

#### AN INDEPENDENT NATIONAL INSTRUMENT 43-101 REPORT SUMMARIZING MINERAL EXPLORATION, DEVELOPMENT AND PRODUCTION ACTIVITIES OF THE BIG BRANCH PROJECT AREA KNOTT COUNTY, KENTUCKY

#### Prepared for:

CDR Minerals, Inc. 70 York Street, Suite 1410 Toronto, Ontario M5J159 Canada Tel: (317) 774-1118

#### Prepared by:

Summit Engineering, Inc. 131 Summit Drive Pikeville, Kentucky 41501 United States of America Tel: 1 (606) 432-1447 Fax: 1 (606) 432-1440

Phillip Lucas, P.E, P.L.S. Principal Mining Engineer Summit Engineering Tel: 1(606) 432-1447 ext. 303 Fax: 1 (606) 432-1440 (email) <u>plucas@summit-engr.com</u>

> Effective Date: April 8, 2011



# **Table of Contents**

	TITLE PAGE	т
2	TABLE OF CONTENTS	2
3	SUMMARY	5
	3.1 INTRODUCTION	
	3.2 PROPERTY DESCRIPTION	
	3.3 OWNERSHIP	-
	3.4 GEOLOGY 3.5 EXPLORATION & DEVELOPMENT	
	3.6 STATUS OF OPERATIONS	-
	3.7 CONCLUSIONS	
	3.8 RECOMMENDATIONS	
4	INTRODUCTION	
	4.1 PURPOSE OF TECHNICAL REPORT	0
	4.1 PURPOSE OF TECHNICAL REPORT	
	4.2 TERMIS OF REFERENCE	
5	RELIANCE ON OTHER EXPERTS	. 10
6	PROPERTY DESCRIPTION AND LOCATION	. 11
	6.1 EXTENT OF PROPERTY	
	6.1 EXTENT OF PROPERTY	.11
	6.2 OWNERSHIP	
	6.2 OWNERSHIP 6.2.1 Mining Rights	11 . <i>.11</i>
	6.2 OWNERSHIP         6.2.1 Mining Rights         6.2.2 Location of Infrastructure	11 <i>11</i> 12
	6.2 OWNERSHIP	11 <i>11</i> <i>12</i> <i>14</i>
	6.2 OWNERSHIP         6.2.1 Mining Rights         6.2.2 Location of Infrastructure         6.2.3 Royalty Rates         6.2.4 Existing Environmental Liabilities	11 11 12 14 16
	6.2 OWNERSHIP         6.2.1 Mining Rights         6.2.1 Directory         6.2.2 Location of Infrastructure         6.2.3 Royalty Rates         6.2.4 Existing Environmental Liabilities         6.2.5 Permitting	11 11 12 14 16 16
	6.2 OWNERSHIP	11 12 14 16 16 17
7	6.2 OWNERSHIP	11 12 14 16 16 17 17
7	<ul> <li>6.2 OWNERSHIP</li> <li>6.2.1 Mining Rights</li> <li>6.2.2 Location of Infrastructure</li> <li>6.2.3 Royalty Rates</li> <li>6.2.4 Existing Environmental Liabilities</li> <li>6.2.5 Permitting</li> <li>6.3 LOCATION OF COAL RESOURCES AND RESERVES</li> <li>ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY</li> <li>7.1 TOPOGRAPHY, ELEVATION AND VEGETATION</li></ul>	11 12 14 16 16 17 18
7	<ul> <li>6.2 OWNERSHIP</li> <li>6.2.1 Mining Rights</li> <li>6.2.2 Location of Infrastructure</li> <li>6.2.3 Royalty Rates</li> <li>6.2.4 Existing Environmental Liabilities</li> <li>6.2.5 Permitting</li> <li>6.3 LOCATION OF COAL RESOURCES AND RESERVES.</li> <li>ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY</li> <li>7.1 TOPOGRAPHY, ELEVATION AND VEGETATION</li> <li>7.2 ACCESSIBILITY AND AVAILABLE INFRASTRUCTURE</li> </ul>	11 12 14 16 16 17 18 18
7	<ul> <li>6.2 OWNERSHIP</li> <li>6.2.1 Mining Rights</li> <li>6.2.2 Location of Infrastructure</li> <li>6.2.3 Royalty Rates</li> <li>6.2.4 Existing Environmental Liabilities</li> <li>6.2.5 Permitting</li> <li>6.3 LOCATION OF COAL RESOURCES AND RESERVES</li> <li>ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY</li> <li>7.1 TOPOGRAPHY, ELEVATION AND VEGETATION</li></ul>	11 12 14 16 16 17 18 18
	<ul> <li>6.2 OWNERSHIP</li> <li>6.2.1 Mining Rights</li> <li>6.2.2 Location of Infrastructure</li> <li>6.2.3 Royalty Rates</li> <li>6.2.4 Existing Environmental Liabilities</li> <li>6.2.5 Permitting</li> <li>6.3 LOCATION OF COAL RESOURCES AND RESERVES.</li> <li>ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY</li> <li>7.1 TOPOGRAPHY, ELEVATION AND VEGETATION</li> <li>7.2 ACCESSIBILITY AND AVAILABLE INFRASTRUCTURE</li> </ul>	11 11 12 14 16 16 17 18 18 18 21
	<ul> <li>6.2 OWNERSHIP</li> <li>6.2.1 Mining Rights</li> <li>6.2.2 Location of Infrastructure</li> <li>6.2.3 Royalty Rates</li> <li>6.2.4 Existing Environmental Liabilities</li> <li>6.2.5 Permitting</li> <li>6.3 LOCATION OF COAL RESOURCES AND RESERVES</li> <li>ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY</li> <li>7.1 TOPOGRAPHY, ELEVATION AND VEGETATION</li> <li>7.2 ACCESSIBILITY AND AVAILABLE INFRASTRUCTURE</li> <li>7.3 CLIMATE AND OPERATING SEASON</li> </ul>	11 12 14 16 17 18 18 18 21
	<ul> <li>6.2 OWNERSHIP</li> <li>6.2.1 Mining Rights</li> <li>6.2.2 Location of Infrastructure</li> <li>6.2.3 Royalty Rates</li> <li>6.2.4 Existing Environmental Liabilities</li> <li>6.2.5 Permitting</li> <li>6.3 LOCATION OF COAL RESOURCES AND RESERVES</li> <li>ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY</li> <li>7.1 TOPOGRAPHY, ELEVATION AND VEGETATION</li></ul>	11 12 14 16 16 17 18 18 18 21 22
	<ul> <li>6.2 OWNERSHIP</li></ul>	11 12 14 16 16 17 18 18 21 22 22



9 GEOLOGICAL SETTING	24
9.1 REGIONAL GEOLOGY	24
9.2 LOCAL AND PROPERTY GEOLOGY	25
10 DEPOSIT TYPES	26
10.1 MINERAL DEPOSIT TYPE	26
10.2 GEOLOGICAL MODELING AND EXPLORATION PROGRAM	26
11 MINERALIZATION	27
11.1 DESCRIPTION OF SURROUNDING ROCK TYPES	27
11.2 MINERAL ZONES	
11.3 COAL QUALITIES	29
12 EXPLORATION	30
12.1 DETAILS OF SURVEYS AND INVESTIGATIONS	30
12.2 INTERPRETATION OF EXPLORATION DATA	34
13 DRILLING	35
13.1 TYPE OF DRILLING	35
13.1.1 Drilling Procedures	
13.1.2 Drilling Length	
13.1.3 Orientation of Mineral	
13.2 EXTENT OF DRILLING	
14 SAMPLING METHOD AND APPROACH	37
14.1 QUALITY CONTROL MEASURES	
14.2 DATA VERIFICATION PROCEDURES	38
15 SAMPLE PREPARATION, ANALYSES AND SECURITY	39
15.1 SAMPLE PREPARATION METHODS	
15.2 INTEGRITY OF SAMPLING PROCESS	-
15.3 SECURITY METHODS	40
16 DATA VERIFICATION	42
16.1 GEOLOGY	42
16.2 HISTORIC EXPLORATION DATA	42
17 ADJACENT PROPERTIES	43
17.1 ADJACENT PROPERTIES	
17.1.1 Adjacent Industrial Properties	
17.1.2 Adjacent Permitted Properties	
17.1.3 Other Significant Adjacent Properties	
17.2 SOURCES OF INFORMATION	44



18 MINERAL PROCESSING AND METALLURGICAL TESTING	45
18.1 REGIONAL COAL QUALITY	45
18.2 DATA SOURCES AND MODELING METHOD	
18.3 PROPERTY COAL QUALITY	47
19 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES	48
19.1 RESOURCE AND RESERVE CRITERIA	
19.2 DATA SOURCES AND MODELING METHOD	
19.3 RESOURCE AND RESERVE CALCULATION PARAMETERS	
19.4 RESULTS OF RESERVE AND RESOURCE ESTIMATION	51
20 OTHER RELEVANT DATA AND INFORMATION	53
21 INTERPRETATIONS AND CONCLUSIONS	54
22 RECOMMENDATIONS	55
23 REFERENCES	56
24 DATE AND SIGNATURE PAGE	57
24 DATE AND SIGNATURE PAGE 25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	)
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND	) 58
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	) <b>58</b> 58
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	<b>)</b> <b>58</b> 58
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	<b>58</b> <b>58</b> <b>59</b> <b>60</b> <b>60</b>
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	<b>58</b> <b>58</b> <b>59</b> <b>60</b> <b>60</b> <b>60</b>
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	<b>58</b> 58 59 60 60 61 61 62
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	<b>58</b> 58 59 60 60 61 61 62 63
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES. 25.1 INTRODUCTION. 25.2 MINING PLAN. 25.3 ESTIMATED CAPITAL EXPENDITURES	<b>58</b> 58 59 60 60 60 61 62 63 63 64
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	<b>58</b> 58 59 60 60 60 61 62 63 63 64
25 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES. 25.1 INTRODUCTION. 25.2 MINING PLAN. 25.3 ESTIMATED CAPITAL EXPENDITURES	<b>58</b> 59 60 60 60 61 62 63 63 64 69



# **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 21, 2010. This report addresses the coal geology, resources and reserves of the properties and permits controlled in the Big Branch project area, 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 total project area covers approximately 2750 acres.

