



# Status Report

**Total Records:** 162

**TOP 3 COUNTY RECORDS**

JOHNSON 162

**TOP 3 MEMBER RECORDS**

NEW BURNSIDE 24 COAL  
 REYNOLDSBURG 9 COAL  
 BIDWELL 7 COAL

**TOP 3 LOG TYPE RECORDS**

Measured section 97  
 Drillers Log 19  
 Survey Core Study 12

**TOP 3 COAL RECORDS**

NEW BURNSIDE 24  
 REYNOLDSBURG 9  
 BIDWELL 7

## Data Summary

Cross-tabulation of all selected logs, individual logs will vary.  
 Tabulation of logged intervals only, individual logs will vary.

*Depth and Thickness measurements in feet*

Member	Lithology	Avg. Depth	Min. Depth	Max. Depth	Avg. Thk	Min. Thk	Max. Thk
STONEFORT	LIMESTONE	25.0	25.0	25.0	1.0	1.0	1.0
GRANGER	SANDSTONE	0.0	0.0	0.0	18.5	18.5	18.5
NEW BURNSIDE	COAL	18.8	5.0	46.6	5.0	2.7	25.7
DELWOOD	COAL	88.2	88.2	88.2	4.0	4.0	4.0
BIDWELL	COAL	59.3	10.0	138.0	4.0	1.0	10.0
MURRAY BLUFF	SANDSTONE	18.1	14.0	26.3	52.0	12.0	108.8
GRINDSTAFF	SANDSTONE	35.0	0.0	70.0	45.0	40.0	50.0
REYNOLDSBURG	COAL	93.9	4.0	323.8	1.4	0.3	2.8
POUNDS	SANDSTONE	188.9	188.9	188.9	45.9	45.9	45.9
WAYSIDE	SANDSTONE	24.0	24.0	24.0	35.3	35.3	35.3
KINKAID	LIMESTONE	103.5	59.3	147.7	122.9	58.3	187.5
DEGONIA	SANDSTONE	246.8	246.8	246.8	17.2	17.2	17.2
<b>Net Coal</b>					<b>14.4</b>		

MAPID: 087271D0001F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 2E SECTION: 20 SENWSW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: LICK CREEK LONGITUDE: -89.017212

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.542782

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 100.2

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT: TRAVERSE UP NORTH BRANCH OF RAVINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			ROCK	60.0	
-			COAL	0.2	
-			ROCK	40.0	

MAPID: 08700059000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 2E SECTION: 24 SWSW

FOOT (NS): 175 N FOOT (EW): 406 E

QUADRANGLE: GOREVILLE LONGITUDE: -88.943773

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.543083

DATE COLLECTED: 4 / 0 / 1955

SURFACE ELEVATION (FT.): 766.0 LOGGED (FT.): 590.0

LOG TYPE: Electric Log

SOURCE: MCENDREE, EBER

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
176.0	BASE OF PENN.		UNCLASSIFIED	- 590.0	

MAPID: 08720413000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 2E SECTION: 25

