JLB- CME - 11/29/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 1 of 8
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	1233		Measure	d Static Water I	Levels		Method Drilling:	Continuous Core
Surface Elev.	178	7.00		Date	Depth	Elevation		Date Drilled: Drilled By:	12/18/2012 - 12/21/2012 Hetager Drilling
Currace Liev.	170	1.00	•	Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	т		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF			CMI management l			•	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured b			•	Laboratory: Northing:	Geochemical 293504.87
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1520367.48
Upper Freeport		390.6	1396.4	_				Grid Coordinates:	
Upper Kittanning		469.3	1317.7						
Middle Kittanning Lower Kittanning		486.0 555.4	1301.0 1231.6						
					ription: rock type, v				
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, min entrations, pyrite, et		Water Conditions	% Recovery	% RQD
(,	(11)	##########	(1001)		omanono, pymo, ot	<u>. </u>	Containono		
		######################################	<u> </u>	4					
		#########							
		#########		5	Sandy Clay, brown				
		######################################	-	-					
		#######################################							
10.0	10.0	######################################	10	_					
		=======							
			<u> </u>	Sha	le, brown, weathered				
14.0	4.0		<u> </u>	<u>1</u>					
		=======		_					
			- -	1					
		=======		1					
				4					
			20						
		=======		1	Shale, black				
			- -	-	Stidle, black				
		=======							
			- -	1					
		=======							
				4					
31.0	17.0		30						
20.0	0.0	000000000000	<u> </u>	Limestone,	black with fossils (An	nes LS)			
33.0	2.0	000000000000							
		=======							
		=========	-	-	Shale, black				
		=======							
40.5	7.5		40	1					
41.0	0.5				Ames Coal				
		######################################	<u> </u>	4					
		#########							
		######################################	<u> </u>	Cla	aystone, gray, limey				
		##########		-					
48.0	7.0	#########							
			50	†					
			- -	1					
				1					
			<u> </u>	-					
				<u> </u>					
			60	-					
			<u> </u>	4					
				1	Sandstone, gray				
			<u> </u>	1					
			느 -	1					
]					
			70	1					
				1					
			- -	-					
				1					
			<u> </u>	4					
			- -	1					
]					
			80	†					

JLB- CME - 10/01				7.1A GEO	DLOGIC DRI	ILL LOG			0721-S164 Page 2 of 8
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	233		Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1787	7.00		Date	Depth	Elevation		Date Drilled: Drilled By:	12/18/2012 - 12/21/2012 Hetager Drilling
-			•	Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	T		ND				Municipality:	Donegal
Survey Method:	GF	es.						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
-		Bottom	Bottom	SWL measured	by:		_	Laboratory:	Geochemical
		Depth	Elevation				_	Northing:	293504.87
Coal Sea Upper Freeport	ım ID	(ft) 390.6	(MSL) 1396.4	_				Easting: Grid Coordinates:	1520367.48
Upper Kittanning		469.3	1317.7					Ona ocoramates.	
Middle Kittanning		486.0	1301.0						
Lower Kittanning		555.4	1231.6	Lithologic Desc	cription: rock type	e. weathering.			
Depth	Thickness	Graphic	Scale	color, for	ssils, carbonate, m	ninerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conc	entrations, pyrite,	etc.	Conditions		
			- -	1	Sandstone, gray				
				1	Canastone, gray				
85.0	37.0	÷=÷=÷=÷=							
		+=+=+=+=							
		+=+=+=+= +=+=+=+=	_ _	1					
		÷=÷=÷=÷=	90	1					
		+=+=+=+= +=+=+=+=	<u> </u>	1					
		+=+=+=+= 	_ =	4					
		+=+=+=+= +=+=+=+=		1					
		+=+=+=+= +=+=+=+=	<u> </u>	-					
		+=+=+=+=		Si	iltstone, gray and re	d			
		+=+=+=+= +=+=+=+=	100	+					
		÷=÷=÷=÷=		1					
		+=+=+=+= +=+=+=+=	_	-					
		÷=÷=÷=÷=							
		+=+=+=+= +=+=+=+=		1					
		+=+=+=+= +=+=+=+=		1					
109.0	24.0	÷=÷=÷=÷=	-						
		:=:=:=:=:=:= :=:=:=:=:=:=	110	-					
		:=:=:=:=:=							
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			- -	1					
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123.0	14.0	:=:=:=:=:=:=							
				1					
			- -	1					
		=======							
			130	1					
				-					
				1					
			- -	Sha	ale, black (LB Horizo	on)			
				7					
			<u> </u>	1					
			140	4					
		=======		1					
			_ _	1					
445.0	20.0			1					
145.0	22.0			<u> </u>			-		
				7					
				1					
			150	-					
		========		1	011				
			_ _	1	Shale, gray				
		=======		1					
			<u> </u>	1					
		=======		7					
			160	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DE	RILL LOG			0721-S164 Page 3 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	233			Measure	d Static Wat	er I evels		Method Drilling:	Continuous Core
									Date Drilled:	12/18/2012 - 12/21/2012
Surface Elev.	1787	7.00	-		Date	Depth	Elevation		Drilled By:	Hetager Drilling
		_			Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	31	-		ND				Municipality:	Donegal
Survey Method:	GF	9							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.	Gr	Bottom	-	Bottom	SWL measured b	hv:		-	Laboratory:	Geochemical
		Depth		Elevation	OWE Moderne		-	-	Northing:	293504.87
Coal Sea	am ID	(ft)		(MSL)					Easting:	1520367.48
Upper Freeport		390.6		1396.4	•				Grid Coordinates:	
Upper Kittanning		469.3		1317.7						
Middle Kittanning		486.0		1301.0						
Lower Kittanning		555.4		1231.6						1
Depth	Thickness	Graphic		Scale		cription: rock ty ssils, carbonate,		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrit		Conditions	,	
			<u> </u>	_		Shale, gray				
162.4	17.4		_			Silale, gray				
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180.9	18.5	+=+=+=+=								
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			<u> </u>							
			<u> </u>	400		Shale, gray				
				190						
			<u> </u>	_						
				_						
196.0	15.1									
		+=+=+=+= +=+=+=+=	\vdash	_						
						Siltstone, red				
200.0	4.8	+=+=+=+=		200						
200.8 201.3	0.5	+=+=+=+= 000000000000			Limestone, gr	ray with fossils (C	Cambridge LS)			
		+=+=+=+=+								
		+=+=+=+= +=+=+=+=	\vdash	_						
		+=+=+=+=						1		
		÷=÷=÷=÷=	Ē	_	Silts	stone, black and	gray	1		
		+=+=+=+= +=+=+=+=	H	_				1		
		÷=÷=÷=÷=		210						
210.5	9.2	+=+=+=+= = = = = = =	-					1		
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JLB- CME - 10/01				7.1A GE	OLOGIC DE	RILL LOG			0721-S164 Page 4 of 8
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	233	-	Measure	ed Static Wat	er I evels		Method Drilling:	Continuous Core
								Date Drilled:	12/18/2012 - 12/21/2012
Surface Elev.	1787	7.00	<u>.</u>	Date	Depth	Elevation		Drilled By:	Hetager Drilling
		_		Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	-1	•	ND				Municipality:	Donegal
Survey Method:	GF	ie						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.	Gr	Bottom	Bottom	SWL measured	by:		-	Laboratory:	Geochemical
		Depth	Elevatio				•	Northing:	293504.87
Coal Sea	am ID	(ft)	(MSL)	-				Easting:	1520367.48
Upper Freeport		390.6	1396.4					Grid Coordinates:	
Upper Kittanning		469.3	1317.7						
Middle Kittanning		486.0	1301.0						
Lower Kittanning		555.4	1231.6						
Donth	Thislman	Crambia	Caala		cription: rock ty		10/0404	% Recovery	% RQD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ssils, carbonate, centrations, pyrite		Water Conditions	76 Recovery	76 KQD
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250.8	40.3	:=:=:=:=:=:=							
252.0	2.2	00000000000	—	Limestone, bla	ack with fossils (B	rush Creek LS)			
253.0	2.2	00000000000000000000000000000000000000		1					
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			260						
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				\dashv					
				_					
			_						
			270		Shale, black				
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				_					
			-	\dashv					
			280	_					
			200						
				_					
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286.4	33.4								
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JLB- CME - 10/01				7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 5 of 8
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	233		Measure	d Static Wate	ar I evels		Method Drilling:	Continuous Core
								Date Drilled:	12/18/2012 - 12/21/2012
Surface Elev.	1787	7.00		Date	Depth	Elevation		Drilled By:	Hetager Drilling
C		· -		Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by: Survey	LC	·l		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GP	s						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	ov:			Laboratory:	Geochemical
		Depth	Elevation			-	•	Northing:	293504.87
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1520367.48
Upper Freeport		390.6	1396.4					Grid Coordinates:	
Upper Kittanning		469.3	1317.7						
Middle Kittanning Lower Kittanning		486.0 555.4	1301.0 1231.6						
Lower rattarining		000.4	1201.0	Lithologic Desc	ription: rock typ	e. weathering.			
Depth	Thickness	Graphic	Scale	color, fos	sils, carbonate,	minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log :=:=:=:=:=	(feet)	conce	entrations, pyrite	, etc.	Conditions		
		:=:=:=:=:=:=	-	1					
		:=:=:=:=:=							
		:=:=:=:=:=:=							
			-	1					
		:=:=:=:=:=:=							
			<u> </u>	1					
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354.0	67.6	:=:=:=:=:=:=							
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			360						
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]					
			370	1					
]	Sandstone, gray				
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			- -	1					
]					
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			380	1					
				1					
			<u> </u>	1					
			- -	1					
388.0	34.0		- -	1					
	U-1.U		_		Shale, black				
390.1	2.1		390	11.	pper Freeport Co	al			
390.6	0.5	##########		l U	hhei i ieehoii 00	AI			
		#########		1					
		##########	<u> </u>	-					
		######################################	- -	†	Claystone, gray				
		##########		1	,				
		######################################	<u> </u>	-					
		######################################	400	1					

II D. CME 10/01					7 1A GEO	DLOGIC DR	III LOG			0721-S164 Page 6 of 8
JLB- CME - 10/01					7.17 020	DECOIO DIN	ILL LOO		Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-	1233			Magazza	d Static Wate	r I avala		Method Drilling:	Continuous Core
•			,		Weasure		Leveis		Date Drilled:	12/18/2012 - 12/21/2012
Surface Elev.	178	7.00			Date	Depth	Elevation		Drilled By:	Hetager Drilling
		_			Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	<i>i</i> 1			ND				Municipality:	Donegal
Survey Method:	GI	90							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
Mictiliou.	- 0.	Bottom		Bottom	SWL measured	bv:		•	Laboratory:	Geochemical
		Depth		Elevation		~,.		-	Northing:	293504.87
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1520367.48
Upper Freeport		390.6		1396.4					Grid Coordinates:	
Upper Kittanning		469.3		1317.7						
Middle Kittanning Lower Kittanning		486.0 555.4		1301.0 1231.6						
Lower Killarining		333.4		1231.0	Lithologic Des	cription: rock type	e weathering			
Depth	Thickness	Graphic		Scale		ssils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conc	centrations, pyrite,	etc.	Conditions		
		######################################	_	_	1	Claustone area				
		################				Claystone, gray				
404.0	13.4	########## :=:=:=:=:=:=:=								
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					1	Sandy Shale, gray				
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		=======		440						
			_	_	4					
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467.3	38.3		_	_	-					
407.3	30.3					pper Kittanning Coa	al	1		
469.3	2.0			-	1	Phei villatitillid 009	A1			
				470	1					
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			—	_	1	Shale, black				
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				_	1					
				480	1			1	1	1

JLB- CME - 10/01				7.1A GEO	DLOGIC DRILL	LOG			0721-S164 Page 7 of 8
SEB OINE 1001								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-	1233		Measure	d Static Water Lev	vels		Method Drilling:	Continuous Core
O	470							Date Drilled:	12/18/2012 - 12/21/2012
Surface Elev.	1/8	7.00		Date Measured	•	levation (MSL)	Notes	Drilled By: Logged By:	Hetager Drilling Don Bergreen Jr.
Surveyed by:	LC	ст		ND	(it)	(IVIOL)	140163	Municipality:	Donegal Donegal
Survey								County, State:	Westmoreland, PA
Method:	GI	PS						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured	by:		i	Laboratory:	Geochemical
0 - 1 0 -	ID	Depth	Elevation					Northing:	293504.87
Coal Sea Upper Freeport	am ID	(ft) 390.6	(MSL) 1396.4	-				Easting: Grid Coordinates:	1520367.48
Upper Kittanning		469.3	1317.7					Grid Goordinates.	
Middle Kittanning		486.0	1301.0						
Lower Kittanning		555.4	1231.6						
Depth	Thickness	Graphic	Scale		cription: rock type, wea ssils, carbonate, mineral		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, etc.		Conditions	,	
				_					
					Shale, black				
405.5	40.0	=======							
485.5 486.0	16.2 0.5	=======		M	iddle Kittanning Coal				
		########			-				
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		######################################		_	Claystone, gray				
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517.0	31.0	######################################		_					
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			520						
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			E20	4					
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]	Shale, dark gray				
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			-	1					
			- -	4					
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EEO C	22.0	=======	550	4					
550.8	33.8	=======							
				Lo	ower Kittanning Coal				
555.4	4.6		<u> </u>	-	J				
555.4	7.0	÷=÷=÷=÷=							
		+=+=+=+= 	<u> </u>	4	Siltstone, gray				
		+=+=+=+= +=+=+=+=	-	1	Cindidition, gray				
		+=+=+=+=	560	1					1

JLB- CME - 10/01					7.1A GEC	LOGIC DE	RILL LOG			0721-S164 Page 8 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	233	_		Measure	d Static Wat	er Levels		Method Drilling:	Continuous Core
:	4-0-								Date Drilled:	12/18/2012 - 12/21/2012
Surface Elev.	1787	.00	-		Date	Depth	Elevation	Natas	Drilled By:	Hetager Drilling
Surveyed by:	LC	т			Measured ND	(ft)	(MSL)	Notes	Logged By: Municipality:	Don Bergreen Jr.
Survey	LC	• 1	-		ND				County, State:	Donegal Westmoreland, PA
Method:	GP	s							Quadrangle:	Stahlstown, PA
-		Bottom	•	Bottom	SWL measured I	by:		•	Laboratory:	Geochemical
		Depth		Elevation		-		<u>.</u> '	Northing:	293504.87
Coal Sea	ım ID	(ft)		(MSL)	-				Easting:	1520367.48
Upper Freeport		390.6		1396.4					Grid Coordinates:	
Upper Kittanning Middle Kittanning		469.3 486.0		1317.7 1301.0						
Lower Kittanning		555.4		1231.6						
201101 Tuttariiiiig		000.1		120110	Lithologic Desc	cription: rock ty	pe, weathering,			
Depth	Thickness	Graphic		Scale	color, fos	ssils, carbonate,	minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log +=+=+=+=		(feet)	conce	entrations, pyrite	e, etc.	Conditions		
			—	_						
		÷=÷=÷=÷=		_						
		÷=÷=÷=÷=	—	_		Siltstone, gray				
		+=+=+=+= +=+=+=+=	\vdash	_						
		÷=÷=÷=÷=		_						
569.0	13.6	+=+=+=+=								
			—	570	Bottom of H	Hole DH 1233 De	pth 569 feet			
			\vdash	_	1					
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			—		-					
				580	-					
				_						
				_						
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			<u> </u>	_						
			\vdash	_	-					
				590						
			—							
			 							
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			—	600	-					
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			\vdash	630	1					
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					7 1 A GE	DLOGIC DRI	LLLOG			0704 0404 Para 4 of 5
JLB- CME - 11/29/01					7.TA GEO	JEUGIC DKI	LL LUG		On anotion Name	0721-S164 Page 1 of 5
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	1320	-		Measure	d Static Water	Levels		Method Drilling:	Continuous Core
									Date Drilled:	8/26/2013-8/28/2013
Surface Elev.	173	4.70			Date	Depth	Elevation		Drilled By:	Sano Drilling
			_		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	`T			ND				Municipality:	Donegal
Survey		<u> </u>	-		.12				County, State:	
Survey										Westmoreland, PA
Method:	GF		-					_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured	by:		-	Laboratory:	Geochemical
		Depth		Elevation					Northing:	288406.8
Coal Sea	am ID	(ft)		(MSL)					Easting:	1508738.5
Mahoning		114.9		1619.8	_				Grid Coordinates:	
Upper Freeport		162.9		1571.8						
Middle Kittanning		295.2		1439.5						
Lower Kittanning		371.7		1363.0						
						cription: rock type				
Depth	Thickness	Graphic		Scale		ssils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	cond	entrations, pyrite,	etc.	Conditions		
		##########		_						
		#########		_						
		##########		_	-					
		#########	_	_						
		#########	_	_						
		##########	_	-	+					
		######################################	_	_						
		#######################################	_	_						
		###########	_	10						
		##########		.0	1	Silty Clay, brown		I		1
		##########		_	1			I		1
		##########		_	1			I		
		#########			1			I		1
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		#########								
		#########								
		#########		_						
		##########		20						
20.2	20.2	#########								
				_						
		=======		_						
				_	Shale, b	prown and gray, wea	thered			
				·	-					
00.5	0.0		<u> </u>	_						
26.5	6.3	========								
			<u> </u>	_	-					
			_	30	=					
				30	1					
			_	_		Shale, gray				
			_	_						
		========	_	_						
				_						
35.4	8.9	=======	_							
				_						
		========								
				40		Shale, dark gray				
				·	-					
40.0	0.0		<u> </u>	_						
42.2 43.2	6.8 1.0	00000000000			Limestone ar	ray with fossils (Brus	h Creek I S)	1		
43.2	1.0	======			Limestone, gr	ay with 1000ilo (Dido	II OICCK LO)			
			\vdash		1			I		
				_	1			I		
				_	1			I		1
								I		1
				50	_			I		1
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			<u></u>		1			I		1
			_	-	+	Shale, dark gray				
			_	_		onaro, dam gray				
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		========	_	_						
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			L	_				I		1
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		=======	_	_	4			I		
			<u> </u>	70	4			I		
70.6	27.4		-		1			4		
			<u> </u>	_	4			I		
			<u> </u>		-			I		
			<u> </u>		1			I		
			\vdash	_	Shale o	ray with sandstone s	streaks	I		
			\vdash		- C.I.G.IC, 9	, ., במותסוטווס כ		I		
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				80	1			1		

JLB- CME - 10/01					7.1A GEO	LOGIC DE	RILL LOG			0721-S164 Page 2 of 5
	DH-1320								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	320	-		Measured	d Static Wat	ter Levels		Method Drilling:	Continuous Core
Surface Elev.	1734	1.70			Date	Depth	Elevation		Date Drilled: Drilled By:	8/26/2013-8/28/2013 Sano Drilling
Currace Liev.	175		-		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т			ND	` '	,		Municipality:	Donegal
Survey			_						County, State:	Westmoreland, PA
Method:	GF		-						Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	oy:	-		Laboratory: Northing:	Geochemical 288406.8
Coal Sea	ım ID	(ft)		(MSL)					Easting:	1508738.5
Mahoning		114.9		1619.8	_				Grid Coordinates:	
Upper Freeport Middle Kittanning		162.9 295.2		1571.8 1439.5						
Lower Kittanning		371.7		1363.0						
Donth	Thiskness	Crambia		Coolo	Lithologic Desc			Mater	% Recovery	% RQD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, entrations, pyrit		Water Conditions	76 Recovery	/0 KQD
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				_						
			<u> </u>	90						
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			\vdash	_	1					
				_]					
			<u> </u>	_	-					
				_	Shale, gra	ay with sandston	ne streaks			
			H	_	-					
			\vdash	100	1					
				_						
			<u> </u>	_						
				_						
			—	_	1					
				_						
			<u> </u>	_						
				110						
			<u> </u>	_	-					
113.0	42.4		-	_	1					
111.0	1.0			_		Mahoning Coal				
114.9	1.9					Shale, gray, lime				
116.9	2.0				`	onale, gray, lime	у			
			<u> </u>	_						
				120		Clayshale, gray				
121.3	4.4		<u> </u>	_						
				_						
			—	_	1					
				_						
			—	_	1					
				_						
			-	130	1					
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			H	_	1					
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			—	140						
						Shale, gray				
				_		Orlaio, gray				
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160.2	20.0	=======	\vdash	400	1			1		1

				7.1A GEO	LOGIC DR	11.1.06			
JLB- CME - 10/01				7.1A GEO	LOGIC DR	ILL LOG		Operation Name :	0721-S164 Page 3 of 5 Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	320						Method Drilling:	Continuous Core
•			•	Measure	d Static Wate	er Leveis		Date Drilled:	8/26/2013-8/28/2013
Surface Elev.	1734	1.70		Date	Depth	Elevation		Drilled By:	Sano Drilling
				Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	<u>T</u>		ND				Municipality:	Donegal
Survey Method:	GF	96						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.	Gi	Bottom	Bottom	SWL measured b	hv:		=	Laboratory:	Geochemical
		Depth	Elevation		-,-		=	Northing:	288406.8
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1508738.5
Mahoning		114.9	1619.8					Grid Coordinates:	
Upper Freeport Middle Kittanning		162.9 295.2	1571.8 1439.5						
Lower Kittanning		371.7	1363.0						_
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	cription: rock typ ssils, carbonate, r entrations, pyrite	ninerals,	Water Conditions	% Recovery	% RQD
161.2	1.0				Shale, dark gray		_		
162.9	1.7			- U _l	pper Freeport Coa	ıl			
			<u> </u>	-	Clayshale, gray				
167.0	4.1								
			- -	1	o				
			170		Shale, gray				
171.0 172.0	4.0 1.0			 	Sandstone, gray		4		
172.0	1.0				zanaciono, gray		1		
			<u> </u>	4					
				1					
				1	Shale, gray				
		========	180						
				-					
185.0	13.0			4					
100.0	10.0	##########							
		######################################	<u> </u>	4	Claystone, gray				
189.0	4.0	##########	_						
			190	_					
				4					
				1					
]					
				1					
		========			Shale, gray				
			200	-					
			- -	-					
				1					
			- -	1					
207.5	18.5		_	1					
			210	-					
				1					
				4					
			<u> </u>	1					
			<u> </u>	-					
				1					
				4					
			220	1					
				_					
				1					
				4	Shale, dark gray				
				_					
			_ =	4					
		=========	<u> </u>	1					
			230]					
				†					
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			- -	1					
]					

JLB- CME - 10/01				7.1A GE0	DLOGIC DRI	LL LOG			0721-S164 Page 4 of 5
OLD OME 1001								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	320		Moasuro	d Static Wate	r I ovole		Method Drilling:	Continuous Core
								Date Drilled:	8/26/2013-8/28/2013
Surface Elev.	1734	1.70	-	Date	Depth	Elevation		Drilled By:	Sano Drilling
		_		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	<u> </u>	-	ND				Municipality:	Donegal Nonegal
Survey Method:	GF	99						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u> </u>	Bottom	Bottom	SWL measured	bv:		_	Laboratory:	Geochemical
		Depth	Elevation				_	Northing:	288406.8
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1508738.5
Mahoning		114.9	1619.8					Grid Coordinates:	
Upper Freeport Middle Kittanning		162.9 295.2	1571.8 1439.5						
Lower Kittanning		371.7	1363.0						
					cription: rock type			0/ Danassams	W DOD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ssils, carbonate, m centrations, pyrite,		Water Conditions	% Recovery	% RQD
()		========							
			<u> </u>						
					Shale, dark gray				
246.0	38.5						4		
			_						
			250	+					
				1	Sandstone, gray				
			<u> </u>	4					
			-	+					
			_ =						
257.0	11.0						-		
			260	_					
				San	dstone, gray with sh	ale			
265.2	8.2		- -	=					
			- -	-					
		=======	270	4					
				1					
			- -	+					
			<u> </u>						
			_		Shale, dark gray				
			280		Silale, dark gray				
			- -	+					
			<u> </u>	+					
				1					
			- -	4					
			<u></u> −	₫					
			290	4					
			_	1					
293.2	28.0	=======		1			4		
295.2	2.0		-	М	iddle Kittanning Coa	al			
			<u> </u>				1		
			- -	+					
		=======	300	4	Shale, gray				
			- -	=					
		=======	_ =						
304.2	9.0	00000000000000000000000000000000000000		+			+		
		000000000000		Ī					
		000000000000	<u> </u>	Limestone, d	dark gray (Middle Kit	tanning LS)			
309.0	4.8	00000000000 00000000000	<u> </u>	<u> </u>					
		=======	310	4					
			- -	+	Oh - '				
				1	Shale, gray				
245.4	6.4		_ =	4					
315.4 315.8	6.4 0.4			<u> </u>	Shale, dark gray				
			- -	+	Clayshale, gray				
			320	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 5 of 5
3EB- GWIE - 10/01						20010 211			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	320				100-0-1			Method Drilling:	Continuous Core
•			•		Measure	d Static Wate	r Leveis		Date Drilled:	8/26/2013-8/28/2013
Surface Elev.	1734	1.70			Date	Depth	Elevation		Drilled By:	Sano Drilling
•			•		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т			ND				Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF	rs							Quadrangle:	Stahlstown, PA
		Bottom	=	Bottom	SWL measured b	by:		-	Laboratory:	Geochemical
		Depth		Elevation					Northing:	288406.8
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1508738.5
Mahoning		114.9		1619.8					Grid Coordinates:	
Upper Freeport Middle Kittanning		162.9 295.2		1571.8 1439.5						
Lower Kittanning		371.7		1363.0						
						ription: rock type				
Depth (ft)	Thickness	Graphic		Scale (feet)		sils, carbonate, mentrations, pyrite,		Water Conditions	% Recovery	% RQD
(11)	(ft)	Log		(icei)	COIICE		etc.	Conditions		
322.0	6.2					Clayshale, gray				
323.0	1.0					Shale, dark gray				
				_						
			_	_	1					
		=======	<u> </u>	_	1					
			—	330	1					
		========		555	1					
		=======				Shale, gray				
			—	_	1					
			\vdash	_	1					
				_						
				_						
			_	_						
340.2	17.2		_	340	1					
								1		
			_	_						
			_	_						
				_						
			_	_						
			_	_	1					
				350						
			_							
				_	Sandston	ne, gray with shale,	streaks			
				_	Gariacion	io, gray war oralo,	ou ouno			
			_	_	1					
			_	_						
				_						
			—	360	+					
				000						
			_	_						
			\vdash	_	1					
365.7	25.5			_						
366.7	1.0					Shale, dark gray		1		
			\vdash	_	1					
				370	Lo	wer Kittanning Coa	al			
274.7	F 0		—		-					
371.7 372.7	5.0 1.0					Shale, dark gray		†		
				_				1		
		=======	<u> </u>	_	1					
			H	_	1					
		========	_		,	Shale, gray, limey				
				380	+					
382.0	9.3		_							
			-		4					
			—		+					
				_]	Shale, gray				
		=======		_		Orlaie, gray				
			H	_	1					
390.0	8.0		_	390	1					
				_	1	_]		
			—	_	1	Shale, dark gray				
				_	1	uun gray				
395.2	5.2			-				1		
			H	_	Bottom of He	ole DH 1320 Depth	395.2 feet			
				_	20					
			i	400	1			1	i	i

JLB- CME - 11/29/01					7.1A GFO	LOGIC DRI	LLOG			0721-S164 Page 1 of 5
JEB- CME - 11/29/01					7.1A OLO	LOGIO DIVI	LL LOO		Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	321				100-0-1			Method Drilling:	Continuous Core
-		-			weasured	d Static Water	Leveis		Date Drilled:	8/29/2013-9/3/2013
Surface Elev.	1739	.00			Date	Depth	Elevation		Drilled By:	Sano Drilling
-					Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т			ND				Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF	S							Quadrangle:	Stahlstown, PA
_		Bottom	E	Bottom	SWL measured b	oy:		- -	Laboratory:	Geochemical
		Depth		evation					Northing:	287637.8
Coal Sea	ım ID	(ft)		(MSL)					Easting:	1507860.5
Coal		51.2		1687.8	Lower Kittanning	355.2	1383.8		Grid Coordinates:	
Mahoning Upper Freeport		103.2 154.5		1635.8 1584.5						
Middle Kittanning		294.9		1444.1						
						ription: rock type				
Depth	Thickness	Graphic		Scale		sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log ####################################	(feet)	conce	entrations, pyrite, e	etc.	Conditions		
		##########	_	_						
		##########		_						
		#########								
		######################################	_							
		##########	_	_						
		##########		_						
		##########								
		########## ###########################		10	:	Silty Clay, brown				
		##########	_	_						
		##########	_	_						
		##########								
		######################################	_	-						
		##########	_	_						
		#########								
00.0	00.0	#########								
20.2	20.2	#########		20				-		
				-						
				_						
				_						
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			_							
			_	30						
				30						
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				_						
			_	_		Shale, dark gray				
			_	_						
				40						
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			_							
		=======	_	_						
			_							
			_	-						
50.2	30.0			50				_		
51.2	1.0					Coal Shale, dark gray		4		
52.0 52.3	0.8	00000000000				ay with fossils (Brus	n Creek LS)	†		
		=======		_	, g	- (55	· · · · · · · · · · · · · · · · · · ·	1		
		=======								
					,	Shale, gray, limey				
			_	_		, g,,,				
59.2	6.9			60				_		
				_						
			_	_						
				_						
			_	-						
			_	-						
			_	_		Shale, gray				
		=======		70		, 57				
				70						
			_							
		=======	_	_						
			_							
75.2	16.0		_	_						
				_				1		
		=======	_	_		Shale, dark gray				
79.2	4.0			80						

JLB- CME - 10/01					7.1A GEC	DLOGIC DRI	LL LOG			0721-S164 Page 2 of 5
OLD OINE 1001									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	321			Moasuro	d Static Wate	r I ovole		Method Drilling:	Continuous Core
									Date Drilled:	8/29/2013-9/3/2013
Surface Elev.	1739	0.00			Date	Depth	Elevation		Drilled By:	Sano Drilling
		_			Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	Т			ND				Municipality:	Donegal
Survey Method:	GF	ie							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.	- Gr	Bottom		Bottom	SWL measured	hv:		-	Laboratory:	Geochemical Geochemical
		Depth		Elevation	OVIE III Casarca	by.		-	Northing:	287637.8
Coal Sea	ım ID	(ft)		(MSL)					Easting:	1507860.5
Coal		51.2		1687.8	Lower Kittanning 3	355.2	1383.80		Grid Coordinates:	
Mahoning		103.2		1635.8						
Upper Freeport Middle Kittanning		154.5 294.9		1584.5 1444.1						
Wilddie Pattarining		204.0		1444.1	Lithologic Desc	cription: rock type	, weathering,			
Depth	Thickness	Graphic		Scale	color, for	ssils, carbonate, m	inerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conc	centrations, pyrite,	etc.	Conditions		
				_						
				_		Sandstone, gray				
			_							
86.0	6.8		_							
			_							
			-	90						
		=======				Shale, gray				
			_	_		, 3,				
			-	_						
				_						
96.0	10.0									
			_							
				_		Shale, dark gray				
101.2	F 2	=========		100						
101.2	5.2					Mahanina Caal				
103.2	2.0					Mahoning Coal				
104.5	1.3	######################################	_	_		Claystone, gray				
105.4	0.9					Sandstone, gray				
			_	_						
			_	110						
			_	-						
				_						
				_						
			_							
			_							
				_						
				120						
				_						
				_						
			_	_						
				_						
			_	_		Shale, gray				
			—	_						
				130						
			_	_						
				_						
				_						
			_	_						
				_						
				_						
			_	140						
			_	_						
			-	_						
				_						
147.0	A1 G		<u> </u>	_						
147.0	41.6							1		
				_						
				150		Shale, dark gray				
				_						
152.8	5.8									
154.5	1.7		-	_	U	Jpper Freeport Coal				
104.0	1.7							1		
						Shale, gray, limey				
158.5	4.0		_	_						
.00.0				160		Shale, grav		1		I

JLB- CME - 10/01					7.1A GEO	LOGIC DE	RILL LOG			0721-S164 Page 3 of 5
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	321			Measured	d Static Wat	er Levels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	1739	.00			Date	Depth	Elevation		Drilled By:	8/29/2013-9/3/2013 Sano Drilling
ouridoo Elovi	1100		•		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т	_		ND	` '	· ·		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GF			Bottom	SWL measured b			•	Quadrangle:	Stahlstown, PA
		Bottom Depth		Elevation	SWL measured t	Jy.		•	Laboratory: Northing:	Geochemical 287637.8
Coal Sea	am ID	(ft)		(MSL)					Easting:	1507860.5
Coal		51.2		1687.8	Lower Kittanning 3	55.2	1383.80		Grid Coordinates:	
Mahoning Upper Freeport		103.2 154.5		1635.8 1584.5						
Middle Kittanning		294.9		1444.1						
Depth	Thickness	Graphic		Scale	Lithologic Desc color, fos	ription: rock ty sils, carbonate,		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrit		Conditions	, in the second second	
			_	_	1					
				_						
			_	_						
				_						
			_	_	-					
				_						
				170						
			_	_	1					
				_	4					
			_	_						
		=======		_						
			_	_	-					
				400						
				180						
			_	_	-					
				_						
			_	_	-					
				_						
			_	_	-					
				190						
			_	_	-					
				_						
			_	_	1					
				_						
			_	_						
		=======								
				200	-	Shale, gray				
				_						
				_						
		=========	_	_	-					
				_	1					
			_	_	-					
				210	1					
			H	_	1					
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				220						
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				230	1					
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JLB- CME - 10/01				7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 4 of 5
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	321		Measure	d Static Wate	r I evels		Method Drilling:	Continuous Core
		mododio	a olalio malo	. 201010		Date Drilled:	8/29/2013-9/3/2013		
Surface Elev.	1739	9.00		Date	Depth	Elevation		Drilled By:	Sano Drilling
-				Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	es						Quadrangle:	Stahlstown, PA
-		Bottom	Bottom	SWL measured b	bv:		_	Laboratory:	Geochemical
		Depth	Elevation		•		_	Northing:	287637.8
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1507860.5
Coal		51.2	1687.8	Lower Kittanning 3	55.2	1383.80		Grid Coordinates:	
Mahoning		103.2	1635.8	3 -					-
Upper Freeport		154.5	1584.5						
Middle Kittanning		294.9	1444.1						_
					ription: rock type			0/ 5	a, 200
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, n entrations, pyrite,		Water Conditions	% Recovery	% RQD
(it)	(11)	Log	(reer)	Conce	entrations, pyrite,	eic.	Conditions		
		=======	_	1					
		=======							
		========							
					Shale, gray				
		=======		-					
				1					
249.0	90.5			1					
			250				1		
				4					
				4					
				Condata	ne, gray with coal	streaks			
				Sanusto	no, gray with coal:	Sucano			
				1					
			_	1					
260.0	11.0		260						
		=======		4	Chala aray				
263.0	3.0			4	Shale, gray				
203.0	3.0								
			_						
		=======							
		=======		4					
		======	270	-					
			270	-					
				1					
		=======		1					
		=======							
		======		-					
				-					
				1	Shale, dark gray				
		=======	280						
		=======							
		=======		_					
				4					
				1					
			_	1					
			_						
			_ =	1					
				4					
			290	1					
				1					
292.7	29.7		_	1]		
293.5	0.8				Sandstone, gray		1		
294.9	1.4				ddle Kittanning Co	al	4		
295.5	0.6				Shale, dark gray Shale, gray, limey		-		
297.0	1.5	00000000000		 	a.o, g.ay, iiiiey		1		
		00000000000]					
		000000000000	300						
		00000000000		Limestone,	, gray (Middle Kitta	nning LS)			
		00000000000		-		5 ,			
		000000000000 000000000000		1					
305.0	8.0	00000000000		1					
		=======					1		
		=======			Shale, gray				
		=======	_ =	4	o, gruy				
309.0	4.0	=======	040	1	Shale, dark gray		4		
310.0 311.5	1.0		310	 	Shale, dark gray Shale, gray		4		
311.5	0.6			<u> </u>	Shale, dark gray		1		
3.2	0.0			1			1		
		=======	_						
		=======	_ =	4					
		=======		4	Shale, gray				
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l				1					i

JLB- CME - 10/01				7.1A GE	OLOGIC DRI	LL LOG			0721-S164 Page 5 of 5
OED OINE 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	321		Moasuro	ed Static Water	Lovole		Method Drilling:	Continuous Core
								Date Drilled:	8/29/2013-9/3/2013
Surface Elev.	1739	.00	-	Date	Depth	Elevation		Drilled By:	Sano Drilling
		_		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	T	-	ND				Municipality:	Donegal
Survey Method:	GP	9						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u> </u>	Bottom	Bottom	SWL measured	bv:		_	Laboratory:	Geochemical
		Depth	Elevation		_		=	Northing:	287637.8
Coal Sea	am ID	(ft)	(MSL)					Easting:	1507860.5
Coal		51.2	1687.8	Lower Kittanning	355.2	1383.80		Grid Coordinates:	
Mahoning Upper Freeport		103.2 154.5	1635.8 1584.5						
Middle Kittanning		294.9	1444.1						
					scription: rock type			0/ Danassams	N/ BOD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ossils, carbonate, mi centrations, pyrite, e		Water Conditions	% Recovery	% RQD
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		=======	_						
			-						
		=======							
		=======	_						
			<u> </u>		Shale, gray				
			330						
				╛					
		=======	<u> </u>	_					
335.2	23.1	=========	 -	\dashv					
300.2	20.1						1		
			<u> </u>						
									
			340						
									
				Sandsto	one, gray with shale s	treaks			
			-						
			<u> </u>						
			350						
351.8	16.6		<u> </u>	_					
355.2	3.4		<u> </u>	⊣ '	ower Kittanning Coal				
		========			Shale, dark gray				
357.2	2.0								
		=======	360						
			<u> </u>	Cla	ayshale, gray with sha	le			
365.2	8.0		_						
	- +								
			<u> </u>	\dashv	Shale, gray				
				\exists	, g.wj				
370.2	5.0		370				4		
			<u> </u>	Bottom of I	Hole DH 1321 Depth	370.2 feet			
			 -	\dashv					
			<u> </u>						
				\exists					
			380						
			<u> </u>	\dashv					
			<u> </u>	\dashv					
			<u> </u>	\dashv					
			<u> </u>	\dashv					
			390						
				_					
			_	\dashv					
			 	\dashv					
			<u> </u>	\dashv					
			_						

JLB- CME - 11/29/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 1 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	322	-		Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1835	5.30			Date	Depth	Elevation		Date Drilled: Drilled By:	9/4/2013-9/9/2013 Sano Drilling
Currace Liev.	1000		-		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т	_		ND	• •	• •		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GF	Bottom	-	Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	OWE measured b	, y .			Northing:	288693.1
Coal Sea		(ft)		(MSL)	_				Easting:	1510360.8
Lower Bakerstown Mahoning Coal	1	89.7 260.4		1745.6 1574.9	Lower Kittanning	494.0	1341.3		Grid Coordinates:	
Upper Freeport		302.7		1574.9						
Middle Kittanning		429.2		1406.1	1					
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	ription: rock type sils, carbonate, n entrations, pyrite,	ninerals,	Water Conditions	% Recovery	% RQD
		######################################	-	_	1					
		#########		_						
		######################################	<u> </u>	_	+					
		##########		_						
		######################################		_	4					
		##########		_						
		######################################		10		Silty Clay, brown				
		#########		_	1					
		#######################################	F	_	4					
		######################################	_	_	-					
		#########		_						
		######################################	—	_	-					
		##########								
20.2	20.2	##########		20						
				_						
			H	_	-					
		=======		_	1					
			—	_	Shale, br	own and gray, we	athered			
		=======		_						
			H	30	+					
				_	1					
32.0	11.8									
			E	_						
				_	1					
				_						
				_	1					
				40						
				_	1	Shale, gray				
			<u> </u>	_	-					
				_	1					
		=========	H		-					
				_	1					
50.2	18.2		H	50	-					
55.2		========								
			\vdash	_	1					
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				_	1					
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				60						
				_	4					
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			\vdash		1	Ob also to				
				-	1	Shale, dark gray				
			\vdash	_	1					
					1					
				70	1					
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			\vdash	_	1					
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			<u> </u>	-	4					

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 2 of 7
II-I- N-	DII 4	000							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	322			Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 9/4/2013-9/9/2013
Surface Elev.	1835	5.30			Date	Depth	Elevation		Drilled By:	Sano Drilling
-					Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	Т			ND				Municipality:	Donegal
Survey Method:	GP	s							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
-	-	Bottom		Bottom	SWL measured b	oy:		-	Laboratory:	Geochemical
		Depth		Elevation		_		='	Northing:	288693.1
Coal Sea Lower Bakerstown		(ft)		(MSL)		404.0	1011.0		Easting:	1510360.8
Mahoning Coal	ı	89.7 260.4		1745.6 1574.9	Lower Kittanning	494.0	1341.3		Grid Coordinates:	
Upper Freeport		302.7		1532.6						
Middle Kittanning		429.2		1406.1	Lithologic Desc	ription: rock type,	weathering,			
Depth	Thickness	Graphic		Scale	color, fos	sils, carbonate, mi	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	Conce	entrations, pyrite, e	etc.	Conditions		
				_		Shale, dark gray				
84.0	33.8		_	_	-					
		=======		_	Shale	, dark gray with foss	sils			
85.6	1.6									
88.7	2.4			_		Shale, dark gray				
89.7	3.1 1.0			90	Low	ver Bakerstown Coa	ıl			
		=======		_	,	Chala arou limau				
93.0	3.3		_	_	†	Shale, gray, limey				
				_				1		
			_	_	1					
				_						
			_	_						
		========		100						
			_	_	-					
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			_	_	-					
				_	1					
		========		110		Shale, gray				
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		========	_		-					
				_	1					
		========		_						
			_	_	1					
				100						
				120	-					
				_						
			_	_	-					
406.0	22.0			_	1					
126.0	33.0							1		
		=======		_	4					
			E	130	s	shale, red and gray				
422.0	6.0				4					
132.0	6.0							1		
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				_		Shale, gray				
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JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG		I	0721-S164 Page 3 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	322		Measured	Static Water I	_evels		Method Drilling:	Continuous Core
								Date Drilled:	9/4/2013-9/9/2013
Surface Elev.	1835	5.30		Date	Depth	Elevation		Drilled By:	Sano Drilling
				Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	Τ		ND				Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GF		_				_	Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	y:		=	Laboratory:	Geochemical
		Depth	Elevation					Northing:	288693.1
Coal Sea		(ft)	(MSL)	_				Easting:	1510360.8
Lower Bakerstown	1	89.7	1745.6	Lower Kittanning	494.0	1341.3		Grid Coordinates:	- <u></u>
Mahoning Coal Upper Freeport		260.4 302.7	1574.9 1532.6						
Middle Kittanning		429.2	1406.1						
				Lithologic Descr	ription: rock type, v	veathering,			
Depth	Thickness	Graphic	Scale		sils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	ntrations, pyrite, et	3.	Conditions		
162.0	30.0			1	Shale, gray				
							1		
		=======							
		=======							
				+					
			- -	1					
			_						
			170	4					
			- -	- :	Shale, dark gray				
			- -	1					
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			- -	4					
				4					
180.4	18.4		180						
		000000000000		Limestone gra	y with fossils (Brush	Creek LS)			
182.2	1.8	00000000000		Limestone, gra	y with 1033ii3 (Brasii				
			_						
		=======							
		=======		4					
			190	+					
			190	-					
			_						
		=======	_	1	Shale, dark gray				
		=======							
		=======		4					
			200	4					
			-						
			_ =	4					
			- -	+					
				1					
640.0	07.0			4					
210.0	27.8	========	210				4		
			_	1					
]					
				4					
			- -	=					
			- -	†					
		=======	220	4					
				1					
		=======		4	Shale, gray				
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			- -	1					
				1					
			230						
				4					
			- -	4					
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JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 4 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	322			Measured	Static Water	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1835	30			Date	Depth	Elevation		Date Drilled: Drilled By:	9/4/2013-9/9/2013 Sano Drilling
Ourrace Liev.	1000				Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т			ND	` '	, ,		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GP	Bottom		Bottom	SWL measured b			_	Quadrangle: Laboratory:	Stahlstown, PA
		Depth		Elevation	SWL measured b	·y		-	Northing:	Geochemical 288693.1
Coal Sea	ım ID	(ft)		(MSL)					Easting:	1510360.8
Lower Bakerstown	1	89.7		1745.6	Lower Kittanning	494.0	1341.3		Grid Coordinates:	
Mahoning Coal Upper Freeport		260.4 302.7		1574.9 1532.6						
Middle Kittanning		429.2		1406.1				•		
Depth	Thickness	Graphic		Scale	color, fos	ription: rock type sils, carbonate, m	inerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite,	etc.	Conditions		
				_						
			_	_	-					
		========		_						
			_	_	-					
				_		Shale, gray				
			_	250	-					
				230						
			_	_	-					
				_	1					
255.0	45.0									
				_	1	Shale, dark gray				
258.2	3.2	=======		_						
260.4	2.2			260		Mahoning Coal				
			_	_	-					
			_	_	5	Shale, gray, limey				
005.0	4.0			_						
265.0	4.6									
				_						
				_						
				270	-					
				_						
			_	_	-					
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			_	_	-					
				_						
				280	-					
				200						
		========	_	_	-					
				_		Shale, gray				
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				_	-			1		
				290	1					
					-					
				_	1					
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		=======		300						
302.5	37.5		_	_						
302.7	0.2				Uŗ	oper Freeport Coal				
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		========	_	_		Shale, gray, limey				
				_	<u> </u>	a.o, gray, iiilioy				
310.0	7.3	========	_	310	-					
310.0	1.0							1		
			_	_	-					
				_	1					
			_	_	-	Shale, gray				
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JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 5 of 7
OLD CINE 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	322			Measured	d Static Water	l avale		Method Drilling:	Continuous Core
									Date Drilled:	9/4/2013-9/9/2013
Surface Elev.	1835	5.30			Date	Depth	Elevation		Drilled By:	Sano Drilling
Commence of the co		· -			Measured ND	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by: Survey	LC	· I	•		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF	s							Quadrangle:	Stahlstown, PA
		Bottom	•	Bottom	SWL measured b	oy:		•	Laboratory:	Geochemical
		Depth		Elevation		_		<u>-</u>	Northing:	288693.1
Coal Sea		(ft)		(MSL)					Easting:	1510360.8
Lower Bakerstowr Mahoning Coal	1	89.7 260.4		1745.6 1574.9	Lower Kittanning	494.0	1341.3		Grid Coordinates:	
Upper Freeport		302.7		1574.9						
Middle Kittanning		429.2		1406.1						
Depth	Thickness	Graphic		Scale		ription: rock type, sils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite, et	ic.	Conditions	,, nosers.	71125
			_	-		Shale, gray				
				_		, g,				
325.0	15.0									
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			_	220						
				330						
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				_						
				340						
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		=======		350						
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		=======		_						
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				360		Shale, dark gray				
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			E	_						
		=======		370						
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				380						
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		=======		390						
			\vdash	_						
				_						
394.0	69.0									
			_	_						
				_	Sandstone, gr	ay with shale and co	al streaks			
			_	_						
			_	400	1			Ī		

JLB- CME - 10/01				7.1A GEC	LOGIC DRIL	L LOG			0721-S164 Page 6 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	322	-	Measure	d Static Water	Levels		Method Drilling:	Continuous Core
Surface Elev.	1835	30		Date	Depth	Elevation		Date Drilled: Drilled By:	9/4/2013-9/9/2013 Sano Drilling
ouridoo Elovi	1000		-	Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т	-	ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	SWL measured I	bv:		=	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation		_		-	Northing:	288693.1
Coal Sea		(ft)	(MSL)	<u></u>				Easting:	1510360.8
Lower Bakerstowr Mahoning Coal	1	89.7 260.4	1745.6 1574.9	Lower Kittanning	494.0	1341.3		Grid Coordinates:	
Upper Freeport		302.7	1532.6						
Middle Kittanning		429.2	1406.1	Lithelesia Dece	uintiam, vaalstuna	atharina			
Depth	Thickness	Graphic	Scale		cription: rock type, ssils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	entrations, pyrite, et	c.	Conditions		
			-						
			<u> </u>						
			<u> </u>	Sandstone, g	ray with shale and co	al streaks			
			410						
414.0	20.0		<u> </u>						
414.0	20.0								
			<u> </u>	_					
			420	_	Ohala dadaaaa				
		=======			Shale, dark gray				
			-						
		=======							
426.5	12.5		-						
			_ ,	Mi	ddle Kittanning Coal				
429.2	2.7		_						
430.2	1.0		430		Shale, dark gray				
			<u> </u>	_					
					Shale, gray				
			<u> </u>						
420.0	0.0								
439.0	8.8	00000000000	440						
		00000000000	<u> </u>						
		00000000000 00000000000		Limestone, da	ark gray (Middle Kitta	nning LS)			
445.0	6.0	00000000000							
445.0	6.0	<u>00000000000</u>					1		
			<u> </u>						
		=========	450	_					
			<u> </u>	_					
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			<u> </u>						
			460						
			460		Shale, gray				
			<u> </u>	-					
			<u> </u>	-					
			470						
			<u> </u>	-					
475.0	30.0		-						
			<u> </u>	_					
				Sandstor	ne, gray with shale st	reaks			
			480	-					

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 7 of 7
Hala Na	DH-1322								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	322	•		Measured	Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 9/4/2013-9/9/2013
Surface Elev.	1835	.30			Date	Depth	Elevation		Drilled By:	Sano Drilling
-			-		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by: _ Survey	LC	<u>T</u>	-		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GP	S							Quadrangle:	Stahlstown, PA
-		Bottom			SWL measured by	y:			Laboratory:	Geochemical
Coal Sea	ID	Depth		levation (MSL)					Northing: Easting:	288693.1
Lower Bakerstown		(ft) 89.7		1745.6	Lower Kittanning	494.0	1341.3		Grid Coordinates:	1510360.8
Mahoning Coal Upper Freeport		260.4		1574.9	-					
Middle Kittanning		302.7 429.2		1532.6 1406.1						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, foss	iption: rock type ills, carbonate, mi ntrations, pyrite, e	inerals,	Water Conditions	% Recovery	% RQD
				_						
			_	_						
				_	Sandstone	e, gray with shale s	streaks			
			_	_	-					
491.0	16.0			490						
					Low	ver Kittanning Coal				
494.0	3.0									
494.4	0.4				\$	Shale, dark gray				
		=======		_		Chala aray				
			_		1	Shale, gray				
500.0	5.6			500						
				_	5	Shale, dark gray				
502.5	2.5									
		=======		_						
			_	_	s	hale, gray, limey				
			_	_						
510.2	7.7			510						
			_		Bottom of Hol	le DH 1322 Depth	510.2 feet			
				_						
			_	_	1					
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			_	520	-					
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JLB- CME - 11/29/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 1 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	323			Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1833	8 40			Date	Depth	Elevation		Date Drilled: Drilled By:	9/16/2013-9/20/2013 Sano Drilling
Ourrace Liev.	1000		•		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т			ND	• •	, ,		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GF	Bottom		Bottom	SWL measured b			_	Quadrangle:	Stahlstown, PA
		Depth		Elevation	SWL measured b	y.		_	Laboratory: Northing:	Geochemical 289232.6
Coal Sea		(ft)		(MSL)					Easting:	1511935.2
Lower Bakerstown	1	114.6		1718.8	Lower Kittanning	513.0	1320.4		Grid Coordinates:	
Mahoning Upper Freeport		284.7 330.8		1548.7 1502.6						
Middle Kittanning		446.0		1387.4						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	ription: rock type sils, carbonate, m entrations, pyrite,	ninerals,	Water Conditions	% Recovery	% RQD
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		######################################	_	_	1					
		##########		_						
		######################################	_	_	+					
		##########		10	<u> </u>					
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		#########		_						
		######################################	_	_	-					
		##########		_						
		######################################	_	_	Si	andy Clay, brown				
		#########			1					
		######################################		20	-					
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		######################################	_	_	1					
		#########		_						
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70.2	35.0			70				_		
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			Ë	_	4					
				_	1	Shale, dark gray				
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JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 2 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	323			Manager	I Ctatia Watan I			Method Drilling:	Continuous Core
•					weasured	d Static Water L	_eveis		Date Drilled:	9/16/2013-9/20/2013
Surface Elev.	1833	3.40			Date	Depth	Elevation		Drilled By:	Sano Drilling
					Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т			ND	v -7	,/		Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF	s							Quadrangle:	Stahlstown, PA
		Bottom	•	Bottom	SWL measured b	ıv:		-	Laboratory:	Geochemical
		Depth		Elevation		_		-	Northing:	289232.6
Coal Sea	am ID	(ft)	-	(MSL)					Easting:	1511935.2
Lower Bakerstown		114.6		1718.8	Lower Kittanning	513.0	1320.4		Grid Coordinates:	
Mahoning		284.7		1548.7	· · · · · · · · · · · · · · · · · · ·					-
Upper Freeport		330.8		1502.6						
Middle Kittanning		446.0		1387.4						
D th	Thiston	0		01-		ription: rock type, w		14/	9/ Booyery	% RQD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, mine entrations, pyrite, etc		Water Conditions	% Recovery	% KQD
(it)	(11)	Log		(icet)	Conce	mirations, pyrite, etc		Conditions		
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			\vdash		1	Shale, dark gray				
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108.2	38.0		_	_						
100.2	36.0							1		
110.2	2.0		_	110	Shale,	, dark gray with fossil	S			
				_						
			_	_		Shale, dark gray				
4440	4.0	=======	_	_						
114.2 114.6	4.0 0.4	=======			Low	er Bakerstown Coal		1		
116.0	1.4					Shale, gray, limey				
				_						
			_	_		Shale, gray				
400.0	4.0	=======	_	400						
120.2	4.2			120				1		
			_							
				_	5	Sandstone, gray				
				_						
125.6	5.4							4		
			\vdash	_	1					
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		=======	<u> </u>	_		Shale, gray				
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149.0	23.4			150		hala sastt		1		
150.2	1.2			150	Sh	hale, red and gray		+		
			\vdash	_	1					
				_	1					
				_] .	Clayshale, gray				
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			<u> </u>	_	-					
158.5	8.3		—		1					
100.0	0.0					Obele		1		
			_	160	1	Shale, gray		1	1	1

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 3 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	323		Magazzad	l Ctatia Water I	avala		Method Drilling:	Continuous Core
-			•	Weasureu	l Static Water I	Leveis		Date Drilled:	9/16/2013-9/20/2013
Surface Elev.	1833	3.40		Date	Depth	Elevation		Drilled By:	Sano Drilling
•				Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	T.		ND		,		Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GF	es						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	v:		-	Laboratory:	Geochemical
		Depth	Elevation	OVIE modeanca b	· · · · · · · ·		=	Northing:	289232.6
Coal Sea	am ID	(ft)	(MSL)					Easting:	1511935.2
Lower Bakerstown		114.6	1718.8	Lower Kittanning	513.0	1320.4		Grid Coordinates:	1311935.2
Mahoning	•	284.7	1548.7	Lower Rittarining	313.0	1320.4		ona ocoramates.	-
Upper Freeport		330.8	1502.6						
Middle Kittanning		446.0	1387.4						
				Lithologic Descr	ription: rock type, v	veathering,			
Depth	Thickness	Graphic	Scale		sils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	ntrations, pyrite, et	C	Conditions		
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			470	4					
			170	4					
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					Shale, gray				
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			180						
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189.0	30.5								
100.0	50.5		190						
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		=======	_						
		=======							
				-	Shale, dark gray				
				1	onalo, dam gray				
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		=======	200						
000 5	40.5	=======							
202.5	13.5						4		
204.0	1.5	00000000000 00000000000	- -	Limestone, gray	y with fossils (Brush	Creek LS)			
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				1 :	Shale, dark gray				
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			230	4					
		=======	⊢ –	4					
233.0	29.0		<u> </u>	4					
233.0	23.0	========		<u> </u>			†		
				1					
				_	Shale, gray				
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		=======		4					

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 4 of 7
OLD CINE 10/01					,. 0_0				Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	323			Mossurod	Static Water	Lovole		Method Drilling:	Continuous Core
									Date Drilled:	9/16/2013-9/20/2013
Surface Elev.	1833	3.40			Date	Depth	Elevation		Drilled By:	Sano Drilling
Commence of the co		· -			Measured ND	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by: Survey	LC	· I			ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF	s							Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured b	y:		-	Laboratory:	Geochemical
		Depth		levation		-		-	Northing:	289232.6
Coal Sea		(ft)		(MSL)	_				Easting:	1511935.2
Lower Bakerstowr Mahoning	1	114.6 284.7		1718.8 1548.7	Lower Kittanning	513.0	1320.4		Grid Coordinates:	
Upper Freeport		330.8		1502.6						
Middle Kittanning		446.0		1387.4						
Depth	Thickness	Graphic		Scale		ription: rock type, sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		ntrations, pyrite, e		Conditions	70 H.G.G. 1017	NII Z
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				260	-					
				_		Shale, gray				
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				_						
				270						
				_						
			_	_						
			_	_	1					
			_	_	-					
				_						
				280						
282.2	49.2		_							
			_			Mahoning Coal				
284.7	2.5									
				_		Shale dork are:				
288.2	3.5	=======================================	_	_	·	Shale, dark gray				
				_				1		
				290	-					
				_	s	Shale, gray, limey				
				_						
295.0	6.8		_	_	1					
				_				1		
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				_						
		=======		300						
			_	_	1					
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			_	_		Shale, gray				
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JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 5 of 7
II-I- N-	DUA	202							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	323			Measured	d Static Water	r Levels		Method Drilling: Date Drilled:	Continuous Core 9/16/2013-9/20/2013
Surface Elev.	1833	3.40			Date	Depth	Elevation		Drilled By:	Sano Drilling
-					Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GP	s							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
-		Bottom		Bottom	SWL measured b	oy:		-	Laboratory:	Geochemical
		Depth		Elevation					Northing:	289232.6
Coal Sea Lower Bakerstown		(ft) 114.6		(MSL) 1718.8	_ Lower Kittanning	513.0	1320.4		Easting: Grid Coordinates:	1511935.2
Mahoning	•	284.7		1548.7	Lower rattarining	010.0	1020.4		Grid Goordinatoo.	
Upper Freeport Middle Kittanning		330.8 446.0		1502.6 1387.4						
						ription: rock type				
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, m entrations, pyrite,		Water Conditions	% Recovery	% RQD
(7	(-7					, , , , , , , , , , , , , , , , , , ,				
			_	_	+	Shale, gray				
				_						
325.2	30.2							1		
				_						
			_	_	+	Shale, dark gray				
329.8	4.6			330						
330.8	1.0	========			Uį	pper Freeport Coal				
				_]					
			H	_	†					
				_		Shale, gray, limey				
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040.0	0.0	=======		040						
340.0	9.2			340						
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				_	1					
			_	_	-					
				350						
			_	_	+					
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				360		Shale, gray				
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				370	1					
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378.0	38.0			_	1			1		
			_	380	+					
				_						
			_	_						
				_	4					
				_]					
		========	F	_	4					
				_	1	Shale, dark gray				
		========		390	4	, dain gray				
				_	1					
		=========	<u> </u>	_	-					
				_	1					
		=========	_	_	4					
				_	1					
			<u> </u>	400	4					

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 6 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	323		Measured	Static Water L	evels		Method Drilling:	Continuous Core
								Date Drilled:	9/16/2013-9/20/2013
Surface Elev.	1833	3.40		Date	Depth	Elevation		Drilled By:	Sano Drilling
-				Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	es						Quadrangle:	Stahlstown, PA
-		Bottom	Bottom	SWL measured b	v:		_	Laboratory:	Geochemical
		Depth	Elevation		· —		_	Northing:	289232.6
Coal Sea	am ID	(ft)	(MSL)					Easting:	1511935.2
Lower Bakerstown		114.6	1718.8	Lower Kittanning	513.0	1320.4		Grid Coordinates:	
Mahoning		284.7	1548.7	· · · · · · · · · · · · · · · · · · ·					-
Upper Freeport		330.8	1502.6						
Middle Kittanning		446.0	1387.4						
					ription: rock type, w			0/	N DOD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, mine ntrations, pyrite, etc		Water Conditions	% Recovery	% RQD
(it)	(11)	Log	(ieet)	Conce	initiations, pyrite, etc		Conditions		
			_						
		========							
		========							
		=======							
			- -	1					
			_	1					
			410]					
				1					
					Shale, dark gray				
			<u> </u>	1					
			- -	1					
			-	1					
]					
		=======							
		=======							
		=======	420						
				-					
423.0	45.0								
120.0	10.0						-		
			430						
			100						
					Sandstone, gray				
			_						
			440						
				1					
				-					
				-					
445.0	22.0						_		
446.0	1.0				Idle Kittanning Coal		4		
447.2	1.2			S	Shale, gray, limey		4		
			<u> </u>	1					
			450	1	Ohala				
		========]	Shale, gray				
			_ =	1					
453.4	6.2						4		
			<u> </u>	1					
			-	•	Shale, dark gray				
457.0	3.6			1					
	_	00000000000							
		000000000000	L =	1					
		00000000000	460	1					
		00000000000 00000000000	- -	Limestone, da	rk gray (Middle Kittan	ning LS)			
		00000000000]					
		000000000000							
465.2	8.2	000000000000					4		
467.0	1 0		<u> </u>	1	Shale, gray				
467.8	0.8				Shale, dark gray		1		
.00	0.0			Ì			1		
			470		Shale, gray				
470.7	2.9	=======		ļ	01-1-1		_		
471.6	0.9	=======			Shale, dark gray		4		
			<u> </u>	1					
			-	†					
				1	Sholo are:				
				1	Shale, gray				
			_ =	1					
		=======		4					

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 7 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	323	_	Measured	d Static Water I	_evels		Method Drilling:	Continuous Core
								Date Drilled:	9/16/2013-9/20/2013
Surface Elev.	1833	3.40	_	Date	Depth	Elevation		Drilled By:	Sano Drilling
		_		Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	<u>T</u>	<u>-</u>	ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF			014/1			_	Quadrangle:	Stahlstown, PA
		Bottom	Bottom Elevation	SWL measured b			_	Laboratory:	Geochemical
Coal Sea	ım ID	Depth (ft)	(MSL)					Northing: Easting:	289232.6 1511935.2
Lower Bakerstown		114.6	1718.8	Lower Kittanning	513.0	1320.4		Grid Coordinates:	1311933.2
Mahoning		284.7	1548.7	Lower rattarining	010.0	1020.4		Ond Goordinates.	
Upper Freeport		330.8	1502.6						
Middle Kittanning		446.0	1387.4	1					
Depth	Thickness	Graphic	Scale		ription: rock type, v sils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, etc		Conditions	70 11000 TOLY	/ RQS
			<u> </u>	_					
			- -						
					Shale, gray				
					Criaio, gray				
			- -	_					
			490						
			_	3					
492.0	20.4						4		
			⊢ -	\dashv					
			 	╡					
		=======	<u> </u>						
			<u> </u>	_					
			500						
			_		Shale, dark gray				
			<u> </u>		onaic, dank gray				
			- -	_					
			-						
		=======	<u> </u>						
			- -	_					
510.2	18.2		510						
							1		
F12.0	2.0			Lo	wer Kittanning Coal				
513.0	2.8						1		
		========							
		=======	<u> </u>						
			- -	_	Shale, gray				
			-		,5 -,				
			520						
522.0	9.0		<u> </u>	4					
322.0	3.0						1		
		=======	<u> </u>	-					
			 - -	=					
			_	╛					
			L =	Shale, gr	ay with sandstone str	eaks			
			530	\dashv					
		========	-	┪					
535.2	12.2		 - -	4					
333.∠	13.2						1		
				Bottom of Ho	ole DH 1323 Depth 53	5.2 feet			
			540	_					
			0.0						
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			<u> </u>	4					
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JLB- CME - 11/29/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 1 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	324	•		Measured	Static Water	Levels		Method Drilling:	Continuous Core
Surface Elev.	1820).20			Date	Depth	Elevation		Date Drilled: Drilled By:	9/10/2013-9/13/2013 Sano Drilling
					Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т			ND				Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF	Bottom		ottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		evation	OWE measured b	-,y·			Northing:	291049.9
Coal Sea		(ft)	((MSL)	_				Easting:	1510565.1
Lower Bakerstown	1	108.3 232.8		1711.9 1587.4	Upper Kittanning	384.8	1435.4		Grid Coordinates:	
Mahoning Upper Freeport		280.7		1539.5	Upper Kittanning Middle Kittanning	405.2 434.5	1415.0 1385.7			
Lower Freeport		333.2		1487.0	Lower Kittanning	493.5	1326.7			
Depth	Thickness	Graphic	s	icale		ription: rock type, sils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log	(1	feet)		entrations, pyrite, e		Conditions		
			_	_	+					
				_	1					
			_							
				_	Shal	le brown, weathered				
			_	_	4					
				_						
10.2	10.2			10						
			E	_]					
			Ŀ.	_	4					
]					
				_						
				_	Sandste	one, brown, weather	red			
			_	20						
			_	_						
24.0	13.8			_	1					
			_	_						
				_	Shale bro	own and gray, weath	ered			
			_	_	-	g,,				
30.2	6.2			30						
		######################################	_	_	+					
		##########		_						
		######################################	_	_	+					
		##########		_	1					
		######################################	_	_	-	Claystone, gray				
		#########		_	1					
		######################################		40	1					
		##########		_						
		######################################	_	_	+					
45.2	15.0	#########]					
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				50]					
					4					
				_	<u> </u>					
				_	1					
				_	<u> </u>					
		========		_						
			_		-					
				60	Shale, bro	own and gray, weath	nered			
			_	_	+					
				_						
				_	<u> </u>					
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				_	<u> </u>					
			Ŀ.	70	4					
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			H.	_	4					
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75.0	29.8				 					
				_	1	Oh - I				
			—		1	Shale, gray				
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JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 2 of 7
OLD OME 1001									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	324			Mossuro	d Static Water	Lovole		Method Drilling:	Continuous Core
									Date Drilled:	9/10/2013-9/13/2013
Surface Elev.	1820).20			Date	Depth	Elevation		Drilled By:	Sano Drilling
					Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF			Dattam	CMI management b			_	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b			-	Laboratory:	Geochemical
Coal Sea	am ID	(ft)		(MSL)					Northing: Easting:	291049.9 1510565.1
Lower Bakerstown		108.3		1711.9	Upper Kittanning	384.8	1435.4		Grid Coordinates:	1010000.1
Mahoning		232.8		1587.4	Upper Kittanning	405.2	1415.0			
Upper Freeport Lower Freeport		280.7 333.2		1539.5 1487.0	Middle Kittanning	434.5	1385.7			
Lower Freeport		333.2		1407.0	Lower Kittanning Lithologic Desc	493.5 ription: rock type,	1326.7 weathering.			
Depth	Thickness	Graphic		Scale	color, fos	sils, carbonate, mi	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite, e	tc.	Conditions		
			_	_						
		=======		_		Shale, gray				
95.0	10.0		_	_						
85.0	10.0							1		
			<u> </u>	_	1					
			—	90	1					
					1					
				_						
			—	_	1					
			_	_	1	Shale, dark gray				
				_						
			_	_						
			_	_	1					
				100						
			_	_						
103.0	18.0		_	_	1					
104.0	1.0				Shale	, dark gray with foss	ils			
			_	_						
				_		Shale, dark gray				
107.8	3.8			· <u></u>		D-11				
108.3	0.5	#########		110	Low	ver Bakerstown Coa		1		
		##########				Claystone, gray				
		#########				Claystorie, gray				
113.0	4.7	########## 						-		
				_						
			_	_						
			_	_	1					
				_		Shale, gray				
				120		Criaio, gray				
			_	_						
				_						
125.0	12.0		\vdash	_	-					
120.0	12.0							1		
		=======	_	_						
			—	_	1					
				130]					
		========	_	_	1					
			_	_	1					
				_	1					
			\vdash	_	-					
			_	_	1	Shale, gray				
			_	140						
				140						
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			_	_	+					
				_	1					
447.0	00.0		<u> </u>	_	1					
147.0	22.0							†		
				_	s	shale, red and gray				
150.2	3.2			150				4		
			\vdash	_	†					
				_	1					
			H	_	-					
			H	_	1	Shale, gray				
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			\vdash	160	1					