#### 3.2 PROPERTY DESCRIPTION

The area covered by this report is bounded to the north by Troublesome Creek, to the south by the town of Amburgey near Elklick Fork of Lotts Creek, to the east by Kentucky Route 1231, and to the west by Clear Creek and Walter's Branch. The project area is located within Knott County, Kentucky, primarily in the Carrie USGS quadrangle map.

#### 3.3 OWNERSHIP

Leases and agreements for the mining rights necessary to conduct surface and underground mining operations within the Cheyenne permit 860-0393 have been obtained by Cheyenne Resources. Specific leases that have been obtained are provided in Table 2 in section 6.2.3 of this report. Negotiation is on-going for other properties that lie to the north of the property area. An Asset Purchase Agreement (APA) dated July 31, 2009, and amended and executed September 30, 2009, sets economic terms for acquisition of property and equipment, access to loadout and assigns historical reclamation liability to Cheyenne and future reclamation liability to CDR.

#### 3.4 GEOLOGY

As evidenced by the results of the core drilling of the project area, there are six coal seams within the project area that are of mineable thickness for surface or underground mining operations. These seams are located from an elevation of approximately 1400' (Hazard #5A seam) up to an elevation of approximately 1800' (Hazard #11 seam).



#### 3.5 EXPLORATION AND DEVELOPMENT

To date, at least 14 drill holes, including 13 geological logging systems digital logs (Elogs) have been bored in the property area. A description of these holes is attached in Table 1. There are no additional holes scheduled for drilling in the near future.

Hole	Туре	Drilling Company	Driller	
CRCC-07-11	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-12	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-13	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-14	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-15	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-16	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-18	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-19	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-20	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-21	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-22	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-23	Digital Log	Carbon River	Jesse Whitaker	
CRCC-07-24	Digital Log	Carbon River	Jesse Whitaker	
H6-3	Driller's Log	Unknown	Unknown	

#### TABLE 1: DESCRIPTION OF COREHOLE DATA

#### 3.6 STATUS OF OPERATIONS

Cheyenne Resources permit 860-0393 is an active permit within the property area, and mining activities resumed as of October of 2009. Core drilling is not, as of this date, taking place on the property.



# 3.7 CONCLUSIONS

Summit's reserve evaluation indicates that there is in excess of 4.9 million proven and probable mineral reserve tons on the property. As shown in Item 18 of this report, the coal on the property appears to be high volatile bituminous coal, averages 12,453 BTU/lb, with a sulfur content of 1.21 percent and an ash content of 11.03 percent. All recoverable tons are classified as measured or indicated (demonstrated) and are under lease by CDR. Permit 860-0393 contains a portion of the properties leased.

On July 31, 2009 CDR entered into an Asset Purchase Agreement (APA) with Cheyenne Resources, Inc. with respect to the acquisition of certain coal and surface leases in addition to a surface mining permit located in Knott County, Kentucky (permit 860-0393). Cheyenne started mining in late October, 2009 on the Cheyenne Resource permit 860-0393. An amendment to permit 860-0393 is currently proceeding and estimated to be issued by the end of 2011.

The projected production tonnages 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. 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. Additional corehole drilling should be conducted as adjacent properties are leased.

Diligently pursue the pending amendment to permit 860-0393, and in obtaining the necessary permits for the northern portion (Area G) of the property.

Ensure that all mine planning and construction is in conformity with current regulations for environmental and reclamation planning. USACE records indicate that a Nationwide 21 permit (NWP 21) was issued for a previous permit on this property on July of 2000. CDR should require that Cheyenne Resources supply documentation or verification that the USACE 404 permits for 860-0393 are adequate for the excess spoil fills designed in the permit.

Ensure that no outstanding reclamation liability exists on the areas previously mined.

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 within the project area, which is located in the Eastern Kentucky Coalfields. The location of this project can be found on the general location map at the end of this report.

Summit Engineering has received a copy of an Exploration Map prepared by Cheyenne Resources in February of 2008; however no previous reserve study results have been provided. The data as shown on the Exploration Map indicates that coreholes CRCC-18-08 thru CRCC-24-08 are new coreholes that have been drilled since that time. The results of the additional exploration, along with previous exploration data within the property area, were prepared by Summit.

#### 4.2 TERMS OF REFERENCE

CDR has requested that Summit Engineering produce a technical report of the property as shown in Figure 1 in item 6.2.2. 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 recent core drilling data, mine permit data, and coal quality information. These reports were provided to CDR, 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 February 12, 2009 Phil Lucas (licensed P.E. and V.P. of Summit Engineering) conducted a site visit to the property. On January 12, 2010 a follow up visit was conducted. A second follow up visit occurred on April 6, 2011. There, he reviewed the previous mining which had been conducted on permit 860-0393 within the property, the proposed mine plan, site access roads, the proposed backfill plan, and current mining operations.



# **5 RELIANCE ON OTHER EXPERTS**

This report has been prepared for CDR, predecessor to Royal Coal. 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, other than site recon, 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. Once further exploration is conducted, the technical conditions as shown in this report will be 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 is bounded to the north by Troublesome Creek, to the south by the town of Amburgey near Elklick Fork of Lotts Creek, to the east by Kentucky Route 1231, and to the west by Clear Creek and Walter's Branch. The project area is located within Knott County, Kentucky, primarily in the Carrie USGS quadrangle map. The seams to be evaluated include the Hazard #5A, Hazard #7, Hazard #8, Hindman (Hazard#9), Skyline (Hazard #10), and the Hazard #11 seams. The total project area covers approximately 2750 acres. Cheyenne property lines have already been surveyed. Prior to any surface disturbance, the lines will be re-surveyed to reconfirm the lines.

#### 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 section 6.2.5 of this report. Some property lines have already been surveyed. Further, prior to any surface disturbance the lines will be surveyed to reconfirm the lines.

On July 31, 2009 CDR entered into an Asset Purchase Agreement (APA). The APA was modified and executed on September 30, 2009, with Cheyenne Resources, Inc. with respect to the acquisition of certain coal and surface leases in addition to a surface mining permit located in Knott County, Kentucky (permit 860-0393). Additional details of the acquisition are included in the APA. The APA includes the following terms:

- Within 5 business days of closing applications are to be filed to name CDR the operator of permit 860-0393. This has been completed.
- Cheyenne Resources, Inc. remains responsible for the reclamation of Area 1, Area 2, and Area 3 until Phase 1 bond release.
- Within the later of 12 months, or 30 days after Phase 1 release of the reclamation Areas 1-3, or after Cheyenne delivers to CDR 60% of the bonding cost of reclamation Areas 1-3, permit 860-0393 will be transferred from Cheyenne to CDR.