FOOT (NS): 900 N FOOT (EW): 1200 W

QUADRANGLE: GOREVILLE LONGITUDE: -88.942769

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.537419

DATE COLLECTED: 5 / 28 / 1988

SURFACE ELEVATION (FT.): 780.0 LOGGED (FT.): 234.8

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP G-2

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
780.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
766.0	ABBOTT	MURRAY BLUFF	SANDSTONE	12.0	14.0	BROWN
754.0	ABBOTT		SANDSTONE	11.0	26.0	BIOTURBATED
743.0	ABBOTT		SANDSTONE	8.9	37.0	SHALEY, BIOTURBATED
734.1	ABBOTT		COAL	0.3	45.9	
733.8	ABBOTT		UNDERCLAY	12.0	46.2	
721.8	ABBOTT		SILTSTONE	7.8	58.2	GRAY
714.0	ABBOTT		SANDSTONE	56.4	66.0	SILTY, BIOTURBATED, GRAY
657.6	ABBOTT		CLAYSTONE & SILTST	15.2	122.4	OLIVE
642.4	ABBOTT		SILTSTONE	22.4	137.6	COAL STRINGERS NEAR 150. BIOTURBATED
620.0	ABBOTT		SHALE	21.0	160.0	SILTY; DARK
599.0	ABBOTT	REYNOLDSBURG	COAL	1.0	181.0	BRIGHTBANDED
598.0	ABBOTT		UNDERCLAY	1.5	182.0	GRAY
596.5	ABBOTT		SANDSTONE	4.5	183.5	SILTY; GRAY
592.0	ABBOTT		SILTSTONE	0.9	188.0	GRAY
591.1	CASEYVILLE	POUNDS	SANDSTONE	45.9	188.9	CLEAN, FRIABLE; LIGHT

MAPID: 087272C0002F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 2E SECTION: 26 NWSENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GOREVILLE LONGITUDE: -88.950371

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.53514

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 750.0 LOGGED (FT.): 168.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT: SECTION IN TRIBUTARY OF DUTCHMANS CREEK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			ROCK	-		
-			UNKNOWN	40.0		COVERED
-			ROCK	10.0		
-	CASEYVILLE		COAL	1.5		ABD MINE. THICKNESS REPORTED BY FARMER
-			UNKNOWN	60.0		COVERED
-			ROCK	30.0		
-			UNKNOWN	25.0		
-			ROCK	2.0		

MAPID: 087272C0003F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 2E SECTION: 27 SWSENWSW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GOREVILLE LONGITUDE: -88.980971

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.528222

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 630.0 LOGGED (FT.): 116.4

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0			UNCONSOLIDATED	-	0.0	
-			ROCK	32.5		
-			COAL	0.8		
-			UNDERCLAY	0.8		
-			COAL	0.7		SOFT, THIN BEDDED, SHALEY
-			ROCK	81.6		

MAPID: 08720427000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 2E SECTION: 31

FOOT (NS): 800 N FOOT (EW): 2800 E

QUADRANGLE: LICK CREEK LONGITUDE: -89.030485

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.521061

DATE COLLECTED: 6 / 10 / 1988

SURFACE ELEVATION (FT.): LOGGED (FT.): 264.0

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP L-2

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0	
-	CASEYVILLE	WAYSIDE	SANDSTONE	8.8	24.0	SHALEY; GRAY
-	CASEYVILLE	WAYSIDE	SHALE	21.2	32.8	
-	CASEYVILLE	WAYSIDE	SANDSTONE/SHALE	4.9	54.0	
-	CASEYVILLE	WAYSIDE	SANDSTONE	0.4	58.9	VERY FINE; WHITE
-	MISSISSIPPIAN	KINKAID	LIMESTONE & SHALE	2.7	59.3	LIGHT
-	MISSISSIPPIAN	KINKAID	SHALE	19.8	62.0	CALCAREOUS, FOSSILS AT BASE
-	MISSISSIPPIAN	KINKAID	LIMESTONE	42.4	81.8	SHALEY AT BASE; LIGHT BROWN
-	MISSISSIPPIAN	KINKAID	SHALE & SILTSTONE	6.2	124.2	LIMEY
-	MISSISSIPPIAN	KINKAID	CLAYSTONE & SILTST	12.4	130.4	GREEN GRAY TO RED
-	MISSISSIPPIAN	KINKAID	LIMESTONE	57.9	142.8	SHALEY
-	MISSISSIPPIAN	KINKAID	SHALE	16.0	200.6	DARK
-	MISSISSIPPIAN	KINKAID	LIMESTONE	30.2	216.6	SHALEY; LIGHT
-	MISSISSIPPIAN	DEGONIA	SHALE	3.5	246.8	CALCAREOUS; DARK
-	MISSISSIPPIAN	DEGONIA	CLAYSTONE & SILTST	6.7	250.3	
-	MISSISSIPPIAN	DEGONIA	SANDSTONE	7.0	257.0	SILTY

