.

There are approximately 128.5 million clean tons remaining in the Hamilton reserve to be mined within the controlled properties. The current life of reserve plan anticipates exhausting the reserve in 2042. The lifespan of the mine is dependent on many factors and may vary materially from current projections. Please refer to Item 1A of the ARLP 10-K regarding the significant risks involved in investment in Alliance's operations including Hamilton, and the coal industry in general.

13.3 UNDERGROUND DEVELOPMENT

HCC currently operates within the specifications of the approved permits and certifications required by all local, state, and federal regulatory agencies. Some of these permits and certifications are as follows:

- Local: County Road agreements, regulated drainage ditch permits
- State: IDNR shadow boundary permit, IDNR surface affects permit, National Pollutant Discharge Elimination System permit, IDEM air permit, Illinois Environmental Protection Agency (IEPA) injection well permit
- Federal: Army Corps of Engineers section 404 (wetlands) permit, US NRC nuclear material license

In addition to the above-mentioned permits, all applicable mining regulations found in Title 30 of the Code of Federal Regulations (CFR) must be followed. The Mine Safety and Health Administration (MSHA) is the federal regulatory agency who oversees compliance with the CFR. Also, plans uniquely specific to Hamilton are required to be submitted, reviewed, and approved by MSHA prior to mining. Some of the approved MSHA required mine plans include:

- Roof Control Plan
- Ventilation Plan
- Emergency Response Plan
- Mine Emergency Evacuation and Fire Fighting Program Instruction Plan
- Oil Well Mine Through/Around Plan

13.4 MINING EQUIPMENT FLEET, MACHINERY & PERSONNEL

Underground equipment required at Hamilton includes, but is not limited to:

- Longwall Equipment; Shearer, Stageloader, Panline, Shields
- Continuous miner
- Shuttle car
- Double boom roof bolter
- Diesel scoop
- Battery scoop

- Fork trucks
- Personnel carrier (mantrip)
- Feeder breaker
- Road grader
- Belt conveyor
- Transformer/substation
- Refuge Alternative chamber
- Rock dusters
- Miscellaneous dewatering pumps

Surface plant and equipment required at Hamilton includes, but is not limited to:

- Dozers (various sizes)
- Miscellaneous preparation plant equipment
- End loader
- Man and material hoisting equipment
- Ventilation fan
- Substation
- Mobile crane
- Belt conveyor
- Tractor and dirt scraping pans
- Side by side personnel carriers
- Miscellaneous dewatering pumps

Personnel required to operate and maintain Hamilton is generally obtained through the hiring of both skilled and non-skilled workers from the immediate area. Salaried positions at HCC are made up of production managers, business managers, engineers, information technology, preparation plant operators, maintenance foreman, purchasing agents, and safety specialists. Hourly positions include equipment operators on the surface and underground, general laborers, dust sampling technicians, mechanics, examiners, warehouse clerks, etc. Total headcount ranges between 220 to 350 workers, depending on the number of development units operating.

13.5 MINE MAP

Please see Appendix A for a plan view of the mine map.

14.0 PROCESSING AND RECOVERY METHODS

14.1 PLANT PROCESS

HCC utilizes a heavy media, float/sink style preparation plant to separate marketable coal from refuse. The plant has a design feed capacity of 2,000 tons per hour (TPH). The plant is divided into two independent 1,000 TPH circuits, fed by two independent plant feed conveyors. Once in the plant, the run of mine (ROM) material passes over vibratory screens to be separated by size. Approximately 85% of all of the ROM material reports to the heavy media circuit as coarse material. Through the introduction of magnetite, a ferromagnetic naturally occurring mineral, the gravity of the ROM material solution within the heavy media circuit is manipulated to precisely control the float/sink point. The ROM material in the heavy media circuit is then pumped into a heavy media cyclone. The cyclonic action aids in the magnification of gravity, which allows for a faster and more precise separation between coal and rock. The clean coal, or product, produced by the heavy media cyclone is rinsed, dried, and collected by the clean coal conveyor to be shipped. The rock, or coarse refuse, produced by the heavy media cyclone is rinsed and sent to the refuse disposal area.

