



**SUMMIT ENGINEERING, INC.**

**AN INDEPENDENT NATIONAL INSTRUMENT 43-101 REPORT  
SUMMARIZING MINERAL EXPLORATION, DEVELOPMENT AND  
PRODUCTION ACTIVITIES OF SID MINING, LLC  
BOWLING CREEK AND CAM JOHNSON BRANCH  
PERRY AND BREATHITT, COUNTIES, KENTUCKY**

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### **3 SUMMARY**

#### 3.1 INTRODUCTION

The following report was prepared by Summit Engineering for CDR Operations Inc. (CDR), predecessor to Royal Coal Corp (Royal Coal). It is a re-filing of the previous report effective date January 20, 2010. This report addresses the coal geology, resources and reserves of the properties and permits controlled by Sid Mining, which is located in the Eastern Kentucky Coalfields. The location of this project can be found on Figure 1 in item 6.2.2 of this report.

#### 3.2 PROPERTY DESCRIPTION

The area covered by this report lies within the drainage areas of Cam Johnson Branch and Bowling Creek of the Middle Fork of the Kentucky River, lying in Perry and Breathitt Counties, Kentucky.

#### 3.3 OWNERSHIP

The mining rights necessary to conduct surface and underground mining operations have been obtained for those properties as described in permit 813-0313 in section 6.2.5 of this report. In addition, mineral rights have been obtained to the immediate Southeast of these properties, along the Breathitt and Perry County border south of Bowling Creek and north of Johnson Branch.

#### 3.4 GEOLOGY

As evidenced by the results of the core drilling of the project area, there are five coal seams within the project area that are of mineable thickness for surface mining operations. These seams are located from an elevation of 968 (Fireclay – Hazard No. 4) up to an elevation of 1327 (Hindman – Hazard No. 9).

#### 3.5 EXPLORATION AND DEVELOPMENT

To date, seven drill holes have been bored in the Sid Mining property area. They are PB-01-92, PB-02-92, PB-03-92, PKM-09-02, PKM-09-03, PKM-09-04, and PKM-09-05. Two additional drill holes (PKM-09-06, PKM-09-01) are scheduled for drilling in the near future.



### 3.6 STATUS OF OPERATIONS

Currently all mining operations on the Sid Mining property are idle. CDR concluded its drilling program after PKM-09-05 was drilled in October of 2008 and no further drilling activity was undertaken. Core drilling is, as of this date, not taking place on the Sid Mining property.

### 3.7 CONCLUSIONS

Summit's reserve evaluation indicates that there is in excess of three (3) million proven and probable reserve tons on the Sid Mining property. As shown in Item 18 of this report, the coal on the property appears to be high volatile bituminous coal, averages 13,006 BTU/lb, with a sulfur content of 1.51 percent and an ash content of 10.66 percent. An additional 10-15 million inferred mineral resource tons may be available on adjacent properties. Lease negotiations for these properties are ongoing.

Existing and proposed permitting appears to be adequate for the existing reserves. Additional permitting will be required to expand the operation.

The projected production tonnages shown in Item 25.1 are reasonable based on the reserves associated with the property. The NYMEX lists Central Appalachia coal futures at \$77.38 per ton as of 4/1/2011. The projected sales price for subsequent years is reasonable.

Estimates of required capital, manpower, and equipment for the surface mine operations are realistic and operating costs are reasonable.

### 3.8 RECOMMENDATIONS

The information as reviewed indicates that there exists a coal resource on this property worthy of additional exploration and further development. The planned drilling of coreholes PKM-09-06 and PKM-09-01 should be continued, along with additional drilling as adjacent properties are leased.

Ensure that all mine planning and construction is in conformity with current regulations for environmental and reclamation planning.

Proceed with the orderly extraction of the coal reserve in this area.



## **4 INTRODUCTION**

### 4.1 PURPOSE OF TECHNICAL REPORT

The following report was prepared by Summit Engineering for CDR, predecessor to Royal Coal. It addresses the coal geology, resources and reserves of the properties and permits controlled by Sid Mining, which is located in the Eastern Kentucky Coalfields. The location of this project can be found on Figure 1 in item 6.2.2 of this report.

The coal deposit in this area was studied by Collins Engineering in 2007; however additional exploration has occurred within the project area and has been provided in this report. Data from coreholes PB-01-92, PB-02-92 and PB-03-92 used to prepare this report was forwarded to Summit by CDR. Data from coreholes PKM-09-02, PKM-09-03, PKM-09-04 and PKM-09-05 has been forwarded to Summit directly from Acculab, an independently-owned coal testing laboratory in Hazard, KY. The results of the additional exploration were prepared by Summit.

### 4.2 TERMS OF REFERENCE

CDR has requested that Summit Engineering produce a technical report of the Sid Mining property. The Terms of Reference for this report are that it should include an independent validation of the coal resources and reserves of the area, and should be in compliance with the current reporting requirements of NI 43-101. The report should address other aspects of the area, including those topics specified in the NI 43-101.

### 4.3 SCOPE OF DATA

The general sources of information used in this report include on-going core drilling data, previous coal reserve studies, mine permit data, economic analyses, and coal quality information. These reports were provided to CDR by Sid Mining, forwarded to Summit Engineering and accepted in good faith. A complete list of references is provided in Item 23, References.

While the author, a qualified person for coal exploration, has conducted site visits and inspections in this area, he did not participate in the original exploration of this coal property. On August 14, 2008 and January 12, 2010 Phil Lucas of Summit Engineering conducted site visits to the Sid Mining property. There he reviewed the previous mining which had been conducted on the mineral property leased from Mary Tzanetos, the proposed mine plan, the proposed backfill plan, site access roads, and reviewed the current excess spoil storage areas. The property was unchanged since 2008.



## **5 RELIANCE ON OTHER EXPERTS**

This report has been prepared for CDR, predecessor to Royal Coal, by Summit Engineering. The findings and conclusions are based on information developed by Summit available at the time of preparation and data supplied by outside sources. Summit staff has not conducted any field work for the preparation of the report and have relied on the results of exploration documented in various public and company reports. These include all of the reports listed in Item 20, references listed in Item 23 of this report, and corehole database and mapping provided to Summit by CDR.

Summit's findings are also based on additional information provided by CDR throughout the course of Summit's investigations. As exploration is still on-going, the technical conditions as shown in this report are subject to change over relatively short periods of time.



## **6 PROPERTY DESCRIPTION AND LOCATION**

### 6.1 EXTENT OF PROPERTY

The area covered by this report lies within the drainage areas of Cam Johnson Branch and Bowling Creek of the Middle Fork of the Kentucky River, lying in Perry and Breathitt Counties, Kentucky. The seams to be evaluated include the Fireclay (Hazard #4), Haddix, Hazard #5A, Hazard #7, Hazard #8, and Hindman (Hazard#9). The current permitted area of the property is 330 acres, with a pending Amendment which will add 76.38 acres. The total leased surface area covers approximately 850 acres.

### 6.2 OWNERSHIP

#### *6.2.1 MINING RIGHTS*

The mining rights necessary to conduct surface and underground mining operations have been obtained for those properties as described in permit 813-0313 in section 6.2.5 of this report. In addition, mineral rights have been obtained to the immediate Southeast of these properties, along the Breathitt and Perry County border south of Bowling Creek and north of Johnson Branch.

On October 23, 2008 CDR purchased from Sid Mining LLC certain coal and lease agreements and a surface mining permit located near Hazard, Kentucky for \$1,700,000. The assets include 10 lease agreements noted in Table 1 in Section 6.2.3 of this report. Under the purchase agreement, CDR shall pay a two-percent override from sales of all coal mined or extracted from the properties and leases. CDR is also obligated to replace existing reclamation bonding totaling approximately \$160,000.

CDR controls ten leases for surface under which it must pay certain minimum royalties which range from \$300 to \$3000 per annum. These can be recouped against production royalties due under the same leases of between \$0.50 and \$3.00 per ton. The salient terms of the leases are summarized on Table 1 in Item 6.2.3. CDR's mining permit 813-0313 which covers 330 acres expires on October 3, 2012 but can be renewed. CDR has been granted approval for an amendment to the permit which adds 76 acres including access to an existing haul road. This approval was received on June 17, 2009. The permit amendment can be issued after the required bond is posted.



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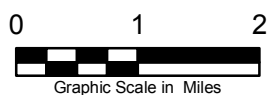
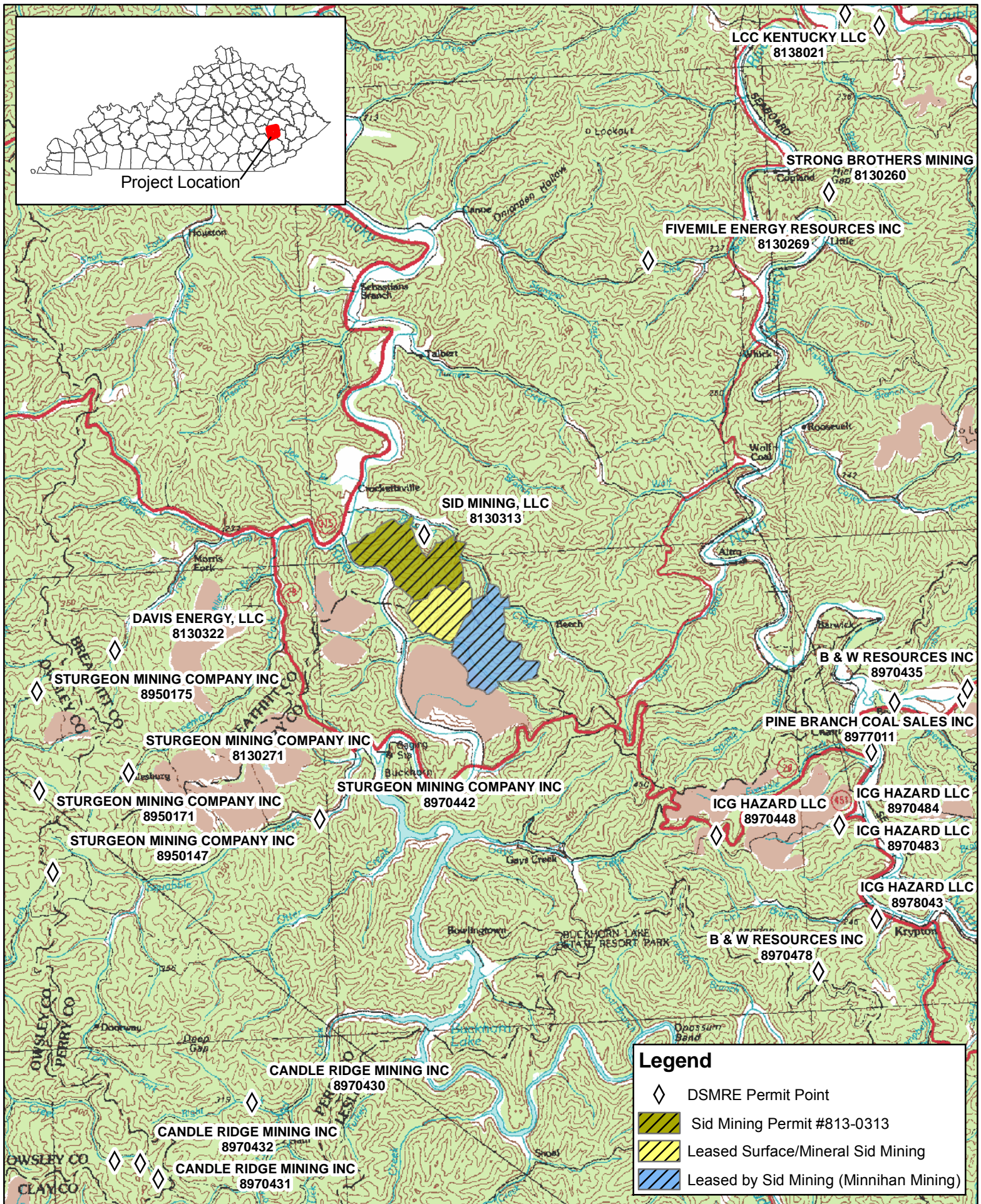
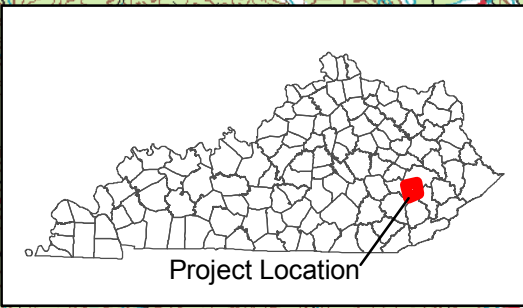
The property boundaries were not located by survey, but were based on previous plots of deeds and leases. These deeds and leases were reviewed and property boundaries were determined to be correct based on acceptable standards required for Kentucky mine permitting. Further, CDR met with surface owners on all sides of the property to verify the boundaries, and prior to any surface disturbance the lines will be surveyed to reconfirm the lines.

### *6.2.2 LOCATION OF INFRASTRUCTURE*

No existing or proposed tailings storage areas, waste disposal areas, or heap leach pad areas are located within the project area. Small ponds, existing and proposed, will be utilized in the project area for drainage and sediment control purposes only and are shown on the Timing Map.

Infrastructure and other natural features and improvements, relative to the outside property boundaries, have been digitized from 1" = 2000' USGS topographic quad in a computer-based GIS. A composite map is shown in Figure 1 attached.





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 PIKEVILLE, KY HAZARD, KY LEXINGTON, KY  
 CHARLESTON, WV CHAPMANVILLE, WV  
 BRIDGEPORT, WV BIG ROCK, VA WISE, VA

**FIGURE 1**  
**SID MINING PERMIT #813-0313**  
**ACTIVE MINE PERMITS IN THE AREA**



**6.2.3 ROYALTY RATES**

Upon review of the lease documents listed in permit 813-0313 and surrounding areas supplied by CDR, the following royalty rates apply:

Note that all tracts shown in Table 1 below are also shown on the Property Control Map attached to Item 26 of this application.

**Table 1: Leases Controlled by Sid Mining**

Tract	Lessor	Type	Executed	Royalty Rate			Term	Extension	Assignment
				Production	Minimum	Wheelage			
1	Nollie Combs	S,M	3/25/2005	\$2.50/t or 6%	\$2,000/yr	\$0.25/ton	5-year	1-year terms	With Consent
2	A.B. and Phyllis Combs	S,M	8/22/2005	\$2.50/t or 6%	\$1,500/yr	\$0.10/ton	3-year	while coal mined	Freely assigned
3	Charlene Amis	S,M	9/2/2004	\$2.75/t flat fee	\$800/yr	\$0.05/ton	5-year	1-year terms	With Consent
4	Delbert Combs heirs	S,M	11/1/2004	\$3.00/t or 6%	\$1,800/yr	\$0.10/ton	3-year	1-year terms	With Consent
5	Mary Tzanetos	S,M	5/10/2007	\$3.00/t flat fee	\$5,000/yr	\$0.10/ton	5-year	5-year terms	Freely assigned
6	J.M. Combs	S,M	12/29/2004	\$3.00/t flat fee	\$800/yr	\$0.10/ton	3-year	1-year terms	With Consent
7	Johnny/Ed Deaton	S	5/24/2004	\$0.50/t flat fee	\$1,000/yr	\$0.10/ton	5-year	1-year terms	With Consent
8	B&M Coal	M	10/23/2008	\$2.50/t or 6%	\$5,000/yr	\$0.10/ton	5-year	1-year terms	With Consent
9	Bud Deaton	S	6/24/2004	\$0.50/t flat fee	\$1,000/yr	\$0.05/ton	5-year	1-year terms	With Consent
10	Green Berry Johnson	S,M	11/18/2004	\$3.00/t or 6%	\$3,000/yr	\$0.10/ton	5-year	1-year terms	With Consent

Note a type S lease indicates surface mining rights have been obtained, and a type M tract indicates underground mining rights have been obtained.