					7 1 A CEO	LOGIC DRIL	1.106			
JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LUG		On anotion Name	0721-S164 Page 3 of 7
	DII.	1004							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	324	-		Measured	d Static Water	Levels		Method Drilling:	Continuous Core
					- .	-			Date Drilled:	9/10/2013-9/13/2013
Surface Elev.	1820	0.20	_		Date	Depth	Elevation		Drilled By:	Sano Drilling
					Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF	rs							Quadrangle:	Stahlstown, PA
		Bottom	-	Bottom	SWL measured b	ov:		-	Laboratory:	Geochemical
		Depth		Elevation		<i>'</i> –		=	Northing:	291049.9
Coal Sea	am ID	(ft)		(MSL)					Easting:	1510565.1
Lower Bakerstown	2	108.3		1711.9	Linnar Kittanning	204.0	1425.4		Grid Coordinates:	1510505.1
Mahoning	•	232.8		1587.4	Upper Kittanning	384.8	1435.4		Grid Coordinates.	
Upper Freeport		280.7		1539.5	Upper Kittanning Middle Kittanning	405.2 434.5	1415.0 1385.7			
Lower Freeport		333.2		1487.0	Lower Kittanning	493.5	1326.7			
Zono: 11coport		000.2				ription: rock type,				
Depth	Thickness	Graphic		Scale		sils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite, e		Conditions		
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		=======	<u> </u>	_	4	Shale, gray		I		
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			_	180						
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190.0	39.8	=======		190						
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		========	<u> </u>	_						
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			_	_	-	Shale, dark gray				
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		========								
200.2	10.2	========		200				1		
000.0	0.0	00000000000	—	_	Limestone, gra	y with fossils (Brush	Creek LS)			
202.2	2.0	00000000000	-					1		
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			<u> </u>	_	4			1		
		=======	\vdash	_	4			1		
			\vdash	230	4					
				200	†					
232.5	30.3				<u>1</u>]		
232.8	0.3					Mahoning Coal]		
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			\vdash	_	٠,	Shale, gray, limey				
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				744.050	LOGIO DDII				
JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG		T	0721-S164 Page 4 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	324		Measured	Static Water I	evels		Method Drilling:	Continuous Core
				Mododiod		2010.0		Date Drilled:	9/10/2013-9/13/2013
Surface Elev.	1820	0.20		Date	Depth	Elevation		Drilled By:	Sano Drilling
-				Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	PS .						Quadrangle:	Stahlstown, PA
	-	Bottom	Bottom	SWL measured b	v.		_	Laboratory:	Geochemical
		Depth	Elevation	OWE IIICUSUICU B	· · · · · ·		_	Northing:	291049.9
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1510565.1
Lower Bakerstown		108.3	1711.9	Upper Kittanning	384.8	1435.4		Grid Coordinates:	1310363.1
Mahoning		232.8	1587.4	Upper Kittanning	405.2	1415.0		Grid Cool dillates.	-
Upper Freeport		280.7	1539.5	Middle Kittanning	434.5	1385.7			
Lower Freeport		333.2	1487.0	Lower Kittanning	493.5	1326.7			
				Lithologic Descr	ription: rock type, v				
Depth	Thickness	Graphic	Scale		sils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	ntrations, pyrite, etc). 	Conditions		
040.0	0.5			S	Shale, gray, limey				
242.3	9.5						-		
				+					
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			<u> </u>	4			I		
			250	4			I		1
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				1	Shale, gray		I		
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			_						
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			_						
		=======							
270.0	27.7		270	_					
210.0	21.1		210				1		
			_						
			_						
		=======			Shale, gray				
		=======		=					
				_					
			_						
279.7	9.7		280						
280.7	1.0				per Freeport Coal]		
281.7	1.0				Shale, dark gray				
		=======							
			- -	1			1		
			- -	1			1		
				1			I		1
							1		
			_ =	_ s	Shale, gray, limey		I		
			290	4			I		
			- -	+			I		
			- -	†			I		
				1			I		
295.0	13.3						_		
		=======					I		
		=======	<u> </u>	4			I		
			- -	4			I		
			300	+			I		
			300						
				1	Shale, gray		I		
			_ =	4			I		
		=======	<u> </u>	4			I		1
			- -	4			I		
308.5	13.5		- -	+			I		
300.3	13.3			+			†		1
			310	1			I		1
				1			I		1
] :	Shale, dark gray		I		1
]			I		1
			_ =	4			I		1
315.2	6.7	=======		1			4		1
			- -	4			I		1
			- -	+	Shale, gray		I		1
			- -	1	onaio, gray		I		1
				-					

LB-CME-10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 5 of 7											
025 OME 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-1	324	_		Measured	d Static Water	Levels		Method Drilling:	Continuous Core	
									Date Drilled:	9/10/2013-9/13/2013	
Surface Elev.	1820).20	_		Date	Depth	Elevation		Drilled By:	Sano Drilling	
		_			Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka	
Surveyed by:	LC	<u> </u>	-		ND				Municipality:	Donegal Nonegal RA	
Survey Method:	GF	99							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA	
	<u> </u>	Bottom	-	Bottom	SWL measured b	ov:		_	Laboratory:	Geochemical	
		Depth		Elevation		_		=	Northing:	291049.9	
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1510565.1	
Lower Bakerstown	1	108.3		1711.9	Upper Kittanning	384.8	1435.4		Grid Coordinates:		
Mahoning Upper Freeport		232.8 280.7		1587.4 1539.5	Upper Kittanning Middle Kittanning	405.2 434.5	1415.0 1385.7				
Lower Freeport		333.2		1487.0	Lower Kittanning	493.5	1326.7				
						ription: rock type,			0/ B	** POD	
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, mi entrations, pyrite, e		Water Conditions	% Recovery	% RQD	
(-7	()			(1223)	22.112.	, py,					
		=======	<u> </u>	_		Shale, gray					
324.0	8.8		<u> </u>	_							
			<u> </u>	_		Sandstone, gray					
327.8	3.8		\vdash	-							
			-	330	I ower F	reeport Coal (with s	hale)				
				_	20#011	000 (will 0					
333.2	5.4			-				_			
			H	_	ءِ	Shale, gray, limey					
336.0	2.8				<u> </u>	, 3,,]			
			\vdash				-				
			\vdash	_	-						
				340							
		=======	<u> </u>	_							
			<u> </u>	_							
				_							
			<u> </u>	_							
			\vdash	_							
						.					
			<u> </u>	350		Shale, gray					
				330							
				_							
			<u> </u>	_	-						
				_							
		=======	<u> </u>	_							
			<u> </u>	_							
361.0	25.0		-	360	-						
301.0	20.0										
			\vdash	_	1						
				_		-1					
			<u> </u>	_	Sha	ale, gray, veregated					
]						
				370							
372.0	11.0		\vdash	_	1						
				_				1			
			<u> </u>	_		Shale, dark gray					
				_	j	ao, aam gray					
377.0	5.0			-				4			
			<u> </u>		-						
				380]	Shale, dark gray					
381.4	4.4										
			\vdash	_	Up	per Kittanning Coal					
384.8	3.4			_	1						
		######################################	\vdash	_	1						
		######################################		_	j	Clayshale, gray					
		#########	F	_		Jayshale, glay					
390.2	5.4	######################################	\vdash	390	1						
	-			_				1			
			Ŀ.	_							
			\vdash	_	1						
				_]	Shale, gray					
			\vdash	_	1						
]						
			F	400							

JLB- CME - 10/01				7.1A GEO	L LOG			0721-S164 Page 6 of 7	
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	324	-	Measured	d Static Water I	Levels		Method Drilling:	Continuous Core
Surface Elev.	1820	20		Date	Depth	Elevation		Date Drilled: Drilled By:	9/10/2013-9/13/2013 Sano Drilling
ouridoo Elovi	1020		-	Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka
Surveyed by:	LC	т	-	ND				Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA
		Depth	Elevation	SWL measured t			-	Northing:	Geochemical 291049.9
Coal Sea	am ID	(ft)	(MSL)					Easting:	1510565.1
Lower Bakerstown	1	108.3	1711.9	Upper Kittanning	384.8	1435.4		Grid Coordinates:	
Mahoning Upper Freeport		232.8 280.7	1587.4 1539.5	Upper Kittanning Middle Kittanning	405.2 434.5	1415.0 1385.7			
Lower Freeport		333.2	1487.0	Lower Kittanning	493.5	1326.7			
Depth	Thickness	Graphic	Scale		ription: rock type, v sils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, et		Conditions		
			_	1	Shale, gray				
403.5	13.3						_		
405.2	1.7			Up	per Kittanning Coal				
			_						
			-	1					
			410	4					
				1					
			-	4					
				1					
			-	4					
			420	_	Shale, dark gray				
			420						
			_						
			_ =						
			<u> </u>	1					
]					
			430	1					
			_]					
432.6	27.4		_	1					
				Mic	ddle Kittanning Coal				
434.5	1.9						1		
			<u> </u>	1	Shale, dark gray				
441.0	6.5		440						
441.0	6.5	00000000000							
		000000000000	F =]					
		00000000000 00000000000		Limestone, da	ark gray (Middle Kittar	nning LS)			
447.0		000000000000]					
447.0	6.0	000000000000 ======		<u> </u>			†		
			450	4					
			450	1	Shale, gray				
			<u> </u>	4	onais, gray				
			<u> </u>	1					
455.6	8.6				Shale, dark gray		4		
456.0 457.5	0.4 1.5			<u> </u>	Shale, gray		†		
458.5	1.0				Shale, dark gray				
			460						
			<u> </u>	4					
			<u> </u>	1					
			F =]	Shale, gray				
			<u> </u>	1					
			470						
			_	1					
475.0	16.5		_	1					
]		
			<u> </u>	Shale, dark	gray with sandstone	streaks			
			400						
			480	1			1	İ	ī

JLB- CME - 10/01										
	DII 4	004						Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-1	324	-	Measured	Static Water L	evels.		Method Drilling: Date Drilled:	Continuous Core 9/10/2013-9/13/2013	
Surface Elev.	1820	.20		Date	Depth	Elevation		Drilled By:	Sano Drilling	
·-			<u>-</u> '	Measured	(ft)	(MSL)	Notes	Logged By:	W. Gomolka	
Surveyed by:	LC	T	-	ND				Municipality:	Donegal Nonegal	
Survey Method:	GP	s						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA	
-		Bottom		SWL measured b	y:			Laboratory:	Geochemical	
Coal Sea	ım ID	Depth (ft)	Elevation (MSL)					Northing: Easting:	291049.9	
Lower Bakerstown		108.3	1711.9	Upper Kittanning	Upper Kittanning 384.8 1435.4			Grid Coordinates:	1510565.1	
Mahoning Upper Freeport		232.8 280.7	1587.4 1539.5	Upper Kittanning Middle Kittanning	405.2	1415.0				
Lower Freeport		333.2	1487.0	Lower Kittanning	434.5 493.5	1385.7 1326.7				
Depth	Thickness	Graphic	Scale		iption: rock type, w ils, carbonate, mine		Water	% Recovery	% RQD	
(ft)	(ft)	Log	(feet)		ntrations, pyrite, etc		Conditions	,, nocoro,	71125	
			- -							
			-	Chala dade	ith condatons	trooko				
		=======		Shale, dark (gray with sandstone s	ireaks				
			-							
400.2	15.0		400							
490.2	15.2		490							
493.5	3.3		<u> </u>	Low	er Kittanning Coal					
.00.0	0.0									
			-	\dashv	hale, gray, limey					
		=======		s	naie, gray, ilmey					
499.0	5.5		-							
			500							
					Shale, gray					
					, g,					
505.0	6.0									
			-	_						
			<u> </u>	Shale, dark (gray with sandstone s	treaks				
510.2	5.2		510							
			-	Bottom of Ho	e DH 1324 Depth 51	0.2 feet				
			520							
			<u> </u>							
			-	+						
			F20							
			530	Ⅎ						
			540							
			<u> </u>	1						
			<u> </u>	4						
			<u> </u>							
			_	+						
			550	4						
			<u> </u>	\exists						
			<u> </u>	-						
			<u> </u>							
			<u> </u>	+						
			= -							
				4						

JLB- CME - 11/29/01	F-11/29/01 7.1A GEOLOGIC DRILL LOG									0721-S164 Page 1 of 5
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	903	-		Measure	d Static Wat	er Levels		Method Drilling:	Continuous Core
Cumface Flavo	4000								Date Drilled:	1/15/2019-1/18/2019
Surface Elev.	1802	2.80	-		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES D. Mark
Surveyed by:	LC	:т			ND	(11)	(MOL)	110103	Municipality:	P. Mack Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF	rs	_					_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured by:				Laboratory:	Geochemical
		Depth		Elevation					Northing:	287903.789
Coal Sea	ım ID	(ft) 60.50		(MSL) 1742.3	_				Easting: Grid Coordinates:	1506104.564
Mahoning		106.00		1696.8					Grid Coordinates.	
Coal		107.30		1695.5						
Middle Kittanning		281.80		1521.0	Lithologic Desc	ription: rock tv	pe. weathering.			
Depth	Thickness	Graphic		Scale	color, fos	sils, carbonate,	minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log ###############		(feet)	conce	entrations, pyrite	e, etc.	Conditions		
		##########		_						
		##########	_		1					
		######################################	<u> </u>	_	+					
		##########			1					
		######################################	<u> </u>	_	Clavshale bro	wn, silty, sandy, v	with sandstone			
		##########		_	Olayshale, bro	wii, only, oandy, i	with sundstone			
		##########		10						
		######################################	<u> </u>	_	-					
		##########		_	1					
45.0		#########	L-		4					
15.2	15.2	#########	 		1					
					1					
			<u> </u>							
				20	Sha	le, brown, weathe	ered			
		=======	_		1					
23.0	7.8		_		-				60%	0%
				_						
			<u> </u>		Sha	ile, dark gray, bro	ken			
				_		, g,,				
28.2	5.2									
30.2	2.0		_	30	Shale	, dark gray, with f	fossils			
				_						
			<u> </u>	_	+					
				_						
		=======	<u> </u>		1					
				_	†					
				_					100%	80%
			—	40						
			<u> </u>	_	-					
				_	Ī					
			<u> </u>	_	4	Shale, dark gray				
			E	_	<u> </u>					
		=======		_]					
			\vdash	50	†					
				_]					
			\vdash	_	1				100%	77%
				_	1				.0070	
			H.	_	1					
			\vdash		1					
				_						
60.2	30.0		<u> </u>	60	1					
60.5	0.3					Coal				
			—		1					
				_						
			<u> </u>	_	1					
					1					
				_					100%	87%
			\vdash	70	1					
				_	1	Shale, gray				
			<u> </u>	_	Shale, gray					
				_	<u> </u>					
			E	_	4					
			\vdash	_	1					
				_					100%	93%
			<u> </u>	80	4					

JLB- CME - 10/01				7 14 GFC	DLOGIC DRI	ILLOG			0721-S164 Page 2 of 5
JLB- CME - 10/01				7.17 GEC	DEOGIO DINI	ILL LOG		Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	1903		Measure	d Static Wate	r I ovole		Method Drilling:	Continuous Core
•			•					Date Drilled:	1/15/2019-1/18/2019
Surface Elev.	1802	2.80		Date	Depth	Elevation		Drilled By:	RES
0				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	il	-	ND				Municipality: County, State:	Donegal
Survey Method:	GF	es.						Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	Bottom	SWL measured	by:		-	Laboratory:	Geochemical
		Depth	Elevation				-	Northing:	287903.789
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1506104.564
Coal		60.50	1742.3					Grid Coordinates:	
Mahoning Coal		106.00 107.30	1696.8 1695.5						
Middle Kittanning		281.80	1521.0						
					cription: rock type			0/ December	N/ BOD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ssils, carbonate, m entrations, pyrite,		Water Conditions	% Recovery	% RQD
()	()				,,,,				
			<u> </u>	_					
			- -	1					
		========						100%	93%
		=======	<u> </u>	_				10070	0070
			- -	1					
			90	4	Shale, gray				
			_	_					
		=======							
			_	-					
			<u> </u>					070/	000/
				-				87%	88%
100.0	39.5		100						
					0				
103.0	3.0		- -	-	Sandstone, gray				
400.0	0.0				Mahoning Coal				
106.0 106.7	3.0 0.7				Shale, gray				
107.3	0.6				Coal				
109.0	1.7		110		Shale, gray				
			110	1	Shale, gray, limey				
111.6	2.6	=======						050/	050/
			- -	+				95%	85%
					Shale, gray				
447.5	5.0								
117.5	5.9								
					Sandstone, gray				
120.0	2.5		120						
			_						
			- -	1					
			<u> </u>	Shale	e, gray, with sandst	one		100%	90%
								10070	3070
			130	4					
			<u> </u>	1					
133.0	13.0								
			<u> </u>	4	Sandstone, gray				
135.7	2.7			1	, g.u/				
				4 <u></u>					
			- -	1					
			140	Sa	andstone, gray, hard	d			
			<u> </u>	-					
143.0	7.3			-				97%	69%
		=======							
			- -	Sha	ale, dark gray, broke	en			
147.0	4.0	=======		1					
				1					
			150	1					
]					
			_ =	4					
			- -	Sandstone, gray	, with shale and coa	al streaks, hard			
]				100%	83%
				4					2370
				_					
			E =						
I			160	1					l

JLB- CME - 10/01				7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 3 of 5
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-	1903		M	-l Ct-ti- W-t	Laurala		Method Drilling:	Continuous Core
•			•	weasure	d Static Water	Leveis		Date Drilled:	1/15/2019-1/18/2019
Surface Elev.	180	2.80		Date	Depth	Elevation		Drilled By:	RES
ouriade Lievi	100		•	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	17	СТ		ND	(1.9	(11102)	110100	Municipality:	
Surveyed by:	L	<i>,</i> 1	•	ND					Donegal
Survey								County, State:	Westmoreland, PA
Method:	GI		•				-	Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	by:		_	Laboratory:	Geochemical
		Depth	Elevation					Northing:	287903.789
Coal Sea	am ID	(ft)	(MSL)					Easting:	1506104.564
Coal		60.50	1742.3	-				Grid Coordinates:	
Mahoning		106.00	1696.8						
Coal		107.30	1695.5						
Middle Kittanning		281.80	1521.0						
				Lithologic Desc	cription: rock type,	weathering,			
Depth	Thickness	Graphic	Scale		sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, e		Conditions		
161.0	14.0			SS, gray, with shale an	nd coal streaks, hard (Upp	er Freeport hoizon)			
								100%	83%
				1				100%	63%
					Shale, gray				
167.0	6.0								
107.0	0.0								
			170]					
				Shale	e, gray, with claysha	le			
				Silali	o, gray, with tidySild				
			_ =	1				80%	42%
		=======	<u> </u>	1					
175.0	8.0			ļ			1		
			<u> </u>	4					
		=======		Shale	e, gray, with sandsto	ne			
178.0	3.0	=======							
		=======	180	4					
				1					
				1					
			_	1					
								100%	87%
					Shale, gray				
			190						
		=======		4					
		=======							
				1					
			_						
199.0	21.0	=======		1					
			200						
		=======							
								4000/	900/
		=======		4				100%	93%
				1					
				1					
				1					
				1	Shale, dark gray				
			210]					
				1					
			<u> </u>	1					
				1					
				1					
218.0	19.0							100%	87%
			220						
			<u> </u>						
		=======		4					
			⊢ –	+					
			<u> </u>	1				-	
			- -	Shale, o	dark gray, with sands	stone			
			- -	1					
				1					
			230]					
]					
]					
			_ =	1				100%	100%
234.0	16.0			ļ			1		
			<u> </u>	4					
			⊢ –	+					
			- -	Sandstone, gr	ray, with shale and c	oal streaks			
			- -	1					
			_	4			1	1	1

JLB- CME - 10/01				7.1A GEC	DLOGIC DRIL	L LOG			0721-S164 Page 4 of 5
		DLI 1002						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	1903	-	Measure	d Static Water	Levels		Method Drilling:	Continuous Core
Surface Elev.	1802	2 80		Date	Depth	Elevation		Date Drilled: Drilled By:	1/15/2019-1/18/2019 RES
Ourrace Liev.	1002	00	-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_	ND	` '	` '		Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GF	Bottom	Bottom	SWL measured	hu:		•	Quadrangle: Laboratory:	Stahlstown, PA
		Depth	Elevation				•	Northing:	Geochemical 287903.789
Coal Sea	am ID	(ft)	(MSL)					Easting:	1506104.564
Coal		60.50	1742.3					Grid Coordinates:	
Mahoning Coal		106.00 107.30	1696.8 1695.5						
Middle Kittanning		281.80	1521.0						
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	cription: rock type, v ssils, carbonate, min entrations, pyrite, et	erals,	Water Conditions	% Recovery	% RQD
242.0	8.0			Sandstone, g	ray, with shale and co	al streaks			
				_					
					Sandstone, gray				
				_	, 5 . ,			100%	93%
								10070	0070
250.0	8.0		250						
			_						
			_						
		=======							
			260						
								4000/	4000/
								100%	100%
				Shale,	dark gray, with sandst	tone			
				_					
			270	_					
				_					
									
				_				100%	80%
279.8	29.8		280						
281.8	2.0			Mi	iddle Kittanning Coal				
283.0	1.2				Shale, gray				
			E	\exists					
			<u> </u>	\dashv					
		=======							
			290	Shale	e, gray, with sandston	e			
		=======	E .					4000/	4000/
								100%	100%
297.0	14.0								
	-	00000000000					1		
		00000000000 00000000000	300	_					
		000000000000							
		00000000000 000000000000			Limestone, gray (Middle Kittanning)				
		000000000000		T '	3,				
		00000000000 00000000000	<u> </u>	\dashv					
307.0	10.0	00000000000							
			<u> </u>	\dashv	_			100%	87%
			310	Shal	le, gray, with clayshale	e			
			<u> </u>	Jilai	, g.w,, miui olayərlali	-			
313.0	6.0								
			<u> </u>		Shale, dark gray				
315.5	2.5			<u> </u>					
	-				·			100%	100%
			<u> </u>	\dashv	Shale, gray			10076	100%
		Ì	220	1			l	İ	İ

JI B- CMF - 10/01	7.1A GEOLOGIC DRILL LOG 0721-S164 Page 5 of 5												
OED OINE 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion			
Hole No.	DH-1	903			Mossuro	d Static Wate	r Lovole		Method Drilling:	Continuous Core			
									Date Drilled:	1/15/2019-1/18/2019			
Surface Elev.	1802	2.80	,		Date	Depth	Elevation		Drilled By:	RES			
0		-			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack			
Surveyed by: Survey	LC	1			ND				Municipality: County, State:	Donegal			
Method:	GP	s							Quadrangle:	Westmoreland, PA Stahlstown, PA			
		Bottom		Bottom	SWL measured b	ov:		-	Laboratory:	Geochemical			
		Depth		Elevation		•		-	Northing:	287903.789			
Coal Sea	am ID	(ft)		(MSL)	<u>-</u>				Easting:	1506104.564			
Coal		60.50		1742.3					Grid Coordinates:				
Mahoning Coal		106.00 107.30		1696.8 1695.5									
Middle Kittanning		281.80		1521.0									
Donath	Thislman	Cranbia		Caala		ription: rock type		Water	% Recovery	% RQD			
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, n entrations, pyrite,		Water Conditions	/6 Necovery	/0 KQD			
, ,	. ,												
		=======	_		-								
			_										
		=======		_					100%	100%			
			_	_		Shale, gray				,			
			_	_	1								
				_									
331.0	15.5	========		330	-								
331.0	10.0	:=:=:=:=:=:=						1					
		:=:=:=:=:=		_									
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	_	Sandy Shale, gray	to dark gray, w/ir	nt bed sandstone						
		:=:=:=:=:=:=:=		_]								
336.7	5.7	:=:=:=:=:=							4000/	000/			
339.2	2.5		_		Sandstone	e, light gray, some // some int bed sh.	breaks,		100%	93%			
000.2	2.0			340									
				_									
			_	_									
			_	_	Shale, gra	ay, w/ fossils, som	e sandy						
			_	_									
		=======		_									
040.7	40.5		_	050									
349.7 351.0	10.5 1.3			350	Shale, dark gray	to black, numerou	s breaks, weak		100%	45%			
351.65	0.65					Kittanning - Coal, s							
352.95 354.30	1.30 1.35				Lower Kittanring - C	ning - Coal, w/ bon							
354.60	0.30				Lower	r Kittanning - Lost	core						
355.6	1.0	#########			Clayshale, gra	ay, some sandy, se	veral breaks						
		######################################	_	_	<u> </u>								
		###########		_	Claysnale, gi	ray to light gray, so	ome breaks						
359.4	3.8	######################################		360									
		###########			Clayabala dari	k gray, some soft a	and arumblad						
		#########		_	Claysilale, dail	k gray, some som	and crumbled		100%	60%			
363.9 364.6	4.5 0.7	######### :=:=:=:=:=:=:=			5	Sandy Shale, gray		1					
	-			_		,		1					
			<u> </u>	_	4	Shale, gray							
				_	1	onalo, gray							
370.2	5.6	=======		370				1					
			_	_	Bottom of Ho	ole DH 1903 Depth	370.2 feet						
				_									
			<u> </u>	<u> </u>	-								
			-	_	†								
			_	_									
				380									
					4								
			_	_	1								
					1								
			_	_	-								
			_	_	1								
				_									
			<u> </u>	390	-								
				550	1								
					4								
			_	_	1								
					1								
			_	-	-								
				_	1								
				_				1					

JLB- CME - 11/29/01											
	DH 1004								Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-1	1904			Measured	d Static Wate	er Levels		Method Drilling: Date Drilled:	Continuous Core	
Surface Elev.	1768	3.53			Date	Depth	Elevation		Drilled By:	1/23/2019-2/7/2019 RES	
					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack	
Surveyed by:	LC	T			ND				Municipality:	Donegal	
Survey Method:	GF	ne .							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA	
wethou.	GI	Bottom	•	Bottom	SWL measured b	bv:		•	Laboratory:	Geochemical	
		Depth		Elevation		•		•	Northing:	288686.04	
Coal Sea	am ID	(ft)		(MSL)	=				Easting:	1508137.38	
Mahoning Upper Freeport		155.2 200.2		1613.3 1568.3					Grid Coordinates:		
Middle Kittanning		327.0		1441.5							
Lower Kittanning		398.6		1369.9	Lithologic Desc	cription: rock typ	e weathering				
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	sils, carbonate, n	ninerals,	Water Conditions	% Recovery	% RQD	
				_							
			_	_	-						
		=======									
			_	_	Oh -	la bassaatbas					
				_	Sha	ile, brown, weather	red				
			_	_							
				10							
12.0	12.0		\vdash	_	-						
12.0	.2.0	=======		_							
			_	_	4						
				_	1	Shale, red					
			_	_	-						
19.0	7.0			_							
		######################################		20	-						
		#########		_	1						
		##########		_	(Clayshale, brown			63%	0%	
		########## ###########################	_	_	1						
07.0	0.0	#########		_							
27.0	8.0	######################################									
		#########		=							
		######################################		30	Claur	shale, gray, with sl	hala				
		#########		_	Ciays	silale, gray, with si	nale				
		######################################		_	1						
35.0	8.0	######### =========									
				_					4000/	9997	
			_	_	+				100%	80%	
		=======		40							
			_	_	-						
				_							
			_	_	+						
		=======		_	Shale	e, gray, with sands	tone				
			H	_	1						
]						
				50	1						
				_					4000/	070/	
			_	_	1				100%	87%	
				_	1						
56.0	21.0										
		=======		_	1						
			_	60	1						
		=======									
			_	_	-	Shale, dark gray					
				_		, J . ,					
			_	_	1						
				_	1						
69.5	13.5		H	_	1				100%	83%	
70.5	1.0	00000000000		70	Limestone, gra	ay, with fossils (Bru	ush Creek LS)				
			H	_	1						
		=======	F	_]						
				_	<u> </u>	Shale dork are					
		=======				Shale, dark gray					
			\vdash	_	†				100%	93%	
					1						
			Ì	80	1			ĺ	İ	İ	

				744.050	N OCIC DD				
JLB- CME - 10/01				7.1A GEC	LOGIC DR	ILL LOG		T	0721-S164 Page 2 of 6
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	904	•	Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
								Date Drilled:	1/23/2019-2/7/2019
Surface Elev.	176	3.53		Date	Depth	Elevation		Drilled By:	RES
				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	•	ND				Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GF		_				_	Quadrangle:	Stahlstown, PA
		Bottom		SWL measured l	by:		_	Laboratory:	Geochemical
		Depth	Elevation					Northing:	288686.04
Coal Sea	am ID	(ft)	(MSL)					Easting:	1508137.38
Mahoning		155.2	1613.3					Grid Coordinates:	-
Upper Freeport Middle Kittanning		200.2 327.0	1568.3 1441.5						
Lower Kittanning		398.6	1369.9						
				Lithologic Desc	cription: rock type	e, weathering,			
Depth	Thickness	Graphic	Scale		ssils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conc	entrations, pyrite,	etc.	Conditions		
			-						
			_						
		========						100%	93%
		=======	<u> </u>						
			-						
			Ε .	╡	Shale, dark gray				
		=======	90						
		=======	<u> </u>	⊣					
			<u> </u>	\dashv					
			-	╡					
				=					
96.0	25.5		_						
		=======	<u> </u>	\dashv				100%	73%
				Sha	ale, dark gray, brok	en		100%	73%
100.0	4.0		100						
							1		
		========	<u> </u>	_					
			 .						
		=======	<u> </u>						
			110						
			110						
		========							
		========						100%	93%
		=======	<u> </u>		Shale, gray				
		=======							
			120						
		========							
			<u> </u>	\dashv					
			-	╡					
128.5	28.5	========					1	100%	90%
		=======		\dashv					
			130	\dashv					
		========	-	Shale	e, gray, with sandst	one			
				\exists					
405.0	0.5	=======	<u> </u>	\dashv					
135.0	6.5			+			1		
			<u> </u>	┪					
			<u> </u>	4					
			140	\dashv					
			-	┪					
				Shal	e, gray, with claysh	nale		100%	87%
		=======	<u> </u>	⊣					
			<u> </u>	\dashv					
			 	╡					
				_					
149.0	14.0	=======	150	01-	ale dark ara: ba-1	en.	4		
151.0	81.0	========		Sha	ale, dark gray, brok	611	+		
			-	┥	oning Cool with	nolo.			
				Mah	oning Coal, with sh	iaië			
155.2	4.2		•	1			4	80%	54%
			<u> </u>	- 01	hale, gray, with clay	,			
158.4	3.2		 		, gray, with cla	,			
				Chal	e, gray, with sandst	one	1		
1		1	100	Snaid	o, gray, willi SandSi	OI IC	1	İ	l .

LB- CME - 10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 3 of 6												
025 OME 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion		
Hole No.	DH-1	904			Moseuros	Static Wate	r I ovole		Method Drilling:	Continuous Core		
									Date Drilled:	1/23/2019-2/7/2019		
Surface Elev.	1768	3.53			Date	Depth	Elevation		Drilled By:	RES		
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack		
Surveyed by:	LC	<u> </u>			ND				Municipality: County, State:	Donegal		
Survey Method:	GF	99							Quadrangle:	Westmoreland, PA Stahlstown, PA		
Metriou.	<u> </u>	Bottom		Bottom	SWL measured b	ıv.		=	Laboratory:	Geochemical		
		Depth		Elevation	OTTE III CUCUITCU E	·,·		_	Northing:	288686.04		
Coal Sea	am ID	(ft)		(MSL)					Easting:	1508137.38		
Mahoning		155.2		1613.3	-				Grid Coordinates:			
Upper Freeport		200.2		1568.3								
Middle Kittanning Lower Kittanning		327.0 398.6		1441.5 1369.9								
		000.0		1000.0	Lithologic Descr	ription: rock type	e, weathering,					
Depth	Thickness	Graphic		Scale		sils, carbonate, m		Water	% Recovery	% RQD		
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite,	etc.	Conditions				
				_								
				_					80%	54%		
		=======	_	_	-							
			_	_	†							
			_	_	Shale	, gray, with sandst	one					
			_	170	-							
				_								
			<u> </u>	_	4				93%	86%		
			\vdash	_	1				93%	0076		
				_	1							
176.0	17.6							_				
			_	_	-							
			_	_	Shale	e, gray, with claysh	ale					
180.0	4.0			180								
			_	_	-							
			_	_	-							
				_	<u> </u>							
			_	_								
			_	_	+							
					1				80%	38%		
				_	Shale	e, gray, badly brok	en					
				190	-							
			_	_	†							
			_	_	-							
			_	_	-							
197.2	17.2											
			_	_	Lipper E	reeport Coal, with	chale					
200.2	3.0		_	200	Оррег Р	reeport Coar, with	Silale					
				_								
			_	_	-				87%	38%		
			_	_	-				07 70	3070		
				_	Sh	ale, gray, with clay	,					
		=======	<u> </u>	_	-	, 5, with old)						
			\vdash	_	1							
				_	1							
210.2	10.0			210	 			4				
			_	_	1							
				_	1							
			<u> </u>	_	4							
			\vdash	_	1	Shale, gray						
				_]							
		=======	_	_	-				100%	73%		
220.2	10.0		\vdash	220	1							
			<u> </u>	_	Ch-1-	e, dark gray, with o	day					
			_	_	Silate	e, uaik gray, willi c	аау					
225.2	5.0			_								
			\vdash	_			· 					
			\vdash	_	1							
				_	1							
				230	4	Shale, gray						
			\vdash	_	1	- 1						
			E	_	1				100%	87%		
				_]							
235.0	9.8				1			-				
			\vdash	_	1							
				_	Shale	, gray, with sandst	one					
			H	240	1							

.B- CME - 10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 4 of 6											
025 OME 1001								Operation Name :	Rustic Ridge #1 Mine-Expansion		
Hole No.	DH-1	904		Measured	d Static Water Le	wale		Method Drilling:	Continuous Core		
								Date Drilled:	1/23/2019-2/7/2019		
Surface Elev.	1768	3.53		Date	•	levation		Drilled By:	RES		
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack		
Surveyed by:	LC	T		ND				Municipality:	Donegal		
Survey	C	ne .						County, State:	Westmoreland, PA		
Method:	GF	Bottom	Bottom	SWL measured b	N/*			Quadrangle: Laboratory:	Stahlstown, PA Geochemical		
		Depth	Elevation	SVVL measured t	.y			Northing:	288686.04		
Coal Sea	am ID	(ft)	(MSL)					Easting:	1508137.38		
Mahoning		155.2	1613.3	=				Grid Coordinates:			
Upper Freeport		200.2	1568.3								
Middle Kittanning Lower Kittanning		327.0 398.6	1441.5 1369.9								
Lower Kittarining		390.0	1309.9	Lithologic Desc	ription: rock type, we	athering,					
Depth	Thickness	Graphic	Scale	color, fos	sils, carbonate, minera		Water	% Recovery	% RQD		
(ft)	(ft)	Log	(feet)	conce	entrations, pyrite, etc.		Conditions				
				1							
			<u> </u>								
				_							
			_	1							
		=======		Shale	, gray, with sandstone			100%	93%		
			250	_	, 5 . , ,						
			250	1							
			_ =	4							
			<u> </u>	4							
256.0	21.0		<u> </u>	1							
			<u> </u>								
			<u> </u>	4							
			260	-	Shale, dark gray						
			200		, g,						
263.0	7.0							100%	80%		
			- -	-							
				Shale	e, gray, with clayshale						
			<u> </u>	Onland	s, gray, with dayshalo						
269.0	6.0		- -	-							
270.2	1.2		270	5	Shale, gray, limey						
			<u> </u>	4							
			-	-							
				_	Shale, gray						
			- -	1	Orlaic, gray			100%	87%		
		=======	280								
			- -	1							
283.0	12.8										
			_	4							
				1							
					Sandstone, gray						
			<u> </u>	4							
290.0	7.0		290	1							
			- -	4				4000/	000/		
			- -	+				100%	90%		
				Sa	ndstone, gray, hard						
			_ =	4							
			<u> </u>	4							
299.5	9.5			1							
300.5	1.0		300		Shale, dark gray						
			<u> </u>	4							
				Sandatana	gray, with coal streaks,	hord					
				Sanusione,	gray, with coar streaks,	Ilaiu					
206.0	E E		<u> </u>	4							
306.0	5.5										
								100%	93%		
			L =	4							
			310	1							
			_	1							
					Sandstone, gray						
			<u> </u>	4	. 5 . 7						
				1							
			_ =	4				4000/	770/		
			<u> </u>	4				100%	77%		
320.2	14.2		320	1							

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 5 of 6
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1904 1768.53			Measured	Static Water I	Levels		Method Drilling:	Continuous Core
Surface Elev.	1768	3.53		Date	Depth	Elevation		Date Drilled: Drilled By:	1/23/2019-2/7/2019 RES
				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т		ND				Municipality:	Donegal
Survey	0.5							County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	SWL measured b	W.		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation	OVIE measured b	<u> </u>		•	Northing:	288686.04
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1508137.38
Mahoning		155.2 200.2	1613.3					Grid Coordinates:	
Upper Freeport Middle Kittanning		327.0	1568.3 1441.5						
Lower Kittanning		398.6	1369.9	1					
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	ription: rock type, v sils, carbonate, min entrations, pyrite, et	erals,	Water Conditions	% Recovery	% RQD
				Sandstone,	gray, with coal streak	s, hard			
224.0	25.0			-					
324.8	25.0			Mic	ddle Kittanning Coal			100%	77%
327.0	2.2			IVIIC	due Kittaririing Coar				
		:=:=:=:=:=:= :=:=:=:=:=:=:=		-					
		:=:=:=:=:=	330	Sandy Sr	nale, gray, with sands	tone			
331.2	4.2	:=:=:=:=:=:=							
			_ =						
		=======		-	Shale, dark gray				
				-					
337.0	5.8	========						4000/	000/
		00000000000 000000000000		+				100%	90%
		000000000000	340		Limestone, gray				
		00000000000 000000000000		(Mi	ddle Kittanning LS)				
343.0	6.0	000000000000000000000000000000000000000	_						
		========		-					
				1	Shale, gray				
					Stiale, gray				
349.0	6.0			-					
349.5	0.5		350		Shale, dark gray				
				-	Shale, gray				
0510		=======			Stiale, gray			100%	87%
354.0 354.8	4.5 0.8				Shale, dark gray				
		=======	_						
				-					
			360	4					
					Shale, gray				
				4					
		========							
367.0	12.2			-					
307.0	16.6	=========						100%	100%
			370	-					
				Shale	, gray, with sandston	e			
				-					
374.0	7.0			<u> </u>					
				-					
		:=:=:=:=:=:=							
		:=:=:=:=:=:=		-					
		:=:=:=:=:=:= :=:=:=:=:=:=	380						
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=		-				100%	100%
		:=:=:=:=:=		Sandyshale, g	ray to dark gray, w/ in	ntbed. SS			
		:=:=:=:=:=:= :=:=:=:=:=:=:=		1					
		:=:=:=:=:=:=	_ =]					
		:=:=:=:=:=:= :=:=:=:=:=:=:=		1					
		:=:=:=:=:=:=	390]					
		:=:=:=:=:=:= :=:=:=:=:=:=:=		-					
393.8	19.8	:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	1					
394.0	0.2			Sandstone, It. gray,	some breaks, w/ some	interbed. shale			
394.28 395.93	0.28 1.65			_				91%	44%
395.96	0.03		_ =		ver Kittanning Coal core (397.0 - 398.6)				
396.91 397.00	0.95 0.09			iost	(0.086 - 0.180)				
				_			•		

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OLD OINE 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	904			Moseuros	d Static Wate	or Lovole		Method Drilling:	Continuous Core
			_						Date Drilled:	1/23/2019-2/7/2019
Surface Elev.	1768	3.53	_		Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	Т	-		ND				Municipality:	Donegal
Survey Method:	GF	99							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
motriou.	<u> </u>	Bottom	-	Bottom	SWL measured b	ov:		_	Laboratory:	Geochemical
		Depth		Elevation		,		_	Northing:	288686.04
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1508137.38
Mahoning		155.2		1613.3					Grid Coordinates:	
Upper Freeport Middle Kittanning		200.2 327.0		1568.3 1441.5						
Lower Kittanning		398.6		1369.9						
					Lithologic Descr				0/ December	N/ BOD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, r entrations, pyrite		Water Conditions	% Recovery	% RQD
400.1	1.5	#########		,		y, some sandy, se				
		######################################	<u> </u>	_					91%	44%
		######################################			Olava hala an	t- Babt			9176	44 /0
		#########		_	Claysnale, gr	ray to light gray, so	ome breaks			
407.0	6.9	######################################	<u> </u>	_	-					
407.0	0.9									
			Ē	446	4					
				410	<u></u>					
				_	Shale	, gray, with sands	tone			
			<u> </u>	_	4				100%	90%
415.0	8.0			_	1					
				_				1		
			-		-					
				_						
				420						
			-	_						
				_]					
			<u> </u>	_	1					
				_	Sandstone	, gray, with dark g	ray shale			
				_	1				4000/	4000/
			<u> </u>	_	+				100%	100%
				430						
			-	_	+					
			—	_						
435.7	20.7				†					
				_						
				_	1					
				440						
			—	_	:	Shale, dark gray				
		=======		_]				100%	93%
			\vdash	_	4					
446.1	10.4				<u>1</u>					
440.4	2.0		\vdash		1	Shale, gray				
448.1	2.0							1		
				450	Ì					
			<u> </u>	_	-	Shale, dark gray				
				_	1	= *				
455.0	6.9		\vdash	_	1					
100.0	0.0							1		
			—	_	Á				100%	63%
				_	1				100%	03%
		=======		460	Shale	e, gray, with claysl	hale			
			\vdash	_	1					
465.2	10.2		<u> </u>	_	4					
400.2	10.2				<u> </u>			1		
				_	Bottom of Ho	ole DH 1904 Depti	h 465.2 feet			
			\vdash	_	1					
				470	1					
			<u> </u>	_	4					
				_	1					
			F	_	1					
			<u> </u>	_	1					
				_]					
			\vdash	_	1					
					1			i	İ	l .

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								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	905	=	Measured	d Static Water L	evels.		Method Drilling:	Continuous Core
Surface Elev.	1709	.18		Date	Depth	Elevation		Date Drilled: Drilled By:	2/13/2019-2/15/2019 RES
Currace Liev.	1700		-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_	ND	` '			Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	SWL measured b	NV:			Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation	OWE measured i				Northing:	290807.006
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1508633.136
Mahoning Upper Freeport		137.3 176.4	1571.9 1532.8	Upper Kittanning	259.0	1450.2		Grid Coordinates:	
Lower Freeport		224.4	1484.8	Middle Kittanning Lower Kittanning	286.5 351.5	1422.7 1357.6			
Lower Freeport		230.2	1479.0						
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	ription: rock type, w sils, carbonate, mine entrations, pyrite, etc	erals,	Water Conditions	% Recovery	% RQD
			-						
			-	-					
				Sha	le, brown, weathered				
			<u> </u>	4					
10.2	10.2	=======================================	10						
		:=:=:=:=:=:=							
		:=:=:=:=:=:=	<u> </u>	-				100%	20%
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	-					
		:=:=:=:=:=:=		\exists					
			-	Sandy	Shale, gray and brow	'n			
		:=:=:=:=:=:=							
			20						
		:=:=:=:=:=:=						9997	4707
24.0	13.8		<u> </u>	_				80%	17%
21.0	10.0	=========							
			<u> </u>	_					
			30	Shale,	gray and brown, broke	en			
33.0	9.0		-						
		=======	_						
			-						
								100%	87%
			-					10076	01 /6
		========	40						
			_ :		Shale, dark gray				
			<u> </u>	Ⅎ	, Jun gray				
			<u> </u>	-					
			<u> </u>	=					
				4					
			50	Ⅎ					
			<u> </u>	4				100%	93%
53.7	20.7		<u> </u>	<u> </u>				10070	3 370
54.8	1.1	00000000000		Limestone, gra	y, with fossils (Brush (Creek LS)			
]					
			60						
				_					
			<u> </u>	-					
				_					
			<u> </u>	-	Shale, dark gray			100%	93%
				╛	onaio, dant gray			100 /0	9376
			70	-					
			<u> </u>						
		=======							
			<u> </u>	=					
		=======							
			<u> </u>	-				100%	53%
		=======							

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	L LOG			0721-S164 Page 2 of 5
	DII 4	005							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	905	-		Measured	l Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 2/13/2019-2/15/2019
Surface Elev.	1709	9.18			Date	Depth	Elevation		Drilled By:	RES
•			•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	-		ND				Municipality:	Donegal
Survey Method:	GF	s							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
•		Bottom		Bottom	SWL measured b	y: _		-	Laboratory:	Geochemical
Coal Sea	am ID	Depth (ft)	E	Elevation (MSL)					Northing: Easting:	290807.006
Mahoning	aili ID	137.3		1571.9	Upper Kittanning	259.0	1450.2		Grid Coordinates:	1508633.136
Upper Freeport Lower Freeport		176.4 224.4		1532.8	Middle Kittanning	286.5	1422.7			
Lower Freeport		230.2		1484.8 1479.0	Lower Kittanning	351.5	1357.6			
Depth	Thickness	Graphic		Scale		ription: rock type, sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		ntrations, pyrite, e		Conditions	70 H.000 H.01	71125
			_	_		Ohala dadaaa				
04.0	00.0	=======			Ì	Shale, dark gray				
84.0	29.2								100%	53%
				_]				100%	55%
				_						
			_	90	Shale	e, gray, with claysha	le .			
				30	- Critais	, gray, mar olayona				
		========	<u> </u>	_	1					
		=======		_						
95.0	11.0	======================================								
		:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=		_]				100%	67%
				_					10070	07 76
		:=:=:=:=:=:= :=:=:=:=:=:=:=		100	-					
		:=:=:=:=:=		_						
		:=:=:=:=:=:=: :=:=:=:=:=:=	_	_						
		:=:=:=:=:=:=		_						
				_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_							
		:=:=:=:=:=:=	_	110						
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	_	_						
		:=:=:=:=:=:=		_	Sandy Sh	ale, gray, with sand	Istone		100%	93%
				_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	-					
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	_	120	1					
		:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=]					
				_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	_	1					
		:=:=:=:=:=		_	1					
		:=:=:=:=:=:= :=:=:=:=:=:=:=		_	<u> </u>				100%	87%
130.0	35.0	:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	130						
100.0	55.5					Ohala deste		1		
133.4	3.4		\vdash	_	 	Shale, dark gray				
			_	_]		
				_	Maho	oning Coal, with sha	le			
137.3	3.9	##########								
		##########				Olavakala asas				
		########## ###########################		140	·	Clayshale, gray				
142.0	4.7	########## :=:=:=:=:=:=:=							97%	62%
		:=:=:=:=:=:=		_					07.70	0270
		:=:=:=:=:=:= :=:=:=:=:=:=:=	\vdash	_	1					
		:=:=:=:=:=:=		_]					
				_	1					
		:=:=:=:=:=:= :=:=:=:=:=:=:=		150	-					
		:=:=:=:=:=:=		_	Sandy :	Shale, gray, with sh	ale			
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>		1					
		:=:=:=:=:=		_]				100%	100%
				_	j					
		:=:=:=:=:=:=		_]					
		:=:=:=:=:=:=	⊢	100				1		

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 3 of 5
025 OME 10/01					,. 0_0				Operation Name :	Rustic Ridge #1 Mine-Expansion
Iole No. <u>DH-1905</u> Surface Elev. 1709.18			_		Measured	Static Water	l evels		Method Drilling:	Continuous Core
									Date Drilled:	2/13/2019-2/15/2019
Surface Elev.	1709	9.18	-		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By:	RES .
Surveyed by:	LC	:т			ND	(11)	(NOL)	Notes	Logged By: Municipality:	P. Mack Donegal
Survey		-	-						County, State:	Westmoreland, PA
Method:	GF		_					_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured by	y: _		=	Laboratory:	Geochemical
Coal Sea	am ID	Depth (ft)		Elevation (MSL)					Northing: Easting:	290807.006 1508633.136
Mahoning	AIII 10	137.3		1571.9	Upper Kittanning	259.0	1450.2		Grid Coordinates:	1000000.100
Upper Freeport		176.4		1532.8	Middle Kittanning	286.5	1422.7			
Lower Freeport Lower Freeport		224.4 230.2		1484.8 1479.0	Lower Kittanning	351.5	1357.6			
						iption: rock type,			0/ B	** POD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, mi ntrations, pyrite, e		Water Conditions	% Recovery	% RQD
, ,	. ,	[=[=[=]=]=								
			<u> </u>	-	1				100%	100%
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	_	Sandy S	Shale, gray, with sh	nale			
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	_						
170.0	28.0	:=:=:=:=:=:=:=	_	170						
			_	_						
			<u> </u>	_	5	Shale, dark gray			100%	53%
475.0				_						
175.0 1.4	5.0 1.0				Upper Fi	reeport Coal, with s	shale	1		
				_						
			<u> </u>	_	Shale	, gray, with claysha	le			
180.0	3.6			180						
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	-	1					
		:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	_	4					
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	_	4				100%	100%
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=		190	Sandy S	Shale, gray, with sh	nale			
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	_						
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	_						
		:=:=:=:=:=:= :=:=:=:=:=:=		_						
199.0	19.0	:=:=:=:=:=:=		200				1		
			<u> </u>	_		Sandstone, gray			100%	93%
				_	1					
205.0	6.0				1			1		
				_	4					
				_	<u> </u>					
				210	1					
				_	j	Shale, gray				
			Ē	_	4					
]					
217 5			Ē	_	4					
217.5								1	93%	57%
			Ē	220		Shale, dark gray				
				220	1	onale, dark gray				
222.4	17.0			_	1			4		
224.4	2.0				Lower Fi	reeport Coal, with s	shale			
			—	_	-					
				_	5	Shale, dark gray				
227.7	4.0						de al a	1		
230.2	2.5			230	Lower Fi	reeport Coal, with s	snale	1		
			\vdash	_	†					
				_					87%	27%
			<u> </u>	_	Sha	ale, gray, with clay				
				_						
238.0	7.8		\vdash	_	1					
		:=:=:=:=:=		046	Sandysha	ale, gray, with sand	stone	1		
				240				•	•	i l

JLB- CME - 10/01				7.1A GEOLOGIC DRILL LOG			0721-S164 Page 4 of 5
Hala Na	DU	005				Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	905	-	Measured Static Water Levels		Method Drilling: Date Drilled:	Continuous Core 2/13/2019-2/15/2019
Surface Elev.	1709	.18	<u>-</u>	Date Depth Elevation		Drilled By:	RES
Surveyed by:	LC	т		Measured (ft) (MSL) ND	Notes	Logged By: Municipality:	P. Mack
Survey		1	-	No		County, State:	Donegal Westmoreland, PA
Method:	GF		_		_	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured by:	-	Laboratory: Northing:	Geochemical 290807.006
Coal Sea	am ID	(ft)	(MSL)			Easting:	1508633.136
Mahoning Upper Freeport		137.3 176.4	1571.9 1532.8	Upper Kittanning 259.0 1450.2		Grid Coordinates:	
Lower Freeport		224.4	1484.8	Middle Kittanning 286.5 1422.7 Lower Kittanning 351.5 1357.6			
Lower Freeport		230.2	1479.0	Lithologic Description: rock type, weathering,			
Depth	Thickness	Graphic	Scale	color, fossils, carbonate, minerals,	Water Conditions	% Recovery	% RQD
(ft)	(ft)	Log :=:=:=:=:=:=	(feet)	concentrations, pyrite, etc.	Conditions		
		:=:=:=:=:=:= :=:=:=:=:=:=:=		_			
		:=:=:=:=:=:=		Sandy Shale, gray, with sandstone			
			-	_			
247.5	9.5	:=:=:=:=:=:= =========================			-	100%	93%
		========				10070	3070
			250				
		=======	E =	Shale, gray			
				╛			
256.0	8.5		_ =				
256.9	0.9			Shale, dark gray	1		
259.0	2.1			Upper Kittanning Coal, with shale			
261.0	2.0		260	Shale, dark gray			
201.0	2.0	:=:=:=:=:=:=			-		
				_		100%	77%
		:=:=:=:=:=:=		Sandyahala dark gray			
				Sandyshale, dark gray			
		:=:=:=:=:=:= :=:=:=:=:=:=		4			
270.0	9.0	:=:=:=:=:=:=:= :=:=:=:=:=:=	270				
			_	_			
			= =				
				Ohalla dada sassa			
				Shale, dark gray		100%	83%
			280				
				_			
204.0	44.0	=======	Ξ Ξ				
284.0	14.0			Middle Kittanning Coal	-		
286.5	2.5	========		1	1		
		=========	290	Shale, dark gray, with sandstone			
		=========	- -	-			
292.8	6.3				4	97%	83%
		00000000000 00000000000	<u> </u>	Limestone, gray			
		00000000000 00000000000	<u> </u>	(Middle Kittanning LS)			
298.0	5.2	00000000000		Clay gray			
299.5	1.5	########## :=:=:=:=:=:=	300	Clay, gray			
			_				
		:=:=:=:=:=:=		Sandy Shale, gray			
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	₫			
306.5	7.0	:=:=:=:=:=:= =========================			1		
						100%	100%
		=======================================	310	Shale, gray, with dark gray shale			
311.5	5.0			1	4		
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	₫			
			<u> </u>	-			
		:=:=:=:=:=:=	F -	Sandy Shale, gray			
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	₫		100%	100%
220.0	0.5	:=:=:=:=:=:=	220				

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 5 of 5
11-1- N-	DII 4	005							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	905			Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 2/13/2019-2/15/2019
Surface Elev.	1709	9.18			Date	Depth	Elevation		Drilled By:	RES
•					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GP	es							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	•	Bottom	SWL measured b	y: _		- -	Laboratory:	Geochemical
01 0	ID	Depth		Elevation					Northing:	290807.006
Coal Sea Mahoning	am ID	(ft) 137.3		(MSL) 1571.9	_ Upper Kittanning	259.0	1450.2		Easting: Grid Coordinates:	1508633.136
Upper Freeport		176.4		1532.8	Middle Kittanning	286.5	1422.7			
Lower Freeport Lower Freeport		224.4 230.2		1484.8 1479.0	Lower Kittanning	351.5	1357.6			
Depth	Thickness	Graphic		Scale	color, foss	ription: rock type, sils, carbonate, mi	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite, e	etc.	Conditions		
			_	_		Shale, dark gray				
				_	j	onalo, dam gray				
325.0	5.0								100%	100%
				_	Sandston	ne, gray, with sandy	shale			
328.2	3.2									
				330		tono grav 6 '	and			
					Sandst	tone, gray, fine graii	ied			
333.2	5.0	::::::::::::::::::::::::::::::::::::::			1			-		
		:=:=:=:=:=:=		=	Sandy Shale o	dark gray, w/ thin in	terhed SS			
337.3	4.1	:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	- Canay Chare, C	aan gray, w	torboa. CC			
557.5	4.1	=========		_				1	100%	100%
			_	340	-	Shale, dark gray				
341.3	4.0									
			_		-					
		:=:=:=:=:=			Sandy Shale, o	dark gray, w/ thin in	terbed. SS			
346.4	5.1		_	_	-					
347.4 348.2	1.0 0.8					Shale, dark gray Shale, dark gray				
349.40	1.20					ng - coal, with some	boney, dull			
351.54	2.14			350	Lower h	Kittanning - coal, br	ight			
		##########		_	Olevekele ded				050/	000/
354.2	2.7	######################################	_	_	Claysnale, dark	gray, some breaks	s, and sandy		85%	39%
		#########								
		######################################	_	_	Cloveb	nale, gray to dark gr	01/			
		######################################		_		al breaks, some slic				
		#########		360						
361.4	7.2	##########						-		
		========				Shale, gray				
365.0	3.6				<u> </u>					
			F		ł					
				_	1				100%	93%
		=========	\vdash	370	-	Oh-I- I				
]	Shale, dark gray				
		========	H	_	1					
275.2	10.0			_						
375.2	10.2				<u> </u>			1		
			_	_	Bottom of Ho	ole DH 1905 Depth 3	375.2 feet			
				_						
				380	1					
				_	1					
				<u> </u>						
			F	_	-					
				_	1					
			<u> </u>	_	-					
				390	1					
			<u> </u>	_	1					
				_	1					
				_	1					
			Ë	_	-					
			E	_	1					
			<u> </u>	400	4					

JLB- CME - 11/29/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 1 of 6
JLB- CME - 11/29/01 Hole No. DH-1944									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.					Measured	d Static Water	Levels		Method Drilling:	Continuous Core
Cumface Flavo	4704								Date Drilled:	11/14/2019-11/20/2019
Surface Elev.	1/6	.50	=		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES B. Maak
Surveyed by:	LC	т			ND	(11)	(INOL)	110103	Municipality:	P. Mack Donegal
Survey			-						County, State:	Westmoreland, PA
Method:	GF	S						_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured b	y:		_	Laboratory:	Geochemical
		Depth		Elevation					Northing:	287489.957
Coal Sea Mahoning	ım ıv	(ft) 220.2		(MSL) 1541.3	_ Upper Kittanning	369.70	1391.8		Easting: Grid Coordinates:	1517001.319
Upper Freeport		272.3		1489.2	Lower Kittanning	437.2	1324.3		Grid Coordinates.	
Coal		348.2		1413.3	J					
Upper Kittanning		352.8		1408.7	Lithologic Descr	ription: rock type,	weathering			
Depth	Thickness	Graphic		Scale	color, foss	sils, carbonate, mir	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log ###############		(feet)	conce	entrations, pyrite, e	tc.	Conditions		
		##########	_		†					
		#########		_	1					
		######################################	_	_	+					
		##########		_]					
		######################################	_	_						
		##########	_	_	†					
		##########		10						
		######################################	_	_	+					
		#########			Clay, brov	wn, sandy, with sand	dstone			
		######################################	<u> </u>	_	4					
		######################################	E	_	1					
		##########		_						
		######################################	_	_	+					
		##########		20						
		######################################	_	_						
		##########	_	_	†					
		##########		_						
25.2	25.2	##########								
27.2	2.0			_	Sands	stone, brown and gra	ay			
			_	_					100%	0%
				30						
		=======	_	_	1					
			_	_						
				_						
			_	_	1					
				_						
			_	_	· '	Shale, dark gray			100%	23%
				40						
			_	_	1					
			_	_						
			E	_	Ì					
			<u> </u>	_	1					
				_						
48.0	20.8				+			-		
				50	1					
			H		1					
				_	1				100%	63%
			<u> </u>	_	4					
				_	1					
				_	1					
			<u> </u>	_	1					
				60						
			_	_						
				_	Shale	e, gray, with clayshal	le			
			\vdash	_	4					
			H	_	1					
		=======		_					4000/	400/
			<u> </u>	_	1				100%	40%
				70	1					
			<u> </u>	_	-					
				_	1					
			E	_	Ì					
76.0	28.0		<u> </u>	_	†					
				_				1	4000/	070/
			_	_	4	Shale, gray			100%	87%
			\vdash	80	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 2 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	944	-		Measured	Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 11/14/2019-11/20/2019
Surface Elev.	1761	1.50			Date	Depth	Elevation		Drilled By:	RES
•			-		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	-		ND				Municipality:	Donegal
Survey Method:	GF	s							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
•		Bottom		Bottom	SWL measured b	y:		-	Laboratory:	Geochemical
Coal Sea	ID	Depth (ft)		levation (MSL)					Northing: Easting:	287489.957
Mahoning	מווווט	220.2		1541.3	Upper Kittanning	369.70	1391.8		Grid Coordinates:	1517001.319
Upper Freeport		272.3		1489.2	Lower Kittanning	437.2	1324.3			
Coal Upper Kittanning		348.2 352.8		1413.3 1408.7						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, foss	ription: rock type, sils, carbonate, mi entrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD
			_	_	-					
		=======		_						
			_	_					100%	87%
									100%	0176
				_		Shale, gray				
			_	90	-					
				_						
			_	_	-					
05.0	40.0			_						
95.0	19.0									
			_	_	-				100%	57%
				_						2
				100	Chala	aren with alexaher	la.			
				_	Snale	, gray, with claysha	ie			
				_						
				_						
107.0	12.0									
			_	_	1					
				110	1					
				_						
			_		-				100%	87%
				_						
			_	-	-					
				_						
				120						
					-					
				_	Shale	gray, with sandysha	ale			
		========		_	Gridle,	a.a., min sanuysik				
		========	—	-	1					
				_	1				100%	100%
				130	1					
			_	_	-					
				_	1					
			E	_	1					
				_	-					
		========		_	1					
140.0	33.0		-	140	-					
		=======		_]		
				_		Shale, dark gray			100%	93%
145.5	5.5	========	<u> </u>	_	-					
146.6	1.1				Shale, dark gr	ray, with fossils (Bru	sh Creek)	1		
			E	-]					
			_	150	-					
				-100]					
			<u> </u>	_	-	Ohala deste				
		=======		_]	Shale, dark gray				
		========	E	-	1				100%	83%
				_	-					
				_	<u> </u>					
				160						

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 3 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	944			Measured	d Static Water	Levels		Method Drilling:	Continuous Core
Surface Elev.	1761	1.50			Date	Depth	Elevation		Date Drilled: Drilled By:	11/14/2019-11/20/2019 RES
					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GF	ne.							County, State:	Westmoreland, PA
wethou.	Gr	Bottom		Bottom	SWL measured b	ov:		=	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation		_		_	Northing:	287489.957
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1517001.319
Mahoning Upper Freeport		220.2 272.3		1541.3 1489.2	Upper Kittanning Lower Kittanning	369.70 437.2	1391.8 1324.3		Grid Coordinates:	
Coal		348.2		1413.3	Lower Killarining	437.2	1324.3			
Upper Kittanning		352.8		1408.7	Lithelesia Dece	ription: rock type,	aath asin a	1		
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	sils, carbonate, mi entrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD
(it)	(11)			(ICCI)	Conce	entrations, pyrite, e		Conditions		
			_	_	-	Shale, dark gray			100%	83%
				_		onalo, dam gray			10070	0070
165.0	18.4							1		
				_	<u> </u>					
			_	_	-					
				170	Shal	le, dark gray, broke	n			
				_						
173.5	8.5								100%	30%
			_	_						
				_	1					
			_	_	-					
				_	Shale	e, gray, with claysha	ile			
				180						
				_	1					
183.5	10.0							1		
				_						
			_	_	1					
		=======		_					100%	97%
				190	-					
				_						
			_	_	-					
				_						
			_							
				_	Shale,	, gray, with sandysh	ale			
				200	+					
				_					100%	100%
				_					10070	10078
			Ë	_	4					
				_	1					
			_	_	1					
				210						
			E]					
213.5	30.0		_		1			1		
				_	1	Shale, dark gray				
217.5	4.0	========	_		1					
					14-1-	i OIishb	1-		93%	64%
220.2	2.7		_	220	Mand	oning Coal, with sha	ile			
			_	_						
				_						
			Ë	_	Shale	e, gray, with claysha	ile			
				_	1					
227.0	6.8				1			+		
					1					
		========		230	1					
				_	1				1000/	1000/
			\vdash	_	Shale,	, gray, with sandysh	ale		100%	100%
		=======		_						
					<u> </u>					
		=======		_]					
240.0	12.0		_	240	4					

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 4 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	944			Measured	Static Water	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1761	50			Date	Depth	Elevation		Date Drilled: Drilled By:	11/14/2019-11/20/2019 RES
ourrace Liev.	170	.50	•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_		ND	` '	, ,		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GF	Bottom		Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	OVIL IIIcasarca b	·y· _		-	Northing:	287489.957
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1517001.319
Mahoning Upper Freeport		220.2 272.3		1541.3 1489.2	Upper Kittanning	369.70	1391.8		Grid Coordinates:	
Coal		348.2		1413.3	Lower Kittanning	437.2	1324.3			
Upper Kittanning		352.8		1408.7	Little de sile Deser	-1				I
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, foss	ription: rock type sils, carbonate, m entrations, pyrite,	inerals,	Water Conditions	% Recovery	% RQD
				_						
			_	_	-					
				_						
				_						
			_	_	-	0			100%	90%
				_		Shale, gray				
				250	-					
				_						
			_	_						
				_						
256.0	16.0									
			_	_	1					
		=======		-						
				260						
		=======		_					100%	87%
			_	_	-	Shale, dark gra			100%	0176
				_						
			_	_						
				_						
			_	270	-					
271.5	15.5						-1-1-			
272.3	0.8				Оррег г	reeport Coal, with	Silale	1		
		=======		_						
			_	_	1	Shale, dark gray				
				_					100%	83%
279.0	6.7		_	_	-				100%	03%
				280						
			_	_	1					
				_						
				_	1					
				_	-					
			H	_	1					
		=======		200						
				290	1					
		========		=					4000/	4000/
			\vdash	_	1				100%	100%
				_]					
			H	_	1]		
				_	1					
			_	300	1	Shale, gray				
		========								
			_	_	-					
				_	1					
			_	_	1					
				_	1					
			H	_	-				100%	100%
				310	1					
		=========	_	_	-					
				_]					
			_	_	-					
				_	<u> </u>]		
				_	-				100%	97%
	=======================================				<u> </u>				100%	9170
		n l		220	1			1		i

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 5 of 6
Hala Na	DUA	044							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	944	•		Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 11/14/2019-11/20/2019
Surface Elev.	1761	.50			Date	Depth	Elevation		Drilled By:	RES
•			-		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	-		ND				Municipality:	Donegal
Survey Method:	GP	s							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	•	Bottom	SWL measured b	y:		-	Laboratory:	Geochemical
		Depth	E	Elevation					Northing:	287489.957
Coal Sea Mahoning	am ID	(ft) 220.2		(MSL) 1541.3	Upper Kittanning	369.70	1391.8		Easting: Grid Coordinates:	1517001.319
Upper Freeport		272.3		1489.2	Lower Kittanning	437.2	1324.3		ona occianates.	
Coal Upper Kittanning		348.2 352.8		1413.3 1408.7						
						ription: rock type				
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, mi entrations, pyrite, e		Water Conditions	% Recovery	% RQD
(7	()					, p				
			_	_	1					
				_						
			_	_	-				100%	97%
				_						
			_	_		Shale, dark gray				
				330						
			_	_						
		=======		_						
			—	_	1					
336.4	11.4									
			_		-				100%	83%
				040	Shala	, gray, with sandsto	uno.			
				340	Silale	, gray, with sandsic	ii le			
343.0	6.6			_	1					
343.0	6.6							1		
				_		Shale, dark gray				
				_	· ·	onaic, dank gray				
347.9 348.2	4.9 0.3					Coal				
				350		Shale, dark gray				
350.9	2.7						-1-1-			
352.8	1.9			_	Opper Ki	ittanning Coal, with	snaie		100%	80%
			_		Shale	, gray, with sandsto	ne			
356.4	3.6									
				_						
			_	360	-					
			_		Shale, d	ark gray, with sand	stone			
				_						
			—	_	1					
007.0	***			_					070/	060/
367.8	11.4		L		Unner V	ittanning Coal, with	shale	1	97%	86%
369.7	1.9	========		370	оррог К			-		
371.7	2.0			_		Shale, gray]		
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	—	_	-					
		:=:=:=:=:=:=		_]			1		
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	\vdash	_	1					
		:=:=:=:=:=:=		_						
			_	380						
		:=:=:=:=:=:=		_						
				_	<u> </u>				100%	100%
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	=	-					
		:=:=:=:=:=:=		_	Sandvsh	ale, gray, with sand	Istone			
		:=:=:=:=:=:= :=:=:=:=:=:=:=	 	_	- Canayon	., ., ., Gallo				
		:=:=:=:=:=:=			1					
				390	1					
		:=:=:=:=:=:=		_]			1		
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	—	_	1					
		:=:=:=:=:=:=		_				1	100%	100%
				_	1					
		:=:=:=:=:=	F	_	-					
400.0	20.2	:=:=:=:=:=:=		400	1			1		

JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 6 of 6
025 OME 1001					,. 0_0				Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	944			Mossurod	Static Water	Lovole		Method Drilling:	Continuous Core
									Date Drilled:	11/14/2019-11/20/2019
Surface Elev.	1761	.50	i		Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GP	e							County, State:	Westmoreland, PA
wethou.	Gr	Bottom	Bot	tom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		ation	OWE moderate b	· · · · · · · · · · · · · · · · · · ·		_	Northing:	287489.957
Coal Sea	am ID	(ft)		SL)					Easting:	1517001.319
Mahoning		220.2	15	41.3	Upper Kittanning	369.70	1391.8		Grid Coordinates:	
Upper Freeport		272.3		89.2	Lower Kittanning	437.2	1324.3			
Coal Upper Kittanning		348.2 352.8		13.3 08.7						
					Lithologic Descr	ription: rock type,	weathering,			
Depth	Thickness	Graphic	Sca			sils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log	(fee	t)	conce	ntrations, pyrite, et	c.	Conditions		
				_						
		=======		_					100%	100%
		=======	_	_		Shale, gray				
			_		1	Orlaic, gray				
				_						
409.0	9.0		_	_						
409.0	9.0	:=:=:=:=:=:=	410)				1		
		:=:=:=:=:=		_						
		:=:=:=:=:=:=	<u> </u>	_	Sandy Sh	ale, gray, with sand	stone		100%	100%
414.2	5.2	:=:=:=:=:=:= :=:=:=:=:=:=	-		†				100 /0	100 /0
				_						
			<u> </u>	_	900	ndstone, light gray				
			_	_	Sal	ilustorie, light gray				
419.0	4.8			_						
		:=:=:=:=:=:=	420)						
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_						
		:=:=:=:=:=:=								
		:=:=:=:=:=		_						
			_	_						
		:=:=:=:=:=		_	Sandy Shale, gr	ray, with interbedded	sandstone			
		:=:=:=:=:=							100%	87%
			430	, –						
		:=:=:=:=:=:=								
400.0	40.0	:=:=:=:=:=	_	_						
432.8 433.65	13.8 0.85				S	andy Shale, gray		<u>-</u>		
434.02	0.4				Lower Kittanning -	- Boney coal, dull, wi				
434.15	0.1				Lower K	Kittanning - Shale, bl	ack	_		
			_		Lower K	Kittanning - Coal, bri	ght			
437.20	3.05							<u> </u>		
		######################################	440)						
		##########		_	Clayshale,	, dark gray to gray, b	roken			
442.5	5.3	#########						4	89%	52%
			_	_						
				_	Sandsto	one, gray, some clay	rey			
447.1	4.6							4		
			-	-	Shale, gray, w	rith sandyshale and s	sandstone			
450.2	3.1	=======	450					4		
			-		Bottom of Ho	ole DH 1944 Depth 4	50.2 feet			
				_]					
			<u> </u>	_	4					
			-	_	1					
				_	1					
			_	_						
			460	_						
					1					
			<u> </u>	_	1					
			_	_						
				_	1					
			<u> </u>		-					
			-		†					
				_	1					
			470)	-					
			-	_	†					
				_	1					
			<u></u>	_	1					
			-		†					
				_	1					
			<u> </u>	_	1					
			_	_	4			1	İ	

JLB- CME - 11/29/01	7.1A GEOLOGIC DRILL LOG								0721-S164 Page 1 of 5				
	DH-1945								Operation Name :	Rustic Ridge #1 Mine-Expansion			
Hole No.	DH-1	945			Measured	Static Water	Levels		Method Drilling:	Continuous Core			
Surface Elev.	1684	1 29			Date	Depth	Elevation		Date Drilled: Drilled By:	12/3/2019-12/6/2019 RES			
ouridoo Elovi	100				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack			
Surveyed by:	LC	т			ND		-		Municipality:	Donegal			
Survey									County, State:	Westmoreland, PA			
Method:	GF	Bottom		Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical			
		Depth		Elevation	OVVE III CASAI CA D	_		-	Northing:	287051.569			
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1515855.743			
Mahoning Upper Freeport		148.7 205.5		1535.6 1478.8	Middle Kittanning	295.9	1388.4		Grid Coordinates:				
Upper Kittanning		278.2		1476.6	Lower Kittanning	370.4	1313.9						
Upper Kittanning		284.0		1400.3	1								
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, foss	iption: rock type, sils, carbonate, min ntrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD			
		######################################		_									
		##########		_									
		######################################	_	_									
		##########		_									
		######################################	_	_	1								
		##########		_									
		########## ###########################		10	-								
		##########		_	1								
		######################################	_	_	Claysh	ale, brown, weather	red						
		##########	E	_	<u> </u>								
		#########		_									
		######################################	_	_	1								
		#########											
		########## ###########################		20	-								
		##########		_									
		######################################		_	-								
25.2	25.2	##########		_									
25.5 27.0	0.3 1.5	######################################				Shale, dark gray Clay, gray							
				_					80%	0%			
			_	30	1								
				_									
			_	_	1								
				_									
			_	_	-								
				_									
			_	_	-				100%	83%			
				40		Shale, gray							
			_	_	-								
				_									
			<u> </u>	_	-								
				-]								
			<u> </u>	_	-								
				_	1								
				50	-								
52.0	25.0		E		1								
		:=:=:=:=:=:=		_]	100%	83%			
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_	†]					
		:=:=:=:=:=:=		_									
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_									
		(=(=(=(=)=			Sandy Sh	ale, gray, with sand	stone						
				60									
		:=:=:=:=:=		_									
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_	1								
65.0	13.0	:=:=:=:=:=:=:= :=:=:=:=:=:=		_	1								
			\vdash	_	-								
				_	1	Shale, dark gray			100%	90%			
69.6	4.6		\vdash	70	-								
		00000000000			Limestone, grav	, with fossils (Brush	r Creek LS)	1					
71.3	1.7	00000000000			, graj			-					
				_	1								
			_	_	-								
				_]	Shale, dark gray							
				_	1]	100%	90%			
			Н		1			1					

JLB- CME - 10/01				7.1A GEC	LOGIC DRIL	L LOG			0721-S164 Page 2 of 5
	DII.	10.45						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	1945		Measure	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 12/3/2019-12/6/2019
Surface Elev.	1684	1.29		Date	Depth	Elevation		Drilled By:	RES
			•	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	T	•	ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF	rs						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured	by:		- -	Laboratory:	Geochemical
Coal Sea	am ID	Depth (ft)	Elevation (MSL)					Northing: Easting:	287051.569 1515855.743
Mahoning	uiii ib	148.7	1535.6	Middle Kittanning	295.9	1388.4		Grid Coordinates:	1010000.740
Upper Freeport Upper Kittanning		205.5 278.2	1478.8 1406.1	Lower Kittanning	370.4	1313.9			
Upper Kittanning		284.0	1400.3	_					
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	cription: rock type, v ssils, carbonate, min entrations, pyrite, et	erals,	Water Conditions	% Recovery	% RQD
			-	\dashv					
				7					
								100%	90%
								10078	3070
			90	4	Shale, dark gray				
					3.,				
			-	\dashv					
			_ :	\exists					
				₫					
				=				93%	64%
99.3	28.0		-						
			100	-					
				Shal	le, gray, with clayshale	9			
				4					
110.0	10.7		110						
				=					
								100%	57%
				4					
			120	-					
		========							
		========		_					
				Shale	e, gray, with sandysha	Ie			
			- -	\dashv				100%	87%
		=======	400						
			130	╛					
			<u> </u>	\dashv					
				=					
		========		\exists					
				₫					
140.0	30.0		140	_					
				7				000/	050/
		========			Shale, gray, broken			80%	25%
146.0	6.0								
170.0	5.0				aning Cool with the		1		
148.7	2.7		- -	Mah	oning Coal, with shale	Э			
			150		Shale, gray]		
151.7	3.0				Gridio, gray]		
				<u></u> -					
		=======		7				100%	37%
			- -	Shal	le, gray, with clayshale	е			
				7					
			160	-					

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	L LOG			0721-S164 Page 3 of 5
OLD OINE 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	945			Moseurod	Static Water	Lovole		Method Drilling:	Continuous Core
									Date Drilled:	12/3/2019-12/6/2019
Surface Elev.	1684	1.29			Date	Depth	Elevation		Drilled By:	RES
C		· -			Measured ND	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	· I	•		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF	·s							Quadrangle:	Stahlstown, PA
		Bottom	•	Bottom	SWL measured by	y:		=	Laboratory:	Geochemical
		Depth		Elevation		_		_	Northing:	287051.569
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1515855.743
Mahoning Upper Freeport		148.7 205.5		1535.6 1478.8	Middle Kittanning	295.9	1388.4		Grid Coordinates:	
Upper Kittanning		278.2		1476.6	Lower Kittanning	370.4	1313.9			
Upper Kittanning		284.0		1400.3						
Depth	Thickness	Graphic		Scale		iption: rock type, ils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		ntrations, pyrite, e		Conditions	70 HOGG 10.19	N.1.25
		=======	_	_	1					
			_	_	†				100%	37%
		=======								
			_	_	-					
				_						
		=======	_	_						
			_	170						
			—	_	Shale	, gray, with claysha	le		100%	75%
				_	Stidle,	, ₅ , ₅ , mui olayəlid	· -		10070	13/0
				_						
			_	_	+					
				_						
			_	180	-					
				100						
			_	_						
			_	_	-					
185.0	33.3			_						
			_	_						
									100%	60%
			_	190						
				100						
			_							
			_	_	†					
				_	Shale	e, dark gray, broker	1			
			_	_						
			_	200	4					
				200						
			_	_	1				100%	63%
204.0	19.0		_	_	1				10070	0370
205.5	1.5				Upper Fr	reeport Coal, with s	hale	4		
			H	_	1					
		========		_						
			H	210	1					
					1					
			H	_	1					
				_	1					
			—	_	4					
				_	1					
									100%	80%
			H	220	†					
				_						
			H	_	1	Shale, gray				
				_	1					
			<u> </u>	_	4					
			E	_	<u> </u>					
				_	1					
				230	1					
			—	_	1				100%	100%
				_	1					
			_	_	4					
			E	_	<u> </u>					
			E	_	4					
			—	240	1					

JLB- CME - 10/01				7.1A GE	OLOGIC DRIL	L LOG				
								Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-1	945	-	Measure	ed Static Water	Levels		Method Drilling:	Continuous Core	
Surface Elev.	1684	1 29		Date	Depth	Elevation		Date Drilled: Drilled By:	12/3/2019-12/6/2019 RES	
Currace Liev.	100-	1.23	-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack	
Surveyed by:	LC	т	_	ND	` '	· · · · ·		Municipality:	Donegal	
Survey		_						County, State:	Westmoreland, PA	
Method:	GF	Bottom	Botton	SWL measured	bu		-	Quadrangle: Laboratory:	Stahlstown, PA	
		Depth	Elevation				-	Northing:	Geochemical 287051.569	
Coal Sea	am ID	(ft)	(MSL)					Easting:	1515855.743	
Mahoning		148.7	1535.6	Middle Kittanning	295.9	1388.4		Grid Coordinates:		
Upper Freeport Upper Kittanning		205.5 278.2	1478.8 1406.1	Lower Kittanning	370.4	1313.9				
Upper Kittanning		284.0	1400.3							
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fo	scription: rock type, ossils, carbonate, min centrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD	
(11)	(11)		(rect)		centrations, pyrite, e		Containons			
			_	_						
			_	\dashv						
				\exists						
			_	-	Shale, gray					
								100%	80%	
			250	-						
253.0	47.5		_	_						
255.0	47.5	#########								
		#########		\Box						
		########## ###########################	_	-	Claushala aray					
		##########		\exists	Clayshale, gray					
		######################################	260	\dashv						
261.0	8.0	#########								
			_	-				100%	60%	
			_	_						
					Shale, gray					
			_	_	Gridio, gray					
			270							
			_	_						
273.0	12.0		_	\dashv						
			_	_						
			_	-	Shale, dark gray					
								4000/	700/	
277.9 278.2	4.9 0.3			·	Jpper Kittanning Coal		1	100%	70%	
			280		Shale, dark gray					
281.8	3.6		_		Oriale, dark gray					
284.0	2.2			Upper	Kittanning Coal, with	shale				
			 	$\overline{}$						
				\Box						
			<u> </u>	\dashv						
		=======	290		Shale, dark gray					
			_	-						
								100%	77%	
294.8	10.8		_	-						
295.9	1.1			Middle	Kittanning Coal, with	shale				
			<u> </u>	$\overline{}$						
				\exists	Shale, gray					
301.0	5.1		300							
001.0	0.1	:=:=:=:=:=:=								
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	_	-						
		:=:=:=:=:=:=		\exists						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	H	$\overline{}$						
		:=:=:=:=:=:=						100%	100%	
		:=:=:=:=:=:= :=:=:=:=:=:=:=	310	$\overline{}$						
		:=:=:=:=:=:=		Sandy	Shale, gray, with sand	Istone				
		:=:=:=:=:=:=:= :	H	\dashv						
				\exists						
		:=:=:=:=:=	<u> </u>	\dashv						
		:=:=:=:=:=:= :=:=:=:=:=:=	E	\exists						
		:=:=:=:=:=:=						100%	100%	
		:=:=:=:=:=:=		\dashv						

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 5 of 5
OED CIME 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	945		Moasuro	d Static Water	Lovole		Method Drilling:	Continuous Core
								Date Drilled:	12/3/2019-12/6/2019
Surface Elev.	1684	1.29	_	Date	Depth	Elevation		Drilled By:	RES
				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	1	-	ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GP	s						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	ov:		-	Laboratory:	Geochemical
		Depth	Elevation		_		_	Northing:	287051.569
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1515855.743
Mahoning		148.7	1535.6	Middle Kittanning	295.9	1388.4		Grid Coordinates:	
Upper Freeport Upper Kittanning		205.5 278.2	1478.8 1406.1	Lower Kittanning	370.4	1313.9			
Upper Kittanning		284.0	1400.3						
Depth	Thickness	Cranbia	Scale		ription: rock type,		Water	% Recovery	% RQD
(ft)	(ft)	Graphic Log	(feet)		sils, carbonate, mir entrations, pyrite, et		Conditions	70 Necovery	/0 KQD
		:=:=:=:=:=:=							
		:=:=:=:=:=:=:=:=	<u> </u>						
			_	_					
		:=:=:=:=:=:=						100%	100%
			<u> </u>						
		:=:=:=:=:=:=							
		:=:=:=:=:=:=	L						
			330	_					
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :-:-:-:-:-	 	Sandy St	hale, gray, with sand:	stone			
		:=:=:=:=:=:= :=:=:=:=:=:=	 	Januy Si	o, g.ay, willi sailu				
		:=:=:=:=:=							
			- -					100%	93%
		:=:=:=:=:=:=							
		:=:=:=:=:=:=	340						
			-						
		:=:=:=:=:=:=							
			<u> </u>						
		:=:=:=:=:=:=							
346.9	45.9	:=:=:=:=:=:=					_		
			_						
			350	Sandstor	ne, light gray, fine gra	ained		100%	100%
351.9	5.0		- -						
		:=:=:=:=:=							
			- -						
		:=:=:=:=:=:=							
		:=:=:=:=:=:=						100%	100%
			- -	Sandy Shale,	dark gray, with intert	pedded ss		10070	10070
		:=:=:=:=:=:=	360						
			- -	_					
		:=:=:=:=:=:=						100%	100%
365.2	13.3		- -	-					
	10.0			Shale, dark gray (0.50			1		
366.9 367.8	1.7 0.9				ale, black, with coal boots coal, bright, with some		4		
307.0	0.9					sone and pyrite	1		
070.4	2.0		370		Lower Kittanning				
370.4	2.6	#######################################					†		
		#########		Clayshale	e, dark gray, some bi	roken		100%	43%
374.4	4.0	######################################	- -	+					
5. 1.1	0	#########					1		
277.0	2.5	######################################	- -	Cla	ayshale, gray, sandy				
377.9 379.4	3.5 1.5	#########			ale, gray, sandy, brol	ken	<u> </u>		
380.2	0.8	#########	380	Cla	ayshale, gray, sandy				
			- -	Bottom of Ho	ole DH 1945 Depth 3	80.2 feet			
			- -	+					
			⊢ =	4					
			 	+					
			390						
			- -	-					
			 	4					
			 	-					
			-	+					
l			- -	⊣			1		1

JLB- CME - 11/29/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 1 of 5
025 OME 11/20/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	946			Measured	Static Wate	r I evels		Method Drilling:	Continuous Core
									Date Drilled:	12/11/2019-12/13/2019
Surface Elev.	1681	.54			Date	Depth	Elevation		Drilled By:	RES
C		· -			Measured ND	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	· I			ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF	s							Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured b	v:		_	Laboratory:	Geochemical
		Depth		levation				_	Northing:	286357.336
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1514723.153
Upper Kittanning		267.5		1414.0					Grid Coordinates:	
Middle Kittanning Lower Kittanning		279.0 351.7		1402.5 1329.8						
Depth	Thickness	Graphic		Scale	Lithologic Descr	ription: rock type sils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		ntrations, pyrite,		Conditions	76 Resortery	70 NQD
		=======	_	_						
			_	_	-					
				_]					
		=======	_	_						
			_	_	-					
				_						
			_		1					
				10	†					
		=======		_						
			<u> </u>	_	Shal	e, brown, weather	eu			
				_	1					
		======	L.	_	-					
			_	_						
				_]					
				20						
			_	_	†					
				_						
25.2	25.2		_	_	-					
20.2	20.2							1		
07.5	0.0	=======	_	_	Sha	ale, brown and gra	ay		100%	40%
27.5	2.3							1	100%	40%
				30						
			_	_	-					
				_						
				_						
			_	_		Shale, gray				
				_]					
			_	_					100%	80%
			_	40	†					
40.0				_						
42.0	14.5							1		
				_						
			H	_	 	Shale, dark gray				
46.8	4.8				<u> </u>			_		
48.0	1.2	00000000000			Limestone, gray	y, with fossils (Bru	ısh Creek LS)	4		
			<u> </u>	50	1					
		=======		_]					
			—	_	-				100%	83%
					1				.0070	55,5
			<u> </u>	_	4					
			H	_	1					
				_	1					
			_	60						
				00	†					
		=======		=						
		=======================================	_	_	1	Oh-I- ' '				
		=======		_] '	Shale, dark gray				
			<u> </u>	_	4					
					1				100%	77%
		=======]					
				70	1					
					1					
			L.	=	Á					
			—	_	1					
				_						
			—	_	1				100%	40%
					1				.0070	,.
				80	ĺ			1		1

U.D. OME 40/04				7 1 A GEC	DLOGIC DRI	HIG			0704 0404 Dogg 2 of E
JLB- CME - 10/01				7.1A GLC	DEOGIC DRI	LL LOG		Operation Name :	0721-S164 Page 2 of 5 Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	946		Measure	d Static Water	r I avals		Method Drilling:	Continuous Core
								Date Drilled:	12/11/2019-12/13/2019
Surface Elev.	1681	1.54		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т		ND	(1.7)	(IIIOL)	110100	Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GF		. Dattam	CWI	L		=	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured I	by:		=	Laboratory: Northing:	Geochemical 286357.336
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1514723.153
Upper Kittanning Middle Kittanning		267.5 279.0	1414.0 1402.5					Grid Coordinates:	
Lower Kittanning		351.7	1329.8						
				Lithologia Doss	cription: rock type	woothering			
Depth	Thickness	Graphic	Scale	color, fos	ssils, carbonate, m	inerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite,	etc.	Conditions		
81.5	33.5		_		Shale, dark gray				
			-	-					
								100%	40%
				-					
				Shal	le, gray, with claysh	ale			
			90	-					
			-						
94.0	12.5								
			- -						
								4000/	000/
			- -					100%	80%
		========	100		Shale, gray				
105.0	11.0		-	_					
				-					
			110	-					
								100%	93%
								10070	3070
				Shale	e, gray, with sandysl	hale			
			<u> </u>	_					
			120						
				4					
			-	-					
,		======]					
126.5	21.5			Chala da	ul. avo.: /Mahanina I	Insiens)		100%	70%
128.5	2.0		400	Snale, da	rk gray (Mahoning I	10112011)	4		
			130	_					
			_ =	Shal	le, gray, with claysh	ale			
135.0	6.5			+			1		
			<u> </u>	4					
			140						
				-					
								100%	93%
			- -	-					
			<u> </u>	+	Shale, gray				
			=		- *				
			150	+					
			<u> </u>	+					
		=======	_ =					100%	80%
			<u> </u>	+					
		=======	_ =						
			160	+					
				_					

JLB- CME - 10/01				7.1A GFC	DLOGIC DR	III LOG			0721-S164 Page 3 of 5
3EB- OME - 10/01				7117. 020	220010 211			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	946		Measure	d Static Wate	er Levels		Method Drilling:	Continuous Core
Surface Elev.	1681	1.54		Date	Depth	Elevation		Date Drilled: Drilled By:	12/11/2019-12/13/2019 RES
Surface Liev.	100	1.54		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т		ND		`		Municipality:	Donegal
Survey Method:	GF	ne.						County, State:	Westmoreland, PA
wethou:	GF	Bottom	Bottom	SWL measured	bv:		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation		•		-	Northing:	286357.336
Coal Sea Upper Kittanning	ım ID	(ft)	(MSL) 1414.0	_				Easting:	1514723.153
Middle Kittanning		267.5 279.0	1402.5					Grid Coordinates:	
Lower Kittanning		351.7	1329.8						
				Lithologic Desc	cription: rock typ	e, weathering,			
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ssils, carbonate, r entrations, pyrite		Water Conditions	% Recovery	% RQD
(11)	(11)		(1001)	Conc	cintrations, pyrite	, 0.0.	Containons		
				-				100%	80%
				+					
		=======							
				=	Chala aray				
			170		Shale, gray				
				₫					
				4				100%	90%
				<u> </u>					
				+					
178.0	43.0								
			180	-					
			_		Shale, dark gray				
181.7	3.7								
		=======		Shale, dark g	ray, with coal (Upp	per Freeport)			
184.7	3.0								
				4				90%	78%
								3070	7070
			190	-					
			_						
				-					
				+					
			200						
				4					
								100%	87%
				-	<u>.</u>				
				7	Shale, gray				
				+					
			210	7					
			210	₫					
			_ =	4					
				1			1		
				-					
]				4000/	020/
				Ⅎ				100%	83%
			220]					
				Ⅎ					
			_ =	4					
225.0	40.3			1					
				-					
				1					
			230	Sh	ale, gray, variegat	ed			
]					
233.0	8.0			<u>-</u>				100%	53%
				_]		
				₫					
			_ =	Shal	le, gray, with clays	hale			
				₫					
240.0	7.0		240				1		

JLB- CME - 10/01				7.1A GE0	DLOGIC DRILL	LOG			0721-S164 Page 4 of 5
OLD OME 1001								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	946		Moasuro	d Static Water Le	wole		Method Drilling:	Continuous Core
								Date Drilled:	12/11/2019-12/13/2019
Surface Elev.	1681	1.54	-	Date		Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	<u> </u>	<u>-</u>	ND				Municipality:	Donegal DA
Survey Method:	GF	99						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
ct.iou.	<u> </u>	Bottom	Bottom	SWL measured	bv:			Laboratory:	Geochemical
		Depth	Elevatio					Northing:	286357.336
Coal Sea	am ID	(ft)	(MSL)					Easting:	1514723.153
Upper Kittanning		267.5	1414.0					Grid Coordinates:	
Middle Kittanning Lower Kittanning		279.0 351.7	1402.5 1329.8						
Lower rattarining		001.7	1020.0						
Double	Thistonese	0	01-		cription: rock type, we		W-1	9/ Pagayany	% RQD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ssils, carbonate, minera entrations, pyrite, etc.	ais,	Water Conditions	% Recovery	/0 KQD
, ,	. ,								
				_					
				-					
				\dashv					
				Shale	e, gray, with sandyshale			100%	100%
			250						
				-					
				コ					
255.0	15.0		<u></u>	_					
255.0	15.0								
				_	Shale, dark gray				
258.7	3.7		<u></u>	_	3.,				
236.7	3.1		260	Shalo dark a	ray, with coal (Upper Kitt	onning)			
260.8	2.1			Shale, dark g	ray, with coal (Opper Kitt	anning)			
				=				100%	68%
				=	Shale, dark gray			10070	5576
				_					
266.2 267.5	5.4 1.3	=======		11	pper Kittanning Coal				
207.5	1.5				ppor randaming oddi				
		=======		_					
			270	_					
			_	Chala	dark gray, with sandstone	•			
		=======		Silale,	uaik gray, with sanustoni	е			
				=					
				\neg					
277.4	9.9							4000/	020/
29.0	1.6			Middle I	Kittanning Coal, with shall	le		100%	83%
20.0	1.0	========	280						
		=======		_					
				コ	Ohala				
			-	\dashv	Shale, gray				
				╛					
		=======		7					
290.2	11.2		290	\dashv					
	· · · · · · · · · · · · · · · · · · ·								
			<u>_</u>	\dashv	Shale, dark gray			100%	100%
				-	Oriale, dark gray			100 /6	100 /6
295.0	4.8		_						
		00000000000 00000000000	<u> </u>	\dashv					
		000000000000		Limestone	, gray (Middle Kittanning	LS)			
		000000000000		_					
300.0	5.0	00000000000	300						
				コ					
			<u> </u>	\dashv	Shale, gray				
305.2	5.2		 -	=					
306.2	1.0				Shale, dark gray				
	_		<u> </u>	\dashv				100%	83%
			<u> </u>	\dashv				100 /0	UJ /0
			310	コ					
			<u> </u>	\dashv					
					arov with construct				
				Shale	e, gray, with sandyshale				
			<u> </u>	\dashv					
				∃ □					
				\exists				100%	83%
			320	\dashv					

JLB- CME - 10/01					7.1A GEO	LOGIC DE	RILL LOG			0721-S164 Page 5 of 5
Hole No.	DH-1	946							Operation Name : Method Drilling:	Rustic Ridge #1 Mine-Expansion Continuous Core
			-			d Static Wat			Date Drilled:	12/11/2019-12/13/2019
Surface Elev.	1681	.54	-		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By:	RES .
Surveyed by:	LC	т			ND	(ft)	(WSL)	Notes	Logged By: Municipality:	P. Mack Donegal
Survey			-						County, State:	Westmoreland, PA
Method:	GF		-	Dattem	CIVII management b			_	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	oy:		-	Laboratory: Northing:	Geochemical 286357.336
Coal Sea	am ID	(ft)		(MSL)					Easting:	1514723.153
Upper Kittanning Middle Kittanning		267.5 279.0		1414.0 1402.5					Grid Coordinates:	
Lower Kittanning		351.7		1329.8						
					Lithologic Descr	rintion: rock tvi	ne weathering			
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, foss	sils, carbonate, entrations, pyrite	minerals,	Water Conditions	% Recovery	% RQD
				_	Ohala	and the same	-h-l-			
			-	_	Snale,	gray, with sandy	rsnaie			
325.0	18.8								100%	83%
		:=:=:=:=:=:= :=:=:=:=:=:=		_	Sandy Shale	e, gray, with sand	Istone, hard			
328.0	3.0	:=:=:=:=:=								
				330	1					
					-					
				_	Sandstone	e, light gray, som	e breaks			
			F	_	-					
				_]				100%	100%
337.4	9.4	:=:=:=:=:=:=:=						4		
		:=:=:=:=:=:=								
				340	1					
		:=:=:=:=:=:=		_	Sandyshale, d	dark gray, with in	terbedded ss		4000/	4000/
			—	_					100%	100%
246.2	0.0	:=:=:=:=:=:=								
346.3 347.44	8.9 1.14	:=:=:=:=:=:= =========================				Shale, gray				
347.81 348.01	0.37				Lower Kittanning	g - Boney coal, w g - Shale, black,				
040.01	0.20			350						
351.70	3.69		_	_	Lower h	Kittanning - Coal,	bright			
		##########		_					100%	43%
		######################################	\vdash	_	Clayshale, dark	gray, several bre	aks, with slicks			
356.6	4.9	######################################		_	-					
555.5	4.0	#########								
359.7	3.1	######################################	-	360	Clayshale,	gray, with HAFs	and slicks			
		##########		_	Cla	yshale, gray, sar	ndy			
361.7	2.0	######### ========						-	100%	100%
365.2	3.5	========		_	Shale,	gray, with sandy	rshale			
					Bottom of Ho	ole DH 1946 Dep	th 365.2 feet			
			_	_	-					
				370	-					
				_]					
			\vdash	_	-					
				_	1					
					1					
				380						
			_	_	-					
				_	1					
			Ь		1					
				_]					
				_	<u> </u>					
			F	390	-					
]					
			<u> </u>	_	-					
				_	1					
			\vdash	_	1					
			F	_						
					<u> </u>					
			ı	400	I .			1	İ	1

JLB- CME - 11/29/01				7.1A GE0	DLOGIC DRILL LOG			0721-S164 Page 1 of 5
							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	1947			al Ctatia Matau Lavala		Method Drilling:	Continuous Core
			-	weasure	d Static Water Levels		Date Drilled:	12/17/2019-12/23/2019
Surface Elev.	1679	9 72		Date	Depth Elevation		Drilled By:	RES
ouridoc Liev.		J., L	-	Measured	(ft) (MSL)	Notes	Logged By:	
Cumranad hur		`Т		ND	(It) (MOL)	110103		P. Mack
Surveyed by:	L(<i>,</i> 1	-	ND			Municipality:	Donegal
Survey							County, State:	Westmoreland, PA
Method:	GF		-			_	Quadrangle:	Stahlstown, PA
		Bottom		SWL measured	by:		Laboratory:	Geochemical
		Depth	Elevation				Northing:	287373.536
Coal Sea	am ID	(ft)	(MSL)				Easting:	1514686.294
Mahoning		121.2	1558.5				Grid Coordinates:	
Upper Freeport		168.6	1511.1					
Middle Kittanning		269.8	1409.9					
Lower Kittanning		345.6	1334.1					
					cription: rock type, weathering,			
Depth	Thickness	Graphic	Scale		ssils, carbonate, minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conc	entrations, pyrite, etc.	Conditions		
			<u> </u>					
			_					
		=======						
								
								
			-					
		========						
			10					
						1		
	1		<u></u>	_				
		=======	<u> </u>	Shale,	brown, highly weathered	1		
		=======						
			<u> </u>					
			_					
		=======	<u> </u>	_				
			20					
			_					
		========						
		========						
25.2	25.2	=======						
		=======					4000/	00/
		=======	_				100%	0%
			30					
			30					
		========			Shale, brown			
		=======						
		========						
							4000/	9004
			<u> </u>				100%	33%
40.0	44.0			_				
40.0	14.8		40			-		
			_					
					Shale, gray			
43.5	3.5	========						
	1		Ľ	_	Shale, dark gray			
46.7	3.2	=======						
40.0	4.0	000000000000	—	Limestone, gra	ay, with fossils (Brusch Creek LS)			
48.3	1.6	00000000000	50	+		\dashv		
	1		- 50	┪				
		=======				1		
	1					1	100%	83%
	1		L			1		
	1	=======	<u> </u>	_		1		
	1	=======	<u> </u>	\dashv				
			_					
								
			60					
			- 00					
	1			┪	Chala dayles			
	1			7	Shale, dark gray			
	1							
	1		Ľ	_				
	1	=======	<u></u>	_				
		=======	<u> </u>			1		
		=======	<u> </u>	_		1	100%	93%
		=======	H	_		1		
	1	=======	70			1		
	1		 	\dashv				
	1		H	=				
	1			┪				
75.3	27.0			<u> </u>				
		=======	<u> </u>	4	Chala area		1000/	070/
	1	=======	—	⊢	Shale, gray		100%	87%
80.3	5.0		80	-				
00.3	5.0		00	1		1	i	1

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 2 of 5
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	947			Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Floy	1670	72			Date	Depth	Elevation		Date Drilled:	12/17/2019-12/23/2019
Surface Elev.	1679	3.7Z	•		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	(/	()		Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF							-	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	by:		-	Laboratory: Northing:	Geochemical 287373.536
Coal Sea	am ID	(ft)		(MSL)					Easting:	1514686.294
Mahoning		121.2		1558.5	-				Grid Coordinates:	
Upper Freeport Middle Kittanning		168.6 269.8		1511.1 1409.9						
Lower Kittanning		345.6		1334.1						
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions	~ noctory	71125
82.0	1.7		_		-	Shale, dark gray				
	1.7				Shale	e, dark gray, with c	nal			
84.0	2.0				Share	s, dank gray, with c	oui -			
			_	_	1				100%	87%
				_						
			_	_	-					
		========		90						
			_	_	+					
				_						
			_	_	-					
				_						
			_	_	-				100%	90%
				_	<u> </u>					
				100	4					
				_	<u> </u>	Shale, gray				
			_		-					
				_	1					
			_	_						
				_	1					
				110						
				110						
				_					100%	77%
			_	_	1				10070	1170
				_						
				_	1					
118.2	34.2									
				120	Maho	oning Coal, with sh	ale			
121.2	3.0									
				_						
			_	_	4					
						Shale, gray				
			_	_	4	-, g.wj			100%	80%
				_	1]	. 2070	2370
131.0	9.8			130	1					
				_	S	Shale, gray, limey		1		
133.0	2.0							1		
				_						
			_	_	1					
				_						
			_	140	-					
		=======								
			_	_	-				100%	87%
				_						
			E	-	1					
				_	1	Shale, gray				
			Е	_	<u> </u>					
			_	150	4					
			E	_	1]		
				_	4					
					<u> </u>				100%	70%
			Ē	=	1				100 /0	1070
					<u> </u>					
			H	160	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 3 of 5
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	947			Measured	Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Floy	1670	72			Date	Depth	Elevation		Date Drilled:	12/17/2019-12/23/2019
Surface Elev.	1679	9.72			Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	()	(Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF							_	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	y:		-	Laboratory: Northing:	Geochemical 287373.536
Coal Sea	am ID	(ft)		(MSL)					Easting:	1514686.294
Mahoning		121.2		1558.5	-				Grid Coordinates:	
Upper Freeport Middle Kittanning		168.6 269.8		1511.1 1409.9						
Lower Kittanning		345.6		1334.1						
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions	~ noctory	71125
161.0	28.0					Shale, gray				
163.0	2.0			_	Sh	ale, gray, fracture	d		100%	70%
			_	_						
			_	_	Shale, d	ark gray, with san	dstone			
167.0	4.0									
168.6	1.6		_	_	Upper F	reeport Coal, with	shale			
				170						
			_	_	-					
		=======		_]				100%	77%
			-	_	+					
				_	1					
			-	_	+					
					1					
				180	+	Shale, gray				
				_						
			_	_	-					
		=======								
			_	_	-					
				_					100%	67%
				190						
192.0	23.4		_	_						
192.0	25.4									
			_	_	-					
				_						
			_	_	1					
					1					
				200	-					
				_					100%	100%
				_					10070	10070
			_	_	4					
				_	1					
			_	_	Shale	gray, with sandys	shale			
				210	S.iaio,	,, oa.ayc	·	1		
			_	_	1					
				_	1					
			_	_	1					
				_						
			_	_	+				100%	100%
					1					
				220	-					
		=======		_						
			Е	_	<u> </u>					
225.0	33.0				1			-		
				_	1					
			Ŀ.	_	-					
				230	1					
			_	_	Sands	stone, gray, with s	hale			
				_		.,,,	•		100%	87%
			_	_	1					
				_]					
238.0	13.0		E		<u> </u>]		
240.2	22			240	Shale, dark gra	ay, with coal (Uppe	er Kittanning)]		

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 4 of 5
025 OM2 1001									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	947			Measured	Static Wate	er Levels		Method Drilling:	Continuous Core
Cumface Flass	4070	. 70			Date				Date Drilled:	12/17/2019-12/23/2019
Surface Elev.	1679	1.72	-		Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	()	()		Municipality:	Donegal
Survey			-						County, State:	Westmoreland, PA
Method:	GP				CIVII management b			•	Quadrangle:	Stahlstown, PA
		Bottom Depth		ottom evation	SWL measured b	y:		•	Laboratory: Northing:	Geochemical 287373.536
Coal Sea	am ID	(ft)		(MSL)					Easting:	1514686.294
Mahoning		121.2		1558.5	_				Grid Coordinates:	
Upper Freeport Middle Kittanning		168.6 269.8		1511.1 1409.9						
Lower Kittanning		345.6		1334.1						
Depth	Thickness	Graphic	Se	cale	Lithologic Descriction Color, foss	ription: rock type sils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log	(fe	ieet)	conce	ntrations, pyrite,	, etc.	Conditions		
				_						
			_	_	-					
				_	Shal	le, dark gray, brok	ren			
				_	Onai	ic, dark gray, brok	icii			
				_					100%	43%
050.0										
250.0	9.8			250	Sandatona grav w	rith and / Innar Ki	ittonning Horizon)			
252.5	2.5				Sandstone, gray, w	пп соаг (оррег КІ	maining HUHZUH)			
			E	_	Shale, dark gray, w	rith coal (Upper Ki	ittanning Horizon)			
255.3	2.8									
				_						
		========	_	_	-					
			<u></u>	260	-					
			_			Shale, dark gray				
			_	_	1	onale, dark gray			100%	57%
		=======		_						
			_	_	-					
268.0	40.7	=======		_						
	12.7	=======			Middle Ki	ittanning Coal, wit	th shale			
269.8	1.8	========	2	270		J ,				
070.5	0.7			_		Shale, gray				
273.5	3.7	:=:=:=:=:=:=								
			<u> </u>	_	-					
		:=:=:=:=:=:=		_						
			_	_	1				100%	90%
		:=:=:=:=:=:=	2	280						
				_	1					
		:=:=:=:=:=		_	Sandysh	ale, gray, with san	ndstone			
				_	1					
		:=:=:=:=:=		_						
			_	_	1					
		:=:=:=:=:=:=]					
		:=:=:=:=:=:= :=:=:=:=:=:=	2	290	1					
292.5	19.0	:=:=:=:=:=							4000/	000/
			E		1	Shale, gray			100%	83%
295.0 295.5	2.5 0.5					Shale, dark gray				
290.0	0.5	:=:=:=:=:=:=								
299.0	3.5			_	S	andy Shale, gray				
300.2	1.2		3	300		Shale, dark gray				
				_	-					
				_						
			<u> </u>	_	1					
				_						
			<u> </u>	_	1	Shale, gray			100%	100%
					1					
			3	310	1					
				_	1					
			E	_	1					
315.2	15.0			_						
			E	_	<u> </u>					
		:=:=:=:=:=:=	<u> </u>	_	Sandy Sh	ale, gray, with sar	ndstone		100%	100%
			 	320	1					

JLB- CME - 10/01				7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 5 of 5
Hole No.	DH-1	947						Operation Name : Method Drilling:	Rustic Ridge #1 Mine-Expansion Continuous Core
					d Static Wate			Date Drilled:	12/17/2019-12/23/2019
Surface Elev.	1679	.72		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т		ND	(11)	(WISE)	Notes	Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	SWL measured b	w.		=	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation	OWE incasured b	, y .	-	=	Northing:	287373.536
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1514686.294
Mahoning Upper Freeport		121.2 168.6	1558.5 1511.1					Grid Coordinates:	
Middle Kittanning Lower Kittanning		269.8	1409.9 1334.1						
		345.6		Lithologic Desc				=	
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, entrations, pyrite		Water Conditions	% Recovery	% RQD
322.0	6.8	:=:=:=:=:=:= :=:=:=:=:=:=	- -	Sandy Sh	nale, gray, with sa	andstone			
			_						
				1				100%	100%
			<u> </u>	4				10070	10070
			330	-					
			<u> </u>		light gray, w/ inter several breaks	bed. shale,			
				1				100%	100%
			- -	1					
				1					
			_	1				100%	100%
340.4	18.4		340	+					
341.0 342.0	1.0 0.6	[=[=[=]=]=			ndy Shale, dark gi				
342.7	0.7			Lov	wer Kittanning Co	pal			
345.6	2.9		= =	Lower H	Kittanning - Coal,	bright			
040.0	2.0	##########		Olevenhede de	-1			000/	700/
349.4	3.8	########## ###########################	-	Ciaysnaie, da	ark gray to gray, s	some breaks		92%	76%
		######################################	350						
		##############		Clayshale	e, gray, sandy, wi	th slicks			
		######################################	-	1					
355.2	5.8	#########							
				Bottom of Ho	ole DH 1947 Dept	th 355.2 feet			
			<u> </u>	<u> </u>					
			360	4					
			<u> </u>						
			_ =	-					
				1					
				1					
			370	1					
			380	1					
				1					
			<u> </u>	-					
				1					
			_	1					
			300	+					
				1					
			_ _	1					
				1					
			390	1					
			000	1					
				1					
			<u> </u>	1					
			_ =	-					
				1					
			<u> </u>	1					
			400	1			1		I

JLB- CME - 11/29/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 1 of 5
Hala Na	DU	1004							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2001	•		Measured	Static Water	r Levels		Method Drilling: Date Drilled:	Continuous Core 1/6/2020-1/10/2020
Surface Elev.	1660	0.00			Date	Depth	Elevation		Drilled By:	RES
•			•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GF	es							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom		Bottom	SWL measured b	y:			Laboratory:	Geochemical
		Depth		Elevation					Northing:	287373.536
Coal Sea Mahoning	am ID	(ft) 117.7		(MSL) 1542.3	_ Lower Kittanning	344.5	1315.5		Easting: Grid Coordinates:	1514686.294
Upper Freeport		163.7		1496.3	Lower remaining	011.0	1010.0		Grid Goordinatoo.	
Upper Kittanning Middle Kittanning		250.8 275.8		1409.2 1384.2						
						iption: rock type				
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, m ntrations, pyrite,		Water Conditions	% Recovery	% RQD
(7	()				55,100	, , , , ,				
			_	_	1					
				_						
			_	_	+					
				_	1					
			_	_						
				10						
			_	_	+					
				_	Shale	e, brown, weathere	ed			
			<u> </u>	_	†					
			_	_	1					
				-						
				20						
				_						
			_	-						
25.2	25.2									
				_	1					
			_	-					100%	40%
				30						
			_	_	-					
				_		Shale, gray				
			_	_	+					
				_						
			_	_	1				100%	83%
20.0	44.4									
39.6 41.0	14.4	00000000000		40	Limestone, gray	, with fossils (Brus	sh Creek LS)			
			_	_						
			E]					
		========	—	_	4					
				_						
			_	_	4					
				50						
			—	_	†					
				_	1				100%	80%
				_	<u> </u>					
				_	\$	Shale, dark gray				
			Е	_	<u> </u>					
		========		60	4					
				- 60	1					
			F	_	4					
				_	1					
			_	_	4					
				_	1					
			_	_	4				100%	77%
70.5	29.5			70	1					
			_		-					
				_	1					
			—	_	Shale	, gray, with claysh	ale			
				_]					
			_	_	1				100%	80%
79.0	8.5				Chala	gray with candyst	hala			

JLB- CME - 10/01				7.1A GEO	LOGIC DRILL	LOG			0721-S164 Page 2 of 5
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2001	<u>.</u>	Measure	d Static Water Le	evels		Method Drilling:	Continuous Core
Confess Flan	4000							Date Drilled:	1/6/2020-1/10/2020
Surface Elev.	1660	J.UU		Date Measured	Depth E	Elevation (MSL)	Notes	Drilled By: Logged By:	RES B. Maek
Surveyed by:	LC	т.		ND	(11)	(WOL)	140163	Municipality:	P. Mack Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GF	rs						Quadrangle:	Stahlstown, PA
		Bottom		SWL measured b	oy:			Laboratory:	Geochemical
010	15	Depth	Elevation					Northing:	287373.536
Coal Sea Mahoning	am ID	(ft) 117.7	(MSL) 1542.3	 Lower Kittanning	344.5	1315.5		Easting: Grid Coordinates:	1514686.294
Upper Freeport		163.7	1496.3	Lower radarining	344.3	1010.0		ona ocoramates.	
Upper Kittanning		250.8	1409.2						
Middle Kittanning		275.8	1384.2	Lithologic Desc	ription: rock type, we	eathering.			
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	sils, carbonate, miner entrations, pyrite, etc.		Water Conditions	% Recovery	% RQD
			-						
			<u> </u>					100%	80%
			<u> </u>						
			90						
			<u> </u>	-					
			<u> </u>	7					
			<u> </u>	-					
				Shale	, gray, with sandyshale			100%	93%
			100						
			100						
		=======	<u> </u>						
			<u> </u>						
			-						
			110						
			-					100%	63%
114.0	35.0								
115.5	1.5				Shale, dark gray				
117.7	2.2			Maho	oning Coal, with shale				
			-						
			120						
			<u> </u>						
			<u> </u>						
				I					
			_ ,	-				100%	93%
				Ⅎ				10070	9370
			130	4					
			<u> </u>	\dashv					
				4					
			<u> </u>	+					
		=======							
			<u> </u>	\dashv	Shale, gray				
			140						
				╛					
			<u> </u>					100%	90%
				╛					
			<u> </u>	4					
				\dashv					
		=======							
			150	\dashv					
			<u> </u>	-					
				╛				90%	67%
157.0	39.3		<u> </u>	-				30 /0	01 /0
107.0	33.3								
			160		Shale, dark gray				

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 3 of 5
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2001			Measured	Static Water	Levels		Method Drilling:	Continuous Core
O	4000								Date Drilled:	1/6/2020-1/10/2020
Surface Elev.	1660	J.00			Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES D. Mosk
Surveyed by:	LC	:T			ND	(11)	(WISE)	Notes	Municipality:	P. Mack Donegal
Survey		•	•						County, State:	Westmoreland, PA
Method:	GF	rs						_	Quadrangle:	Stahlstown, PA
		Bottom		tom	SWL measured b	y:		_	Laboratory:	Geochemical
		Depth		ation					Northing:	287373.536
Coal Sea Mahoning	am ID	(ft) 117.7		SL) 42.3	Lower Kittenning	244 5	121E E		Easting: Grid Coordinates:	1514686.294
Upper Freeport		163.7		96.3	Lower Kittanning	344.5	1315.5		Grid Coordinates.	
Upper Kittanning		250.8	140	09.2						
Middle Kittanning		275.8	138	34.2	Lithologic Descr	iption: rock type	weathering			
Depth	Thickness	Graphic	Sca		color, foss	sils, carbonate, mi	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(fee	t)	conce	ntrations, pyrite, e	etc.	Conditions		
		=======			:	Shale, dark gray				
162.4 163.7	5.4 1.3	=======			Un	per Freeport Coal		_	90%	67%
103.7	1.5	##########			- Sp	por ricoport coa.				
		#########		_	Claus	hale, gray, with sha	alo.			
		######################################	_	_	Clays	naie, gray, with sna	ile			
169.0	5.3	##########								
		========	170)						
				_]					
		========	<u> </u>	_	-				100%	90%
				_	<u> </u>					
				_						
			_	_	-					
				_						
			180)	-					
		========		_						
			_	_	-					
			_		1					
				_						
			_	_	1				100%	100%
				_						
			190)	-					
		=======		_						
			_	_	1					
		=======			Shale.	gray, with sandysh	ale			
			_	_	1	3 - ,,				
				_						
			200	_						
			200							
		=======	_	_					100%	100%
			_	_					10076	10076
			Ľ.	_	4					
			<u> </u>	_	1					
		=======		_						
			210	, –	1					
		=======	_	_]					
			-	_	1					
				_	1					
			<u> </u>	_	1					
				_						
			_	_					100%	90%
			220	_						
221.0	52.0	=======						_		
			E	_	Sanda	tone, gray, with sh	ale			
00E 0	4.0		F		Sarius	, gray, with SH				
225.0	4.0							-		
			F	_]					
			_	_	1					
			230)]					
			<u> </u>	_	1					
				_] :	Sandstone, gray			100%	100%
			<u> </u>	_	-					
				_]					
			<u> </u>	_	-					
				_]					

JLB- CME - 10/01				7.1A GEC	DLOGIC DRILL			0721-S164 Page 4 of 5	
	DH-2001							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	:001	-	Measure	d Static Water Le	evels		Method Drilling:	Continuous Core
Surface Floy	1660			Date	Depth I	Elevation		Date Drilled:	1/6/2020-1/10/2020
Surface Elev.	1000	1.00	-	Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т		ND	(1-7)	()		Municipality:	Donegal
Survey			-					County, State:	Westmoreland, PA
Method:	GP		_					Quadrangle:	Stahlstown, PA
		Bottom		SWL measured	by:			Laboratory:	Geochemical
01 0	ID	Depth	Elevation						287373.536
Coal Sea Mahoning	ım IV	(ft) 117.7	(MSL) 1542.3	Lower Kittanning	344.5	1315.5		Easting: Grid Coordinates:	1514686.294
Upper Freeport		163.7	1496.3	Lower Kittarining	344.3	1313.3		Grid Coordinates.	
Upper Kittanning		250.8	1409.2						
Middle Kittanning		275.8	1384.2	Lithologic Desc	cription: rock type, we	athering			
Depth	Thickness	Graphic	Scale	color, for	ssils, carbonate, miner	rals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conc	entrations, pyrite, etc.		Conditions		
			<u> </u>						
			- -		Sandstone, gray				
					,				
			<u> </u>					100%	80%
248.9	23.9		-					10070	0070
			250	Upper h	Kittanning Coal, with sha	ale			
250.8	1.9								
			_						
			-						
			-	_					
			260						
			-		Shale, dark gray			100%	93%
			-						
			_						
			270						
273.5	22.7		-						
				Middle I	Kittanning Coal, with sha	ale			
275.8	2.3								
			<u> </u>		Shale, gray			100%	80%
			280						
281.0	5.2								
			-	_					
					Shale, dark gray				
286.5	5.5		 	-					
			 						
			290						
			<u> </u>	_	Shale, gray				
			 					100%	93%
295.0	8.5	======================================							
		:=:=:=:=:=:=							
		:=:=:=:=:=:=	<u> </u>						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	300						
		:=:=:=:=:=:=							
			<u> </u>						ļ
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=:=	 	-					
		:=:=:=:=:=:=							
		:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=	<u> </u>	Sandy S	Shale, gray, with sandsto	one		100%	100%
			310						
		:=:=:=:=:=:=							
			 - -						
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	-					
		:=:=:=:=:=:=:=							
		:=:=:=:=:=:=:=	<u> </u>					100%	100%

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 5 of 5
OLD OME 1001								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	001		Moasuro	d Static Water L	ovole		Method Drilling:	Continuous Core
								Date Drilled:	1/6/2020-1/10/2020
Surface Elev.	1660	.00		Date	Depth	Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	I	•	ND				Municipality:	Donegal
Survey Method:	GP	S						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u> </u>	Bottom	Bottom	SWL measured b	ov:		-	Laboratory:	Geochemical
		Depth	Elevation		<i>'</i>		-	Northing:	287373.536
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1514686.294
Mahoning		117.7	1542.3	Lower Kittanning	344.5	1315.5		Grid Coordinates:	
Upper Freeport Upper Kittanning		163.7 250.8	1496.3 1409.2						
Middle Kittanning		275.8	1384.2						
					ription: rock type, w				~
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, mine entrations, pyrite, etc		Water Conditions	% Recovery	% RQD
321.1	26.1	:=:=:=:=:=	(1001)		nale, gray, with sands		Comunication		
								4000/	4000/
			- -	4				100%	100%
				=				100%	100%
			330	Sandstone, g	gray, w/ interbed. sand	lyshale,			
			- -	1	some breaks				
]				100%	100%
			- -	-					
			- -	1					
			<u> </u>						
340.5	19.4		340	1					
341.10	0.60			Boney	coal, with coal streak	S			
				- 10	wer Kittanning Coal			100%	70%
344.54	4.00		_	1	worrand bank			10070	1070
		##########							
		######################################	- -	4					
		##########		Clavshale dark or	ay to gray, some slick	s and breaks			
		##########		- Olayonalo, dan gi	ay to gray, come once	o and broand			
		######################################	350						
352.3	7.76	##########							
354.5	2.2			Sands	tone, gray, fine graine	ed		100%	100%
355.2	0.7				Shale, gray				
			<u> </u>	Rotto	m of Hole Depth fee				
					in or riole Departies	•			
			360	4					
			<u> </u>	4					
			- -	1					
			<u> </u>	-					
				_					
			370	4					
			- -	1					
				1					
				-					
			<u> </u>	_					
			_ =	4					
			- -	4					
			380]					
				4					
			- -	1					
			<u> </u>	-					
				_					
			<u> </u>	4					
			390	1					
]					
			<u> </u>	4					
			- -	1					
			- -	-					
				_					

JLB- CME - 11/29/01				7.1A GFO	LOGIC DR	ILLOG			0721-S164 Page 1 of 8
JEB- CIVIE - 11/29/01				7.174 020	LOGIO DIC	<u> </u>		Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	002		Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Flor	1065	0.7		Date		Elevation		Date Drilled:	1/13/2020-1/27/2020
Surface Elev.	1863	5.97		Measured	Depth (ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т		ND	(1.7)	(IIIOL)	110100	Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF						-	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured b	by:		=	Laboratory: Northing:	Geochemical 288669.186
Coal Sea	am ID	(ft)	(MSL)					Easting:	1519681.479
Upper Kittanning		497.70	1366.3	_				Grid Coordinates:	
Middle Kittanning Lower Kittanning		527.90 592.30	1336.1 1271.7						
Lower rattarning		002.00	1271.7						
Depth	Thickness	Graphic	Scale		ription: rock type sils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite,		Conditions		
				1					
		=======							
				-					
		=======		1					
				4					
		=======		Shal	le, brown, weather	ed			
			10	4					
		=======		1					
			- -	4					
17.0	17.0			4					
17.0	17.0								
		=======		_					
			20	Shale	, dark gray, weath	ared			
		=======		Silate	, dark gray, weatin	sieu			
				1					
25.2	8.2			1					
		=======================================			Shale, gray				
28.2	3.0	000000000000000						100%	80%
30.4	2.2	000000000000	30		Limestone, gray				
				1					
		=======							
				1					
		=======							
				1				100%	40%
		=======							
			40	Shale	e, gray, with claysh	ale			
		=======							
				1					
		=======							
				1					
		=======							
50.4	20.0		50	<u> </u>					
		=======							
			- -	1	Shale, dark gray			100%	37%
54.0	3.6		_						
		=======================================		1					
		=======]					
				1					
		=======	60						
			- -	1					
				Shale,	, dark gray, with fo	ssils			
			- -	1					
		=======================================	- -	1				100%	53%
71.0	17.0	=========	70	1					
			- -	Sha	le, dark gray, brok	en			
75.5	4.5			1					
				1					
			_ =	Shale	e, gray, with claysh	ale		100%	40%
			80	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 2 of 8
3EB- OME - 10/01					71177 020	200.0 2.			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	002	-		Measured	Static Water	er Levels		Method Drilling:	Continuous Core
Surface Elev.	1863	97			Date	Depth	Elevation		Date Drilled: Drilled By:	1/13/2020-1/27/2020 RES
Curiado Elevi	1000	,,,,,	-		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	Т	_		ND				Municipality:	Donegal
Survey Method:	GF	10							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.	- Gr	Bottom	-	Bottom	SWL measured b	oy:		-	Laboratory:	Geochemical Geochemical
		Depth		Elevation		•		_	Northing:	288669.186
Coal Sea Upper Kittanning	ım ID	(ft) 497.70		(MSL) 1366.3	=				Easting: Grid Coordinates:	1519681.479
Middle Kittanning		527.90		1336.1					Grid Coordinates.	
Lower Kittanning		592.30		1271.7						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ription: rock typ sils, carbonate, e entrations, pyrite	minerals,	Water Conditions	% Recovery	% RQD
()	()				-	, , , , ,	,			
			—	_						
		=======		_						
				_					100%	40%
			—	_	-					
				_						
				90	1					
		========		_						
		=======================================			1					
		=======		_						
				_						
				_	Shale	e, gray, with clays	hale		100%	80%
				100	- Criais	, gray, mar dayo	, iaio			
			-	_	-					
		========		_						
			—	_						
		=======		_						
				_						
			—	110	-					
		=======		- 110						
			_	_	-				100%	73%
				_						
				_	-					
117.0	41.5							1		
119.2	2.2					e, dark gray, with	coal			
120.2	1.0			120	,	Sandstone, gray		-		
				_						
				_						
		=========	\vdash	_	-					
				_	1					270/
			\vdash	_	1				100%	27%
		=======		130	1					
				_]					
		=========	\vdash	_	-					
				_	1					
			\vdash	_	1					
				_]	Shale, gray				
				140	1					
			<u> </u>		-					
				_	1				100%	93%
			\vdash	_	1					
		=======	F	_						
			E	=	<u> </u>					
		========	F	150	-					
					1					
		=========	\vdash	_	1					
				_]					
156.5	36.3	=======================================	\vdash	_	1				100%	90%
		=======	<u> </u>]		
					<u> </u>	Shale, dark gray				
				160						

JLB- CME - 10/01				7.1A GE0	OLOGIC DRIL	L LOG			0721-S164 Page 3 of 8
OLD OINE 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2002		Moasuro	ed Static Water	Lovole		Method Drilling:	Continuous Core
•			•					Date Drilled:	1/13/2020-1/27/2020
Surface Elev.	1863	3.97	-	Date	Depth	Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	<u> </u>	<u>-</u>	ND				Municipality:	Donegal DA
Survey Method:	GF	s						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u>.</u>	Bottom	Bottom	SWL measured	bv:		-	Laboratory:	Geochemical
		Depth	Elevatio		_		-	Northing:	288669.186
Coal Sea	am ID	(ft)	(MSL)					Easting:	1519681.479
Upper Kittanning		497.70	1366.3					Grid Coordinates:	
Middle Kittanning Lower Kittanning		527.90 592.30	1336.1 1271.7						
Depth	Thickness	Graphic	Scale		cription: rock type, ssils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		centrations, pyrite, et		Conditions	76 Resortery	70 NQD
		=======		\dashv					
			_					100%	90%
			<u> </u>	_					
			_	\dashv					
				=					
			170		Shale, dark gray				
			170						
			<u> </u>	_				1000/	80%
			_	\dashv				100%	ðU%
		=======							
476.0	20.2	=======		\dashv					
176.8 177.4	20.3 0.6			Shale	e, dark gray, with foss	ils			
			180	Sha	ale, gray, with clayshal	e			
			_		no, gray, mar olayona.				
183.0	5.6								
				\dashv					
				\dashv				93%	71%
				-	Shale, gray			3370	7 1 70
			190						
				-					
193.0	10.0								
195.3	2.3		<u> </u>	_	Shale, red				
100.0	2.0								
			<u> </u>	-	Shale, dark gray				
199.0	3.7				onaic, dank gray				
			200						
				_					
				_	Shale, gray and red			100%	67%
				\dashv					
207.0	8.0	=======							
				\exists					
			210	_					
			<u> </u>	-					
				コ					
			<u> </u>	-					
				\exists					
			<u> </u>	_				100%	100%
				Shale	e, gray, with sandysha	ale		100%	100%
			220						
			<u> </u>	_					
				コ					
			<u> </u>	_					
			<u> </u>	-					
				コ					
229.0	22.0		<u> </u>	4					
223.0	22.0		230		Shale, gray and red		1		
231.2	2.2				oaio, gray ariu reu				
			 	\dashv	Shale dork are:			100%	80%
				コ	Shale, dark gray				
235.4 236.5	4.2 1.1	00000000000		Limestone, gr	ay, with fossils (Brush	Creek LS)	1		
200.0		=======			- (•	1		
			<u>L</u>	\dashv	Shale, gray				
			240	\dashv					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 4 of 8
OLD OINE 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2002			Measured	d Static Wate	ar I avale		Method Drilling:	Continuous Core
									Date Drilled:	1/13/2020-1/27/2020
Surface Elev.	1863	3.97			Date	Depth	Elevation		Drilled By:	RES
C		· -			Measured ND	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	· I	•		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF	es							Quadrangle:	Stahlstown, PA
		Bottom	•	Bottom	SWL measured b	by:		=	Laboratory:	Geochemical
		Depth		Elevation		-		_	Northing:	288669.186
Coal Sea	am ID	(ft)		(MSL)	<u>-</u>				Easting:	1519681.479
Upper Kittanning Middle Kittanning		497.70 527.90		1366.3 1336.1					Grid Coordinates:	
Lower Kittanning		592.30		1271.7						
Depth	Thickness	Graphic		Scale		ription: rock typ sils, carbonate, r		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite		Conditions		
			_	_						
			_		1					
		=======								
			_	_						
			_							
		=======		_					100%	93%
			_	250						
				200						
			Ļ.		1					
			_							
		=======	_		-	Shale, gray				
			_							
				_						
				260						
			_							
				_					100%	100%
			_		-					
				_						
		=======	_							
			_							
				270						
271.0	34.5							4		
			_							
				_						
			_	_	1					
				_		Shale, dark gray				
			_		-				100%	100%
			_	280						
282.0 283.5	11.0 1.5	00000000000			Limes	tone, gray, with fo	ossils	1		
200.0		=======								
			_	_	-					
				-]					
			Ļ.		1					
				290	†					
		=======		_						
			_	_	-				100%	100%
				_]				100,0	10070
		=======	_							
			_							
				_		Shale, dark gray				
			_	300						
				300						
		=======		_						
				_	1					
					1					
			<u> </u>		-					
				_	1				100%	80%
					1					
				310	1					
312.0	28.5									
	-						· · · · · · · · · · · · · · · · · · ·			
			_		0	arov with -1	hala			
		=======		_	Snale	e, gray, with clays	iate			
318.0	6.0		_		1				100%	90%
310.0	0.0					Shale, gray		1	100,0	00,0
				320	Ì	onale, glay		Ì	1	1

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 5 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	002			Measured	d Static Wate	er Levels		Method Drilling:	Continuous Core
Surface Elev.	1863	. 07			Date	Depth	Elevation		Date Drilled: Drilled By:	1/13/2020-1/27/2020 RES
Surface Elev.	1000	0.31			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т			ND	,	\		Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF			.				•	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	by:			Laboratory: Northing:	Geochemical 288669.186
Coal Sea	am ID	(ft)		(MSL)					Easting:	1519681.479
Upper Kittanning		497.70		1366.3	-				Grid Coordinates:	
Middle Kittanning Lower Kittanning		527.90 592.30		1336.1 1271.7						
201101 1 111111111111111111111111111111		002.00								
Depth	Thickness	Graphic		Scale		ription: rock typ sils, carbonate, i		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite		Conditions		
			_	_						
				_						
			_	_					4000/	000/
		=======		_					100%	90%
			_	_						
				_						
				330	-					
				_						
		========	_	_	1					
		=======		_						
			_	_	-					
				_					100%	90%
			_	340						
				040						
			_	_						
				_						
		=======	_	_						
				_						
			_	_						
				350						
			_	_						
				_					100%	87%
		=======	_	_						
				_						
		=======	_	_		Shale, gray				
				_						
		=======		360						
				_						
				_						
				_]					
			<u> </u>	_						
				_					93%	86%
		=======	Ë.	370						
					1					
			<u> </u>	_						
				_]					
		========	—	_	-					
				_	1					
			<u> </u>	_						
				380						
			_	_						
				_					100%	87%
		=========	_	_	-					
				-						
		========	Ë.	_						
				_]					
				390						
				_]					
393.0	75.0									
				_	1				87%	92%
		=========	_	_	Shale	, gray, with sandy	shale		5.75	02,0
				_	S	, , candy				
		=======================================	—	400	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 6 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2002			Magaziro	d Static Wate	er I ovolo		Method Drilling:	Continuous Core
-			-1		Wieasured	J Static Wate	er Leveis		Date Drilled:	1/13/2020-1/27/2020
Surface Elev.	186	3.97			Date	Depth	Elevation		Drilled By:	RES
•			•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т			ND		. ,		Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF	PS .							Quadrangle:	Stahlstown, PA
		Bottom	Bot	tom	SWL measured b	ıv.		-	Laboratory:	Geochemical
		Depth		ation		.,.	-	•	Northing:	288669.186
Coal Sea	ım ID								_	
Upper Kittanning	טווווט	(ft) 497.70		SL) 66.3	_				Easting: Grid Coordinates:	1519681.479
Middle Kittanning		527.90		36.1					Grid Cool dillates.	
Lower Kittanning		592.30		71.7						
3										
					Lithologic Desc	ription: rock typ	e, weathering,			
Depth	Thickness	Graphic	Sca			sils, carbonate, r		Water	% Recovery	% RQD
(ft)	(ft)	Log	(fee	t)	conce	entrations, pyrite	, etc.	Conditions		
			_	_						
			_	_					87%	92%
			_						2.72	1
					1					
					Shale,	gray, with sandy	shale			
		=======	_	_						
			410	、 -	4					
			410	,						
			_	-	1					
413.0	20.0	========							100%	83%
		========								
			_	-	1					
			_	_						
			420	_	1					
		=======			1					
						Shale, dark gray				
		=======	_							
			_	-	1					
			_	_						
			_	-	1				100%	87%
		=======			1					
		=======	430)						
432.0	19.0	=======								
			_	-	1					
			_	-	1					
			_	_						
		========								
				. –						
			440)	1					
					1					
			_	_					100%	100%
		=======	<u> </u>	_	4					
			_	_	4					
			_	_	1					
				_	1					
		=======	450)]					
		=======		_	4					
		=======	<u> </u>	_	1					
			—	_	1					
		========	-	_	†					
				_	1	Shale, gray				
		=======]	- -				
		========							100%	100%
		=======		_						
			460)	1					
			_	_						
			_	-	1					
		=======		_]					
		=======	_		1					
		=======	<u> </u>	_	4			1		
		=======	<u> </u>	_	1			1		
			-	_	1					
		========	470	_	†					
					1					
					1					
		=======		_	1				100%	93%
		=======	_	_	4					
		=======	<u> </u>	_	1					
		=======	—	_	1					
			-	_	†					
479.0	47.0			_	1					
			480)		Sandstone, gray]		

JLB- CME - 10/01					7.1A GEC	DLOGIC DR	ILL LOG			0721-S164 Page 7 of 8
OLD OINE 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	002			Moasuro	d Static Wate	r Lovole		Method Drilling:	Continuous Core
•					Measure	u Static Wate	LEVEIS		Date Drilled:	1/13/2020-1/27/2020
Surface Elev.	1863	3.97	_		Date	Depth	Elevation		Drilled By:	RES
•			_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	_		ND				Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GP		-	-	0111			_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured	by:		-	Laboratory:	Geochemical
Coal Sea	ım ID	Depth		Elevation (MSL)					Northing: Easting:	288669.186
Upper Kittanning		(ft) 497.70		1366.3	-				Grid Coordinates:	1519681.479
Middle Kittanning		527.90		1336.1					Grid Goordinates.	
Lower Kittanning		592.30		1271.7						
					Lithologic Desc	cription: rock type	weathering			
Depth	Thickness	Graphic		Scale		ssils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conc	entrations, pyrite,	etc.	Conditions		
			<u> </u>		1					
				_		Sandstone, gray				
				_						
485.0	6.0									
			\vdash	_	-					
				_					97%	83%
			L							
			-	490	1	Shale, dark gray				
				_	1					
				_						
40E 4	10.4		—	_	-					
495.4	10.4		L		Hone- E	Kittanning Coal, with	n shale	1		
497.7	2.3				оррег г	a. mig Coai, will	. Jilaio	1		
			—	_	+					
				500						
				_						
			┢	_	-				100%	73%
			\vdash	_					10070	1070
				_						
			<u> </u>	_		Shale, dark gray				
				_						
				_						
				510						
				_						
5440	40.0	=======	<u> </u>	_						
514.0	16.3							+		
				_						
			<u> </u>	_					100%	47%
			—	_	Sha	ale, dark gray, brok	en		100%	47 /0
				520						
522.0	8.0		—	_						
322.0	0.0									
				_		Shale, dark gray				
526.1	4.1		\vdash	_	1					
				_	Middle 4	Kittanning Coal, with	h shale	1		
527.9	1.8		_		iviidale I			-		
			\vdash	530	1					
				_		Shale, gray				
			\vdash	_	1	. 5 . ,			100%	80%
534.0	6.1				1]	10070	0070
						· · · · · · · · · · · · · · · · · · ·	·			
			\vdash	_	1					
				_		Shale, dark gray				
					4					
541.0	7.0			540						
2.110				_				1		
			\vdash	_	-					
			\vdash	_	1					
				_						
			\vdash	_	-				100%	93%
			H	_	1				10070	9370
				550		Objects				
			\vdash	_	4	Shale, gray				
				_	1					
				_						
			\vdash	_	1					
				_]					
				_	4				100%	100%
			\vdash	560	1					