The 15% of material that makes up the fine circuit within the plant is also separated by gravity, but in a different manner. The fine ROM material reports to a series of classifying cyclones, spirals, and flotation columns to separate the coal from the fine refuse. Clean coal produced by the flotation columns and spirals is passed through screen bowl driers to remove excess moisture prior to being collected on the clean coal conveyor. Fine refuse from the same process is pumped to a static thickener. Once the fine refuse material has had sufficient time to settle to the bottom of the thickener, it is pumped away to be disposed of within the refuse impoundments.

14.2 ENERGY, WATER, PROCESS MATERIALS & PERSONNEL

Energy for the underground mining and preparation plant operations is delivered through a 138kV transmission line to Hamilton's 60MW substation located on site. The electricity is purchased from Hoosier Energy and is delivered by WWEC.

Hamilton gets its potable and non-potable water from the Hamilton County Water District. Water used for coal processing is supplemented by non-potable water sourced from collection ponds and impoundments.

The preparation plant uses readily available reagents and supplies. These are typically able to be competitively sourced from multiple vendors and are generally delivered to the mine by truck.

The preparation plant operates a flexible work schedule responding to mine production and market demands. A typical shift crew includes one salaried and eight hourly personnel with up to four crews to operate at full capacity.

15.0 INFRASTRUCTURE

Hamilton is located at 18033 County Road 500 E, Dahlgren, IL, 62828. (38°10’8” N, -88°36’26” W). It is accessible from County Road 1800 N via County Road 500 E via State Route 142 via County Road 2200 E via Interstate 64. Interstate 64, State Routes 142 and 242 are major transportation arteries in and out of the area. Most supplies are trucked to the mine from regional vendors. All necessary utilities are in place and working. Electricity is purchased from Hoosier Energy and delivered by WWEC. Water is provided by the Hamilton County Water District.

Coal is transported by the EVWR to the CSX or Alliance’s Mount Vernon Transfer Terminal (MVTT) on the Ohio River (mile marker 828). HCC's annual rail loadout capacity is approximately eight million tons and typically can load trains in 4 hours or less. MVTT (37°55’31” N, -87°51’46” W) is approximately 50 miles southeast of HCC. MVTT has the capabilities to transload eight million tons per year from rail to barge. MVTT ground storage is approximately 200,000 tons.

Two fine refuse impoundments are located on the mine’s property. Once construction is completed, the two embankment style impoundments will cover approximately 200 acres and 475 acres, respectively. The impoundment embankments are constructed of coarse refuse, creating storage space for fine refuse within the impoundment.

Figure 15-1 shows the layout of Hamilton surface facilities.