MAPID: 087272D0060F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 2E SECTION: 32  
QUADRANGLE: LICK CREEK LONGITUDE: -89.013153  
CONFIDENTIAL: N LATITUDE: 37.518429  
SURFACE ELEVATION (FT.): 710.0 LOGGED (FT.): 68.0  
SOURCE: FLD. NOTES-WANLESS  
COMMENT: SECTION JUST ABOVE F272D031

FOOT (NS): 1900 N FOOT (EW): 2200 W  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1933  
LOG TYPE: Measured section  
WELL TYPE: Outcrop

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
710.0	ABBOTT	GRINDSTAFF	SANDSTONE	50.0	0.0	LT GR. W DULL RED
660.0			SANDSTONE	12.0	50.0	
648.0			SANDSTONE	6.0	62.0	
-			SHALE	-		BL GR. ("TO TOP OF COAL ENTRY")

MAPID: 08720317000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 2 NWSWSW  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.8548  
CONFIDENTIAL: N LATITUDE: 37.588217  
SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 110.0  
SOURCE: KELTON, DRILLER  
COMMENT:

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 3 / 23 / 1977  
LOG TYPE: Drillers Log  
WELL TYPE: Water Well

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			CLAYSTONE	11.0	0.0	
530.0			SANDSTONE	9.0	20.0	SOFT,BROWN
505.0			SHALE	25.0	45.0	
440.0			SANDSTONE	65.0	110.0	GRAY

MAPID: 08720318000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 2  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.843436  
CONFIDENTIAL: N LATITUDE: 37.5935  
SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 100.0  
SOURCE: LESTER, DRILLER  
COMMENT:

FOOT (NS): 1400 N FOOT (EW): 1750 E  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 1 / 5 / 1979  
LOG TYPE: Drillers Log  
WELL TYPE: Water Well

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.0			CLAYSTONE	25.0	0.0	
425.0			SAND	50.0	75.0	
400.0			SANDSTONE	25.0	100.0	

MAPID: 087272D0043F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 11 NWSE

FOOT (NS): 330 N FOOT (EW): 100 E

QUADRANGLE: CREAL SPRINGS

LONGITUDE: -88.842199

GEOLOGIST: BARGH,M

CONFIDENTIAL: N

LATITUDE: 37.577382

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 540.0

LOGGED (FT.): 25.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Roadcut

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-	SPOON	CURLEW	SANDSTONE	25.0	MASSIVE, SOME MICA SH INTRBDD

MAPID: 087272D0044F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 13 NENESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS

LONGITUDE: -88.829303

GEOLOGIST: BARGH,M

CONFIDENTIAL: N

LATITUDE: 37.562795

DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 680.0

LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-BROKAW

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-	DIP 12 DEGREES N 20 DEGREES W LAMINATED

MAPID: 087272D0045F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 13 SWNENW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS

LONGITUDE: -88.831465

GEOLOGIST: BARGH,M

CONFIDENTIAL: N

LATITUDE: 37.568268

DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 630.0

LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WELLER

WELL TYPE: Roadcut

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-	MASSIVE

MAPID: 087272D0046F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 14 NWNENE

FOOT (NS): 20 S FOOT (EW): 50 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.841549

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.56913

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	-		MASSIVE LT. GR. DIP SLIGHTLY NW
-			BLACK SHALE	-		FLOAT ONLY

MAPID: 08700151000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 15 NENWNW

FOOT (NS): 200 S FOOT (EW): 200 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.87026

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.569593

DATE COLLECTED: 7 / 8 / 1969

SURFACE ELEVATION (FT.): 630.0 LOGGED (FT.): 140.0

LOG TYPE: Drillers Log

SOURCE: GREER, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0			CLAYSTONE	34.0	0.0	
490.0			SANDSTONE	106.0	140.0	GRAY TO WHITE

MAPID: 08700152000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 15

FOOT (NS): 1550 S FOOT (EW): 950 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.870971

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.560405

DATE COLLECTED: 7 / 24 / 1969

SURFACE ELEVATION (FT.): 660.0 LOGGED (FT.): 134.0

LOG TYPE: Drillers Log

SOURCE: GREER, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
660.0			CLAYSTONE	32.0	0.0	
628.0			SANDSTONE	102.0	32.0	BROWN