JLB- CME - 10/01				7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 8 of 8
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	002		Measured	d Static Wate	er Levels		Method Drilling: Date Drilled:	Continuous Core 1/13/2020-1/27/2020
Surface Elev.	1863	3.97		Date	Depth	Elevation		Drilled By:	1/13/2020-1/2//2020 RES
-		_	•	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	<u>T</u>	•	ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GP	s						Quadrangle:	Stahlstown, PA
•		Bottom	Bottom	SWL measured b	oy:		-	Laboratory:	Geochemical
Coal Sea	ım ID	Depth (ft)	Elevation (MSL)					Northing: Easting:	288669.186 1519681.479
Upper Kittanning		497.70	1366.3	-				Grid Coordinates:	
Middle Kittanning Lower Kittanning		527.90 592.30	1336.1 1271.7						
				Lithelesia Dasa	winting, week tow	a waatharing			
Depth	Thickness	Graphic	Scale	color, fos	ription: rock typ sils, carbonate,	minerals,	Water	% Recovery	% RQD
(ft) 561.0	(ft) 1.0	Log	(feet)	conce	entrations, pyrite	e, etc.	Conditions		
562.0	21.0	[=[=[=[=[=			Shale, gray				
		:=:=:=:=:=:= :=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=:=		- 8	Sandy Shale, gray	,		100%	100%
500.0		:=:=:=:=:=:=	Ξ Ξ						
568.0 568.3	6.0 0.3	:=:=:=:=:=:= =========================		Shale, d	dark gray, with sar	ndstone			
		:=:=:=:=:=:= :=:=:=:=:=:=:=	570	<u></u>					
		:=:=:=:=:=:=		1				4000/	1000/
		(=(=(=(=(=(= (=(=(=(=(=(=	<u> </u>	1				100%	100%
		:=:=:=:=:=:= :=:=:=:=:=:=:=		7					
		:=:=:=:=:=:=:=							
			_ _	Sandy S	Shale, gry, w/ inter	bed. ss		100%	116%
		:=:=:=:=:=	580	1					
			<u> </u>	4					
		:=:=:=:=:=:=							
			- -	-					
588.13 588.58	19.83 0.45	[=]=]=[=]=		Lower Kittar	nning - Coal, with	honey coal		100%	70%
588.83	0.25		590		g +++,	,			
			<u> </u>	Lov	wer Kittanning Co	pal			
592.30 594.0	3.47 1.7			Sands	stone, dark gray to	o grav			
004.0	1.7	##########			, g,	. 3)			
		######################################	- -	Claystone, dark	k gray, some sand	dy, some slicks			
597.7	3.7	#########							
			600	Sa	andstone, dark gra	ay		100%	100%
602.3	4.6		- -						
605.2	2.9				Shale, dark gray				
003.2	2.3			5 (11					
			- -	Bottom of Ho	ole DH 2002 Dept	th 605.2 feet			
				7					
			610	1					
			- -	-					
				7					
				_					
			- -	-					
			_ =						
			620						
				4					
				1					
				_					
			<u> </u>	-					
]					
			630	Ⅎ					
				-					
				1					
			- -	1					
			_ =	7					
				_					
			640	-					

JLB- CME - 11/29/01				7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 1 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2003		Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1770	n 21		Date	Depth	Elevation		Date Drilled: Drilled By:	1/28/2020-1/31/2020 RES
Surface Elev.	1770	U.Z I		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	ст		ND	(1-7	()		Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF						_	Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	by:		-	Laboratory:	Geochemical
Cool Soc	ID	Depth	Elevation					Northing:	288920.832
Coal Sea Mahoning	עו וווו	(ft) 255.6	(MSL) 1514.6	-				Easting: Grid Coordinates:	1521055.983
Middle Kittanning		426.5	1343.7					Ona Gooramatos.	
Lower Kittanning		484.3	1285.9						
				Lithologic Desc	ription: rock typ	e. weathering.			
Depth	Thickness	Graphic	Scale		sils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	entrations, pyrite,	, etc.	Conditions		
				-					
		l [
				-					
				1					
				1					
			10]					
			<u> </u>	Shal	le, brown, weather	red			
			<u> </u>	j					
				4					
				+					
				<u> </u>					
				1					
				+					
22.2	22.2								
				-					
		I							
								80%	0%
				j					
			_	Shale	e, gray, with claysh	nale			
			30	+					
]					
				1					
35.2	13.0								
				+				100%	77%
			40	1					
				†					
		I							
				1					
			<u> </u>	j					
			50	Shale,	gray, with sandy	shale			
				1	Í				
				1				100%	93%
			<u> </u>	1					
			<u> </u>	1					
]					
				+					
			60						
				1					
				†					
65.0	29.8			 			1		
				1					
		<u></u>	_ =	4				100%	83%
			70	†					
]					
			<u> </u>	4	Shale, dark gray				
				1	, aam gray				
				-					
				1					
				1				100%	57%
			80	1					
J			OU	i .				i .	i

				744.050	N OCIC DDI	11.100			
JLB- CME - 10/01				7.1A GEO	DLOGIC DRI	LL LUG		On susting Name :	0721-S164 Page 2 of 7
	BU							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2003		Measure	d Static Water	r Levels		Method Drilling:	Continuous Core
O(El	477			Data	Danish	Elevation		Date Drilled:	1/28/2020-1/31/2020
Surface Elev.	1770	J.Z1	=	Date Measured	Depth (ft)	(MSL)	Notes	Drilled By:	RES .
Currented by		`T		ND ND	(11)	(IVIOL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	<i>,</i> 1	•	ND				Municipality: County, State:	Donegal
Survey Method:	GF	99						Quadrangle:	Westmoreland, PA Stahlstown, PA
Wetilou.		Bottom	Bottom	SWL measured	hv:		•	Laboratory:	Geochemical Geochemical
		Depth	Elevation	OWE IIICASAICA			•	Northing:	288920.832
Coal Sea	am ID	(ft)	(MSL)					Easting:	1521055.983
Mahoning	u 10	255.6	1514.6	_				Grid Coordinates:	1021000.000
Middle Kittanning		426.5	1343.7						
Lower Kittanning		484.3	1285.9						
				1					
Depth	Thickness	Graphic	Scale		cription: rock type ssils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite,		Conditions		
		=======			Shale, dark gray				
82.5	17.5	=======							
		######################################		-					
		##########			Clayshale, gray			4000/	F70/
		##########						100%	57%
87.5	5.0	##########							
			- -	+					
			90						
		=======							
		=======	_		Shale, gray				
			<u> </u>	4					
			- -	_					
			_						
97.0	9.5	=======							
	0.5	=======			Shale, red and gray			100%	73%
99.5	2.5		100						
			100		0				
		=======			Shale, gray				
103.5	4.0	=======							
			<u> </u>	-	Shale, red and gray				
106.5	3.0	========		1	onalo, rod and gray				
		=======							
		=======							
		=======		_					
			110	-					
			_						
		=======						100%	87%
		======							
			- -	+					
		=======							
		======							
			120	+					
		=======		Shale	e, gray, with sandysl	hale			
		=======	<u> </u>	-	.,5 .,,				
				-					
		=======		1					
		=======						100%	87%
		=======	400	4					
			130	1					
]					
		=======	_ =	4					
		=======		_					
			-	=					
		=======	_						
		=======							
140.2	22.7	=======		_					
140.2 141.2	33.7 1.0	00000000000	140	Lime	stone, gray, with fos	ssils			
142.2	1.0	=======			Shale, dark gray				
		=======						100%	47%
		=======		_					
			- -	1					
				1					
		=======							
		=======	150	4					
			150	1					
			- -	1	Shale, gray				
		=======]					
		=======	_	4					
			<u> </u>	4				100%	93%
			- -	1					
]					
		=======							
			160						

JLB- CME - 10/01					7.1A GEC	LOGIC DR	ILL LOG			0721-S164 Page 3 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	003	_		Measure	d Static Wate	er Levels		Method Drilling:	Continuous Core
:									Date Drilled:	1/28/2020-1/31/2020
Surface Elev.	1770).21	-		Date Measured	Depth	Elevation	Natas	Drilled By:	RES
Surveyed by:	LC	т			ND ND	(ft)	(MSL)	Notes	Logged By: Municipality:	P. Mack
Survey		'1	-		ND				County, State:	Donegal Westmoreland, PA
Method:	GP	s							Quadrangle:	Stahlstown, PA
		Bottom	-	Bottom	SWL measured l	by:		•	Laboratory:	Geochemical
		Depth		Elevation				<u>-</u> '	Northing:	288920.832
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1521055.983
Mahoning Middle Kittanning		255.6 426.5		1514.6 1343.7					Grid Coordinates:	
Lower Kittanning		484.3		1285.9						
Depth	Thickness	Graphic		Scale		cription: rock typ ssils, carbonate, r		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite		Conditions	,	
			<u> </u>	_	-					
				_	j				100%	93%
				_						
			-	_	-					
				_	j					
				_	1					
			<u> </u>	170	+					
					1					
			<u> </u>	_	4	Shale, gray			100%	100%
			<u> </u>	_	-				100 /6	100 /6
				_						
			<u> </u>	_	-					
			_	_	1					
				180	+					
					<u> </u>					
404.0	44.0	=======	<u> </u>	_	_					
184.0	41.8									
				_						
			—	_	1	Shale, dark gray			100%	93%
189.0	5.0		<u> </u>	_	-				10070	3370
		00000000000		190	Limestone, gra	ay, with fossils (Bru	ush Creek LS)			
191.0	2.0	00000000000								
		=======		_						
		=======	<u> </u>	_	1					
			<u> </u>	_	-					
		=======		_						
			<u> </u>	_	-					
				200						
		=======	<u> </u>	_	1					
			-	_	-	Shale, dark gray			100%	80%
		=======		_						
			\vdash	_	1					
				_	1					
			⊢_	_	1					
			\vdash	210	1					
				_]					
213.0	22.0		\vdash	_	1					
2.5.0										
			⊢_	_	4					
			\vdash	_	1					
				_					100%	57%
			<u> </u>	220	-					
				220						
			⊢_	_	1					
			—	_						
				_]					
			\vdash	_	Shall	e, gray, with claysl	hale			
				_	J. Crian	. , g , , oiuysi	-			
					4					
			 	230	1					
				_	1					
			<u> </u>	_	4				100%	80%
			\vdash	_	1					
				_]					
			\vdash	_	4					
				_	1					
240.0	27.0			240	<u> </u>			<u> </u>		

JLB- CME - 10/01					7.1A GEC	DLOGIC DRI	LL LOG			0721-S164 Page 4 of 7
SED- CIVIL - 10/01					71171 020	22010 2111			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	003			Moasuro	d Static Water	Lovole		Method Drilling:	Continuous Core
			-						Date Drilled:	1/28/2020-1/31/2020
Surface Elev.	1770).21			Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	<u> </u>			ND				Municipality: County, State:	Donegal
Survey Method:	GF	s							Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	•	Bottom	SWL measured I	by:		-	Laboratory:	Geochemical
		Depth		Elevation		-		_	Northing:	288920.832
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1521055.983
Mahoning Middle Kittanning		255.6 426.5		1514.6 1343.7					Grid Coordinates:	
Lower Kittanning		484.3		1285.9						
,										
Depth	Thickness	Graphic		Scale		cription: rock type,		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions	,	
			_	_	+					
				_	<u> </u>					
			_	_	1					
			_	_	-					
				_		Shale, gray			4000/	900/
			_		1				100%	80%
		=======		250						
			\vdash	_	4					
253.0	13.0		E		<u>1</u>]		
				_		Shale, dark gray				
255.4 255.6	0.2	=======			+	Mahoning Coal		1		
200.0	0.2									
			_	_	Shale	le, gray, with claysha	ale			
260.0	4.4		_	260	†					
				_						
			_	_					100%	67%
				_						
				_	-	Shale, gray				
				_						
			_		1					
270.0	10.0			270						
				_						
				_	-					
				_						
			_	_	1					
				_						
			_	_	-				100%	93%
				280	1					
			_		1					
				_	-					
				_						
			_	_	0	grow with country	ala			
				_	Snale	e, gray, with sandysh	laie			
			_	_	1					
				290	1					
			H	_	1					
				_	1				100%	100%
			H.	_	4					
			E	_	<u> </u>					
				_						
			_	_						
				300						
302.0	32.0		_	_	-					
JU2.U	J2.U				1			1		
			H.	_	4					
				_	<u> </u>					
			F	_]				4009/	1000/
			\vdash	_	1				100%	100%
				310	1					
			_	_	4	Sandstone, gray				
					1					
				_	1					
			_	_	1					
				_					4000/	070/
			\vdash	_	1				100%	87%
ı			_		1			1	İ	İ

JLB- CME - 10/01				7.1A GEOLOGIC DRILL LOG		Operation Name :	0721-S164 Page 5 of 7
Hole No.	DH-2	.003		Manageral Ctatic Water Lavela		Method Drilling:	Rustic Ridge #1 Mine-Expansion Continuous Core
			•	Measured Static Water Levels		Date Drilled:	1/28/2020-1/31/2020
Surface Elev.	1770).21	•	Date Depth Elevation	Natas	Drilled By:	RES
Surveyed by:	LC	т		Measured (ft) (MSL)	Notes	Logged By: Municipality:	P. Mack Donegal
Survey			•			County, State:	Westmoreland, PA
Method:	GF			- 	_	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured by:	_	Laboratory: Northing:	Geochemical 288920.832
Coal Sea	am ID	(ft)	(MSL)			Easting:	1521055.983
Mahoning		255.6	1514.6	-		Grid Coordinates:	
Middle Kittanning Lower Kittanning		426.5 484.3	1343.7 1285.9				
-				Lithe de als December 1 and a second and a second as a			
Depth	Thickness	Graphic	Scale	Lithologic Description: rock type, weathering, color, fossils, carbonate, minerals,	Water	% Recovery	% RQD
(ft) 321.5	(ft) 19.5	Log	(feet)	concentrations, pyrite, etc. Sandstone, gray	Conditions		
321.3	19.5			Gandotono, gray			
				-			
						100%	87%
			_ _	-			
				Shale, dark gray			
			330	1			
		========					
			<u> </u>	1			
205.0	40.5	=======					
335.0	13.5						
				Shale, gray		100%	83%
				Chaic, gray		10070	0070
340.5	5.5		340		_		
			- -	-			
			350	Sandstone, gray			
				-			
						100%	100%
			- -	-			
358.0	17.5						
			360				
			360				
				-			
			⊢ –	1			
						100%	100%
]		100%	100%
		========	370	-			
		========		1			
		=========	<u> </u>	1			
				1			
			<u> </u>	1			
			380	Shale, dark gray			
		=========	<u> </u>	-			
		========	<u> </u>	1		100%	100%
		=========	<u> </u>	1			
				1			
			⊢ –	1			
			200]			
			390]			
			<u> </u>	-			
				1			
			L =	-		100%	93%
				1			
		=========	<u> </u>	-			
			400	1			

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	ILL LOG			0721-S164 Page 6 of 7
Hole No.	DH-2	003							Operation Name : Method Drilling:	Rustic Ridge #1 Mine-Expansion Continuous Core
noie No.	DH-2	.003			Measured	d Static Wate	r Levels		Date Drilled:	1/28/2020-1/31/2020
Surface Elev.	1770).21			Date Measured	Depth	Elevation (MSL)	Notes	Drilled By:	RES
Surveyed by:	LC	т			ND	(ft)	(WISL)	Notes	Logged By: Municipality:	P. Mack Donegal
Survey	C	16							County, State:	Westmoreland, PA
Method:	GF	Bottom	•	Bottom	SWL measured b	oy:		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation		•		-	Northing:	288920.832
Coal Sea Mahoning	ım ıu	(ft) 255.6		(MSL) 1514.6	=				Easting: Grid Coordinates:	1521055.983
Middle Kittanning Lower Kittanning		426.5 484.3		1343.7 1285.9						
3					Lithologia Dosa	ription: rock type	weathering			
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	sils, carbonate, mentrations, pyrite,	ninerals,	Water Conditions	% Recovery	% RQD
		=======		_	-	Shale, dark gray			100%	93%
		========		_		Silale, dark gray			100%	93%
405.0	47.0							1		
				_	-					
				410						
			_	_	-				100%	93%
				_						
				_	Shale, d	dark gray, with sand	dstone			
		=========		_						
			_	420	-					
			_	_	-					
		=======		_	1					
424.8	19.8			_						
426.5	1.7			_	Middle K	Cittanning Coal, with	n shale			
428.5	2.0	=========	_	_	-	Shale, gray			100%	60%
		:=:=:=:=:=:= :=:=:=:=:=:=		430				1		
		:=:=:=:=:=:=		_	Condu Cl	hale, gray, with sar	, data a			
				_	Sality Si	nale, gray, with Sai	iusione			
435.5	7.0	:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	-					
				_						
				440		Shale, dark gray				
		========		440						
441.5	6.0								100%	100%
		=========	_	_	-					
				_						
				_	1					
		========		450	1					
		=======================================	E	_	1	Shale, gray				
			_	_	-					
				_						
				_]				4000/	93%
		=========		_					100%	9376
460.7	19.2			460	Sholo grov w	uith come condeton	no inclusions			
462.5	1.8				Onaid, gray, W	vith some sandston	.c. a norudionia			
				_						
				_	1					
				_						
			Ь	470	1					
					Sandstone, gra	ay, with interbedded	d sandyshale			
				_]				100%	100%
				_						
				_	1					
			F	_						
480.7	18.2			480	1					

JLB- CME - 10/01				7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 7 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	003		Measured	d Static Water	r Levels		Method Drilling: Date Drilled:	Continuous Core 1/28/2020-1/31/2020
Surface Elev.	1770	.21		Date	Depth	Elevation		Drilled By:	RES
•			•	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	Т		ND				Municipality:	Donegal
Survey Method:	GP	s						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	Bottom	SWL measured b	y:			Laboratory:	Geochemical
		Depth	Elevation					Northing:	288920.832
Coal Sea Mahoning	am ID	(ft) 255.6	(MSL) 1514.6	-				Easting: Grid Coordinates:	1521055.983
Middle Kittanning		426.5	1343.7					Grid Goordinatoo.	
Lower Kittanning		484.3	1285.9						
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, foss	ription: rock type sils, carbonate, m entrations, pyrite,	inerals,	Water Conditions	% Recovery	% RQD
481.14	0.44			Lower Kittanr	ning - Boney, with o Kittanning - Shale, I	coal bands			
481.31	0.17			Lower P	Allanining - Shale, i	DIACK			
404.20	2.00			Lower h	Kittanning - Coal, b	right			
484.30 485.7	2.99 1.4	##########			Claystone, gray				
								100%	67%
			-	†				10076	07 /6
			490	:	Sandstone, gray				
				1					
494.3	8.6		<u> </u>	-					
495.2	0.9			S	Sandy Shale, gray				
				Bottom of Ho	ole DH 2003 Depth	495.2 feet			
			500	+					
				1					
				-					
			510	-					
			- -	1					
			<u> </u>						
			520						
			_ _	+					
			- -	†					
				1					
				<u> </u>					
			530	4					
				1					
			- -	1					
			= =	1					
			_ -	<u> </u>					
			<u> </u>	4					
				1					
			540	-					
				1					
			⊢ –	1					
]					
			<u> </u>	<u> </u>					
			<u> </u>	4					
			550	1					
				4					
				1					
				-					
				1					
			- -	1					
				1					

JLB- CME - 11/29/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 1 of 8
	Bu	2004							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2004	-		Measured	Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 2/3/2020-2/12/2020
Surface Elev.	1824	1.38			Date	Depth	Elevation		Drilled By:	RES
					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	•		ND				Municipality:	Donegal
Survey Method:	C	ne							County, State:	Westmoreland, PA
wethou.	GF	Bottom	В	ottom	SWL measured b	v:		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		evation		_		-	Northing:	289764.508
Coal Sea	am ID	(ft)		MSL)	_				Easting:	1521736.642
Mahoning Lower Freeport		316.90 402.80		507.5 421.6	Middle Kittanning Lower Kittanning	479.00 540.70	1345.4 1283.7		Grid Coordinates:	
Lower Freeport		406.60	1	417.8	Lower Rittarining	340.70	1203.7			
Middle Kittanning		460.50	1	363.9	Lithologic Descr	iption: rock type,	weathering			
Depth	Thickness	Graphic		cale	color, foss	ils, carbonate, mi	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(fe	eet)	concer	ntrations, pyrite, e	etc.	Conditions		
				_	1					
			_	_	+					
		=======		_						
			_	_						
				_						
			L .	10						
					<u> </u>					
				_						
			_	_	1					
				_						
			—	_						
		=======		_						
			<u> </u>	20	Shale	e, brown, weathere	d			
				_						
			_		1					
				_						
			_		4					
		=======		_						
			_	_						
			_ ;	30						
			_	_						
				-	1					
				_						
			_	_	1					
20.5	20.5	=======		_						
38.5	38.5				Shale	, dark gray, with co	al			
40.0	1.5		4	40	Chaic	, dank gray, with co	ui .			
				_					93%	23%
				_						
			_	_	Shale, gra	ay, limey, with lime	stone			
		=======	_	_						
48.0	8.0									
				50				1		
				_	1					
			<u> </u>	_	4				100%	67%
			E	_]				10070	07 /0
			<u> </u>	_	4					
				_	1					
				_	Shale,	gray, with sandy sh	ale			
			_ (60						
			_							
				-	•			1		
		=======		_]					
				_				1		
67.5	19.5	=======							1009/	770/
69.0	1.5		<u> </u>	_	-	Sandstone, gray		1	100%	77%
	-			70	1					
		=========	E	_	<u> </u>					
					1					
				_	Shale,	gray, with sandy sh	ale			
		=======			4					
			H	_	†				93%	25%
00.0	44.0	=======	Ē.]					

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 2 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2004			Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	1824	1.38			Date	Depth	Elevation		Drilled By:	2/3/2020-2/12/2020 RES
			•	_	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GF	es							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	Botto	m	SWL measured b	oy:			Laboratory:	Geochemical
		Depth	Elevati						Northing:	289764.508
Coal Sea Mahoning	am ID	(ft) 316.90	(MSL 1507.		Middle Kittanning	479.00	1345.4		Easting: Grid Coordinates:	1521736.642
Lower Freeport		402.80	1421.	6	Lower Kittanning	540.70	1283.7			
Lower Freeport Middle Kittanning		406.60 460.50	1417. 1363.							
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		color, fos	ription: rock type, sils, carbonate, mi entrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD
		========				Shale, dark gray				
83.0	3.0	##########								
86.0	3.0	######################################				Clayshale, gray			93%	25%
					S	hale, red and gray				
88.0	2.0									
		========	90							
						Shale, gray				
			<u> </u>	=						
95.0	7.0									
			<u> </u>	\dashv						
									100%	80%
			100	_						
			_	_						
			_	_						
			_	_						
			110		Shale	, gray, with sandysh	ale			
			_	_					100%	100%
			_	_						
			120							
			<u> </u>	_						
125.0	30.0		_	_				-		
		=======								270/
			_	_					100%	87%
			130							
		=========	<u> </u>	_		Shale, dark gray				
				\exists		· · ·				
			<u>L</u>							
			140							
141.7	16.7		_	_						
142.1	0.4	00000000000			Limes	stone, gray, with fos	sils		100%	47%
		=========								
		=========	<u> </u>	\dashv						
			150							
			L	=		Shale, gray				
				\exists						
			 	_					4000/	070/
		=======							100%	67%
158.7	16.6		160		S	hale, red and gray				

JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 3 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2004	-		Measured	Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	1824	1.38			Date	Depth	Elevation		Drilled By:	2/3/2020-2/12/2020 RES
-			-		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_		ND				Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF	Bottom	Bott	om	SWL measured b	v·		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Eleva			_		-	Northing:	289764.508
Coal Sea	ım ID	(ft)	(MS		=,				Easting:	1521736.642
Mahoning Lower Freeport		316.90 402.80	150 142		Middle Kittanning	479.00	1345.4		Grid Coordinates:	
Lower Freeport		406.60	141		Lower Kittanning	540.70	1283.7			
Middle Kittanning		460.50	136	3.9	Little de sile Deser	detter letere				
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		color, foss	ription: rock type, sils, carbonate, mir ntrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD
161.7	3.0		_	_	Si	nale, red and gray				
101.7	3.0							1	100%	67%
			_	_	-					
				_	Shale	, gray, with clayshal	е			
				_						
169.0	7.3		_	_	-					
			170							
			<u> </u>	_	1					
				_	1				100%	67%
			_	_	-					
				_						
		=======		_						
			_							
			180							
			_	_						
				_	Shale,	gray, with sandysha	ale			
			_	_	-					
				_						
			<u> </u>	_					100%	100%
				_	1				10070	10070
			190							
				_	1					
				_						
195.0	26.0			_	1					
			_	_						
			_	_	 	Shale, dark gray				
199.5	4.5			-						
			200							
									4000/	420/
			_	_	-				100%	43%
				_	Shale	, gray, with clayshal	е			
			<u> </u>	_	1					
]					
210.0	10.5		210	_	1					
		=======	_]		
		=========	 	_	1					
				_	1					
		=========	 	_	1					
		=======		_]					
			_	_	-				100%	100%
			220	_						
		========	_	_	-					
				_						
		========	_	_	-					
				_	Shale,	gray, with sandysha	ale			
		=======		_						
		=========	E	-	1					
			230							
			 	_	1					
				_	1				100%	93%
			_	_	-					
				_]					
			<u> </u>	_	-					
			E	_	<u> </u>					
		l	240		Ì			Ì		į

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	L LOG			0721-S164 Page 4 of 8
	DI C	2004							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2004	-		Measured	l Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 2/3/2020-2/12/2020
Surface Elev.	1824	1.38			Date	Depth	Elevation		Drilled By:	RES
•			-		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	-		ND				Municipality:	Donegal
Survey Method:	GF	es							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	-	Bottom	SWL measured b	y:			Laboratory:	Geochemical
		Depth		Elevation					Northing:	289764.508
Coal Sea Mahoning	am ID	(ft) 316.90		(MSL) 1507.5	Middle Kittanning	479.00	1345.4		Easting: Grid Coordinates:	1521736.642
Lower Freeport		402.80		1421.6	Lower Kittanning	540.70	1283.7		Grid Goordinatoo.	
Lower Freeport Middle Kittanning		406.60 460.50		1417.8 1363.9						
						ription: rock type,			=	
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, mi ntrations, pyrite, e		Water Conditions	% Recovery	% RQD
` ,			_	· _						
243.0	33.0		_		Snale,	gray, with sandysh	aie			
						Shale, dark gray				
		=======		_	Ì	Snale, dark gray			100%	100%
249.2	6.2								100%	100%
250.8	1.6	00000000000		250	Limestone, gray	y, with fossils (Brusl	h Creek LS)			
250.6	1.6	000000000000 ======								
			<u> </u>	_						
				_						
			<u> </u>	_	-					
				_						
			<u> </u>	260	-					
			<u> </u>	_					100%	83%
		=======		_						
			<u> </u>			Shale, dark gray				
				_]					
				270						
				_						
			<u> </u>	_						
			<u> </u>		-					
				_					100%	80%
279.0	28.2			280						
				_]					
			<u> </u>		Shale	, gray, with claysha	le			
285.2	6.2			_						
285.2	6.2									
			\vdash	_	1					
				_]					
				290	1					
				_]				100%	100%
									10076	10076
			Ē	_						
				_						
			<u> </u>	_	-					
				300		Shale, gray				
			<u> </u>		-					
				_						
			\vdash	_						
		=======		_]					
					1				100%	90%
				210]					
				310	<u> </u>					
				_]					
314.2	29.0									
316.4	2.2		\vdash	_		Shale, dark gray				
316.9	0.5				Maho	ning Coal, with sha	le			
		########## ###########################	—		1	Clay, gray			93%	64%
J			$\overline{}$	220	1	,			İ	I

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 5 of 8
Hala Na	DU	1004						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2004	-	Measured	Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 2/3/2020-2/12/2020
Surface Elev.	1824	1.38		Date	Depth	Elevation		Drilled By:	RES
•			<u>-</u>	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	-	ND				Municipality:	Donegal Nonegal
Survey Method:	GF	s						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	Bottom	SWL measured b	y:		-	Laboratory:	Geochemical
		Depth	Elevation					Northing:	289764.508
Coal Sea Mahoning	am ID	(ft) 316.90	(MSL) 1507.5	_ Middle Kittanning	479.00	1345.4		Easting: Grid Coordinates:	1521736.642
Lower Freeport		402.80	1421.6	Lower Kittanning	540.70	1283.7			
Lower Freeport Middle Kittanning		406.60 460.50	1417.8 1363.9						
					ription: rock type,			0/ Passania	0/ BOD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, min entrations, pyrite, et		Water Conditions	% Recovery	% RQD
		##########			Clay, gray				
322.0	5.1	#########					1		
								93%	64%
			<u> </u>	-					
					Shale, gray				
			330	4	2, g,				
				1					
				-					
336.5	14.5								
		=======						100%	100%
			340	-					
				7					
			<u> </u>						
			_	4					
		=======							
			350	-					
		========						4000/	4000/
			<u> </u>	-				100%	100%
		=======		Shale	gray, with sandysha	alo.			
			_	Jilaie,	gray, with sandysna	iie			
			<u> </u>						
			360						
			_	4					
		=======		1					
				-					
		=======	E =	7					
				_				100%	100%
		========	370	-					
		========		1					
			- -	1					
075.0	00.7	=======	E =	7					
375.2	38.7						†		
270.2	2.0				Shale, dark gray				
378.2	3.0			1			1		
			380	-					
				1				4000/	000/
				-	Candatana arau			100%	93%
			E =	7	Sandstone, gray				
			<u> </u>	Ⅎ					
				7			1		
390.2	12.0		390	<u> </u>					
							1		
		=========							
			<u> </u>	-					
				1	Shale, dark gray		1	100%	90%
			- -	1					
		=======	400	7					
			400	I			Ī		İ

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 6 of 8
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2004	•	Measured	d Static Water I	Levels		Method Drilling:	Continuous Core
a								Date Drilled:	2/3/2020-2/12/2020
Surface Elev.	182	4.38		Date	Depth	Elevation	NI-4	Drilled By:	RES
C d b		·-		Measured ND	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	<i>,</i> I	•	ND				Municipality:	Donegal
Survey Method:	GF	96						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.	Gi	Bottom	Bottom	SWL measured b			-	Laboratory:	Geochemical
		Depth	Elevation	SWL Illeasured b			=	Northing:	289764.508
Coal Sea	am ID	(ft)	(MSL)					Easting:	1521736.642
Mahoning	um 10	316.90	1507.5	Middle Kittanning	479.00	1345.4		Grid Coordinates:	1321730.042
Lower Freeport		402.80	1421.6	Lower Kittanning	540.70	1283.7			
Lower Freeport		406.60	1417.8						
Middle Kittanning		460.50	1363.9	1					
Depth	Thickness	Graphic	Scale		ription: rock type, v sils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, et		Conditions	,	77.1.42
			_		Shale, dark gray				
402.7	12.5	=======			wer Freeport Coal			100%	90%
402.8	0.1			LO	wei Freeport Coai		-	100%	90%
			_	Sar	ndstone, gray, hard				
405.7	2.9		_						
406.6	0.9			Lower F	reeport Coal, with sh	nale	_		
			410	Sou	ndstone, gray, hard				
			_	Jai	riustorie, gray, riaru				
440.0	0.4							100%	90%
413.0	6.4						-	100%	90%
			_						
		=======							
				4					
			420						
					06-1-				
					Shale, gray				
								4000/	2004
								100%	90%
			430						
432.0	19.0								
				4					
			440						
			_	Sar	ndstone, gray, hard				
								100%	93%
			_					10078	3370
449.0	17.0		- -	1					
450.0	1.0		450		Shale, dark gray				
		=======	<u> </u>	-					
			- -	+					
			- -	1					
		=======		Shal	le, dark gray, broken				
		=======							
								100%	30%
459.0	9.0		_					10070	30,0
			460	Middle Ki	ittanning Coal, with s	shale			
460.5	1.5				le, dark gray, broken		_		
461.7	1.2	======== :=:=:=:=:=:=		Silai	ie, uaik gray, brokeri		1		
		:=:=:=:=:=:=	_	5	Sandyshale, gray				
465.0	3.3	:=:=:=:=:=	_				_		
		=======	_ _	4					
			- -	1					
			- -	1					
			470]					
		=======		4 .	Chala dede				
			<u> </u>	-	Shale, dark gray			100%	77%
			- -	1				100 /0	11/0
		=======	_ =	4					
477.7	12.7		<u> </u>	-					
479.0	1.3			Middle Ki	ittanning Coal, with s	hale	1		
			480		Shale, grav		1		I

JLB- CME - 10/01				7.1A GEC	LOGIC DRII	LL LOG			0721-S164 Page 7 of 8
	DI C	2004						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2004		Measure	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 2/3/2020-2/12/2020
Surface Elev.	1824	1.38		Date	Depth	Elevation		Drilled By:	RES
•			•	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T		ND				Municipality:	Donegal
Survey Method:	GF	es						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	Bottom	SWL measured l	by:		-	Laboratory:	Geochemical
		Depth	Elevation					Northing:	289764.508
Coal Sea Mahoning	am ID	(ft) 316.90	(MSL) 1507.5	Middle Kittanning	479.00	1345.4		Easting: Grid Coordinates:	1521736.642
Lower Freeport		402.80	1421.6	Lower Kittanning	540.70	1283.7		ona ocoramatos.	
Lower Freeport Middle Kittanning		406.60 460.50	1417.8 1363.9						
					cription: rock type,				
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ssils, carbonate, mi entrations, pyrite, e		Water Conditions	% Recovery	% RQD
(11)	(11)		(1001)		citi ations, pyrite, e		Containons		
			<u> </u>	_	Shale, gray				
					, 3 . ,				
485.0	6.0	======================================							
		:=:=:=:=:=:=						4000/	9997
		:=:=:=:=:=:=:=: :=:=:=:=:=:=:=	- .	Sandy S	hale, gray, with sand	dstone		100%	93%
		:=:=:=:=:=:=	490	_					
492.5	7.5	:=:=:=:=:=:=: :=:=:=:=:=:=:=	- .						
		=======					1		
			- .		Shale, dark gray				
497.5	5.0								
			<u> </u>						
			500						
		=======						1009/	1009/
			-					100%	100%
					Shale, gray				
			510						
			<u> </u>						
			<u> </u>						
518.6	21.1		- .					100%	93%
				Sha	ale, gray, some slicks	s	1		
520.3	1.7		520						
				_					
				_					
			<u> </u>	_					
			530	Sandstone, light gr	ay, well sorted, seve	eral breaks, hard		100%	100%
			<u> </u>	_				10070	1.5575
			<u> </u>	-					
538.4	18.1		-						
538.6 539.03	0.2 0.43		540		Shale, black				
540.70	1.67		540		ower Kittanning Coal			100%	45%
542.5	1.8	######################################	L .	Claystone, d	ark gray to gray, sor	ne breaks			
544.1	1.6	#########			, broken and crumb		1		
544.8 546.0	0.7 1.2	######################################			aystone, tannish gray tone, gray, some sar		-		
3.0.0					,	-	1		
			<u> </u>	Sands	stone, gray, fine grain	ned			
			550						
550.7	4.7						1		
			_ :		Shale, gray			100%	93%
555.0	4.3		<u> </u>	<u> </u>					
]		
					Shale, dark gray				
				_					

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 8 of 8
Hole No.	DU 3							Operation Name : Method Drilling:	Rustic Ridge #1 Mine-Expansion	
noie No.	DH-2	004	-		Measured	Static Water	Levels		Date Drilled:	Continuous Core 2/3/2020-2/12/2020
Surface Elev.	1824	.38	_		Date	Depth	Elevation		Drilled By:	RES
0		-			Measured ND	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	1	-		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GP	s	_						Quadrangle:	Stahlstown, PA
		Bottom			SWL measured b	y: _		- -	Laboratory:	Geochemical
Coal Sea	am ID	Depth (ft)	Eleva (MS						Northing: Easting:	289764.508 1521736.642
Mahoning		316.90	1507	'.5	Middle Kittanning	479.00	1345.4		Grid Coordinates:	10211001012
Lower Freeport Lower Freeport		402.80 406.60	1421 1417		Lower Kittanning	540.70	1283.7			
Middle Kittanning		460.50	1363							
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		color, foss	ription: rock type, sils, carbonate, mi ntrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD
					-					
				_						
				_		Shale, dark gray				
				_	Ì	onaic, dank gray				
				_					100%	15%
571.0	16.0		570	_	-					
371.0	10.0									
			—	_	Sar	ndstone, gray, hard				
575.2	4.2									
			E	_	Bottom of Ho	le DH 2004 Depth s	575.2 feet			
				_						
			580		-					
				_	-					
				_						
			_							
			_	-						
			590	_						
					-					
				_						
				_	-					
				_						
			600	_	+					
				_						
			_	_	-					
				_						
			E	_	1					
			<u> </u>	_	-					
			<u> </u>	_	Shale, gray, with sandy	y shale				
			610		<u> </u>					
			<u> </u>	_	-					
				_	1					
			<u> </u>	_	1					
				_]					
				_						
			620		-					
				_	1					
			<u> </u>	_	1					
			E	_						
				_	<u> </u>					
			L	_	-					
			630	_	1					
			<u> </u>	_	-					
				_]					
				_	<u> </u>					
			<u> </u>	_	-					
				_	1					
					4					

JLB- CME - 11/29/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 1 of 8
025 OME 11/20/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	005			Moasuroo	Static Water	r Lovole		Method Drilling:	Continuous Core
									Date Drilled:	2/13/2020-2/21/2020
Surface Elev.	1816	5.61			Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	Т			ND				Municipality:	Donegal
Survey Method:	GP	99							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.	- 01	Bottom	Bo	ttom	SWL measured b	ıv.		-	Laboratory:	Geochemical Geochemical
		Depth		vation		.,.		-	Northing:	290323.211
Coal Sea	am ID	(ft)		ISL)					Easting:	1520790.805
Mahoning		318.6		198.0	_				Grid Coordinates:	
Upper Freeport Lower Kittanning		389.0 548.7		127.6 267.9						
Lower Killarining		340.7	12	.07.9						
					Lithologic Descri				a. 5	~
Depth (ft)	Thickness (ft)	Graphic Log	Sca (fe			sils, carbonate, r entrations, pyrite		Water Conditions	% Recovery	% RQD
()	()		(10)		20.00	, ру	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
			_	_						
			_	_	+					
				_						
			_	_						
			_		-					
				_]					
			1	0	4					
				_	1					
		=======		_]					
			<u> </u>	_	-					
				_	Shal	e, brown, weathe	red			
				_	1					
			_		+					
				0 —						
		=======	_	_	-					
			-		1					
				_]					
			_		1					
			_		-					
				_						
30.2	30.2				-					
30.2	30.2		3			Shale, dark gray				
32.5	2.3					Onale, dark gray		_		
34.2	1.7	00000000000 0000000000	_	_	Limes	tone, gray, with fo	ssils			
		=======						1		
37.5	3.3		_	_	Shale	e, dark gray, with	coal			
37.3	3.3							=	80%	17%
				_ =						
			4	0						
				_	Shale	e, gray, with claysl	nale			
		=======	_		1					
45.0	7.5		 -		1					
		========				_				
				_	1					
				_	1					
			5	0	4					
			 -		1					
				_	1				100%	77%
			<u></u>	_	-					
				_	Shale, I	brown and gray, b	roken			
			<u></u>	_	4					
			_	_	+					
			- 6	0 _	1					
			<u> </u>	_	4					
			 -		1					
		=======		_]					
65.0	20.0				_			1		
67.2	2.2				Sands	stone, brown, fract	tured			
					1				100%	33%
		=========	7	o <u> </u>	1					
				_	1					
			<u> </u>	_	4					
				_	S	hale, gray, broken	ı			
				_]					
				_	1					
				_	1				100%	33%
			- 8	0	4					

#B 045 ::::				7.1A GEOLOGIC DR				0704 0404 Dex - 0 - 1 0
JLB- CME - 10/01				7.1A GEOLOGIC DR	ILL LOG		Operation Name :	0721-S164 Page 2 of 8 Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2005		M			Method Drilling:	Continuous Core
				Measured Static Water	er Levels		Date Drilled:	2/13/2020-2/21/2020
Surface Elev.	1810	6.61		Date Depth	Elevation		Drilled By:	RES
				Measured (ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	L(T		ND			Municipality:	Donegal
Survey Method:	GF	98					County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.		Bottom	Bottom	SWL measured by:		-	Laboratory:	Geochemical
		Depth	Elevation			=	Northing:	290323.211
Coal Se	am ID	(ft)	(MSL)				Easting:	1520790.805
Mahoning		318.6	1498.0				Grid Coordinates:	
Upper Freeport Lower Kittanning		389.0 548.7	1427.6 1267.9					
Depth	Thickness	Graphic	Scale	Lithologic Description: rock type color, fossils, carbonate, to		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	concentrations, pyrite		Conditions	70 Necovery	70 KQD
81.0	13.8	=======		Shale, gray, broker				
				1				
				1				
				4			100%	33%
				Shale, gray, with clays	hale			
				1				
			90	4				
91.0	10.0		3U					
				Shale, red				
95.0	4.0		_					
				4				
				†			100%	40%
			100	-				
				Shale, gray, with clays	hale			
			_	1				
				1				
]				
108.0	13.0			-				
100.0	10.0	=======						
			110					
				+				
				1			100%	80%
				-				
			- -	Shale, gray, with sandy	shale			
				Gnale, gray, with Sandy	Silato			
				1				
			120	1				
				4				
				1				
124.0	16.0					4		
				1				
]				
				4			100%	83%
			130					
			_					
				Shale, dark gray				
			- <u>-</u>	onalo, dank gruy				
				4				
				1				
			- -	1				
			140	-				
141.0	17.0		140	1				
142.0	1.0	=======		Shale, dark gray, with for	ossils	1		

Shale, gray, with clayshale

Shale, gray

Shale, red and gray

150.0

159.0

9.0

160

100%

100%

47%

90%

JLB- CME - 10/01					7.1A GEC	DLOGIC DRI	LL LOG			0721-S164 Page 3 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2005 v. 1816.61		-		Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1816	61			Date	Depth	Elevation		Date Drilled: Drilled By:	2/13/2020-2/21/2020 RES
Surface Liev.	1010		-		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_		ND	` '	` '		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GP	Bottom	-	Bottom	SWL measured	bu:		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	SWL measureu	by.		-	Northing:	290323.211
Coal Sea	am ID	(ft)		(MSL)					Easting:	1520790.805
Mahoning		318.6		1498.0					Grid Coordinates:	
Upper Freeport Lower Kittanning		389.0 548.7		1427.6 1267.9						
					1					
Depth	Thickness	Graphic		Scale		cription: rock type ssils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conc	entrations, pyrite,	etc.	Conditions		
				_						
			<u> </u>	_	_				100%	90%
				_						
			<u> </u>	_	-	Shale, red and gray				
				_						
				470						
171.5				170	1					
				_	_				100%	57%
				_	1				100%	57 %
				_						
			_	_	+					
		=======		_						
			_	180	4					
			<u> </u>	_	_					
				_	Shale	e, gray, with sandy s	hale			
				_	4					
				_	1					
				_					100%	100%
				190	1					
				_						
			H	_	-					
				_						
195.0	23.5									
		========		_	Ī	Ob also and and are				
			—	_	+	Shale, red and gra				
200.4	5.4			200						
201.4	1.0	000000000000			Lime	stone, gray, with fos	SSIIS			
				_					100%	37%
			—	_	+					
				_						
			_	_	s	hale, gray, with clay	,			
]	,				
			 	210	1					
				_						
214.0	12.6		\vdash	_	1					
	m ¹			_				1		
			\vdash	_	1					
				_	1				100%	73%
			<u> </u>	220	-					
		========		_						
			_	_	4					
				_	1					
			\vdash	_	-					
				_	Shal	le, gray, with claysh	ale			
			<u> </u>	_		,				
				230						
			\vdash		-					
				-					100%	100%
			F	_	-					
			E	_	_					
			F	_]					
			\vdash	-	1					
				240	<u> </u>					

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 4 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2005			Measure	d Static Wate	r Levels		Method Drilling: Date Drilled:	Continuous Core 2/13/2020-2/21/2020
Surface Elev.	1816	6.61			Date	Depth	Elevation		Drilled By:	Z/13/2020-2/21/2020 RES
			•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GF	es.							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	•	Bottom	SWL measured b	by:		-	Laboratory:	Geochemical
		Depth		Elevation		•		<u>-</u> '	Northing:	290323.211
Coal Sea Mahoning	am ID	(ft) 318.6		(MSL) 1498.0	-				Easting: Grid Coordinates:	1520790.805
Upper Freeport		389.0		1427.6					Grid Coordinates.	
Lower Kittanning		548.7		1267.9						
						ription: rock type				
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, mentrations, pyrite,		Water Conditions	% Recovery	% RQD
(7	(1-)					, PJ ,				
			_	_	Shale	e, gray, with claysh	ale			
				_						
245.0	31.0									
		========		_					4000/	4000/
			H	_		Shale, dark gray			100%	100%
				250						
251.5	6.5	00000000000			Limontono ara	ith foosile (Dr.)	ah Craak I C\			
253.1	1.6	00000000000	-	_	Limestone, gra	y, with fossils (Bru	SIT Creek LS)			
			_	_	-					
				_	1					
				260	-					
			_	_	-				100%	100%
				_					10070	10070
			<u> </u>	_						
				_		Shale, dark gray				
			_	_	1					
				270						
			_	_						
		=======								
			_	_	-					
				_	-					
				_					100%	73%
			_	280	-					
281.5	28.4			200						
			_	_	-					
				_	Shale	e, gray, with claysh	ale			
286.5	5.0		_	_	1					
	*	========								
			E	_	1					
			_	290	-					
				_	1					
			_	_	-				100%	90%
				_	1					
			_	_	1					
				_]					
			_	300						
		=======		_	Sha	ale, gray, with sand	ly			
			Е	_	1					
				_]					
			Ē	_	-				100%	93%
			E	_]				10070	5570
				310	-					
				_	1					
			_	_	-					
315.2	28.7			_	1					
			_	_	1	Shale, dark gray				
318.0	2.8	=======		_		oning Coal, with sh	ale		100%	67%
318.6	0.6	##########		320	iviano	Clayshale, gray	uiu			

JLB- CME - 10/01				7.1A GEO	DLOGIC DRI	LL LOG			0721-S164 Page 5 of 8
3EB- OME - 10/01				,. 020	220010 2111			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	005		Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Flor	1016	. 64		Date		Elevation		Date Drilled:	2/13/2020-2/21/2020
Surface Elev.	1816	0.01		Measured	Depth (ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т		ND	(,	()		Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GF	Bottom	Bottom	SWL measured	h		-	Quadrangle:	Stahlstown, PA
		Depth	Elevation	SVVL measureu	by.		•	Laboratory: Northing:	Geochemical 290323.211
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1520790.805
Mahoning		318.6	1498.0					Grid Coordinates:	
Upper Freeport Lower Kittanning		389.0 548.7	1427.6 1267.9						
				Lithelesia Dec	aviation, vaalstyna	atharina			
Depth	Thickness	Graphic	Scale	color, for	cription: rock type ssils, carbonate, m	inerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log ##########	(feet)	conc	entrations, pyrite,	etc.	Conditions		
		##########			Clayshale, gray				
324.0	5.4	######################################	- -	-	, ,,,,				
92.10								100%	67%
				4					2
			330	_					
			- 550						
				-					
			<u> </u>	_	Shale, gray				
			<u> </u>	_				100%	100%
			340						
				_					
0.3	21.0			_					
0.3	21.0	:=:=:=:=:=	_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	4					
		:=:=:=:=:=:=							
			350	-					
		:=:=:=:=:=						4000/	4000/
				-	Shale, gray			100%	100%
		:=:=:=:=:=:=							
			-	-					
		:=:=:=:=:=							
			360	-					
361.0	16.0	:=:=:=:=:=]					
				-					
				-					
			Ξ Ξ]				1009/	1009/
								100%	100%
			370	4	Sandstone, gray				
				-					
				-					
378.4	17.4								
			380	-	Shale, dark gray				
381.2	2.8								
383.0	1.8		_	Shale, dark g	gray, with coal (Uppe	er Freeport)		100%	40%
				_					
				Shal	le, gray, with claysh	ale			
388.0	5.0								
388.0	1.0			Upper	Freeport Coal, with	shale			
			390	-					
				-					
					Shale, gray			100%	100%
				-					
			400	-					

JLB- CME - 10/01				7 14 GEC	LOGIC DR	III LOG			0724 S464 Dogo 6 of 9
JLB- CME - 10/01				7.14 GEG	LOGIC DIV	ILL LOG		Operation Name :	0721-S164 Page 6 of 8 Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	005		Measure	d Static Wate	ar I avale		Method Drilling:	Continuous Core
-			•					Date Drilled:	2/13/2020-2/21/2020
Surface Elev.	1816	5.61		Date	Depth	Elevation	Natas	Drilled By:	RES
Surveyed by:	LC	т		Measured ND	(ft)	(MSL)	Notes	Logged By: Municipality:	P. Mack Donegal
Survey		'	•	110				County, State:	Westmoreland, PA
Method:	GF	S					_	Quadrangle:	Stahlstown, PA
		Bottom		SWL measured I	oy:		_	Laboratory:	Geochemical
Coal Sea	ım ID	Depth (ft)	Elevation (MSL)					Northing: Easting:	290323.211
Mahoning	טו וווו	318.6	1498.0	_				Grid Coordinates:	1520790.805
Upper Freeport		389.0	1427.6						
Lower Kittanning		548.7	1267.9						
					ription: rock typ				
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, i entrations, pyrite		Water Conditions	% Recovery	% RQD
(7	()	=======================================			, ру	, 222			
				4				100%	100%
								10070	10070
			_ =						
		========							
			410	+	Shale, gray				
		=======							
				-				100%	93%
				4					
418.5	29.5								
			420	+					
				+					
			-	+					
				+				100%	100%
			430						
				+					
				-					
				9.0	ındstone, gray, ha	rd			
			440]	iliusione, gray, na	iu			
				†					
			_ =					100%	100%
				+					
			_ =						
				₫					
			450	4					
			450	₫					
				4					
				₫					
				4					
				1					
								100%	100%
460.0	41.5		460	+					
				+					
				╡					
				1					
				-					
		=======	470	1	Shale, dark gray				
		=========		4	, g.uy				
				1				100%	93%
			_ =	4					
				₫					
				4					
				₫					
			480						1

JLB- CME - 10/01				7.1A GE0	DLOGIC DRILL LO	G		0721-S164 Page 7 of 8
							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2005	_	Measure	d Static Water Levels		Method Drilling:	Continuous Core
-			-	Measure	u otatic water Levels		Date Drilled:	2/13/2020-2/21/2020
Surface Elev.	1810	6.61		Date	Depth Eleva	tion	Drilled By:	RES
-			-	Measured	(ft) (MS	L) Notes	Logged By:	P. Mack
Surveyed by:	LC	T		ND			Municipality:	Donegal
Survey			_				County, State:	Westmoreland, PA
Method:	GF	PS					Quadrangle:	Stahlstown, PA
-		Bottom	Bottom	SWL measured	by:	<u></u>	Laboratory:	Geochemical
		Depth	Elevation			<u></u>	Northing:	290323.211
Coal Sea	am ID	(ft)	(MSL)				Easting:	1520790.805
Mahoning		318.6	1498.0				Grid Coordinates:	
Upper Freeport		389.0	1427.6					
Lower Kittanning		548.7	1267.9					
				Lithologic Des	cription: rock type, weatheri	na		
Depth	Thickness	Graphic	Scale		ssils, carbonate, minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, etc.	Conditions		
		=======						
				_				
			_	-				
			_					
		=======						
		=======			Shale, dark gray			
		=======		4			100%	83%
			490	-				
			490	-				
		=======						
493.0	33.0	========						
494.0	1.0	=======		Shale, dark gi	ray, with coal (Middle Kittanning	9)		
				-				
			_	†	Ohala			
		=======			Shale, gray			
		=======						
500.0	6.0	=======	500					
				+				
			_		Shale, dark gray		100%	93%
			_					
504.8	4.8	=======						
505.1	0.3			Shale, dark gi	ray, with coal (Middle Kittanning	9)		
		00000000000 000000000000	<u> </u>	+				
		000000000000	_	Limestone	e, gray (Middle Kittanning LS)			
		00000000000	510					
511.0	5.9	000000000000						
		=======						
				4	Shale, gray			
			_	+	Oriale, gray			
516.3	5.3		_					
517.2	0.9	========			Shale, dark gray			
				_			100%	80%
			520	=				
			020					
					Shale, gray			
				4				
525.7	8.5			-				
		:=:=:=:=:=:=						
		:=:=:=:=:=						
		:=:=:=:=:=:=:=	E20	4				
			530	†				
		:=:=:=:=:=:=:=		1				
		:=:=:=:=:=:=					100%	93%
		:=:=:=:=:=:=		4				
		[=[=[=]=]= [=[=]=[=]=]=		Sandy shale (gray, with interbedded sandstor	ne .		
		:=:=:=:=:=:=		Garray Gridio, §	gray, war morboadod oandolo			
		:=:=:=:=:=:=	-	1				
		:=:=:=:=:=						
		:=:=:=:=:=:=	540	4				
			<u> </u>	+				
		:=:=:=:=:=:=		-				
		:=:=:=:=:=:=	_					
545.2	19.5	:=:=:=:=:=:=		0	de with home and activity		100%	65%
545.7	0.5	=======		Shale, blac	k, with bone and coal, broken			
			- -	Lower	Kittanning - Coal, bright			
548.7	3.0							
550.2	1.5	##########	550	Clayshale	, gray, sandy, several breaks			
		##########	<u> </u>	4				
		######################################	H -	Clavshale gra	ay to tannish gray, several brea	ks		
		######################################	<u> </u>		, g.a,,	-		
555.3	5.1	##########		<u></u>			100%	80%
		:=:=:=:=:=:=		4	Od-t		100 /0	00 /0
FE0 7	2.4	:=:=:=:=:=:=:=	-	4	Sandstone, gray			
558.7	3.4	:=:=:=:=:=:= ==========						
			560	Shale	e, gray, with sandy shale			

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 8 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	005			Measured	Static Water	r Levels		Method Drilling:	Continuous Core
									Date Drilled:	2/13/2020-2/21/2020
Surface Elev.	1816	5.61			Date	Depth	Elevation	Nate -	Drilled By:	RES
Surveyed by		т			Measured ND	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	1			ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GP	s							Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured b	v:		=	Laboratory:	Geochemical
		Depth		Elevation		•		_	Northing:	290323.211
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1520790.805
Mahoning		318.6		1498.0					Grid Coordinates:	
Upper Freeport Lower Kittanning		389.0 548.7		1427.6 1267.9						
Lower Rittarining		340.7		1207.5						
					Lithologic Descr				0/ 8	** POD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, r ntrations, pyrite		Water Conditions	% Recovery	% RQD
()	(,			(1001)	0000	, py:	, 0.0.	001141110110		
					Shale,	gray, with sandy	shale		100%	80%
565.2	6.5		_	_	•					
000.2	0.0							1		
					Bottom of Ho	le DH 2005 Dept	h 565.2 feet			
			_		•					
				_						
				570						
			_	_	1					
				_]					
			_	_						
			_	_	1					
				_]					
				_						
			_	580						
			_							
			_							
				_						
			_							
			_							
				_						
				590						
			_	_	1					
				_						
			_	_	-					
			_							
				_						
			_		-					
				600						
				_						
			_		-					
]					
			_	_						
			-	_	1					
				_]					
			-	610	1					
]					
			_	_						
			-	_	1					
				_]					
			_	_	1					
				_]					
				620	1					
				_]					
			_	_						
			_	_	1					
				_]					
			_	_						
			—	_	1					
				630]					
			_	_						
			-	_						
]					
			_	_	-					
			_	_	1					
				_]					
			_	_						

JLB- CME - 11/29/01				7.1A GEO	LOGIC DRIL	L LOG					
								Operation Name :	Rustic Ridge #1 Mine-Expansion		
Hole No.	DH-2	2007		Measure	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core		
Surface Elev.	1767	7 53		Date	Depth	Elevation		Drilled By:	3/2/2020-3/11/2020 RES		
Ourrace Liev.	1707	.55	-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack		
Surveyed by:	LC	т	_	ND	• •			Municipality:	Donegal		
Survey		_						County, State:	Westmoreland, PA		
Method:	GF	Bottom	Bottom	SWL measured	hve		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical		
		Depth	Elevatio		_		-	Northing:	285553.476		
Coal Sea	am ID	(ft)	(MSL)					Easting:	1513415.743		
Mahoning Upper Freeport		198.40 249.80	1569.1 1517.7	Middle Kittanning	345.20	1422.3		Grid Coordinates:			
Upper Kittanning		324.40	1443.1	Lower Kittanning	422.40	1345.1					
Upper Kittanning		331.80	1435.7	1							
Depth	Thickness	Graphic	Scale		cription: rock type, ssils, carbonate, min		Water	% Recovery	% RQD		
(ft)	(ft)	Log	(feet)	conc	entrations, pyrite, et	tc.	Conditions				
		=======	<u> </u>	-							
			_	\dashv							
				7							
			_	\dashv							
		=======	Ξ	_							
			10								
		=======		01:-1	dork grov weeth	ad					
			<u> </u>	Shale	e, dark gray, weathere	eu					
				コ							
			_	\dashv							
		=======									
				=							
			_								
			_	\dashv							
		=======									
25.2	25.2	##########									
		##########		\exists							
		########## ###########################	_	\dashv	Clayshale, gray						
		##########	30								
31.0	5.8	######### ========									
			<u> </u>	=							
				\exists							
				Ⅎ	Shale, gray			93%	39%		
			40	_	onalo, gray						
			<u> </u>	\dashv							
45.0	44.0	========									
45.0	14.0	=========					1				
		=======	_	\exists							
			<u></u>	\dashv							
			50	\dashv							
				\exists							
		=======		\exists				100%	0%		
			E	\exists							
		=======		\exists							
			<u> </u>	\dashv							
		=======	Ξ								
			60	Shale, g	ray, with clayshale, br	roken					
		=======									
			_	\dashv							
			<u>_</u>	\dashv			1				
				\exists							
			<u>L</u>	\dashv				100%	40%		
			70								
			_	\dashv							
				\exists							
75.2	30.2		<u> </u>	\dashv							
76.2	1.0				Shale, dark gray		1				
			<u> </u>	\dashv	Obele		1	100%	80%		
			Ε	コ	Shale, gray						

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 2 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	:007			Measured	Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1767	53			Date	Depth	Elevation		Date Drilled: Drilled By:	3/2/2020-3/11/2020 RES
Currace Liev.	170	.55	•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_		ND	` '	•		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GF	Bottom		Bottom	SWL measured b			•	Quadrangle:	Stahlstown, PA
		Depth		Elevation	SWL measured b	у.		•	Laboratory: Northing:	Geochemical 285553.476
Coal Sea	am ID	(ft)		(MSL)					Easting:	1513415.743
Mahoning		198.40		1569.1	Middle Kittanning	345.20	1422.3		Grid Coordinates:	
Upper Freeport Upper Kittanning		249.80 324.40		1517.7 1443.1	Lower Kittanning	422.40	1345.1			
Upper Kittanning		331.80		1435.7						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		iption: rock type sils, carbonate, m ntrations, pyrite,	ninerals,	Water Conditions	% Recovery	% RQD
		=======	_	_						
			_	_	1					
			_	_	+				100%	80%
				_						
			_	_						
				90	j					
			_	_						
				_	1					
				_						
			_	_						
									4000/	020/
			_	_	+				100%	93%
				100	1	Shale, gray				
			_	-	1					
		=======		_						
			_	_	4					
				_						
			_		-					
				_	1					
				110						
				_	1					
			_	_	-				100%	93%
			_	_	1					
				_						
			_	_	1					
119.2	43.0			120						
121.2	2.0	000000000000 00000000000		120	Limestone, dark g	ray, with fossils (B	Brush Creek LS)			
			_	_	-					
			_	_	1					
			_	_	4					
			E	-	1					
				_	1				100%	90%
			E	130]					
					4					
				_	<u> </u>					
		=======	E	_]					
			_	_	1					
		========								
			_	_	-	Shale, dark gray				
		========		140						
			_	-	1					
		=======							100%	93%
			_	_	1					
				_	1					
			_	_	4					
				_	1					
				150	4					
			E]					
		=======	E	_]					
				_	<u> </u>				4000/	000/
156.0	34.8								100%	80%
			H	_	- Ot :	grov with -1	alo			
		========		460	Snale	, gray, with claysh	auc			

JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 3 of 6
	DI C								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2007			Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 3/2/2020-3/11/2020
Surface Elev.	1767	7.53			Date	Depth	Elevation		Drilled By:	RES
			•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GF	96							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wictilou.		Bottom		Bottom	SWL measured b	ov:		-	Laboratory:	Geochemical
		Depth		Elevation		_		_	Northing:	285553.476
Coal Sea	am ID	(ft)		(MSL)					Easting:	1513415.743
Mahoning Upper Freeport		198.40 249.80		1569.1 1517.7	Middle Kittanning Lower Kittanning	345.20 422.40	1422.3 1345.1		Grid Coordinates:	
Upper Kittanning		324.40		1443.1	g					
Upper Kittanning		331.80		1435.7	Lithologic Descr	ription: rock type,	weathering,			
Depth	Thickness	Graphic		Scale	color, foss	sils, carbonate, mi	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite, e	tc.	Conditions		
				_	1				100%	80%
				_	Shale	e, gray, with claysha	le		10070	0070
				_	1					
167.5	11.5									
			_	_	4					
				170						
			_	_	4					
				_					100%	93%
			_	_	4					
				_						
			_	_	1					
				_						
				180	Shale,	gray, with sandysha	ale			
				_						
			_		-					
				_						
				_						
			_	_	1				100%	93%
				190						
			_	_	-					
				_	1					
194.2	26.7					Shale, dark gray				
195.9	1.7					Snale, dark gray				
198.4	2.5			_		Mahoning Coal				
			_	200	4					
					<u>.</u>					
			_	_	Shale	e, gray, with claysha	le		83%	72%
005.0		========		_						
205.0	6.6							-		
				_	1					
				_	1					
				210	-					
				_	1					
			\vdash	_	1					
				_	1					
					1					
				_					100%	93%
				220						
				_	1					
				_	Shale,	gray, with sandysha	ale			
			H.	_	-					
				_	1					
		=========	<u> </u>	_	1					
					1					
		========		230	1					
				_	1				4000/	4000/
			E		1				100%	100%
		=======		_	1					
		=========			1					
				_	1					
			—	240	4					

JLB- CME - 10/01			7.1A GEOLOGIC DRILL LOG						0721-S164 Page 4 of 6				
	DH-2007								Operation Name :	Rustic Ridge #1 Mine-Expansion			
Hole No.	DH-2	2007	-		Measured	Static Water	Levels		Method Drilling:	Continuous Core			
Surface Elev.	1767	7 52			Date	Depth	Elevation		Date Drilled: Drilled By:	3/2/2020-3/11/2020			
Surface Elev.	1/0/	.53	-		Measured	(ft)	(MSL)	Notes	Logged By:	RES P. Mack			
Surveyed by:	LC	т			ND	(1.7)	(02)	110100	Municipality:	Donegal			
Survey			•						County, State:	Westmoreland, PA			
Method:	GF	rs	_					_	Quadrangle:	Stahlstown, PA			
		Bottom		Bottom	SWL measured b	y:		- -	Laboratory:	Geochemical			
		Depth		Elevation					Northing:	285553.476			
Coal Sea Mahoning	am ID	(ft)		(MSL) 1569.1	Mistalla IZinaaaiaa	0.45.00	4400.0		Easting: Grid Coordinates:	1513415.743			
Upper Freeport		198.40 249.80		1517.7	Middle Kittanning Lower Kittanning	345.20 422.40	1422.3 1345.1		Grid Coordinates:				
Upper Kittanning		324.40		1443.1	g								
Upper Kittanning		331.80		1435.7	Lithelesia Dece	ription: rock type,	waath aving						
Depth	Thickness	Graphic		Scale		sils, carbonate, mi		Water	% Recovery	% RQD			
(ft)	(ft)	Log		(feet)	conce	ntrations, pyrite, e	tc.	Conditions					
			—	_	-								
				_	Shale,	gray, with sandysha	ale						
				_									
245.0	40.0							1					
					Shale, da	ark gray, with sands	tone						
247.8	2.8	=======						1	100%	80%			
249.8	2.0		_	250	Upper F	reeport Coal, with s	hale						
								1					
			<u> </u>	_	-								
			H	_	†								
			H	_	-								
			\vdash	_									
				260									
		=======	<u> </u>	_					100%	93%			
			 	_									
				_									
			—	_									
			\vdash	_	-								
		=======		270									
			\vdash	_	-								
		=======		_		Shale, gray							
			—	_									
			\vdash	_	-								
		=======							40007	070/			
			┢	_	4				100%	87%			
				280									
			<u> </u>	_									
			—	_	-								
				_									
			\vdash	_	-								
				_	1								
		=======			4								
			\vdash	290	1								
				_	1					ļ			
		========	H-	_	4				100%	90%			
			E	_	<u> </u>				100 /0	90 /0			
295.0	45.2							4					
			\vdash	_	1								
				_	Sha	le, gray, variegated				ļ			
200.0	5.0	=======	<u> </u>										
300.2	5.2	##########		300				1					
		##########		_	1	Clayshale, gray							
304.0	3.8	######################################	<u> </u>	_		, ,,,,							
504.0	5.0							1					
		=======		_	4					ļ			
			H	_	1				100%	67%			
				_	1								
			-	310	4								
			E	_	<u> </u>	Shale gray							
				_		Shale, gray				ļ			
			H	_	1								
					j								
			Ē	_	4				100%	00%			
			H	_	1				100%	90%			
			\vdash	320	1					I			

JLB- CME - 10/01				7.1A GEC	LOGIC DRII	LL LOG			0721-S164 Page 5 of 6
	DI C							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2007	-	Measure	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 3/2/2020-3/11/2020
Surface Elev.	1767	7.53		Date	Depth	Elevation		Drilled By:	RES
•			-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	-	ND				Municipality:	Donegal
Survey Method:	GF	s						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom	Bottom	SWL measured l	by:			Laboratory:	Geochemical
		Depth	Elevation					Northing:	285553.476
Coal Sea Mahoning	am ID	(ft) 198.40	(MSL) 1569.1	Middle Kittanning	345.20	1422.3		Easting: Grid Coordinates:	1513415.743
Upper Freeport		249.80	1517.7	Lower Kittanning	422.40	1345.1		ona occianates.	
Upper Kittanning Upper Kittanning		324.40 331.80	1443.1 1435.7						
					cription: rock type,				
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ssils, carbonate, mi entrations, pyrite, e		Water Conditions	% Recovery	% RQD
		=======	(1001)	Control	Shale, gray		Conditions		
322.4	18.4								
324.0	1.6		_		Shale, dark gray				
324.4	0.4	========		Up	oper Kittanning Coal			100%	90%
				1					
			-	-	Shale, dark gray				
			330	1					
330.9 331.8	6.5 0.9	========		Upper K	Kittanning Coal, with	shale			
	212		_		<u> </u>				
			-	-					
				1					
				Shale, o	dark gray, with sands	stone		100%	70%
				1					
			340	-					
343.4	11.6			Middle I	Cistonnina Cool with	ahala			
345.2	1.8			iviladie r	Kittanning Coal, with	snaie			
				1					
]					
			350	_					
]					
								100%	93%
					Shale, gray				
			<u> </u>	_					
			360	4					
				1					
363.1 363.6	17.9 0.5				Shale, dark gray				
		00000000000							
		00000000000 00000000000	<u> </u>	Limestone,	, gray (Middle Kittanı	ning LS)			
260.2	E 7	000000000000	_ =]				100%	90%
369.3	5.7	<u>00000000000</u>	370	<u> </u>					
			<u> </u>	1					
				1					
			- -	1					
			_ _]					
				-					
			=						
			380	1	Chala aray				
					Shale, gray			4000/	000/
			_	1				100%	90%
				4					
			<u> </u>	1					
			<u> </u>	1					
			390	1					
		========	<u> </u>	-					
393.3	24.0			<u> </u>					
			_ =	1					
				Sand	Istone, gray, with sha	ale		100%	97%
			<u> </u>	-	. 3 - 7, 316				
398.8	5.5		400	1	andetone light grav				