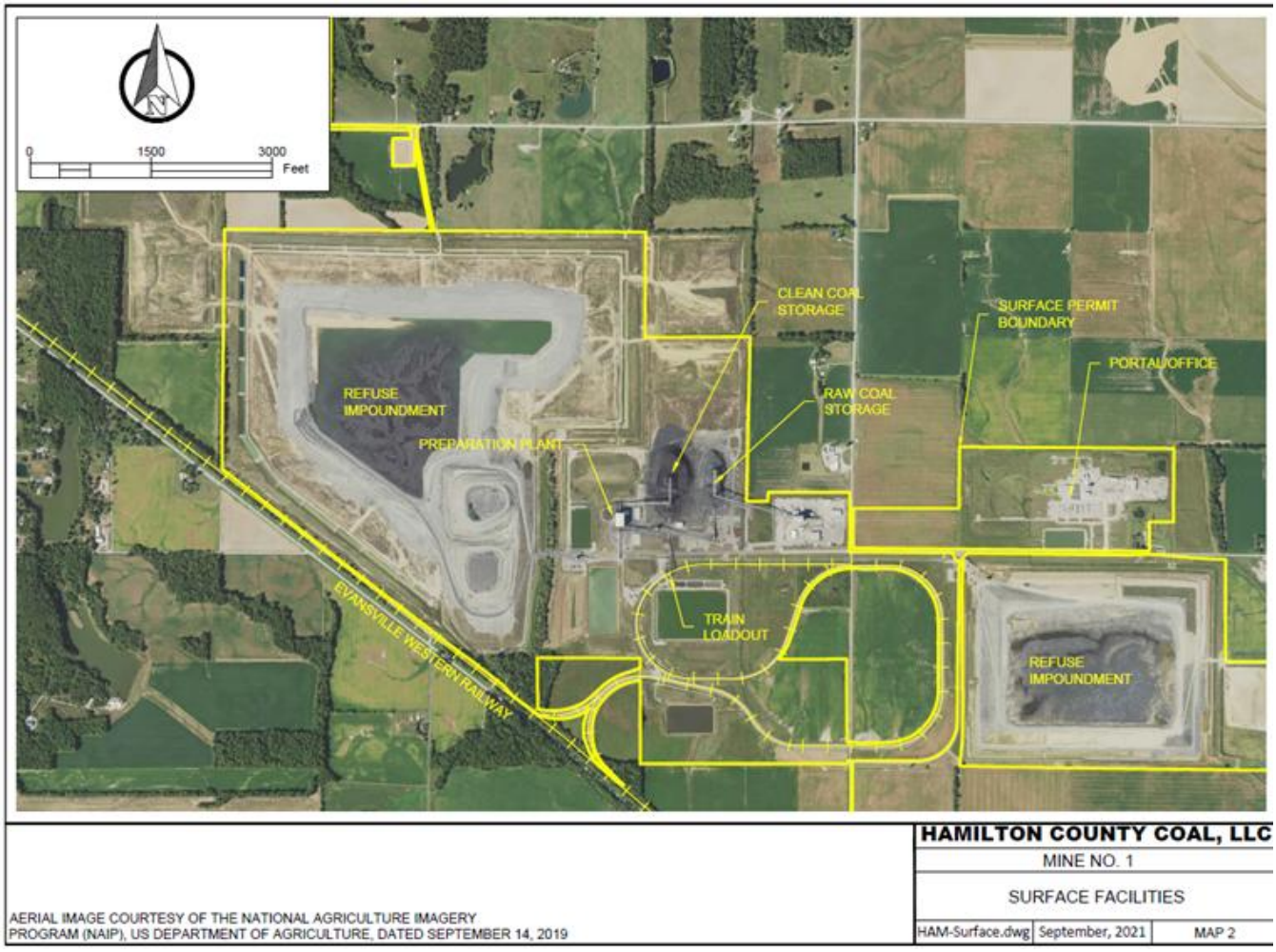


Figure 15-1. Infrastructure Layout

16.0 MARKET STUDIES

16.1 MARKETS

Hamilton produces high sulfur coal that is sold to the domestic and international thermal coal markets. Production from Hamilton is transported to customers by rail via the EVWR with connection to CSX, Norfolk Southern Railway or the MVTT transloading facility for barge deliveries.

Hamilton participates in the Illinois Basin coal market, selling coal to a diverse customer base of various domestic utilities, industrial facilities, and exporters. While coal demand in the US is expected to decline over the coming years, the Eastern US thermal coal demand in 2021 was over 190 million tons.

Table 16-1. Economic Analysis Coal Price

Operation		5-Year Average 2017-2021	Third Party Price Forecasts[1] Minimum	Third Party Price Forecasts[1] Maximum	Economic Analysis Coal Price[2]	Reserve Tons
HCC	Tons Sold[3]	5,200	---	---	---	128,536
	Price per ton[2]	---	$32.42	$60.06	$36.27[4]	---

1. Proprietary third-party pricing forecast for 2022-2040 and 2022-2050, real 2021 dollars.
2. Price per ton is real 2021 dollars for the life of reserve economic analysis.
3. Tons reported in thousands.
4. The economic analysis coal price is based on the QP's review of historical pricing realized by Hamilton and as reported by EIA and proprietary third-party coal price forecasts provided by Alliance.

The demand for Hamilton coal is closely linked to the demand for electricity, and any changes in coal consumption by United States or international electric power generators would likely impact the TRM demand. The domestic electric utility industry accounts for approximately 91% of domestic coal consumption. The amount of coal consumed by the domestic electric utility industry is affected primarily by the overall demand for electricity, environmental and other governmental regulations, and the price and availability of competing fuels for power plants such as nuclear, natural gas, and fuel oil as well as alternative sources of energy.

Future environmental regulation of GHG emissions could also accelerate the use by utilities of fuels other than coal. In addition, federal and state mandates for increased use of electricity derived from renewable energy sources could affect demand for coal. Such mandates, combined with other incentives to use renewable energy sources such as tax credits, could make alternative fuel sources more competitive with coal. A decrease in coal consumption by the domestic electric utility industry could adversely affect the price of coal.