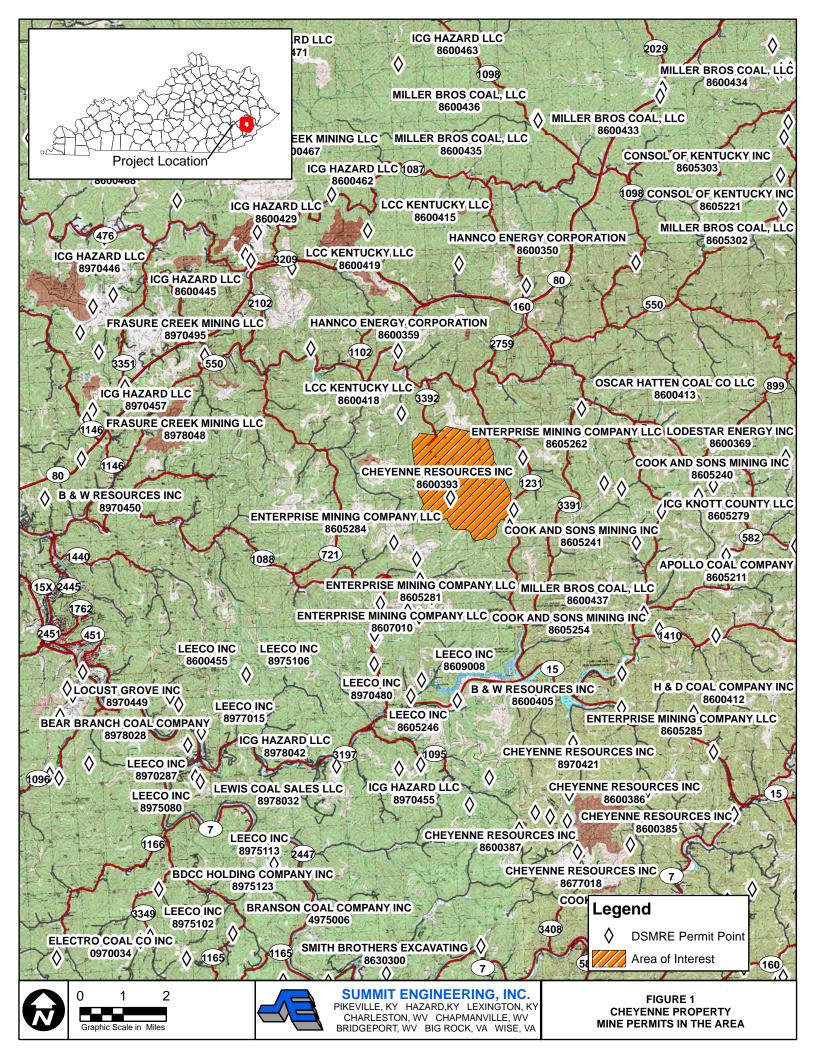
A detailed list of leases is provided in Table 2 in section 6.2.3 of this report.



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.





#### 6.2.3 ROYALTY RATES

Table 2 below lists the properties within the project area. Upon review of the lease documents as supplied by CDR, the following royalty information is pertinent:

#### Table 2: Leases

#### **Surface Tracts**

Lessor	<u>Seams</u>	<u>Status</u>	Royalty Rate	<u>Minimum</u>
N.W. Simpson Heirs	5A and above	Leased	\$2.75/ton or 10%	None
J.P. Simpson Heirs	All	Leased	\$2.75/ton	\$1200/yr
Sally Simpson Heirs	All	Leased	\$2.75/ton	\$1200/yr
Bertie Smith et.al.	7 and above	Leased	\$0.50/ton	None
Olvin Jent	All	Leased	\$0.50/ton	\$2800/yr
Rhoda Everidge	7 and above	Leased	None	\$100/yr
Red Star Coal Company	All	Leased	\$0.50/ton	\$1000/yr
Mountain Properties	5A thru 9	Leased	\$0.50/ton	\$5000/yr
Monroe Cornett et.al.	7 and above	Leased	\$0.50/ton	None
Leslie Resources*	All	Leased	\$0.50/ton	None
Kentucky River Coal Corp.	5A and above	Leased	\$3.00/ton or 10%	None
Charlie Slone	All	Leased	\$0.50/ton	None
Maston Nickles Heirs	Unknown	Leased	Unknown	Unknown
RM Mining Co. et.al.	Unknown	Agmt	Unknown	Unknown
Marcia Smith et.al.	7 and above	Leased	\$2.25/ton or 8%	None
Arnold R. Smith	5A and above	Leased	\$12,000 Lump Sum	None
Luthur & Roberta Mullins	All	Lossod	\$0 EQ/tap	\$800/mo
		Leased	\$0.50/ton	wheelage
Aaron Cornett et.al.	5A and above	Leased	\$2.50/ton	None

\*Note the Leslie Resources surface lease refers to a Master agreement, effective December 18, 2000, which details a \$198,636.25 fixed recoupable balance and \$59,036.22 left to recoup.



#### **Mineral Tracts**

Lessor	<u>Seams</u>	<u>Status</u>	<u>Royalty Rate</u>	<u>Minimum</u>
N.W. Simpson Heirs	5A and above	Leased	\$2.75/ton or 10%	None
J.P. Simpson Heirs	All	Leased	\$2.75/ton	\$1200/yr
Sally Simpson Heirs	All	Leased	\$2.75/ton	\$1200/yr
Kentucky River Coal Corp.	5A and above	Leased	\$2.40/ton or 8%	None
B.M. Smith Heirs	7 and above	Leased	\$2.25/ton or 8%	None
Cornett & Smith	All	Leased	\$1.50/ton or 7%	None
Charles Cornett et.al.	All	Leased	\$2.50/ton	None

Royalty rates will begin on tracts only after a permit is obtained and mining begins. In certain tracts a minimum royalty rate will apply regardless of whether a property has yet been permitted.

A summary of the basic financial requirements for the APA between Cheyenne Resources and CDR, dated July 31, 2009 and modified and executed September 30, 2009, is as follows:

- Within 5 business days of closing applications are to be filed to name CDR the operator of permit 860-0393. This has been completed.
- Cheyenne Resources, Inc. remains responsible for the reclamation of Area 1, Area 2, and Area 3 until Phase 1 bond release.
- Within the later of 12 months, or 30 days after Phase 1 release of the reclamation Areas 1-3, or after Cheyenne delivers to CDR 60% of the bonding cost of reclamation Areas 1-3, permit 860-0393 will be transferred from Cheyenne to CDR.



# 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.

One mapped site was found in EDR's search of available "reasonably ascertainable" government records either on the target property or within the  $\frac{1}{2}$  mile search radius around the target property in 41 Federal Records databases or 5 Tribal Records databases. This mapped site is the KPDES permit KYG045719 associated with Cheyenne Resource permit 860-0393.

The mapped KPDES permit site does not imply an environmental liability associated with this property. The KPDES permit covers the monitoring of point source discharges from existing ponds, which is regulated under Section 402 of the U.S. Clean Water Act and supervised or directed by the Kentucky Division of Water (KDOW). These existing ponds are within <sup>1</sup>/<sub>4</sub> mile of the property but not within the property limits.

# 6.2.5 PERMITTING

There is currently one permit that lies within the project area. On July 31, 2009 CDR entered into an Asset Purchase Agreement (APA) with Cheyenne Resources, Inc. with respect to the acquisition of certain coal and surface leases in addition to a surface mining permit located in Knott County, Kentucky (permit 860-0393). CDR started mining in late October, 2009 on the Cheyenne Resource permit 860-0393.

An amendment to permit 860-0393 is currently pending. This amendment will add approximately 124 acres to the permit, including approximately 540,000 tons of the reserve in Area E.

Permits adjacent to the property area are as shown in item 6.2.2 above. The nearest adjacent permits are Leslie Resources 860-0418 to the north of the project area, and Cook and Sons Mining 860-5241 to the southeast.



# 6.3 LOCATION OF COAL RESOURCES AND RESERVES

The area covered by this report is bounded to the north by Troublesome Creek, to the south by the town of Amburgey near Elklick Fork of Lotts Creek, to the east by Kentucky Route 1231, and to the west by Clear Creek and Walter's Branch. The project area is located within Knott County, Kentucky, primarily in the Carrie USGS quadrangle map.

The primary coal seams that have been historically mined in close proximity to the project area are, in a stratigraphic ascending order, the Hazard #5A, Hazard #7, Hazard #8, Hindman (Hazard#9), Skyline (Hazard #10), and the Hazard #11 seams.



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

# 7.1 TOPOGRAPHY, ELEVATION AND VEGETATION

This property is situated at approximately Latitude (North) 37-17-50 and Longitude (West) 83-01-13, in Knott County, Kentucky. The mean elevation within the property area is approximately 1509 ft. above sea level.