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 6 of 6
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	007	=	Measured	l Static Water L	_evels		Method Drilling:	Continuous Core
Surface Elev	1767	. 52		Date	Depth	Elevation		Date Drilled:	3/2/2020-3/11/2020
Surface Elev.	1707	.55	-	Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т		ND	(,	(Municipality:	Donegal
Survey			<u>-</u>					County, State:	Westmoreland, PA
Method:	GP			014/1				Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured b				Laboratory: Northing:	Geochemical 285553.476
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1513415.743
Mahoning		198.40	1569.1	Middle Kittanning	345.20	1422.3		Grid Coordinates:	
Upper Freeport Upper Kittanning		249.80 324.40	1517.7 1443.1	Lower Kittanning	422.40	1345.1			
Upper Kittanning		331.80	1435.7						
Depth	Thickness	Graphic	Scale		ription: rock type, w sils, carbonate, mine		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		ntrations, pyrite, etc		Conditions	•	
			- -	+					
								100%	97%
			<u> </u>	-					
				Sai	ndstone, light gray				
				1				100%	100%
				1				10070	10070
410.0	11.2		410	1					
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	1					
		:=:=:=:=:=	<u> </u>	Sand	dy Shale, dark gray, interbedded sandsto	ine		100%	90%
			_	w/ some	, menseuded sandsto	110			
416.3	6.3	[=]=]=]=]=		1					
418.2	0.3		-	-	Shale, dark gray				
418.8	0.6							4000/	000/
419.5			420	Low	ver Kittanning Coal			100%	33%
422.4	4.0								
424.1	1.7	######################################	<u> </u>	Claystone	, dark gray, broken, v	veak			
727.1	1.7	:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_	4					
		:=:=:=:=:=:=		Sandy Shale	e, dark gray, with som	ne clav			
			430	- Sandy Share	o, aam gray, mar oon	.o olay		100%	100%
		:=:=:=:=:=:=	430					10070	10070
432.0	8.0	:=:=:=:=:=							
				Shale,	, gray, with sandstone	e			
435.2	2.8								
				Bottom of Ho	ole DH 2007 Depth 43	5.2 feet			
			<u> </u>	1					
			440]					
			<u> </u>	4					
]					
			<u> </u>	1					
				1					
			-	4					
				1					
			450	4					
				1					
			<u> </u>	4					
				1					
			<u> </u>	4					
				1					
			460	-					
				ĺ					
				1					
			<u> </u>	4					
			<u> </u>	1					
			<u> </u>	ĺ					
			470	1					
			<u> </u>	1					
			<u> </u>	1					
			<u> </u>	-					
			<u> </u>	1					
			<u> </u>	ĺ					
			<u> </u>	1					
			480						

JLB- CME - 11/29/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 1 of 9
025 OME 11/20/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	010			Moasuroo	Static Water	or Lovole		Method Drilling:	Continuous Core
•			,						Date Drilled:	3/30/2020-4/7/2020
Surface Elev.	1935	5.51			Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	51			ND				Municipality:	Donegal Nonegal BA
Survey Method:	GP	99							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u> </u>	Bottom		Bottom	SWL measured b	ov:		-	Laboratory:	Geochemical
		Depth		Elevation		,		-	Northing:	291395.307
Coal Sea	am ID	(ft)		(MSL)					Easting:	1522705.705
Upper Freeport		501.3		1434.2	_				Grid Coordinates:	
Lower Kittanning Lower Kittanning		654.2 655.7		1281.3 1279.8						
Lower Killarining		033.7		1279.0						
					Lithologic Descri				a. 5	~
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, r entrations, pyrite		Water Conditions	% Recovery	% RQD
(-7	()			(1331)	20.00	, ру	,			
			_	_						
			_	_	+					
				_						
			_	_						
			_	_	-					
				_]					
				10	4					
				_	1					
		=======		_]					
			_	_	-					
				_	1					
				_	Chal		un d			
			_	_	Snai	e, brown, weathe	rea			
				20						
		=======	_	_	-					
			_	_	1					
				_]					
			_	_	1					
			_	_	-					
			_	30						
				30	†					
		=======		_						
			_	_	-					
35.2	35.2			_						
		:=:=:=:=:=:=	_	_	Sandy	Shale, brown and	l grav			
38.2	3.0		_	_	Sandy	Onale, brown and	gray			
				_						
				40	-				100%	65%
				_						
				_		Shale, gray				
			_	_	1					
				_]					
47.2	9.0				-			-		
				_	1					
				50	4					
			_	_	1					
				_]				100%	37%
			_	_	-					
				_	1					
			_	_	4					
			_	_	+					
				60	Shale, brown and	gray, weathered	, with sandstone			
			_	_		5 .,,				
				_	1					
		=======			4					
			_	_	1					
				=	1					
			_	_	4				100%	43%
			_	70	1					
		=======		_	1					
73.5	26.3		_	_	4					
10.0	20.0]					
		=======	_	_	4					
			_	_	Shal	le, dark gray, brok	ken			
				_]				83%	28%
			_	80	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	LL LOG			0721-S164 Page 2 of 9
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	010			Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1935	5.51			Date	Depth	Elevation		Date Drilled: Drilled By:	3/30/2020-4/7/2020
Surface Elev.	1935	.51			Measured	(ft)	(MSL)	Notes	Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	(1-7	(Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF			D - 44	014/1 1.1			•	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	by:		•	Laboratory: Northing:	Geochemical 291395.307
Coal Sea	am ID	(ft)		(MSL)					Easting:	1522705.705
Upper Freeport		501.3		1434.2	-				Grid Coordinates:	
Lower Kittanning Lower Kittanning		654.2 655.7		1281.3 1279.8						
				1270.0						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	ription: rock type sils, carbonate, m entrations, pyrite,	inerals,	Water Conditions	% Recovery	% RQD
			_	_	1					
		========		_	01-	de ded ees best				
			_	_	Sna	ile, dark gray, brok	en		000/	000/
				_					83%	28%
87.0	13.5									
				_]					
				90	-					
				_	[
			_	_	-					
				_						
			Ē	_	4					
			_	_	Sandstone, gr	ay, with shale and	coal streaks		93%	71%
				100						
				100						
			_							
				_						
107.0	20.0		_	_	-					
108.3	1.3				Shale	e, dark gray, with c	oal			
			_	110	1					
				_		Shale, dark gray				
			_	_	1				100%	47%
114.0	5.7			-						
		00000000000 00000000000	_	_	1					
		000000000000		_						
		00000000000 00000000000	_	_	1					
		000000000000		120						
		000000000000 000000000000	_	_	·					
		000000000000		_	Lime	stone, gray, with sh	nale			
		00000000000 00000000000	_	_	1					
		000000000000		_]					
		00000000000 00000000000	_	-	1				100%	80%
405 -		000000000000		=]					
130.0	16.0	00000000000		130						
				_						
			_		1					
				_]					
			_				-1-			
				_	Shali	e, gray, with claysh	ale			
				140	1					
			_	_	1				100%	30%
144.0	14.0									
			_		1					
				_	1	01-1-1-1				
			_	_	1	Shale, dark gray				
				150	1					
150.7	6.7									
				_	1					
			_	-	Shale	, dark gray, with fo	ssils			
				_]	3 3			100%	60%
158.0	7.3		_	_	1					
158.6	0.6	00000000000				stone, gray, with for				
				160	Sha	ile, dark gray, brok	en			

JLB- CME - 10/01				7 14 GEO	LOGIC DRIL	LLOG			0721-S164 Page 3 of 9
JLB- CME - 10/01				7.14 020	LOGIC DIVIL	L LOG		Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	010		Measure	d Static Water	Levels		Method Drilling:	Continuous Core
								Date Drilled:	3/30/2020-4/7/2020
Surface Elev.	1935	5.51		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By:	RES
Surveyed by:	LC	т		ND	(II)	(WISL)	Notes	Logged By: Municipality:	P. Mack Donegal
Survey		•						County, State:	Westmoreland, PA
Method:	GF						_	Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	oy:		_	Laboratory:	Geochemical
Coal Sea	ım ID	Depth (ft)	Elevation (MSL)					Northing: Easting:	291395.307 1522705.705
Upper Freeport		501.3	1434.2	_				Grid Coordinates:	
Lower Kittanning Lower Kittanning		654.2 655.7	1281.3 1279.8						
Lower Rittarining		033.7	1273.0						
Depth	Thickness	Graphic	Scale	color, fos	ription: rock type,	nerals,	Water Conditions	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, e		Conditions		
163.0	4.4			Sha	ile, dark gray, broken	l		100%	60%
100.0	7.7							10070	0070
				4					
				4					
			170	†					
				₫				100%	63%
		=======			Shale, gray				
				†	Silale, gray				
		=======		4					
			180	4					
				4					
186.0	23.0								
								100%	47%
			190	4					
				s	shale, red and gray				
				+					
195.2	9.2			4					
195.2	9.2	00000000000							
		00000000000 00000000000	-	+					
		000000000000	=						
		000000000000 000000000000	200	+					
		000000000000		Lima	atana aray with aha	la.		100%	83%
		000000000000 000000000000		Lime	stone, gray, with sha	ie		100%	0376
		000000000000							
		00000000000 00000000000		+					
		000000000000							
210.2	15.0	00000000000 00000000000	210	<u> </u>					
		=======		4					
				₫					
				- Chair	e, gray, with clayshal	۵			
				Silan	o, gray, with olayoflal	-			
			_ =	4				100%	70%
219.5	9.3		_					10076	1076
			220						
				4					
		========		1					
				4					
				1			1		
			230	Shale	, gray, with sandysha	ale			
			200	Citale	, ,,, oanayona				
			_ =	4				100%	100%
								10070	10070
			_ =	4			1		
				Ⅎ					
			_ =	7					
			240	┪					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	III LOG			0721-S164 Page 4 of 9
JEB- CIVIE - 10/01					7.1A GEG	LOGIO DI	ILL LOO		Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	010			Measured	Static Water	er Levels		Method Drilling:	Continuous Core
O	400									3/30/2020-4/7/2020
Surface Elev.	1935	5.51			Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES D. Maek
Surveyed by:	LC	т			ND	(11)	(WOL)	Notes	Municipality:	P. Mack Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF							_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured b	y:	-	-	Laboratory:	Geochemical
Coal Sea	ım ID	Depth (ft)		Elevation (MSL)					Northing: Easting:	291395.307 1522705.705
Upper Freeport		501.3		1434.2	-				Grid Coordinates:	
Lower Kittanning Lower Kittanning		654.2 655.7		1281.3 1279.8						
Lower rattarining		033.7		1273.0						
Depth	Thickness	Graphic		Scale	Lithologic Descr	ription: rock typ sils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite		Conditions	,, noove,	71125
			_	_	-					
					Shale.	gray, with sandys	shale			
			_	_		9,,				
246.0	26.5			_						
			_	_	-				100%	100%
			_	_	1				10070	10070
				250						
					<u> </u>					
				_						
			-	_	1					
				_] .	Shale, dark gray				
			_	_	•	Snale, dark gray				
		=======								
				260						
		=======		_					4000/	020/
			_	_					100%	83%
		=======								
267.0	21.0			_						
			_	-	-					
				270						
			_	_	-					
		=======								
		=========	_	_	1					
		=======		_						
			_	-	-				100%	93%
		=======		280		Shale, gray				
				200						
		=======		_						
				_						
		========	_	_	-					
				<u> </u>]					
			_	_	-					
290.0	23.0			290]		
		######################################	_	_	-					
		#########		_	1	Clayshale, gray			100%	63%
294.0 295.5	4.0 1.5	#########				Shale, red		-		
	-							1		
			_	_	-					
				300	-					
				_						
			_	-	-					
				_	-					
				_	<u> </u>					
			_	_	-	Shale, gray			100%	100%
				310	1					
				_	-					
				_]					
			_	_	-					
				_]					
			_	_	-				100%	87%
		=======		_]					2.70
		========		320	Ì			Ī		

JLB- CME - 10/01					7.1A GEC	LOGIC DRI	ILLOG			0721-S164 Page 5 of 9
JEB- CIVIE - 10/01					7.174 020	DECOIO DIXI	LL LOO		Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	010			Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
									Date Drilled:	3/30/2020-4/7/2020
Surface Elev.	1935	5.51			Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES D. Maek
Surveyed by:	LC	т			ND	(11)	(MOL)	Notes	Municipality:	P. Mack Donegal
Survey									County, State:	Westmoreland, PA
Method:	GP							_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured I	by:		_	Laboratory:	Geochemical
Coal Sea	ım ID	Depth (ft)		Elevation (MSL)					Northing: Easting:	291395.307 1522705.705
Upper Freeport		501.3		1434.2	-				Grid Coordinates:	10221001100
Lower Kittanning		654.2		1281.3						
Lower Kittanning		655.7		1279.8						
Doub	Thistonese	Obi-		01-		cription: rock type		M/-t	9/ Bassyery	% RQD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ssils, carbonate, m entrations, pyrite,		Water Conditions	% Recovery	/6 KQD
				_						
			_	_	-	Shale, gray				
		=======								
325.0 326.0	29.5 1.0	00000000000			Limes	stone, gray, with for	ssils		100%	87%
		=======		_		Shale, dark gray				
328.5	2.5									
				330	<u> </u>					
			_	_	-					
				_	1					
			_	_	4					
				_	1]		
				_					100%	90%
			_	_	-				100%	90%
		=======		340						
			_	_	+					
				_						
				_	-					
				_		Shale, gray				
			_	_	-					
				_	<u> </u>					
				350						
				_	1					
				_					100%	77%
				_	<u> </u>					
				_						
				_	1					
				360						
				300	1					
262.0	24.5	=======		_						
363.0	34.5									
			_	_	4					
			E	_	1					
				_	1			1	100%	100%
				370	<u> </u>	Shale, dark gray				
					4					
				_	<u> </u>					
275.2	40.0			_	1					
375.2	12.2	00000000000			Limpetono	ay, with fossils (Bru	sh Craek I SI	1		
377.0	1.8	00000000000			Limestone, gra	ay, with 1055115 (DIU	on Oreek Lo)			
			_	_	-					
				380	1					
				_	<u> </u>			1		
				_					100%	100%
				_	<u> </u>					
		=======								
			-	_	1					
					1	Shale, dark gray				
				390	1					
				_	1					
			_	_	-					
				_	1				100%	83%
			_	_	4			1	.5070	5570
				_	1					
		=======================================	-	400	-					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 6 of 9
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2010			Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Floy	102	5 E4			Date	Depth	Elevation		Date Drilled:	3/30/2020-4/7/2020
Surface Elev.	1935	0.01	•		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	(1-7	()		Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF			-				_	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	oy:		_	Laboratory: Northing:	Geochemical 291395.307
Coal Sea	am ID	(ft)		(MSL)					Easting:	1522705.705
Upper Freeport		501.3		1434.2	_				Grid Coordinates:	
Lower Kittanning Lower Kittanning		654.2 655.7		1281.3 1279.8						
Lower rattarining		000.1		1270.0						
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
			_	_	-					
				_		Shale, dark gray			100%	83%
404.0	27.0							-		
				_						
			_	_	Shale	e, gray, with claysh	ale			
			_	_	-					
410.0	6.0			410				_		
				_						
		=======	F	_					100%	63%
			H	_	1					
				_						
			_	_	1					
				_						
				420	-					
				_						
			_	_	-					
				_						
				_	Shale	, gray, with sandys	hale			
			_	_	1				100%	100%
				430						
			_	_	1					
				_						
			_	_	1					
				_						
				440	-					
442.0	32.0							-	100%	87%
		=======		_						5.75
			\vdash		-	Shale, dark gray				
446.6	4.6									
448.0	1.4				Shale, dar	k gray, with Mahor	ning coal	1		
				450	[
			\vdash		-	Shale, gray				
				_	1	, g.wj				
455.0	7.0		_	_	-					
400.0	7.0			_				1		
			_	_	-				100%	77%
				_					10070	1170
				460						
				_						
				_						
			E		1					
			Ē	_	4					
				_	Shale	, gray, with sandys	hale			
		=======		470]	ŕ				
				470	1					
		=======		_]				4000/	020/
			\vdash	_	1				100%	93%
				_	1					
			_	_	1					
				_	1					
		=========	_	480	1					

JLB- CME - 10/01							0721-S164 Page 7 of 9			
						LOGIC DR			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	010			Measured	d Static Wate	er Levels		Method Drilling:	Continuous Core
Surface Floy	1026	: 54			Date	Depth	Elevation		Date Drilled:	3/30/2020-4/7/2020
Surface Elev.	1935	0.51			Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	(,	()		Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF			-				_	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	by:	•	-	Laboratory: Northing:	Geochemical 291395.307
Coal Sea	am ID	(ft)		(MSL)					Easting:	1522705.705
Upper Freeport		501.3		1434.2	-				Grid Coordinates:	
Lower Kittanning Lower Kittanning		654.2 655.7		1281.3 1279.8						
Lower rattarining		000.1		1270.0						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ription: rock typ sils, carbonate, i entrations, pyrite	minerals,	Water Conditions	% Recovery	% RQD
				_						
				_	Shale,	, gray, with sandy	shale			
484.0	29.0	========						_		
			_	_	1	Shale, dark gray				
400.0						onale, uark gray			4000/	770/
488.3	4.3				Ob also stanta a			1	100%	77%
489.7	1.4			490	Snale, dark g	ray, with Upper F	reeport coal			
			_	_	1					
				_	1					
			_	_	-	Shale, dark gray				
				_	<u> </u>					
498.4	8.7		_	_	4					
430.4	0.7							1		
501.3	2.9			500	Upper F	reeport Coal, with	h shale			
301.3	2.5							1		
			_	_	-				100%	80%
				_						
			_	_	-					
				_						
				E10						
				510	1					
				=						
			_	_	1					
				=		Shale, gray				
			_	_	†					
				_					100%	100%
			_	520	-					
				_	1					
			_	_	-					
					1					
				_	<u> </u>					
529.3	28.0			_	<u> </u>					
	-			530	1	-				
					1					
			Ē	_	4				100%	100%
				_]					
			_	_						
				_	1					
			_	540	-					
				340						
			_	_	-					
				_		_				
			\vdash	_	1	Sandstone, gray				
				_	1					
			<u> </u>	_	1				100%	100%
				550	1					
			H	_	1					
				_	1					
			_	_	1					
				_						
			\vdash	_	†				100%	93%
				FC0]					
			1	560	•					i

JLB- CME - 10/01				7.1A GEC	DLOGIC DR	LL LOG			0721-S164 Page 8 of 9
Uala Na	DU 4	2010						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2010	•	Measure	d Static Wate	r Levels		Method Drilling: Date Drilled:	Continuous Core 3/30/2020-4/7/2020
Surface Elev.	193	5.51		Date	Depth	Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	L(CT		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GI	PS						Quadrangle:	Stahlstown, PA
•		Bottom	Bottom	SWL measured	by:		-	Laboratory:	Geochemical
		Depth	Elevation					Northing:	291395.307
Coal Sea Upper Freeport	am ID	(ft) 501.3	(MSL) 1434.2	=				Easting: Grid Coordinates:	1522705.705
Lower Kittanning		654.2	1281.3					Grid Coordinates.	
Lower Kittanning		655.7	1279.8						
				Lithologic Desc	cription: rock type	e, weathering,			
Depth	Thickness	Graphic	Scale	color, fos	ssils, carbonate, m	ninerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conc	entrations, pyrite,	etc.	Conditions		
564.5	35.2]	Sandstone, gray				
304.5	30.2	========							
		=======						100%	93%
			<u> </u>	_					
		=======							
			570	_	Shale, gray				
			570		, g,				
			_						
	40.4	=======							
577.6	13.1			Ob -t- 1 1	ent with to the trans	la Vittar -!	1	100%	80%
579.5	1.9			Shale, dark gr	ray, with coal (Midd	e Kittanning)			
			580	_					
		=======		_					
			_	-					
			<u> </u>	-					
		=======			Shale, dark gray				
			590	_					
			<u> </u>	_				100%	83%
		=======		_					
597.8	18.3			1					
599.2	1.4	========		Shale, dark gr	ray, with coal (Middl	le Kittanning)			
			600	-	Shale, gray				
602.0	2.8	=======							
				-					
			- -	1	Od-:				
				1	Sandstone, gray			100%	100%
			- -	+					
			610	1					
612.0	10.0						-		
				1	Shale, dark gray				
615.2	3.2	00000000000		-					
		00000000000		Limestone	, gray (Middle Kitta	nning LS)			
618.2	3.0	00000000000		1					
			620	1					
			<u> </u>	_				100%	100%
				٠					
				Shale	, gray, with sandy s	iriale			
			- -	+					
				1					
			630	4					
			- -	1					
633.8	15.6						_		
		:=:=:=:=:=:= :=:=:=:=:=:=	- -	1			1	100%	90%
		:=:=:=:=:=:=		Sa	andy Shale, dark gra	ay	1	12.7	
			<u> </u>	-	,, sum gro	•			
640.3	6.5		<u> </u>						
			640	Sandston	e, light gray, coarse	grained	<u> </u>		

JLB- CME - 10/01				7.1A GEC	LOGIC DR	ILL LOG			0721-S164 Page 9 of 9
OLD OINE 1001								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	010		Moseuro	d Static Wate	r Lovole		Method Drilling:	Continuous Core
								Date Drilled:	3/30/2020-4/7/2020
Surface Elev.	1935	5.51		Date	Depth	Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	1	•	ND				Municipality:	Donegal
Survey Method:	GP	9						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u> </u>	Bottom	Bottom	SWL measured I	bv:		_	Laboratory:	Geochemical
		Depth	Elevation		,		_	Northing:	291395.307
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1522705.705
Upper Freeport		501.3	1434.2					Grid Coordinates:	
Lower Kittanning Lower Kittanning		654.2 655.7	1281.3 1279.8						
201101 Tattarining		000.1	.2.0.0						
Donath	Thistonese	0	01-		cription: rock type		144-4	9/ Bassyony	% RQD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		ssils, carbonate, mentrations, pyrite,		Water Conditions	% Recovery	% KQD
, ,	. ,				•••				
								100%	90%
								10070	3070
				Sandstone	e, light gray, coarse	arained			
					o, ng. n gray, ooaloc	gramou			
			650	+					
				_					
653.5	13.2		_	+	Shale block		4	100%	53%
653.8 654.2	0.3 0.4	=======		+	Shale, black		1		
655.7	1.5				ower Kittanning Coal				
657.1	1.4	######################################		С	layshale, dark gray	′	4		
		######################################		01	. to Balet many back	and could all also			
		#########	660	Claystone, gray	y to light gray, brok	en, with slicks			
661.0	3.9	#########					4		
		:=:=:=:=:=:=		Sandy S	hale, gray, with sor	me clay			
665.8	4.8	:=:=:=:=:=:=							
005.8	4.0	:=:=:=:=:=:= =========================					1		
		=======						100%	100%
			670						
			070						
		=======							
				Shale	, gray, with sandys	hale			
		=======							
681.0	15.2		680	_					
							1		
								100%	100%
				₫					
			- -	┨ .	- data				
				_ Sa	andstone, gray, har	u			
			690	-					
				<u> </u>					
695.0	14.0		- -	+					
							1		
			- -	4				100%	87%
			- -	Condat	arov with and ct	oko bord		10076	01 70
			700	Sandstone	, gray, with col stre	aks, naru			
			- -	4					
703.0	8.0								
				Sa	andstone, gray, har	d			
705.2	2.2			+			1		
				Bottom of H	ole DH 2010 Depth	705.2 feet			
			- -	-					
			710	₫					
			<u> </u>	4					
			- -	+					
				1					
			- -	+					
				₫					
			_ =	4					
				_			1		1

JLB- CME - 11/29/01				7.1A GEC	ILL LOG			0721-S164 Page 1 of 6	
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2011		Measure	d Static Wate	er Levels		Method Drilling:	Continuous Core
Surface Elev.	1677	7 03		Date	Depth	Elevation		Date Drilled: Drilled By:	4/8/2020-4/15/2020 RES
Ourrace Liev.	1077	.00	-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т		ND	• • •	•		Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	Bottom	Bottom	SWL measured I	hv		-	Quadrangle: Laboratory:	Stahlstown, PA
		Depth	Elevation		Jy.		-	Latitude:	Geochemical 290483.299
Coal Sea	am ID	(ft)	(MSL)					Longitude:	1519869.000
Upper Kittanning		307.1	1369.9					Grid Coordinates:	
Upper Kittanning Middle Kittanning		325.3 348.2	1351.7 1328.8						
Lower Kittanning		418.0	1259.0						
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	cription: rock typ ssils, carbonate, r entrations, pyrite	ninerals,	Water Conditions	% Recovery	% RQD
			<u> </u>						
			<u> </u>						
			-						
			10						
			-	Sha	le, brown, weathe	red			
			-						
			<u> </u>						
			20						
23.0	23.0								
				_	Shale, red				
26.2	3.2								
								100%	0%
		========							
			30	Shal	e, gray, with clays	hale			
			<u> </u>						
35.0	8.8								
37.0	2.0		-		Shale, red				
	-							83%	48%
			40	_					
			<u> </u>	_					
			<u> </u>						
			<u> </u>	-	Shale, gray				
			50		, 3:)				
			<u> </u>	-					
								100%	87%
			<u> </u>	_					
			<u> </u>	_					
60.0	23.0		60						
				S	Shale, red and gray	1			
63.0	3.0								
			<u> </u>	_					
								100%	40%
		=======	70	61-1	e grav with alar	hale			
			70	Snai	e, gray, with clays	IGIC			
			-	-					
76.0	13.0						-		
					Shale, gray			100%	83%
				_	, 5,01				

JLB- CME - 10/01				7.1A GEC	LOGIC DRI	LL LOG			0721-S164 Page 2 of 6
OLD OINE 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2011		Moasuro	d Static Water	Lovole		Method Drilling:	Continuous Core
								Date Drilled:	4/8/2020-4/15/2020
Surface Elev.	1677	7.03		Date	Depth	Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	il		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF	es						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured I	by:		•	Laboratory:	Geochemical
		Depth	Elevation		_		-	Latitude:	290483.299
Coal Sea	am ID	(ft)	(MSL)	_				Longitude:	1519869.000
Upper Kittanning Upper Kittanning		307.1 325.3	1369.9 1351.7					Grid Coordinates:	
Middle Kittanning		348.2	1328.8						
Lower Kittanning		418.0	1259.0						
Depth	Thickness	Graphic	Scale		cription: rock type, ssils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite,		Conditions	,	711.42
		=======		4					
				=					
		=======		4				100%	83%
			90	4					
				_	Shale, gray				
			<u> </u>	4					
			- -	1					
				1					
			<u> </u>	4					
			-	-				100%	93%
101.0	25.0		100	4					
101.0	23.0								
		=======		4					
			-	-					
		=======							
				+	Shale, dark gray				
			110	_					
				1					
113.5	12.5							100%	100%
115.0	1.5	00000000000 00000000000		Limestone, gra	ay, with fossils (Brus	sh Creek LS)			
			- -	+					
			120	_					
			<u> </u>	_					
			<u> </u>	4					
			- -	1				100%	100%
]					
			130	-	Shale, dark gray				
				1					
			<u> </u>	-					
				_					
			<u> </u>	4					
				+					
			140	4					
				1					
444.0	20.0		<u> </u>	4				100%	73%
144.0	29.0						1		
			<u> </u>	-					
				Shal	e, gray, with claysha	ale			
			150	4					
			- -	1					
153.0	9.0			1					
			<u> </u>	-					
				1				100%	80%
			<u> </u>	Shale	, gray, with sandy sh	nale			
			- -	1					
		========	160	1					

JLB- CME - 10/01				7.1A GEC	LOGIC DRI	ILL LOG			0721-S164 Page 3 of 6
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	:011	<u>.</u>	Measure	d Static Wate	r Levels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	1677	7.03		Date	Depth	Elevation		Drilled By:	4/8/2020-4/15/2020 RES
			<u>-</u>	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	Т		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	Bottom	Bottom	SWL measured	hv:		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation				-	Latitude:	290483.299
Coal Sea	am ID	(ft)	(MSL)					Longitude:	1519869.000
Upper Kittanning Upper Kittanning		307.1 325.3	1369.9 1351.7					Grid Coordinates:	
Middle Kittanning		348.2	1328.8						
Lower Kittanning		418.0	1259.0	l ithelesia Dess	uintian, vaal tuna	atharina			
Depth	Thickness	Graphic	Scale		cription: rock type ssils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conc	entrations, pyrite,	etc.	Conditions		
				_				100%	80%
			<u> </u>	_					
		=======	470	_					
			170						
			<u></u>	Shale	, gray, with sandy s	hale		100%	93%
								10070	9J /0
		=======							
			_						
			180						
			<u> </u>	_					
			_						
184.0	31.0								
								100%	33%
			<u> </u>	Shal	e, gray, with claysh	ale		100%	33%
		=======	190						
193.0	9.0								
			<u> </u>	_					
			200	_					
								100%	100%
		========							
				-					
			210	Shale	, gray, with sandy s	hale			
		=========	 	\dashv					
			 	\dashv			1		
		=======							
			<u> </u>	_				100%	90%
			220						
		=======							
			_	_					
222.2	20.0	=======		\exists					
226.0	33.0						1		
							1		
			230	Ⅎ					
				\dashv					
				Sand	Istone, gray, with sh	nale		100%	100%
			<u> </u>		, 3.3,,		1		
			<u> </u>	\dashv			1		
							1		
			240	1			1	1	i l

JLB- CME - 10/01				7.1A GEO	3	0721-S164 Page 4 of 6				
	DII 6	2011					Operation Name :	Rustic Ridge #1 Mine-Expansion		
Hole No.	DH-2	2011		Measured	Static Water Levels		Method Drilling: Date Drilled:	Continuous Core 4/8/2020-4/15/2020		
Surface Elev.	1677	7.03		Date	Depth Elevat	ion	Drilled By:	RES		
•			•	Measured	(ft) (MSL	_) Notes	Logged By:	P. Mack		
Surveyed by: Survey	LC	T	•	ND			Municipality: County, State:	Donegal Westmoreland, PA		
Method:	GF	es					Quadrangle:	Stahlstown, PA		
•		Bottom	Bottom	SWL measured b	y:		Laboratory:	Geochemical		
Coal Sea	am ID	Depth (ft)	Elevation (MSL)				Latitude: Longitude:	290483.299 1519869.000		
Upper Kittanning	AIII 110	307.1	1369.9	=			Grid Coordinates:	1313003.000		
Upper Kittanning Middle Kittanning		325.3 348.2	1351.7 1328.8							
Lower Kittanning		418.0	1259.0					•		
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, foss	ription: rock type, weatherin sils, carbonate, minerals, ntrations, pyrite, etc.	Water Conditions	% Recovery	% RQD		
			<u> </u>							
							100%	93%		
			250	Sands	stone, gray, with shale					
			_							
			<u> </u>							
			_							
258.0	32.0			_						
				;	Shale, dark gray					
260.2			260		<u> </u>					
							100%	30%		
							10070	3070		
				Shale	, gray, with clayshale					
			- -							
270.2			270							
			_							
			- -							
							100%	100%		
			280							
				1						
			_ =	1	Shale gray					
			<u> </u>	1	Shale, gray					
			290	_						
		=======		1						
			<u> </u>	1			100%	93%		
		=======	_ =	1						
				1						
				4						
		========		1						
			300							
303.2	33.0									
			_ =	Upper Ki	ttanning Coal, with shale					
307.1	3.9									
309.5	2.4	########## ###########################	<u> </u>	-	Clayshale, gray		100%	53%		
			310							
				1						
				4						
				1	Shale, gray					
			<u> </u>	-						
045 -				1			100%	53%		
319.0	9.5		220	Shala di	ark aray with candetone					

JLB- CME - 10/01	7.1A GEOLOGIC DRILL LOG									0721-S164 Page 5 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	:011			Measured	d Static Wate	er Levels		Method Drilling:	Continuous Core
Surface Elev.	1677	7.03			Date	Depth	Elevation		Date Drilled: Drilled By:	4/8/2020-4/15/2020 RES
					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т			ND				Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GF	Bottom		Bottom	SWL measured b	21/1			Quadrangle: Laboratory:	Stahlstown, PA
		Depth		Elevation	SVVL measured t	у.			Latitude:	Geochemical 290483.299
Coal Sea	am ID	(ft)		(MSL)					Longitude:	1519869.000
Upper Kittanning		307.1		1369.9	<u>-</u>				Grid Coordinates:	
Upper Kittanning Middle Kittanning		325.3 348.2		1351.7 1328.8						
Lower Kittanning		418.0		1259.0						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ription: rock typesils, carbonate, entrations, pyrite	minerals,	Water Conditions	% Recovery	% RQD
			_	_	<u>.</u>					
				_	Shale, d	dark gray, with sar	ndstone			
323.7	4.7	=======								
325.3	1.6			_	Upper Ki	ittanning Coal, wi	ith shale		100%	53%
			_	_						
				330]					
			_	_						
				_]					
			_	_	-					
				_						
			_	_		Shale, dark gray			100%	100%
			_	_					10070	10070
				340						
			_	_	1					
		========								
			_	_	-					
				_						
347.2 348.2	21.9 1.0				Middle K	Cittanning Coal, w	ith shale			
0.10.12	1.0					J ,				
				350						
				_						
				_					100%	87%
			_	_	1	Shale, gray				
				_						
			_	_						
360.2 361.0	12.0 0.8			360		Shale, dark gray				
		00000000000								
		00000000000 00000000000	_	_	Limestone,	gray (Middle Kitt	anning LS)			
365.2	4.2	00000000000		_	1					
			H	_	1					
				_	1				100%	93%
			_	370	-					
]					
			<u> </u>	_	-					
				_	1					
			<u> </u>	_	-	Shale, gray				
			_	_						
				380]					
			_	_						
			_	_	1				100%	93%
385.0	10.0		Ē	_						
300.U	19.8	:=:=:=:=:=:=								
		:=:=:=:=:=:=		_]					
			\vdash	_						
		:=:=:=:=:=		390	Sandy Sh	hale, gray, with sa	andstone			
		:=:=:=:=:=:= :=:=:=:=:=:=:=	\vdash	_	1					
		:=:=:=:=:=:=		_	1					
394.8	9.8		<u> </u>	_	1					
554.5	5.0			_					100%	100%
			Ë	_	Sandstone, light gr	av. w/interhed o	sh, several breaks			
				_	Canadione, ngm gr	,,, miloribed. 5	, coroidi bicano			
				400	Ī			ı		i l

LB- CME - 10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 6 of 6											
025 OME 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-2	011	_		Measured	d Static Wate	r I evels		Method Drilling:	Continuous Core	
									Date Drilled:	4/8/2020-4/15/2020	
Surface Elev.	1677	7.03	_		Date	Depth	Elevation		Drilled By:	RES	
O					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack	
Surveyed by: Survey	LC	i I	-		ND				Municipality: County, State:	Donegal Westmoreland, PA	
Method:	GP	s							Quadrangle:	Stahlstown, PA	
		Bottom	-	Bottom	SWL measured b	ov:		_	Laboratory:	Geochemical	
		Depth		Elevation		•		_	Latitude:	290483.299	
Coal Sea	am ID	(ft)		(MSL)	_				Longitude:	1519869.000	
Upper Kittanning		307.1		1369.9					Grid Coordinates:		
Upper Kittanning Middle Kittanning		325.3 348.2		1351.7 1328.8							
Lower Kittanning		418.0		1259.0							
						ription: rock typ			a. 5	av 202	
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, n entrations, pyrite,		Water Conditions	% Recovery	% RQD	
(1-7	()	9		(1001)		, p	,				
			<u> </u>	_							
			—	_							
									100%	100%	
									10070	10070	
			—	_	Sandstone, ligh	nt gray, w/ interbed	d. sandv shale				
				_]						
			<u> </u>	410	4						
			\vdash	_	†						
					1						
44.0	20.0		<u> </u>	_	4						
414.8 415.5	20.0		 		Lower Kittar	nning - Boney coal	, with coal	1			
				_		Kittanning - Coal,					
418.0	2.5	***************************************				hale, dark gray, br		4	100%	43%	
419.5	1.5	######################################	 	420	Cidysi	, wain glay, DI	0011	1			
		#########									
		######################################	<u> </u>	_	Claystone,	gray, crumbled ar	nd broken				
423.9	4.4	######################################	<u> </u>	_							
		##########									
		######################################	<u> </u>	_	Claysha	le, gray, HAFs and	d slicks				
428.0	4.1	##########		_	1				100%	90%	
						Shale, gray					
430.2	2.2			430				_			
				_	Bottom of Ho	ole DH 2011 Depth	1 430.2 feet				
			—	_							
			—	-							
			<u> </u>	_							
				_							
				440							
			—	-							
				_							
			⊢ [¯]	_	4						
			\vdash	_	†						
				_]						
			\vdash	_	-						
				450	1						
			\vdash		4						
			\vdash	_	1						
					1						
			<u> </u>	_	4						
			\vdash	_	†						
			H	460	-						
			L [−]	_	4						
			H	_	1						
				_	1						
			<u> </u>	_	4						
			\vdash	_	†						
				_	1						
			 	470	-						
				_	<u> </u>						
				_]						
			\vdash		1						
					1						
			L¯	_	4						
			E	_	<u> </u>						

JLB- CME - 11/29/01	7.1A GEOLOGIC DRILL LOG 0721-S164 Page 1 of 5											
025 OME 11/20/01									Operation Name :	Rustic Ridge #1 Mine-Expansion		
Hole No.	DH-2	2012			Moseuro	d Static Wate	r I ovole		Method Drilling:	Continuous Core		
									Date Drilled:	4/16/2020-4/22/2020		
Surface Elev.	1627	7.90			Date	Depth	Elevation		Drilled By:	RES		
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack		
Surveyed by: Survey	LC	il			ND				Municipality: County, State:	Donegal Nonegal		
Method:	GF	es.							Quadrangle:	Westmoreland, PA Stahlstown, PA		
	<u>.</u>	Bottom		Bottom	SWL measured b	ov:		_	Laboratory:	Geochemical		
		Depth		Elevation				_	Northing:	291682.828		
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1519667.638		
Lower Kittanning		379.3		1248.6					Grid Coordinates:			
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD		
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions				
			_	_	+							
				_]							
			_	_	-							
			_		-							
				_	Sha	le, brown, weather	ed					
			_	_	-							
			_	10	1							
					4							
13.2	13.2		_	_	1				2.07	201		
. 4.65	. J.L	##########							24%	0%		
		#########	<u>_</u>	_	4	Clayshale, red						
		######################################	_		-	Claysilale, reu						
18.0	4.8	#########										
			_	20	-							
				20	1							
				_					000/	00/		
			_	_	+				80%	0%		
				_	Shale	e, gray, with claysh	ale					
		=======	_	_	-	o, gray, mar dayon	aio					
			_	_								
				30	1							
32.5	14.5											
			_	_	-							
					<u> </u>							
		=======	_	_	-							
			_	_	†				100%	83%		
				40	-							
				_								
			_	_	+							
				_	1	Shale, gray						
			<u> </u>	_	1							
			—		1							
				50	1							
				_	1							
			—	_	4				100%	87%		
				_	1							
57.0	04.5		<u>L</u>	_	1							
57.0	24.5				 			1				
				60								
				_	1							
			_	_	-	Shale, dark gray						
				_	1							
			<u>_</u>	_	4							
			—		1				100%	90%		
69.0	12.0				1,500.000		oh Crost-1 O'	_				
70.5	1.5	00000000000		70	Limestone, gra	y, with fossils (Bru	SIT Creek LS)	-				
				_	1							
			H	_	4							
					1	Shale dork area						
			E	_	4	Shale, dark gray						
			<u> </u>	_	1				100%	93%		
				_	1							
1			i	80	1			1		İ		

JLB- CME - 10/01				7.1A GE		0721-S164 Page 2 of 5			
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH	-2012		Moseuro	ed Static Wat	or Lovole		Method Drilling:	Continuous Core
				Measure	u Static Wat	ei Leveis		Date Drilled:	4/16/2020-4/22/2020
Surface Elev.	163	27.90		Date	Depth	Elevation		Drilled By:	RES
				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	L	.CT		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	G	SPS .						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured	by:		_	Laboratory:	Geochemical
		Depth	Elevation				_	Northing:	291682.828
Coal Se	am ID	(ft)	(MSL)					Easting:	1519667.638
Lower Kittanning		379.3	1248.6	_				Grid Coordinates:	•
ĺ									

Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	Lithologic Description: rock type, weathering, color, fossils, carbonate, minerals, concentrations, pyrite, etc.	Water Conditions	% Recovery	% RQD	
			_	_					
			_	_					
		=========	_	_			100%	93%	
				_					
			_						
				90	Shale, dark gray				
			_	_					
			_	_					
			_	_			100%	77%	
			_	_			100 %	1176	
				100					
101.0	30.5	========							
		=========	_						
			<u> </u>						
			_	_					
					Shale, gray, with clayshale				
		=======	_						
				110					
444.5	40.5	=======	_	_			100%	40%	
114.5	13.5								
			_	_					
		=========	_						
				120					
		=========	_	_					
			_						
			_	_					
				-	Shale, gray				
					Silale, gray		100%	93%	
		=========	_	130					
				130					
			H	-					
				=					
			L-						
			<u> </u>	\dashv					
140.0	25.5			140					
			—	-					
							100%	37%	
			Ľ.						
			—	-	Shale, gray, with clayshale				
			<u> </u>						
			\vdash	150					
151.0	11.0								
			H	-					
							100%	93%	
			<u> </u>	_	Shale, gray, with sandy shale and sandstone		10070	5570	
			H	-					
L	ļ	=======		160					

LB- CME - 10/01				7.1A GEOLOGIC DRILL LOG			0721-S164 Page 3 of 5
						Operation Name :	Rustic Ridge #1 Mine-Expansio
lole No.	DH-2	2012		Measured Static Water Levels		Method Drilling:	Continuous Core
faaa Fla	400	7.00		Date Depth Elevation		Date Drilled:	4/16/2020-4/22/2020
urface Elev.	162	7.90		Date Depth Elevation Measured (ft) (MSL)	Notes	Drilled By: Logged By:	P. Mack
Surveyed by:	LC	eT.		ND (MSL)	Notes	Municipality:	Donegal
Survey				115		County, State:	Westmoreland, PA Stahlstown, PA Geochemical
Method:	GF	es				Quadrangle:	
		Bottom	Bottom	SWL measured by:		Laboratory:	
		Depth	Elevation			Northing:	291682.828
Coal Seam ID Lower Kittanning		(ft)	(MSL)	_		Easting:	1519667.638
Lower Kittanning 379.3			1248.6			Grid Coordinates:	
Depth	Thickness	Graphic	Scale	Lithologic Description: rock type, weathering, color, fossils, carbonate, minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	concentrations, pyrite, etc.	Conditions		
			<u> </u>				
				4		100%	93%
				+			
				4			
				_			
			170	Shale, gray, with sandy shale and sandstone			
				-			
						100%	100%
			_				
				<u> </u>			
180.0	29.0		180	-			
			_				
				_			
			_				
		_	_				
				_			
			_			100%	100%
			190				
			190	_			
			_				
				_			
				Sandstone, gray			
		<u> </u>		- Canadania, gray			
			_				
		<u> </u>	200				
				†			
			- <u>-</u>			100%	100%
				-			
			<u> </u>				
				_			
				+			
210.0	30.0		210				
	1			1		1	
ŀ			_	Shale dark gray with coal (Upper Freeport)			
213.0	3.0			Shale, dark gray, with coal (Upper Freeport)			

Shale, gray

Shale, gray, with limestone

Shale, gray, with clayshale

Shale, gray, with sandy shale and sandstone

220

230

240

219.0

226.0

232.5

7.0

6.5

100%

100%

77%

83%

JLB- CME - 10/01				7.1A GEC	LOGIC DE	RILL LOG			0721-S164 Page 4 of 5
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-	-2012		Moseuro	d Static Wat	or Lovole		Method Drilling:	Continuous Core
•				Wieasure	a Static Wat	ei reaeiz		Date Drilled:	4/16/2020-4/22/2020
Surface Elev.	162	27.90		Date	Depth	Elevation		Drilled By:	RES
•				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	L	CT		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	G	PS						Quadrangle:	Stahlstown, PA
•		Bottom	Bottom	SWL measured I	oy:			Laboratory:	Geochemical
		Depth	Elevation					Northing:	291682.828
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1519667.638
Lower Kittanning		379.3	1248.6	_				Grid Coordinates:	•

Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	Lithologic Description: rock type, weathering, color, fossils, carbonate, minerals, concentrations, pyrite, etc.	Water Conditions	% Recovery	% RQD
		========					
		=======					
			<u> </u>			100%	100%
			250				
			-				
		========	_				
		=======					
		========	260				
		=======					
			<u> </u>	Shale, gray, with sandy shale and sandstone		100%	100%
		=======					
		=========	<u> </u>				
		========	270				
		=======					
			-				
		========	F =				
		=========	<u> </u>			100%	93%
			280				
			<u> </u>				
202.6	E4.4	=======					
283.6 284.1	51.1 0.5			Shale, dark gray, with coal (Upper Kittanning)			
		========	<u> </u>	Shale, gray			
287.5	3.4		_	.0 ,			
			290				
						100%	100%
		========	<u> </u>				
		=======					
			E -				
		========	300	Shale, dark gray			
		=======					
			<u> </u>				
		========	<u> </u>				
			F =			100%	87%
309.0	21.5			Obstantal resource to	1	.5070	3.70
309.4	0.4		310	Shale, dark gray, with coal (Middle Kittanning)	1		
		=======					
		========	<u> </u>				
			<u> </u>	Shale, gray			
			<u> </u>			100%	93%
			320				

.B- CME - 10/01			7.1A GEC		0721-S164 Page 5 of 5			
							Operation Name :	Rustic Ridge #1 Mine-Expansion
lole No.	DH-2012		Maasura	d Static Wat	or I ovole		Method Drilling:	Continuous Core
			Weasure	u Static Wat	Date Drilled:	4/16/2020-4/22/2020		
Surface Elev.	1627.90		Date	Depth	Elevation		Drilled By:	RES
			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LCT		ND				Municipality:	Donegal
Survey							County, State:	Westmoreland, PA
Method:	GPS						Quadrangle:	Stahlstown, PA
	Bottom	Bottom	SWL measured	by:		_	Laboratory:	Geochemical
	Depth	Elevation				_	Northing:	291682.828
Coal Seam ID	(ft)	(MSL)					Easting:	1519667.638
Lower Kittanning	379.3	1248.6	_				Grid Coordinates:	•

Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	Lithologic Description: rock type, weathering, color, fossils, carbonate, minerals, concentrations, pyrite, etc.	Water Conditions	% Recovery	% RQD
				Shale, gray			
323.0	13.6	========	_	,			
		00000000000 000000000000		-			
		0000000000000		Limestone, gray (Middle Kittanning LS)		100%	93%
327.0	4.0	000000000000					
			<u> </u>	1			
		=======	330				
				Shale, gray			
005.0	0.0	=======					
335.0 335.7	8.0 0.7			Shale, dark gray			
		=======	_				
		=======	<u> </u>	-		100%	97%
			340	1			
		=======					
			<u> </u>	-			
]			
			<u> </u>	-			
			-	Shale, gray, with sandy shale			
		=======					
		=======	250	-			
			350	1			
		=======		-		100%	100%
			<u> </u>	1			
355.7	20.0	=======					
			<u> </u>	-			
		:=:=:=:=:=:=					
		:=:=:=:=:=:=:=	360	-			
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	<u> </u>	1			
		:=:=:=:=:=					
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	-	Sandy Shale, dark gray, with interbed Sandstone		100%	
		:=:=:=:=:=:=		3 3,7			100%
		:=:=:=:=:=:=					
			-	1			
		:=:=:=:=:=	370				
		:=:=:=:=:=:= :=:=:=:=:=:=:=	-	-			
374.3	18.6	:=:=:=:=:=:=:= :=:=:=:=:=:=					
375 7	1.4		<u> </u>	Shale, dark gray, with boney			
375.7 375.8	1.4 0.1			Lower Kittanning - Boney	<u> </u>		
				Lower Vitternies Cool halake]	4000/	E20/
379.3	3.5		-	Lower Kittanning - Coal, bright		100%	53%
379.9	0.6	##########	380	Clayshale, dark gray	1		
_		#########	<u> </u>				
		######################################	-	Clayshale, gray, sandy, with breaks and HAFs			
383.7		##########			1		
		######################################	<u> </u>				
		##########		Clayshale, tan. gray to gray, several breaks, w/ slicks			
388.7 389.3	9.0 0.6	########## 		Sandstone, gray	1	100%	100%
390.2	0.9	:=:=:=:=:=:=	390	Sandy Shale, gray	<u> </u>		
				Pottom of Holo DH 2012 Depth 200 2 feet			
			<u> </u>	Bottom of Hole DH 2012 Depth 390.2 feet			
]			
			<u> </u>	-			
			 	1			
]			
			400	-			
	ļ	!	400	ļ	<u> </u>	I.	ļ

JLB- CME - 11/29/01												
									Operation Name :	Rustic Ridge #1 Mine-Expansion		
Hole No.	DH-2	013	-		Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core		
Surface Elev	1804	1 67			Date	Depth	Elevation		Date Drilled:	4/27/2020-5/5/2020		
Surface Elev.	1004	1.07	-		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack		
Surveyed by:	LC	т			ND	()	(2		Municipality:	Donegal		
Survey			-						County, State:	Westmoreland, PA		
Method:	GF		-	D-#	CM/I massaumad b			_	Quadrangle:	Stahlstown, PA		
		Bottom Depth		Bottom Elevation	SWL measured b	y:		-	Laboratory: Northing:	Geochemical 292175.038		
Coal Sea	am ID	(ft)		(MSL)					Easting:	1520225.41		
Mahoning		319.0		1485.7	_				Grid Coordinates:			
Middle Kittanning Lower Kittannning		492.4 559.3		1312.3 1245.4								
			1		1							
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, n		Water	% Recovery	% RQD		
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite,	, etc.	Conditions				
				_								
		=======	<u> </u>	_	1							
			_	-	-							
			<u> </u>	_	Shal	le, brown, weather	red					
				_								
				10								
				_								
			\vdash	_	4							
15.2	15.2											
			<u> </u>	_								
			<u> </u>	_	1							
				20	-							
		========		_					770/	00/		
			<u> </u>	_	Shai	le, dark gray, brok	en		77%	0%		
				_		3 - 3,						
			<u> </u>	_	4							
				_								
			<u> </u>	30	-							
				30	1							
32.0	16.8							1				
			<u> </u>	_	1							
				_								
				_	Shale, dark gi	ray, with limestone	e and fossils					
				_					90%	33%		
			_	40	-							
41.0	9.0							_				
			<u> </u>	_	+							
			<u> </u>	_	-							
		=======		=								
			<u> </u>	_	Shal	le, dark gray, brok	en					
		=======		50								
			—	_	1							
				_	1				93%	29%		
55.0	14.0		<u> </u>	_	+							
-	-	[=]=]=]=]=						1				
			_	_	Sandy Shale, g	ray, with shale and	d coal streaks					
		:=:=:=:=:=:=		_		-						
60.0	5.0	:=:=:=:=:= ===========================		60				1				
				_	Shale	e, gray, with claysh	nale					
64.5	4.5		<u> </u>	_		,						
55		[=]=]=]=]=						1				
			\vdash	_	-							
		:=:=:=:=:=:= :=:=:=:=:=:=		_	1				100%	67%		
		:=:=:=:=:=:= :	<u> </u>	70	4							
					1							
		:=:=:=:=:=:=	<u> </u>	_	s	Sandy Shale, gray						
			E		1							
		:=:=:=:=:=		_	1							
		:=:=:=:=:=:= :=:=:=:=:=:=		_	<u> </u>							
		:=:=:=:=:=:=		=]				100%	87%		
			\vdash	80	1							

JLB- CME - 10/01				7.1A GE	OLOGIC DE	RILL LOG			0721-S164 Page 2 of 8
	DU	2010						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-	2013		Measure	ed Static Wat	er Levels		Method Drilling: Date Drilled:	Continuous Core 4/27/2020-5/5/2020
Surface Elev.	180	4.67		Date	Depth	Elevation		Drilled By:	RES
-				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	L	СТ		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GI	PS Bottom	Bottom	CMI magazirad	h		_	Quadrangle:	Stahlstown, PA
		Depth	Elevation	SWL measured	by:		_	Laboratory: Northing:	Geochemical 292175.038
Coal Sea	am ID	(ft)	(MSL)					Easting:	1520225.41
Mahoning		319.0	1485.7	_				Grid Coordinates:	
Middle Kittanning Lower Kittannning		492.4 559.3	1312.3 1245.4						
Lower Kittariiriirig		333.3	1243.4						
Depth Thickness C		Graphic	Scale	color, fo	scription: rock typessils, carbonate,	minerals,	Water	% Recovery	% RQD
(ft) 81.5	17.0	Log	(feet)		Sandy Shale, gray		Conditions		
				4					
								100%	87%
			_ =	4				10070	01 /0
				1	Chala				
		=======]	Shale, gray				
		========	90	-					+
			<u> </u>						
				4					
95.2	13.7			-					
				-				100%	17%
								10070	
			100						
				Shale, red,	, with gray shale ar	nd clayshale			
				1					
				4					
107.0	11.8								
				1					
			110						
			-	1					
				1				100%	80%
				4					
		=======			Shale, gray				
		=======		4					
		========		_					
		=======	120]					
				-					
123.0	16.0			1			_		
				-					
			_ =						
			_ =	4				100%	600/.
				1				100%	60%
		=======	130						
				1					
		=======		Sh	nale, dark gray, bro	ken			
				-	., g. a,, 510				
				_					
		=======	_ =						
				1					
			140]					
				-					
143.3	20.3			<u>†</u>				100%	60%
143.6	0.3	00000000000		Lime	estone, gray, with f	ossils]		
		######################################		1					
		#######################################		1					
		######################################		4					
		######################################	150	_					
1 1		1		1			i		

Clayshale, gray, with shale

100%

90%

JLB- CME - 10/01												
									Operation Name :	Rustic Ridge #1 Mine-Expansion		
Hole No.	DH-2	2013			Measure	d Static Water	r Levels		Method Drilling:	Continuous Core		
Surface Elev	190	1 67			Date	Depth	Elevation		Date Drilled:	4/27/2020-5/5/2020		
Surface Elev.	1804	1.07	-		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack		
Surveyed by:	LC	т			ND	()	()		Municipality:	Donegal		
Survey			_						County, State:	Westmoreland, PA		
Method:	GF		-	D-#	SWL measured b			•	Quadrangle:	Stahlstown, PA		
		Bottom Depth		Bottom Elevation	SWL measured i	by:		•	Laboratory: Northing:	Geochemical 292175.038		
Coal Sea	am ID	(ft)		(MSL)					Easting:	1520225.41		
Mahoning		319.0		1485.7					Grid Coordinates:			
Middle Kittanning Lower Kittannning	l	492.4 559.3		1312.3 1245.4								
-					1							
Depth	Thickness	Graphic		Scale	color, fos	cription: rock type ssils, carbonate, m	inerals,	Water	% Recovery	% RQD		
(ft)	(ft)	Log ####################################		(feet)	conce	entrations, pyrite,	etc.	Conditions				
		#########		_	Clavs	shale, gray, with sh	ale					
163.6	20.0	######################################	<u> </u>	_	1	, 5 . , ,			100%	90%		
100.0	20.0											
			_	_	4							
				_								
		========	<u> </u>	470	1							
				170		Shale, red and gray						
			F	_	4	, rou unu yidy			100%	30%		
			\vdash	_	†				10070	30%		
			\vdash	_	1							
178.5	14.9											
			H	180								
				_								
			H	_								
				_								
			—	_	+							
				_		Shale, gray			40007	9997		
			H	_	1				100%	83%		
				190								
			—	_	-							
		========		_								
			H	_	1							
196.5	18.0											
198.5	2.0					Shale, red						
			_	200	4							
			<u> </u>	_	_	Shale, gray			100%	30%		
				_								
204.6 205.0	6.1 0.4	=======	<u> </u>			Coal						
				_	-							
				_	1							
				210	4							
			E	_	1							
				_	1							
				_	1							
				_								
				_	-				100%	93%		
		=======										
				220	-							
		========		_								
				_	-	Shale, gray						
		=======	F	_	7							
			\vdash	_	1							
				_]							
			\vdash	230	1							
				_	4							
			E	_	1				100%	100%		
			F	_	-							
				_	1							
			\vdash	_	-							
				_	1							
240.0	35.0	=======	I	240				l				

JLB- CME - 10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 4 of 8										
OLD OINE 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2013			Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
Confess Flags	400	4.67							Date Drilled:	4/27/2020-5/5/2020
Surface Elev.	1804	1.07			Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	(1.7)	(IIIOL)	110100	Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF			-				•	Quadrangle:	Stahlstown, PA
	Botto Dept			Bottom Elevation	SWL measured I	y:	-	•	Geochemical 292175.038	
Coal Sea	Coal Seam ID (f		-	(MSL)					Easting:	1520225.41
Mahoning		319.0		1485.7	-				Grid Coordinates:	
Middle Kittanning Lower Kittannning		492.4 559.3		1312.3 1245.4						
3										
Depth	Thickness	Graphic		Scale	Lithologic Description: rock type, weathering, color, fossils, carbonate, minerals,		Water	% Recovery	% RQD	
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite,	etc.	Conditions		
				_						
		=======		_						
			_	_	1					
		=======				Shale, dark gray				
			_	_	-		100%	100%		
		=======					-			
				250						
252.0	12.0	=======								
254.0	2.0	00000000000 00000000000	_	_	Limestone, gray, with fossils (Brush Creek LS)					
		=======		_						
			_	_	1					
			_	260						
		========								
			_	_					100%	100%
				_						,
			_							
				_						
			_	_	-	Shale, dark gray				
				270		Onaio, dain gray				
			_							
				_						
			_	_	-					
				_						
			_	_	-				100%	87%
		=======								
				280	-					
283.0	=======			_				-		
203.0	29.0 ======									
		=======================================	_		1					
				_						
			_	_	1					
				290						
				_	1					
				_]				100%	93%
		=========		_	<u> </u>					
			_	_	4					
			_							
				200						
				300	-	Shale, gray				
				_						
			_		-					
			_	_	-					
				_]					
			_	_	-				100%	93%
				310	1					
				_	-					
		=======		_	1					
			<u> </u>	_	1					
				_]					
318.0	35.0	=======================================			<u> </u>				100%	72%
319.0	1.0			320		oning Coal, with sh e, gray, with claysh				
			i .	520	Jilai	., J, , o.uy o		•		i

					7.4.4.0501.001	2 DDII I I 22			
JLB- CME - 10/01					7.1A GEOLOGIO	C DRILL LOG			0721-S164 Page 5 of 8
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2013	•		Measured Static	Water Levels		Method Drilling:	Continuous Core
								Date Drilled:	4/27/2020-5/5/2020
Surface Elev.	1804	4.67			Date Dept	th Elevation		Drilled By:	RES
					Measured (ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND			Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	PS						Quadrangle:	Stahlstown, PA
-		Bottom	Botto	m	SWL measured by:		-	Laboratory:	Geochemical
		Depth		Elevation	-		•	Northing:	292175.038
Coal Sea	am ID	(ft)	(MSI					Easting:	1520225.41
Mahoning		319.0	1485		•			Grid Coordinates:	
Middle Kittanning		492.4	1312					Grid Coordinates.	
Lower Kittannning		559.3	1245						
					Lithologic Description: r			a. =	N DOD
Depth	Thickness	Graphic	Scale		color, fossils, carbo		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		concentrations	s, pyrite, etc.	Conditions		
				_					
		=======	_						
		========							
								100%	72%
		========						10070	. 2,0
			_	_	Shale, gray, wi	th clayshale			
									
			330						
			000						
				_]				
334.0	15.0			_				!	
		=======	_						
			_	_					
			_	_				100%	100%
				_				10070	10070
			340		Shalo grov with	s candy chala			
		========			Shale, gray, with	i sandy snale			
		========							
		=======	_	_					
			<u> </u>						
346.0	12.0		<u> </u>	_					
346.0	12.0								
				_					
			_						
			350						
				_				4000/	4000/
			_	_				100%	100%
			_	_					
			_						
			_						
			360						
				_					
			-	_					
			_						
			_	_	Sandstone	e, gray			
				_				4000/	4000/
			-	_				100%	100%
			370	_					
			_	_					
			<u> </u>						
			_	_					
			_	_					
				_					
			380						
			_	_					
			_	_				100%	100%
			-	_				100%	100 /0
384.6	38.6		_						
							1		
		=======		_					
		=======	_						
		=======	_	_					
		=======	390						
			 	_					
			-	_	Shale, da	rk gray			
			_	_	Ondie, dai	J·-7			
				_				4000/	070/
		=======		_				100%	87%
		=======	_						
		=======	<u> </u>						
		=======	L	_					
			400		<u> </u>				

JLB- CME - 10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 6 of 8									
							Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-2	013		Measure	ed Static Water Levels		Method Drilling:	Continuous Core	
Surface Elev	190/	1 67		Date	Depth Elevation		Date Drilled: Drilled By:	4/27/2020-5/5/2020 PES	
Surface Elev.	rface Elev. 1804.67			Measured	(ft) (MSL)	Notes	Logged By:	RES P. Mack	
Surveyed by:	urveyed by: LCT			ND			Municipality:	Donegal	
Survey			•				County, State:	Westmoreland, PA	
Method:	GF		Bottom	SWL measured	L.	_	Quadrangle:	Stahlstown, PA	
	Bottom Depth		Elevatio			_	Laboratory: Northing: Easting:	Geochemical 292175.038	
Coal Sea	am ID	(ft)	(MSL)		_			1520225.41	
Mahoning		319.0	1485.7				Grid Coordinates:		
Middle Kittanning 492.4 Lower Kittannning 559.3		559.3	1312.3 1245.4						
-				Lithelesia Dec					
Depth	Thickness	Graphic	Scale		Lithologic Description: rock type, weathering, color, fossils, carbonate, minerals,		% Recovery	% RQD	
(ft)	(ft) (ft) Log		(feet)	con	centrations, pyrite, etc.	Conditions			
		========			Shale, dark gray		4000/		
404.0	19.4		_	\dashv			100%	87%	
			_	_				77%	
				Sha	ale, gray, with clayshale				
410.0	6.0		410	_					
410.0	0.0		410			1			
			<u> </u>	\dashv			100%		
				\dashv			10076	1170	
				Shall	e, gray, with sandy shale				
				Silai	e, gray, with sandy shale				
			420	_					
421.0	11.0								
				_					
			_	-					
							4000/	4000/	
			_	\dashv			100%	100%	
			430						
			_	_					
			_	-					
			_	_					
			440						
				Ι			4000/	40004	
			_	Sandst	one, gray, with sandy shale		100%	100%	
				\exists					
			_	\dashv					
			450	_					
			<u> </u>	$\overline{}$					
			<u> </u>	$\overline{}$					
			_	-			100%	93%	
			460						
			_	_					
464.0	43.0					-			
			<u> </u>	$\overline{}$					
			<u> </u>						
			470						
					Shale, dark gray		1000/	000/	
			<u> </u>	$\overline{}$	· ·		100%	93%	
			<u> </u>	$\overline{}$					
			480	<u>-</u>					

Survey County, State: Westmoreland, PA Method: GPS Bottom SWL measured by: Laboratory: Geochemical Depth Elevation Northing: 292175.038 Coal Seam ID (ft) (MSL) Mahoning 319.0 1485.7	JLB- CME - 10/01					7.1A GEC	DLOGIC DRI	LL LOG			0721-S164 Page 7 of 8
Survey 1900.427 Survey of 1900.627 Cod Servey 100											
Date Depth Elevation Course C	Hole No.	DH-2	013	-		Measure	d Static Wate	r Levels			
Surveyed by: LCT	Surface Elev.	1804	1.67			Date	Depth	Elevation			
Survey Coal Seam D				•				(MSL)	Notes	-	
Note Coard Span Coard Spa	Surveyed by:	LC	Т			ND					
Deptity Dept		GF	s								
Control Cont				Bott	om	SWL measured l	by:		-	_	
Milestrate 1922									•	_	
Middle Classifier 1923 1923 1924 1924 1924 1924 1925 1924 1925 1924 1925 1		am ID				_					1520225.41
County C	Middle Kittanning		492.4	131	2.3					Grid Goordinates.	
Depth Thickness Garage Scale Color, respire, out. Conditions Water % Recovery % ROD	Lower Kittannning		559.3	124	5.4						
10	Donth	Thickness	Granhia	Soule					Water	% Recovery	% POD
Shell, dark gray 93% 54%										70 NGCOVERY	/0 ICQD
Strain, dark gray Strain, dark gray 80%, 54%, 54%, 54%, 54%, 54%, 54%, 54%, 54				_	_	+					
### ### ### ### ### ### ### ### ### ##			=======		_	1					
### ### ### ### ### ### ### ### ### ##				—	_	-					
492 4 0.4			=======		_		Shale, dark gray				
### ### ### ### ### ### #### #########					_	1				80%	54%
### ### ### ### ### ### #### #########				400	_	1					
482-4 0-4 Abdde Kittering-Coel Abdde Kittering-Coel Abdde Kittering Coel Abdde Kittering Coel Abdde Kittering Coel Abdde Kittering Coel Abdde Kittering Library Library Abdde Kittering Library Library Library Abdde Kittering Library Librar				430		1					
Shale, gray 100%	492.0 492.4					Mi	iddle Kittanning Coa	al			
Strate, gray, with careful production Strate, gray, with careful production Strate, gray, with careful production Strate, gray, with careful production Strate, gray, with thin interfedded sundature Strate, gray	102.1	0.1					<u> </u>				
Shale, gray 100%				_	_	1					
Shale, gray 100%					_	1					
Sol. 12.1				_	_	+	Shale, gray				
12.1			=======	500		1					
12.1					_						
Committee Comm	504 F	12.1			_	1				100%	100%
Situation State	504.5	12.1									
Committee Comm				_	_	-					
State Stat					_	Limestone	, gray (Middle Kittar	nning LS)			
Shale, gray, with sandy shale 100% 90%				510	_	-					
Shale, gray, with sandy shale 100% 90%	511.0	6.5		0.0							
Shale, gray, with sandy shale 100% 90%				_	_	+					
Shale, gray, with sandy shale 100% 90%			=======		_						
Shale, gray, with clayshale Solution Shale, gray with clayshale Solution Shale, gray with clayshale Solution Solution Shale, gray with clayshale Solution Solution Solution Solution Shale, gray Solution				_		-					
Shale, gray, with clayshale Solution Shale, gray with clayshale Solution Shale, gray with clayshale Solution Solution Shale, gray with clayshale Solution Solution Solution Solution Shale, gray Solution					_					100%	90%
State Stat					_	Shale	e, gray, with sandy s	hale		10078	3076
Shale, gray, with clayshale				520		-					
Shale, gray, with clayshale					_	j					
Shale, gray, with clayshale				_	_	-					
Shale, gray, with clayshale Shale, gray, with thin interbedded sandstone Shale, gray Shale, gray, with thin interbedded sandstone Shale, gray, with thin interbedded san	525.0	14.0			_						
Sandy Shale, gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, gray, with thin interbedded sandstone Sandy Shale,				-	_	1					
Sandy Shale, gray Sandy Shale, gray Sandy Shale, gray Sandy Shale, dark gray Sandy Sha			=======		_	Shal	le, gray, with claysh	ale			
Sandy Shale, gray Sandy Shale, gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, dark gray Sandy Shale, gray, with thin interbedded sandstone Sandy Shale, g	530.0	5.0		530		<u> </u>					
Sandy Shale, gray 80% 83%					_	1		·			
Sandy Shale, dark gray Sandy Shale, dark gray			:=:=:=:=:=:=		_	1 '	Sandy Shale, gray			80%	83%
						Sa	andy Shale, dark ora	ıy			
Sandy Shale, gray, with thin interbedded sandstone	300.0		[=[=[=[=				,, gre	-			
				 	_	1					
			:=:=:=:=:=:=	E 40	_						
Sandy Shale, gray, with thin interbedded sandstone				540		-					
Sandy Shale, gray, with thin interbedded sandstone					_						
					_	1					
				 	_	Sandy Shale, gra	ay, with thin interbed	dded sandstone			
			:=:=:=:=:=:=		_	1					
				<u> </u>		1				33%	90%
			:=:=:=:=:=:=	550		1					
				-	_	1					
555.1 19.6 :=:=:=:=:= Lower Kittanning - Boney, with coal bands Lower Kittanning - Coal, bright 85% 43% 43% 559.3 3.80			:=:=:=:=:=:=		_	1					
555.5 0.42 Lower Kittanning - Boney, with coal bands Lower Kittanning - Coal, bright 85% 43% 559.3 3.80	555.1	19.6									
559.3 3.80						Lower Kittar	nning - Boney, with	coal bands			
	F50.0	0.00			_	Lower	Kittanning - Coal, b	oright		85%	43%
			##########	560		Claysha	ale, dark gray, some	sandy			