17.0 ENVIRONMENTAL

17.1 ENVIRONMENTAL STUDIES

No standalone environmental studies have been conducted for the properties. As part of the state and federal permitting process, various environmental assessments have been conducted. As disturbances are proposed for the operation, all relevant local, state, and federal agencies are contacted to review the proposed project. Each agency reviews the project for impacts to lands, water, and ecology.

17.2 WASTE DISPOSAL & WATER MANAGEMENT

The processing of the run-of-mine coal at Hamilton process generates fine and coarse refuse waste streams. The fine and course refuse are disposed of in the two onsite refuse impoundments. The coarse refuse is used to construct the impoundments' embankments and the fine refuse is pumped to the pool areas created by the embankments. Additional permitting will be required to expand the refuse impoundments. The expansion areas will be constructed on controlled land adjacent to the existing refuse impoundments. In conjunction with the expansion area, the refuse impoundments may be increased by employing upstream construction methods.

All runoff from the site is managed by sediment control structures including diversions, sumps, and sediment basins. Prior to discharge from the permitted areas, water must meet compliance standards as defined in the NPDES permits. Water samples at discharge locations are collected in accordance with the approved permit and analyzed by an independent laboratory.

17.3 PERMITTING REQUIREMENTS

IDNR, LRD is responsible for review and issuance of all permits relative to coal mining and reclamation activities, and financial assurance of comprehensive environmental protection performance standards related to surface and underground coal mining operations. In addition to the state mining and reclamation laws, operators must comply with various other federal laws relevant to mining. The federal laws include:

- Clean Air Act
- Clean Water Act
- Surface Mining Control and Reclamation Act
- Federal Coal Mine Safety and Health Act
- Endangered Species Act
- Fish and Wildlife Coordination Act
- National Historic Preservation Act
- Archaeological and Historic Preservation Act

In conjunction with the IDNR coal mining permit, the Clean Air Act and Clean Water Act laws and regulations are administered by the Illinois Environmental Protection Agency (IEPA). IEPA is responsible

for permit issuance and compliance monitoring for all activities which have the potential to impact air or water quality.

Along with the IDNR and IEPA, a state interagency committee reviews permit applications for components applicable to a particular agency's area of expertise. Agencies represented on this committee include Illinois Department of Agriculture, Illinois Department of Natural Resources/Office of Realty and Environmental Planning, Illinois Department of Natural Resources/Office of Water Resources, Illinois Environmental Protection Agency, and Illinois Historic Preservation Agency.

All applicable permits for underground mining, coal preparation and related facilities, and other incidental activities have been obtained and remain in good standing. A listing of all current state mining permits is provided in Table 17-1. Mining Permits generally require that the permittee post a performance bond in an amount established by the agency to provide assurance that any disturbance or liability created by the mining operations is properly restored to an approved post-mining land use and that all regulations and requirements of the permit are satisfied before the bond is returned to the permittee.

Table 17-1. Current State Permits

Regulatory Agency	Permit No.	Permitted Surface Area (Acres)	Permitted Underground Area (Acres)	Current Bond
IDNR	409	499.72	10,488.20	YES
IDNR	431	217.75	----	YES
IDNR	445	615.3	----	YES
IEPA	NPDES: IL0078921	----	----	----
IEPA	Air: 065803AAC	----	----	----

17.4 PLANS, NEGOTIATIONS OR AGREEMENTS

New permits and certain permit amendments/revisions require public notification. The public is made aware of pending permits by advertisement in the local newspaper. Additionally, a copy of the application is retained at the county's public library for the public to review. A 30-day comment period follows the last advertisement date to allow the public to submit comments to the regulatory authority.

In certain instances, additional opportunities are provided to the public for comment. These instances include operations within 100 feet of a public road, operations within 300 feet of a dwelling, and operations within 300 feet of a public building, school, church, or community building. In those instances, approval must be granted by the regulatory authority as well as individuals or groups who own or provide oversight for a particular facility.

17.5 MINE CLOSURE

A detailed plan for reclamation activities upon completion of mining required at the properties has been prepared. Reclamation costs have been estimated based on internal project costs as well as publicly available heavy construction databases. Reclamation costs at the end of the year 2021 totaled approximately $21.7 million.