MAPID: 08700153000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 15 NWSW

FOOT (NS): 300 S FOOT (EW): 50 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.874091

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.560615

DATE COLLECTED: 7 / 24 / 1969

SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 100.0

LOG TYPE: Drillers Log

SOURCE: GREER, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0			CLAYSTONE	36.0	0.0	
510.0			SANDSTONE	64.0	100.0	BROWN

MAPID: 087272D0001F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 15 SWNESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.859174

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.560833

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 37.2

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0			SANDSTONE	15.0	0.0	
555.0			UNKNOWN	3.0	15.0	
552.0			SHALE	3.5	18.0	LT. GR. STEMS & LEAVES
548.5			COAL	83.0	21.5	BRIGHT, THIN BEDDED
465.5			UNDERCLAY	1.0	104.5	ROOT IMPRESSIONS
464.5			SHALE	1.8	105.5	LT. GR. SILTY TO SANDY
462.7			SANDSTONE	1.0	107.3	MASSIVE, Y. GR.

MAPID: 087272C0004F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 16 NESEWNNE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GOREVILLE LONGITUDE: -88.879467

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.568545

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 8.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			ROCK	-		
-			COAL	0.5		
-			ROCK	7.5		

MAPID: 08700184000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 22 NWNWNWSE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.864516

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.548355

DATE COLLECTED: 8 / 9 / 1970

SURFACE ELEVATION (FT.): 650.0 LOGGED (FT.): 135.0

LOG TYPE: Drillers Log

SOURCE: SERGENT, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
650.0			UNKNOWN	8.0	0.0	
642.0			UNKNOWN	127.0	8.0	

MAPID: 08700104000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 23

FOOT (NS): 1700 S FOOT (EW): 400 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.838641

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.546163

DATE COLLECTED: 7 / 0 / 1965

SURFACE ELEVATION (FT.): 697.0 LOGGED (FT.): 205.0

LOG TYPE: Drillers Log

SOURCE: MITCHELL & STANONIS

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
492.0	BASE OF PENN.		UNCLASSIFIED	-	205.0	

MAPID: 08700104000C VERSION: 2

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 23

FOOT (NS): 1700 S FOOT (EW): 400 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.838641

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.546163

DATE COLLECTED: 7 / 1 / 1965

SURFACE ELEVATION (FT.): 684.0

LOGGED (FT.): 1676.0

LOG TYPE: Drillers Log

SOURCE: MITCHELL & STANONIS, INC

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
684.0			UNCONSOLIDATED	25.0	0.0	
659.0			SHALE	3.0	25.0	
656.0			SANDSTONE	163.0	28.0	
493.0			SANDSTONE/SHALE	14.0	191.0	
479.0			LIMESTONE	10.0	205.0	SHELLS
469.0			LIMESTONE AND SAND	30.0	215.0	
439.0			SANDSTONE	23.0	245.0	HARD
416.0			SHALE	6.0	268.0	
410.0			SANDSTONE	46.0	274.0	WHITE,FINE
364.0			BLACK SHALE	15.0	320.0	
349.0			SANDSTONE	45.0	335.0	WHITE,COARSE
304.0			SANDSTONE/SHALE	33.0	380.0	
271.0			SANDSTONE	97.0	413.0	WHITE,HARD
174.0			LIMESTONE	10.0	510.0	
164.0			SHALE	12.0	520.0	
152.0			ROCK	5.0	532.0	"RED ROCK"
147.0			LIMESTONE	8.0	537.0	
139.0			SHALE	35.0	545.0	BLUE, MUDDY,SANDY AT BASE
104.0			LIMESTONE	43.0	580.0	
61.0			SHALE	15.0	623.0	SHALE,RED ROCK
46.0			LIMESTONE	29.0	638.0	HARD
17.0			SANDSTONE	5.0	667.0	
12.0			LIMESTONE	8.0	672.0	
4.0			SHALE	23.0	680.0	
-19.0			LIMESTONE	32.0	703.0	
-51.0			SHALE	10.0	735.0	
-61.0			SANDSTONE	24.0	745.0	
-85.0			SHALE	20.0	769.0	
-105.0			LIMESTONE	11.0	789.0	
-116.0			SHALE	9.0	800.0	
-125.0			LIMESTONE	11.0	809.0	
-136.0			SANDSTONE	6.0	820.0	WATER BEARING
-142.0			CALCAREOUS SHALE	17.0	826.0	
-159.0			SANDSTONE	17.0	843.0	
-176.0			SHALE	8.0	860.0	SANDY
-184.0			LIMESTONE	7.0	868.0	BLACK
-191.0			SHALE	10.0	875.0	
-201.0			LIMESTONE	47.0	885.0	SHELLS
-248.0			SHALE	9.0	932.0	