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 8 of 8
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2013			Measured	Static Water	r Levels		Method Drilling:	Continuous Core
O	400								Date Drilled:	4/27/2020-5/5/2020
Surface Elev.	1804	1.67			Date Measured	Depth	Elevation (MSL)	Notes	Drilled By: Logged By:	RES .
Surveyed by:	LC	т			ND	(ft)	(INIOL)	140169	Municipality:	P. Mack Donegal
Survey		<u> </u>							County, State:	Westmoreland, PA
Method:	GF	rs						_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured b	y:		_	Laboratory:	Geochemical
		Depth		Elevation					Northing:	292175.038
Coal Sea Mahoning	am ID	(ft) 319.0		(MSL) 1485.7	_				Easting: Grid Coordinates:	1520225.41
Middle Kittanning		492.4		1312.3					Grid Coordinates.	
Lower Kittannning		559.3		1245.4						
					Lithologic Desc	ription: rock typ	e, weathering,			
Depth	Thickness	Graphic		Scale	color, fos	sils, carbonate, n	ninerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log ####################################		(feet)	conce	entrations, pyrite	etc.	Conditions		
		##########		_						
		######################################	_	_	Clays	tone, dark to light	gray			
565.4	5.0	##########		_					85%	43%
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	4					
		:=:=:=:=:=:=		_	S	Sandy Shale, gray				
570.2	4.8	:=:=:=:=:=:=		F70				-		
			E	570	Bottom of Ho	ole DH 2013 Depth	570.2 feet			
				_	Ì					
				_	1					
				_						
			\vdash	_	1					
				_						
			_	580						
			_	_						
				_	1					
				_						
			_	_	-					
				_						
			_	590	+					
				_	1					
			_	_	+					
				_						
			_	_	1					
				_						
			_	_						
				600						
			_	_						
				_						
			<u> </u>	_	-					
				_	1					
			—	_	4					
				_	1					
				610	-					
				_	1					
			<u> </u>	_	4					
				_						
			<u> </u>	_	4					
				_	1					
			_	620						
				020	1					
			Ē	_	4					
			E	_	1					
			H.	_	4					
				_	<u> </u>					
				_]					
			H	630	†					
				_						
			H	_	†					
				_						
			_	_	1					
				_						
				_	<u> </u>					
			_		7			1	i	i l

JLB- CME - 11/29/01					7.1A GEO	LOGIC DE	RILL LOG			0721-S164 Page 1 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2014	-		Measured	Static Wat	er Levels		Method Drilling:	Continuous Core
									Date Drilled:	5/19/2020-5/26/2020
Surface Elev.	1756	5.70	_		Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	il	-		ND				Municipality:	Donegal
Survey Method:	GF	ne .							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.	Gr	Bottom	-	Bottom	SWL measured b	.v.		-	Laboratory:	Geochemical
		Depth		Elevation	OWE IIICUOUICU	· y ·	-	-	Northing:	291368.488
Coal Sea	am ID	(ft)		(MSL)					Easting:	1521159.95
Upper Kittanning		405.7		1351.0	-				Grid Coordinates:	-
Upper Kittanning		420.8		1335.9						
Middle Kittanning		441.5		1315.2						
Lower Kittanning		501.9		1254.8	Lithologic Desc	ription: rock tv	pe. weathering.			
Depth	Thickness	Graphic		Scale	color, fos	sils, carbonate,	minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log ###############		(feet)	conce	entrations, pyrit	e, etc.	Conditions		
*		##########	_		1					
		#########		_						
		#########	_	_						
		######################################	_	_						
		##########								
		##########		_						
		######################################	_	10						
		##########		10						
		##########			Clay, brov	vn, sandy, with s	sandstone			
		######################################	<u> </u>	_						
		######################################	_	_	•					
		##########		_						
		##########		_						
		######################################	<u> </u>	_	-					
		##########		20						
		#########		_						
23.2	23.2	######################################	_	_	-					
20.2	20.2									
						Sandstone, gray				
26.0	2.8	000000000000							100%	0%
27.7	1.7	00000000000				Limestone, gray				
			_	30	-					
		=======		_						
			_	_						
				_	Snaie	e, gray, with clay	snale			
			_	_						
			_	_					100%	27%
				_						
40.0	12.3			40						
			_	_						
				_						
				_						
			\vdash	_	S	hale, red and gra	ay			
				_]					
			F.	_						
50.0	10.0		H	50	1					
-	*			_				1		
			<u> </u>	_					100%	67%
			\vdash	_	1				100 /0	07 /0
				_]					
				_						
			_	_						
				_						
				60						
			_	_						
]					
				_						
			H	-	1	Shale, gray				
				_]					
			<u> </u>	_	-				100%	93%
			H	70	1					
				_]					
			<u> </u>	_	-					
			\vdash	_	1					
				_]					
			<u> </u>	_	-					
			F	_]				100%	87%
				_]					
80.0	30.0		I	80	ĺ			1	1	I

JLB- CME - 10/01				7.1A GE0	DLOGIC DRI	LL LOG			0721-S164 Page 2 of 7
025 OME 10/01					220010 2111			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	014		Moseuro	d Static Water	r I ovole		Method Drilling:	Continuous Core
•			•	Wicasuic	u Static Water	Levels		Date Drilled:	5/19/2020-5/26/2020
Surface Elev.	1756	5.70		Date	Depth	Elevation		Drilled By:	RES
•			•	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T		ND				Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GF						_	Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured	by:		-	Laboratory:	Geochemical
Cool Coo	ID	Depth	Elevation					Northing:	291368.488
Coal Sea Upper Kittanning	מוו וט	(ft) 405.7	(MSL) 1351.0					Easting: Grid Coordinates:	1521159.95
Upper Kittanning		420.8	1335.9					Grid Goordinates.	
Middle Kittanning		441.5	1315.2						
Lower Kittanning		501.9	1254.8	1					
Depth	Thickness	Graphic	Scale		cription: rock type ssils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		centrations, pyrite,		Conditions		
			<u> </u>						
			_	_					
			_						
								100%	87%
			<u> </u>	_					
			 	\dashv					
		=======							
			90	4					
			 	\dashv	Shale, dark gray				
				╛					
			<u> </u>	\dashv					
			_						
								100%	67%
			100	_					
			100						
102.0	22.0			Chal	a dayle aray with for	aile.			
102.5	0.5			Stiale	e, dark gray, with fos	SSIIS	1		
				Sha	le, gray, with claysha	ale			
108.5	6.0		_						
			110	_					
			_						
								100%	77%
			<u> </u>	Shale	e, gray, with sandy sl	hale			
			<u> </u>						
			<u> </u>	_					
120.0	11.5		120						
				┥ .	Shale, red and gray				
				_					
125.0	5.0			+			1		
			<u> </u>	┥	Shale, dark gray				
128.0	3.0			1			1	100%	57%
		######################################	130	-					
		##########	130	CI	ayshale, red and gra	У			
132.5	4.5	#########		1			1		
			-	\dashv					
				_					
		=======	 	\dashv					
			-	\dashv					
			140	-					
			_						
								100%	93%
			<u> </u>	\dashv	Shale, gray				
			<u> </u>	\dashv					
			150						
				4					
			<u> </u>	\dashv					
				╛					
450.0	00.5		_	_				100%	80%
156.0 156.7	23.5 0.7				Shale, red		1		
157.7	1.0	00000000000			Limestone, gray		1		
			160	\dashv	Shale, dark gray				

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 3 of 7
OLD OINE 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2014			Measure	d Static Wate	r I ovole		Method Drilling:	Continuous Core
									Date Drilled:	5/19/2020-5/26/2020
Surface Elev.	1756	5.70			Date	Depth	Elevation		Drilled By:	RES
C		· -			Measured ND	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	· I			ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF	·s							Quadrangle:	Stahlstown, PA
		Bottom	•	Bottom	SWL measured b	oy:		=	Laboratory:	Geochemical
		Depth		Elevation				_	Northing:	291368.488
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1521159.95
Upper Kittanning Upper Kittanning		405.7 420.8		1351.0 1335.9					Grid Coordinates:	
Middle Kittanning		441.5		1315.2						
Lower Kittanning		501.9		1254.8						
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions	70 HGGG 16.19	N.1.25
		=======	_		-					
				_	†	Shale, dark gray			100%	80%
165.4	7.7							4		
			_	_	1					
				_						
			_	170	-					
			E		1					
			Ë	_	Ch-1-	a gray with alast-	ale		1000/	17%
			—	_	Snaid	e, gray, with claysh	aic		100%	17%
				_	1					
			H	_	1					
			_	_						
180.4	15.0			180				4		
				_						
		=======		_						
			_	_						
				_						
			_	_	-				100%	93%
				_	†				10070	3070
				190						
			_	_	+					
				_		Shale, gray				
		=======	_		-					
			_	_	1					
			_	_	-					
			_	200	†					
			_	_						
			_	_	1				100%	90%
205.0	24.6							1		
				_	1					
			Ë	_	1	Shale dark are				
			\vdash	210	1	Shale, dark gray				
		=======		_						
212.5	7.5	000000000000			1, 5	no milita (11 / 12	ah Craal: LO'	1		
214.1	1.6	00000000000		_	Limestone, gra	y, with fossils (Bru	SII Creek LS)	_		
			H	_	1					
					1					
			Ë	_	1				100%	100%
			_	220	-					
				_						
			_	_	4					
				_	1					
			<u> </u>	_	4					
			H	_	†	Cholo dad:				
				_	1	Shale, dark gray				
			H	230	1					
					1					
			Ē	_	4				100%	100%
			_	_	1				10076	100%
				_]					
			\vdash		-					
				_	1					
			Ē	240	4					

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 4 of 7
OLD OINE 1001									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	014			Moaeuroa	d Static Wate	r I ovole		Method Drilling:	Continuous Core
										5/19/2020-5/26/2020
Surface Elev.	1756	5.70	_		Date	Depth	Elevation			RES
		_			Measured	(ft)	(MSL)	Notes		P. Mack
Surveyed by:	LC	T	-		ND				Municipality:	Donegal
Survey	C	ie.							County, State:	Westmoreland, PA
Method:	GF	Bottom	-	Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA
		Depth		Elevation	SWL measured t	Jy.		-	_	Geochemical 291368.488
Coal Sea	am ID	(ft)		(MSL)					-	1521159.95
Upper Kittanning		405.7		1351.0	<u>-</u>				Grid Coordinates:	
Upper Kittanning		420.8		1335.9						
Middle Kittanning Lower Kittanning		441.5 501.9		1315.2 1254.8						
Lower rattarining		001.0		1204.0	Lithologic Desc	ription: rock type	e, weathering,			
Depth	Thickness	Graphic		Scale	color, fos	sils, carbonate, n	ninerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite,	, etc.	Conditions		
						Shale, dark gray				
243.0	28.9									
			-		-					
				_	1					
			\vdash	_					100%	47%
			\vdash	250	1					
]					
		======	Ĺ¯	_						
			\vdash	_	1					
			\vdash	_	1					
				_						
			<u> </u>	_						
				_						
				260						
			<u> </u>		-					
						Shale, gray			100%	100%
				_						
			<u> </u>	_						
			\vdash	_						
			<u> </u>	270						
				210						
				_						
			<u> </u>	_						
				_	1					
		=======		_						
			H		-				100%	67%
				_						
201.0				280						
281.0	38.0									
						Shale, dark gray				
284.0	3.0		ļ		Chala dayl	gray, with coal (M	(Ashoning)	1		
285.2	1.2				Silale, dark	v gray, willi boal (IV	nanoring)	†		-
				_]					
			\vdash	_	-					
				290	Shale	e, gray, with claysh	nale			
		=======								
293.5	8.3		\vdash	_	1				100%	60%
200.0	0.0			_				1		
			<u> </u>	_						
			\vdash	_	1					
				_						
		=======	_							
				300						
				_]					
			<u> </u>							
			\vdash	_	1					
				_]					
			<u> </u>	_	Shale,	gray, with sandy s	shale		100%	100%
			\vdash	_	1				100%	100%
				310]					
			<u> </u>	_	-					
			\vdash	_	1					
				_]					
			\vdash	_	1					
				_]					
				_]				100%	100%
			\vdash	320	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 5 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2014	_		Measured	d Static Water	r Levels		Method Drilling:	Continuous Core
Surface Elev	1750	: 70			Date	Depth	Elevation		Date Drilled:	5/19/2020-5/26/2020
Surface Elev.	1756	5.70	-		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	(/	()		Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF		-	D - 11	014/1			•	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	by:		•	Laboratory: Northing:	Geochemical 291368.488
Coal Sea	am ID	(ft)		(MSL)					Easting:	1521159.95
Upper Kittanning		405.7		1351.0	-				Grid Coordinates:	
Upper Kittanning Middle Kittanning		420.8 441.5		1335.9 1315.2						
Lower Kittanning		501.9		1254.8						
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	77.14-
			—		+					
				_	<u> </u>					
			—	_						
			\vdash	_	Shale	gray, with sandy s	hale		100%	100%
				_	Orlaie,	gray, with sandy s	ilale			
			—	_						
				330						
332.5	39.0		—	_	-					
002.0	00.0			_						
			—	_						
				_	1					
				_					100%	100%
			\vdash	_	1				10070	10070
		========		340		0				
			\vdash	_	+	Sandstone, gray				
				_						
			—	_	-					
				_						
			<u> </u>	_	4					
348.6	16.1			_						
350.8	2.2			350	Shale, dark gr	ay, with coal (Uppe	er Freeport)			
550.5	2.2									
			┢	_	-				100%	50%
				_	<u> </u>					
			<u> </u>	_	4					
				_	<u> </u>					
			<u> </u>	360	-					
				300	1					
			<u> </u>	_	-					
				_	1					
				_						
			<u> </u>	_	1					
				_	1				100%	90%
			E	370	1					
				_	1					
			Е	_	<u> </u>					
		=======	E	_]					
			Е	_	<u> </u>	Shale, gray				
		=======		_						
			—	_	-					
				380						
			H	_	+					
		========		_					100%	100%
			\vdash	_	1					
				_	1					
			—		1					
				_	1					
				390	-					
				_	1					
			\vdash	_	4					
				_	1				100%	47%
			H	_	4				10070	71.70
				_]					
399.6	48.8		<u> </u>	400	4					
JJJ.U	-tu.u			700	i .					1

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 6 of 7
	DI 6								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	014			Measured	d Static Wate	r Levels		Method Drilling: Date Drilled:	Continuous Core 5/19/2020-5/26/2020
Surface Elev.	1756	5.70			Date	Depth	Elevation		Drilled By:	RES
•					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal Westmoreland, PA
Survey Method:	GP	s							County, State: Quadrangle:	Stahlstown, PA
•		Bottom	•	Bottom	SWL measured b	oy:			Laboratory:	Geochemical
01 0 -	ID	Depth		Elevation					Northing:	291368.488
Coal Sea Upper Kittanning	am ID	(ft) 405.7		(MSL) 1351.0	=				Easting: Grid Coordinates:	1521159.95
Upper Kittanning		420.8		1335.9						
Middle Kittanning Lower Kittanning		441.5 501.9		1315.2 1254.8						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	ription: rock type sils, carbonate, n entrations, pyrite,	ninerals,	Water Conditions	% Recovery	% RQD
402.2	2.6			_		Shale, dark gray				
402.2	2.0			_					100%	47%
			_	_	Up	per Kittanning Coa	al			
405.7	3.5									
			_	-						
		========								
				410						
				_		Shale, gray			100%	77%
			E			onaie, gray			10076	1170
				_						
		========	Е							
440.0	40.0			_						
419.0	13.3			420	I Inner K	ittanning Coal, with	h shale			
420.8	1.8				Оррег те	attariring Coar, with	T Shale			
				_						
			_	_						
				_						
			_	-					100%	93%
				430		Shale, dark gray				
			_	_						
				_						
				_						
			_	_						
440.2	19.4			440						
441.5	1.3	(=(=(=(=(=			Middle K	Kittanning Coal, wit	n shale			
		:=:=:=:=:=:=		_					100%	83%
		:=:=:=:=:=:= :=:=:=:=:=:=	E	_	_	Sandy Shale, gray				
		:=:=:=:=:=:=		_		Januy Shale, gray				
				_						
449.0	7.5	:=:=:=:=:=:= =========================		450						
						Chala ded				
			_			Shale, dark gray				
454.2	5.2									
		00000000000 00000000000		_						
		00000000000		_	Limestone	gray (Middle Kitta	nning LS)		100%	93%
		00000000000 00000000000		_	Limestone,	gray (middle ratta	ining Lo)		10070	3376
461.0	6.8	00000000000 00000000000		460						
701.0	0.0	=======		_						
			_	_						
				_						
			_							
				_						
				470		Shale, gray				
		=======								
				_					100%	93%
				_						
				_						
478.5	17.5		_	_						
47 0.0	17.0	:=:=:=:=:=:=:=			Sandy Shale	, gray, with interbe	edded shale			

JLB- CME - 10/01				7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 7 of 7
025 OME 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	014		Mossuro	d Static Water	r I ovole		Method Drilling:	Continuous Core
								Date Drilled:	5/19/2020-5/26/2020
Surface Elev.	1756	5.70		Date	Depth	Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	-	ND				Municipality:	Donegal
Survey Method:	GP	9						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u> </u>	Bottom	Bottom	SWL measured b	ov:		•	Laboratory:	Geochemical
		Depth	Elevation		-		•	Northing:	291368.488
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1521159.95
Upper Kittanning		405.7	1351.0					Grid Coordinates:	
Upper Kittanning Middle Kittanning		420.8 441.5	1335.9 1315.2						
Lower Kittanning		501.9	1254.8						
					ription: rock type				av 202
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, m entrations, pyrite,		Water Conditions	% Recovery	% RQD
(,	(,	:=:=:=:=:=	(1001)				o o namo no		
400.0	4.0	:=:=:=:=:=:=		Sandy Shale	, gray, with interbed	dded shale			
482.8	4.3	=:=:=:=:=:=							
484.7	1.9		_	Shale, da	ark gray, w/ int. san	dstone			
			_					100%	93%
				Sandstone, light of	gray, fine grained, s	some int. shale			
			490		,				
			- -	†					
493.0	8.3		_	1					
		:=:=:=:=:=:=	<u> </u>	-					
			_	Sandy Shale, da	ark gray, with thin in	nt. sandstone			
		:=:=:=:=:=:=							
498.0 498.5	5.0 0.5	:=:=:=:=:=		Boney	y coal, with coal bar	nds			
490.5	0.5		500						
					nning - Shale, black Kittanning - Coal, b				
501.9	3.4	##########						100%	73%
503.7	1.8	##########		- Clayshal	le, dark gray, some	sandy		10070	1070
		#########		Claystone, g	ray, some broken,	with slicks			
506.2	2.5	######################################							
508.0	1.8	#########		Cla	ayshale, gray, sandy	у			
					andstone, light gray				
510.8	2.8		510	-	andstone, light gray				
		:=:=:=:=:=							
		:=:=:=:=:=:=		s	Sandy Shale, gray			100%	100%
515.2	4.4	:=:=:=:=:=:= :=:=:=:=:=:=		1					
				Datters of He	-l- DII 0044 D4b	E4E 0 f			
				Bottom of Ho	ole DH 2014 Depth	515.2 feet			
			520						
			_						
			<u> </u>	-					
			<u> </u>						
			_ =	4					
			-	1					
			530	1					
			<u> </u>	4					
			- -	†					
]					
				-					
			_ =	4					
			540	-					
]					
				4					
			_	†					
				4					
			_ <u> </u>	4					
			550	1					
			_ =	4					
			- -	†					
				4					
				1					

JLB- CME - 11/29/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 1 of 6
	DH-2015								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2015	-		Measured	Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 5/28/2020 - 6/2/2020
Surface Elev.	1741	1.41			Date	Depth	Elevation		Drilled By:	RES
Curiaco Elevi			=		Measured	(ft)	(MSL)	Notes	-	P. Mack
Surveyed by:	LC	т	_		ND				Municipality:	Donegal
Survey		_							County, State:	Westmoreland
Method:	GF	Bottom	-	Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	OVVE III CASAI CA D	_		-	_	288925.15
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1509403.29
Mahoning		145.5		1595.9	Lower Kittanning	387.4	1354.0		Grid Coordinates:	
Upper Freeport Upper Kittanning		190.8 273.5		1550.6 1467.9						
Middle Kittanning		316.6		1424.8				•		
Depth	Thickness	Graphic		Scale		iption: rock type, vills, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		ntrations, pyrite, et		Conditions		
			_	_	1					
				_						
			_	_						
				_	Shale	e, brown, weathered				
				_						
			_	_						
10.0	10.0			10						
		######################################	_	_	-					
		#########		_					40%	0%
		########## ###########################	_	_	Cla	ay, brown and red				
		#########		_						
17.0	7.0	#########								
				_						
				20	Shale, bro	own and gray, weath	ered			
			_	_	1					
23.0	6.0								93%	7%
			_	_	-					
				_						
			_	_	1					
		=======		_						
				30	-					
				_						
			_	_						
				_						
				_		Shale, gray				
			_	_	1				100%	93%
				40						
				40						
				_						
			_	_						
		=======	E	_						
			_	_	-					
48.0	25.0			_				1		
			\vdash	50	1]		
		=======		_]					
			\vdash	_	1]	100%	93%
				_]					
			_	_	1					
		=======		_						
			_	_		Shale, dark gray				
				60		, g,				
			_	_						
				_						
			Ē	_	-					
			E	_	<u> </u>					
									4000/	4000/
69.0	21.0		_	_					100%	100%
		0000000000		70	Limestone, gray	, with fossils (Brush	Creek LS)	1		
70.6	1.6	00000000000000000000000000000000000000			2 2, 3.29	.,	•	-		
		=======		_]					
			<u> </u>	_	-					
					5	Shale, dark gray				
			_	_	-				100%	80%
				_]				10070	5576
		l======	İ	80	I			ĺ		İ

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 2 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	015			Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 5/28/2020 - 6/2/2020
Surface Elev.	1741	.41			Date	Depth	Elevation		Drilled By:	RES
					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey									County, State:	Westmoreland
Method:	GF	Bottom		Bottom	SWL measured b	w.		=	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	OWE Incapared a	<u> </u>		-	Northing:	288925.15
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1509403.29
Mahoning Upper Freeport		145.5 190.8		1595.9 1550.6	Lower Kittanning	387.4	1354.0		Grid Coordinates:	
Upper Kittanning		273.5		1467.9						
Middle Kittanning		316.6		1424.8	1		1741.4			
Depth	Thickness	Graphic		Scale		ription: rock type, sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite, e	etc.	Conditions		
				_	1					
			_	_						
			_	_	1				100%	80%
				_					10076	00 /6
			_	_	-					
		========								
				90	1	Shale, dark gray				
		=======		_						
			H	_	†					
		=======		_	1					
			_	_	1					
				_					100%	60%
98.4 100.0	27.8 1.6	======= ##############################		100		Clay, gray				
100.0						J.E.J, g.E.J				
			_	_	-	Shale, gray				
		========		_						
105.0 105.4	5.0 0.4					Shale, dark gray				
		##########				Clay, gray				
108.0	2.6	##########				,,,,				
				110						
			_	_	+					
									100%	80%
			_	_	1					
				_						
			_	_	1					
				120	-					
					Shale,	gray, with sandy sh	nale			
			_	_	+					
		=======		_						
			H	_	†					
				_	1				100%	90%
			_	130	1					
				_	1					
			\vdash	_	1					
				_	1					
135.0	27.0				1			-		
			_	_	+					
				140		Shale, dark gray				
			_	_	+					
442.7	0.7			_					100%	47%
143.7	8.7				Mahoning	g Coal, with shale b	inders			
145.5	1.8				IVIAI IOI III IĮ	y coui, will shale D		-		
					<u> </u>					
			Ē	150	Shale	e, gray, with claysha	ale			
				150	<u> </u>					
152.0	6.5			_	ļ					
			E		1					
				_	1				100%	87%
			\vdash		Shale,	gray, with sandy sh	nale			
				_	1					
			—	460	4					

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	ILL LOG			0721-S164 Page 3 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	015			Measured	Static Wate	r Levels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	1741	.41			Date	Depth	Elevation		Drilled By:	5/28/2020 - 6/2/2020 RES
					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т			ND				Municipality:	Donegal
Survey		_							County, State:	Westmoreland
Method:	GF	Bottom	•	Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	OWE measured b	,y.		_	Northing:	288925.15
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1509403.29
Mahoning Upper Freeport		145.5 190.8		1595.9 1550.6	Lower Kittanning	387.4	1354.0		Grid Coordinates:	
Upper Kittanning		273.5		1467.9						
Middle Kittanning		316.6		1424.8	1		1741.4			
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, foss	ription: rock type sils, carbonate, m entrations, pyrite,	ninerals,	Water Conditions	% Recovery	% RQD
			_	_	1					
				_	1				100%	87%
			_	_	+					
				_						
				_	4					
				_						
				170	-					
				_	1					
			_	_	-				100%	93%
				_	Shale,	gray, with sandy s	shale			
			_	_	-					
				_						
			_	180	-					
					1					
			_	_	-					
				_	1					
				_						
			_	_	1					
188.0	36.0							-	93%	54%
189.4	1.4			190		e, dark gray, broke				
190.8	1.4				Upper F	reeport Coal, with	snale	1		
				_	.					
			_	_	Shale	e, gray, with claysh	ale			
195.2	4.4							1		
			_	-						
				200						
			_	_	-				100%	83%
				_						
			—	_	1					
				_	1					
			_	_	1					
				210	1					
			_	_	1					
				_	1	Shale, gray				
			_	_	1	· ,				
		=======		_	1					
			<u> </u>	_	1				100%	83%
				_					10070	3070
				220	1					
				_						
			—	_	1					
		========		_]					
			_	_	1					
				_]					
230.0	34.8		\vdash	230	†					
]		
			\vdash	_	1				100%	100%
				_]					
			_	_	Shale,	gray, with sandy s	shale			
				_	1					
					<u> </u>					
240.0	10.0			240	1			İ	İ	1

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 4 of 6
	o. DH-2015							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2015	:	Measured	Static Water	Levels		Method Drilling:	Continuous Core
Surface Elev.	1741	1 41		Date	Depth	Elevation		Date Drilled: Drilled By:	5/28/2020 - 6/2/2020 RES
ourrace Liev.	174	11		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т		ND	• •	` '		Municipality:	Donegal
Survey		_						County, State:	Westmoreland
Method:	GF	Bottom	Bottom	SWL measured b			•	Quadrangle:	Stahlstown, PA
		Depth	Elevation	SVVL measured b			•	Laboratory: Northing:	Geochemical 288925.15
Coal Sea	am ID	(ft)	(MSL)					Easting:	1509403.29
Mahoning		145.5	1595.9	Lower Kittanning	387.4	1354.0		Grid Coordinates:	
Upper Freeport Upper Kittanning		190.8 273.5	1550.6 1467.9						
Middle Kittanning		316.6	1424.8			1741.4			
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	ription: rock type, v sils, carbonate, min ntrations, pyrite, et	erals,	Water Conditions	% Recovery	% RQD
		:=:=:=:=:=:=: :=:=:=:=:=:=:=		-					
		:=:=:=:=:=:=							
				-					
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=		4				100%	100%
		:=:=:=:=:=:=						10070	10070
		:=:=:=:=:=:=	250	Sandy Sh	ale, gray, with sands	etone			
		:=:=:=:=:=:= :=:=:=:=:=:=:=		- Garlay Gr	aic, gray, with bands	none.			
		:=:=:=:=:=:=							
				-					
		:=:=:=:=:=		7					
		:=:=:=:=:=:= :=:=:=:=:=:=		-					
		(=(=(=(=(=	= =						
261.0	21.0		260	-					
								4000/	000/
				-	Shale, dark gray			100%	93%
264.2	3.2		_						
				-					
			270	-	Sandstone, gray				
272.8	8.6			-					
273.5	0.7			Upper Ki	ttanning Coal, with s	hale			
				-					
					Shale, gray				
				-	, g,			100%	83%
280.0	6.5		280						
				-					
			- -	1					
]					
			<u> </u>	1					
]					
			290	┨ .	Chala dade				
]	Shale, dark gray			4000/	000/
			- -	1				100%	93%
]					
			- -	1					
]					
			300	-					
]					
302.0	22.0								
]					
			- -	1					
]				4000/	222/
			- -	Sandstone	, gray, with dark gray	shale		100%	90%
			310]	_ ,				
			- -	1					
				1					
314.4	12.4		-	1					
				Mid	Idle Kittanning Coal				
316.6	2.2							100%	87%
		=======		7	Shale, gray				

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 5 of 6
OLD OINE 1001								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	015		Moseuro	d Static Water I	ovole		Method Drilling:	Continuous Core
								Date Drilled:	5/28/2020 - 6/2/2020
Surface Elev.	1741	.41		Date	Depth	Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T		ND				Municipality:	Donegal
Survey	C	ie.						County, State:	Westmoreland
Method:	GP	Bottom	Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation	SWL measured t	.y. <u> </u>		-	Northing:	288925.15
Coal Sea	am ID	(ft)	(MSL)					Easting:	1509403.29
Mahoning		145.5	1595.9	Lower Kittanning	387.4	1354.0		Grid Coordinates:	
Upper Freeport		190.8	1550.6	•					
Upper Kittanning Middle Kittanning		273.5 316.6	1467.9 1424.8			1741.4			
Wilddie Kittarining		310.0	1424.0	Lithologic Desc	ription: rock type, v				
Depth	Thickness	Graphic	Scale	color, fos	sils, carbonate, min	erals,	Water	% Recovery	% RQD
(ft) 321.0	(ft) 4.4	Log	(feet)	conce	entrations, pyrite, etc Shale, gray	С.	Conditions		
321.0	4.4				Criaic, gray				
					Shale, dark gray				
324.7	3.7								
024.1	0.1	00000000000						100%	87%
		00000000000		Limestone,	gray (Middle Kittanni	ng LS)			
328.0	3.0	000000000000							
			330						
			<u> </u>	4					
			- -	†					
				1					
			_ =	1					
			- -	1	Shale, gray				
								100%	93%
			340						
044.0	40.0								
344.0	16.0								
346.0	2.0				Shale, drak gray				
				1					
			350		Shale, gray				
				1					
								100%	80%
353.6	7.6								
356.0	2.4		_	Shale	e, gray, with clayshale	9			
					Shale, gray				
			360		Orialo, gray				
360.2	4.2								
				Shale, d	ark gray, with sandsto	one			
363.6	3.4		_	•					
			<u> </u>	-	_			100%	85%
			_	1					
			370	Sandstone	, gray, with int. sandy	shale			
				1	_ ,				
			<u> </u>	1				100%	80%
			- -	1				100%	OU 76
375.0	11.4								
			_ _	1					
]				100%	80%
			200	Condat	grov with acres-15	rooko			
			380	Sandstone	, gray, with several b	reaks			
				1					
383.6	8.6								
384.01	0.41								
007.05	0.00		<u> </u>	-1	er Kittanning Coal	•			
387.23 387.40	3.22 0.17			lost c	ore 387.23 - 387.40	U		100%	67%
		##########		Clavsh	nale, gray, sandy, har	d			
389.2	1.8	######################################	390	2.3.30.	. 5 ,, ,				
		######################################		Claysha	ale, gray, several brea	aks			
393.0	5.0	#########							
			- -	1					
				Sandstone, gra	y, with interbedded sa	andy shale			
398.0	5.0		<u> </u>	-				100%	80%
J90.U	0.0				Chole are:			100 /0	00 /0
			400	1	Shale, gray		1		

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 6 of 6
025 CM2 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	015		Magazirad	Static Water I	ovolo		Method Drilling:	Continuous Core
•								Date Drilled:	5/28/2020 - 6/2/2020
Surface Elev.	1741	.41		Date	Depth	Elevation		Drilled By:	RES
•				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland
Method:	GP		_				•	Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured by	y:			Laboratory:	Geochemical
010	15	Depth	Elevation					Northing:	288925.15
Coal Sea Mahoning	am IU	(ft) 145.5	(MSL) 1595.9	_ Lawar Kittanaina	207.4	1251.0		Easting: Grid Coordinates:	1509403.29
Upper Freeport		190.8	1550.6	Lower Kittanning	387.4	1354.0		Grid Coordinates:	
Upper Kittanning		273.5	1467.9						
Middle Kittanning		316.6	1424.8			1741.4			
Depth	Thickness	Graphic	Scale		iption: rock type, v ils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		ntrations, pyrite, et		Conditions	76 NGGGVG19	// / / /
400.2	2.8				Shale, gray				
		-		Dottom of Hol	a DI I 2015 Danih 4	00.24004			
		F		- Bollotti di Fidi	e DH 2015 Depth 4	00.2 Teet			
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		ŀ	420	-					
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				4					
			430	1					
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		-		4					
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		ŀ	440	-					
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JLB- CME - 11/29/01					7.1A GEOI			0721-S164 Page 1 of 5		
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2016	•		Measured	Static Wate	er Levels		Method Drilling:	Continuous Core
Surface Elev.	1714	L 01			Date	Depth	Elevation		Date Drilled: Drilled By:	6/8/2020 - 6/10/2020 RES
ourrace Liev.	17.1-		•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_	_	ND		• •		Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF	Bottom	Botton	, -	SWL measured by			_	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation		SVVE ilicasarca by	y .		_	Northing:	290081.47
Coal Sea	am ID	(ft)	(MSL)	1					Easting:	1509054.67
Mahonning Upper Freeport		158.6 196.4	1555.4 1517.6		Jpper Kittanning	276.5			Grid Coordinates:	
Lower Freeport		243.0	1471.0		Middle Kittanning Lower Kittanning	308.5 380.2				
Lower Freeport		249.5	1464.5			!t!				I
Depth	Thickness	Graphic	Scale			ils, carbonate, n	minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		concer	ntrations, pyrite,	, etc.	Conditions		
			_	_						
			_	_						
			10	_	Shale, brown	n, red and gray, v	weathered			
			<u> </u>	\dashv						
				\exists						
				\Box						
17.0	17.0		_	_						
			_	_						
			_							
				-						
					Shale	e, gray, weathere	ed			
			_	_					70%	0%
				_						
29.2	12.2		30					4		
32.0	2.8				S	Sandstone, gray				
			<u> </u>	_						
			_	_						
									100%	83%
			40	_						
					Shale, g	gray, with sandy	shale			
				_						
		========								
			<u> </u>	\dashv						
				\exists						
48.5	16.5		<u> </u>	\dashv						
		=======	50					7		
			<u> </u>	\dashv						
				\exists					100%	87%
			<u> </u>	\dashv						
				\exists						
			 	\dashv						
					S	Shale, dark gray				
			60							
		========								
			_	_						
			Ë	\exists						
				\exists						
69.0	37.0		<u> </u>	4					100%	100%
		00000000000	70		Limestone, grav	, with fossils (Bru	ush Creek LS)	1		
71.0	2.0	00000000000						-		
				\exists						
			 	\dashv						
				\exists	S	Shale, dark gray				
			<u> </u>	\dashv					100%	87%
									1.00%	0.70

JLB- CME - 10/01				7.1A GEC	LOGIC DRIL	L LOG			0721-S164 Page 2 of 5
	DI C							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	016	-	Measure	d Static Water I	Levels		Method Drilling: Date Drilled:	Continuous Core 6/8/2020 - 6/10/2020
Surface Elev.	1714	J.01		Date	Depth	Elevation		Drilled By:	RES
•			='	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	-	ND				Municipality:	Donegal Westmoreland, PA
Survey Method:	GF	s						County, State: Quadrangle:	Stahlstown, PA
•		Bottom	Bottom	SWL measured	by:			Laboratory:	Geochemical
Coal Sea	am ID	Depth (ft)	Elevation (MSL)					Northing: Easting:	290081.47 1509054.67
Mahonning	aili ID	158.6	1555.4	Upper Kittanning	276.5	1437.5		Grid Coordinates:	1509054.67
Upper Freeport Lower Freeport		196.4 243.0	1517.6 1471.0	Middle Kittanning	308.5	1405.5			
Lower Freeport		249.5	1464.5	Lower Kittanning	380.2	1333.8			
Depth	Thickness	Graphic	Scale		cription: rock type, v		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, et		Conditions	•	
			<u> </u>						
		=======						100%	87%
		=======================================	-						
		=======							
			90		Shale, dark gray				
		=========	E :	╡					
		=======================================	<u> </u>	\dashv					
		=======		7					
98.0	57.6		-					100%	67%
			100						
			100						
		=======================================	-		Shale, gray				
		=======							
105.2	7.2								
107.0	1.8	##############			Shale, dark gray				
		#########							
		######################################	110		Claystone, gray				
112.0	5.0	##########						100%	60%
								10078	0070
			120						
		=======							
		=======================================	-						
		=======							
				╛					
		=========	<u> </u>	Shale, grav. v	vith sandy shale and s	sandstone		100%	93%
		=======	130]					
		=======================================		Ⅎ					
			<u> </u>	-					
		=======		=					
			- -	\dashv					
		=======							
			140	Ⅎ					
				-					
		=======		=				100%	83%
144.5	32.5		<u> </u>						
			_						
			<u> </u>	Ⅎ	Shale, dark gray				
148.2 149.2	3.7 1.0	#######################################	150	+	Clay, gray				
					27.5 - 7				
		=======================================	-	\dashv	Shale, dark gray				
15//	E 2		E :	\exists					
154.4	5.2	=======						100%	60%
			<u> </u>	Mah	oning Coal, with shale	е			
158.6	4.2		160	Chal	e grav with clavebale	9			

JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 3 of 5
OLD OME 1001					,. 0_0				Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2016			Mossurod	Static Water I	ovole		Method Drilling:	Continuous Core
										6/8/2020 - 6/10/2020
Surface Elev.	1714	1.01			Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes		P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GF	90							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.		Bottom		Bottom	SWL measured b	v.		-	Laboratory:	Geochemical
		Depth		Elevation	OWE moderate b	_		-	Northing:	290081.47
Coal Sea	am ID	(ft)		(MSL)					Easting:	1509054.67
Mahonning		158.6		1555.4	Upper Kittanning	276.5	1437.5		Grid Coordinates:	
Upper Freeport Lower Freeport		196.4		1517.6	Middle Kittanning	308.5	1405.5			
Lower Freeport		243.0 249.5		1471.0 1464.5	Lower Kittanning	380.2	1333.8			
						ription: rock type, v				
Depth	Thickness	Graphic		Scale		sils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	ntrations, pyrite, et	С.	Conditions		
				_]					
			_		Shale	, gray, with clayshale	9		100%	60%
165.0	6.4		_	_	-					
								1		
			_		-					
			_		1					
				170						
			—	_	4					
			E	_	1				100%	87%
				_]					
			_	_	-					
				_	†	Shale, gray				
		========								
			_	180						
				100	†					
			_							
				-						
188.0	23.0		_	_	-				100%	83%
100.0	23.0								10070	0070
		========		190						
			_	_	1					
		========		_	•	Shale, dark gray				
				_						
195.2	7.2		_	-	+					
196.4	1.2				Up	per Freeport Coal				
				_						
			_	200	+					
		========]					
			_	_	-				100%	77%
			H	_	1				10070	11/0
		========		_]					
			_	_	1	Shale, gray				
					1	, 5 - 3				
			_	210	1					
				210	1					
		=======		_	1					
			—	_	4					
				_	1					
216.0	19.6	=======		_				1		
			\vdash	_	-				100%	100%
					1				1.0070	.55,5
				220	4					
		========	_	_	-					
				_	Shale	gray, with sandy sha	le			
		=======	H	_	Jilaie,	, ,, oallay olla				
			\vdash	_	1					
				_	1					
			H	_	4					
230.0	14.0		\vdash	230	1					
	*			_				1		
			—	_	1				100%	53%
			\vdash	_	1				100 /0	JJ /0
				_		Shale, dark gray				
			—	_	4					
			E	_	1					
239.0	9.0			240	1	wer Freeport Coal				
				7411	LO	THUS I DEEDUIL COM		•		

JLB- CME - 10/01													
									Operation Name :	Rustic Ridge #1 Mine-Expansion			
Hole No.	DH-2	2016			Measured	d Static Water	Levels		Method Drilling:	Continuous Core			
0	4-74								Date Drilled:	6/8/2020 - 6/10/2020			
Surface Elev.	1714	1.01			Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By:	RES .			
Surveyed by:	LC	т.			ND	(11)	(IVISL)	Notes	Logged By: Municipality:	P. Mack Donegal			
Survey		,,			110				County, State:	Westmoreland, PA			
Method:	GF	s							Quadrangle:	Stahlstown, PA			
		Bottom	•	Bottom	SWL measured b	y:			Laboratory:	Geochemical			
		Depth		Elevation					Northing:	290081.47			
Coal Se	am ID	(ft)		(MSL)		070 5	4407.5		Easting:	1509054.67			
Mahonning Upper Freeport		158.6 196.4		1555.4 1517.6	Upper Kittanning Middle Kittanning	276.5 308.5	1437.5 1405.5		Grid Coordinates:				
Lower Freeport		243.0		1471.0	Lower Kittanning	380.2	1333.8						
Lower Freeport		249.5		1464.5	Lithelesia Deser	ription: rock type,	waath arin a						
Depth	Thickness	Graphic		Scale		sils, carbonate, mi		Water	% Recovery	% RQD			
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite, e	tc.	Conditions					
			_	_	Lower F	reeport Coal, with s	hale						
243.0	4.0			_									
			_	_									
				_	 	Shale, dark gray							
				_					4000/	070/			
247.5	4.5	=======							100%	37%			
249.5	2.0			250	Lo	wer Freeport Coal							
				_									
			<u> </u>	_	†								
				_	Shale	e, gray, with claysha	e						
			_	_	_								
256.5	7.0			_									
		=======	_	_									
			_	260	_								
				_		Shale, gray							
			_	_	-				100%	93%			
				_									
265.0	15.0												
				_	Sar	ndstone, gray, hard							
268.0	3.0												
			_	270	-								
				_									
			_	_	-	Shale, gray							
				_									
275.2	7.2		_	_	1								
276.5	1.3				Upper Ki	ttanning Coal, with	shale						
				_					100%	80%			
			_	280	-								
				_									
			_	_	-								
				_	1								
			H		-								
					1								
			H	_	4								
				290	1								
				_	4								
			H	_	-	Shale, dark gray			100%	93%			
				_	1								
			<u> </u>	_	1								
				_									
			H	_	4								
				300									
				_	4								
			—	_	1								
				_	1								
			H		-								
306.1	29.6												
308.5	2.4		<u> </u>	_	Mid	ddle Kittanning Coal			100%	77%			
3.00.5	2.4	=======		310				1					
		=======		_	4								
			H	_	1 .	Chala dad							
				_]	Shale, dark gray							
			<u> </u>	_	1								
316.4	7.9			_									
		00000000000	<u> </u>	_	Limestone	gray (Middle Kittanr	ning LS)		100%	93%			
	1	00000000000 nnnnnnnnnn	\vdash	320	Linestone,	g.as (middle Nitidill	g ==/						

JLB- CME - 10/01				7.1A GEO	LOGIC DRILI	L LOG			0721-S164 Page 5 of 5
OED CIME 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	016		Moseuro	d Static Water L	ovole		Method Drilling:	Continuous Core
•				Weasured	Jane Water L	-eveis		Date Drilled:	6/8/2020 - 6/10/2020
Surface Elev.	1714	.01		Date	Depth	Elevation		Drilled By:	RES
				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T		ND				Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GF		D - 11	014/1			-	Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b			-	Laboratory:	Geochemical
Coal Sea	ım ID	Depth (ft)	Elevation (MSL)					Northing: Easting:	290081.47 1509054.67
Mahonning	2111 10	158.6	1555.4	Upper Kittanning	276.5	1437.5		Grid Coordinates:	1303034.07
Upper Freeport		196.4	1517.6	Middle Kittanning	308.5	1405.5			
Lower Freeport		243.0	1471.0	Lower Kittanning	380.2	1333.8			
Lower Freeport		249.5	1464.5	Lithelesia Dece	ription: rock type, w	ra ath anim a			
Depth	Thickness	Graphic	Scale		sils, carbonate, mine		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, etc		Conditions		
		000000000000		Limestone	gray (Middle Kittannir	na LS)			
322.4	6.0	00000000000 0000000000		Linesione,	gray (wildaic rattariiii	ig 20)			
		========					1		
								100%	93%
					Shale, gray				
		========		1					
329.0	6.6		_						
		:=:=:=:=:=:=	330	4					
		:=:=:=:=:=:= :=:=:=:=:=:=		- s	Sandy Shale, gray				
333.0	4.0	:=:=:=:=:=:=:=	<u> </u>	<u> </u>					
22.5				4	Shale, dark gray	<u> </u>			
334.2 335.9	1.2	==========		-	Shale, gray		1		
337.0	1.1				Shale, dark gray]		
		:=:=:=:=:=:=						100%	80%
		:=:=:=:=:=:= :=:=:=:=:=:=:=	340						
		:=:=:=:=:=:=		s	Sandy Shale, gray				
		:=:=:=:=:=							
344.0	7.0								
							1		
			350		Shale, dark gray				
					onalo, dam gray				
								100%	100%
356.5	12.5								
				4					
			360						
			_ =	1					
				Sandy Shale, g	ray, with interbedded	sandstone		100%	100%
				†					
				1					
			370	4					
				1					
075	40 -		_ =	_				4000/	4000/
375.3 375.5	18.8 0.2			1	Shale, dark gray		1	100%	100%
375.6	0.1	##########			Clay, gray, soft]		
376.0	0.4				le, dark gray to black		1		
376.5 376.62	0.5 0.12				ney coal, with shale ng - Boney, with coal t	oands dull	†		
0.0.02	0.12				wer Kittanning Coal				
380.2	3.58		380			ak	1		
381.0 381.2	0.8	######################################			ale, gray, easy to brea aystone, gray, soft	ars	1		
382.5	1.3	#########			yshale, grayish tank			100%	57%
		######################################		4					
		######################################		†					
		###########		Clavsh	nale, gray, some sand	у			
		######################################		-	. 5 ,,	=			
		######################################	390	†					
390.2	7.7	#######################################							
				Bottom of Ho	ole DH 2016 Depth 39	0.2 feet			
				1					
			_ =	4					
				1					
				1					
				4			I		

JLB- CME - 11/29/01					7.1A GEO	LOGIC DRII	L LOG	0721-S164 Page 1 of 6			
Hole No. DH-2017									Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-2	2017	•		Measured	Static Water	Levels		Method Drilling:	Continuous Core	
Surface Elev.	1792	2 64			Date	Depth	Elevation		Date Drilled: Drilled By:	6/15/2020 - 6/18/2020 RES	
Surface Liev.	1132	2.04	-		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack	
Surveyed by:	LC	т			ND	(/	(02)		Municipality:	Donegal	
Survey			•						County, State:	Westmoreland, PA	
Method:	GF		_					_	Quadrangle:	Stahlstown, PA	
		Bottom		Bottom	SWL measured b	y:		•	Laboratory:	Geochemical	
Cool Coo	ID	Depth		levation					Northing:	290127.92	
Coal Sea Mahonning	מוו ווט	(ft) 184.5		(MSL) 1608.1	Upper Kittanning	299.0	1493.6		Easting: Grid Coordinates:	1507832.95	
Upper Freeport		222.0		1570.6	Middle Kittanning	330.4	1462.2		Grid Goordinatos.		
Lower Freeport		263.7		1528.9	Lower Kittanning	398.3	1394.3				
Lower Freeport		269.0		1523.6	Lithologic Descr	ription: rock type,	weathering				
Depth	Thickness	Graphic		Scale	color, foss	sils, carbonate, mi	nerals,	Water	% Recovery	% RQD	
(ft)	(ft)	Log		(feet)	conce	ntrations, pyrite, e	tc.	Conditions			
				_							
			_	_							
				_							
			_								
					Shale	e, brown, weathere	d				
				10	4						
			—		1						
				_]						
			—	_	1						
15.2	15.2				<u> </u>						
]			
			_	_							
				20							
			_								
						Shale, gray			100%	20%	
		=======	_		-						
			_								
		=======		_							
28.0	12.8										
				30							
			_		-						
		=======	_		-						
				_	1						
				_					100%	73%	
			_	_					100%	13%	
				40							
			<u> </u>	_	-						
				_	Sh	nale, red and gray					
			<u> </u>	_	-						
				_]						
			L-	_	4						
			<u> </u>	_	†						
		=======		50							
			<u> </u>	_	†						
]				100%	27%	
			—	_	1]			
56.0	28.0			_]			
			<u> </u>	_	-						
				_	<u> </u>						
				60							
			H	_	†						
]						
		=======================================	\vdash	_	1]			
				_	1						
			<u> </u>	_	-				100%	87%	
				_	<u> </u>	Shale, gray			10070	07 /0	
				70	-						
			H	_	†						
				_]						
			\vdash	_	1						
				_]						
			—	_	-]	100%	80%	
				_]				10070	0070	
		1	ı -	00	1			1	i	i	

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 2 of 6
								Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-2	2017	_		Measured	Static Water	Levels		Method Drilling:	Continuous Core
:	4=04								Date Drilled:	6/15/2020 - 6/18/2020
Surface Elev.	1792	2.64	-		Date Measured	Depth	Elevation	Natas	Drilled By:	RES
Surveyed by:	LC	•т			ND ND	(ft)	(MSL)	Notes	Logged By: Municipality:	P. Mack
Survey		, 1	-		ND				County, State:	Donegal Westmoreland, PA
Method:	GF	s							Quadrangle:	Stahlstown, PA
		Bottom	-	Bottom	SWL measured b	y:		_	Laboratory:	Geochemical
		Depth	I	Elevation		·-		_	Northing:	290127.92
Coal Sea	am ID	(ft)		(MSL)	<u>-</u>				Easting:	1507832.95
Mahonning Upper Freeport		184.5 222.0		1608.1 1570.6	Upper Kittanning Middle Kittanning	299.0 330.4	1493.6 1462.2		Grid Coordinates:	
Lower Freeport		263.7		1528.9	Lower Kittanning	398.3	1394.3			
Lower Freeport		269.0		1523.6	1					
Depth	Thickness	Graphic		Scale		ription: rock type, sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite, e		Conditions		
			<u> </u>	_						
				_						
			H		-	Shale, gray			100%	80%
				_						
				_						
89.5	33.5		—	90	1					
								1		
			—	_	-					
			\vdash	_	1					
				_]	Shale, dark gray				
			\vdash	_	1					
			H	_	1				100%	100%
100.0	10.5	000000000000		100						
101.7	1.7	0000000000		_	Limestone, gra	y, with fossils (Brus	h Creek LS)			
			_	_						
			_	_	1					
				_						
			_		-					
				_						
				110						
			—		1					
				_					100%	100%
				_						
				_	-	Shale, dark gray				
			<u> </u>	_						
				120						
		=======	<u> </u>	_	-					
				_						
				_						
			\vdash	_	1					
				_]					
420.0	07.0		H_	_	-				100%	57%
129.0	27.3			130				1		
		=======		_	4					
			\vdash	_	1					
				_	1					
		========	\vdash	_	-					
			\vdash	_	Shale	e, gray, with claysha	le			
		=======		_						
			<u> </u>	140	1					
				140						
			H_	_	-				100%	57%
143.5	14.5		\vdash	_	1				100 /0	J1 /0
			_	_						
			\vdash	_	-					
				_]					
				150	4					
			-	150	1					
				_	Shale	gray, with sandy sh	ale			
			\vdash	_	- C.i.die,	J., 20110y 011	-			
			L	_	<u> </u>				100%	100%
		=======		_	4				100%	100%
			\vdash	_	1					
				_	1					
		========	1	160	I			Ì		İ

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	L LOG			0721-S164 Page 3 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	.017			Measured	Static Water	Levels		Method Drilling:	Continuous Core
Surface Elev.	1792	64			Date	Depth	Elevation		Date Drilled: Drilled By:	6/15/2020 - 6/18/2020 RES
ourrace Liev.	17.02				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т			ND	` '	, ,		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GF	Bottom		Bottom	SWL measured b	W.		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		levation	OVVE III CASAI CA D	_		-	Northing:	290127.92
Coal Sea	am ID	(ft)		(MSL)	_				Easting:	1507832.95
Mahonning Upper Freeport		184.5 222.0		1608.1 1570.6	Upper Kittanning	299.0	1493.6		Grid Coordinates:	
Lower Freeport		263.7		1528.9	Middle Kittanning Lower Kittanning	330.4 398.3	1462.2 1394.3			
Lower Freeport		269.0		1523.6	Lithelesia Beer					I
Depth	Thickness	Graphic	:	Scale		ription: rock type, sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	ntrations, pyrite, e	tc.	Conditions		
				_						
			_	_	-				100%	100%
				_						
			_	_	-					
				-						
				470	Shale,	gray, with sandy sh	ale			
				170						
				_					1000/	920/
			H	_	1				100%	83%
				_						
177.0	33.5		_	_	1					
						a				
180.0	3.0		_	180	· ·	Shale, dark gray				
			_		-	Mahoning Coal				
				_						
184.5	4.5									
				_					4000/	==0/
			_	_	-				100%	57%
				190						
			_	_	-					
				_		Shale, gray				
			_		-					
				_						
			_		-					
				_						
199.5	15.0			200						
				_					4000/	4000/
			_	_					100%	100%
				_		Sandstone, gray				
			_	_						
				_]					
209.0	9.5			210				1		
				_						
			_	_	1					
				_]	Chalc				
			H	_	1	Shale, gray				
				_]				40007	222/
			<u> </u>	_	1				100%	80%
220.0	11.0			220						
222.0	2.0		_	_	Shale, dark gra	ay, with coal (Uppe	r Freeport)			
	-				Shale	, gray, with claysha	le			
225.0	3.0			_	Gilale	, grup, miui olayəlid]		
			_	_	-					
				_]					
		=========	<u> </u>	230	-					
]					
			Ë	_	-	Shale, gray			100%	100%
			E	_]	Jilaio, gray			100 /0	100 /0
			Ë	_	-					
				_	<u> </u>					
				_						
			<u> </u>	240	1					

JLB- CME - 10/01				7.1A GEOLOGIC DRILL LOG			0721-S164 Page 4 of 6
						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2017	:	Measured Static Water Levels		Method Drilling:	Continuous Core
Surface Elev.	1792	2.64		Date Depth Elevation		Date Drilled: Drilled By:	6/15/2020 - 6/18/2020 RES
			•	Measured (ft) (MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т		ND		Municipality:	Donegal
Survey						County, State:	Westmoreland, PA
Method:	GF	Bottom	Bottom	SWL measured by:		Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation		_	Northing:	290127.92
Coal Sea	am ID	(ft)	(MSL)	_		Easting:	1507832.95
Mahonning Upper Freeport		184.5 222.0	1608.1 1570.6	Upper Kittanning 299.0 1493.6		Grid Coordinates:	
Lower Freeport		263.7	1528.9	Middle Kittanning 330.4 1462.2 Lower Kittanning 398.3 1394.3			
Lower Freeport		269.0	1523.6				
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	Lithologic Description: rock type, weathering, color, fossils, carbonate, minerals, concentrations, pyrite, etc.	Water Conditions	% Recovery	% RQD
			<u> </u>	-			
				_			
			<u> </u>				
				Shale, gray		100%	90%
						10070	0070
			250				
253.0	28.0				_		
				-			
				4			
			_	Shale, dark gray			
260.6	7.6		260	-			
				Chala dark grow with and (Lawar Francist)		4000/	F00/
263.7	3.1			Shale, dark gray, with coal (Lower Freeport)		100%	50%
		========					
				Shale, dark gray			
267.5	3.8			Lower Freeze at Cool			
269.0	1.5	##########	270	Lower Freeport Coal			
		#########					
		######################################		Clay, gray			
		#########					
276.0	7.0	######################################	_	+			
						100%	60%
						10070	0070
			280				
			_				
			<u> </u>	4			
				Shale, gray, with sandy shale			
			290	4			
			290	₫			
		=======	_ =	4		90%	70%
			- -	1		90%	/0%
		=======					
			<u> </u>	1			
297.4	21.4			Upper Kittanning Coal			
299.0	1.6		300	Opper Kittarining Coal			
				Shale, gray			
305.0	6.0			4			
303.0	0.0	:=:=:=:=:=:=			1		
				-		100%	100%
				₫		10070	10070
		:=:=:=:=:=:=	310	4			
		:=:=:=:=:=:= :=:=:=:=:=:=:=		₫			
		:=:=:=:=:=:=		Sandy Shale, gray			
			- -	1			
		(=(=(=(=(=					
		:=:=:=:=:=:= :=:=:=:=:=:=	- -	4		100%	77%
		:=:=:=:=:=:=	<u> </u>	1			

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 5 of 6
OLD OINE 10/01					,				Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2017			Measured	l Static Water	Levels		Method Drilling:	Continuous Core
		DH-2017 Measured Static Water Levels							Date Drilled:	6/15/2020 - 6/18/2020
Surface Elev.	1792	2.64	-		Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	<u> </u>	•		ND				Municipality:	Donegal
Survey Method:	GF	99							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wethou.		Bottom	B	ottom	SWL measured b	w.		-	Laboratory:	Geochemical
		Depth		evation	OVIZ mododrou b	· · · · · · · · · · · · · · · · · · ·		•	Northing:	290127.92
Coal Sea	am ID	(ft)		MSL)					Easting:	1507832.95
Mahonning		184.5	1	608.1	Upper Kittanning	299.0	1493.6		Grid Coordinates:	
Upper Freeport		222.0		570.6	Middle Kittanning	330.4	1462.2			
Lower Freeport Lower Freeport		263.7 269.0		528.9 523.6	Lower Kittanning	398.3	1394.3			
201101 T TOOPOIT		200.0		020.0	Lithologic Descr	ription: rock type	weathering,			
Depth	Thickness	Graphic		cale		sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log	(10	eet)	conce	ntrations, pyrite, o	etc.	Conditions		
		:=:=:=:=:=:=		_						
		:=:=:=:=:=	_	_						
			_		S	andy Shale, gray				
		:=:=:=:=:=:=	_						100%	77%
		:=:=:=:=:=:=		_						
328.0	23.0	[=:=:=:=:=								
				330	Middle Ki	ittanning Coal, with	shale			
330.4	2.4									
			<u> </u>	_	1					
				_]					
				_] ;	Shale, dark gray				
				_	1	3 .,				
			_						100%	93%
338.6	8.2									
341.0	2.4	000000000000	3	340	Limestone,	gray (Middle Kittan	ning LS)			
341.0	2.4	00000000000000000000000000000000000000								
			_			Shale, gray				
			_			Orlaie, gray				
				_						
347.5	6.5	=======				Shale, dark gray				
			3	350	,	onale, dark gray				
				_						
			_	_					100%	87%
			_	_	1				10076	07.70
				_						
		=======	_							
			-			Shale, gray				
				_						
			3	360						
			_	_	1					
365.0	16.0		_	_	1					
300.0	10.0									
									4000/	000/
			—	_	_				100%	80%
			3	370	Sands	stone, gray, with sha	aie			
			<u> </u>	_						
372.2	7.2		—	_	1					
					Shale, da	rk gray, with sandy	shale			
374.9	2.7	======== :=:=:=:=:=:=								
		:=:=:=:=:=:= :=:=:=:=:=:=		_	1					
		:=:=:=:=:=								
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	380	1					
		:=:=:=:=:=:=		000						
		(=(=(=(=(=		_					4000/	4000/
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	_	Sandy S	hale, gray, a few b	reaks		100%	100%
		:=:=:=:=:=:= :=:=:=:=:=:=		_]					
		:=:=:=:=:=								
			_	_	1					
		:=:=:=:=:=:= :=:=:=:=:=:=:=		_]					
		:=:=:=:=:=	3	390]					
390.4	15.5									
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_	Sandy Chala	ray with interhad 1	d candatona			
		:=:=:=:=:=:=		_	Sanuy Shale, gr	ray, with interbedde	u sariusionė			
394.9 395.2	4.5 0.3	[=]=]=]=]=			Lower Kittannin	g - Boney, with coa	l bands. dull		100%	73%
333.£	0.0					Kittanning - Coal, b				
398.1	2.9		_							
398.3	0.2	#########	Δ	100		Coal, with thin sha vshale, grav, sandy				

JLB- CME - 10/01				7.1A GEC	LOGIC DRIL	L LOG			0721-S164 Page 6 of 6
025 CM2 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	017		Moseuro	d Static Water I	ovole		Method Drilling:	Continuous Core
•			•					Date Drilled:	6/15/2020 - 6/18/2020
Surface Elev.	1792	2.64	- .	Date	Depth	Elevation		Drilled By:	RES
				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T	•	ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GP		Dattam	CWI management I	h		-	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured I			-	Laboratory: Northing:	Geochemical
Coal Sea	am ID	(ft)	(MSL)					Easting:	290127.92 1507832.95
Mahonning		184.5	1608.1	Upper Kittanning	299.0	1493.6		Grid Coordinates:	1007002.00
Upper Freeport		222.0	1570.6	Middle Kittanning	330.4	1462.2			
Lower Freeport		263.7	1528.9	Lower Kittanning	398.3	1394.3			
Lower Freeport		269.0	1523.6	Lithologic Desc	cription: rock type, v	veathering			
Depth	Thickness	Graphic	Scale		ssils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	entrations, pyrite, et		Conditions		
400.8	2.5	##########		Cla	ayshale, gray, sandy				
		:=:=:=:=:=:= :=:=:=:=:=:=							
		:=:=:=:=:=			Sandy Shale, gray				
405.0	= 0	:=:=:=:=:=:=							
405.8	5.0	:=:=:=:=:= ############################					1		
		#########	-	Clays	hale, gray, some sand	iy			
408.3	2.5	#########					1		
			410	-					
			-	7	Chale are:				
					Shale, gray				
415.0	6.7		 	=					
710.0	0.1						1		
440.0					Shale, dark gray				
418.0	3.0	========= :=:=:=:=:=:=							
		:=:=:=:=:=:=	420		Sandy Shale, gray				
420.2	2.2	:=:=:=:=:=:=							
			_	Bottom of Ho	ole DH 2017 Depth 4	20.2 feet			
			<u> </u>	_					
			430						
			<u> </u>	_					
			-	=					
			<u> </u>	_					
			440	_					
			- -	=					
			<u> </u>	4					
			 - -	7					
			450]					
			 	=					
			<u> </u>	Ⅎ					
			<u> </u>	_					
			- -	-					
			่	<u> </u>					
			460	-					
			- -	\dashv					
				_					
			- -	-					
			-	╡					
]					
			470	\dashv					
				╛					
			-	Ⅎ					
			 	-					
				1					
			480	1			ĺ	İ	İ

JLB- CME - 11/29/01					7.1A GEOLO	GIC DR	ILL LOG			0721-S164 Page 1 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2033			Measured St	tatic Wate	er Levels		Method Drilling:	Continuous Core
Surface Elev.	1870	00			Date	Depth	Elevation		Date Drilled: Drilled By:	10/5/2020-10/7/2020 RES
ouridoo Elovi	107	,,,,,			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_		ND		· ·		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GF	Bottom	Botto	_	SWL measured by:			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevati		OWE measured by.			=	Northing:	291393.923
Coal Sea	am ID	(ft)	(MSL	.)	_				Easting:	1507118.398
Lower Freeport Lower Freeport		312.5 320.6	1557. 1549.						Grid Coordinates:	
Middle Kittanning		385.7	1484.							
Lower Kittanning		451.6	1418.	4	1 101 1 1 5 10					
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		Lithologic Descripti- color, fossils, concentra		minerals,	Water Conditions	% Recovery	% RQD
			_	_	-					
			_	_	-					
				_						
				_	Shale, brown and	d gray, highly	weathered			
						0 % 0 %				
			10		-					
				_						
15.2	15.2		<u> </u>		<u> </u>					
							<u></u>			
			_		-					
			20		Sh	ale, brown				
				_					000/	00/
			_	_	-				93%	0%
26.0	10.8							1		
			30	_	-					
					Shale, t	brown and gra	ay			
			<u> </u>	_	-					
				_						
35.0	9.0							1		
				_						
			_	_	-				73%	23%
			40	-						
			_	_	-					
			_		-					
					Shal	le, dark gray				
				_]					
			<u> </u>		-					
				_	<u> </u>					
			50		-					
52.5	17.5				1					
53.1	0.6				Shale, dari	k gray, with fo	ossils	4	100%	30%
					Ohale d	ark grov be-1	ven.			
		=======		_	Snaie, di	ark gray, brol	7011			
57.1	4.0	##########						†		
		##########		_	c	lay, gray				
61.1	4.0	########## ###########################	60		1					
			_							
			_	_	1					
				_]					
			 	_	1					
				_]				100%	93%
			70	_	1					
					SI	hale, gray				
			<u> </u>	_	1					
				_]					
			<u> </u>	_	1					
				_]					
			_		-				100%	80%
				_	1					I

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 2 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2033			Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Floy	1070				Date	Depth	Elevation		Date Drilled:	10/5/2020-10/7/2020
Surface Elev.	1870	J.00			Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	(1-7	(Municipality:	Donegal
Survey			-						County, State:	Westmoreland, PA
Method:	GF			-				•	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom levation	SWL measured b	oy:			Laboratory: Northing:	Geochemical 291393.923
Coal Sea	am ID	(ft)		(MSL)					Easting:	1507118.398
Lower Freeport		312.5		1557.5	-				Grid Coordinates:	
Lower Freeport Middle Kittanning		320.6 385.7		1549.4 1484.3						
Lower Kittanning		451.6		1418.4						
Donth	Thiskness	Cuambia		Caala		ription: rock type		Mater	% Recovery	% RQD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, mentrations, pyrite,		Water Conditions	/₀ Kecovery	/6 KQD
			_	_						
			_	_						
		========		_						
			_	_	1				100%	80%
				_						
			_	_		Shale, gray				
				90						
			_	_	-					
			E	_	<u> </u>					
05.5	24.4		L.	_	4					
95.5	34.4									
				_]	Shale, dark gray			4000/	000/
98.8	3.3		_	_	1				100%	60%
100.0	1.2			100		Coal, with shale				
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_	-					
		:=:=:=:=:=:=		_						
		:=:=:=:=:=		_						
			_	_	1					
		:=:=:=:=:=								
			_	_	-					
		:=:=:=:=:=:=		110						
			_	_	-	Sandy Shale, gray				
		:=:=:=:=:=		_					100%	87%
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_							
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :-:-:-:-:-:	_	_	-					
				_						
		:=:=:=:=:=:= ::-:-:-:-		120	-					
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	1					
123.0	23.0	(=(=(=(=(=								
			_		-					
				_	4					
			E	_	1				100%	100%
				120	4					
				130	1	Shale, gray				
		=======		_	4	onale, gray				
			E	_	1					
				_						
			_	_	1					
400.0	40.0									
139.0	16.0			140						
		========								
			_	_					100%	90%
		========		_		Shale, dark gray				
			_	_	1	5 /				
				_	1					
149.0	10.0		_	_	1					
				150	Shale, dark d	ray, with fossils (B	rush Creek)			
151.2	2.2				, y	,	,			
				_	[
			<u> </u>	_	-					
				_	1	Shale, dark gray			100%	100%
			_	_	-					
			E	_]					
			1	160	Ì			l		

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	ILL LOG			0721-S164 Page 3 of 6
025 OME 10/01									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2033			Measured	d Static Wate	r I avale		Method Drilling:	Continuous Core
									Date Drilled:	10/5/2020-10/7/2020
Surface Elev.	1870	0.00			Date	Depth	Elevation		Drilled By:	RES
		_			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	il			ND				Municipality: County, State:	Donegal
Method:	GF	es							Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u>.</u>	Bottom	Во	ottom	SWL measured b	ov:		-	Laboratory:	Geochemical
		Depth		vation				-	Northing:	291393.923
Coal Sea	am ID	(ft)		MSL)	=,				Easting:	1507118.398
Lower Freeport		312.5		557.5					Grid Coordinates:	
Lower Freeport Middle Kittanning		320.6 385.7		549.4 484.3						
Lower Kittanning		451.6		418.4						
Depth	Thickness	Graphic	90	ale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		eet)		entrations, pyrite,		Conditions	/ Recovery	70 KQD
			_	_	-				100%	100%
			_	_					10070	10070
				_						
			_	_	-					
				_]					
			<u></u>		-					
			1.	70	j	Shale dark arou				
				_]	Shale, dark gray			4000/	000/
				_	1				100%	93%
				_]					
			<u></u>	_						
			_	_						
				_						
			18	80						
182.0	30.8			_						
		#########		_						
		######################################	_	_		01				
		#########				Clay, gray				
188.0	6.0	######################################	_	_	-				100%	50%
100.0	0.0									
			19	90						
			_	_	1					
				_						
			_	_						
				_						
			_	_						
				_						
			20	00						
			_	_						
									100%	100%
				_	1	Shale, gray				
				_]	-, 5 =)				
			<u> </u>	_						
				_	j					
			2	10						
				_	1					
				_]					
				_	1					
				_	1					
				_	-				83%	80%
				_]				0070	0070
204.0	00.0	=======	22	20						
221.0 222.5	33.0 1.5					Shale, dark gray		1		
				_						
				_		Coal, with shale				
226.2	3.7				1					
			_	_	1					
				_	1					
			23	30						
			_	_	1					
]	Shale, gray			93%	93%
			<u> </u>	_	1					
				_]					
			<u> </u>	_	-					
				_	1					
			24	40				1		