17.6 LOCAL PROCUREMENT & HIRING

There are no commitments for local procurement or hiring. However, efforts are made to source supplies and materials from regional vendors. The workforce is hired from the regional area.

17.7 OPINION OF THE QUALIFIED PERSON ON DATA ADEQUACY

The approved permits and certifications are adequate for continued operation of the facility. Waste disposal facilities are in place for current mining operations, with plans to expand the disposal facilities in order to provide life of reserve storage. Water control structures are in place and function as required by regulatory agencies. In the QP's opinion, the estimated reclamation liability is adequate to estimate mine closure and reclamation costs at the property.

18.0 CAPITAL AND OPERATING COSTS

RESPEC reviewed capital and operating costs required for the coal mining operations at Hamilton. Historic capital and operating expenditures were supplied to RESPEC by HCC. The site is an operating coal mine; therefore, the capital and operating cost estimates were prepared with consideration of recent operating performance. The cost estimates are accurate to within +/-25%. RESPEC considers these cost estimates to be reasonable. All costs in this section are expressed in real 2021 US dollars.

18.1 CAPITAL COSTS

Capital costs were estimated with the costs classified as routine operating necessity (sustaining capital) and capital required for major infrastructure additions or replacement. As discussed in Item 12.3, the reserve for GSM is 128.5M tons. The current production schedule estimates approximately 128.5M tons will be mined by 2042. The estimated capital costs for the reserve tons are provided in Table 18-1.

Table 18-1. Capital Cost Estimate

Life of Reserve Estimate 2022-2042 (US$ 000's)				
Category	**Annual Minimum**	**Annual Maximum**	**Annual Average**	**Total**
Routine Operating Necessity	6,404	47,393	28,302	594,343
Major Infrastructure Investment	---	---	---	---

18.2 OPERATING COSTS

Operating cost inputs for the life of reserve economic analysis such as labor, benefits, consumables, maintenance, royalties, taxes, transportation, and general and administrative expenses were based on recent operating data. A summary of the estimated operating costs, including depreciation expense (the Mining and Processing Cost) for the life of the reserve are provided in Table 18-2.

Table 18-2. Operating Cost Estimate

Life of Reserve Estimate 2022-2042 (US$ 000's)				
Category	**Annual Minimum**	**Annual Maximum**	**Annual Average**	**Total**
Mining and Processing Costs	63,018	197,657	171,026	3,591,537

19.0 ECONOMIC ANALYSIS

RESPEC completed an economic analysis based on the cash flow developed from the production plan and capital and operating costs previously discussed. The average per ton sold revenue estimate used for the life of reserve economic evaluation was $36.27.

19.1 KEY PARAMETERS AND ASSUMPTIONS

The economic analysis has been based on production, revenue, capital, and operating costs estimates. Other base economic analysis assumptions include:

- All revenue, costs, and cash flows are estimated using real 2021 U.S. dollars
- Taxes – Federal and State income tax are excluded from the economic analysis
- Royalties – reserve average of 14.8% of revenue
- Government levies – reserve average of 3.2% of revenue

Table 19-1 provides the range of cash flow of the life of reserve economic analysis for GSM based on the above assumptions.

Table 19-1. Cash Flow Summary

Life of Reserve Cash Flow Summary 2022-2042 (US$ 000's)				
Category	**Annual Minimum**	**Annual Maximum**	**Annual Average**	**Total**
Cash Flow	5,375	84,387	55,253	1,160,307

19.2 ECONOMIC VIABILITY

The economic viability of the operation is reliable based on various factors. This is an on-going operation and has already established the economic benefits outweigh the economic costs. The economic analysis utilized the same parameters and assumptions used in past financial models. Therefore, it is reasonable to expect similar benefits and costs. Since this is an on-going operation with no major up front capital expenditures, there is no calculation of NPV, internal rate of return or payback period of capital.

We have tested the economic viability of the life of reserve economic analysis by conducting sensitivity analysis with respect to the revenue and operating and capital cost. In the independent sensitivity analysis, the revenue was reduced by 20% and the operating and capital cost were increase by 25%. The summary of the sensitivity analysis is shown in Table 19.2.