There are four main soil components within the project area: Dekalb, Shelocta, Kimper, and Urban Land. Characteristics of the soil composition in the general area of the target property are as follows:

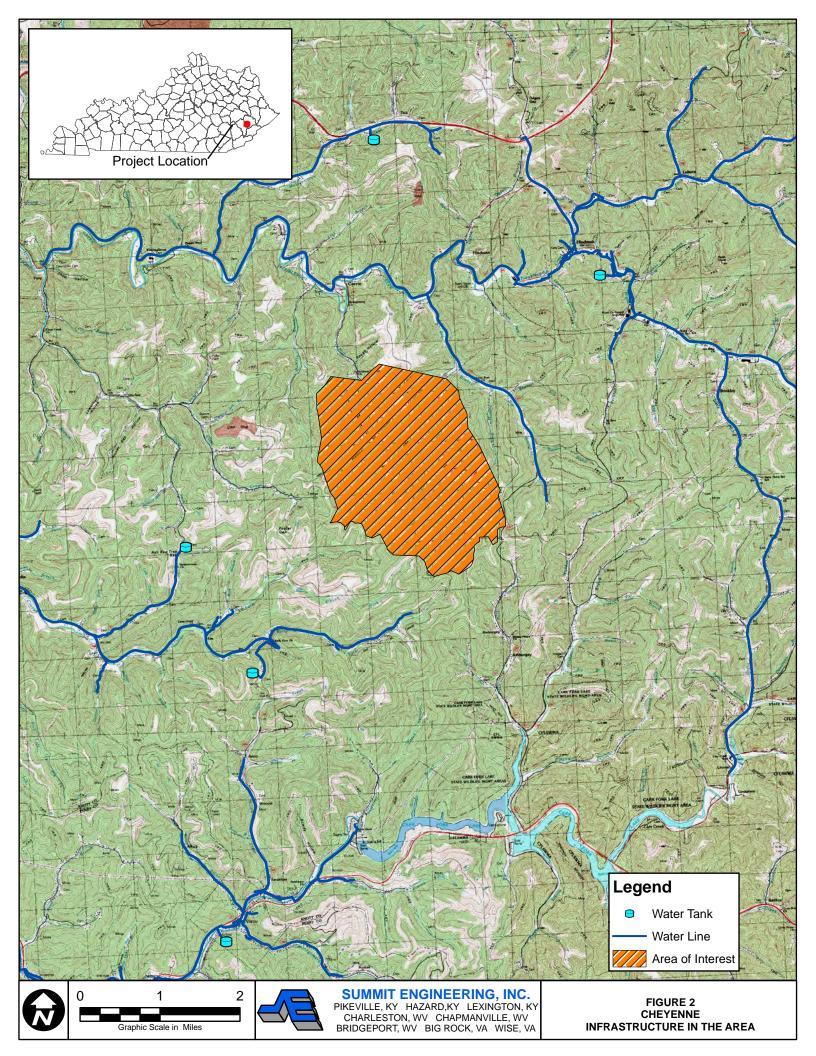
- Soil Surface Texture channery sandy loam, silt loam.
- Hydrologic Group class B, moderate infiltration rates, deep and moderately deep, moderately well and well drained soils with moderately coarse textures; class C, slow infiltration rates, soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.
- Soil Drainage Class Well drained.
- Hydric Status soil does not meet the requirements for a hydric soil.
- Corrosion Potential Uncoated Steel: low.
- Depth to Bedrock -- > 0 inches.

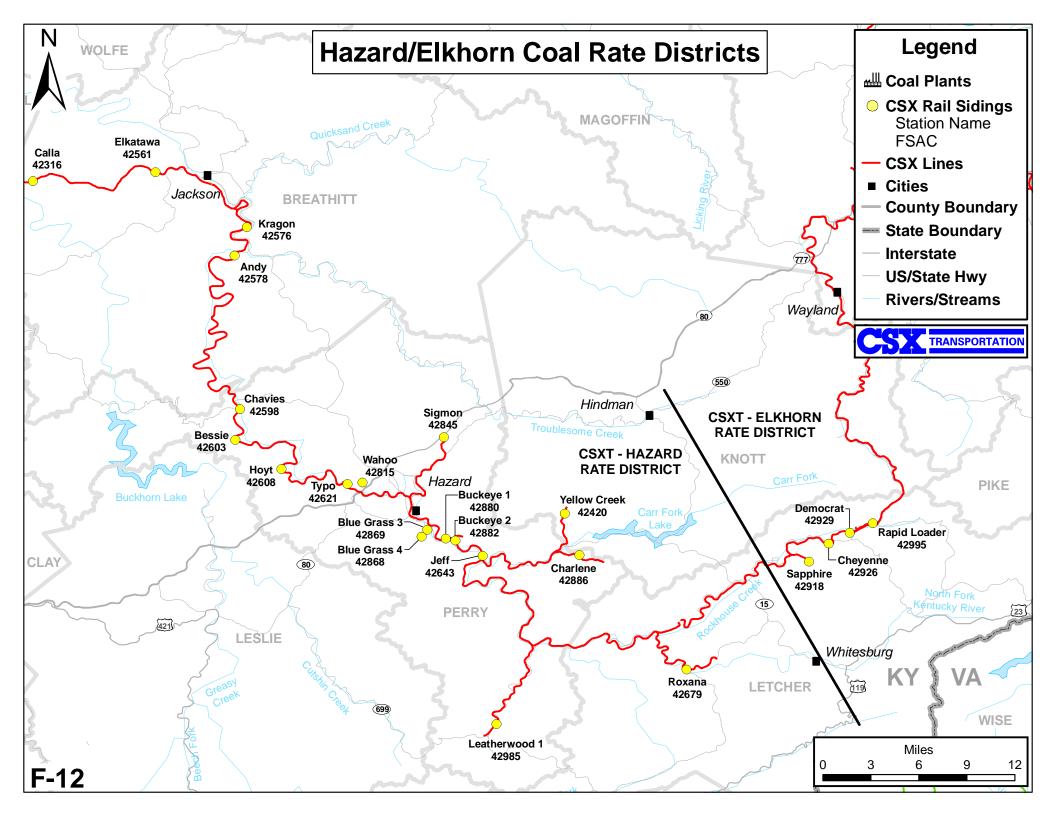
# 7.2 ACCESSIBILITY AND AVAILABLE INFRASTRUCTURE

The subject property is located on Big Branch of Troublesome Creek, south of the junction of KY 550 and KY 1231 and 0.2 miles east of the Right Fork of Big Branch. The property is approximately 2.3 miles northwest of the town of Amburgey. Primary access will be from KY 1231, in the SE portion of the property. It is a sparsely inhabited area.

Coal will be transported from the project by truck to the Charlene loadout, which is a CSX rail station. The APA details an agreement between CDR and Cheyenne at this loadout (located south of the project area) which will enable better access to utility and industrial markets. The loadout is a 4-hr. fast-load batch weigh facility, has 68,000 tons of storage capacity, and has a stokering facility which allows access to the premium-priced industrial market. 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 Knott County, Kentucky was about 17,100, with a growth rate since April 1, 2000 of -3.0%. The population is 100% rural. The total population (as of July 1, 2009) for Kentucky was about 4,314,000, with a growth rate since April 1, 2000 of 6.7%.







# 7.3 CLIMATE AND OPERATING SEASON

The regional climate is characterized by well-defined seasons with hot summers and cool winters. Kentucky's weather patterns are influenced by the Gulf of Mexico, especially during summer. The highest temperature recorded in Kentucky is 114 degrees, Fahrenheit. This record high was recorded on July 28, 1930 at Greensburg. The lowest temperature in Kentucky, -37 degrees, was recorded on January 19, 1994 at Shelbyville.

Much of Kentucky's average 46 inches of precipitation a year falls in spring, the rainiest season. Kentucky is located in a path several storm systems follow. Storms happen year-round; however most storms occur between March and September.

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 subject property is controlled by Cheyenne Resources, LLC, with permit No. 860-0393, MSHA I.D. #15-18765. According to Mine Safety and Health Administration (MSHA) records, Cheyenne began operating this surface mine on May 19, 2004.

Nearby large-scale permits are controlled by Lexington Coal Company, LLC (permit 860-0418, MSHA I.D. #15-18317), Enterprise Mining (permit 860-5262, MSHA I.D. #15-13308, permit 860-5281, MSHA I.D. #15-17427, permit 860-5284, MSHA I.D. #15-18714), and by Cook & Sons (permit 860-5241, MSHA I.D. #15-12454).

#### 8.2 DETAILS OF PREVIOUS EXPLORATION

The Federal Mine Safety and Health Administration (MSHA) records typically include quarterly production reports. The Cheyenne surface mine, according to these reports, has produced about 825,000 tons since 2004.

The Enterprise Mining permits lie primarily to the south and west of the property. Permit 860-5262 began operation in August 1995 and mined approximately 110,000 tons through 1996. Enterprise permit 860-5281 operated from September 1996 to November 1997 and mined about 575,000 tons. Enterprise permit 860-5284 began in February of 2004, and was abandoned later that year after producing approximately 30,000 tons.

The Lexington Coal Company, LLC permit lies to the north of the property. It began operations in May 2004 and is still active. An estimated 765,000 tons have been mined on this permit.

The Cook and Sons permit lies to the southeast of the property. This operation began production in July 1989 and finished in 1996, producing approximately 530,000 tons.

#### **8.3 PRIOR RESOURCE AND RESERVE ESTIMATES**

In February of 2008 an Exploration Map was prepared by Cheyenne Resources for the unpermitted area to the north of permit 860-0393. This map showed prospect holes CRCC-07-18 thru CRCC-07-24 within the northern area. However, no mineral resource or mineral reserve estimates were calculated from this data.



Therefore the prospect holes provided by Cheyenne Resources as described above are not in accordance with the categories set out in sections 1.2 and 1.3 of NI 43-101. No estimates were prepared from this data.

Sufficient work was not completed to classify this historical information 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, and the historical estimate was not to be relied upon, but was incorporated 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 40 licensed mining operations in Knott County, Kentucky. The counties surrounding and adjacent to the property in Knott County include Perry, Letcher, Magoffin, Breathitt, Floyd and Pike Counties. Another 250 mines are licensed in these counties making a total of over 300 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 Knott County was about 8.7 million tons, from Perry County about 14.7 million tons, from Letcher County about 8.0 million tons, from Magoffin County about 1.0 million tons, from Breathitt County about 2.0 million tons, from Floyd County about 6.8 million tons, and from Pike County about 22.5 million tons. Thus a total of over 63 million tons of coal was produced from the seven county region near and adjacent to the property in 2007.