JLB- CME - 10/01					7.1A GEO	LOGIC DE	RILL LOG			0721-S164 Page 4 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2033	-		Measure	d Static Wat	er Levels		Method Drilling: Date Drilled:	Continuous Core 10/5/2020-10/7/2020
Surface Elev.	1870	0.00			Date	Depth	Elevation		Drilled By:	RES
-			-		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_		ND				Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GF	Bottom	-	Bottom	SWL measured b	hv:		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation		-,.		-	Northing:	291393.923
Coal Sea	am ID	(ft)		(MSL)	<u>-</u>				Easting:	1507118.398
Lower Freeport Lower Freeport		312.5 320.6		1557.5 1549.4					Grid Coordinates:	
Middle Kittanning		385.7		1484.3						
Lower Kittanning		451.6		1418.4	Lithologic Desc	wintian, vaalstu	na waatharina			
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	sils, carbonate, entrations, pyrit	minerals,	Water Conditions	% Recovery	% RQD
			_	-	-					
				_						
			-	_	-					
				_						
			<u> </u>	_					100%	87%
			<u> </u>	-		Shale, gray			100 /6	07 /6
				250						
			<u> </u>	_						
				_]					
			\vdash		-]		
				_	1					
257.5	31.3	=======								
				_	Shale, dark g	ray, with coal (Up	oper Freeport)			
260.0	2.5	#########		260						
262.1	2.1	#########		_		Clay, gray				
			-	_	-				100%	73%
				_						
			_	_						
				_						
				270						
				270	1					
				_						
			-	_						
]					
			<u> </u>	_	1					
		=======		_					100%	93%
			-	280						
				_		Shale, gray				
			-	_	-					
			-	_	-					
				_						
			\vdash	_	1					
				290						
			\vdash	_	1					
				_	1]	100%	97%
			\vdash	_	1					
				_				1		
			<u> </u>	_						
299.2	37.1			_						
300.2	1.0			300	Shale, dark g	ray, with coal (Lo	wer Freeport)			
				_		Shale, gray				
303.2	3.0		_							
				_	Shale, daark	gray, with Lower	Freeport coal			
305.8	2.6	=======								
				_	1				87%	73%
		=======		046]	Shale, dark gray]		
311.4	5.6			310	1					
312.5	1.1				Lower F	Freeport Coal, wi	th shale]		
			<u> </u>		1					
				_]	Shale, dark gray				
			\vdash	_	-	, g.uy				
318.9	6.4								100%	77%
320.6	17		<u> </u>	320	Lower F	Freeport Coal, wi	th shale]		

JLB- CME -	- 10/01					7.1A GEO	LOGIC DRI	ILL LOG			0721-S164 Page 5 of 6
										Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole N	о.	DH-2	2033			Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface	o Elov	1870				Date	Depth	Elevation		Date Drilled:	10/5/2020-10/7/2020
Surfac	e Elev.	1070	J.00			Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Survey	ed by:	LC	т			ND		<u> </u>		Municipality:	Donegal
Survey										County, State:	Westmoreland, PA
Method	d:	GF	PS Bottom		Bottom	SWL measured b			-	Quadrangle:	Stahlstown, PA
			Depth		Elevation	SWL measured t	Jy.		-	Laboratory: Northing:	Geochemical 291393.923
	Coal Sea	am ID	(ft)		(MSL)					Easting:	1507118.398
Lower F			312.5		1557.5					Grid Coordinates:	
Lower F Middle F	Kittanning		320.6 385.7		1549.4 1484.3						
	ittanning		451.6		1418.4						
De	epth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite,	etc.	Conditions		
					_						
				_	_	-					
					_					100%	77%
				_	_	Shale	e, gray, with claysh	ale		10070	
					_						
			=======		000						
					330]					
33	31.6	11.0									
			:=:=:=:=:=:= :=:=:=:=:=:=		_	<u> </u>					
			(=(=(=(=(=		_	-					
					_	<u> </u>					
			:=:=:=:=:=:=		_					100%	100%
					340						
			:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=	_		-					
				_	_	1					
			:=:=:=:=:=		_						
				_	_		Sandy Shale, gray				
			:=:=:=:=:=		_	Ì	sandy Snale, gray				
				_	_						
			:=:=:=:=:=		350						
					_						
			:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	-				100%	100%
			:=:=:=:=:=:=		_						
			:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	-					
			:=:=:=:=:=:=		_						
36	60.3	28.7	:=:=:=:=:=:= :=:=:=:=:=:=	_	360						
30	50.5	20.1	========		300						
				_	_	-					
					_						
				_		1					
]				4000/	222
				_		1				100%	90%
			=======		370						
					_	1	Shale, dark gray				
			=======		_						
						1					
					_						
				\vdash	_	1					
			=======								
					380						
38	32.5	22.2								100%	73%
					_	Mic	ddle Kittanning Coa	al		10078	7370
38	35.7	3.2	:=:=:=:=:=:=								
			(=(=(=(=(=		_	1					
			:=:=:=:=:=:= :=:=:=:=:=:=:=	_		1					
			(=(=(=(=(=		390	s	Sandy Shale, gray				
			:=:=:=:=:=:= :=:=:=:=:=:=	_		1					
			(=(=(=(=(=		_	1					
39	95.0	9.3				1				4000/	030/
			000000000000		_					100%	93%
			00000000000 00000000000	E	_	Limestone,	gray (Middle Kittar	nning LS)			
			000000000000		400	-					
			00000000000		400	1			1		

				714 050	I OCIC DB				
JLB- CME - 10/01				7.1A GEO	LOGIC DR	ILL LUG		On anotice Name :	0721-S164 Page 6 of 6
Hole No.	DH-2	0033						Operation Name : Method Drilling:	Rustic Ridge #1 Mine-Expansion Continuous Core
noie No.	<i>υ</i> п-2	2033	•	Measured	d Static Wate	r Levels		Date Drilled:	10/5/2020-10/7/2020
Surface Elev.	1870	00		Date	Depth	Elevation		Drilled By:	RES
Curiaco Elevi	107			Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т		ND		(- /		Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GF	es						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	oy:		-	Laboratory:	Geochemical
		Depth	Elevation					Northing:	291393.923
Coal Sea	ım ID	(ft)	(MSL)	=				Easting:	1507118.398
Lower Freeport Lower Freeport		312.5 320.6	1557.5 1549.4					Grid Coordinates:	
Middle Kittanning		385.7	1484.3						
Lower Kittanning		451.6	1418.4						
					ription: rock typ			0/	av pop
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, n entrations, pyrite,		Water Conditions	% Recovery	% RQD
401.0	6.0	000000000000	` ′		gray (Middle Kitta				
		:=:=:=:=:=:=	<u> </u>	_				100%	93%
				_				100%	93%
		:=:=:=:=:=:=		Sandy Sh	hale, gray, with sa	ndstone			
		(=(=(=(=(=		Januy Si	naie, gray, with sa	idstorie			
			⊢ –	4					
409.0	8.0		- -	1					
410.2	1.2	=======	410		Shale, dark gray				
411.0	0.8			-	Shale, gray		4		
412.0	1.0	:=:=:=:=:=:=:=			Shale, dark gray		1	100%	100%
		:=:=:=:=:=:=]					
		:=:=:=:=:=:=							
				4					
		:=:=:=:=:=:=		1					
		:=:=:=:=:=							
		:=:=:=:=:=:=	420	Sandy Sh	hale, gray, with sa	ndstone			
			- -	1					
		:=:=:=:=:=:=							
		:=:=:=:=:=	<u> </u>	4					
			- -	-					
		:=:=:=:=:=							
428.2	16.2	:=:=:=:=:=:=					1	100%	100%
			430						
			<u> </u>						
			- -	<u>-</u>					
			<u> </u>	_					
			- -	1					
					gray, c. grained to	f. grained,			
			440	_	w/ sh inclusions				
			440					100%	100%
				4					
			<u> </u>	4					
448.2	20.0		- -	1					
448.5	0.3			Lower Kittannin	g - Shale, black, w	ith coal bands		100%	27%
			450	Lower	Kittanning - Coal,	briaht			
451.6	3.1		<u> </u>			. g			
		#########				· · · · · · · · · · · · · · · · · · ·			
		######################################	- -	1					
		#########		1					
		##########		Clays	hale, gray to dark	gray			
		######################################	<u> </u>	1					
		##########	460						
404.0	40.0	#########	_						
461.6	10.0	#########					-		
				Bottom of Ho	ole DH 2033 Depth	453.5 feet			
			<u> </u>	4					
			- -	-					
]					
			470	4					
			470	†					
			<u> </u>	4					
			- -	1					
			<u> </u>	4					
			- -	1					
			400	1			1	1	Ī

JLB- CME - 11/29/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 1 of 6
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	036A	-	Measure	d Static Water L	_evels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	180	5.04		Date	Depth	Elevation		Drilled By:	11/5/2020-11/13/2020 RES
Currace Liev.	1000		-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т		ND	` '			Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	Bottom	Bottom	SWL measured b	bv:		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation				-	Northing:	289808.785
Coal Sea	am ID	(ft)	(MSL)					Easting:	1510086.491
Mahoning Upper Freeport		244.00 288.00	1561.0 1517.0	Middle Kittanning	408.50	1396.5		Grid Coordinates:	
Lower Freeport		344.00	1461.0	Lower Kittanning	478.20	1326.8			
Lower Freeport		349.50	1455.5	1		0.1			
Depth	Thickness	Graphic	Scale		cription: rock type, was sils, carbonate, mine		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	entrations, pyrite, etc).	Conditions		
			<u> </u>						
			<u> </u>						
				Sha	le, brown, weathered				
			⊑ :						
			10						
			-						
15.2	15.2								
			-						
			20	_					
			<u> </u>					100%	7%
				Sh	ale, brown and gray				
			<u> </u>						
			<u> </u>						
			30						
30.7	15.5								
			_						
			_ :						
			-						
			_ :					100%	33%
					Shale, gray			10070	0070
			40						
			<u> </u>						
45.0	14.3		-						
			-	-					
			-	-				100%	80%
			-	-	Cholo dark a				
					Shale, dark gray				
			-	_					
		========	60						
			-						
07.0	00.0		□ :						
67.0 67.5	22.0 0.5	=======			Coal, with shale]	100%	80%
			70		<u></u>				
			10						
			<u> </u>	Shale	e, gray, with clayshale				
75.5	8.0						-		
			<u> </u>		Shale, gray]	100%	83%
			- 00	-1			1		i

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	L LOG			0721-S164 Page 2 of 6
	211.0								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-20	036A			Measured	Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	1805	5.04			Date	Depth	Elevation		Drilled By:	11/5/2020-11/13/2020 RES
					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	Т			ND				Municipality:	Donegal
Survey	0.5								County, State:	Westmoreland, PA
Method:	GF	Bottom		Bottom	SWL measured b	v.		-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	OVIE modeared b	_		-	Northing:	289808.785
Coal Sea	am ID	(ft)		(MSL)	=,				Easting:	1510086.491
Mahoning Upper Freeport		244.00 288.00		1561.0 1517.0	Middle Kittanning	408.50	1396.5		Grid Coordinates:	
Lower Freeport		344.00		1461.0	Lower Kittanning	478.20	1326.8			
Lower Freeport		349.50		1455.5	Lishalania Dagan	iption: rock type,	weath aring			
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, foss	sils, carbonate, mi ntrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD
			_	_	-					
				_						
			_	_					4000/	020/
		========							100%	83%
			_	_	-					
				90	1					
				_]	0				
			—	_	-	Shale, gray				
		========		_]					
			_		-					
				_					100%	80%
				100						
				100	1					
				_						
			_	_						
105.0	29.5			_						
			_	_						
		=======		_		01-1				
			_	110	1	Shale, red				
		=======								
112.0	7.0								100%	47%
				_						
			_	_						
				_	Shale	, gray, with claysha	le			
			_	_	-					
120.0	8.0			120						
			_	_	-					
				_						
			_	_	-					
		=======		_]					
			_	_	-				100%	83%
		=======		_]					
				130	-]		
		=======		_	Shale,	gray, with sandy sh	ale			
			—	_	-					
				_	1					
		=========	H	_	-]		
				_]					
			—	140	-					
				140						
143.0	23.0		—	_	-				100%	97%
140.0	20.0			_					10070	0.70
		=========	H	_	-]		
				_]					
			<u> </u>	_	-					
				150]					
		========	\vdash	_		Shale, dark gray				
				_	<u>'</u>	a.o, aan gray				
			Ē	_	-					
			E	-	1				100%	93%
				_						
			H	_	1					
				160	1					

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 3 of 6
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	036A		M	l Ctatia Watan	Laurala		Method Drilling:	Continuous Core
			-	weasured	d Static Water	Leveis		Date Drilled:	11/5/2020-11/13/2020
Surface Elev.	180	5.04		Date	Depth	Elevation		Drilled By:	RES
			-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	`Т		ND	(11)	(IIIOL)	110100		
		<i>,</i> 1	-	ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF		_				-	Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	y:		_	Laboratory:	Geochemical
		Depth	Elevation					Northing:	289808.785
Coal Sea	am ID	(ft)	(MSL)					Easting:	1510086.491
Mahoning		244.00	1561.0	Middle Kittanning	408.50	1396.5		Grid Coordinates:	
Upper Freeport		288.00	1517.0	Lower Kittanning	478.20	1326.8			
Lower Freeport		344.00	1461.0	J					
Lower Freeport		349.50	1455.5						
					ription: rock type, v				
Depth	Thickness	Graphic	Scale		sils, carbonate, min		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	entrations, pyrite, et	c.	Conditions		
400.0	40.0	=======		4	Shale, dark gray				
162.0 163.3	19.0			Limeetone ara	y, with fossils (Brush	Crook I S)	_	100%	93%
103.3	1.3	000000000000		Limestone, gra	y, with lossils (Drush	Oreek Loj	-	100 /8	9376
				-					
			_	1					
			-	1					
			_	1					
			_	1					
			170	1					
		=======							
		=======	L =	1				100%	100%
		=======	<u> </u>						
			_						
		=======	<u> </u>	4					
				_	Shale, dark gray				
		=======		_	Shale, dark gray				
		=======		-					
			180	-					
			-	1					
			-	1					
			_	1					
		========	_	1					
		=======		1					
		========	_					100%	80%
		=======							
		=======	190						
		=======	<u> </u>	4					
192.3	29.0						_		
		=======	<u> </u>	-					
				-					
			-	1					
			_						
			_	Shale	e, gray, with clayshale	е			
			200						
		=======							
								40004	9004
203.5	11.2	=======						100%	80%
			<u> </u>	-					
				-					
		=========	 	1					
			 	1					
		========		1					
			210						
				1					
		=======	<u> </u>	_					
		=======	⊢ –	4					
			⊢ –	-					
			⊢ –	4					
			⊢ –	1				100%	100%
			-	1				10070	10070
			220	1					
		========	-	01-1-					
			_	Snale,	gray, with sandy sha	ile			
			L =	1					
			<u> </u>	4					
			<u> </u>	4					
		=======	⊢ -	4					
		=======	⊢ –	-					
			220	1					
			230	1					
			⊢ -	1					
			- -	†				100%	93%
		=========	 	1				1.00%	3575
				1					
		========		1					
		=======							
239.0	35.5		_	1			1		
	i		240	I Maho	oning Coal, with shale	9	1	İ	İ

JLB- CME - 10/01					7.1A GEOL	OGIC DRIL	L LOG			0721-S164 Page 4 of 6
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-20	036A			Measured	Static Water I	_evels		Method Drilling:	Continuous Core
Curtasa Flau	4007	- 04							Date Drilled:	11/5/2020-11/13/2020
Surface Elev.	1805	5.04			Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т			ND	(1.7)	(IIIOL)	110100	Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF							•	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured by	/ :		•	Laboratory: Northing:	Geochemical
Coal Se	am ID	(ft)		(MSL)					Easting:	289808.785 1510086.491
Mahoning		244.00		1561.0	Middle Kittanning	408.50	1396.5		Grid Coordinates:	
Upper Freeport Lower Freeport		288.00 344.00		1517.0 1461.0	Lower Kittanning	478.20	1326.8			
Lower Freeport		349.50		1455.5						
Benth	Thiston	0		0		ption: rock type, v		14/	% Recovery	% RQD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ils, carbonate, mine strations, pyrite, etc		Water Conditions	/₀ Necovery	/6 KQD
				_						
				_	Mahor	ning Coal, with shale	1			
244.0	5.0									
			_	_	1					
				_						
			_	_	-				100%	57%
				250	<u> </u>					
			_	_						
				_	1					
			H.	_	4					
]			_]					
				_						
				_	-					
				260						
			_	_						
				_		Shale, gray			100%	100%
			_	_	1					
				_						
			_	_	+					
				_						
				270	1					
				_						
			_	_	1					
				_						
			_	_	1					
									100%	93%
			_	280	-					
281.0	37.0									
			_	_	s	andstone, gray				
284.5	3.5									
				_	s	Shale, dark gray				
286.8	2.3				Upper Er	eeport Coal, with sh	ale			
288.0	1.2				орреі Гі	Shale, gray				
290.2	2.2			290	1	. 3 . 7				
]			_	1				4000/	222/
			_	_	1				100%	80%
				_	Shale. o	gray, with sandy sha	le			
			_	_	1	, . , , ,				
				_						
300.2	10.0		_	300	-					
		=======	_	_						
					<u> </u>					
				_	1					
			Н	_	<u> </u>					
				_					1000/	00%
			—	_	†				100%	90%
		=======		310		Shale, gray				
			H	_	1	•				
]	=======		_						
				_	<u> </u>					
			—	_	†				100%	100%
		=======		220						
	1		1	320	i .					1

JLB- CME - 10/01	7.1A GEOLOGIC DRILL LOG 0721-S164 Page 5 of 6											
								Operation Name :	Rustic Ridge #1 Mine-Expansion			
Hole No.	DH-20	036A	<u> </u>	Measured	l Static Water L	_evels		Method Drilling:	Continuous Core			
Surface Floy	1805	. na		Date	Depth	Elevation		Date Drilled:	11/5/2020-11/13/2020			
Surface Elev.	1003	0.04		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack			
Surveyed by:	LC	т		ND	(/	(Municipality:	Donegal			
Survey			•					County, State:	Westmoreland, PA			
Method:	GF						•	Quadrangle:	Stahlstown, PA			
		Bottom Depth	Bottom Elevation	SWL measured b			•	Laboratory: Northing:	Geochemical 289808.785			
Coal Sea	am ID	(ft)	(MSL)					Easting:	1510086.491			
Mahoning		244.00	1561.0	Middle Kittanning	408.50	1396.5		Grid Coordinates:				
Upper Freeport Lower Freeport		288.00 344.00	1517.0 1461.0	Lower Kittanning	478.20	1326.8						
Lower Freeport		349.50	1455.5									
Depth	Thickness	Graphic	Scale		ription: rock type, wasils, carbonate, mine		Water	% Recovery	% RQD			
(ft)	(ft)	Log	(feet)		ntrations, pyrite, etc		Conditions	/# Nedovery	70 KQD			
				-								
			_									
			- -	-				100%	100%			
				-								
			330		Shale, gray							
				4								
				1								
			<u> </u>	-								
			<u> </u>	₫								
		=======						100%	93%			
339.5	39.3			-				100 /6	9376			
			340									
			- -	-	Shale, dark gray							
343.6	4.1					-1-						
344.0	0.4	========		Lower F	reeport Coal, with sh	ale						
]	Shale, dark gray							
347.5	3.5	=======										
349.5	2.0			Lower F	reeport Coal, with sh	ale						
		######################################	350	4								
		##########			Clay, gray							
353.0	3.5	######### 						100%	60%			
				-								
			<u> </u>									
			360	_								
			300									
		=======		-								
			<u> </u>	-	Shale, gray							
			<u> </u>	_	Share, gray							
			_ =	7				100%	93%			
			370	₫								
				-								
			<u> </u>	Ⅎ								
		=======	_ =	7								
			<u> </u>	₫								
070 5	05.5	=======	_ =]								
378.5	25.5											
			380									
			- -	1								
			_ =	7				100%	100%			
			- -	1								
]								
			- -	1								
				Shale. d	ark gray, with sandsto	one						
			390	1								
				1								
			- -	1								
]				100%	93%			
			- -	-								
				1								
			400	1								

JLB- CME - 10/01				7.1A GEO	LOGIC DRILI	L LOG			0721-S164 Page 6 of 6
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-20	036A		Measured	Static Water L	.evels		Method Drilling:	Continuous Core
Surface Elev	1805	: 04		Date	Depth	Elevation		Date Drilled:	11/5/2020-11/13/2020
Surface Elev.	1000	0.04		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т		ND	()	()		Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GP		.	01111			•	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured by	y:		•	Laboratory: Northing:	Geochemical 289808.785
Coal Sea	am ID	(ft)	(MSL)					Easting:	1510086.491
Mahoning		244.00	1561.0	Middle Kittanning	408.50	1396.5		Grid Coordinates:	
Upper Freeport Lower Freeport		288.00 344.00	1517.0 1461.0	Lower Kittanning	478.20	1326.8			
Lower Freeport		349.50	1455.5						
Depth	Thickness	Graphic	Scale		iption: rock type, w ils, carbonate, mine		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		ntrations, pyrite, etc		Conditions	,	77.14-
				-					
				Shale da	rk gray, with sandsto	nne		100%	93%
				- Orialo, do	an gray, mar canacic	,,,,			
406.0	27.5								
408.5	2.5			Mide	dle Kittanning Coal				
400.3	2.5	:=:=:=:=:=							
		:=:=:=:=:=:=	410	1					
				Sand	dy Shale, dark gray				
			_ =	Jane	_, c.i.a.o, uain yiay			100%	80%
		:=:=:=:=:=:= :=:=:=:=:=:=		1					
416.3	8.0	:=:=:=:=:=		1					
		00000000000000000]					
		00000000000 000000000000	420	Limestone, g	gray (Middle Kittannir	ng LS)			
421.3	5.0	000000000000	120						
				1					
				1					
				+					
					Shale, gray			4000/	4000/
				1				100%	100%
			430	1					
432.7	11.4			+					
433.5	0.8			5	Shale, dark gray				
				-					
			_ =	1					
			440	4					
				Shale, (gray, with sandy shal	e		100%	100%
				1					
				1					
450.5	17.0		450						
				Shale dark o	ray, with sandstone s	streaks			
454.4	3.9		_ =	S. Idio, dairk y	, , candotorie :			100%	100%
.07	5.5								
				1					
				1				100%	100%
			460	1					
				Condatona liaht as	ou with interlegal and	aandii ahala		100%	100%
				Janusione, light gi	ay, with interbedded	Januy Stale			
			<u> </u>	1					
			_ =	1				100%	100%
			_ =	1				10070	10070
			470	-					
473.0	18.6				alada a sa sa sa sa sa sa sa sa sa sa sa sa				
473.8 473.9	0.8	######################################			e, dark gray to black systone, dark gray				
474.4	0.5			Shale, I	black, with boney coa			100%	41%
474.55	0.15			1	ing - Boney coal, wit				
478.20	3.65		_	Lowerk	Shale grav	111			
479.2	1.0		480	Bottom of Hole	Shale, gray DH 2036A Depth 47	79.2 feet			

JLB- CME - 11/29/01	7.1A GEOLOGIC DRILL LOG											
									Operation Name :	Rustic Ridge #1 Mine-Expansion		
Hole No.	DH-2	037	-		Measured	Static Water	Levels		Method Drilling:	Continuous		
Cumface Flass	474	. 04							Date Drilled:	11/18/2020-11/24/2020		
Surface Elev.	1744	1.01	-		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	RES D. Mosk		
Surveyed by:	LC	т			ND	(11)	(INOL)	140103	Municipality:	P. Mack Donegal		
Survey			-						County, State:	Westmoreland, PA		
Method:	GF	S	_					_	Quadrangle:	Stahlstown, PA		
		Bottom		Bottom	SWL measured by	y:		_	Laboratory:	Geochemical		
		Depth		Elevation					Northing:	290814.942		
Coal Sea Mahoning	am ID	(ft) 138.4		(MSL) 1605.6	Upper Kittanning	252.3	1491.7		Easting: Grid Coordinates:	1507903.156		
Upper Freeport		170.6		1573.4	Middle Kittanning	276.3	1467.7		Grid Coordinates.			
Lower Freeport		215.2		1528.8	Lower Kittanning	341.6	1402.4					
Lower Freeport		218.8		1525.2	Lithologic Descri	iption: rock type,	weathering					
Depth	Thickness	Graphic		Scale	color, foss	ils, carbonate, mir	nerals,	Water	% Recovery	% RQD		
(ft)	(ft)	Log ###############		(feet)	concer	ntrations, pyrite, et	IC.	Conditions				
		##########		_								
		######################################	<u> </u>	_								
		##########	_	_	1							
		#########		_								
		######################################	\vdash	_								
		#########		_								
		######################################		10	-							
		##########	<u> </u>	_	1							
		##########		_	Clay, brown,	sandy, with sandsto	ne blebs					
		########## ###########################	\vdash	_	1							
		##########		_]							
		######################################	—	_	-							
		##########	_	_	1							
		##########		20								
		######################################	—	_								
		#########		_								
05.0	05.0	######################################	_	_								
25.2 26.2	25.2 1.0				Sa	andstone, brown						
				_					4000/	00/		
			—	_	1				100%	0%		
				30								
			<u> </u>	_	Shale	e, brown, weathered	ı					
				_	-							
				_								
35.7	9.5		H	_								
				_					020/	F70/		
			—	_		Shale, gray			93%	57%		
				40								
40.7	5.0											
				_								
			<u> </u>		-							
			E	_	1							
			\vdash	_	S	Shale, dark gray						
				50	1							
			\vdash	_	1							
				_	1				100%	100%		
54.8	14.1		Ŀ.	_	4							
56.1	1.3	00000000000			Limestone, gray	, with fossils (Brush	Creek LS)					
			\vdash									
			\vdash	_	†							
				60								
			\vdash	_	1							
				_]							
			—	_	-							
				_	1							
			F	_	-				100%	100%		
			\vdash	_	· S	Shale, dark gray			10070	100%		
		========		70								
			—	_	1							
				_	1							
			Ŀ.	_	4							
			H	_	1							
		=======		_					4000/	000/		
			H	_	1				100%	83%		
			\vdash	80	1			Ì				

JLB- CME - 10/01					7.1A GEO	0721-S164 Page 2 of 5				
	DI C								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	:037			Measured	d Static Water	r Levels		Method Drilling: Date Drilled:	Continuous 11/18/2020-11/24/2020
Surface Elev.	1744	l.01			Date	Depth	Elevation		Drilled By:	RES
•			•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal Westmoreland, PA
Survey Method:	GF	s							County, State: Quadrangle:	Stahlstown, PA
•		Bottom		Bottom	SWL measured b	y:		-	Laboratory:	Geochemical
Coal Soc	am ID	Depth		Elevation (MSL)					Northing:	290814.942
Coal Sea Mahoning	aili ID	(ft) 138.4		1605.6	Upper Kittanning	252.3	1491.7		Easting: Grid Coordinates:	1507903.156
Upper Freeport Lower Freeport		170.6 215.2		1573.4 1528.8	Middle Kittanning	276.3	1467.7			
Lower Freeport		218.8		1525.2	Lower Kittanning	341.6	1402.4			
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
			_	_	-					
				_	:	Shale, dark gray				
				_	<u> </u>				100%	83%
86.1	30.0							1	10070	0370
				_						
			_	90	4					
				_	Shale	e, gray, with claysha	ale			
			H	_	1					
05.0	0.4	=======		_						
95.2	9.1							1		
			_	_	-				100%	83%
				_					10070	3070
				100	1					
		=======		_						
			_	_	1					
				_	-					
				_						
			_	_	+					
		=======		110						
				_	Shale	gray, with sandy sh	hale			
				_	Silale,	gray, with sandy si	naic		100%	100%
				_						
		=======================================	_	_	1					
		=======		_						
				120	<u> </u>					
				_						
				_						
		=======================================	_	_	1					
		=======		_	1					
			E	_	1				100%	87%
129.0	33.8			130	1			+		
] .	Cholo dort are:				
			E	_	<u> </u>	Shale, dark gray				
133.9	4.9							-		
				_	1	Mahoning Coal				
138.4	4.5		H	_	-					
				440						
				140						
			F	_	4				100%	70%
				_					10070	7070
			\vdash	_	1					
				_	1					
			E	_	1	Shale, gray				
		========	_	150	4	onaio, gray				
				_	1					
			_	_	1					
				_	1				100%	80%
				_	<u> </u>					
				_	1					
			—	160	1					I

JLB- CME - 10/01					7.1A GEO	LL LOG	0721-S164 Page 3 of 5				
Hole No.	DH-2	0037							Operation Name : Method Drilling:	Rustic Ridge #1 Mine-Expansion Continuous	
noie No.	DH-2	.031			Measured	d Static Water	Levels		Date Drilled:	11/18/2020-11/24/2020	
Surface Elev.	1744	1.01			Date	Depth	Elevation		Drilled By:	RES	
Cumrayad by		ът.			Measured ND	(ft)	(MSL)	Notes	Logged By:	P. Mack	
Surveyed by: Survey	LC	•1			ND				Municipality: County, State:	Donegal Westmoreland, PA	
Method:	GP	rs						-	Quadrangle:	Stahlstown, PA	
		Bottom		Bottom	SWL measured b	y: _		-	Laboratory:	Geochemical	
Coal Sea	am ID	Depth (ft)		Elevation (MSL)					Northing: Easting:	290814.942 1507903.156	
Mahoning		138.4		1605.6	Upper Kittanning	252.3	1491.7		Grid Coordinates:		
Upper Freeport Lower Freeport		170.6 215.2		1573.4 1528.8	Middle Kittanning Lower Kittanning	276.3 341.6	1467.7 1402.4				
Lower Freeport		218.8		1525.2							
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, foss	ription: rock type, sils, carbonate, mi entrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD	
			_	_							
				_	1	Shale, gray			100%	80%	
			_	_	+						
166.5	28.1										
				_	Shal	le, dark gray, broke	n				
169.2 170.6	2.7 1.4			170	Un	oper Freeport Coal					
170.0	1.4										
			_	_	1				100%	67%	
				_							
				_	<u> </u>						
			_	_	-						
				_							
				180	1						
				_							
				<u> </u>							
			_	_	-						
				_					4000	4000/	
			_	_	Chala	aray with analysah	· ala		100%	100%	
		=======		190	Snaie,	gray, with sandy sh	naie				
				_	<u> </u>						
			_	_	-						
				_							
			_	_	-						
				_	1						
				200							
			_	_	+						
		=======		_					100%	87%	
				<u> </u>							
			F	_	4						
208.2	37.6										
		========	Н	210	<u> </u>						
				_	•	Shale, dark gray					
213.0	4.8				1						
215.2	2.2				Lower F	reeport Coal, with s	shale				
217.2	2.0				<u>-</u>	Shale, dark gray					
218.8	1.6		_	_	Lo	wer Freeport Coal			100%	47%	
210.0	1.0			220							
			_	_	+						
		=======		_							
				_	Shale,	gray, with sandy sh	nale				
			Ē	_	4						
				_	1						
230.0	11.0	========	_	230	1						
		:=:=:=:=:=:=									
		:=:=:=:=:=:= :=:=:=:=:=:=:=	Н	_	<u> </u>				100%	100%	
		:=:=:=:=:=:=		_	7						
				_	Sandy Sh	nale, gray, with sand	dstone				
		:=:=:=:=:=:= :=:=:=:=:=:=:=	Ë	_	4						
		:=:=:=:=:=:=:=:=:=:=		240	1						

JLB- CME - 10/01				7.1A GEOLOGIC DRILL LOG			0721-S164 Page 4 of 5
						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2037		Managerad Static Water Layela		Method Drilling:	Continuous
			•	Measured Static Water Levels		Date Drilled:	11/18/2020-11/24/2020
Surface Elev.	174	4.01		Date Depth Elevation		Drilled By:	RES
				Measured (ft) (MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T.		ND		Municipality:	Donegal
Survey			•			County, State:	Westmoreland, PA
Method:	GF	99				Quadrangle:	Stahlstown, PA
motriou.		Bottom	Bottom	SWL measured by:	=	Laboratory:	Geochemical
				SWL measured by.	-	=	
010-	ID	Depth	Elevation			Northing:	290814.942
Coal Sea	am ID	(ft)	(MSL)			Easting:	1507903.156
Mahoning		138.4	1605.6	Upper Kittanning 252.3 1491.7		Grid Coordinates:	
Upper Freeport Lower Freeport		170.6 215.2	1573.4 1528.8	Middle Kittanning 276.3 1467.7 Lower Kittanning 341.6 1402.4			
Lower Freeport		218.8	1525.2	Lower Kittarining 541.0 1402.4			
zowo: i roopoit		2.0.0	1020.2	Lithologic Description: rock type, weathering,			
Depth	Thickness	Graphic	Scale	color, fossils, carbonate, minerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	concentrations, pyrite, etc.	Conditions		
241.0	11.0	:=:=:=:=:=:=		Sandy Shale, gray, with sandstone			
		=======	_				
			_				
		=======	<u> </u>	-			
				Shale, dark gray, with sandstone			
		========	_	1		100%	77%
		========		1			
250.0	9.0	========	250				
			_	Upper Kittanning Coal, with shale			
252.3	2.3			-	1		
		:=:=:=:=:=:=	<u> </u>	-			
			- -	-			
		:=:=:=:=:=:=		Sandy Shale, gray			
		:=:=:=:=:=:=	_	1			
258.0	5.7	:=:=:=:=:=:=					
			260				
		========					
			<u> </u>	-		100%	100%
				-		10078	100%
				†			
			_	Chala dade aray			
				Shale, dark gray			
		========	<u> </u>				
			_				
			270	4			
				-			
			-	†			
274.2	16.2						
				Middle Kittanning Coal	1		
276.3	2.1			Whate Ritter Hing Godi			
			_			4000/	770/
			<u> </u>	-		100%	77%
			280	Shale, gray, with sandstone			
			200	, gy,			
			_				
283.5	7.2						
			<u> </u>	Shale, dark gray			
285.2	1.7				1		
		00000000000	- -	1			
		00000000000 00000000000	-	Limestone, gray (Middle Kittanning LS)			
289.0	3.8	00000000000		1			
		=======	290]		
			<u> </u>	-			
		=======	<u> </u>	4		1000/	020/
			⊢ –	Shale, gray	I	100%	93%
		=========	-	1	I		
]	I		
296.5	7.5				1		
297.6	1.1	=======		Shale, dark gray			
		=======					
		=======	300	Shale, gray			
				Onaic, gray			
303.2	5.6		- -	1			
304.2	1.0			Shale, dark gray	1		
		=======					
		=======			1		
		=======	<u> </u>	-	1	1000/	1000/
		=======	<u> </u>	Shale, gray, with sandy shale		100%	100%
			240	1			
			310	1			
312.2	8.0		-	1			
- · - · -		:=:=:=:=:=			1		
		:=:=:=:=:=]			
		:=:=:=:=:=	_ =	Sandy Shale, dark gray, with sandstone			
		:=:=:=:=:=	<u> </u>	, , , , , , , , , , , , , , , , , , ,			
240.2	6.4	:=:=:=:=:=:=	⊢ –	-		100%	100%
318.3	6.1				1	100%	100%
		=.=.= !=:=:=:=:=:-:-	320	Sandy Shale, dark gray, with interbedded sandstone	I		

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 5 of 5
OLD CINE 10/01								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	037		Moseuros	d Static Water I	ovole		Method Drilling:	Continuous
								Date Drilled:	11/18/2020-11/24/2020
Surface Elev.	1744	.01		Date	Depth	Elevation		Drilled By:	RES
		_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	1		ND				Municipality:	Donegal
Survey Method:	GP	9						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u> </u>	Bottom	Bottom	SWL measured b	ov:		-	Laboratory:	Geochemical
		Depth	Elevation		<i>-</i>		-	Northing:	290814.942
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1507903.156
Mahoning		138.4	1605.6	Upper Kittanning	252.3	1491.7		Grid Coordinates:	
Upper Freeport Lower Freeport		170.6 215.2	1573.4 1528.8	Middle Kittanning Lower Kittanning	276.3 341.6	1467.7 1402.4			
Lower Freeport		218.8	1525.2	Lower Killarining	341.0	1402.4			
					ription: rock type, v			a. 5	~
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, min entrations, pyrite, et		Water Conditions	% Recovery	% RQD
(11)	(rt)	:=:=:=:=:=	(ICCI)	Conce	mirations, pyrite, et	υ .	Conditions		
		:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=		4					
		:=:=:=:=:=:=						100%	100%
		:=:=:=:=:=]				100 %	100%
		:=:=:=:=:=:= :=:=:=:=:=:=:=		Sandy Shale, dark	gray, with interbedd	ed sandstone			
		:=:=:=:=:=:=							
		:=:=:=:=:=	330						
		:=:=:=:=:=:=: :-:-:-:-:-:		4					
332.8	14.5			1]	100%	100%
				4					
				Sandstone, I	light gray, w/ int. sand	ly shale			
337.9	5.1								
338.3	0.4				black, with boney co g - Shale, black, w/ c				
338.8 339.5	0.5 0.7		340		Kittanning - Boney co		+	100%	41%
340.3	0.9			Lower Kitt	tanning - Coal, bright,	hard	1		
341.6	1.3	========		Lower Kitt	tanning - Coal, bright Shale, gray	, soft	Ц		
342.6	1.0				Oriale, gray				
				Bottom of Ho	ole DH 2037 Depth 34	12.6 feet			
				4					
			_	1					
			350	_					
				4					
		ļ							
				+					
			360						
				_					
			_	1					
			_ =]					
		ŀ		1					
			_]					
				4					
		ŀ	370	†					
				4					
				1					
		ŀ		1					
		[_ =	4					
		ŀ		†					
]					
		-	380	4					
		ŀ		1					
			_ =	4					
		ŀ		1					
]					
				-					
		ŀ		†					
]					
		-	390	4					
		ŀ							
			_ =	4					
		ŀ		1					
]					
				-					
		ŀ		_					

JLB- CME - 11/29/01				7.1A GEOLOGIC DRIL	L LOG			0721-S164 Page 1 of 4
							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	2114		Manageral Static Water I	avala		Method Drilling:	Continuous Core
			-	Measured Static Water L	_eveis		Date Drilled:	6/22/2021-6/28/2021
Surface Elev.	151	3.70		Date Depth	Elevation		Drilled By:	RES
			-	Measured (ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	ст		ND	(- /		Municipality:	Donegal
Survey		-	-				County, State:	Westmoreland, PA
Method:	GI	99					Quadrangle:	Stahlstown, PA
motriou.		Bottom	Bottom	SWL measured by:			Laboratory:	Geochemical
010-	ID	Depth	Elevation				Northing:	290947.42
Coal Sea	am ID	(ft)	(MSL)	-			Easting:	1516910.08
Mahoning Upper Freeport		21.4 77.0	1492.3 1436.7	Lower Kittanning 262.3	1251.4		Grid Coordinates:	
Upper Kittanning		168.0	1345.7					
Middle Kittanning		192.5	1321.2					
<u> </u>		102.0		Lithologic Description: rock type, w	eathering,			
Depth	Thickness	Graphic	Scale	color, fossils, carbonate, mine		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	concentrations, pyrite, etc		Conditions		
		#########	_					
		##########		Q1 b				
		##########		Clay, brown, sandy				
5.0	5.0	######################################	-	1				
5.0	5.0	========						
			_	1				
			10	Shale, brown, weathered				
		=======		4				
		=======		-				
			⊢ −	1				
15.0	10.0		⊢ –	1				
10.0	10.0			01 :				
17.2	2.2		_	Shale, gray				
				Mahoning Coal, with shale				
			20					
21.4	4.2							
				-			77%	0%
				1			1176	070
			-	†				
			_	1				
				Shale, gray, with clayshale	,			
				onale, gray, mar elayenale				
			30	4				
				-				
			<u> </u>	1				
			<u> </u>	1				
35.2	13.8		_	1				
		:=:=:=:=:=:=						
		:=:=:=:=:=:=						
		:=:=:=:=:=:=	_	Sandy Shale, gray, with sha	le		100%	60%
		:=:=:=:=:=:=:=						
41.0	5.8	:=:=:=:=:=:= :=:=:=:=:=:=:=	40	1				
41.0	3.0							
			_	1				
	1]				
	1		<u> </u>	4				
		=======	⊢ –	-				
			 					
			⊢ –	1				
			50	1				
		=======]				
		=======	\vdash	1				
			<u> </u>				100%	93%
			⊢ –	Shale, gray				
			⊢ −	1				
				1				
			_	1				
		=======	60					
			<u> </u>	4				
	1	=======	<u> </u>	4				
	1		<u> </u>	1				
	1	=========	<u> </u>	1				
66.5	25.5			1				
	1							
	1]			100%	80%
	1		\Box					
	1		70	4				
	1	=======	<u> </u>	Shale, dark gray				
	1		<u> </u>	1				
			-	1				
	1			1				
75.7	9.2							
77.0	1.3			Upper Freeport Coal, with sh	ale			
	1		<u> </u>				93%	39%
		=======		Shale, gray				
	i .		80	Ť	I			

U.D. OMF. 40/04				7 1A GEO	LOGIC DRILI	LOG			0704 0404 Dane 2 of 4
JLB- CME - 10/01				7.1A GEO	LOGIC DRILL	LUG		Operation Name :	0721-S164 Page 2 of 4 Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	114						Method Drilling:	Continuous Core
	D11 2			Measured	d Static Water L	.evels		Date Drilled:	6/22/2021-6/28/2021
Surface Elev.	1513	3.70		Date	Depth	Elevation		Drilled By:	RES
•				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	rs						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	y:			Laboratory:	Geochemical
		Depth	Elevation					Northing:	290947.42
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1516910.08
Mahoning Upper Freeport		21.4 77.0	1492.3 1436.7	Lower Kittanning	262.3	1251.4		Grid Coordinates:	
Upper Kittanning		168.0	1345.7						
Middle Kittanning		192.5	1321.2						
					ription: rock type, w			0/ B	av BOD
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, mine entrations, pyrite, etc		Water Conditions	% Recovery	% RQD
(1.1)	(11)	======================================	(ICCI)	Contac			Conditions		
82.2	5.2		_		Shale, gray				
				Shale, gr	ray, limey, with limesto	one			
					,,,,			93%	39%
87.0	4.8		_						
			90		Shale, gray				
				1	, 3 - ,				
92.0	5.0								
		:=:=:=:=:=:= :=:=:=:=:=:=	-	4					
		:=:=:=:=:=:= :=:=:=:=:=:=							
		:=:=:=:=:=:=							
		:=:=:=:=:=						4000	2001
		(=(=(=(=(=)=)= 		_				100%	90%
		=:=:=:=:= =:=:=:=:=:=	100	1					
		:=:=:=:=:=:=							
		:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=		-					
		:=:=:=:=:=:=							
		:=:=:=:=:=							
		:=:=:=:=:=:=							
		:=:=:=:=:=:=	110	s	Sandy Shale, gray				
		:=:=:=:=:=:=							
		:=:=:=:=:=: :=:=:=:=:=:=	_	-				100%	93%
		:=:=:=:=:=:=							
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=		_					
		:=:=:=:=:=:=		1					
		:=:=:=:=:=:=							
		:=:=:=:=:=:=	120						
		:=:=:=:=:=:= :=:=:=:=:=:=		-					
		:=:=:=:=:=:=							
		:=:=:=:=:=:=	<u> </u>	4					
		:=:=:=:=:=:= :=:=:=:=:=:=	- -	1					
127.0	35.0		<u> </u>	<u> </u>					
					· · · · · · · · · · · · · · · · · · ·			100%	93%
			130	-					
			130	1					
]					
			<u> </u>	4					
			- -	1					
				1					
			<u> </u>	4					
				-					
			140						
				-				100%	100%
					Sandstone, gray			.00%	10070
			-	4					
			_ _	†					
]					
			150	4					
			- -	1					
				1					
			<u> </u>	4					
			- -	1				100%	87%
				1					
			<u> </u>	4					
			160	†					

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 3 of 4
Hala Na	DU	444							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	114			Measured	d Static Water	r Levels		Method Drilling: Date Drilled:	Continuous Core 6/22/2021-6/28/2021
Surface Elev.	1513	3.70			Date	Depth	Elevation		Drilled By:	RES
•					Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal NA
Survey Method:	GP	s							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
•		Bottom			SWL measured b	y:		-	Laboratory:	Geochemical
Coal Sea	ım ID	Depth		Elevation (MSL)					Northing: Easting:	290947.42 1516910.08
Mahoning	טו וווו	(ft) 21.4		1492.3	Lower Kittanning	262.3	1251.4		Grid Coordinates:	1516910.06
Upper Freeport		77.0 168.0		1436.7						
Upper Kittanning Middle Kittanning		192.5		1345.7 1321.2						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)	color, fos	ription: rock type sils, carbonate, m entrations, pyrite, o	inerals,	Water Conditions	% Recovery	% RQD
162.0	35.0		_		:	Sandstone, gray				
				_					100%	87%
			_	_	:	Shale, dark gray				
166.0	4.0	=======		_						
168.0	2.0			_	Upper Ki	ittanning Coal, with	shale			
				170						
		:=:=:=:=:=:=								
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_					100%	80%
		:=:=:=:=:=:=		_						
			_	_						
		:=:=:=:=:=:= :-:-:-:-:-:		_						
				_	_					
		:=:=:=:=:=:= :=:=:=:=:=:=:=		180	Sar	ndyshale, dark gray	/			
		:=:=:=:=:=:=		_						
			_	_						
				_						
		:=:=:=:=:=:=		_						
			_	_					100%	80%
		:=:=:=:=:=:=		190						
191.2 192.5	23.2 1.3	[=[=[=[=]=			Mic	ddle Kittanning Coa	ı			
194.2	1.7			_		Shale, dark gray				
194.2	1.7									
			_	_	0.					
				_	Sna	ale, dark gray, lime	у			
200.2	6.0			200						
		00000000000 000000000000		_						
		000000000000		_	Limestone.	gray (Middle Kittan	nning LS)		100%	83%
		00000000000 00000000000	_	_		3 - 7 (3 -,			
206.0	5.8	00000000000		_						
		:=:=:=:=:=:= :=:=:=:=:=:=								
				210				1		
		:=:=:=:=:=:=								
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_				1		
		:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_						
		:=:=:=:=:=:=		_					100%	100%
				_					10070	10078
		:=:=:=:=:=:= :=:=:=:=:=:=		220	_					
		:=:=:=:=:=:=		_	S	Sandy Shale, gray				
		(=(=(=(=(=(= (=(=(=(=(=(=	Ь	_						
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=		_						
			H	_						
		:=:=:=:=:=:=		230						
		:=:=:=:=:=:= :=:=:=:=:=:=	E					1		
		:=:=:=:=:=:=		_					100%	100%
				_				1		
236.0	30.0	(=(=(=)=(=(=)= (=(=(=)=(=(=)=						-		
238.4	2.4	:=:=:=:=:=:=			Sar	ndy Shale, dark gra	у			
		:=:=:=:=:=:=	<u> </u>	240	Sandy Shale, dark	gray, with interbed	dded sandstone			

JLB- CME - 10/01				7.1A GEO	LOGIC DRILL	LOG			0721-S164 Page 4 of 4
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	114	<u>.</u>	Measured	Static Water Le	evels		Method Drilling:	Continuous Core
Surface Floy	1513	70		Date	Depth I	Elevation		Date Drilled:	6/22/2021-6/28/2021 DES
Surface Elev.	1913	.70		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	RES P. Mack
Surveyed by:	LC	т		ND	()	()		Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GP							Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured b				Laboratory: Northing:	Geochemical 290947.42
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1516910.08
Mahoning		21.4	1492.3	Lower Kittanning	262.3	1251.4		Grid Coordinates:	
Upper Freeport Upper Kittanning		77.0 168.0	1436.7 1345.7						
Middle Kittanning		192.5	1321.2						
Depth	Thickness	Graphic	Scale		ription: rock type, we sils, carbonate, miner		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		ntrations, pyrite, etc.	uis,	Conditions	, noctroly	70.112
		:=:=:=:=:=:=							
				†					
		[=]=]=]=]=							
								100%	100%
		:=:=:=:=:=:=							
				Sandy Shale, dark	gray, with interbedded	I sandstone			
		:=:=:=:=:=:=	250						
		:=:=:=:=:=:=: :=:=:=:=:=:=:=		4					
		:=:=:=:=:=:=		1					
			<u> </u>	4					
257.1	18.7								
257.6 258.4	0.5 0.8				Shale, dark gray , with coal bands and b	onev		91%	51%
258.9	0.5				ning - Boney, with coal			3170	3170
			260	Lower	Kittanning - Coal, brigh				
262.3	3.4			Lowerr	Attariring - Coai, brigit	ı			
263.0	0.7	#########			nale, dark gray to gray				
264.4	1.4	######################################			ayshale, gray, soft				
266.3	1.9	##########		Claysn	ale, gray, some sandy				
		######################################		┧ .					
		#########		s	andy Shale, gray				
270.7	4.4	########## :=:=:=:=:=:=:=	270						
272.3	2.0	:=:=:=:=:=:=		Sandy Shale, dark	gray, with interbedded	sandstone			
				Bottom of Ho	le DH 2114 Depth 272	.3 feet			
				4					
				1					
			280	4					
				4					
				4					
			290						
				1					
				4					
			300						
			<u> </u>						
				4					
			<u> </u>	4					
			310	4					
			310						
			<u> </u>	-					
			<u> </u>	4					
				1					
			<u> </u>	4					
#REF!	#REF!		320	┪					

JLB- CME - 11/29/01					7.1A GEO	LOGIC DR	ILL LOC	3			0721-S164 Page 1 of 8
3EB- GWIE - 11/23/01					71171 0201	200.00				Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1:	3100				01-11-14-1				Method Drilling:	Continuous Core
-			•		weasured	Static Water	er Leveis			Date Drilled:	1/3/2012-1/7/2012
Surface Elev.	1807	7.00			Date	Depth	Elevat	ion		Drilled By:	Hetager Drilling
-			•		Measured	(ft)	(MSL	∟)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	т			ND					Municipality:	Donegal
Survey			•							County, State:	Westmoreland, PA
Method:	GF	S								Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured by	y:				Laboratory:	Geochemical
		Depth		Elevation						Northing:	294796.22
Coal Sea	am ID	(ft)		(MSL)	-					Easting:	1522809.12
Coal Mahoning		246.2 363.3		1560.8 1443.7	Upper Kittanning		478.4	1328.6		Grid Coordinates:	
Upper Freeport		410.8		1396.2	Lower Kittanning		576.3	1230.7	,		
Upper Kittanning		466.7		1340.3							
					Lithologic Descr			ng,		0/ 5	av DOD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ils, carbonate, ntrations, pyrite			Water Conditions	% Recovery	% RQD
()	(11)	#########		(1001)	0011001	manono, pyrno	, 0.0.		Jonaillo III		
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		#########									
		##########	<u> </u>	_							
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		#########	L-								
		######################################	\vdash	_	1						
		##########	_	_	1						
		##########		_							
		#########		_							
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		##########	_	20	1						
		#########			Sé	andy Clay, brown	1				
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		#########	_	_							
		########## ###########################	_	_	1						
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		#########		30							
		######################################	_	_	1						
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		######################################	_	40	-						
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42.0	42.0	#########									
		######################################	—	_	-						
		######################################		_]						
		#########		_]	21					
		######################################	<u> </u>	_	·	Claystone, gray					
		######################################	\vdash	_	1						
		##########		50]						
50.6	8.6	##########									
			\vdash	_	1						
				_]						
		=======	<u> </u>	_		Shale, dark gray					
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				_	j						
59.0	8.4										
		00000000000 00000000000		60							
		00000000000		_							
		000000000000		_							
		00000000000 000000000000	—	_							
		00000000000		_	Limestone, b	lack with fossils	(Ames LS)				
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		000000000000 nnnnnnnnnn	H	_	1						
		00000000000 000000000000		70]						
70.6	11.6	000000000000									
			\vdash	_			_				
			\vdash	_	1	Shale, black					
				_]						
75.3	4.7				Chele	black, carbonac	POLICE				
76.3	1.0				Snale,	DIAUN, CAIDUIIAC	LUUS				
				_	s	hale, gray, limey					
I				80	1					ı	1

JLB- CME - 10/01					7.1A GEC	LOGIC DR	ILL LOG	}			0721-S164 Page 2 of 8
3EB- GWIE - 10/01					71171 020	2200.0 2.				Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1:	3100				100-0-1				Method Drilling:	Continuous Core
•			9		Measure	d Static Wat	er Leveis			Date Drilled:	1/3/2012-1/7/2012
Surface Elev.	1807	7.00			Date	Depth	Elevat	ion		Drilled By:	Hetager Drilling
-					Measured	(ft)	(MSL		Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	т			ND					Municipality:	Donegal
Survey										County, State:	Westmoreland, PA
Method:	GF	rs								Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured l	by:				Laboratory:	Geochemical
		Depth		Elevation						Northing:	294796.22
Coal Sea	am ID	(ft)		(MSL)	-					Easting:	1522809.12
Coal Mahoning		246.2 363.3		1560.8 1443.7	Upper Kittanning		478.4	1328.6		Grid Coordinates:	
Upper Freeport		410.8		1396.2	Lower Kittanning		576.3	1230.7	1		
Upper Kittanning		466.7		1340.3							
						cription: rock typ		g,		0/ 5	av non
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ssils, carbonate, entrations, pyrite			Water Conditions	% Recovery	% RQD
()	(")			(1001)	33113	o, pyrice	, 0.0.		Contantionic		
		=======									
			_	_							
			_	_	-	o					
				_		Shale, gray, limey					
				_							
			_	_	-						
90.1	13.8			90	1]
		#########									
		##########	_	_	1						
		######################################	-	_	1	Claystone, gray					
		#########		_	1						
96.3	6.2	#########			ļ						
		######################################	_	_							
		#########		_							
		######################################		100	1	Claystone, red					
		##########	_	_	1						
		##########									
104.0	7.7	########## +=+=+=+=									
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		÷=÷=÷=÷=		_	4						
		+=+=+=+= +=+=+=+=	_	_	1						
		+=+=+=+=	_	_	Sil	Itstone, red and gr	ay				
				_	4						
		+=+=+=+= +=+=+=+=	-	130	1						
		+=+=+=+=+=		.00	1						
		+=+=+=+=	_	_	4						
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		+=+=+=+=+=	_	_	†						
	45.	÷=÷=÷=÷=		_]						
149.1	45.1	+=+=+=+=		150	1						
				100	1						
				_]						
			_		-	Sandstone, gray					
				_	1	_aasiono, grdy					
				_	4						
158.4	9.3		_	_	1						
100.7	5.5				Shala blast	(Lower Bakersto	wn Horizon)				
			_	160	oriale, black	· /=omei pakeisi0				1	1

JLB- CME - 10/01					7.1A GEO	LOGIC DR	RILL LOG	}			0721-S164 Page 3 of 8
										Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1:	3100	_		Measured	Static Wat	er Levels			Method Drilling:	Continuous Core
Surface Flori	1007	7.00			Date	Depth	Elevati	ion		Date Drilled:	1/3/2012-1/7/2012
Surface Elev.	1807	.00	-		Measured	(ft)	(MSL		Notes	Drilled By: Logged By:	Hetager Drilling Don Bergreen Jr.
Surveyed by:	LC	т			ND	(11)	(1110)	·	110100	Municipality:	Donegal Donegal
Survey			•							County, State:	Westmoreland, PA
Method:	GP	s								Quadrangle:	Stahlstown, PA
		Bottom	_	Bottom	SWL measured b	y:				Laboratory:	Geochemical
		Depth		Elevation						Northing:	294796.22
Coal Sea	am ID	(ft)		(MSL) 1560.8	l lanas Kittanaina		470.4	4220 (•	Easting:	1522809.12
Mahoning		246.2 363.3		1443.7	Upper Kittanning Lower Kittanning		478.4 576.3	1328.6 1230.7		Grid Coordinates:	
Upper Freeport		410.8		1396.2	g				•		
Upper Kittanning		466.7		1340.3	Lithelesia Dece	sintian, saak tu		_ [1
Depth	Thickness	Graphic		Scale	Lithologic Descriction Color, foss	ription: rock tyj sils, carbonate,		g,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite			Conditions	•	
			—	_	-						
			—	_	†						
			—	_	-						
				_	†						
		========									
			\vdash	170							
				110	Shale, black	(Lower Bakersto	wn Horizon)				
				_	4						
			\vdash	_	1						
				_	1						
		=======	<u> </u>	_							
			 	_	-						
				_]						
179.6	21.2			180							
		######################################	\vdash	_	-						
		#########									
		######################################	—	_	-	Claystone, gray					
		##########		_	†						
		#########									
187.9	8.3	##########									
		:=:=:=:=:=:=		190							
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	<u> </u>	_							
		:=:=:=:=:=:=		_							
		:=:=:=:=:=:=		_	S	Sandy Shale, gray	/				
			 	_	-						
		:=:=:=:=:=									
199.3	11.4		<u> </u>	_							
199.5	11.4	#######################################		200							
		#########	_	_	1						
		######################################	—	_							
		#########									
		######################################	\vdash	_	4						
		######################################		_	1						
		##########		_	4	Claystone, red					
		######################################	\vdash	210	1						
		#########			1						
		######################################	<u> </u>	_	4						
		######################################	Е	_	1						
		#########		_]						
216.8	17.5	######################################	—	_	-						
210.0	11.0]						
					1						
				220							
			\vdash	_	4						
			<u> </u>	_	†						
			E	_		Condata:					
			\vdash	_	1	Sandstone, gray					
				_	1						
			<u> </u>	230	4						
			\vdash	_	1						
				_							
			\vdash	_	1						
236.3	19.5			_	<u> </u>						
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		##########			1	Claystone, red					
240.4	2.0		1	240	i .					i .	1

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG				0721-S164 Page 4 of 8
										Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	3100	-		Measured	d Static Wate	r Levels			Method Drilling:	Continuous Core
Surface Elev.	1807	00			Date	Depth	Elevation	on		Date Drilled: Drilled By:	1/3/2012-1/7/2012 Hetager Drilling
Ourrace Liev.	1007	.00	-		Measured	(ft)	(MSL)		Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	т	_		ND	• • •	<u> </u>			Municipality:	Donegal
Survey		_								County, State:	Westmoreland, PA
Method:	GP	Bottom	-	Bottom	SWL measured b					Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	OVIL IIIcasarca i	,y.				Northing:	294796.22
Coal Sea	am ID	(ft)		(MSL)	_					Easting:	1522809.12
Coal		246.2 363.3		1560.8 1443.7	Upper Kittanning			1328.6		Grid Coordinates:	
Mahoning Upper Freeport		410.8		1396.2	Lower Kittanning		576.3	1230.7	1		
Upper Kittanning		466.7		1340.3	1						
Depth	Thickness	Graphic		Scale		ription: rock typ sils, carbonate, n		,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	entrations, pyrite,	, etc.		Conditions		
				_							
		=======	L.	_	-	Shale, black					
				_	1						
245.5	5.4					Coal					
246.2	0.7	##########				Coai					
		#########									
		######################################		250	Lir	neyclaystone, gra	у				
		#########		_]	= .					
254.2	8.0	######################################	\vdash	_	1						
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				270	٤ -	Sandy Shale, gray					
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285.3	31.1	:=:=:=:=:=:= :=:=:=:=:=:=		_							
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		00000000000		_							
		00000000000 000000000000	H	290	Limestone, blac	ck with fossils (Bru	ush Creek LS)				
		000000000000			1						
292.3 293.4	7.0 1.1	00000000000 00000000000			Limestone, gra	y with fossils (Bru	sh Creek LS)				
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			_	_	-	Shale, black					
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JLB- CME - 10/01					7.1A GEO	LOGIC DE	RILL LOG	}			0721-S164 Page 5 of 8
OLD CIME TOO.										Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1:	3100			Measured	Static Wat	or I avale			Method Drilling:	Continuous Core
										Date Drilled:	1/3/2012-1/7/2012
Surface Elev.	1807	7.00			Date	Depth	Elevat			Drilled By:	Hetager Drilling
		_			Measured	(ft)	(MSL	-)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	51			ND					Municipality:	Donegal
Survey Method:	GF	s								County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
	<u>.</u>	Bottom		Bottom	SWL measured b	v:				Laboratory:	Geochemical
		Depth		Elevation			-			Northing:	294796.22
Coal Sea	ım ID	(ft)		(MSL)	_					Easting:	1522809.12
Coal Mahoning		246.2 363.3		1560.8 1443.7	Upper Kittanning		478.4	1328.6		Grid Coordinates:	
Upper Freeport		410.8		1396.2	Lower Kittanning		576.3	1230.7	(
Upper Kittanning		466.7		1340.3							•
Depth	Thickness	Graphic		Scale	Lithologic Descr	ription: rock typ sils, carbonate,		g,	Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		ntrations, pyrite			Conditions	,, noore,	7.1.25
			_	_							
			_		-						
				_							
						Shale, black					
			_	_		Strate, Diack					
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			_	220							
331.2	37.8			330	1						
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359.0	27.8	÷=÷=÷=÷=		_							
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362.0	3.0	:=:=:=:=:=:= :=:=:=:=:=:=		_			.,				
363.3	1.3					Mahoning Coal					
		########## ###########################	E	_	j						
		#########		_							
		######################################	_	_	1						
		#########		_		Claystone, gray					
		######################################		370							
		#########		_	j						
274.0	10.7	##########		_							
374.0	10.7	#########									
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382.3	8.3		_	_	1						
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JLB- CME - 10/01				7.1A GEC	DLOGIC DR	ILL LOG			0721-S164 Page 6 of 8
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	3100	-	Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Elev.	1807	7 00		Date	Depth	Elevation		Date Drilled: Drilled By:	1/3/2012-1/7/2012 Hetager Drilling
ouridoo Elovi	1007	.00	•	Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	т		ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	Bottom	Bottom	SWL measured	hv			Quadrangle: Laboratory:	Stahlstown, PA
		Depth	Elevation		by.		_	Northing:	Geochemical 294796.22
Coal Sea	am ID	(ft)	(MSL)					Easting:	1522809.12
Coal		246.2	1560.8	Upper Kittanning			28.6	Grid Coordinates:	
Mahoning Upper Freeport		363.3 410.8	1443.7 1396.2	Lower Kittanning		576.3 123	30.7		
Upper Kittanning		466.7	1340.3	1					
Depth	Thickness	Graphic	Scale		cription: rock type ssils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite,		Conditions		
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	-						
		:=:=:=:=:=							
			<u> </u>	- ,	Sandy Shale, black				
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		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>						
409.7	27.4	:=:=:=:=:=:= :=:=:=:=:=	-						
410.0 410.6	0.3		410	L	Ipper Freeport Coa Shale, black	I			
410.8	0.6	=======		U	Ipper Freeport Coa	I			
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464.8	54.0	:=:=:=:=:=:= :=:=:=:=:=:=	_						
466.7	1.9		<u> </u>	Ul	pper Kittanning Coa	al			
				_					
			470						
				4					
				╛	Shale, gray				
478.3	11.6		<u> </u>	_					
478.4	0.1				pper Kittanning Coa	al			
			480		Shale, black		1	i	i l

JLB- CME - 10/01					7.1A GEOL	OGIC DR	ILL LOG				0721-S164 Page 7 of 8
3EB- GWIE - 10/01					0201	10010 211				Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1:	3100			Manager	Ct=4!= \W=4.				Method Drilling:	Continuous Core
-					weasured	Static Wate	er Leveis			Date Drilled:	1/3/2012-1/7/2012
Surface Elev.	1807	.00			Date	Depth	Elevati	ion		Drilled By:	Hetager Drilling
-					Measured	(ft)	(MSL	_)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	т			ND					Municipality:	Donegal
Survey										County, State:	Westmoreland, PA
Method:	GF	S								Quadrangle:	Stahlstown, PA
		Bottom	ı	Bottom	SWL measured by	/ :				Laboratory:	Geochemical
		Depth		levation						Northing:	294796.22
Coal Sea	ım ID	(ft)		(MSL)	-					Easting:	1522809.12
Coal		246.2		1560.8	Upper Kittanning		478.4	1328.6		Grid Coordinates:	
Mahoning Upper Freeport		363.3 410.8		1443.7 1396.2	Lower Kittanning		576.3	1230.7	·		
Upper Kittanning		466.7		1340.3							
					Lithologic Descri			g,			
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ls, carbonate, i trations, pyrite			Water Conditions	% Recovery	% RQD
(11)	(11)			iccij	CONCEN	trations, pyrite	, 0.0.		Conditions		
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						Shale, black					
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534.1	55.7	00000000000]
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		000000000000		_	Limestone g	ray (Middle Kitta	inning LS)				
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540.3	6.2	000000000000	_	540							
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547.7	7.4	+=+=+=+=	_	_							
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559.1	11.4	+=+=+=+= +=+=+=+=	_		1						
500.1				560	Sandstone, grav	with interbedde	d sandy shale	,		I	1

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG				0721-S164 Page 8 of 8
II-I- N-	DU 4	2400								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1:	3100	-		Measured	Static Water	r Levels			Method Drilling: Date Drilled:	Continuous Core 1/3/2012-1/7/2012
Surface Elev.	1807	7.00			Date	Depth	Elevation	n		Drilled By:	Hetager Drilling
·-			•		Measured	(ft)	(MSL)		Notes	Logged By:	Don Bergreen Jr.
Surveyed by: Survey	LC	T	-		ND					Municipality: County, State:	Donegal Westmoreland, PA
Method:	GP	s								Quadrangle:	Stahlstown, PA
-		Bottom		Bottom	SWL measured b	у:				Laboratory:	Geochemical
Coal Sea	ID	Depth (ft)		Elevation (MSL)						Northing: Easting:	294796.22
Coal	טו וווו	246.2		1560.8	Upper Kittanning		478.4 1	1328.6		Grid Coordinates:	1522809.12
Mahoning		363.3		1443.7	Lower Kittanning			1230.7			
Upper Freeport Upper Kittanning		410.8 466.7		1396.2 1340.3							
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		iption: rock typ sils, carbonate, n ntrations, pyrite	ninerals,		Water Conditions	% Recovery	% RQD
				_							
				_							
			 								