Table 19-2. Sensitivity Analysis

Life of Reserve Estimate 2022-2042 (US$ 000's)				
Category	**Annual Minimum**	**Annual Maximum**	**Annual Average**	**Total**
Revenue Reduced 20% - Cash Flow	(17,339)	34,700	9,890	227,467
Operating & Capital Costs increased 25% - Cash Flow	(24,994)	43,423	12,183	280,199

20.0 ADJACENT PROPERTIES

There are no active coal mines within 5 miles of Hamilton.

21.0 OTHER RELEVANT DATA AND INFORMATION

All data relevant to the supporting studies and estimates of mineral resources and reserves have been included in the sections of this TRS. No additional information or explanation is necessary to make this TRS understandable and not misleading.

22.0 INTERPRETATION AND CONCLUSION

22.1 INTERPRETATIONS AND CONCLUSIONS

The QP has reached a conclusion concerning the Hamilton operation based on data and analysis summarized in this TRS that the operation is currently viable based on the resource and reserves that remain, the economic benefits for HCC and the market needs of this product. Hamilton contains an estimated 128.5 million clean tons of reserves.

22.2 RISKS AND UNCERTAINTIES

It is the QP's opinion that the mine operating risks are low. This is an on-going operation that has proven to be a viable and profitable business. The analysis of the reserves and resources used the same methodology the operation has used in the past. Given the reliability of past mining plans, it is a reasonable conclusion that future mining plans would continue to be reliable. However, market uncertainty associated with government regulations could result in earlier retirements of coal fired electric generating units. This could negatively affect the demand and pricing for the Hamilton product. Please refer to ARLP's Form 10-K, Item 1A, for a complete listing of risk factors that may affect this operation.

23.0 RECOMMENDATIONS

The recommendations for Hamilton are as follows:

- Continue acquiring mining rights in the extended mine plan to support future production.
- Continued research into a new impoundment location and commence negotiations with landowners as required.
- Continue current exploration plan

24.0 REFERENCES

Willman, Harold Bowen; Atherton, Elwood; Buschbach, T.C.; Collinson, Charles William; Frye, John Chapman; Hopkins, M.E.; Lineback, Jerry Alvin; Simon, Jack A.1975. Handbook of Illinois Stratigraphy. Urbana, IL: Illinois State Geological Survey

Nalley S., LaRose, A. (2021). Annual Energy Outlook 2021 Press Release, U.S. Energy Information Administration (EIA). Accessed on December 17, 2021. Retrieved from https://www.eia.gov/outlooks/aeo/

U.S. Energy Information Administration (EIA). (2021). Coal Markets. Accessed on December 17, 2021. Retrieved from https://www.eia.gov/coal/markets/