Tracts 1-4 are covered by Permit #813-0313, issued 10-2-2007. Tract 5 was added in Amendment 1 to permit 813-0313, which can be issued after the required bond is posted. Tracts 6-10, which lie to the southeast of tract 5, are currently not permitted. Royalty rates will begin on tracts 6-10 only after a permit is obtained and mining begins.





#### *6.2.4 EXISTING ENVIRONMENTAL LIABILITIES*

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

No mapped sites were found in EDR's search of available "reasonably ascertainable" government records either on the target property or within the ½ mile search radius around the target property in 41 Federal Records databases or 5 Tribal Records databases.

#### *6.2.5 PERMITTING*

There is currently one active permit for Sid Mining. Kentucky permit #813-0313 covers approximately 230 surface disturbance acres (330 acres total), and includes contour, area, highwall, and auger mining methods. The permit has a four-increment \$163,000 bond posted. There are four valley fills that are approved in the SMCRA permit. The COE permit has been submitted, but is pending the resolution of the issues as described in item 20.3 of this report. Mining can be done for in excess of one year without the need for a COE permit. An existing valley fill with excess capacity along with existing highwall backfill areas will provide excess spoil storage for about one year. Additional excess spoil may also be placed in a road fill, and alternative mine planning can allow for additional spoil storage. The four excess spoil fills in this permit are small, and thus the likelihood of a COE permit being issued in a timely fashion is very good.

Amendment #1 of this permit, deemed technically acceptable (TAC'd) on June 17, 2009, includes an additional 70 acres of surface disturbance on the Mary Tzantos property, which includes area mining in the Haddix seam. This property was mined in the early 2000's, but the company filed for bankruptcy in 2004. According to the Kentucky Surface Mine Information Systems database (SMIS), Minnehan forfeited its bonds leaving about a mile of unreclaimed highwall. This amendment was filed in order to allow the new operation to use the old haulroad, to allow a cut-thru to the coal seams on the new permit, allow the backfilling of the old highwalls, and to mine the remaining coal on the old permit area.

CDR Sid Mining Company currently controls no other active or pending permits.



6.3 LOCATION OF COAL RESOURCES AND RESERVES

The Sid Mining property is located approximately 2 miles northeast of Buckhorn Lake and is approximately 1 mile south of Crockettsville, at approximately Latitude (North) 37-22-24 and Longitude (West) 83-27-16, in northern Perry and southern Breathitt Counties.

The primary coal seams that have been historically mined in close proximity to the project area are, in a stratigraphic ascending order, the Fireclay (Hazard No. 4), the Copland, the Haddix, the Hazard 5A, the Hazard No. 7, and the Hindman (Hazard No. 9) coal seams.



## **7 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### 7.1 TOPOGRAPHY, ELEVATION AND VEGETATION

The Sid Mining property is situated at approximately Latitude (North) 37-22-24 and Longitude (West) 83-27-16, in northern Perry and southern Breathitt Counties. The elevations within the property area range from 718 ft to 1382 ft. above sea level.

Characteristics of the soil composition in the general area of the target property are as follows:

- Soil Surface Texture – silt loam.
- Hydrologic Group – class B, Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
- Soil Drainage Class – Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.
- Hydric Status – soil does not meet the requirements for a hydric soil.
- Corrosion Potential – Uncoated Steel: low.
- Depth to Bedrock -- > 40 inches.

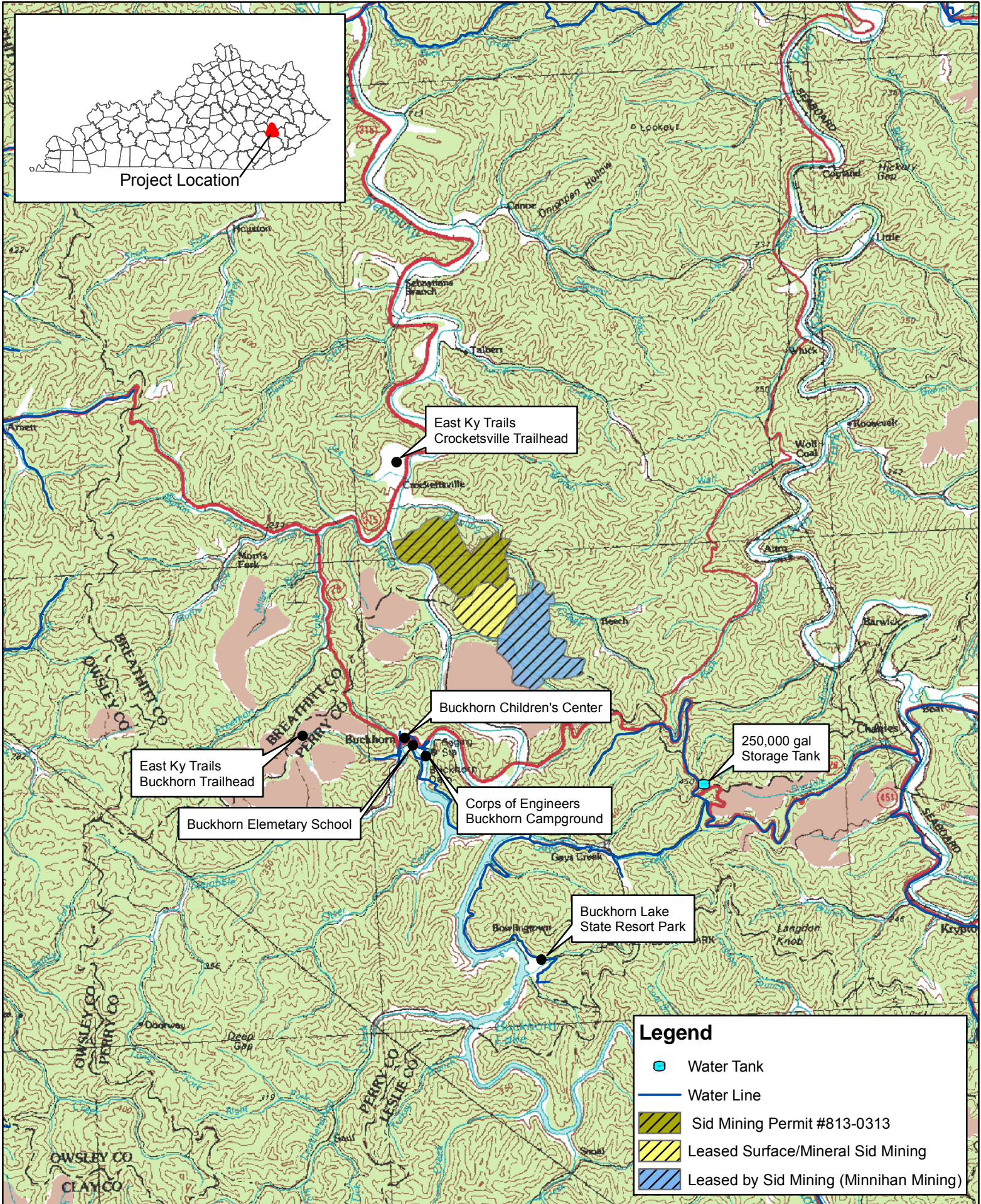
### 7.2 ACCESSIBILITY AND AVAILABLE INFRASTRUCTURE

The Sid Mining property is located approximately 2 miles northeast of Buckhorn Lake and is approximately 1 mile south of Crockettsville. Access will be from Route 28 thru Cam Johnson Branch road (a useable but narrow paved county road). It is a sparsely inhabited area.






At the beginning sold coal will have to be transported by tractor trailer to river markets (Cattlesburg KY is about 100 miles away) or to rail tipples controlled by others. The CSX rail line Sigmon station lies to the southeast of the project area. Details of the infrastructure in the nearby area are included in Figure 2. The CSX rail line route is shown in Figure 3 (CSX map section F-12).

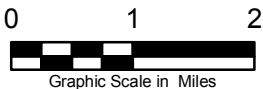
The total population (as of July 1, 2009) of Perry County, Kentucky was about 29,100, down about 1% since April 1, 2000. The population is about 78% rural and 22% urban.





**Legend**

-  Water Tank
-  Water Line
-  Sid Mining Permit #813-0313
-  Leased Surface/Mineral Sid Mining
-  Leased by Sid Mining (Minnihan Mining)













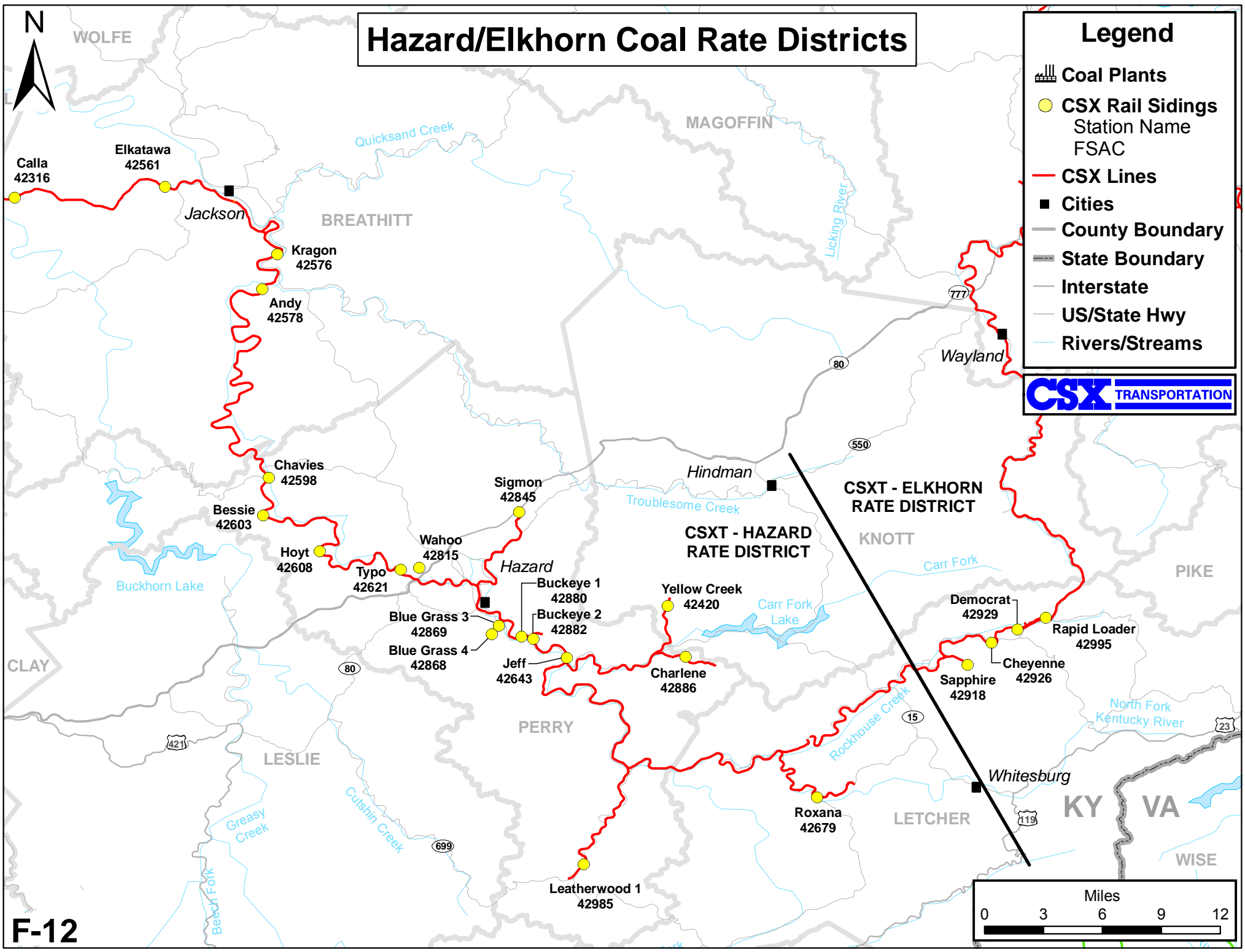
**SUMMIT ENGINEERING, INC.**  
 PIKEVILLE, KY HAZARD, KY LEXINGTON, KY  
 CHARLESTON, WV CHAPMANVILLE, WV  
 BRIDGEPORT, WV BIG ROCK, VA WISE, VA

**FIGURE 2**  
**SID MINING PERMIT #813-0313**  
**INFRASTRUCTURE IN THE AREA**

# Hazard/Elkhorn Coal Rate Districts

## Legend

-  Coal Plants
-  CSX Rail Sidings  
Station Name  
FSAC
-  CSX Lines
-  Cities
-  County Boundary
-  State Boundary
-  Interstate
-  US/State Hwy
-  Rivers/Streams





### 7.3 CLIMATE AND OPERATING SEASON

The climate is characterized by well-defined seasons with hot summers and cool winters. The average annual temperature is approximately 56 degrees, with the record (from 1945 to 2006) highest in July 1952 at 102 degrees, and the record lowest at -21 degrees in January 1985.

Average annual precipitation is approximately 41 inches, with a mean annual snowfall of 15 inches. Total precipitation, as of 2006, was 40.64 inches. Relative humidity ranges from about 87 percent at 7 a.m. to 57 percent at 1 p.m.

Mining operations in the region continue throughout the year and climate conditions are not a major hindrance to operations. The surface rights obtained as shown in section 6.2.3 of this report are sufficient for mining operations. Adequate sources and availability of mine power, water, and mining personnel is present in the surrounding area. No existing or proposed tailings storage areas, waste disposal areas, or heap leach pad areas are located within the project area. No proposed mineral processing plant is nearby the project area.



## **8 HISTORY**

### 8.1 PRIOR OWNERSHIP

Part of the Sid Mining property was previously mined on by Minnehan Mining, LLC. Based on observations in the field, coal was mined from the site by Minnehan under Kentucky Department of Natural Resources Surface Mine Permit No. 897-0434.

According to Mine Safety and Health Administration (MSHA) records, Minnehan operated an active mine from April 1, 2001 through January 8, 2003, and filed for bankruptcy in 2004.

### 8.2 DETAILS OF PREVIOUS EXPLORATION

The Federal Mine Safety and Health Administration (MSHA) records typically include quarterly production reports, however none exist for Minnehan. It appears that Minnehan may not have turned in their quarterly production and man-hours reports to MSHA.

The permit bond was forfeited by Minnehan and the Kentucky Division of Abandoned Mine Lands (AML) has done some reclamation at the site. The Minnehan coal removal should not adversely impact Sid Mining's mine plan. The mine plan includes placing excess spoil on the existing mine benches created from the mining done by Minnehan.

### 8.3 PRIOR RESOURCE AND RESERVE ESTIMATES

A reserve report was prepared for permit 813-0313 (original permit area only) by Collins Consulting in May, 2007. The study area included the Fireclay, Copland, Haddix, Hazard #5A, and Hazard #9 seams. Total recoverable surface mining tons on this permit was estimated at 856,680 tons, and total recoverable auger/highwall mining tons was estimated at 336,770 tons, for a grand total of 1,193,450 tons. Included within this total were the reserves in the area shown on "Minnehan Mining Permit #897-0357" where approximately 160,000 recoverable tons were in the Hazard #5A seam only.