Part of the subject property is controlled by Cheyenne Resources, LLC, with permit No. 860-0393, MSHA I.D. #15-18765. According to Mine Safety and Health Administration (MSHA) records, Cheyenne began operating this surface mine on May 19, 2004. As of the date of this report the Cheyenne surface mine has produced about 825,000 tons since 2004.



# **9 GEOLOGICAL SETTING**

#### 9.1 REGIONAL GEOLOGY

The project area is located within the Eastern Kentucky Coal Field physiographic province. The Eastern Kentucky Coal Field includes all or parts of 37 counties. For convenience, the coalfield is divided into the Big Sandy, Hazard, Licking River, Princess, Southwestern, and Upper Cumberland districts. The field is geologically similar to and, in part, stratigraphically similar to the adjacent coalfields in Ohio, West Virginia, and Tennessee.

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.

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.

The eastern coal field has been one of the nation's leading coal producing regions. Coal is produced underground from drift, and rarely, slope and shaft mines. Surface production comes from contour, area, mountaintop removal, and auger mines.



# 9.2 LOCAL AND PROPERTY GEOLOGY

The Hazard District, which covers approximately 1886 square miles in the central part of the eastern Kentucky field, contains the second largest quantity of coal resources of the six districts in the coal field. It includes Breathitt, Knott, Leslie, and Perry Counties, and the parts of Letcher and Harlan counties north of the Pine Mountain Fault. 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.

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.

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 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 Hindman and Handshoe 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.



#### **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, Hazard #5A, Hazard #7, Hazard #8, Hindman (Hazard#9), Skyline (Hazard #10), and the Hazard #11 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 Hazard #7 and Hindman seams, tend to be more consistent in both character and elevation than others, such as the Hazard 5A and Hazard 8.

#### **10.2 GEOLOGICAL MODELING AND EXPLORATION PROGRAM**

The site specific geology of the project area has been characterized by the drilling of 14 known coreholes within the project area. A copy of core samples (taken across the property by Cheyenne and sent for analysis at SGS North America Inc.) was made available to Summit. There are no plans to drill any additional holes on the property at this time. 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.

All corehole data was supplied to Summit Engineering by CDR.



#### **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 3 depicts the major coal seams arithmetic average thickness, seam parting (if any) and the description of the underlying and overlying rock deposits.

Coal Seam	<u>Parting</u>	<u>Overlying Rock</u>	<u>Underlying Rock</u>
Hazard 5A – 10" top			
18" mid, 22" bot	Shale – 18"	Shale	Sandstone
Hazard 7 – 40"	N/A	Shale, Sandy Shale	Shale
Hazard 8 – 11" top,			
19" mid, 14" bot	Shale – 20"	Sandstone	Shale, Sandy Shale
Hazard 9 – 48-60"	N/A	Shale, Sandy Shale	Sandstone
Hazard 10 – 12"	N/A	Sandstone, Shale	Shale, Sandy Shale
Hazard 11 –			
unknown	N/A	Sandstone, Shale	Shale, Sandstone

#### Table 3A: Surrounding Rock Types



# 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 Hazard #5A, Hazard #7, Hazard #8, Hindman (Hazard#9), Skyline (Hazard #10), and the Hazard #11 seams.

The coal seams will be described in stratigraphically ascending order, beginning with the Hazard No. 5A 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.

The Hazard No. 5A coal seam is the lowest coal seam to be considered within the project area, located at an elevation of approximately 1400 ft. The seam has three distinct splits. The average thickness for the top split was approximately 10 inches thick, the middle split was about 18 inches thick, and the bottom split averaged about 22 inches thick. The location of the seam is shown by the Hazard 5A seam map included in this report.

The Hazard No. 7 coal seam is the next significant coal seam above the Hazard No. 5A seam, at an elevation of approximately 1500 ft. The seam is 40 inches thick, with no large partings within the project area. The location of the seam is shown by the Hazard 7 seam map included in this report.

The Hazard No. 8 coal seam is the next significant coal seam above the Hazard No. 7 seam, at an elevation of approximately 1580 ft. The seam has three distinct splits. The average thickness for the top split was approximately 11 inches thick, the middle split was about 19 inches thick, and the bottom split averaged about 14 inches thick. The location of the seam is shown by the Hazard 8 seam map included in this report.

The Hazard No. 9 coal seam is the next significant coal seam above the Hazard No. 8 seam, at an elevation of approximately 1660 ft. The seam averages 4-5 feet in thickness, with no parting mentioned. However, research has shown that the Hazard 9 seam has been previously mined out through large portions of the reserve area, and so no recoverable tons have been included within this report.

The Hazard No. 10 coal seam is the next significant coal seam above the Hazard No. 9 seam, at an elevation of approximately 1760 ft. The seam averages about 12 inches thick, with no parting mentioned. However, this seam is too thin for mining to take place, and so no recoverable tons have been included within this report.



The Hazard 11 coal seam is the uppermost coal seam to be evaluated in the project area. It is at an average elevation of approximately 1800 feet. A small portion of reserve may remain in this area for one knob, called area D in the Cheyenne exploration maps, but no seam thickness or parting data was taken for this area. Therefore no recoverable tons have been included within this report.

# **11.3 COAL QUALITIES**

Coal quality information has been obtained where available from coreholes drilled on the property. Table 4 in section 18.3 summarizes the average quality data as provided via Cheyenne Resources within the SGS North America, Inc. analysis report. Quality information for existing drill holes and previous lab analyses were also reviewed and utilized. 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 likely the majority of coal removed by contour, area, and point removal methods of mining will not require washing.



# **12 EXPLORATION**

#### 12.1 DETAILS OF SURVEYS AND INVESTIGATIONS

On February 12, 2009 Phil Lucas (author of this report) conducted a site visit to the property. On January 12, 2010 a follow up visit occurred. A second follow up visit was conducted by Phil Lucas on April 6, 2011. There, he reviewed the previous mining which had been conducted on permit 860-0393 within the property, the proposed mine plan and the proposed backfill plan.



Entrance Road: Cheyenne Resources permit.





Reclaimed areas near entrance of permit.



Active Pit: Hazard #5A seam.

NI 43-101 – Big Branch – Technical Report April 8, 2011





Point Removal in Area B of Permitted Reserve: Cheyenne Resources permit.



Existing mined area to West of project area: Cheyenne Resources permit.





Active Mining Area; Cut-Thru now near Hazard 5A seam level.



Unmined Area G: North of Permitted Area.

NI 43-101 – Big Branch – Technical Report April 8, 2011



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 most of the reserve left in this area lies in the Hazard 5A, 7 and 8 seams. However, one small knob may contain reserves in the 11 seam. Also, the existing mountaintop removal areas located within this permit could enhance the overall mine plan by providing additional areas to place excess spoil. 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 800' to 2050' above sea level, while coal seams vary in elevation from 1400' to 1800'. So, the maximum and minimum expected depth of drilling within the project area should be approximately 250' to 600'.

#### 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 the Hindman and Handshoe 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 characterized by the drilling of 14 known coreholes (including digital logs) within the project area. Additional coal sections were taken by Cheyenne Resources and are denoted on the individual seam maps as CS1-8 Seam (for the 1<sup>st</sup> coal section in the Hazard 8 seam), CS2 - 8 Seam, etc. as necessary. The locations of these coreholes and coal sections can be found on the seam maps in item 26 of this report.

A summary of existing drill hole intersections with the applicable seams in this project is provided in table 3B 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.

	<u>Coal Seam</u>				
Drill Hole	Hazard 5A	Hazard 7	<u>Hazard 8</u>	<u>Hazard 9</u>	Hazard 10
CRCC-07-11	1398.91	N/A	N/A	N/A	N/A
CRCC-07-12	1416.09	N/A	N/A	N/A	N/A
CRCC-07-13	1384.39	1474.98	1575.25	N/A	N/A
CRCC-07-14	1380.31	1471.87	1571.84	N/A	N/A
CRCC-07-15	1394.17	1487.35	N/A	N/A	N/A
CRCC-07-18	1374.88	1471.71	1571.32	N/A	N/A
CRCC-07-19	1390.32	1488.57	1585.75	N/A	N/A
CRCC-07-20	1392.18	1499.40	1595.22	N/A	N/A
CRCC-07-21	1363.23	1455.32	1559.14	N/A	N/A
CRCC-07-22	1381.83	1476.29	1574.65	1657.52	1775.47
CRCC-07-23	1384.59	1484.99	1579.67	N/A	N/A
CRCC-07-24	1372.99	1479.40	1565.13	N/A	N/A
H6-2	1388.80	1480.80	1579.30	N/A	N/A
H6-3	1397.40	1488.60	1559.90	N/A	N/A
P-112	1411.40	1504.34	1602.35	N/A	N/A

# Table 3B: Summary of Drill Hole Intersections

No additional corehole drilling is planned at this time. However additional coreholes will allow for more distinct classification of the reserve, in both the northern area of the property and in possible remaining 11 seam reserves, and for expanding the reserve base in the future.