-257.0	SANDSTONE	16.0	941.0	
-273.0	SHALE	8.0	957.0	
-281.0	LIMESTONE	6.0	965.0	
-287.0	SHALE	4.0	971.0	
-291.0	LIMESTONE	70.0	975.0	
-361.0	UNCERTAIN	26.0	1045.0	
-387.0	LIMESTONE	31.0	1071.0	WITH 1 FT SHALE BAND
-418.0	SHALE	98.0	1102.0	
-516.0	SANDSTONE	9.0	1200.0	WHITE,COARSE
-525.0	SHALE	3.0	1209.0	
-528.0	LIMESTONE	15.0	1212.0	
-543.0	SANDSTONE	5.0	1227.0	
-548.0	LIMESTONE	4.0	1232.0	SANDY
-552.0	SANDSTONE	23.0	1236.0	SANDY
-575.0	SANDSTONE	6.0	1259.0	COARSE
-581.0	SANDSTONE	3.0	1265.0	WHITE,FINE
-584.0	LIMESTONE	19.0	1268.0	
-603.0	SHALE	32.0	1287.0	
-635.0	LIMESTONE	27.0	1319.0	
-662.0	SHALE & SANDSTONE	43.0	1346.0	
-705.0	SANDSTONE	6.0	1389.0	HARD
-711.0	SHALE	6.0	1395.0	
-717.0	LIMESTONE	19.0	1401.0	HARD
-736.0	LIMESTONE W/ SHALE	31.0	1420.0	
-767.0	LIMESTONE	7.0	1451.0	
-774.0	SHALE	22.0	1458.0	SANDY
-796.0	LIMESTONE	7.0	1480.0	
-803.0	SHALE	46.0	1487.0	
-849.0	LIMESTONE	4.0	1533.0	
-853.0	SHALE	39.0	1537.0	
-892.0	SANDSTONE	3.0	1576.0	COARSE
-895.0	SHALE	21.0	1579.0	
-916.0	SANDSTONE	17.0	1600.0	WATER

---

MAPID: 08720278000C VERSION: 1

PROJECT: COGEOMAP

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 23 NENWSW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.852344

GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 37.54795

DATE COLLECTED: 7 / 29 / 1974

SURFACE ELEVATION (FT.): 680.0 LOGGED (FT.): 190.0

LOG TYPE:

SOURCE: GRIER, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
680.0			CLAYSTONE	20.0	0.0	SANDY
660.0			UNKNOWN	20.0	20.0	
640.0			SANDSTONE	150.0	40.0	

MAPID: 08720395000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 23

FOOT (NS): 2600 S FOOT (EW): 1200 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.851658