A supplemental feasibility study and economic analysis was conducted for the Sid Mining properties by Bob Warnick in August, 2008. He concluded that with good quality controls mining operations should be able to maintain a <11% ash, 1.2% (+/-) sulfur with more than 12,200 BTU product. Warnick further estimated that production would be approximately 27,400 average tons per month from surface mining, and 5,200 tons per month from auger mining. He stated that the mine would be very profitable at an \$84.75/ton coal price (or \$100/t market price).



The historical estimates, provided by Collins Consulting and Warnick as described above, are not in accordance with the categories set out in sections 1.2 and 1.3 of the NI 43-101 instrument. The estimates were of projected total in-place coal and total recoverable coal within the property, and were not further classified.

Sufficient work was not completed for the Collins Consulting or Warnick reports to classify these historical estimates as current mineral resources or mineral reserves. The issuer is not treating the historical estimate as current mineral resources or mineral reserves as defined in sections 1.2 and 1.3 of the Instrument, and the historical estimate was not to be relied upon, but was used as reference data. A compliant estimate has been calculated and provided in section 19 of this report.

#### 8.4 HISTORICAL PRODUCTION

As of June 30, 2009, the Kentucky Office of Mine Safety and Licensing listed 35 licensed mining operations in Perry County, Kentucky. The counties surrounding and adjacent to the Sid Mining Property in Perry County include Knott, Breathitt, Owsley and Leslie Counties. Another 66 mines are licensed in these counties making a total of over 100 mines licensed in the area. The most recent production records from the state of Kentucky are through the end of 2007. Production for the year 2007 from Perry County was about 14.7 million tons, from Knott County about 8.6 million tons, from Leslie County about 4 million tons and from Owsley and Breathitt Counties about 2 million tons. Thus a total of over 29 million tons of coal was produced from the five county region near and adjacent to the Sid Mining property.

Within the property area, According to the Mine Safety and Health Administration of the US Department of Labor (MSHA) records, Minnehan Mining, LLC., operated an active mine (permit 897-0434, MSHA I.D. #15-18598) from April 1, 2001 through January 8, 2003, and filed for bankruptcy in 2004. Approximately 252,500 tons of coal was produced in that time.





## **9 GEOLOGICAL SETTING**

### 9.1 REGIONAL GEOLOGY

The project area is located within the Eastern Kentucky Coal Field physiographic province. The topography in this region of Kentucky is largely made up of second growth forested hills dissected by V-shaped valleys eroded through thick, flat-lying sequences of Pennsylvanian age coal-bearing rocks.

The mountain ridges are generally as narrow and sinuous as the valley bottoms, with the terrain consisting of steep slopes generally in the range of 30 to 45 percent. Cliffs of resistant sandstone cap many ridges, while less resistant strata such as shale and coal seams form natural benches or small terraces that are discernable on topographic maps.

The topography in the areas adjacent to the Middle Fork of the Kentucky River, just west of the project area, provides an exception to the general description above. There are several large, broad valley bottoms at the confluence of the larger streams and the river, which are underlain by substantial amounts of alluvium.

Originally, the eastern field contained an estimated coal resource of 64.1 billion tons. Approximately 12.0 billion tons of coal have been mined or lost because of mining practices; hence the remaining resource as of Jan. 1, 2009 is estimated at 52.1 billion tons.

More than 70 percent of Kentucky's annual coal production is from the Eastern Kentucky Coal Field. All of the mined coal in Eastern Kentucky is high grade bituminous. Although generally lower in sulfur content and ash yield than coal from Western Kentucky, coal from the Eastern Kentucky Coal Field can be variable in thickness and quality. Many Eastern Kentucky coals contain partings of shale or bone coal that are laterally continuous and require processing of the coal to remove the impurities.



## 9.2 LOCAL AND PROPERTY GEOLOGY

The geology of the project area consists of strata within the Breathitt Formation of Lower to Middle Pennsylvanian age. The regional structural features of the Breathitt Formation are the Pine Mountain thrust fault and the associated Eastern Kentucky Syncline. Estimated original coal resources for this district were 19.4 billion tons, and the remaining resources, as of January 1, 2009 were 15.2 billion tons.

A syncline can best be described as a valley shaped structural feature, with the centerline of the valley being termed the “synclinal axis” and the strata on either side of the axis being termed the “limbs”. The Pine Mountain thrust fault is located approximately 70 miles to the southwest of the project area. It is the Pine Mountain thrust fault that gently deformed the strata of the Eastern Kentucky Coal Field and produced the predominant regional structural feature known as the Eastern Kentucky Syncline.

The geological structure of the Breathitt Formation can be described as a series of gently folded and deformed strata that resulted from the Pine Mountain overthrust faulting event. The regional strike of the strata is approximately North 45 degrees East, with a regional dip of approximately 1 degree to the North West. This is based upon the general trends of the coal seams and the Magoffin Member structure contours as depicted on the Buckhorn (Danilchik & Lewis 1978) and Canoe (Hinrichs, 1978) U.S.G.S. geologic quadrangles maps.

These values of structural inclination are typical of those found throughout Eastern Kentucky and do not impact the mining of the coal reserves in the area. They do impact the direction of groundwater flow however and underground mining plans need to mine “up dip” whenever possible to prevent water problems.

There are no faults located within the immediate region of the project area that would influence surface or underground mining operations of the coal seams.



## **10 DEPOSIT TYPES**

### 10.1 MINERAL DEPOSIT TYPE

The primary coal seams that have been historically mined in close proximity to the project area are, in a stratigraphic ascending order, the Fireclay (Hazard No. 4), the Copland, the Haddix, the Hazard 5A, the Hazard No. 7, and the Hindman (Hazard No. 9) coal seams.

It should be noted that all of these seams may vary in elevation and thickness within the project area. The depositional environment of coal seams can produce inconsistent characteristics with regard to coal quality, thickness and coal partings. Some seams, such as the Fireclay and Hindman seams, tend to be more consistent in both character and elevation than others, such as the Haddix and Hazard 5A.

### 10.2 GEOLOGICAL MODELING AND EXPLORATION PROGRAM

The site specific geology of the project area has been characterized by the drilling of five coreholes within the project area. Three of these coreholes PB-01-92, PB-02-92 and PB-03-92 were drilled for Highwire, Inc. in 1992. More recently, coreholes PKM-09-02, PKM-09-03, PKM-09-04 and PKM-09-05 were drilled by Sid Mining and the coal seams encountered were sampled and sent to Acculab for quality analysis. Core holes PKM-09-06 and PKM-09-01 are planned for drilling at a later date. The locations of these coreholes are shown on the seam maps included in item 26 of this report.

The elevations listed for the coal seams are an average taken from the drilling logs described above, which may or may not have been surveyed precisely. The exact elevation of each coal seam from this corehole data depends on the accuracy of the drill collar location, whether it was surveyed or spotted on a topographic map. Collar elevations for the recently drilled coreholes were surveyed, while coreholes PB-01-92, PB-02-92 and PB-03-92 were not surveyed and cannot be verified by Summit.



## **11 MINERALIZATION**

### 11.1 DESCRIPTION OF SURROUNDING ROCK TYPES

The Pennsylvanian strata present beneath the Eastern Kentucky Coal Field were deposited within a major sedimentary basin named the Appalachian basin. The Pennsylvanian Period began about 323 million years ago and lasted about 33 million years. Pennsylvanian-aged rocks in the Eastern Kentucky Coal Field predominantly consist of sandstone, siltstone and shale. These deposits indicate that in Pennsylvanian time Kentucky was near sea level, alternately covered by lakes, extensive swamps, shallow bays, and estuaries. Most of the major coal beds, which number approximately 45 to 50 in Eastern Kentucky, were formed as widespread peat swamps or mires during the Pennsylvanian Period.

The target coal seams are discrete coal seams bounded above and below by clastic sedimentary rocks. Within the coal seams, however, there may be present a number of intra-seam clastic partings consisting predominantly of mudstones and minor siltstones. Table 2 depicts the major coal seams arithmetic average thickness, seam parting (if any) and the description of the underlying and overlying rock deposits.

**Table 2A: Surrounding Rock Types**

<u>Coal Seam</u>	<u>Parting</u>	<u>Overlying Rock</u>	<u>Underlying Rock</u>
Fireclay – 3.58'	Shale - 2.17'	Grey Shale	Sandy Shale
Haddix – 2.08'	N/A	Sandstone	Shale, Sandy Shale
Hazard 5A - 2.75'	N/A	Shale, Sandy Shale	Shale, Sandy Shale
Hazard 7 – 0.83'	N/A	Sandstone	Shale, Sandy Shale
Hazard 8 – 1.85'	N/A	Sandstone, Shale	Shale, Sandy Shale
Hazard 9 – 1.29'	N/A	Sandstone, Shale	Shale, Sandy Shale

The most consistent parting within any of the seams within the project area is the flint clay parting of the Fireclay coal seam. This parting is characterized by a hard, dark brownish gray flint clay parting that is consistently present wherever the coal seam is found. It typically ranges in thickness from one to three feet and has the characteristics of flint.



## 11.2 MINERAL ZONES

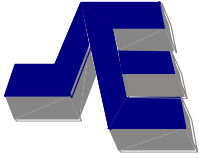
The primary coal seams that have been historically mined in close proximity to the project area are, in a stratigraphic ascending order, the Fireclay (Hazard No. 4), the the Haddix, the Hazard 5A, the Hazard No. 7, and the Hindman (Hazard No. 9) coal seams.

The coal seams will be described in stratigraphically ascending order, beginning with the Fireclay coal seam. Not all coreholes encountered every coal seam in the project interval. Core loss, depth of drilling and the elevation of the corehole collar were the controlling factors as to if each coal seam is represented in a corehole. This is illustrated by the log of corehole PKM-09-04, which lists three feet of core loss/soft coal/mud streaks at an elevation of 1121.5 Ft., which is where the Hazard No. 5 seam should be present.

The Fireclay (Hazard No. 4) coal seam is the lowest coal seam to be considered within the project area, located at an elevation of 968 ft. As shown by the seam map included in this report, the Fireclay coal seam averages 3.58 feet in thickness, contains the largest area of any of the seams in this report. The Fireclay tends to be one of the more consistent coals seams in the region in terms of thickness, quality and elevation.

The Haddix coal seam is the next significant coal seam above the Copland seam, at an elevation of approximately 1120 ft. The seam averages 2.08 feet in thickness, with no parting mentioned. As shown by the seam map included in this report, the Haddix coal seam contains a significant amount of reserves within the project area.

The Hazard No. 5A coal seam is the next significant coal seam above the Haddix seam, at an elevation of approximately 1170 ft. A soft coal/mud streak/core loss recorded in corehole PKM-09-04 at a depth of 138' 6" occurs at the stratigraphic interval that the Hazard No. 5 seam should be present. The sequence of strata above and below this core loss also tends to indicate that the Hazard No. 5 coal seam was present in this interval. Core loss at the interval of a coal seam is fairly common in core drilling, since coal is brittle and can be easily destroyed by drilling. The seam is 2.75 feet thick with no parting mentioned. The location of the seam is shown by the seam map included in this report.



The Hazard No. 7 coal seam was not included in the initial reserve studies, but the seam was found to be present in coreholes PKM-09-03, PKM-09-04 and PB-01-92. It has an average elevation of 1195 feet. The seam averages 0.83 feet in thickness, with no parting mentioned. Due to limited seam thickness, this seam was not deemed mineable. No reserve map was prepared for this seam.

The Hazard No. 8 coal seam is the next significant coal seam above the Hazard No. 8 seam, at an elevation of approximately 1300 ft. The seam averages 1.85 feet in thickness, with no parting mentioned. As shown by the seam map included in this report, the Haddix coal seam contains a significant amount of reserves within the project area.

The Hazard No.9 coal seam is the uppermost coal seam to be evaluated in the project area. It is at an average elevation of approximately 1327 feet. The seam is averages 1.29 feet thick with no parting being recorded. The location of the seam is shown by the seam map included in this report.

### 11.3 COAL QUALITIES

Coal quality information has been obtained where available from coreholes drilled on the property. Table 3 in section 18.3 summarizes the arithmetic average quality data for each seam found within the 4 recently drilled holes provided. Quality information for existing drill holes and previous lab analyses were also reviewed and utilized in the averages. A description of the coal qualities and methods to obtain them are discussed in more detail in a later section of this report.

In general, coal quality data on the property indicate that the majority of coal removed by contour, area, and point removal methods of mining will not require washing. Coal removed by auger or highwall methods, however, will require washing.



## **12 EXPLORATION**

### **12.1 DETAILS OF SURVEYS AND INVESTIGATIONS**

On August 14, 2008 and on January 12, 2010 Phil Lucas (author of this report) conducted two site visits to the Sid Mining property. There, he reviewed the previous mining which had been conducted on the Tzanetos property, the proposed mine plan, the proposed backfill plan, and reviewed the current excess spoil storage areas. No mining activity has taken place since that time, so no follow-up visits have been conducted for this property since that date.



**Existing Mining operations: 813-0313 permit.**





**Existing excess spoil fill constructed by Minnehan Mining, LLC.**



**Existing access road in Amendment 1 to the currently approved permit.**





Results of the exploration are as follows:

- The reserves on properties under lease are classified as proven or probable reserve tons. Additional adjacent properties have lease negotiations pending.
- Existing and proposed permitting appears to be adequate for the existing reserves. Additional permitting will be required to expand the operation.
- Estimates of required capital, manpower, and equipment for the surface mine operations are realistic.

## 12.2 INTERPRETATION OF EXPLORATION DATA

Upon review of existing site conditions, Summit Engineering believes that adding the Tzantos lease, which includes a haul road for property access, will be of benefit to Sid Mining operations. The approximately 1 mile of mine benches left in place by Minnehan Mining will not adversely affect mining conditions or the current mine plan. The mine plan should be enhanced by the existing mine benches which may be utilized for excess spoil storage.

Other conclusions and interpretations are filed under the appropriate sections in this report.



## **13 DRILLING**

### 13.1 TYPE OF DRILLING

#### *13.1.1 DRILLING PROCEDURES*

Typically drill holes are produced in the region by rotary drilling. Standard NX core drilling procedures are followed whereby all core recovered is laid out on the ground and/or in core trays in a set interval or on a run-by-run basis. In either case, both lithological and geotechnical logging are easily facilitated. All coal seams, and strata up to 10 feet above and 10 feet below the coal seams, are packed into lockable core boxes for transport to a designated secure core shed.

#### *13.1.2 DRILLING LENGTH*

Drilling length is typically a factor of both the surface (collar) elevation where the drilling is to commence, and the bottom-most elevation of the coal seam to be analyzed where drilling will cease. As stated in other sections of this report, surface elevations can vary along the property from approximately 700' to 1400' above sea level, while coal seams vary in elevation from 900' to 1320'. So, the maximum and minimum expected depth of drilling within the project area should be approximately 100' to 525'.

#### *13.1.3 ORIENTATION OF MINERAL*

The regional strike of the strata is approximately North 45 degrees East, with a regional dip of approximately 1 degree to the North West. This is based upon the general trends of the coal seams and the Magoffin Member structure contours as depicted on Buckhorn (Danilchik & Lewis 1978) and Canoe (Hinrichs, 1978) U.S.G.S. geologic quadrangles maps.

As such, the coal seams are relatively flat-lying and thus orientation of the drilled core is not a factor which would change typical drilling procedures. Drilling is conducted vertically from the surface, and thus would intersect the coal beds at a 90 degree angle. Therefore the core sample length is the true thickness of the mineralization.

However, mine planning and operations will need to consider the small strike and dip associated with the coal seams in this area, because this will affect drainage flow conditions.