## 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.

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 Cheyenne Resources and SGS North America, Inc. Certain data verification procedures (see Item 14.2) are typically employed in order to derive a level of confidence with respect to the sample integrity.

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 by 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 SGS North America, Inc., used to determine calorific value (in BTU/lb), was D-5865. This lab determined sulfur content with ASTM method D-4239, method B. Ash content was calculated from ASTM method D-3174.



## **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, SGS North America, Inc. (whose local office is located in Pikeville, Kentucky) is a privately owned company that is paid a fee for analytical work performed. To Summit's knowledge, SGS North America, Inc. holds no equity or material interest in any of its clients operations or businesses. The American Association for Laboratory Accreditation certification for SGS North America, Inc., is included in 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. As far as Summit knows Cheyenne Resource'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, the lab 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 SGS North America, Inc. for this property, are adequate.



The American Association for Laboratory Accreditation



A2LA has accredited

# SGS NORTH AMERICA, INC.

## Henderson, KY

for technical competence in the field of

# **Chemical Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 16<sup>th</sup> day of November 2009.

President & CEO For the Accreditation Council Certificate Number 1601.01 Valid to July 31, 2011

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.



## **16 DATA VERIFICATION**

#### 16.1 GEOLOGY

The 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 hard 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 14 coreholes (including digital logs) 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 reviewing and correlating the depth and thickness of seams recorded on the data supplied from CDR. The results were then compared with the previous report records and all available coal samples (as shown on the seam maps). The results, with minor insignificant variations, were the same. Summit concluded that the historic geological records with respect to seam thickness and depth as drilled are approximately 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 project area include the following:

- Halls Upholstery
- Columbia Natural Resources
- Smith Oilfield Services
- Emmalena Elementary School
- Knott County State Maintenance Garage
- Holly Hills Plaza Shopping Center
- Rogers Auto Mart
- Knott County Solid Waste Transfer
- Sawyers Convenient Mart
- S & S Tire
- Knott County Food
- Hindman 66
- Hayes Gulf
- ARH June Buchanan Primary Care Center
- Chesapeake Appalachia LLC Portable
- Halcombs Grocery
- Hindman Double Kwik No. 2
- Fields Drilling
- 80 Motel
- Carr Creek Marina
- KY DOP Carr Creek State Park, Lake, Dam and Resort
- Vicco STP
- Ashland Service Station
- Marty's Shell Food Mart



## 17.1.2 ADJACENT PERMITTED PROPERTIES

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

- Cook and Sons Mining Inc: Permits 860-5241, 860-5254
- Cheyenne Resources Inc: Permits 860-0393
- Enterprise Mining Company LLC: Permits 860-5262, 860-5281, 860-5284, 860-7010
- Hannco Energy Corporation: Permit 860-0359
- LCC Kentucky, LLC: Permit 860-0418
- Miller Bros Coal, LLC: Permit 860-0437
- Oscar Hatten Coal Co, LLC: Permit 860-0413

If possible, approximate seam thickness and elevation data within these permits 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 project area include the following:

- Large Water Storage Tank
- Emmalena Elementary School
- Carr Fork Lake, Park and Resort
- Community of Carrie

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 14 coreholes (including digital holes) as listed in Table 1 below. These coreholes were drilled in 2007.

Hole	Туре	Drilling Company	Driller
CRCC-07-11	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-12	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-13	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-14	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-15	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-16	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-18	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-19	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-20	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-21	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-22	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-23	Digital Log	Carbon River	Jesse Whitaker
CRCC-07-24	Digital Log	Carbon River	Jesse Whitaker
H6-3	Driller's Log	Unknown	Unknown

#### TABLE 1: DESCRIPTION OF COREHOLE DATA

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 project area. Note no quality information was obtained from core holes within the property. Instead, quality information was obtained from coal samples that had been sent from this property to the Charlene loadout. The data was analyzed by coal seam and summarized in monthly reports.

These reports were presented to CDR, reviewed by Summit Engineering and accepted in good faith. Approximately 25 of the individual sample analyses were reviewed, out of the total samples utilized to generate Table 4 below. The table illustrates average coal quality based on site specific samples, and appears to be high volatile bituminous coal.

Cheyenne Resources,	Inc Job Q	uality 200	7 & 2008	
Seam	Tons	BTU/lb	Sulfur	Ash
Hazard 9	38,870	11,665	2.21	12.15
Hazard 9 Bottom Split	4,795	11,608	1.33	15.83
Hazard 8 Top Split	12,417	10,266	1.05	25.15
Hazard 8 Middle Split	21,409	12,763	0.77	9.72
Hazard 8 Bottom Split	15,989	12,576	6.09	12.11
Hazard 7	111,824	12,679	0.75	10.30
Hazard 7 Auger	7,746	11,334	0.70	17.74
Hazard 5A Top Split	13,957	12,220	0.73	14.16
Hazard 5A Middle Split	48,457	12,639	0.62	10.07
Hazard 5A Bottom Split	34,251	13,356	0.72	5.20
Total:	309,713	12,453	1.21	11.03

#### **Table 4: Average Coal Quality Values**

Additional quality data was taken in November and December of 2009. Samples of this data in the Hazard 7, Hazard 5A (top split) and Hazard 8 (middle split) yield results that are consistent with the data compiled in 2007 and 2008.



## **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.



SUMMIT ENGINEERING, INC.

*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. Highwall mineable reserves extend perpendicularly from contour mineable reserves (which have an average bench width of 150') having a maximum depth of 1000'. Auger mineable reserves extend perpendicularly from contour mineable reserves (which have an average bench width of 120') 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

The results of the reserve study for the property are summarized in Table 5 below:

	Minera	l Resource	Tons	Mineral To	
Seam	Measured	Indicated	Inferred	Proven	Probable
5 Top	477,767	145,202	0	406,102	123,422
5 Mid	928,788	247,702	0	789,470	210,547
5 Bot	1,351,884	238,961	0	1,149,101	203,117
7	1,247,664	64,913	0	1,060,514	55,176
8 Top	273,406	0	0	232,395	0
8 Mid	462,092	0	0	392,778	0
8 Bot	353,721	0	0	300,663	0
Sub Total:	5,095,321	696,779	0	4,331,023	592,262
<u>Totals:</u>		<u>5,792,100</u>			<u>4,923,285</u>

#### Table 5: Estimated Reserves & Resources

As shown in Item 18 of this report, the coal on the property appears to be high volatile bituminous coal, averages 12,453 BTU/lb, with a sulfur content of 1.21 percent and an ash content of 11.03 percent.

Note the 4,923,285 mineral reserve tons as shown above are the portion of the 5,792,100 mineral resources tons indicated above that are economically mineable. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

The extent to which the estimate of the mineral resources and mineral reserves may be materially affected by any known environmental, permitting, legal, title, taxation, socioeconomic, marketing, political or other relevant issues is discussed in Section 20 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. Cheyenne Resources has represented to Summit that Cheyenne Resources 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 Cheyenne Resources.

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 or mining cost on the reserve areas.

Summit has not conducted an independent assessment of the financial condition of Cheyenne Resources 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 4.9 million proven or probable reserve tons on the property.
- This reserve base is classified entirely as proven or probable reserve tons. With additional exploration for the Hazard 11 seam and in surrounding areas, the reserve base may be expanded.
- Additional SMCRA and USACE 404 permitting will be required for future operations. The pursuit of the issuance of the DNR and 404 permits for this site is extremely important for the long-term project success. However, existing excess spoil fill and mountain-top removal areas may allow for mining to continue in excess of 18 months while 404 permits are being pursued. Thus additional 404 permits are required to streamline operations on future permits, but the lack thereof may not prevent mining from occurring.
- 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.



## 22 RECOMMENDATIONS

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

- CDR has allocated approximately \$12,000 per month for permitting and other reserve activity, which includes the cost to drill each corehole. These will cost approximately \$10,000 each, and additional core drilling should commence as adjacent properties are leased.
- 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.
- Diligently pursue obtaining a SMCRA permit and USACE 404 permit for the northern portion of the property reserve.
- Proceed with the orderly extraction of the coal reserve in this area.



SUMMIT ENGINEERING, INC.