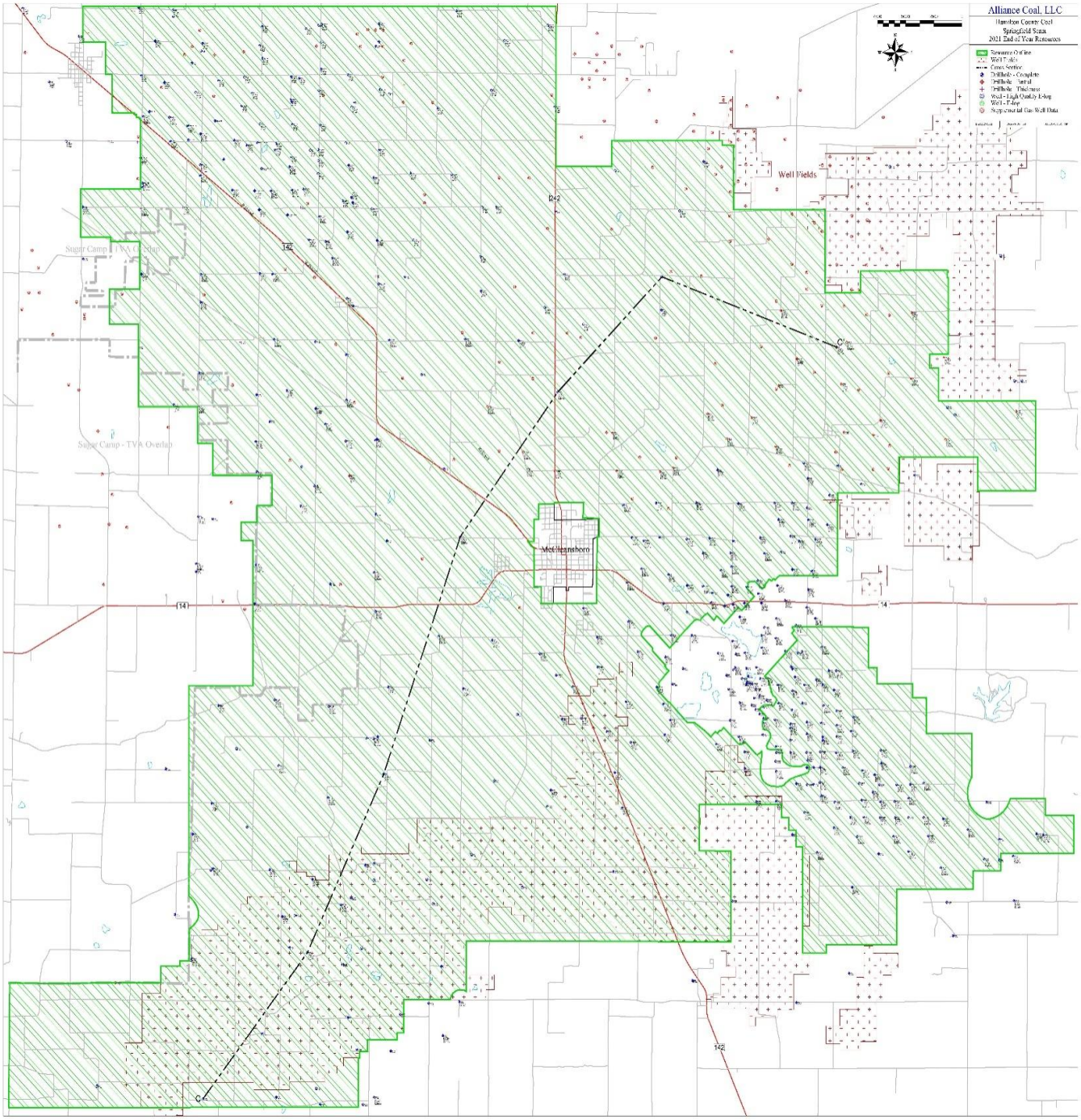
25.0 RELIANCE ON INFORMATION PROVIDED BY THE REGISTRANT

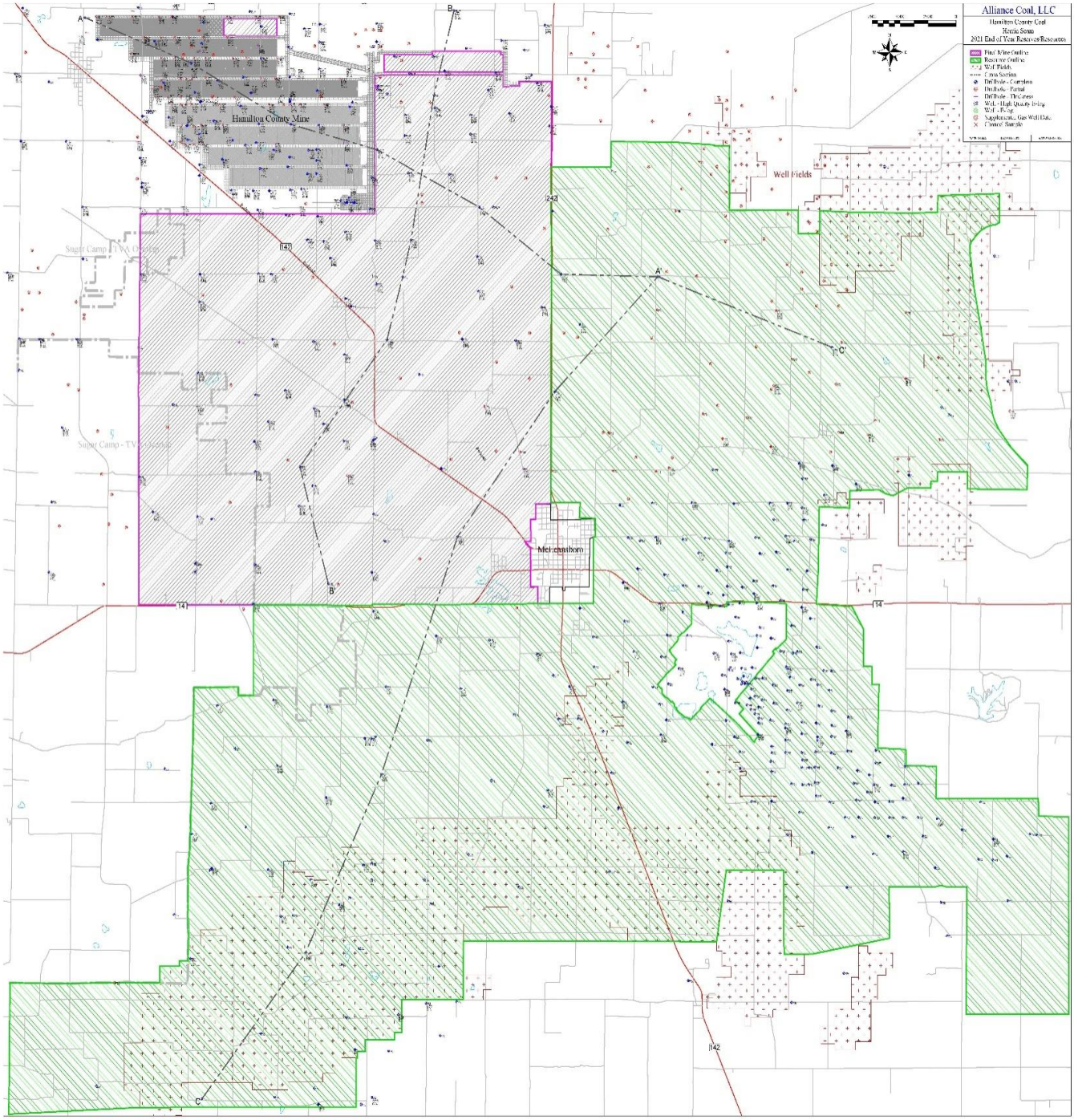
Table 25-1 summarizes the information provided by the registrant for matters discussed in this report, as permitted under §229.1302(f) of the SEC S-K 1300 Final Rule.

Table 25-1. Summary of Information Provided by Registrant

Category	Report Item/ Portion	Disclose why the Qualified Person considers it reasonable to rely upon the registrant
Macroeconomic trends	Section 19	N/A
Marketing information	Section 16	The market trends were provided by HCC personnel. The QP's experience evaluating similar projects leads them to opine that the market trends are representative of the expected trends of an on-going coal mining operation in the United States
Legal matters	Section 17	The legal matters involving statutory and regulatory interpretations affecting the mine plan were provided by HCC personnel. The QP's experience with statutory and regulatory issues leads them to opine the mining plan meets all statutory and regulatory requirements of an on-going coal mining operation in the United States
Environmental matters	Section 17	The environmental permits and matters were provided by HCC permitting group. The QP's experience with permitting and environmental issues leads them to opine the information provided is representative of what is required of an on-going coal mining operation in the United States
Local area commitments	Section 17	N/A
Governmental factors	N/A	N/A

APPENDIX A
MINE MAP


Alliance Coal, LLC
Hamilton County Coal
Springfield Seam
2021 End of Year Resources
Resource Outline
Well Fields
Cross Section
Drillhole - Complete
Drillhole - Initial
Drillhole - Thickness
Well - High Quality E-log
Well - E-log
Superimposed Gas Well Data
Well Fields
Sugar Camp - TVA Overlay
McLeansboro
142
14
C
C'


Alliance Coal, LLC
Hamilton County Coal
Illinois Basin
2021 End of Year Reserves/Resources
Final Mine Outline
Reserve Outline
Well Fields
Cross Section
Drill Hole - Coal Seam
Drill Hole - Partial
Drill Hole - No Coal
Well - High Quality Testing
Well - Pump
Supplemental Gas Well Data
Closure Sample
Hamilton County Mine
Well Fields
Mechanicsburg
Sugar Camp - TVA Ops
Sugar Camp - TV
A
A'
B
B'
C
C'
14
142
242