### 13.2 EXTENT OF DRILLING

The extent of drilling within the project area has been defined of seven coreholes within the project area. Three of these coreholes (PB-01-92, PB-02-92 and PB-03-92) were drilled for Highwire, Inc. in 1992. Coreholes PKM-09-02, PKM-09-03, PKM-09-04, and PKM-09-05 were drilled by Sid Mining in 2008, and they currently have plans to drill two more holes (PKM-09-01 and PKM-09-06). The locations of these coreholes can be found on the seam maps in item 26 of this report. These additional coreholes will allow for more distinct classification of the reserve and for expanding the reserve base in the future.

A summary of existing drill hole intersections with the applicable seams in this project is provided in table 2B below. Note the elevations of the intersections reported below represent the bottom elevation of the coal seam. In such cases where more than one “split” of the coal occurs, the bottom-most split elevation is recorded.

**Table 2B: Summary of Drill Hole Intersections**

Drill Hole	Coal Seam					
	Fireclay	Haddix	Hazard 5A	Hazard 7	Hazard 8	Hazard 9
PB-01-92	N/A	N/A	1165.20	not present	1303.08	1322.25
PB-02-92	N/A	N/A	N/A	1246.34	1337.09	1367.88
PB-03-92	N/A	N/A	1117.33	1173.58	N/A	N/A
PKM-09-03	959.46	1099.29	1143.79	1195.46	1295.21	1324.71
PKM-09-04	N/A	1103.03	1154.03	1200.53	N/A	N/A
PKM-09-05	N/A	1199.67	1254.50	1303.00	N/A	N/A



## **14 SAMPLING METHOD AND APPROACH**

### 14.1 QUALITY CONTROL MEASURES

The objective of sampling is to collect a portion of material small enough in volume to be transported conveniently and yet large enough for analytical purposes while still accurately representing the material being sampled. This objective implies that the relative proportions or concentrations of all pertinent components will be the same in the samples as in the material being sampled, and that the sample will be handled in such a way that no significant changes in composition occur before the tests are made.

The core samples collected and submitted for analysis were handled using methods that are standard for the coal industry. The standard method of coal core handling is for the drillers, once the cores are retrieved to the surface, to place the cores in core boxes designed to accept core of the diameter being drilled. Samples are then trucked from the field to independent laboratories for sample testing. On this property Sid Mining should arrange for a lab, or a third party, to pick up and deliver sample data to Acculab.

A description of the rock types, geological controls, widths of mineralized zones and other parameters used to establish the sampling interval is included in Section 11.2 of this report. A summary of the widths of mineralized zones is included in Table 2 within Section 11.1, and a summary of the coal quality is included in Table 3 within Section 18.3.

The ability to trace possession and handling of the sample from the time of collection through analysis and final disposition is referred to as “chain-of-custody” and is required to demonstrate sample control when the data are to be used for regulation or litigation. Where litigation is not involved, chain-of-custody procedures are useful for routine control of samples.

The sample data received by Summit from CDR originated from the Acculab Coal, Water and Soil Testing Laboratory. Certain data verification procedures (see Item 14.2) were typically employed in order to derive a level of confidence with respect to the integrity of these samples.

The number, type, nature and spacing of samples collected within this project area are specified in Section 18.2 of this report. Sample quality is discussed in Section 18.3. It is Summit’s opinion that the samples taken were representative of the resources within this property, and that there are no known factors that may have resulted in sample biases.

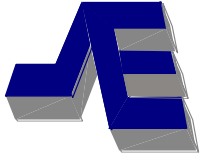


## 14.2 DATA VERIFICATION PROCEDURES

The following procedures summarize the major aspects of chain of custody.

- Sample Labels – include the following information: a unique sample number, sample type, name of collector, date and time of collection, place of collection, and sample preservative.
- Sample Seals – to detect unauthorized tampering with samples up to the time of analysis.
- Field Log Book – to record all information pertinent to a field survey.
- Chain of Custody Record – including the sample number, signature of collector, date and time of collection, signatures of persons involved in the chain of possession, and inclusive dates and times of possession.
- Sample analysis request sheet – including pertinent information from field log book, and information completed by laboratory personnel regarding sample number, date of receipt and condition of sample.
- Delivery to the laboratory – as soon as practicable after collection, typically within two days.
- Receipt and logging of sample.
- Assignment of sample for analysis.
- Disposal, after the data has been reviewed and accepted, in accordance with local, state and U.S. EPA approved standards.

It is Summit's opinion that there are no known factors that may materially impact the accuracy or reliability of the results of the samples.



## **15 SAMPLE PREPARATION, ANALYSES AND SECURITY**

### 15.1 SAMPLE PREPARATION METHODS

Application tests are laboratory procedures that measure some characteristic of coal that has been empirically related to some application or handling or processing step. Typically, these procedures attempt to duplicate some aspect of the commercial application at laboratory scale and may produce information in the form of an index. Application procedures do not measure a single component of the coal but infer the combined effect of multiple components.

The American Society for Testing and Materials (ASTM) publishes the most inclusive reference to analytical procedures. This publication, which is revised annually, provides extensive information concerning generally accepted methods of laboratory analysis. ASTM also provides standards for sampling and some information concerning sample handling.

Ultimate analysis is a process typically used which gives the composition of coal in terms of carbon, hydrogen, nitrogen, oxygen, ash, and sulfur without regard to origin. The ash determination can be found with ASTM D-3174. Sulfur is determined either by wet chemistry methods (ASTM D-3177) or by measuring the sulfur content of the gas released through high temperature combustion of the coal sample (ASTM D-4239). Carbon and hydrogen are also determined through a combustion process (ASTM D-3178) and nitrogen by a wet chemistry method (D-3179). Oxygen is not determined directly. The sum of the carbon, hydrogen, nitrogen, sulfur, and ash are subtracted from 100 to calculate oxygen (ASTM D-3176).

Heating value or calorific value is a measure of the heat produced from a unit weight of coal. In the United States, it is commonly expressed in British thermal units per pound (Btu/lb). Other units are calories per gram (cal/g) and joules per gram (J/g). Heating value is generally determined by burning a weighed coal sample, in oxygen, in a calorimeter (ASTM D-2015 and D-3286).

The ASTM method Acculab used to determine calorific value (in BTU/lb), was D-5865-04. This lab determined sulfur content with ASTM method D-4239-05. Ash content was calculated from ASTM method D-3174-04.



### 15.2 INTEGRITY OF SAMPLING PROCESS

On-the-job monitoring and training of staff ensures that correct procedures and best practice methods are being continually employed. All laboratory equipment and instrumentation is routinely checked and calibrated. Further, Acculab (whose office is located in Hazard, Kentucky and is certified with the Kentucky approved electronic Discharge Monitoring Reports analysis program) is a privately owned company that is paid a fee for analytical work performed. To Summit's knowledge, Acculab holds no equity or material interest in any of its clients operations or businesses. A letter from Acculab describing the lab's qualifications is included on the following page.

To Summit's knowledge, no aspect of sample preparation was conducted by an employee, officer, director, or associate of CDR/Royal Coal.

### 15.3 SECURITY METHODS

In coal work it is unusual to employ security methods (other than those described in the chain-of-custody procedures) for the shipping and storage of samples, because coal is a low value bulk commodity. CDR's procedures for handling and shipping coal samples and for sample security was essentially the same as that of other operators in the region. Further, Acculab's data verification procedures and sample preparation methods (as described above) meet typical industry standards.

It is the author's opinion that the sample preparation, security measures and analytical procedures, as reported to Summit Engineering by Acculab for this property, are adequate.



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March 23, 2011

CDR Minerals USA  
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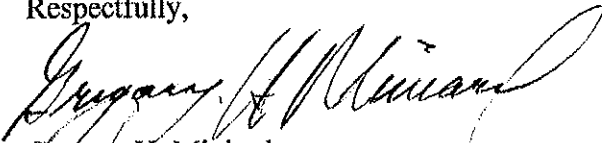
Mr. Alfred Collins:

Acculab has been in business since 1989. The principal employees have been in the analysis field since 1975.

All analysis tested by Acculab is performed using ASTM, or EPA standard methods.

Examples are: Moisture	SM- 3302-5
Ash	SM-D3174-04
Sulfur	SM-D4239-05
Btu	SM-D5865-04
Fusion	SM-D1857-04
FSI	SM-D720-91
Grindability	SM-D409-02
Screen/Sieve	SM-D47496-87

Respectfully,



Gregory H. Miniard  
Owner/manager





## **16 DATA VERIFICATION**

### 16.1 GEOLOGY

The Sid Mining project area is characterized by geology that is complex, both with respect to stratigraphy and structure. This complexity is not an impediment to mining; it is the cause for the seams to be surface mineable in this location. Folding, faulting and topographic relief has brought the seams to the surface or to shallow depth permitting the drilling of relatively shallow holes to test the coal. Seam exploration data as found in the six coreholes did not appear to conflict with the regional geologic characteristics as defined in other items of this report. As regional coal quality and seam thickness data is readily available from public sources (as listed in the reference section of this report), there were no inherent limitations in the process of verifying the geologic data in this project area.

### 16.2 HISTORIC EXPLORATION DATA

Where possible, Summit independently checked the exploration data available from historic records. The most important activity of this type was a verification of the corehole depth and seam thickness data. This check was made by determining the depth and thickness of seams recorded on the geophysical logs. The results were then compared with the previous report records. The results, with minor insignificant variations for the three coreholes which over the project area covered in the original 813-0313 permit application, were the same. Summit concluded that the historic geological records with respect to seam thickness and depth as drilled are accurate.



## **17 ADJACENT PROPERTIES**

### 17.1 ADJACENT PROPERTIES

#### *17.1.1 ADJACENT INDUSTRIAL PROPERTIES*

From the EDR report as defined in section 6.2.4 above, the adjacent industrial properties near the Sid Mining project area include the following:

- GOODYEAR
- OWSLEY CO STATE MAINTENANCE GARAGE
- ELKATKWA WAREHOUSE
- BREATHITT CO STATE MAINTENANCE GARAGE
- VANCEBURG ELECTRIC
- LOVINS GROCERY
- SMITHS GROCERY & GARAGE
- GENEVA MILLER GROCERY
- MOORES GROCERY
- JACKSON RECYCLING CENTER
- BREATHITT CO TRANSFER STATION
- JACKSON CHEVRON
- SMITH GROCERY
- SONNYS STOP & SAVE

#### *17.1.2 ADJACENT PERMITTED PROPERTIES*

As shown on Figure 1 in section 6.2.2 above, the adjacent permitted properties near the Sid Mining project area include the following:

- B&W Resources Inc.: Permits 897-0478, 897-0435
- Candle Ridge Mining Inc: Permits 897-0430, 897-0431, 897-0432
- Davis Energy LLC: Permit 813-0322
- Fivemile Energy Resources: Permit 813-0269
- ICG Hazard LLC: Permits 897-0448, 897-0432, 897-0484, and 897-8043
- Pine Branch Coal Sales Inc.: Permit 897-7011
- Sturgeon Mining Company Inc: Permits 895-0175, 813-0271, 895-0171, 895-0147, 897-0442

If possible, approximate seam thickness and elevation data should be examined to verify trends in the local geology.



### *17.1.3 OTHER SIGNIFICANT ADJACENT PROPERTIES*

As shown in Figure 2 in section 7.2 above, other significant adjacent properties near the Sid Mining project area include the following:

- 250,000 gal Storage Tank
- Buckhorn Children's Center
- Buckhorn Elementary School
- Buckhorn Lake State Resort Park
- Corps of Engineers, Buckhorn Campground
- East Kentucky Trails, Buckhorn Trailhead
- East Kentucky Trails, Crocketsville Trailhead

Due to the existence of these significant adjacent properties, it is recommended that best mine practices in the mine plan include detailed blasting, sediment control, noise and other pollution plans.

### 17.2 SOURCES OF INFORMATION

Sources of information for all property data, as well as other referenced material within this report, are shown in section 23.



## **18 MINERAL PROCESSING AND METALLURGICAL TESTING**

### 18.1 REGIONAL COAL QUALITY

The eastern Kentucky coal field covers 10,500 square miles and contains approximately 52 billion tons of remaining resources. There are more than 80 named coal beds in the eastern Kentucky coal field which covers parts of 37 counties. The project area site lies in the Hazard District of the eastern Kentucky coal field. The Hazard District is one of six districts in eastern Kentucky and includes Knott, Letcher, Perry, Leslie and Breathitt Counties along with a small portion of Harlan County. The Hazard district has estimated reserves of 16 billion tons and includes 23 coal beds of at least 14 inches in thickness. Seven principal coal beds in the district account for about 70 % of the coal reserves. These coal beds are the Elkhorn No. 3, Amburgy, Fire Clay, Fire Clay Rider, Hazard No. 7, and the Francis coal seam.

Mean data for quality parameters of the seven principal coal beds is as follows:

- Sulfur – 0.7 to 5.2 %
- BTU/lb – 10,400 to 15,800
- Ash- 4 to 26 %
- Volatile Matter – 25.3 to 42.0 %
- Moisture – 1.2 to 6 %

Eastern Kentucky has abundant coal reserves remaining. It is estimated that about 5% of the reserves are greater than 56 inches, 12% range from 42 to 56 inches, 31% range from 28 to 42 inches and 52 % of the reserves range from 14 to 28 inches in thickness. Eastern Kentucky is believed to contain one of the largest resources of low-sulfur, high-BTU coal, although moderate to high sulfur coals are also mined. Ash contents vary, and recent experience suggests that the remaining resource will have higher levels of ash than that previously mined.

\*Source of above information: Kentucky Geologic Survey (KGS) and the Keystone Coal Industry Manual.



## 18.2 DATA RESOURCES AND MODELING METHOD

Coal quality trends have been modeled from the database of the four recently drilled holes (PKM-09-02, PKM-09-03, PKM-09-04 and PKM-09-05). These coreholes were drilled by Sid Mining in 2009.

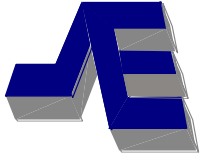
The method used to estimate in-situ quality of coal by mining block is based on standard industry practice of computer based modeling of applicable quality parameters (Ash, Sulfur, BTU). The model is interpolated, using mostly core data, by the inverse distance squared method. However, when seams have fewer than three core holes, it is necessary to calculate arithmetic averages of the values.

## 18.3 PROPERTY COAL QUALITY

The following table represents estimates of the coal quality on the seams within the Sid Mining project area. The table illustrates average coal quality based on site specific samples, and appears to be high volatile bituminous coal.

**Table 3: Average Coal Quality Values**

<u>Coal Seam</u>	<u>% Ash</u>	<u>% Sulfur</u>	<u>BTU/lb</u>
Fireclay	9.88	2.95	13,231
Haddix	14.38	0.71	12,666
Hazard No. 5A	8.51	0.64	12,933
Hazard No. 7	4.70	1.59	14,198
Hazard No. 8	8.05	0.65	13,653
Hazard No. 9	15.64	0.75	12,541
<b>AVERAGE:</b>	<b>10.66</b>	<b>1.51</b>	<b>13,006</b>



## **19 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES**

### 19.1 RESOURCE AND RESERVE CRITERIA

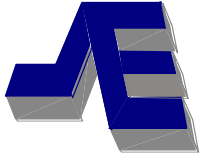
The reserve classification for the Summit analysis follows the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) definition standards for Mineral Resources and Mineral Reserves as prepared by the CIM Standing Committee on Reserve Definitions.

**Mineral Resource** – The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socio-economic and governmental factors. The phrase „reasonable prospects for economic extraction’ implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable. Mineral Resources are sub-divided, in order of decreasing geological confidence, into Measured, Indicated and Inferred categories.