			_		Sandstone, gra	y with interbedde	d sandy shale				
				570							
F70.7	14.6										
573.7	14.6										
576.3	2.6		\vdash	=	Lov	ver Kittanning Co	al				
370.0	2.0	#########									
		######################################	_		1						
		##########		580		Claystone, gray					
		######################################	E	<u> </u>							
584.3	8.0	######### +=+=+=+=									
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589.0	4.7	+=+=+=+=									
				590	Bottom of Ho	le DH 13100 Dep	th 589 feet				
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JLB- CME - 11/29/01					7.1A GEO	LOGIC DRII	L LOG			0721-S164 Page 1 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	3101	•		Measured	Static Water	Levels		Method Drilling:	Continuous Core
Surface Elev.	1785	5.00			Date	Depth	Elevation		Date Drilled: Drilled By:	1/9/2013-1/15/2013 Hetager Drilling
ouridoo Elovi	1700		•		Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	т			ND				Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GP	Bottom		Bottom	SWL measured b			-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth		Elevation	OVIE modeanou s	_		=	Northing:	288515.29
Coal Sea	am ID	(ft)		(MSL)	=,				Easting:	1518819.61
Mahoning Upper Freeport		270.1 328.5		1514.9 1456.5	Middle Kittanning Lower Kittanning	435.0	1350.0 1290.7		Grid Coordinates:	
Upper Kittanning		404.9		1380.1	Lower Killarining	494.3	1290.7			
Upper Kittanning		412.1		1372.9	l ithelesis Dece	sintian, saak tuna	atharing	1		
Depth	Thickness	Graphic		Scale		ription: rock type, sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)	conce	ntrations, pyrite, e	tc.	Conditions		
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		#########		_						
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9.0	9.0	#########								
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				30						
32.2	23.2	######################################						_		
34.3	2.1	#########				Claystone, red				
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55.2	20.9	+=+=+=+= +=+=+=+=	—	_	1					
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			_		5	Sandystone, gray				
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				_]					
76.3	21.1	:=:=:=:=:=						4		
		:=:=:=:=:=		_	Si	andy Shale, black				
		:=:=:=:=:= :=:=:=:=:=	_	80	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 2 of 7
	DII 4	0404							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	3101			Measured	Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 1/9/2013-1/15/2013
Surface Elev.	1785	5.00			Date	Depth	Elevation		Drilled By:	Hetager Drilling
-			•		Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GF	es							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
-		Bottom		Bottom	SWL measured b	y:		-	Laboratory:	Geochemical
		Depth		Elevation					Northing:	288515.29
Coal Sea Mahoning	am ID	(ft) 270.1		(MSL) 1514.9	Middle Kittanning	435.0	1350.0		Easting: Grid Coordinates:	1518819.61
Upper Freeport		328.5		1456.5	Lower Kittanning	494.3	1290.7		Grid Goordinatoo.	
Upper Kittanning Upper Kittanning		404.9 412.1		1380.1 1372.9						
						ription: rock type				
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, m entrations, pyrite,		Water Conditions	% Recovery	% RQD
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		(=(=(=)=)=								
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		(=(=(=)=)=		_	S	andy Shale, black				
		:=:=:=:=:= :=:=:=:=:=	_	_	+					
		:=:=:=:=:=		90						
92.3	16.0	:=:=:=:=:= :=:=:=:=:=	_	_	+					
		##########								
		######################################	_	_	+					
		##########		_						
		######################################	_	_	+					
		#########		=	1					
		########## ###########################		100	-					
		#########		_	1					
		######################################		_	-					
		#########		_		Claystone, gray				
		######################################		_		Ciaystorie, gray				
		######################################		_						
		######################################		110	<u> </u>					
		######################################		_						
		#########		_	j					
		######################################	_	_	-					
		##########		_						
		######################################	_	_	+					
119.2	26.9	##########								
		+=+=+=+= +=+=+=+=		120	+					
		+=+=+=+=		_	Silt	tstone red and gray				
124.4	5.2	+=+=+=+= +=+=+=+=		_	-					
		:=:=:=:=:= :-:-:-:-:			1					
		:=:=:=:=:= :=:=:=:=:=		-]					
		:=:=:=:=:= :	Ē	_	4					
		:=:=:=:=:= :=:=:=:=:=		130	1					
		:=:=:=:=:= :=:=:=:=:=	—	_	1					
		(=(=(=)=)=		_	1					
		(=(=(=(=(= (=(=(=(=(=	_	_	1					
		:=:=:=:=:=		_	1					
		:=:=:=:=:= :=:=:=:=:=	_	_	+					
		(=(=(=)=)=		440	1					
		:=:=:=:=:= :=:=:=:=:=		140						
		:=:=:=:=:=		_	s	Sandy Shale, gray				
		:=:=:=:=:= :=:=:=:=:=	E		<u> </u>					
		:=:=:=:=:=	F	_	4					
		:=:=:=:=:= :=:=:=:=:=		_	1					
		:=:=:=:=:= :=:=:=:=:=	—	_	4					
		:=:=:=:=:= :=:=:=:=:=		150	1					
		:=:=:=:=:= :=:=:=:=:=	—	_	4					
		(=(=(=)=)=		_	1					
		:=:=:=:=:= :=:=:=:=:=	H	<u> </u>	-					
		(=(=(=(=)=		_	1					
		:=:=:=:=:= :=:=:=:=:=	<u> </u>	_	1					
		:=:=:=:=:=		400]					

JLB- CME - 10/01					7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 3 of 7
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-13101				Measure	d Static Water	l evels		Method Drilling:	Continuous Core
									Date Drilled:	1/9/2013-1/15/2013
Surface Elev.	178	5.00			Date	Depth	Elevation		Drilled By:	Hetager Drilling
					Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey									County, State:	Westmoreland, PA
Method:	GI			-				_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured b	oy:		_	Laboratory:	Geochemical
Coal Sea	am ID	Depth (ft)		Elevation (MSL)					Northing: Easting:	288515.29 1518819.61
Mahoning	aiii iD	270.1		1514.9	Middle Kittanning	435.0	1350.0		Grid Coordinates:	1510019.01
Upper Freeport		328.5		1456.5	Lower Kittanning	494.3	1290.7		Ona Gooramatoo.	
Upper Kittanning		404.9		1380.1	J					
Upper Kittanning		412.1		1372.9	Little de als Bess					
Depth	Thickness	Graphic		Scale		cription: rock type, ssils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite, e		Conditions		
		:=:=:=:=:=	<u> </u>	_	4					
		:=:=:=:=:= :=:=:=:=:=	H	_	4					
		:=:=:=:=:=		_						
		:=:=:=:=:		_						
		:=:=:=:=:=	—	_	_					
		:=:=:=:=:= :=:=:=:=:=	\vdash	_	1					
		:=:=:=:=:=		_				1		
		:=:=:=:=:=	Ŀ.	170	4					
		:=:=:=:=:= :=:=:=:=:=	\vdash	_	1					
		:=:=:=:=:=		_]	Sandy Shale, gray				
		:=:=:=:=:=	Ľ.	_	4					
		[=:=:=:=:= [=:=:=:=:=:=	H	_	1					
		:=:=:=:=:=		_						
		:=:=:=:=:=	<u> </u>	_	4					
		:=:=:=:=:= :=:=:=:=:=	\vdash	180	<u>-</u>					
		:=:=:=:=:=								
		:=:=:=:=:=	<u> </u>	_	4					
184.2	59.8	:=:=:=:=:= :=:=:=:=:=:=	\vdash	_	-					
10112	00.0	:=:=:=:=:=								
		:=:=:=:=:=	<u> </u>	_	4					
		:=:=:=:=:= :=:=:=:=:=	_	_	1					
		:=:=:=:=:=		_						
		:=:=:=:=:=		190	_	Sandy Shale ,black				
		:=:=:=:=:= :=:=:=:=:=	\vdash	_	 	bandy onaic ,black				
		:=:=:=:=:=		_						
		:=:=:=:=:=	┝	_	_					
		[=:=:=:=:= [=:=:=:=:=:=	\vdash	_	1					
197.0	12.8	:=:=:=:=:=			1					
198.0	1.0	:=:=:=:=:=			Limestone, gra	ay with fossils (Brush	Creek LS)			
		:=:=:=:=:=		200	-					
		:=:=:=:=:=		_						
		:=:=:=:=:= :=:=:=:=:=	—	_	-					
		:=:=:=:=:=		_						
		:=:=:=:=:=	<u> </u>	_	4					
		:=:=:=:=:= :=:=:=:=:=:=	H	_	-					
		:=:=:=:=:=		_						
		:=:=:=:=:=	Ľ.	240	4					
		:=:=:=:=:= :=:=:=:=:=:=		210	1					
		:=:=:=:=:=		_						
		(=(=(=)=(=)= 	\vdash	_	-l s	Sandy Shale, black				
		:=:=:=:=:= :=:=:=:=:=	\vdash	_	1					
		:=:=:=:=:=		_						
		(=(=(=)=(=)= 	\vdash	_	4					
		:=:=:=:=:= :=:=:=:=:=	_	_	1					
		:=:=:=:=:=		220						
		:=:=:=:=:=	<u> </u>	_	<u> </u>					
		:=:=:=:=:= :=:=:=:=:=	H	-	1					
		:=:=:=:=:=								
		:=:=:=:=:= :=:=:=:=:=:=	\vdash	_	1					
226.8	28.8	:=:=:=:=:=:= :=:=:=:=:=]		
227.4	0.6			-	Shale	e, black, carbonaceo	us			
		######################################	\vdash	230	1					
		#########				Claystone, gray				
200 (0.0	#########	Ē		4					
233.4	6.0	######### :=:=:=:=:=:=						1		
		:=:=:=:=:=		_						
		:=:=:=:=:=	Ŀ.	_	- 5	Sandy Shale, gray				
		:=:=:=:=:= :=:=:=:=:=	\vdash	_	†					
239.0	5.6	:=:=:=:=:=		_]		
			l -	240		Sandstone, gray		1	i	1

JLB- CME - 10/01				7.1A GEC	LOGIC DRIL	L LOG			0721-S164 Page 4 of 7
	5							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1	3101	<u>-</u>	Measure	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 1/9/2013-1/15/2013
Surface Elev.	178	5.00		Date	Depth	Elevation		Drilled By:	Hetager Drilling
			=	Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	T	-	ND				Municipality:	Donegal
Survey Method:	GF	96						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
wiethou.	GI	Bottom	Bottom	SWL measured I	bv:		•	Laboratory:	Geochemical
		Depth	Elevation		_		•	Northing:	288515.29
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1518819.61
Mahoning Upper Freeport		270.1 328.5	1514.9 1456.5	Middle Kittanning Lower Kittanning	435.0 494.3	1350.0 1290.7		Grid Coordinates:	
Upper Kittanning		404.9	1380.1	Lower rattarining	404.0	1200.7			
Upper Kittanning		412.1	1372.9	Lithologic Desc	cription: rock type,	weathering			
Depth	Thickness	Graphic	Scale	color, fos	sils, carbonate, mir	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	entrations, pyrite, e	tc.	Conditions		
			<u> </u>	_					
			250						
			230						
			- -	-	Sandstone, gray				
			_		- and control, gray				
				4					
			<u> </u>						
			260	-					
			- -						
265.3	26.3								
000.0	0.0	=======			Shale, black				
268.3	3.0	=======			Mahoning Coal				
270.1	1.8	#########	270		manoring coal				
		##########							
		##########			Claystone, gray				
		######################################			Claystorie, gray				
277.3	7.2	######################################							
211.5	1.2	÷=÷=÷=÷=	_						
		+=+=+=+= +=+=+=+=	280						
		:=:=:=:=	200						
		+=+=+=+= +=	<u> </u>						
		:=:=:=:=							
		+=+=+=+= +=+=+=+=	<u> </u>	_					
		:-:-:-:- :=:=:=:=:=							
		÷=÷=÷=÷= 	<u> </u>	_					
		+=+=+=+= +=+=+=+=	290						
		+=+=+=+= +=+=+=+=	<u> </u>	=					
		+=+=+=+= +=+=+=+=							
		:=:=:=:=							
		+=+=+=+= +=+=+=+=							
		:=:=:=:=			Siltstone, gray				
		+=+=+=+= +=+=+=+=	_						
		÷=÷=÷=÷=	300						
		+=+=+=+= +=+=+=+=		_					
		:=:=:=:=							
		+=+=+=+= +=+=+=+=	_						
		÷=÷=÷=÷=							
		+=+=+=+= +=+=+=+=	- -	+					
		+=+=+=+=	E =						
		+=+=+=+= +=+=+=+=	310	+					
		:=:=:=:=							
		+=+=+=+= += +=+=+=+=	-	+					
									
317.1	39.8	+=+=+=+= +=+=+=+=		+					
3	00.0				Oh-le 11				
			320	4	Shale, black				

JLB- CME - 10/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 5 of 7
	DU 4								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-1:	3101			Measured	Static Wate	r Levels		Method Drilling: Date Drilled:	Continuous Core 1/9/2013-1/15/2013
Surface Elev.	1785	5.00			Date	Depth	Elevation		Drilled By:	Hetager Drilling
•					Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	Т			ND				Municipality:	Donegal NA
Survey Method:	GP	s							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
•		Bottom		Bottom	SWL measured b	y:		- -	Laboratory:	Geochemical
		Depth		Elevation					Northing:	288515.29
Coal Sea Mahoning	am ID	(ft) 270.1		(MSL) 1514.9	Middle Kittanning	435.0	1350.0		Easting: Grid Coordinates:	1518819.61
Upper Freeport		328.5		1456.5	Lower Kittanning	494.3	1290.7			
Upper Kittanning Upper Kittanning		404.9 412.1		1380.1 1372.9						
					Lithologic Descr				av 5	N 202
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, m ntrations, pyrite,		Water Conditions	% Recovery	% RQD
` ,	`,'	========				7.1.7				
			_	_	1					
		=======]	Shale, black				
		========	_	_						
328.0	10.0			_						
328.5	10.9 0.5				Up	per Freeport Coal				
		========		330						
				_						
			_	_	-					
		=======		_						
			_	_	1					
		=========	_	340	-					
		=======		_						
			_	_						
		=======		_						
		========	_	_						
				_						
				_						
		========		350						
		=======		_						
			_	_	-					
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		========	_	_						
		=======]					
			_	360	1	Shale, gray				
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				_						
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				_						
		=========	_	_	-					
				270]					
				370]					
			_	_						
		========		_						
			_	_	-					
				_						
		=========	_	_	-					
		=======		380]					
			_	_						
]					
				_]					
			_	_						
				_	1					
389.2	60.7			390						
]					
			_	_						
				_	,	Sandetone grov				
]	Sandstone, gray				
				_						
				_	1					
				400	ĺ			Ī	I	I

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 6 of 7
	DU 4							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-13	3101		Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core 1/9/2013-1/15/2013
Surface Elev.	1785	5.00		Date	Depth	Elevation		Drilled By:	Hetager Drilling
•				Measured	(ft)	(MSL)	Notes	Logged By:	Don Bergreen Jr.
Surveyed by:	LC	Т		ND				Municipality:	Donegal
Survey Method:	GP	s						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
•		Bottom	Bottom	SWL measured b	y:			Laboratory:	Geochemical
		Depth	Elevation					Northing:	288515.29
Coal Sea Mahoning	ım ID	(ft) 270.1	(MSL) 1514.9	Middle Kittanning	435.0	1350.0		Easting: Grid Coordinates:	1518819.61
Upper Freeport		328.5	1456.5	Lower Kittanning	494.3	1290.7			
Upper Kittanning Upper Kittanning		404.9 412.1	1380.1 1372.9						
					ription: rock type,			~ 5	av 202
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, mir entrations, pyrite, et		Water Conditions	% Recovery	% RQD
					Sandstone, gray				
402.7	13.5				Shala dark gray				
404.7	2.0				Shale, dark gray per Kittanning Coal				
404.9	0.2			ОР	per Kittarining Coar				
				-	Sandstone, gray				
				<u> </u>	canasione, gray				
410.0	5.1		410	1					
412.1	2.1		_	Up	per Kittanning Coal				
			<u> </u>	-					
				1					
			- -	1					
				1					
			420	-					
			_	1					
				-	Sandstone, gray				
				<u> </u>					
				-					
				1					
			430	-					
				1					
432.8	20.7								
435.0	2.2			Mic	ddle Kittanning Coal				
				-					
		=======		1	Shale, gray				
			440						
440.6	5.6	00000000000							
443.4	2.8	00000000000		Limestone, gra	y (Middle Kittanning	Limestone)			
			<u> </u>	1					
				1					
			- -	1					
		=======	450]					
			450	1					
			<u> </u>	4					
				1					
			<u> </u>	-	Shale, gray				
				1					
			- -	1					
		=======	460]					
		=========		1					
		========		1					
			<u> </u>	<u> </u>					
			_ =	1					
467.8	24.4		<u> </u>						
			470	1					
			470	<u> </u>					
			<u> </u>	4					
				Sandeton	e, gray with shale st	reaks			
			_ =	Januston	, y.u., wiiii siiaic si				
				1					
			<u> </u>	4					
			480	1					

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 7 of 7
Hole No.	DH-1:	2101						Operation Name : Method Drilling:	Rustic Ridge #1 Mine-Expansion Continuous Core
noie No.	DII-I	3101	-	Measured	d Static Water	Levels		Date Drilled:	1/9/2013-1/15/2013
Surface Elev.	1785	5.00	_	Date	Depth	Elevation		Drilled By:	Hetager Drilling
Surveyed by:	LC	т		Measured ND	(ft)	(MSL)	Notes	Logged By: Municipality:	Don Bergreen Jr.
Surveyed by: Survey	LC	1	-	ND				County, State:	Donegal Westmoreland, PA
Method:	GP		_					Quadrangle:	Stahlstown, PA
		Bottom		SWL measured b	y:		•	Laboratory:	Geochemical
Coal Sea	am ID	Depth (ft)	Elevation (MSL)					Northing: Easting:	288515.29 1518819.61
Mahoning		270.1	1514.9	Middle Kittanning	435.0	1350.0		Grid Coordinates:	
Upper Freeport Upper Kittanning		328.5 404.9	1456.5 1380.1	Lower Kittanning	494.3	1290.7			
Upper Kittanning		412.1	1372.9	1					
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	ription: rock type, sils, carbonate, mir entrations, pyrite, e	nerals,	Water Conditions	% Recovery	% RQD
(10)	(it)		(leet)	Conce	entrations, pyrite, e		Conditions		
			_						
			- -	Sandston	e, gray with shale st	reaks			
			_						
400.0	22.4		490						
490.9	23.1			1					
494.3	3.4			Lov	wer Kittanning Coal				
.55	ŭ	:=:=:=:=:=		1					
		:=:=:=:=:= :=:=:=:=:=	- -	+					
		:=:=:=:=:=	E =	7					
		:=:=:=:=:= :=:=:=:=:=	500						
		:=:=:=:=:= :=:=:=:=:=		San	ndyhshale, dark gray				
		:=:=:=:=:=			aynonalo, aam gray				
		:=:=:=:=:= :=:=:=:=:=	_						
		:=:=:=:=:=							
		:=:=:=:=:= :=:=:=:=:=	_						
509.0	14.7	<u> = = = = =</u>	510						
			510	Bottom of Hol	le DH 13101 Depth	509.0 feet			
			_						
			- -						
			520						
			-						
			<u> </u>	4					
			530	1					
			- -	+					
			F =	7					
			_ =						
			540						
			E -	Ⅎ					
			<u> </u>	7					
			<u> </u>	Ⅎ					
			<u> </u>	-					
			<u> </u>	1					
			550	+					
			F =	7					
			<u> </u>	Ⅎ					
				-					
			<u> </u>	╛					
			<u> </u>	-					
			F60 -	⊣			l	1	1

JLB- CME - 11/29/01					7.1A GEO	LOGIC DRI	ILL LOG			0721-S164 Page 1 of 9
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-20	0132			Measured	d Static Wate	r Levels		Method Drilling:	Continuous Core
Confess Flags	4004	20							Date Drilled:	11/10/2020-12/4/2020
Surface Elev.	1921	.38			Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	TRC P. Mack
Surveyed by:	LC	т			ND	(11)	(11102)	110100	Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GP							_	Quadrangle:	Stahlstown, PA
		Bottom		Bottom	SWL measured b	oy:		_	Laboratory:	Geochemical
Coal Sea	am ID	Depth (ft)		Elevation (MSL)					Northing: Easting:	293985.691 1523303.014
Mahoning	uiii 10	453.4		1468.0	-				Grid Coordinates:	1023000.014
Upper Freeport		501.3		1420.1						
Lower Kittanning		668.3		1253.1						
						ription: rock type			0/ Page	% DOD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, m entrations, pyrite,		Water Conditions	% Recovery	% RQD
			_	_						
			_	_	-					
				_	j					
				_						
			_	_	†					
				_	0.40	ub.uudaa .uaaaaiii				
			_	10	Ove	erburden, unspecifie	ea			
			_	_	4					
				-	1					
			Ē	_	4					
17.0	17.0		\vdash	_	†					
		(=(=(=(=(=		_						
			_	20	1				100%	0%
		:=:=:=:=:=:=								
		:=:=:=:=:=:= :=:=:=:=:=:=		_	-					
		:=:=:=:=:=:=		_	1					
		(=(=(=(=(=(=		_						
			_	_	-				4000/	450/
		:=:=:=:=:=:=		_					100%	15%
			_	30	-	Sandy Shale, gray				
		:=:=:=:=:=:=				, , . ,				
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_	-					
		:=:=:=:=:=:=		_	1					
		(=(=(=(=(=(=		_						
			_	_	1				000/	440/
		:=:=:=:=:=:=		_					90%	11%
			_	40	1					
		:=:=:=:=:=:=								
42.5	25.5	:=:=:=:=:=:=								
				_						
			_	_						
				_	†				100%	75%
			Ē	_	4				100 /0	1370
			E	50	<u> </u>	Sandetono				
]	Sandstone, gray				
			\vdash	_	1					
				_						
			_	_	1					
				_					90%	61%
57.8	15.3	:=:=:=:=:=:=:=			1			+		
		:=:=:=:=:=:=		60						
			\vdash	_	4					
		:=:=:=:=:=:=		_	1					
		:=:=:=:=:=:=	Ē	=	4					
			H	_	1					
		:=:=:=:=:=:=		_					100%	70%
		:=:=:=:=:=:= :=:=:=:=:=:=	H	_	┨ .	Condu Ct1-				
		:=:=:=:=:=:=		70]	Sandy Shale, gray				
			\vdash	_	-					
		:=:=:=:=:=:= :=:=:=:=:=:=		_	1					
		:=:=:=:=:=:= :	H	_	4					
				_	<u> </u>				100%	50%
		:=:=:=:=:=:=		_	1				10070	5076
			H	_	1					
		:=:=:=:=:=:=		80	Ī					

II D. CME. 40/04				7 14 GEO	LOGIC DR	III LOG			0724 8464 Page 2 of 0
JLB- CME - 10/01				7.14 020	LOGIO DI	ILL LOO		Operation Name :	0721-S164 Page 2 of 9 Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	0132		Measure	d Static Wate	r I evels		Method Drilling:	Continuous Core
								Date Drilled:	11/10/2020-12/4/2020
Surface Elev.	1921	.38	=	Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	TRC P. Mack
Surveyed by:	LC	т		ND	(11)	(MOL)	110103	Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GF						_	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured b	oy:		-	Laboratory: Northing:	Geochemical 293985.691
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1523303.014
Mahoning		453.4	1468.0	_				Grid Coordinates:	
Upper Freeport Lower Kittanning		501.3 668.3	1420.1 1253.1						
							•		
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)	color, fos	cription: rock typ ssils, carbonate, r entrations, pyrite	ninerals,	Water Conditions	% Recovery	% RQD
		:=:=:=:=:=:=							
		:=:=:=:=:=	- -	4					
		:=:=:=:=:=:= :=:=:=:=:=:=							
		:=:=:=:=:=:=						100%	75%
				+					
		:=:=:=:=:=	90						
			<u> </u>	+					
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=	-	+					
		:=:=:=:=:=:=							
			-	†				85%	41%
		:=:=:=:=:=:=	100						
		:=:=:=:=:=:= :=:=:=:=:=:=	100						
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	4					
		:=:=:=:=:=:=		<u> </u>					
		:=:=:=:=:=:= :=:=:=:=:=:=		4					
		:=:=:=:=:=:=			Sandy Shale, gray			100%	90%
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	-	, , 3 . ,				
		:=:=:=:=:=:=	110						
			- -	+					
		:=:=:=:=:=:=							
			<u> </u>	+					
		:=:=:=:=:=:=							
								100%	70%
			120	4					
		:=:=:=:=:=:=	120	<u> </u>					
		:=:=:=:=:=: :=:=:=:=:=:=:=	<u> </u>	4					
		:=:=:=:=:=:=		<u> </u>					
			<u> </u>	-					
		:=:=:=:=:=:=:= :=:=:=:=:=:=:=		1				100%	95%
		:=:=:=:=:=:= :=:=:=:=:=:=:=		4			1	.5076	3370
		:=:=:=:=:=:=	130	1					
				1					
404.0	76.0	:=:=:=:=:=:=	_ =	7					
134.0	76.2	=======================================					†		
			_ =	4					
		========] ,	Shale, red and gray			100%	95%
			140	-	,				
142.0	8.0	:=:=:=:=:=:=		+			1		
		:=:=:=:=:=:=							
			<u> </u>	₫					
		:=:=:=:=:=:=	_ =	7				100%	90%
			<u> </u>	<u> </u>	Sandy Shale, gray				
		:=:=:=:=:=:=	150	4					
				₫			1		
			_ =	4					
154.7	12.7		- -	1]		
		=========		-			1	100%	100%
				Sha	ale, black, with fos	sils	1		
160.7	6.0		160	<u>- </u>					

JLB- CME - 10/01					7.1A GEC	DLOGIC DRI	LL LOG			0721-S164 Page 3 of 9
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-20	0132			Measure	d Static Wate	r Levels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	1921	.38			Date	Depth	Elevation		Drilled By:	11/10/2020-12/4/2020 TRC
•			•		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	T			ND				Municipality:	Donegal
Survey Method:	GP	s							County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
		Bottom		Bottom	SWL measured	by:		=	Laboratory:	Geochemical
01 0	15	Depth		Elevation					Northing:	293985.691
Coal Sea Mahoning	am IU	(ft) 453.4		(MSL) 1468.0	-				Easting: Grid Coordinates:	1523303.014
Upper Freeport		501.3		1420.1						
Lower Kittanning		668.3		1253.1						
Double	Thiston	0bi-		01-		cription: rock type		W-1	% Recovery	% RQD
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ssils, carbonate, m centrations, pyrite,		Water Conditions	% Recovery	% KQD
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	-					
		:=:=:=:=:=:=		_		Sandy Shale, gray				
164.0	3.3	:=:=:=:=:= ############################						1		
		#########		_	1					
		######################################	_	_	-	lavotono grav limo			100%	90%
		######################################		170		laystone, gray, lime	у			
		#########								
172.0	8.0	#######################################						1		
		#########		_	CI	laystone, gray, sand	у			
176.0	4.0	######################################	_	_	1	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
		:=:=:=:=:=:=							100%	90%
		:=:=:=:=:=:= :=:=:=:=:=:=		_		Sandy Shale, gray				
		[=[=]=[=]= 		180		Garidy Griale, gray				
182.0	6.0			_						
			_	_	-					
				_						
			_	_	+				4000/	000/
				_					100%	90%
			_	190	1					
				_						
				_	j					
			_	_	-					
				_						
			_	_					100%	95%
				200						
				200		Shale, red and gray				
			_		-	g,				
				_	1					
				_						
			<u> </u>	_	4				100%	95%
				_						
				210	1					
				_	1					
					<u> </u>					
		========	F	_	-					
				_	j				100%	80%
			_		-				10070	5575
220.5	38.5			220						
			_	_	1					
		:=:=:=:=:=:=		_	1					
				_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_	4					40
		:=:=:=:=:=		_	1				100%	100%
		(=(=(=(=(=(= (=(=(=(=(=(=	E	230		Sandy Chala are:				
		:=:=:=:=:=:=		_	1	Sandy Shale, gray				
		:=:=:=:=:=:= :=:=:=:=:=:=		_	1					
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_	_						
		:=:=:=:=:=:=		_	1				100%	100%
		:=:=:=:=:=:= :=:=:=:=:=:=	H	_	1					
		:=:=:=:=:=:=		240						
		:=:=:=:=:=:=		240	<u> </u>					

II B- CME - 10/01				7.1A GEO	LOGIC DRII	LLOG			0721-S164 Page 4 of 9
JLB- CME - 10/01 Hole No. DH-20132			7.1A OLO	PLOOIO DIVII			Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	DH-20	0132		Measure	d Static Water	Levels		Method Drilling:	Continuous Core
Surface Flor	4024	1 20		Date	Depth	Elevation		Date Drilled:	11/10/2020-12/4/2020
Surface Elev.	1921	1.30	:	Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	TRC P. Mack
Surveyed by:	LC	т	_	ND	,	<u> </u>		Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	CWI magazirad b				Quadrangle:	Stahlstown, PA
		Depth	Elevation	SWL measured b			•	Laboratory: Northing:	Geochemical 293985.691
Coal Sea	ım ID	(ft)	(MSL)	_				Easting:	1523303.014
Mahoning		453.4	1468.0					Grid Coordinates:	
Upper Freeport Lower Kittanning		501.3 668.3	1420.1 1253.1						
				Lithologia Dasa	cription: rock type,	woothoring			
Depth	Thickness	Graphic	Scale	color, fos	sils, carbonate, mi	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	entrations, pyrite, e	tc.	Conditions		
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=		-					
		:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=		-				4000/	4000/
		:=:=:=:=:=						100%	100%
		:=:=:=:=:=:=: :=:=:=:=:=:=	250	4					
		:=:=:=:=:=:=			Sandy Shale, gray				
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	-					
		:=:=:=:=:=:=							
		:=:=:=:=:=:=		-					
		:=:=:=:=:=:= :=:=:=:=:=:=:=						100%	100%
		:=:=:=:=:=:=						100 /6	100 /6
			260	-					
261.0	40.5	:=:=:=:=:=		Cho	ale, black, with fossils				
262.1	1.1			Sila	ile, Diack, Willi 1055ii	•			
				-					
					Shale, gray			100%	100%
				-					
074.0			270						
271.0 271.7	9.0 0.7			Sha	ale, black, with fossils	3			
		#########		-					
		######################################		Cla	aystone, gray, sandy				
277.5	5.8	######################################		-					
211.0	0.0	:=:=:=:=:=						100%	80%
		:=:=:=:=:=:= :=:=:=:=:=:=:=		4					
		:=:=:=:=:=:=							
		:=:=:=:=:=:= :=:=:=:=:=:=:=		_					
		:=:=:=:=:=:=			Sandy Shale, gray				
		:=:=:=:=:=:= :=:=:=:=:=:=:=	_ =	-					
		:=:=:=:=:=:=		1				100%	100%
			<u> </u>	-				.00,0	,
290.0	12.5	(=(=(=(=(=	290	1					
			<u> </u>	-					
			<u> </u>	-					
				1					
			<u> </u>	-				100%	90%
				s	Shale, red and gray				
			300	-					
			<u> </u>	-					
				1					
307.0	17.0			-					
307.0	17.0	:=:=:=:=:=:=		1				100%	95%
		(=(=(=(=(=	310	-					
			310	_					
		:=:=:=:=:=:= ::-:-:-:	<u> </u>	-					
		:=:=:=:=:=:= :=:=:=:=:=:=:=			Sandy Shale, gray				
		:=:=:=:=:=:=	_ =	7	•				
		:=:=:=:=:=:= :=:=:=:=:=:=	- -	1				100%	100%
		(=(=(=(=(=]					
		:=:=:=:=:=:= :=:=:=:=:=:=	320	1					

JLB- CME - 10/01					7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 5 of 9
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	0132	-		Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Continuous Core
Surface Elev.	1921	.38			Date	Depth	Elevation		Drilled By:	11/10/2020-12/4/2020 TRC
		_	_		Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by: Survey	LC	1	-		ND				Municipality: County, State:	Donegal Westmoreland, PA
Method:	GF		_					_	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	oy:		-	Laboratory: Northing:	Geochemical 293985.691
Coal Sea	ım ID	(ft)		(MSL)					Easting:	1523303.014
Mahoning Upper Freeport		453.4 501.3		1468.0 1420.1					Grid Coordinates:	
Lower Kittanning		668.3		1253.1						
					Lithologic Desc	ription: rock type,	weathering,			
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		sils, carbonate, mi entrations, pyrite, e		Water Conditions	% Recovery	% RQD
			_							
		:=:=:=:=:=:=		_						
			<u> </u>	_	- 8	Sandy Shale, gray				
		:=:=:=:=:=:= :=:=:=:=:=:=:=		_						
328.0	21.0	:=:=:=:=:=:=		_					100%	95%
			<u> </u>	330	_	Shale, red and gray				
332.5	4.5	========		_	i i	inale, red and gray				
333.5	1.0	00000000000			Limestor	ne, gray (Brush Cree	ek LS)			
		######################################	<u> </u>	_	1					
		######################################		_						
		#########		_					100%	95%
		######################################	<u> </u>	340	-					
		#########	_	_						
		######################################		_	Cla	aystone, gray, limey				
		######################################	<u> </u>	_	-	ayotorio, gray, iiiioj				
		#########		_						
		######################################		_	<u> </u>				100%	70%
		######################################	<u> </u>	350	-					
		#########	_	_						
353.0	19.5	######################################		_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	_	-					
		:=:=:=:=:=:=		_						
				_	<u> </u>				100%	98%
			<u> </u>	360	-					
		:=:=:=:=:=:=	_	_						
		:=:=:=:=:=:= :=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	_	-					
		:=:=:=:=:=:=		_	1					
		:=:=:=:=:=:= :=:=:=:=:=:=		_		Sandy Shale, gray			100%	100%
		:=:=:=:=:=:= :=:=:=:=:=:=	E	370	1	. ,3.,				
					4					
		:=:=:=:=:=:=		_	1					
		:=:=:=:=:=:= :=:=:=:=:=:=			<u> </u>					
			<u> </u>	_	4					
		(=(=(=(=(=		_]			1	100%	100%
				380						
			<u> </u>	_						
382.7	29.7	:=:=:=:=:=:=		_				=		
384.7	2.0			_	Sha	le, black, with fossil	s]		
			<u> </u>	_	-				4000/	1000/
		:=:=:=:=:=:=		_	1				100%	100%
				390						
			\vdash	_	4					
		:=:=:=:=:=:=		_	5	Sandy Shale, gray				
				_						
			_	_	4				100%	100%
		:=:=:=:=:=:=		_]			1		
				400	1					

JLB- CME - 10/01				7.1A GEC	DLOGIC DRII	LL LOG			0721-S164 Page 6 of 9
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-2	0132	-	Measure	d Static Water	Levels		Method Drilling:	Continuous Core
Surface Elev.	1921	38		Date	Depth	Elevation		Date Drilled: Drilled By:	11/10/2020-12/4/2020 TRC
ourrace Liev.	132		-	Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	т	_	ND				Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	Bottom	Bottom	SWL measured	hv:		•	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation	OWE Incapared			-	Northing:	293985.691
Coal Sea	ım ID	(ft)	(MSL)	_				Easting:	1523303.014
Mahoning Upper Freeport		453.4 501.3	1468.0 1420.1					Grid Coordinates:	
Lower Kittanning		668.3	1253.1						
				Lithologic Desc	cription: rock type,	weathering			
Depth	Thickness	Graphic	Scale	color, for	ssils, carbonate, mi	nerals,	Water	% Recovery	% RQD
(ft)	(ft)	Log :=:=:=:=:=	(feet)	conc	entrations, pyrite, e	etc.	Conditions		
		:=:=:=:=:=:=							
			-	+					
		:=:=:=:=:=:=							
			- -	+	Sandy Shale, gray				
		:=:=:=:=:=			, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			100%	100%
			410	4					
		:=:=:=:=:=							
412.7	28.0	:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	4					
714.7	20.0	#########							
		######################################		4					
		##########						100%	90%
		######################################		4	laystone, gray, limey			10070	3070
		######################################	420		laystorie, gray, ilitiey				
		#########							
		######################################		-					
424.0	11.3	#########							
			-	+					
		:=:=:=:=:=:=						100%	100%
				+					
		:=:=:=:=:=:=	430						
				+					
		:=:=:=:=:=							
				+					
		(=(=(=(=(=]					
				+	0t0hl			100%	100%
		:=:=:=:=:=:=			Sandy Shale, gray				
			440	+					
		(=(=(=(=(=							
				+					
		:=:=:=:=:=:=							
			-	+				4000/	000/
		:=:=:=:=:=		1				100%	90%
		:=:=:=:=:=:= :=:=:=:=:=:=	450	-					
		:=:=:=:=:=:=							
452.2 453.4	28.8 1.2	[=]=]=]=[=]=		1	Mahoning Coal				
		##########		1			1		
		######################################	-	-					
		#########]				100%	75%
		######################################	- -	CI	aystone, gray, sandy				
		#########	460						
		######################################	- -	+					
463.5	10.1	#########		1					
		:=:=:=:=:=:= :=:=:=:=:=:=	- -	+					
		:=:=:=:=:=:=		1					
		:=:=:=:=:=:= :=:=:=:=:=:=:=		-				100%	95%
		:=:=:=:=:=:=		1					
			470	-					
		:=:=:=:=:=:=		1	Sandy Shale, gray				
		:=:=:=:=:=:= :=:=:=:=:=:=:=		-					
		:=:=:=:=:=		1					
		:=:=:=:=:=:= :=:=:=:=:=:=:=	<u> </u>	-				100%	100%
		:=:=:=:=:=:=		1					
		:=:=:=:=:=:= :=:=:=:=:=:=	480	<u> </u>					

JLB- CME - 10/01					7.1A GEC	LOGIC DRI	LL LOG			0721-S164 Page 7 of 9
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	DH-20	0132			Measure	d Static Wate	r Levels		Method Drilling:	Continuous Core
Surface Floy	1921	20			Date	Depth	Elevation		Date Drilled:	11/10/2020-12/4/2020 TRC
Surface Elev.	1921	.30	•		Measured	(ft)	(MSL)	Notes	Drilled By: Logged By:	P. Mack
Surveyed by:	LC	т			ND	(/	()		Municipality:	Donegal
Survey			•						County, State:	Westmoreland, PA
Method:	GF		-	D - 44	014/1			•	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured I	by:			Laboratory: Northing:	Geochemical 293985.691
Coal Sea	am ID	(ft)		(MSL)					Easting:	1523303.014
Mahoning		453.4		1468.0	-				Grid Coordinates:	
Upper Freeport Lower Kittanning		501.3 668.3		1420.1 1253.1						
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		entrations, pyrite,		Conditions		
		:=:=:=:=:=:= :=:=:=:=:=:=:=		_						
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	_							
		(=)=(=(=(=								
			<u> </u>	_	-				100%	100%
		:=:=:=:=:=:=				Sandy Shale, gray				
				490	1					
		:=:=:=:=:=		_						
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	_	_	-					
		:=:=:=:=:=:=:=		_						
		:=:=:=:=:=:=: :=:=:=:=:=:=:=	<u> </u>	_						
498.3	34.8			_					80%	88%
			_	500	Unner	reeport Coal, with	shale			
501.3	3.0			300	Оррегі	recport coal, with	Silaic			
		######################################	<u> </u>		-					
		##########		_						
		######################################		_	-					
		##########		_	Cla	aystone, gray, sand	у		100%	80%
		#########		_					100%	0076
		########## ###########################	_	510						
540.0	40.7	#########		_						
512.0	10.7	##########								
		:=:=:=:=:=:= 		_						
				_						
		:=:=:=:=:=:= 		_					100%	100%
				_						
		(=)=)=(=(=(= 		520	-					
			_	_	1					
		:=:=:=:=:=:=		_						
				_						
		:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=	<u> </u>	_	-					
				_					100%	100%
		:=:=:=:=:=:=		530	-					
		:=:=:=:=:=:= :=:=:=:=:=:=		530]					
		(=(=(=(=(=(=	<u> </u>	_	4					
					1					
		:=:=:=:=:=:=		_	-					
					<u> </u>	Sandy Shale, gray			100%	100%
		:=:=:=:=:=:= 		_					10070	10070
		:=:=:=:=:=:= :=:=:=:=:=:=:=		540						
		:=:=:=:=:=:=	_	_						
				_	<u> </u>					
		:=:=:=:=:=:=		_						
		:=:=:=:=:=:= :=:=:=:=:=:=:=			1					
		:=:=:=:=:=:=		_]				100%	100%
				_	<u> </u>					
		:=:=:=:=:=:=		550	4					
		:=:=:=:=:=:= :=:=:=:=:=:=:=	E		<u> </u>					
		:=:=:=:=:=		_						
			E	_	1					
		:=:=:=:=:=:=		_					100%	100%
		:=:=:=:=:=:= :=:=:=:=:=:=:=	\vdash	_	1					
		:=:=:=:=:=:=]					
		:=:=:=:=:=:=		560	L					

JLB- CME - 10/01				7.1A GEC	DLOGIC DR	LL LOG		T	0721-S164 Page 8 of 9
Hala Na	DH-2	0122						Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	υп-2	0132		Measure	d Static Wate	r Levels		Method Drilling: Date Drilled:	Continuous Core 11/10/2020-12/4/2020
Surface Elev.	192	1.38		Date	Depth	Elevation		Drilled By:	TRC
•				Measured	(ft)	(MSL)	Notes	Logged By:	P. Mack
Surveyed by:	LC	CT		ND				Municipality:	Donegal
Survey Method:	GI	es						County, State: Quadrangle:	Westmoreland, PA Stahlstown, PA
ct.iou.		Bottom	Bottom	SWL measured	by:		=	Laboratory:	Geochemical
		Depth	Elevation		•		-	Northing:	293985.691
Coal Sea	ım ID	(ft)	(MSL)	_				Easting:	1523303.014
Mahoning Upper Freeport		453.4 501.3	1468.0 1420.1					Grid Coordinates:	
Lower Kittanning		668.3	1253.1						
-				1					
Depth	Thickness	Graphic	Scale		cription: rock type ssils, carbonate, n		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite,		Conditions	·	
		:=:=:=:=:=:= :=:=:=:=:=:=	-						
		:=:=:=:=:=:=			Sandy Shale, gray				
564.0	52.0	:=:=:=:=:=:=					1		
								100%	100%
				_					
			570						
				_					
								100%	100%
			-						
		:::::::::::::::::::::::::::::::::::::::	580						
				_					
		:::::::::::::::::::::::::::::::::::::::		Sandstone, g	gray, with some sha	le beddings			
				_					
								100%	100%
				_					
			590						
				_					
				_					
								100%	100%
600.7	26.7		600						
600.7	36.7	:=:=:=:=:=:=					1		
		:=:=:=:=:=			Sandy Shale, gray				
605.0	4.3			_					
				_				100%	100%
				Sa	andstone, gray, har	d			
			610	-	. 5 - 7,				
				1					
613.0	8.0		_				1		
					andstone, gray, hard Kittanning Horizon (
616.0	3.0		_	with Middle P		ou ou cano	4		
			- -	†				100%	100%
			=						
			620	Sa	andstone, gray, har	d			
				1					
				_					
625.0	9.0		_]		
627.2	22	:=:=:=:=:=:= :	<u> </u>	4	Sandy Shale, gray				
021.2	2.2	000000000000000000000000000000000000000					1	100%	98%
		000000000000							
		00000000000 00000000000	630	Limestone	, gray (Middle Kitta	nning LS)			
		000000000000		1					
634.5	7.3	00000000000 00000000000	- -	4					
554.5	1.5	######################################					1		
		#########	<u> </u>	4	Clayshale, gray			100%	100%
638.5	4.0	######################################		<u> </u>					
		:=:=:=:=:=:=	640		Sandy Shale, gray				
		:=:=:=:=:=:=	640	1			<u> </u>	1	I

JLB- CME - 10/01					7.1A GEO	LOGIC DR	ILL LOG			0721-S164 Page 9 of 9
Hole No.	DH-2	0132				d Static Wate			Operation Name : Method Drilling:	Rustic Ridge #1 Mine-Expansion Continuous Core
Confess Flavo	4004	20							Date Drilled:	11/10/2020-12/4/2020
Surface Elev.	1921	.38	-		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	TRC P. Mack
Surveyed by:	LC	т			ND	(14)	(11102)	110100	Municipality:	Donegal
Survey			-						County, State:	Westmoreland, PA
Method:	GF		_	-				_	Quadrangle:	Stahlstown, PA
		Bottom Depth		Bottom Elevation	SWL measured b	oy:	-	-	Laboratory: Northing:	Geochemical 293985.691
Coal Sea	am ID	(ft)		(MSL)					Easting:	1523303.014
Mahoning		453.4		1468.0	-				Grid Coordinates:	
Upper Freeport Lower Kittanning		501.3 668.3		1420.1 1253.1						
Lower Kittarining		000.3		1255.1						
Depth (ft)	Thickness (ft)	Graphic Log		Scale (feet)		ription: rock typ sils, carbonate, r entrations, pyrite	minerals,	Water Conditions	% Recovery	% RQD
		:=:=:=:=:=:= :=:=:=:=:=:=		_						
		:=:=:=:=:=:=		_	S	Sandy Shale, gray				
645.6	7.1	:=:=:=:=:= :=:=:=:=:=:=	\vdash	_						
			<u> </u>							
			\vdash	_	Shale, gray,	with interbedded :	sandy shale		100%	100%
				_			-			
650.3	4.7			650				1		
				_	1					
			H	_	-	Shale, dark gray				
655.3	5.0		\vdash	_						
			<u> </u>							
			\vdash	_	-				100%	100%
				_						
				660	Sandstone, light of	gray, with some s	hale laminations			
				_						
			<u> </u>	_	-					
665.6	10.3		\vdash	_	1					
665.65	0.05 0.25					Kittanning - Shale Kittanning - Coal				
665.90 667.40	1.50					nning - Coal, brigh		1	100%	62%
668.30	0.90			070		tanning - Coal, bri				
669.6 670.9	1.3	######################################		670		ark gray to gray, s Clayshale, gray	some sandy	1		
674.2	3.3	######################################		=	Clayshale	e, gray, solid, som	ne sandy			
01 HZ	0.0			_	Sa	andstone, light gra	ıy			
678.4	4.2		\vdash	_	-				100%	100%
		[= <u>[</u> =]=]=]=						1		
		:=:=:=:=:=:= :=:=:=:=:=:=:=		680	S	Sandy Ghale, gray	•			
682.0	3.6	:=:=:=:=:=								
				_	Bottom of Hol	le DH 20132 Dep	th 682.0 feet			
				_						
			\vdash	_						
			E	_						
			H	690	1					
				_						
			H	_	1					
				_						
			H	_	1					
				_]					
			\vdash	_	1					
				700						
			—	_	1					
				_	1					
			H	_	1					
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			—	_	-					
				_	1					
			<u> </u>	710	-					
			Е	_	1					
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				720]					
				120					1	1

JLB- CME - 11/29/01					7.1A GEOLOGIC D	RILL	LOG			0721-S164 Page 1 of 7
		_							Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	7D			Measured Static Wa	iter L	evels.		Method Drilling:	Air Rotary
Surface Elev.	1640	.64			Date Depth		Elevation		Date Drilled: Drilled By:	1/7/2020-1/8/2020 Holt Drilling
ouridoo Elovi	1040	.04			Measured (ft)		(MSL)	Notes	Logged By:	Tion Driving
Surveyed by:	LC	T	-		8/17/2020 177.95		1465.27		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottor	n	SWL measured by:		LCT	•	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation		OTTE modelated by.		LOT		Northing:	300222.623
Coal Sea	am ID	(ft)	(MSL)						Easting:	1522059.262
Upper Freeport Upper Kittanning		330.0 371.0	1310.6 1269.6		Middle Kittanning 408 Middle Kittanning 433		1232.6 1207.6		Grid Coordinates:	
Upper Kittanning		375.0	1265.6		Middle Kittanning 433 Lower Kittanning 481		1159.6			
Upper Kittanning		389.0	1251.6	<u> </u>	Lithologic Description: rock t		a a th a sin a			
Depth	Thickness	Graphic	Scale		color, fossils, carbonate	e, mine	erals,	Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		concentrations, pyr	ite, etc		Conditions		
		~~~~~~		_						
		****	_	_	Unconsolidate	d				
		~~~~~~								
6.0	6.0	****								
			10	_						
				_						
			_	_	Sandstone, brov	vn				
				_						
				_						
			_	_						
			_	_						
27.0	21.0									
				_						
			30							
					Sand, brown, weat	hered				
			_	_						
35.0	8.0									
		:=:=:=:=:=:= :=:=:=:=:=:=	_	_						
		:=:=:=:=:=:=		_						
			40	_						
		:=:=:=:=:=: :=:=:=:=:=:=:=	_	_						
		:=:=:=:=:=		_	Sandy Shale, gr	ay				
			_	_						
		:=:=:=:=:=								
				_						
=0.0	45.0	:=:=:=:=:=:=		_						
50.0	15.0	:=:=:=:=:=:=	50	_						
			<u> </u>	_						
				_						
			<u> </u>							
				_						
			60	_						
			_	_	Sandstone, gra	ıy				
				_						
			 	_						
				_						
			 	_						
				_						
			70							
72.0	22.0									
				_						
		:=:=:=:=:=:=	Ľ	_						
				_	Sandy Shale, gr	ay				
		:=:=:=:=:=		_						
			80	_						

LB-CME-10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 2 of 7									
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	7D		Measure	d Static Water	Levels		Method Drilling:	Air Rotary
O(El	404							Date Drilled:	1/7/2020-1/8/2020
Surface Elev.	1640	1.64		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	Holt Drilling
Surveyed by:	LC	т		8/17/2020	177.95	1465.27	110100	Municipality:	Donegal
Survey			•					County, State:	Westmoreland, PA
Method:	GF						_	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured I	by:	LCT	_	Laboratory: Northing:	Geochemical 300222.623
Coal Sea	ım ID	(ft)	(MSL)					Easting:	1522059.262
Upper Freeport		330.0	1310.6	Middle Kittanning	408.0	1232.6		Grid Coordinates:	
Upper Kittanning Upper Kittanning		371.0 375.0	1269.6 1265.6	Middle Kittanning Lower Kittanning	433.0 481.0	1207.6 1159.6			
Upper Kittanning		389.0	1251.6						
Depth	Thickness	Graphic	Scale		cription: rock type,		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite,		Conditions	70 NGOOVERY	// NGD
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		:=:=:=:=:=							
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		:=:=:=:=:=:=							
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		:=:=:=:=:=	90] ,	Sandy Shale, gray				
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		:=:=:=:=:=:=							
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			-	-					
100.0	28.0	:=:=:=:=:=	100	1			_		
			-						
			-	-	0				
					Sandstone, gray				
110.0	10.0		110				1		
		=======							
			<u> </u>						
			<u> </u>	_					
					Shale, red				
			120						
			<u> </u>						
125.0	15.0	======== :=:=:=:=:=:=					1		
400.0		:=:=:=:=:=:=	_ :	□ :	Sandy Shale, gray				
128.0	3.0	:=:=:=:=:= ===========================					1		
		=======	130						
			<u> </u>	=	Shale, red				
			_ :						
135.0	7.0		<u> </u>	\dashv					
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		:=:=:=:=:=:=		_					
		:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>						
		:=:=:=:=:=:=		- :	Sandy Shale, gray				
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JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 3 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	-7D		Measure	d Static Water	Levels		Method Drilling: Date Drilled:	Air Rotary
Surface Elev.	164	0.64		Date	Depth	Elevation		Drilled By:	1/7/2020-1/8/2020 Holt Drilling
ounded Liev.		0.04	•	Measured	(ft)	(MSL)	Notes	Logged By:	Tion Dinning
Surveyed by:	LO	т		8/17/2020	177.95	1465.27		Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GI			014/1			-	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured b		LCT	-	Laboratory: Northing:	Geochemical 300222.623
Coal Sea	am ID	(ft)	(MSL)					Easting:	1522059.262
Upper Freeport		330.0	1310.6	Middle Kittanning	408.0	1232.6		Grid Coordinates:	
Upper Kittanning Upper Kittanning		371.0 375.0	1269.6 1265.6	Middle Kittanning Lower Kittanning	433.0 481.0	1207.6 1159.6			
Upper Kittanning		389.0	1251.6						
Depth	Thickness	Graphic	Scale		cription: rock type, ssils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, e		Conditions	76 Resovery	70 KQD
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				+					
		(=)=(=(=(=(=							
			- -	+					
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				†					
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				+					
		(=)=(=(=(=(=	180		Sandy Shale, gray				
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		:=:=:=:=:=:=							
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				+					
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		-		-					
		=======							
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				4	Gridio, gray				
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		=======	230]					
			-	┥					
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240.0	40.0		240	i			I .	Î	1

JLB- CME - 10/01				7.1A GFO	LOGIC DRII	LLOG			0721-S164 Page 4 of 7
JEB- CME - 10/01				7.1A OLO	LOCIO DIVII			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	7D						Method Drilling:	Air Rotary
-				Measured	d Static Water	Leveis		Date Drilled:	1/7/2020-1/8/2020
Surface Elev.	1640	0.64		Date	Depth	Elevation		Drilled By:	Holt Drilling
-				Measured	(ft)	(MSL)	Notes	Logged By:	
Surveyed by:	LC	т		8/17/2020	177.95	1465.27		Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GF	s						Quadrangle:	Stahlstown, PA
_		Bottom	Bottom	SWL measured b	y:	LCT	-	Laboratory:	Geochemical
		Depth	Elevation					Northing:	300222.623
Coal Sea	ım ID	(ft)	(MSL)	_				Easting:	1522059.262
Upper Freeport Upper Kittanning		330.0 371.0	1310.6 1269.6	Middle Kittanning Middle Kittanning	408.0	1232.6		Grid Coordinates:	
Upper Kittanning		375.0	1265.6	Lower Kittanning	433.0 481.0	1207.6 1159.6			
Upper Kittanning		389.0	1251.6						
					ription: rock type,			0/ 8	av Bob
Depth (ft)	Thickness (ft)	Graphic Log	Scale (feet)		sils, carbonate, mi entrations, pyrite, e		Water Conditions	% Recovery	% RQD
241.0	1.0	209	(1001)	001100	Coal		Containone		
		:=:=:=:=:=							
		:=:=:=:=:=							
			_						
		:=:=:=:=:=:=		s	Sandy Shale, gray				
		:=:=:=:=:=							
		:=:=:=:=:=:=							
250.0	9.0		250						
							1		
			_	4					
			_ _	-					
			-	†					
			260						
				_	Sandstone, gray				
				·	Saliusione, gray				
			270						
				1					
275.0	25.0								
213.0	25.0						1		
			280						
			<u> </u>	4					
			- -	1					
				Sh	nale, medium dark				
		=======	<u> </u>	_					
			290	1					
				1					
]					
			<u> </u>	-					
			-	†					
			- -	4					
300.0	25.0		300						
							1		
			_	-					
]					
			- -	4					
			- -	1	Shale, gray				
				1					
		=======	310	4					
			-	†					
				1					
245.0	15.0		-	-					
315.0	15.0			<u> </u>			1		
]	Condate				
			<u> </u>	-	Sandstone, gray				
			320	1			1		1

II D. CME. 40/04				7 14 GEO	LOGIC DRIL	LIOG			0721-S164 Page 5 of 7
JLB- CME - 10/01				7.14 GLO	LOGIC DIVIL	L LOG		Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	7D		Measure	d Static Water	l evels		Method Drilling:	Air Rotary
								Date Drilled:	1/7/2020-1/8/2020
Surface Elev.	1640	.64		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	Holt Drilling
Surveyed by:	LC	т		8/17/2020	177.95	1465.27	Notes	Municipality:	Donegal
Survey								County, State:	Westmoreland, PA
Method:	GP		-				_	Quadrangle:	Stahlstown, PA
		Bottom Depth	Bottom Elevation	SWL measured b		LCT	=	Laboratory: Northing:	Geochemical 300222.623
Coal Sea	am ID	(ft)	(MSL)					Easting:	1522059.262
Upper Freeport		330.0	1310.6	Middle Kittanning	408.0	1232.6		Grid Coordinates:	
Upper Kittanning Upper Kittanning		371.0 375.0	1269.6 1265.6	Middle Kittanning Lower Kittanning	433.0 481.0	1207.6 1159.6			
Upper Kittanning		389.0	1251.6						
Depth	Thickness	Graphic	Scale		ription: rock type, sils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, e		Conditions	,	
				-					
					Sandstone, gray				
325.0	10.0			-					
					Shale, gray				
327.0	2.0						1		
330.0	3.0		330	Uį	pper Freeport Coal				
330.0	3.0		330				1		
			_ =	4					
				1					
				1	Shale, gray				
				-					
		=======							
340.0	10.0		340	+					
							1		
				+					
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				-					
			350						
				-					
				<u> </u>	Sandstone, gray				
				-					
			_ =	<u> </u>					
				-					
			_ =						
			360	+					
				-					
365.0	25.0			1			4		
				-					
		=======			Shale, dark gray				
370.0	5.0		370	-					
371.0	1.0				per Kittanning Coal	·	4		
373.0	2.0		<u> </u>		Shale, dark gray				
375.0	2.0			Up	per Kittanning Coal				
	-						1		
			<u> </u>	†	Shale, dark gray				
		=======							
380.0	5.0		380				1		
			= =						
]					
				-					
387.0	7.0		-	1					
389.0	2.0			Up	per Kittanning Coal				
			390				1		
				1					
				1					
				1	Sandstone, gray				
				1	, 3,				
				-					
				1					
			400	ĺ			1	1	1

JLB- CME - 10/01	B- CME - 10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 6 of 7											
										Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.		PZ-	7D			Measure	d Static Water	Levels		Method Drilling:	Air Rotary	
Surface Ele	21/	1640	64			Date	Depth	Elevation		Date Drilled: Drilled By:	1/7/2020-1/8/2020	
Surface Ele	∌v	1040	.04			Measured	(ft)	(MSL)	Notes	Logged By:	Holt Drilling	
Surveyed b	y:	LC	Т			8/17/2020	177.95	1465.27		Municipality:	Donegal	
Survey										County, State:	Westmoreland, PA	
Method:		GP			D - 11	014/1 1.1			=	Quadrangle:	Stahlstown, PA	
			Bottom Depth		Bottom Elevation	SWL measured b	oy: _	LCT	-	Laboratory: Northing:	Geochemical 300222.623	
Coal	I Seam	ID	(ft)		(MSL)					Easting:	1522059.262	
Upper Freepo			330.0		1310.6	Middle Kittanning	408.0	1232.6		Grid Coordinates:		
Upper Kittanr Upper Kittanr			371.0 375.0		1269.6 1265.6	Middle Kittanning Lower Kittanning	433.0 481.0	1207.6 1159.6				
Upper Kittanr			389.0		1251.6							
Depth		Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD	
(ft)		(ft)	Log		(feet)		entrations, pyrite,		Conditions	/o necotion	N.I.Q.	
				_	_	-						
					_		Sandstone, gray					
				_	_	-	canastone, gray					
406.0		17.0		_	_	1						
400.0		0.0		_	_	Mic	ddle Kittanning Coa	I				
408.0	-	2.0							1			
					410							
				_		1						
					_]						
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					_							
				_	_							
					_							
					420		Sandstone, gray					
				_	_	1						
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				_		1						
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					430	-						
432.0		24.0			_							
433.0		1.0	:=:=:=:=:=:=			Mid	ddle Kittanning Coa	I				
			:=:=:=:=:=:=		_							
			:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>	_	-	Sandy Shale, gray					
			:=:=:=:=:=:=		_		, , 5 . ,					
440.0		7.0	:=:=:=:=:=:= :=:=:=:=:=:=	_	440	-						
440.0		7.0										
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					450	1						
				— [_	-						
					_	1	Sandstone, gray					
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				<u> </u>	_	-						
					_							
					460	-						
				_	_	1						
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465.0		25.0			·	<u> </u>						
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			=======		470							
					470	1	Cholo dod					
					_	1	Shale, dark gray					
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477.0		12.0	=========	_		1						
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				<u> </u>	480	Lo	wer Kittanning Coal					

JUB- CME - 1001 7.1A GEOLOGIC DRILL LOG 0721-S16									0721-S164 Page 7 of 7
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	7D		Measured	Static Water	Levels		Method Drilling:	Air Rotary
								Date Drilled:	1/7/2020-1/8/2020
Surface Elev.	1640	.64		Date	Depth	Elevation		Drilled By:	Holt Drilling
		-		Measured	(ft)	(MSL)	Notes	Logged By:	
Surveyed by:	LC	1		8/17/2020	177.95	1465.27		Municipality:	Donegal
Survey	6.0	_						County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	SWL measured b	.,,	LOT	=	Quadrangle: Laboratory:	Stahlstown, PA
		Depth	Elevation	SWL measured b		LCT	=	Northing:	Geochemical 300222.623
Coal Sea	am ID	(ft)	(MSL)					Easting:	1522059.262
Upper Freeport		330.0	1310.6	Middle Kittanning	408.0	1232.6		Grid Coordinates:	1022000.202
Upper Kittanning		371.0	1269.6	Middle Kittanning	433.0	1207.6			
Upper Kittanning		375.0	1265.6	Lower Kittanning	481.0	1159.6			
Upper Kittanning		389.0	1251.6	Lithologic Descr	ription: rock type,	weathering			
Depth	Thickness	Graphic	Scale		sils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)	conce	ntrations, pyrite, et	ic.	Conditions		
481.0 482.0	4.0 1.0	:=:=:=:=:=			ver Kittanning Coal andy Shale, gray		4		
402.0	1.0				and Chao, gray				
				Bottom of I	Hole PZ-7D Depth 4	82 feet			
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JLB- CME - 11/29/01					7.1A GEO	LOGIC DRI	LL LOG			0721-S164 Page 1 of 5
									Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	9D	•		Measured	Static Water	Levels		Method Drilling:	Air Rotary
Surface Elev.	1744	.06			Date	Depth	Elevation		Date Drilled: Drilled By:	4/21/2020-4/22/2020 Holt Drilling
Currace Liev.	1777		•		Measured	(ft)	(MSL)	Notes	Logged By:	Holt Dilling
Surveyed by:	LC	т	_		8/17/2020	65.6	1678.5		Municipality:	Donegal
Survey		_							County, State:	Westmoreland, PA
Method:	GP	Bottom		Bottom	SWL measured b	.,,	LCT	•	Quadrangle:	Stahlstown, PA
		Depth		Elevation	SVVL measured b	y	LCI	•	Laboratory: Northing:	Geochemical 290839.098
Coal Sea	am ID	(ft)		(MSL)					Easting:	1507885.325
Mahoning		138.0		1606.1	Lower Freeport	220.0	1524.1		Grid Coordinates:	
Upper Freeport Lower Freeport		170.0 210.0		1574.1 1534.1	Upper Kittanning Middle Kittanning	253.0 279.0	1491.1 1465.1			
Lower Freeport		213.0		1531.1	Lower Kittanning	342.0	1402.1			
Depth	Thickness	Graphic		Scale		ription: rock type sils, carbonate, m		Water	% Recovery	% RQD
(ft)	(ft)	Log		(feet)		ntrations, pyrite,		Conditions	,	
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		#########		_						
		######################################		20	-					
		#########		_						
		######################################	_	_	-					
		#########		_						
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		#######################################		30						
32.0	32.0	########## :=:=:=:=:=:=:=								
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LB- CME - 10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 2 of 5									
3EB- GWIE - 10/01				71171 020	200.0 2			Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	9D		Moasuro	d Static Water	Lovole		Method Drilling:	Air Rotary
								Date Drilled:	4/21/2020-4/22/2020
Surface Elev.	1744	.06		Date	Depth	Elevation		Drilled By:	Holt Drilling
Commence of horse		-		8/17/2020	(ft) 65.6	(MSL)	Notes	Logged By:	
Surveyed by: Survey	LC	1		6/17/2020	05.0	1678.5		Municipality: County, State:	Donegal Westmoreland, PA
Method:	GP	s						Quadrangle:	Stahlstown, PA
		Bottom	Bottom	SWL measured b	y:	LCT	•	Laboratory:	Geochemical
		Depth	Elevation		_		<u>-</u> '	Northing:	290839.098
Coal Sea	ım ID	(ft)	(MSL)	_				Easting:	1507885.325
Mahoning Upper Freeport		138.0 170.0	1606.1 1574.1	Lower Freeport	220.0	1524.1		Grid Coordinates:	
Lower Freeport		210.0	1534.1	Upper Kittanning Middle Kittanning	253.0 279.0	1491.1 1465.1			
Lower Freeport		213.0	1531.1	Lower Kittanning	342.0	1402.1			
Depth	Thickness	Graphic	Scale		ription: rock type, sils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, e		Conditions	,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	71125
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					Sandstone, Gray				
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130.0	80.0		130						
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				_	Shale, gray				
405.0									
135.0	5.0								
					Mahoning Coal				
138.0	3.0	#######################################							
		#########	140		Clay, gray				
142.0	4.0	##########		4					
142.0	4.0	########## :::::::::::::::::::::::::::							
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]	Sandstone, Gray				
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.B- CME - 10/01 7.1A GEOLOGIC DRILL LOG 0721-S164 Page 3 of 5										
025 OME 1001								Operation Name :	Rustic Ridge #1 Mine-Expansion	
Hole No.	PZ-	9D		Measure	d Static Water	Levels		Method Drilling:	Air Rotary	
Confess Flan	4744	.00						Date Drilled:	4/21/2020-4/22/2020	
Surface Elev.	1744	.06		Date Measured	Depth (ft)	Elevation (MSL)	Notes	Drilled By: Logged By:	Holt Drilling	
Surveyed by:	LC	т		8/17/2020	65.6	1678.5		Municipality:	Donegal	
Survey								County, State:	Westmoreland, PA	
Method:	GP			014/1			=	Quadrangle:	Stahlstown, PA	
		Bottom Depth	Bottom Elevation	SWL measured b		LCT	=	Laboratory: Northing:	Geochemical 290839.098	
Coal Sea	am ID	(ft)	(MSL)					Easting:	1507885.325	
Mahoning		138.0	1606.1	Lower Freeport	220.0	1524.1		Grid Coordinates:		
Upper Freeport Lower Freeport		170.0 210.0	1574.1 1534.1	Upper Kittanning Middle Kittanning	253.0 279.0	1491.1 1465.1				
Lower Freeport		213.0	1531.1	Lower Kittanning	342.0	1402.1				
Depth	Thickness	Graphic	Scale		cription: rock type, ssils, carbonate, mi		Water	% Recovery	% RQD	
(ft)	(ft)	Log	(feet)		entrations, pyrite, e		Conditions	,		
			- -							
			_ _	_	Sandstone, Gray					
			_							
168.0	26.0		<u> </u>							
				U	pper Freeport Coal		1			
170.0	2.0		170		ppor r rooport cour		1			
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			_		Sandstone, Gray					
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204.0	34.0						_			
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209.0	5.0	:=:=:=:=:=:= :=:=:=:=:=:=	<u> </u>				1			
210.0	1.0	========	210		Ower Freeport Coal		1			
212.0	2.0	========	_		Shale, dark gray		1			
213.0	1.0	:=:=:=:=:=			ower Freeport Coal		†			
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219.0	6.0	:=:=:=:=:=:= :=:=:=:=:=:=								
220.0	1.0		220	Lo	ower Freeport Coal		1			
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			<u> </u>	4						
				1						
			230	-	Sandstone, Gray					
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			240	4						

JLB- CME - 10/01				7.1A GEO	LOGIC DRIL	L LOG			0721-S164 Page 4 of 5
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	9D	<u>.</u>	Measured	d Static Water	Levels		Method Drilling: Date Drilled:	Air Rotary
Surface Elev.	1744	.06		Date	Depth	Elevation		Drilled By:	4/21/2020-4/22/2020 Holt Drilling
-			•	Measured	(ft)	(MSL)	Notes	Logged By:	g
Surveyed by:	LC	Т		8/17/2020	65.6	1678.5		Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	SWL measured b	W.	LCT	=	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation	OWE IIICUOUICU K	_	201	=	Northing:	290839.098
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1507885.325
Mahoning		138.0	1606.1	Lower Freeport	220.0	1524.1		Grid Coordinates:	
Upper Freeport Lower Freeport		170.0 210.0	1574.1 1534.1	Upper Kittanning Middle Kittanning	253.0 279.0	1491.1 1465.1			
Lower Freeport		213.0	1531.1	Lower Kittanning	342.0	1402.1			
Depth	Thickness	Graphic	Scale		ription: rock type, sils, carbonate, mir		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, e		Conditions		
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					Sandstone, Gray				
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			200	1					
			260	1					
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					Sandstone, Gray				
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275.0	22.0						1		
				Mid	ddle Kittanning Coal				
279.0	4.0		_						
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			<u> </u>	4					
					Sandstone, Gray				
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JLB- CME - 10/01				7.1A GEO	LOGIC DRII	LL LOG			0721-S164 Page 5 of 5
								Operation Name :	Rustic Ridge #1 Mine-Expansion
Hole No.	PZ-	9D	:	Measure	d Static Water	Levels		Method Drilling: Date Drilled:	Air Rotary
Surface Elev.	1744	.06		Date	Depth	Elevation		Drilled By:	4/21/2020-4/22/2020 Holt Drilling
ouridoo Elovi			•	Measured	(ft)	(MSL)	Notes	Logged By:	Tion Dilling
Surveyed by:	LC	T		8/17/2020	65.6	1678.5		Municipality:	Donegal
Survey		_						County, State:	Westmoreland, PA
Method:	GP	Bottom	Bottom	SWL measured b	bv:	LCT	-	Quadrangle: Laboratory:	Stahlstown, PA Geochemical
		Depth	Elevation	OVVE III Casarca i		LOT		Northing:	290839.098
Coal Sea	am ID	(ft)	(MSL)	_				Easting:	1507885.325
Mahoning Upper Freeport		138.0 170.0	1606.1 1574.1	Lower Freeport	220.0	1524.1		Grid Coordinates:	
Lower Freeport		210.0	1574.1	Upper Kittanning Middle Kittanning	253.0 279.0	1491.1 1465.1			
Lower Freeport		213.0	1531.1	Lower Kittanning	342.0	1402.1			
Depth	Thickness	Graphic	Scale		cription: rock type, ssils, carbonate, mi		Water	% Recovery	% RQD
(ft)	(ft)	Log	(feet)		entrations, pyrite, e		Conditions		
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338.0	22.0	:=:=:=:=:=:=							
			340	-	wer Kittanning Coal				
342.0	4.0]	wei Kittaririing Coar				
343.0		##########			Clay, gray				
				Bottom of	f Hole PZ-9 Depth 3	43 feet			
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