## **23 REFERENCES**

<u>Author/Editor</u>	<u>Title</u>	<u>Date</u>	<u>Company</u>
CDR	Lease Information	Jan 2009	CDR
Cheyenne Resources	Coal Exploration Map	Feb 2008	Cheyenne Resources
Energy Information		Year	
Administration	Annual Energy Outlook - 2008	2008	N/A
Environmental Data	The EDR Radius Map Report		
Resources, Inc.	with GeoCheck	2/04/09	N/A
	Standard Methods for the		
	Examination of Water and	Year	
Franson, H.	Waste Water, 20th ed 2008	2008	N/A
Geological Logging		2007-	
Systems	Digital Logs (E-logs)	2008	Geological Logging Systems
Leonard, Joseph W.,		Year	
	Coal Preparation, 5th ed.	1991	N/A
	National Instrument 43-101		
	Standards of Disclosure for		
	Mineral Projects, Form 43-		
Ontario Securities	101F1, Technical Report, and		Ontario Securities
Commission	Companion Policy 43-101CP		Commission
		Year	
SGS North America	Coal Quality Data	2008	SGS North America

Websites Referenced:

http://www.netstate.com/states/geography/ky\_geography.htm https://edis.commerce.state.nc.us/docs/coutyProfile/KY/21119.pdf http://www.csx.com http://www.msha.gov http://www.minepermits.ky.gov/sminformationsystem/ http://www.eia.doe.gov/cneaf/coal/page/nymex/nymex\_chart.pdf



## 24 DATE AND SIGNATURE PAGE

Presented here-with is Summit Engineering's Independent Technical Report (ITR) summarizing mineral exploration, development and production activities of CDR project area, located 0.2 miles east of the Right Fork of Big Branch of Knott County, 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:

Tel: 1 (606) 432-1447 Fax: 1 (606) 432-1440 E-mail:plucas@summit-engr.com

Phillip Lucas, PE, PLS

Vice President, Summit Engineering, Inc.

10011

Date of Signing

Summit Project Number: 3211.015



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

#### 25.1 INTRODUCTION

The subject property is located on Big Branch of Troublesome Creek, south of the junction of KY 550 and KY 1231 and 0.2 miles east of the Right Fork of Big Branch. The property is approximately 2.3 miles northwest of the town of Amburgey.

The area covered by this report is bounded to the north by Troublesome Creek, to the south by the town of Amburgey near Elklick Fork of Lotts Creek, to the east by Kentucky Route 1231, and to the west by Clear Creek and Walter's Branch. The project area is located within Knott County, Kentucky, primarily in the Carrie USGS quadrangle map. Primary access will be from KY 1231, in the SE portion of the property. It is a sparsely inhabited area.

Coal will be transported from the project by truck to the Charlene loadout, which is a CSX rail station. The APA details an agreement between CDR and Cheyenne at this loadout (located south of the project area) which will enable better access to utility and industrial markets.

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

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Production (000's tons)	517	732	732	732
Realized price per ton	\$ 73.93	\$ 86.43	\$ 87.12	\$ 87.12
Financial royalties per ton	\$ 3.97	\$ 2.81	\$ 2.28	\$ 2.28
Cash Cost per ton <sup>1</sup>	\$ 52.63	\$ 50.35	\$ 52.35	\$ 55.05

#### Table 6: Estimated Financial Summary

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



#### 25.2 MINING PLAN

On July 31, 2009 CDR entered into an Asset Purchase Agreement (APA) with Cheyenne Resources, Inc. with respect to the acquisition of certain coal and surface leases in addition to a surface mining permit located in Knott County, Kentucky (permit 860-0393).

Production began in late October, 2009 on permit 860-0393. Production began in Area H, where current pit operations involve overburden removal and coal extraction in the Hazard 8, Hazard 7 and the Hazard 5A seams. At the current rate of planned extraction, mining in Area H is projected to take place for approximately 18 months. Prior to completely extracting all coal in Area H, mining will begin in Area B and subsequently Area A, Area E, and Area F.

A portion of the tons in Area E is currently permitted. An amendment to permit 860-0393 is currently proceeding. This amendment will add approximately 124 acres to the permit, including approximately 540,000 of the reserve in Area E.

Area G, controlled by CDR, is also in the preliminary stages of being permitted and is estimated to be issued in late 2013, several years before mining is projected to begin in that area. The planned mine sequence is depicted on the Mine Sequence Map included in Item 26 of this report.

From Item 19.4 above, the total proven and probable mineral reserve within the mineral resource is 4,923,985 tons. The production and timing of the operations within the properties of Cheyenne/Big Branch is summarized in Table 6 in Item 25.1 above. The total production through 2014 is projected to be 2,713,000 tons. Thus all production as shown above through 2014 is proven or probable mineral reserve.



## 25.3 ESTIMATED CAPITAL EXPENDITURES

The estimated capital expenditures schedule for CDR is presented below:

#### Table 7: Estimated Capital Expenditure Summary

(\$000s)					
	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	Total
Maintenance CAPEX - Investing	2,540	2,500	2,000	1,000	8,040
Maintenance CAPEX - Financing	0	1,000	1,000	0	4,000
Total	2,540	3,500	3,000	1,000	10,040

#### 25.4 ESTIMATED COAL PRODUCTION TAXES AND SALES COSTS

CDR 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%

A summary of the basic financial requirements for the APA between Cheyenne Resources and CDR, dated July 31, 2009 and modified and executed September 30, 2009, is as follows:

- Within 5 business days of closing applications are to be filed to name CDR the operator of permit 860-0393. This has been completed.
- Cheyenne Resources, Inc. remains responsible for the reclamation of Area 1, Area 2, and Area 3 until Phase 1 bond release.
- Within the later of 12 months, or 30 days after Phase 1 release of the reclamation Areas 1-3, or after Cheyenne delivers to CDR 60% of the bonding cost of reclamation Areas 1-3, permit 860-0393 will be transferred from Cheyenne to CDR.

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

CDR'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 \$47.4 million and unlevered free cash flow of nearly \$29.9 million from 2011 through to 2014 on cumulative estimated capital expenditures of approximately \$10 million.

(\$000s)					
	2011	2012	2013	2014	Total
Sales	38,222	63,267	63,772	63,772	229,032
Operating costs	(27,210)	(36,856)	(38,320)	(40,297)	(142,683)
Gross margin	11,012	26,411	25,452	23,475	86,350
Federal lung tax	(569)	(805)	(805)	(805)	(2,984)
Federal reclamation tax	(70)	(99)	(99)	(99)	(366)
Royalties	(959)	(2,223)	(2,146)	(1,988)	(7,315)
Kentucky severance tax	(496)	(1,188)	(1,145)	(1,056)	(3,886)
Federal income tax	(3,033)	(7,512)	(7,227)	(6,639)	(24,411)
Operating cash flow	5,887	14,583	14,029	12,888	47,387
Financial Royalties	(2,052)	(2,057)	(1,669)	(1,669)	(7,447)
CAPEX	(2,540)	(3,500)	(3,000)	(1,000)	(10,040)
Unlevered free cash flow	1,294	9,026	9,360	10,219	29,900

#### **Table 9: Cash Flow Forecast**



#### 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 \$22.6 million dollars based on a forecast prepared by management team CDR in March, 2011. A sensitivity analysis with discount rates ranging from 8% to 12% and price variations from CDR's expectations are presented in the table below.

(000s)				Discount Rate	e	
		12.0%	11.0%	10.0%	9.0%	8.0%
Deviation 1 Forecast	-15.0%	\$ 6,740	\$ 6,958	\$ 7,186	\$ 7,422	\$ 7,668
viat	-10.0%	\$ 11,663	\$ 11,995	\$ 12,340	\$ 12,699	\$ 13,072
	-5.0%	\$ 16,585	\$ 17,031	\$ 17,494	\$ 17,975	\$ 18,475
Price L from	0.0%	\$ 21,508	\$ 22,067	\$ 22,648	\$ 23,252	\$ 23,879
P	5.0%	\$ 26,431	\$ 27,104	\$ 27,803	\$ 28,528	\$ 29,282
Coal	10.0%	\$ 31,353	\$ 32,140	\$ 32,957	\$ 33,805	\$ 34,685
·	15.0%	\$ 36,276	\$ 37,177	\$ 38,111	\$ 39,081	\$ 40,089

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



## 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).



SUMMIT ENGINEERING, INC.

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.



#### Site Specific Environmental Considerations:

The USACE 404 permit requirements for this area are complex as the original permits for this area date back to Leslie Resource permit 860-0315 issued in 1992.

Prior to December 1998 excess spoil fills related to surface mining in the waters of the United States did not require USACE 404 permits. After December 1998 and until 2003 excess spoil fills were permitted under Nationwide 21 general permits. Streams already impacted with fill prior to these dates are generally considered non-jurisdictional and do not require additional permitting.

Leslie Resources permit 860-0315, issued in 1992, expired in 1997. Leslie Resources permit 860-0356 (issued in 1997) overlapped 860-0315 and was transferred to Lexington Coal Company, LLC permit 860-0418 in May of 2007. This permit is still active and appears to overlap Cheyenne Resources permit 860-0393.

USACE 404 permit requirements for existing Cheyenne permit 860-0393 appear to be adequate. USACE records indicate that a Nationwide 21 Permit for 860-0356 was issued in July of 2000. Thus CDR should require that Cheyenne Resources supply documentation or verification that the USACE 404 permits for 860-0393 are adequate for the excess spoil fills designed in the permit.