*Measured Mineral Resource* -- A „Measured Mineral Resource’ is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity. As established by the U.S. Geological Survey-U.S. Bureau of Mines in the U.S.G.S. Circular 891, 1983, they may extend as far as a one-quarter mile (1,320 feet) radius from a valid point of measurement.

*Indicated Mineral Resource* -- An „Indicated Mineral Resource’ is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed. As established by the U.S. Geological Survey-U.S. Bureau of Mines in the U.S.G.S. Circular 891, 1983, resources in this category are those occurring between one-quarter (1,320 feet) radius and three-quarters mile (3,960 feet) radius from a valid point of measurement.





*Inferred Mineral Resource* – An „Inferred Mineral Resource’ is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. As established by the U.S. Geological Survey-U.S. Bureau of Mines in the U.S.G.S. Circular 891, 1983, these reserves lie more than three-quarters of a mile (3,960 feet) from reliable points of measurements and may be extended as far as three miles (15,840 feet). Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies.

**Mineral Reserve** – A Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined. Mineral Reserves are sub-divided in order of decreasing confidence into Proven Mineral Reserves and Probable Mineral Reserves.

*Proven Mineral Reserve:* A „Proven Mineral Reserve’ is the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

*Probable Mineral Reserve:* A „Probable Mineral Reserve’ is the economically mineable part of an Indicated and, in some circumstances, a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.



## 19.2 DATA SOURCES AND MODELING METHOD

In calculating the in-place and recoverable tons for potential mine site areas, potential reserve areas were created in SurvCADD. SurvCADD is a computer model distributed by Carlson Software that utilizes three-dimensional analysis to estimate reserve volumes. In-place tons are calculated by computer based modeling of applicable parameters (seam thickness and elevation). The model is interpolated, using mostly core data, by the inverse distance squared method. Coal density was assumed to be 80 lbs per cubic foot and rock density was assumed to be 160 lbs per cubic foot.

## 19.3 RESOURCE AND RESERVE CALCULATION PARAMETERS

Potential reserves were classified as surface mineable (area, point removal and contour mineable), highwall mineable, or auger mineable reserve. Surface mineable reserves had a maximum cubic yards of overburden to recoverable tons of coal ratio of 20:1, and are generally shown as having a bench width of 130'. Highwall mineable reserves extend perpendicularly from contour mineable reserves, having a maximum depth of 1000'. Auger mineable reserves extend perpendicularly from contour mineable reserves, having a maximum depth of 300'. The minimum seam thickness parameter for highwall and auger mineable reserves was 24'.

Summit based calculations on coal seam thickness instead of total seam (coal plus rock) thickness. Therefore when estimating the recoverable tons, a mining recovery factor was used, and no plant loss was taken into consideration. The mining recovery factor for area, point removal and contour mineable reserves were calculated as 85% of in-place tons for all seams. Reserves classified as highwall mineable had a mining recovery factor of 45% of in-place tons for all seams, and reserves classified as auger mineable were given a mining recovery factor of 30% of in-place tons for all seams.

Exploration data on property currently under lease allows for all reserves to be classified as either proven or probable reserves. Ongoing lease negotiations may add potential inferred resources to the property. Potential inferred resources are reported as an in-situ (in place) tonnage and not adjusted for mining losses or recovery. Minimum mineable seam thickness and maximum removable parting thickness are considered; coal intervals not meeting these criteria are not included. Resource tons are estimated by the average thickness times area method. The area is calculated from the SurvCADD generated coal seam outcrop and by potential lease lines as described in item 19.4, and the average thickness is assumed to be approximately equal to the average thickness generated for measured and indicated reserves.



19.4 RESULTS OF RESERVE AND RESOURCE ESTIMATION

Table 5 details the results of Summit Engineering’s reserve estimation based on data obtained up to December 31, 2009:

**Table 5: Estimated Reserves & Resources**

Seam	Mining Type	Mineral Resource Tons			Mineral Reserve Tons	
		Measured	Indicated	Inferred	Proven	Probable
Fireclay	Contour	234,000	841,000	0	199,000	715,000
	Auger	223,000	747,000	0	67,000	224,000
Haddix	Point Removal	54,000	0	0	46,000	0
	Contour	260,000	529,000	0	221,000	450,000
	Auger	150,000	177,000	0	45,000	53,000
Hazard 5A	Point Removal	71,000	0	0	60,000	0
	Contour	388,000	172,000	0	330,000	146,000
	High-wall Miner	756,000	196,000	0	340,000	88,000
Hazard 7	N/A	0	0	0	0	0
Hazard 8	Point Removal	20,000	0	0	17,000	0
	Area	198,000	0	0	168,000	0
Hazard 9	Point Removal	9,000	0	0	8,000	0
	Area	104,000	0	0	88,000	0

Total Surface: 1,338,000 1,542,000 0 1,137,000 1,311,000  
 Total Auger/HW Mining: 1,129,000 1,120,000 0 452,000 365,000

**Sub Total: 2,467,000 2,662,000 0 1,589,000 1,676,000**

Total Measured and Indicated Mineral Resource: **5,129,000.**

Total Proven and Probable Mineral Reserve within the Mineral Resource: **3,265,000.**

Note the 3,265,000 mineral reserve tons as shown above are the portion of the 5,129,000 mineral resources tons indicated above that are economically mineable. Mineral resources that are not mineral reserves do not have demonstrated economic viability.



## **SUMMIT ENGINEERING, INC.**

As shown in Item 18 of this report, the coal on the property appears to be high volatile bituminous coal, averages 13,006 BTU/lb, with a sulfur content of 1.51 percent and an ash content of 10.66 percent.

Ongoing lease negotiations may add approximately 13,500,000 tons of inferred resource tons to the existing property. These additional potential inferred resource tons are located south of Bowling Creek and north of Route 28. If these leases are obtained, additional exploration will be required to classify these resource tons as reserve tons.

The extent to which the estimate of the mineral resources and mineral reserves may be materially affected by other known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues is discussed in Section 25 of this report. The extent to which the estimate of the mineral resources and mineral reserves may be materially affected by local infrastructure is detailed in Section 7.2, by mining and operating conditions in Section 7.3, and by previous exploration is Section 8.2.

Phil Lucas, the Qualified Person who estimated the mineral resources and mineral reserves with the project area, is a licensed professional engineer in the states of Kentucky, West Virginia, Virginia, and Arkansas. He is a Registered Member of the Society of Mining Engineers (SME). Member No. 1959010RM. He is primarily responsible for coal reserve and mine feasibility studies, as well as the design and design supervision of deep mines, surface mines, refuse impoundments and construction related projects. These projects include reserve studies, property evaluation, mineral taxes, reclamation liability, coal handling facilities, surveying and mapping, cost studies, mine construction, mine ventilation, ground control and refuse impoundments for over 21 separate Coal and Land Companies. He is independent of CDR/Royal Coal applying all of the tests in Section 1.4 of National Instrument 43-101.



## **20 OTHER RELEVANT DATA AND INFORMATION**

Excluded from the scope of work for this engagement was the independent verification by Summit of leases, deeds, surveys, or other property control instruments. Sid Mining has represented to Summit that Sid Mining controls the mining rights to the reserves shown on its property maps, and Summit has accepted these as being true and accurate depiction of the surface and mineral rights controlled by Sid Mining.

The determination of economic viability is based on a preliminary feasibility study prepared by Summit. The work conducted by Summit included a comprehensive study of mineability and a detailed projection of mining cost on the reserve areas.

Summit has not conducted an independent assessment of the financial condition of Sid Mining and Summit expresses no opinion as to matters of a financial nature, other than those considered in its assessment of the mineral reserves.



## **21 INTERPRETATIONS AND CONCLUSIONS**

While compiling the information needed for this ITR, Summit has reached the following interpretations and conclusions:

- Summit's reserve evaluation indicates that there is in excess of three (3) million recoverable tons on the Sid Mining Property.
- The reserves on properties under lease are classified as proven or probable reserve tons. Additional adjacent properties have lease negotiations pending. Thus, with additional exploration, the reserve base may be expanded.
- Coal quality information appears to be reasonably good. Localized areas of sulfur exceeding 0.70% may require blending in the Hazard 5A seam in order to meet the specs of the Hazard Coal Sales order.
- Existing and proposed permitting appears to be adequate for the existing reserves. Additional permitting will be required to expand the operation. The USACE 404 permit issues has been a hindrance for surface mine operations for over 2 years. The pursuit of the issuance of the 404 permits for this site is extremely important for the project success.
- The projected production tonnages are reasonable based on the reserves associated with the property. Annual mine production based on the proforma is forecasted to be at about 800,000 tons when full production is achieved.
- Estimates of required capital, manpower, and equipment for the surface mine operations are realistic.





## **22 RECOMMENDATIONS**

The information as reviewed indicates that there exists a coal resource on this property worthy of additional exploration and further development.

- The planned drilling of coreholes PKM-09-06 and PKM-09-01 should be continued within the next six to twelve months after the commencement of mining activity to further define the coal reserve, along with additional drilling as adjacent properties are leased. These will cost approximately \$10,000 each.
- Pursue the estimated use of capital expenditures summarized in Item 25.3 of this report; they appear to be sufficient for the property.
- Ensure that all mine planning and construction is in conformity with current regulations for environmental and reclamation planning.
- The pending permit amendment has been technically approved by the state of Kentucky and is ready to be issued. Bonding should be provided as soon as possible to allow for the issuance of the permit amendment.
- Diligently pursue the issuance of the USACE 404 permit.
- Proceed with the orderly extraction of the coal reserve in this area.



**23 REFERENCES**

<u>Author/Editor</u>	<u>Title</u>	<u>Date</u>	<u>Company</u>
Acculab	PKM Coal Quality PKM-09-03, PKM-09-04, PKM-09-05	Year 2008	Acculab
Alchemy Engineering Associates, Inc.	PKM Coredata: PKM-09-03, PKM-09-04, PKM-09-05	Year 2008	Alchemy Engineering Associates, Inc.
Collins, Alfred Jr.	Sid Mining Reserve Study	05/22/07	Collins Consulting
Energy Information Administration	Annual Energy Outlook - 2008	Year 2008	N/A
Environmental Data Resources, Inc.	The EDR Radius Map Report with GeoCheck	09/24/08	N/A
Franson, H.	Standard Methods for the Examination of Water and Waste Water, 20th ed. - 2008	Year 2008	N/A
Leonard, Joseph W., III	Coal Preparation, 5th ed.	Year 1991	N/A
Ontario Securities Commission	National Instrument 43-101 Standards of Disclosure for Mineral Projects, Form 43-101F1, Technical Report, and Companion Policy 43-101CP		Ontario Securities Commission
Warnick, Bob	Eastern KY Surface Mining Project	08/02/08	N/A

Websites Referenced:

- <http://www.thinkkentucky/EDIS/cmnty/QltyLife.aspx?cw=104>
- <https://edis.commerce.state.nc.us/docs/coutyProfile/KY/21193.pdf>
- <http://www.msha.gov>
- <http://www.minepermits.ky.gov/sminformationsystem/>



**SUMMIT ENGINEERING, INC.**

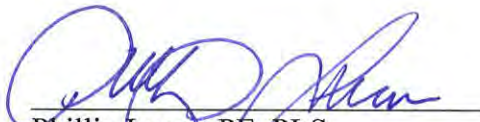
**24 DATE AND SIGNATURE PAGE**

Presented here-with is Summit Engineering's Independent Technical Report (ITR) summarizing mineral exploration, development and production activities of Sid Mining, LLC, located in Bowling Creek and Cam Johnson Branch of Perry and Breathitt Counties, Kentucky, USA.

The effective date of this ITR is April 8, 2011.

Should you have any comments do not hesitate to contact me at the following numbers:

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E-mail:plucas@summit-engr.com

  
Phillip Lucas, PE, PLS  
Vice President,  
Summit Engineering, Inc.

  
Date of Signing

Summit Project Number: 3211.015



## **25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES**

### 25.1 INTRODUCTION

The area covered by this report lies within the drainage areas of Cam Johnson Branch and Bowling Creek of the Middle Fork of the Kentucky River, lying in Perry and Breathitt Counties, Kentucky. The Sid Mining property is located approximately 2 miles northeast of Buckhorn Lake and is approximately 1 mile south of Crockettville, at approximately Latitude (North) 37-22-24 and Longitude (West) 83-27-16, in northern Perry and southern Breathitt Counties.

Access will be from Route 28 thru Cam Johnson Branch road (a useable but narrow paved county road). It is a sparsely inhabited area.

At the beginning sold coal will have to be transported by tractor trailer to river markets (Cattlesburg KY is about 100 miles away) or to rail tipples controlled by others. The CSX rail line Sigmon station lies to the southeast of the project area.

An estimated financial summary of the Sid Mining property is provided in the table below:

**Table 6: Estimated Financial Summary**

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Production (000's tons)	204	540	765	815
Realized price per ton	\$ 78.37	\$ 91.26	\$ 90.37	\$ 89.96
Financial Royalties	\$ 4.12	\$ 2.81	\$ 2.22	\$ 2.18
Cash Cost per ton <sup>1</sup>	\$ 59.43	\$ 55.52	\$ 57.49	\$ 58.87

1. Includes direct cash mining costs and operating lease payments.



## 25.2 MINING PLAN

Sid Mining will begin production on the DSMRE permit 813-0313 with a point removal on the east side of the Mary Tzantos property. This is done due to the availability of spoil storage on an existing strip bench and haul road off of Cam Johnson Branch. The mining sequence is shown on the attached Mine Plan Map.

While mining the point removal Sid Mining will begin work on the first cut-through. The beginning months will see production in the Hazard 5A and Haddix Seams.

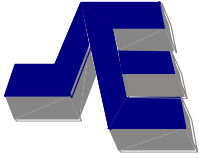
Once the point removal is completed, mining of the Hazard 5A Seam will begin at the cut-through in the Bowling Creek Area. Sid Mining will contour mine the 5A Seam and the Haddix Seam in the area of Hollow Fill 4. Contour Mining will continue in the Hazard 5A Seam towards the second cut-through. The second cut-through will complete the Mine Plan for the first year.

There are three small valley fills that would improve but not be required to follow through with the mining plan. Issuance of a 404 USACE permit for these fills would improve the efficiency and economics of the operation. One of the fills is expected to be deemed non-jurisdictional by the COE; permits for the other two were submitted approximately two years ago and were put on hold with the other 175 under review until recently when the approval process was reinstated.

The majority of the second year of mining will occur in the Fireclay Seam in the Bowling Creek Area. The end of year two will mine the Hazard 5A Seam using excess spoil from the Hazard 5A seam to complete the backfill of the Fireclay Seam.

Year three will continue with mining of the Fireclay Seam placing spoil in the hollow fills then the mining the Hazard 5A Seam with excess spoil backfilling the Fireclay Seam. Contour mining of the Haddix and Fireclay Seams will consist of auger mining those seams. Contour mining of the Hazard 5A will consist of High-wall mining of the Hazard 5A Seam.

From Item 19.4 above, the total proven and probable mineral reserve within the mineral resource is 3,265,000 tons. The production and timing of the operations within the properties of Sid Mining is summarized in Table 6 in Item 25.1 above. The total production through 2014 is projected to be 2,324,000 tons. Thus all production as shown above through 2014 is proven or probable mineral reserve.



## SUMMIT ENGINEERING, INC.

### 25.3 ESTIMATED CAPITAL EXPENDITURES

The estimated capital expenditures schedule for Sid Mining is presented below:

**Table 7: Estimated Capital Expenditure Summary**

(\$000s)

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<b>Total</b>
Maintenance CAPEX - Investing	1,000	0	1,500	1,500	<b>4,000</b>
Maintenance CAPEX - Expansion	0	2,000	2,000	0	<b>4,000</b>
Total	1,000	2,000	3,500	1,500	<b>8,000</b>

### 25.4 ESTIMATED COAL PRODUCTION TAXES AND SALES COSTS

Laurel Fork is responsible for federal black lung excise tax, federal reclamation tax and Kentucky severance tax, a summary of which is provided in the table below:

**Table 8: Estimated Production Tax Summary**

Federal lung excise tax - per ton sold (underground)	\$1.100
Federal reclamation tax - per ton sold (underground)	\$0.135
Federal lung excise tax - per ton sold (surface)	\$0.550
Federal reclamation tax - per ton sold (surface)	\$0.315
Kentucky severance tax - % of revenue	4.50%

Lease rates and terms that have been obtained for this property are summarized in Table 1 in section 6.2.3 of this report.





25.5 CASH FLOW SUMMARY

Sid Mining's management's cash flow forecast is presented in the table below and is based on the assumptions provided above. The forecast shows operating cash flow totaling approximately \$40.4 million and unlevered free cash flow of about \$26.5 million from 2011 through to 2014 on cumulative estimated capital expenditures of approximately \$8.0 million.

**Table 9: Cash Flow Forecast**

(\$000s)

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>Total</b>
Sales	16,000	49,253	69,106	73,291	207,651
Operating costs	(12,133)	(29,964)	(43,963)	(47,962)	(134,022)
Gross margin	3,867	19,289	25,143	25,329	73,629
Federal lung tax	(225)	(594)	(841)	(896)	(2,556)
Federal reclamation tax	(28)	(73)	(103)	(110)	(314)
Royalties	(340)	(1,624)	(2,126)	(2,149)	(6,239)
Kentucky severance tax	(174)	(868)	(1,131)	(1,140)	(3,313)
Federal income tax	(1,054)	(5,484)	(7,120)	(7,152)	(20,810)
<b>Operating cash flow</b>	<b>2,046</b>	<b>10,646</b>	<b>13,821</b>	<b>13,883</b>	<b>40,397</b>
Financial Royalties	(841)	(1,517)	(1,698)	(1,776)	(5,831)
CAPEX	(1,000)	(2,000)	(3,500)	(1,500)	(8,000)
<b>Unlevered free cash flow</b>	<b>205</b>	<b>7,129</b>	<b>8,624</b>	<b>10,607</b>	<b>26,565</b>



25.6 DISCOUNTED CASH FLOW SUMMARY AND SENSITIVITY

The project shows positive results for each of the years 2011-2014. The discounted profit or loss generated each year was brought to a net present value (NPV) by assuming an annual discount rate of 10%. The discount rate is applied each year in the future that the profit or loss is generated. The NPV based on free cash flow is approximately \$19.8 million dollars based on a forecast prepared by management team of Sid Mining and CDR in March, 2011. A sensitivity analysis with discount rates ranging from 8% to 12% and price variations from Sid Mining’s expectations are presented in the table below.

**Table 10: Discounted Cash Flow Results and Sensitivity**

(000s)		Discount Rate				
		12.0%	11.0%	10.0%	9.0%	8.0%
Coal Price Deviation from Forecast	-15.0%	\$ 5,811	\$ 5,993	\$ 6,182	\$ 6,379	\$ 6,585
	-10.0%	\$ 10,123	\$ 10,417	\$ 10,722	\$ 11,040	\$ 11,371
	-5.0%	\$ 14,434	\$ 14,840	\$ 15,262	\$ 15,701	\$ 16,158
	0.0%	\$ 18,746	\$ 19,264	\$ 19,803	\$ 20,362	\$ 20,945
	5.0%	\$ 23,057	\$ 23,688	\$ 24,343	\$ 25,023	\$ 25,731
	10.0%	\$ 27,369	\$ 28,111	\$ 28,883	\$ 29,684	\$ 30,518
	15.0%	\$ 31,680	\$ 32,535	\$ 33,423	\$ 34,345	\$ 35,305



## 25.7 MARKETS AND CONTRACTS

Long term coal production, according to the Energy Information Administration (EIA) is projected to vary based on different assumed policies with regard to greenhouse gas (GHG) emissions. The no GHG concern case illustrates a sizable increase in coal production. In 2030, coal production in the no GHG concern model is 20 percent higher than in other models. The impact on long term coal use would depend on details of policies such as the allocation of emissions allowance and the inclusion of policies to encourage the use of other fuels.

In any case, electric power consumption in the US is forecast to increase by one percent per year through the year 2030. The use of coal fired electricity generation is only projected to decrease moderately from 49% to 47% by 2030.

The projected production tonnages and coal prices included in Item 25.1 are reasonable based on the reserves associated with the property. The NYMEX lists Central Appalachia coal futures at \$77.38 per ton as of 4/1/2011.

While Central Appalachia has experienced consistent coal production and growth, some projections show a decline over the next several years as many mines exhaust their better reserves. Coal operators, particularly underground operators will have to deal with the burden and costs of additional compliance due to the poor safety performance of some. Also, surface mine operations will deal with continued pressure from environmental activists and the courts. Higher compliance costs may in fact force some operators to close thus freeing up manpower and equipment for those who remain in business.



## 25.8 ENVIRONMENTAL CONSIDERATIONS

Recent issues related to the coal industry such as the Sago and Upper Big Branch mine disasters and the controversy surrounding mountain top/surface mining have led to renewed interest by lawmakers and environmental activists.

The subject property is located within the regulatory jurisdictional boundaries of the U.S. Army Corps of Engineers (USACE), Louisville District. While the Louisville District has not faced the myriad of legal challenges from environmental groups regarding surface mining Section 404 permits as has the USACE Huntington District, the Louisville District has been affected by the lawsuits. The Huntington District has been the subject of numerous lawsuits filed by environmental groups regarding issued public permits as well as programmatic procedures such as the issuance of Public Notices of Section 404 Individual Permits.

While the government has routinely lost at the federal District Court level, the decisions have typically been appealed to the U.S. Court of Appeals for the Fourth Circuit (Kentucky is located in the U.S. Court of Appeals for the Sixth Circuit). Typically, the lower court decisions have been overturned. However, due to the time lapse between the lower court decision and the appeals court reversal, USACE has changed its policies and procedures making the process less efficient. The changes to policies and procedures have not been limited to the Huntington District as other districts regulating surface coal mining have typically implemented the changes to some extent.

In December 2007, a lawsuit was filed by environmental groups against USACE regarding an issued Section 404 Individual Permit for ICG's Thunder Ridge surface mine in Leslie County, KY. The lawsuit alleged several illegal actions were made by the USACE in issuance of the Section 404 Individual Permit. Amongst these items was an assertion that the USACE had not adequately addressed cumulative impacts. In response to the lawsuit, USACE suspended ICG's permit pending a review of the cumulative impacts analysis. Following preparation of a significantly greater cumulative impacts analysis, ICG's permit was re-issued in March 2009.

The U.S. Court of Appeals for the Fourth Circuit overturned Judge Chambers' decision from the Southern District of West Virginia in very similar litigation as what was filed against the USACE for the ICG Thunder Ridge permit. However, Kentucky is not in the geographical boundaries of the Courts of Appeals for the Fourth Circuit so this decision does not directly affect litigation in the Commonwealth of Kentucky.



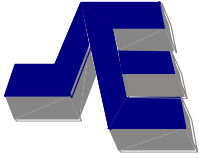
The USACE Louisville District has imposed very restrictive limits on the use of Nationwide Permits 21 (prior to its suspension), 49 and 50 (although there is some flexibility for NWP 49 due to its environmental benefits). For the poorest quality streams, impacts cannot exceed 2,000 linear feet, and impacts cannot exceed 300-500 linear feet for the highest quality streams. For most surface mining projects, these limits are unattainable, which leaves an Individual Permit as the only alternative for Section 404 authorization.

Nationwide Permit 21 (NWP 21), which was most recently issued by USACE on March 18, 2007 to regulate Surface Coal Mining Activities, was suspended on June 18, 2010 in the Appalachian regions of Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. Therefore, the only permitting avenues for surface mining activities at this time in these areas are Section 404 Individual Permits or Nationwide Permit 49 if the project is re-mining and meets the strict acreage requirements of this permit.

On February 16, 2011, USACE published in the Federal Register its proposal to re-issue NWPs for another 5 year term (Fed. Reg. Vol. 76, No. 32, pp. 9174 – 9207). Although the current version of NWP 21 is suspended, USACE proposed issuance of a restricted version of NWP 21. USACE offered three options for comment as part of the Federal Register notice:

1. Do not reissue NWP 21.
2. The discharge must not cause the loss of greater than ½ acre of non-tidal waters of the United States including the loss of no more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds the district engineer waives the 300 linear foot limit. This NWP would not authorize discharges of dredged or fill material into waters of the United States associated with the construction of valley fills.
3. The discharge must not cause the loss of greater than ½ acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds the district engineer waives the 300 linear foot limit.

Option 2 is preferred by USACE. This option would not authorize the construction of valley fills in jurisdictional waters but would provide a direct avenue for the construction of ponds, stream or road crossings, etc. The new NWPs should be issued prior to or upon expiration of the current NWPs (March 18, 2012).



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In addition to the obstacles facing Section 404 permitting associated with litigation and adverse court decisions in West Virginia, the U.S. Environmental Protection Agency (EPA) has recently taken a greater role in permitting. The agency has routinely commented on proposed projects and threatened the veto of several Section 404 permits. The agency's objections center on stream impairment, proposed mitigation, and water quality, specifically conductivity and total dissolved solids.

EPA has essentially forced coal companies to accept very extensive and expensive water and benthic monitoring programs in exchange for the release of Section 404 permits for surface mining activities. These monitoring plans have typically included a conductivity threshold that increases the monitoring frequency and requires best management practices be implemented if surpassed.

EPA has also begun conducting a review of all Section 404 applications for compliance with the Clean Water Act Section 404(b)(1) Guidelines and avoidance of impacts on downstream water quality. The focus on water quality impacts may lead to extensive operational changes, including but not limited to selective handling of strata, fill compaction, increased water monitoring, and water quality remediation. EPA's involvement in the Section 404 permitting process will lead to a more expensive permitting process with no certainty of permit issuance.

EPA's interest in water quality is not limited to Section 404 permitting. The agency has also been very involved in the permitting of wastewater discharges (Section 402 or NPDES permits). EPA has oversight authority of states with primacy programs to issue NPDES permits, and EPA has routinely commented on or objected to these permits.

In December 2008, the Office of Surface Mining Reclamation and Enforcement (OSM) issued a statement regarding the 100 foot stream buffer zone rule. This rule attempted to clarify that the 100 foot buffer zone did not apply to hollow fills. However, this new rule required a fill minimization plan to document that the stream impacts were minimized. A fill minimization routine has been developed and is in use for Kentucky SMCRA permits.

On December 22, 2008, on behalf of 8 environmental groups, a lawsuit was filed in D.C. District Court challenging approval of the 100 foot stream buffer zone rule. The suit names the United States Department of the Interior (DOI), OSM, and EPA. Two claims are filed against each agency alleging that the rule fails to explain alternatives and that it violates both SMCRA and the Clean Water Act (CWA).

OSM is currently preparing a revised stream buffer zone rule.





On June 11, 2009 the USACE, DOI, and the EPA entered into a Memorandum of Understanding regarding oversight of Appalachian surface coal mining projects. The memorandum required the USACE and EPA to take the following steps by the end of 2009:

- Issue a public notice to preclude use of Nationwide Permit 21 for authorization of discharge of fill material into streams for surface coal mining.
- USACE and EPA, in coordination with United States Fish and Wildlife Services, will develop guidance to strengthen the environmental review of surface coal mining projects under the Clean Water Act Section 404 (h) (1) guidance.
- Work with the states to strengthen oversight and review of Section 401 water quality certification and Section 402 NPDES (National Pollutant Discharge Elimination System) permits.
- Develop guidance regarding evaluation of impacts to streams and evaluation to mitigation projects.
- Clarify applicability of waste treatment exemption.

By the end of 2009, DOI was to have taken the following steps under the memorandum:

- If stream buffer zone rule is vacated, issue guidance clarifying application of the 1983 stream buffer zone provisions.
- The OSM will re-evaluate and determine how to more effectively conduct oversight of the states.
- The OSM will remove impediments to its ability to require correction of state application permit deficits.

Again, the design and permit methodology along with mining practices for large scale surface mines are likely to be impacted by increased timing and costs. Mining professionals to date have been able to find a means of meeting the requirements of both the regulations and the courts in order to continue mining in a reasonable and cost effective way.



25.9 GLOSSARY, ABBREVIATIONS AND UNITS

*Glossary:*

- Bench – A ledge that, in open-pit mine and quarries, forms a single level of operation above which minerals or waste materials are excavated from a contiguous bank or bench face. The mineral or waste is removed in successive layers, each of which is a bench, several of which may be in operation simultaneously.
- Dip – Inclination of geological features from the horizontal.
- Dyke – A tabular igneous intrusion that cuts across the bedding or foliation of the country rock.
- Fault – Fracture or fracture zone in crustal rocks along which there has been displacement of the two sides relative to one another parallel to the fracture.
- Highwall – Edge of opencast operations in advance of the direction of mining.
- In Situ – Generally used with reference to the reporting of coal resources to indicate a volume or tonnage of coal present undisturbed in the ground.
- Mineral Reserve – The economically mineable material derived from a measured and/or indicated mineral resource.
- Mineral Resource – A concentration of material of economic interest in or on the Earth's crust in such a form, quality, and quantity that there are reasonable and realistic prospects for eventual economic extraction.
- Overburden – Designates material of any nature, consolidated or unconsolidated, that overlies an economic deposit.
- Proforma -- A Latin term meaning "for the sake of form". In the investing world, it describes a method of calculating financial results in order to emphasize either current or projected figures.
- Seam – A provincial term for a coal bearing layer.
- Strike – The course or bearing of the outcrop of an inclined bed, vein, or fault plane on a level surface; the direction of a horizontal line perpendicular to the direction of the dip.



*Abbreviations:*

AML – Abandoned Mine Lands  
ASTM – American Society for Testing and Materials  
BTU – British Thermal Unit  
CDR – CDR Minerals, Inc.  
CIM – Canadian institute of Mining, Metallurgy and Petroleum  
CWA – Clean Water Act  
DOE – United States Department of Energy  
DOI – United States Department of Interior  
EDR – Environmental Data Resources, Inc.  
EPA – United States Environmental Protection Agency  
GIS – Graphic Information System  
ITR – Independent Technical Report  
KPDES – Kentucky Pollutant Discharge Elimination System  
NPDES – National Pollutant Discharge Elimination System  
NX – standard 57.44 mm core hole diameter used in drilling  
MSHA – Mine Safety and Health Administration  
SMCRA – Surface Mining Control and Reclamation Act  
SCSR – Self Contained Breathing Devices  
SMIS – Kentucky Surface Mine Information Systems  
USACE – United States Army Corps of Engineers  
USGS – United States Geological Survey

*Units:*

' = feet  
" = inches  
% = percentage  
Ft = feet  
Lb = pound  
Min = minute  
Mi = mile  
MW = megawatt  
Ton = 2000 pounds



## SUMMIT ENGINEERING, INC.

### CERTIFICATE OF QUALIFICATIONS AND CONSENTS

To accompany the report dated April 8, 2011 and entitled An Independent National Instrument 43-101 Report Summarizing Mineral Exploration, Development and Production Activities of Sid Mining, LLC, Bowling Creek and Cam Johnson Branch, Perry and Breathitt Counties, Kentucky

1. I, Phillip Lucas, am currently employed as Vice President by: Summit Engineering, Inc., 131 Summit Drive, Pikeville, KY 41501, USA.
2. This certificate applies to the report titled NI 43-101 – Sid Mining – Technical Report, and dated April 8, 2011.
3. I graduated with a Bachelor of Science degree in Civil Engineering from the University of Kentucky, Lexington, Ky. in 1976. I graduated with a Master of Science degree in Mining Engineering from the University of Kentucky, Lexington, Ky. in 1998. I am a licensed professional engineer in the states of Kentucky, West Virginia, Virginia, and Arkansas. I am a Registered Member of the Society of Mining Engineers (SME). Member No. 1959010RM. I am primarily responsible for coal reserve and mine feasibility studies, as well as the design and design supervision of deep mines, surface mines, refuse impoundments and construction related projects. These projects include reserve studies, property evaluation, mineral taxes, reclamation liability, coal handling facilities, surveying and mapping, cost studies, mine construction, mine ventilation, ground control and refuse impoundments for over 21 separate Coal and Land Companies, and have worked as an engineer and mining professional since 1976.
4. I most recently visited this property on January 12, 2010, for approximately ½ day.
5. I am responsible for all items of this technical report.
6. I am independent of the issuer as described in Section 1.4 of National Instrument 43-101.
7. Summit Engineering has prepared SMCRA permits within the property. I have had no other prior involvement with the property that is the subject of this report.
8. I have read National Instrument 43-101 and form 43-101F1 and the Technical Report has been prepared in compliance with that instrument form.
9. As of the date of the certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
10. I consent to filing of the Technical report with any stock exchange and other regulatory authority and any publication of them, including electronic publication in the public company files on their websites accessible by the public, of the technical report.