The Kentucky Division of Mine Permits and Kentucky Department of Mine Reclamation and Enforcement (DMP and DMRE) keep a database for all active mine sites within the state that require long-term treatment of acid mine drainage (AMD). This long-term treatment (LTT) list was supplied to Summit Engineering in an open records request.

The LTT list shows Cheyenne Resources permit 860-0393 currently treating three ponds. Embankment pond #5A and dugout pond #51 (located below hollowfill #4 and #5) are being treated for pH and Manganese. Pond #3 on Calf Hollow, held by LCC Kentucky, LLC in permit 860-0418 which overlaps the Cheyenne permit, is being treated for pH.

Perpetual treatment of these ponds may be required. Under the terms of the Asset Purchase Agreement, Cheyenne assumes the cost to treat ponds 5A and 51 until such time as the water discharge from the particular pond has met all applicable water quality standards for a period of twelve (12) consecutive months, as reflected in monitoring reports as submitted to governmental authority. There are currently no outstanding water quality violations on the permit.



## 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 – Abandon Mine Lands APA – Asset Purchase Agreement 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 – Department of Energy DOI/OSM - United States Department of Interior / Office of Surface Mining DNR - Kentucky Department of Natural Resources EDR - Environmental Data Resources, Inc. EPA – United States Environmental Protection Agency GIS – Graphic Information System ICG - International Coal Group ITR – Independent Technical Report KPDES – Kentucky Pollutant Discharge Elimination System MSHA - Mine Safety and Health Administration NPDES – National Pollutant Discharge Elimination System NWP - Nationwide Permit NX – standard 57.44 mm core hole diameter used in drilling SCSR - Self Contained Breathing Devices SMCRA - Surface Mining Control and Reclamation Act SMIS – Surface Mining 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



#### CERTIFICATE OF QUALIFICATIONS AND CONSENTS

To accompany the report dated January 21, 2010 and entitled An Independent National Instrument 43-101 Report summarizing mineral exploration, development and production activities of CDR project area, Knott County, 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 Big Branch 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 April 6, 2011, for approximately  $\frac{1}{2}$  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.



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

Dated this April 8, 2011:

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

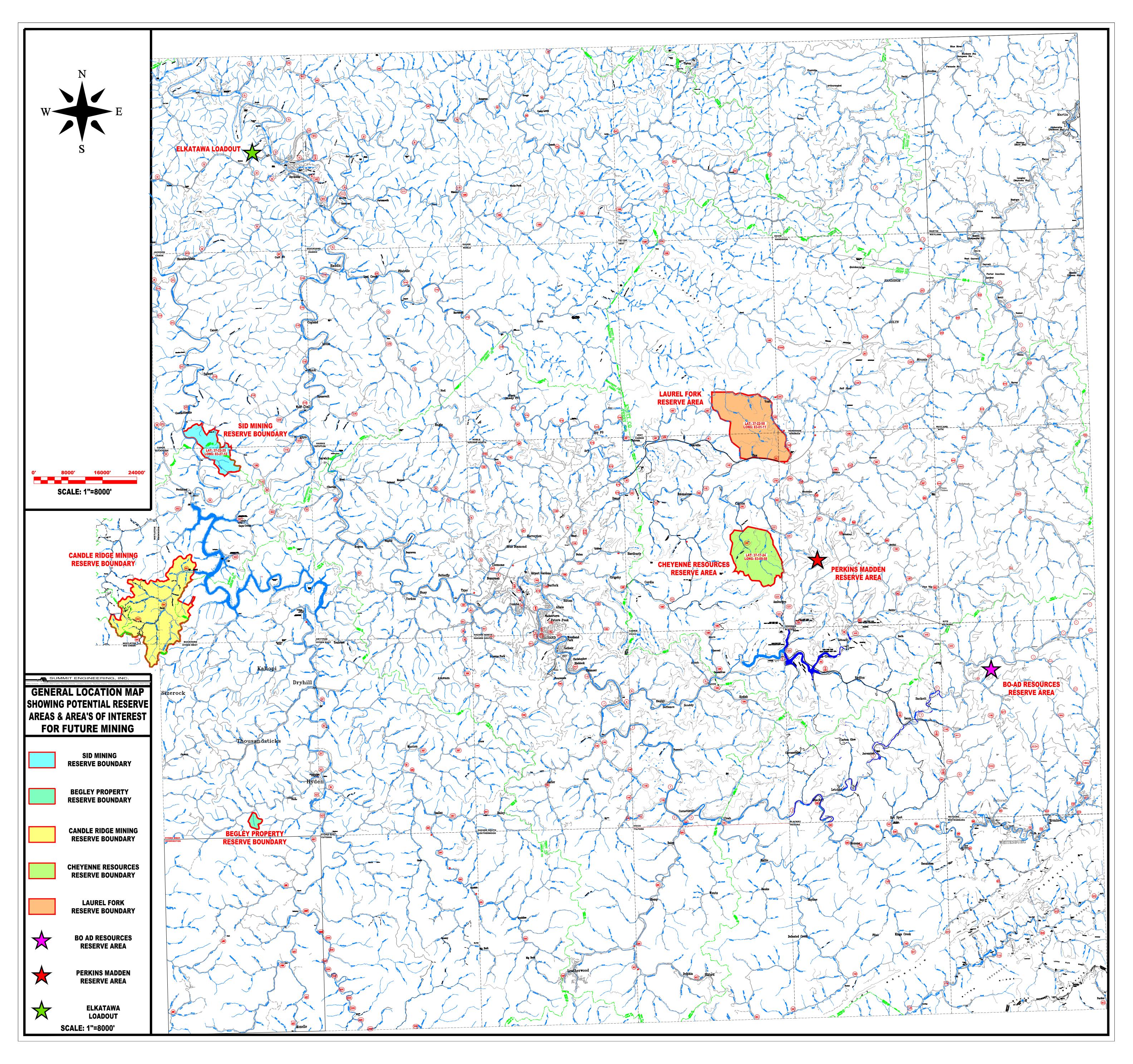
 Mr. Lucas has over 30 years experience in coal operations and consulting. Prior to joining Summit Mr. Lucas spent 14 years working in the mining industry. He held a variety of production and engineering assignments with Bethlehem Mines Corp., and the Pittston Coal Group. He has also managed production 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 including the project area.
- Reclamation Plan Exhibit showing reclamation plan referenced in the APA between Cheyenne Resources and CDR.
- Mine Sequence map showing projected areas of mining operations.
- Hazard #5A seam map reserve location map for the Hazard #5A seam.
- Hazard #7 seam map reserve location map for the Hazard #7 seam.
- Hazard #8 seam map reserve location map for the Hazard #8 seam.





1626 00 1631 <sup>+</sup>	1 356000	State	1600 + 1574	+1628	1850 N 358000	+ 1721	1650	N 36000	100 000 miles	26+		+ 1539 1115 1115 1115 1115 1115 1115 1115	1584+	+ 1534 + 1553 + 1562	+ 1536 N 36400
DRAWN BY:         LF         DATE:         I0/9/08           CHECKED BY:         SCALE:         I"- 4,00"	RECLAMATION	REVDATEDESCRIPTIONREVDATERI10/7/08ADDED NOTESR3R210/9/08ADDED NOTESR4	HEREBY CERTIFY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, IN ACCORDANCE WITH 405 KAR 7:040, SECTION IO, THAT THIS DOCUMENT IS CORRECT AS DETERMINED BY ACCEPTED ENGINEERING PRACTICES / INCLUDES ALL THE INFORMATION REQUIRED OF IT BY KRS CHAPTER 35 AND KAR TITLE 405.	CHEYENNE RESOURCES, 1965 MONTGOMERY CREEK ROAD VICCO, KY 41773	CURRENT TOTAL WALL BACKFILLED 6,870' TOTAL NEW WALL 4,780' REMAINING WALL 11,650' TOTAL WALL REMAINING OR NEW	AREA 4 - FINISHED IN 3 YEARS AREA 5 - FINISHED IN 5 YEARS	5,200 - 8 WALL BACKFILLED 4,050' - 7 WALL BACKFILLED 880' - 5 WALL BACKFILLED 18,310' - TOTAL WALL BACKFILLED 3,080' - 7 WALL NEW OR REMAINING 3,650 8 WALL NEW OR REMAINING 1380' - 9 WALL NEW	EA 3	AREA 2 - FINISHED IN 18 MONTHS 1,340' - 5A WALL BACKFILLED 1,340' - TOTAL WALL BACKFILLED 940' - NEW WALL	1,550' - 7 WALL BACKFILLED 3,260' - TOTAL WALL BACKFILLED 1,900' - NEW 7 WALL 700' - NEW 8 WALL	AREA 1 - FINISHED IN 18 MONTHS	URI	OPEN WALL 3/2006 WALL BACKFILLED OR ELIMINATED	or and the second secon	
SHEET NO.	PLAN	DESCRIPTION	LIEF, IN DOCUMENT RACTICES AND CHAPTER 350	ES, INC.	ALS	RS	4.1	AYS RECLAIMED	NTHS		ONTHS	GRADED, AND OPEN WALL 7/2008	ELIMINATED	1200'	