**SUMMIT ENGINEERING, INC.**

11. The following exhibits listed below and attached provide evidence of the relevant experience of the Qualified Person:

\* Resume

Dated this April 8, 2011:

A handwritten signature in blue ink, appearing to read 'Phillip Lucas', is written over a horizontal line. The signature is fluid and cursive.

Signature of Qualified Person

Phillip Lucas, PE, PLS  
Print Name of Qualified Person

**SUMMIT  
ENGINEERING,  
INC.**

**VICE PRESIDENT**

**EDUCATION**

Pikeville College, B. S.  
Mathematics  
University of Kentucky, B.S.  
Civil Engineering  
University of Kentucky, M.S.  
Mining Engineering

**REGISTRATION**

Professional Engineer  
Registered in  
Kentucky / #16713  
Virginia / #23497  
West Virginia / #11389  
Arkansas / #11167

Land Surveyor  
Registered in  
Kentucky / #3151  
Virginia / #2233  
West Virginia / #1391

Certified Foreman of  
Underground Coal Mines

Certified Foreman of Surface  
Mines

**AFFILIATIONS**

Kentucky Society of Professional  
Engineers  
Kentucky Professional Engineers  
in Mining (PEM)  
Society of Mine Engineers (SME)  
Registered Member  
#1959010RM  
Kentucky Coal Association  
West Virginia Coal Association



# PHILLIP LUCAS, P.E., P.L.S.

## PROFESSIONAL EXPERIENCE

- Mr. Lucas joined Summit Engineering in 1992 and presently serves as Vice-President and Partner in the firm. Mr. Lucas has oversight responsibility in the Pikeville, Ky., Hazard, Ky., and Lexington, Ky. Offices. He is primarily responsible for coal reserve and mine feasibility studies. He is also responsible for design and design supervision of deep mines, surface mines, refuse impoundments, and construction related projects.
- Mr. Lucas has extensive experience in mine planning and production, including reserve studies, property evaluation, mineral taxes, reclamation liability, coal handling facilities, surveying and mapping, cost studies, mine construction, mine health and safety, mine ventilation, ground control, and refuse impoundments.

## PROJECTS

- Pocahontas Land Company- Reclamation Liability Study
- Berwind Land Company - Reserve Evaluation for US 460 Condemnation
- Carmeuse Lime Company- Underground Ventilation Study
- Carolina Power and Light – Environmental, Health and Safety Assessment of Mines and Terminals
- Massey Coal – Kentucky and West Virginia Unmined Coal Tax Filings and Corporate Reserve Calculations
- Mettiki Coal Company – Permitting and Mine Design
- Mid American Mining- Arkansas Deep Mine Project
- Beth Energy Mines- Longwall Dewatering Project
- Pittston Coal- Slurry Impoundment- Construction Management
- CDR Minerals, Inc. National Instrument 43-101 Coal Reserve Report
- Dravo Lime Co.- Underground Limestone Mine Mapping
- TECO Coal Co. - Reserve Evaluation for US 23 Condemnation
- Bull Creek Coal Company- Reserve Evaluation
- Diamond May Coal Co.- Reserve Evaluation and Permitting
- Prospect Energy- Coal Reserve and Feasibility Studies
- Traxys Worldwide – Progress Fuels Property- Due Diligence Report and Reserve Evaluation
- South Mississippi Electric Power Assoc. – Property Management
- Consol of Kentucky – Permitting and Mine Design
- West Virginia DOT- Coal Reserve Evaluations for Condemnation
- Alpha Natural Resources- Permitting and Mine Design
- Central Appalachian Mining –Permitting and Mine Design

## PRIOR EXPERIENCE

- Mr. Lucas has over 30 years experience in coal operations and consulting. Prior to joining Summit Mr. Lucas spent 14 years working in the mining industry. He held a variety of production and engineering assignments with Bethlehem Mines Corp., and the Pittston Coal Group. He has also managed production companies as an operator and business partner. Immediately prior to joining Summit he spent 2 years as a partner with Mine Management Consultants in Jenkins, Kentucky

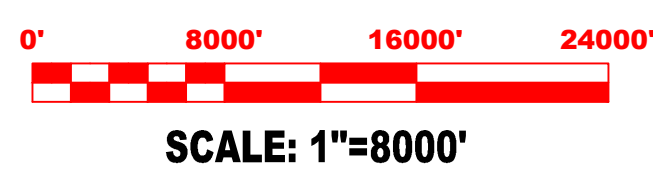
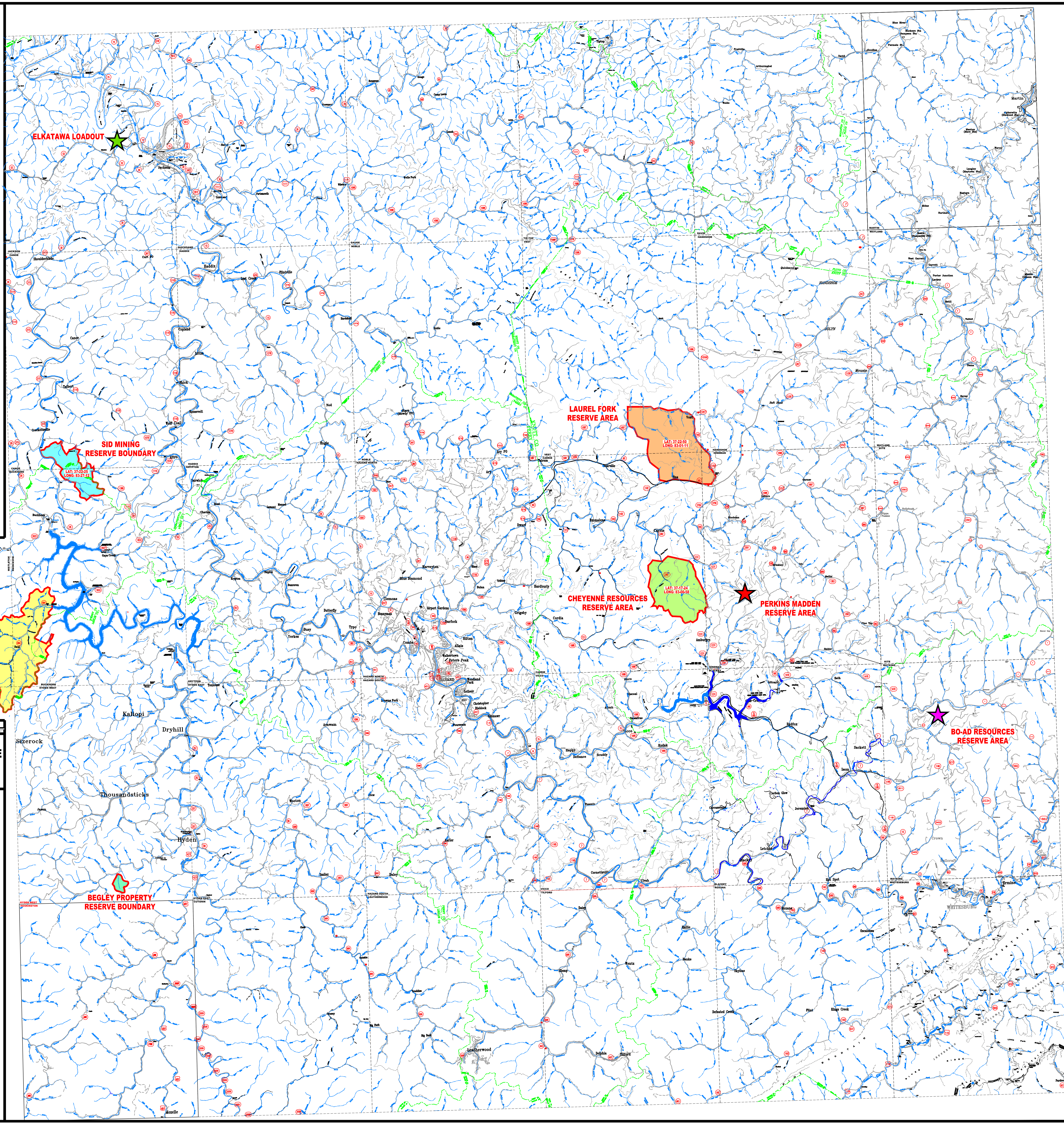
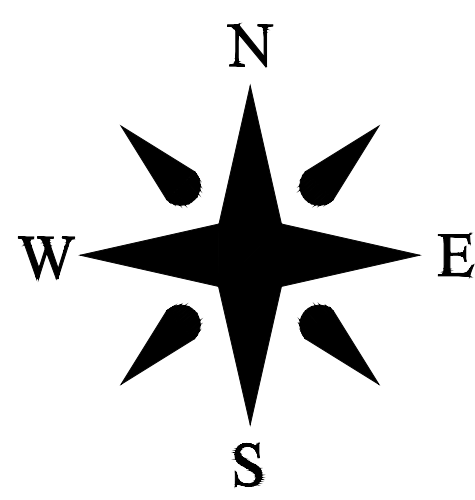


## **26 ILLUSTRATIONS**

Attached are the following maps:

- General Location map for the project area.
- Mine Timing map for the project area.
- Hazard #4 (Fireclay) seam map – reserve location map for the Hazard #4 seam.
- Haddix seam map – reserve location map for the Haddix seam.
- Hazard #5A seam map – reserve location map for the Hazard #5A seam.
- Hazard #8, #9 seam map – reserve location map for the Hazard #8 and Hazard #9 seams.





CANDLE RIDGE MINING RESERVE BOUNDARY

SID MINING RESERVE BOUNDARY

LAUREL FORK RESERVE AREA

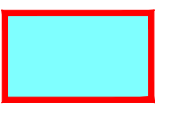







CHEYENNE RESOURCES RESERVE AREA

PERKINS MADDEN RESERVE AREA

BO-AD RESOURCES RESERVE AREA

BEGLEY PROPERTY RESERVE BOUNDARY

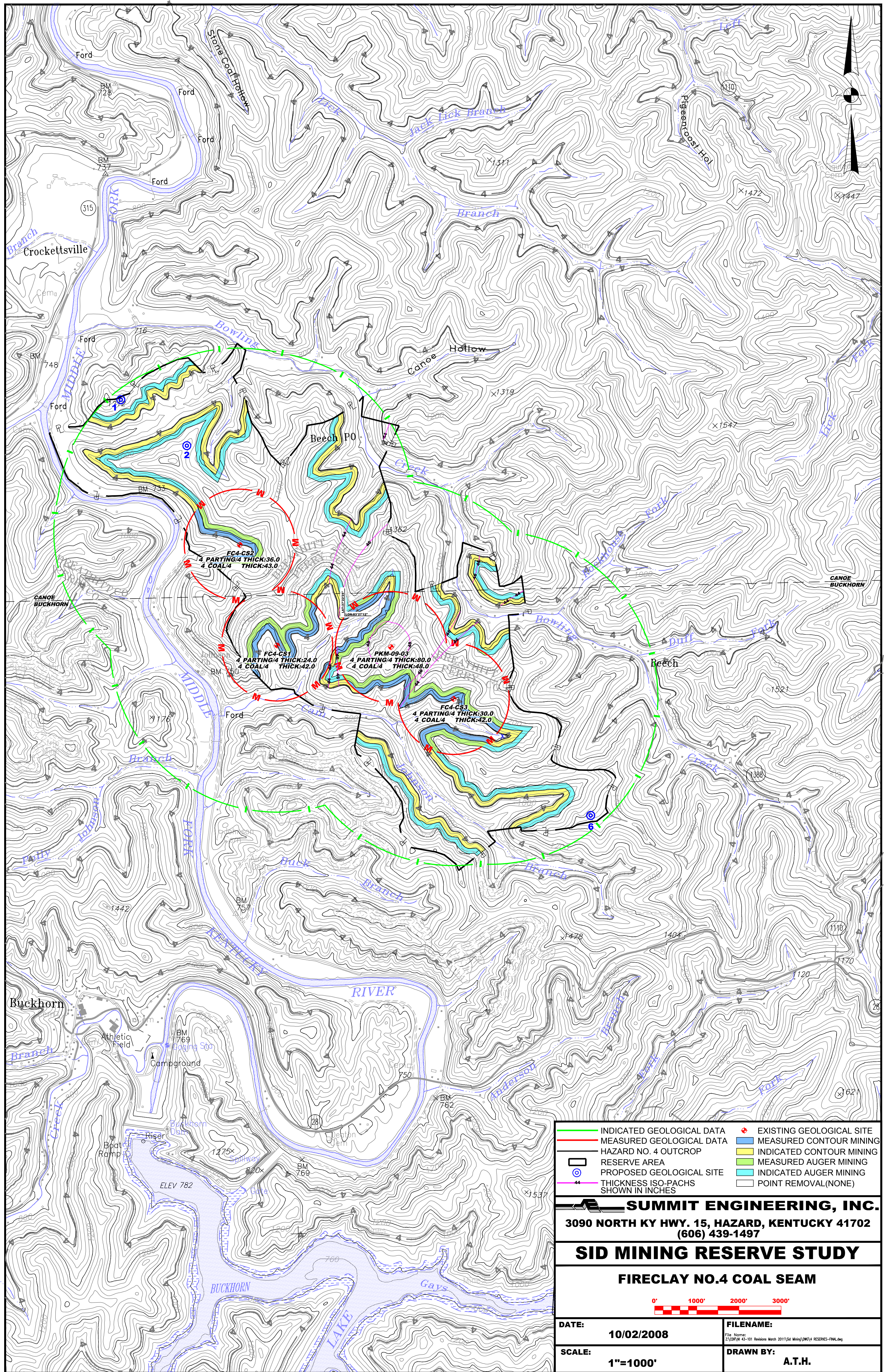
**SUMMIT ENGINEERING, INC.**  
**GENERAL LOCATION MAP**  
**SHOWING POTENTIAL RESERVE**  
**AREAS & AREA'S OF INTEREST**  
**FOR FUTURE MINING**

-  SID MINING RESERVE BOUNDARY
  -  BEGLEY PROPERTY RESERVE BOUNDARY
  -  CANDLE RIDGE MINING RESERVE BOUNDARY
  -  CHEYENNE RESOURCES RESERVE BOUNDARY
  -  LAUREL FORK RESERVE BOUNDARY
  -  BO AD RESOURCES RESERVE AREA
  -  PERKINS MADDEN RESERVE AREA
  -  ELKATAWA LOADOUT
- SCALE: 1"=8000'









- |  |                                        |  |                          |
|--|----------------------------------------|--|--------------------------|
|  | INDICATED GEOLOGICAL DATA              |  | EXISTING GEOLOGICAL SITE |
|  | MEASURED GEOLOGICAL DATA               |  | MEASURED CONTOUR MINING  |
|  | HAZARD NO. 4 OUTCROP                   |  | INDICATED CONTOUR MINING |
|  | RESERVE AREA                           |  | MEASURED AUGER MINING    |
|  | PROPOSED GEOLOGICAL SITE               |  | INDICATED AUGER MINING   |
|  | THICKNESS ISO-PACHS<br>SHOWN IN INCHES |  | POINT REMOVAL(NONE)      |

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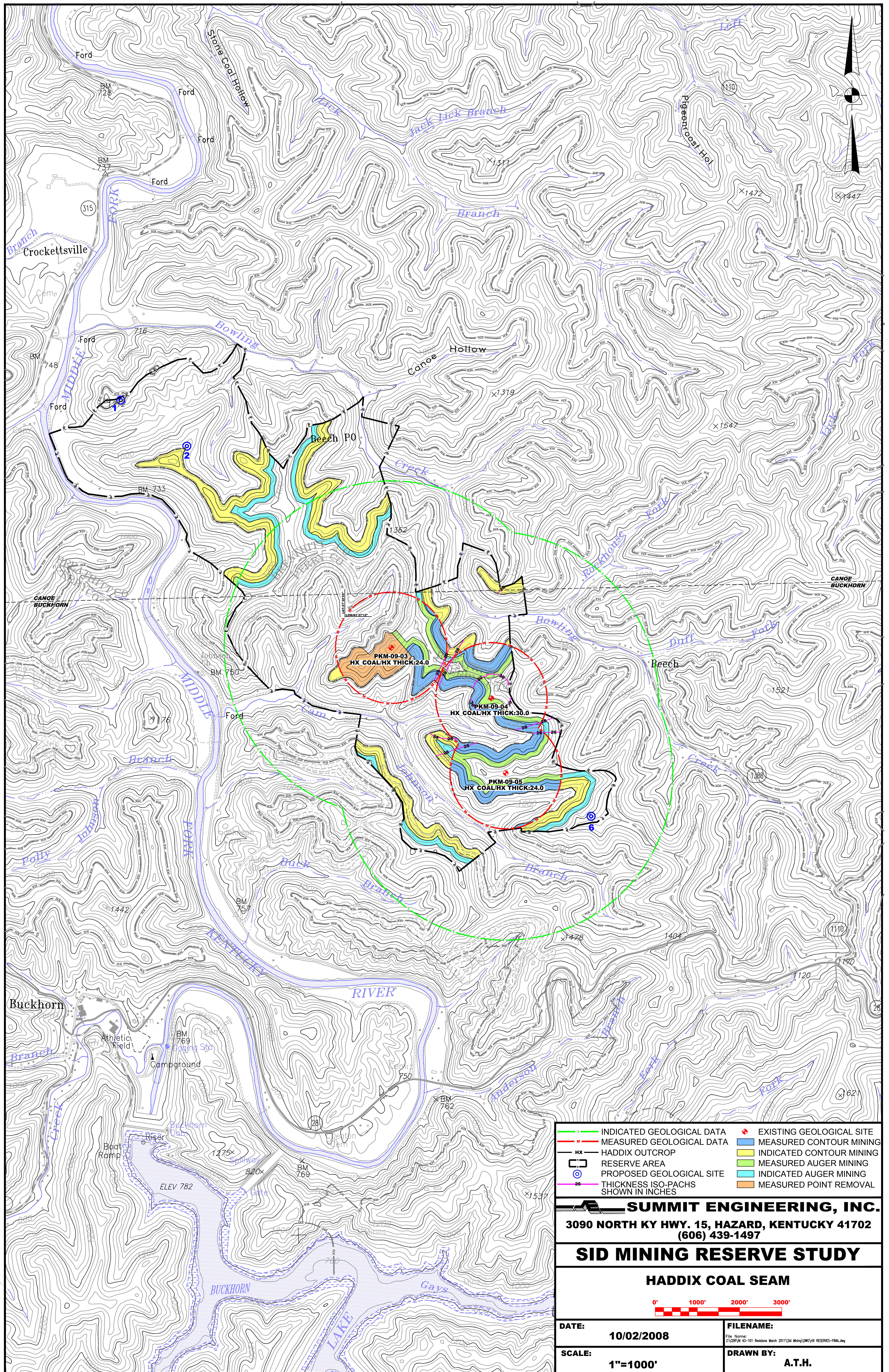
**SID MINING RESERVE STUDY**

**FIRECLAY NO. 4 COAL SEAM**



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<b>SCALE:</b>	<b>1"=1000'</b>	<b>DRAWN BY:</b>	<b>A.T.H.</b>





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|--|-------------------------------------|--|--------------------------|
|  | INDICATED GEOLOGICAL DATA           |  | EXISTING GEOLOGICAL SITE |
|  | MEASURED GEOLOGICAL DATA            |  | MEASURED CONTOUR MINING  |
|  | HADDIX OUTCROP                      |  | INDICATED CONTOUR MINING |
|  | RESERVE AREA                        |  | MEASURED AUGER MINING    |
|  | PROPOSED GEOLOGICAL SITE            |  | INDICATED AUGER MINING   |
|  | THICKNESS ISO-PACHS SHOWN IN INCHES |  | MEASURED POINT REMOVAL   |

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**SID MINING RESERVE STUDY**

**HADDIX COAL SEAM**



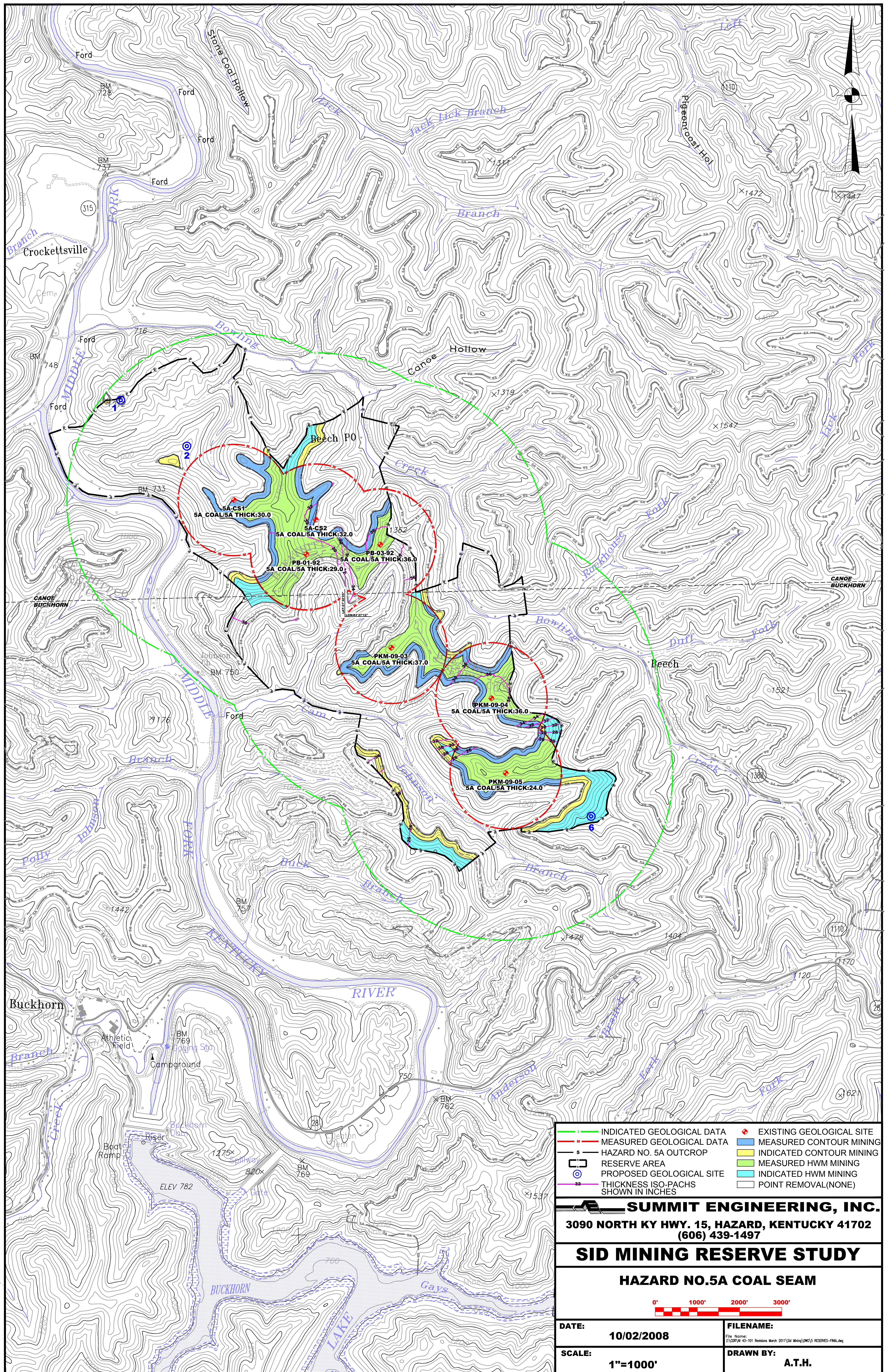
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|--|----------------------------------------|--|--------------------------|
|  | INDICATED GEOLOGICAL DATA              |  | EXISTING GEOLOGICAL SITE |
|  | MEASURED GEOLOGICAL DATA               |  | MEASURED CONTOUR MINING  |
|  | HAZARD NO. 5A OUTCROP                  |  | INDICATED CONTOUR MINING |
|  | RESERVE AREA                           |  | MEASURED HWM MINING      |
|  | PROPOSED GEOLOGICAL SITE               |  | INDICATED HWM MINING     |
|  | THICKNESS ISO-PACHS<br>SHOWN IN INCHES |  | POINT REMOVAL(NONE)      |

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**SID MINING RESERVE STUDY**

**HAZARD NO.5A COAL SEAM**



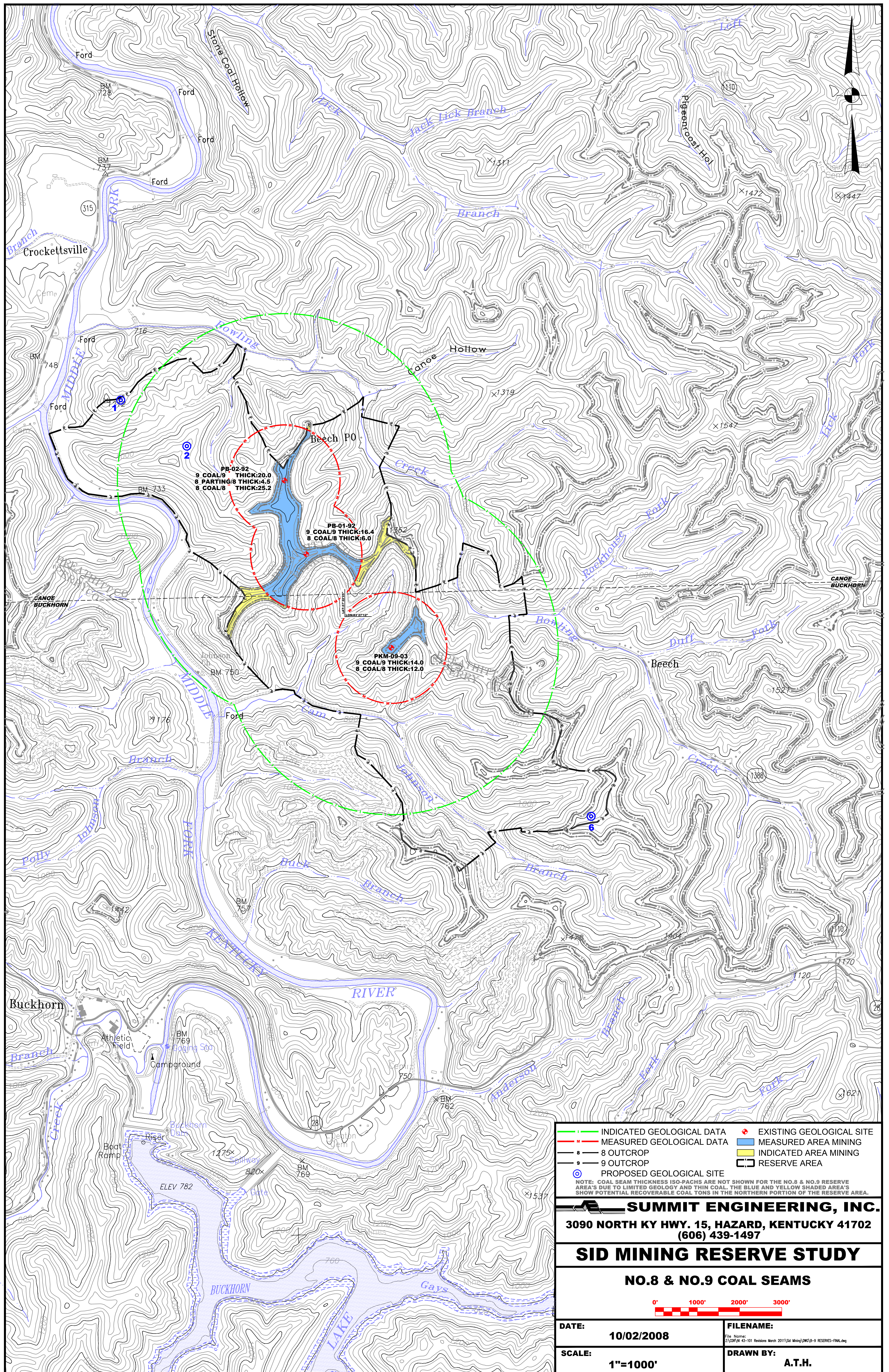
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PB-02-92  
 9 COAL/9 THICK:20.0  
 8 PARTING/8 THICK:4.5  
 8 COAL/8 THICK:25.2

PB-01-92  
 9 COAL/9 THICK:16.4  
 8 COAL/8 THICK:6.0

PKM-09-03  
 9 COAL/9 THICK:14.0  
 8 COAL/8 THICK:12.0

- INDICATED GEOLOGICAL DATA
- MEASURED GEOLOGICAL DATA
- 8 OUTCROP
- 9 OUTCROP
- ⊙ PROPOSED GEOLOGICAL SITE
- ◆ EXISTING GEOLOGICAL SITE
- MEASURED AREA MINING
- INDICATED AREA MINING
- RESERVE AREA

NOTE: COAL SEAM THICKNESS ISO-PACHS ARE NOT SHOWN FOR THE NO.8 & NO.9 RESERVE AREA'S DUE TO LIMITED GEOLOGY AND THIN COAL. THE BLUE AND YELLOW SHADED AREA'S SHOW POTENTIAL RECOVERABLE COAL TONS IN THE NORTHERN PORTION OF THE RESERVE AREA.

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**SID MINING RESERVE STUDY**

**NO.8 & NO.9 COAL SEAMS**



DATE:	10/02/2008	FILENAME:	
SCALE:	1"=1000'	DRAWN BY:	A.T.H.