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.548612

DATE COLLECTED: 10 / 9 / 1985

SURFACE ELEVATION (FT.): 710.0 LOGGED (FT.): 83.0

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP C-2

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
710.0	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0	
702.0	ABBOTT		SANDSTONE	11.4	8.0	FRIABLE; LIGHT
690.6	ABBOTT		SANDSTONE	1.5	19.4	WHITE
689.1	ABBOTT		SANDSTONE	1.0	20.9	BROWN
688.1	ABBOTT		CORE LOSS	5.7	21.9	
682.4	ABBOTT		SANDSTONE	8.6	27.6	DARKER AT BASE; LIGHT
673.8	ABBOTT		CORE LOSS	6.1	36.2	
667.7	ABBOTT		SANDSTONE	6.7	42.3	CALCAREOUS
661.0	ABBOTT		CORE LOSS	2.2	49.0	
658.8	ABBOTT		SANDSTONE	4.0	51.2	AS ABOVE
654.7	ABBOTT		SHALE	7.1	55.3	BLACK AT BASE; DARK
647.6	ABBOTT		SHALE	6.6	62.4	SILTY; GRAY
641.0	ABBOTT		SHALE	1.3	69.0	AS ABOVE
639.7	ABBOTT		SANDSTONE	2.7	70.3	SILTY; LIGHT
637.0	ABBOTT		SHALE	7.5	73.0	SILTY
629.5	ABBOTT		SANDSTONE	2.5	80.5	SILTY; LIGHT

MAPID: 08700023000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 24 NW

FOOT (NS): 330 S FOOT (EW): 330 W

QUADRANGLE: CREAL SPRINGS

LONGITUDE: -88.836115

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 37.549767

DATE COLLECTED: 3 / 0 / 1941

SURFACE ELEVATION (FT.): 733.0

LOGGED (FT.): 615.0

LOG TYPE: Electric Log

SOURCE: JENKINS, GORDON T.

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
118.0	BASE OF PENN.		UNCLASSIFIED	-	615.0

MAPID: 08700023000C    VERSION: 2

PROJECT: BLM

COUNTY: JOHNSON    TWP/RNG: 11S 3E    SECTION: 24    NW

FOOT (NS): 330 S    FOOT (EW): 330 W

QUADRANGLE: CREAL SPRINGS

LONGITUDE: -88.836115

GEOLOGIST: BARGH,M

CONFIDENTIAL: N

LATITUDE: 37.549767

DATE COLLECTED: 3 / 0 / 1941

SURFACE ELEVATION (FT.): 733.0

LOGGED (FT.): 4250.0

LOG TYPE: Multiple log types

SOURCE: BENEDUM-TREES OIL CO

WELL TYPE: Oil and Gas Test

COMMENT: 1,4,5 SAMPLE STUDY BY RJJ SS#5744 C#239

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
733.0			SANDSTONE	228.0	0.0	HARD
505.0			SHALE	37.0	228.0	
468.0			SANDSTONE	95.0	265.0	HARD
373.0			SHALE & SANDSTONE	10.0	360.0	
363.0			SANDSTONE	120.0	370.0	HARD
243.0			SANDSTONE/SHALE	50.0	490.0	BROKEN. BASE OF PENNSYLVANIAN WITH GREEN SHALE
193.0			LIMESTONE AND SAND	18.0	540.0	
193.0			SANDSTONE/LIMESTON	22.0	540.0	
171.0			SHALE	38.0	562.0	
115.0			LIMESTONE	42.0	618.0	
133.0			SHALE	20.0	600.0	
113.0			LIMESTONE	30.0	620.0	
83.0			LIMESTONE	20.0	650.0	HARD, BLACK
63.0			SHALE	25.0	670.0	BLUE
38.0			LIMESTONE	29.0	695.0	
9.0			SHALE	67.0	724.0	
-58.0			SANDSTONE	27.0	791.0	
-85.0			SHALE	0.0	818.0	
-85.0			LIMESTONE	16.0	818.0	SANDY
-101.0			LIMESTONE W/ SHALE	29.0	834.0	
-130.0			SHALE	34.0	863.0	
-164.0			LIMESTONE	2.0	897.0	
-166.0			SANDSTONE	19.0	899.0	
-185.0			LIMESTONE W/ SHALE	120.0	918.0	
-305.0			SHALE	92.0	1038.0	
-397.0			LIMESTONE	3.0	1130.0	
-400.0			LIMESTONE	6.0	1133.0	HARD
-406.0			SHALE	23.0	1139.0	
-429.0			SHALE & SANDSTONE	20.0	1162.0	
-449.0			LIMESTONE W/ SHALE	47.0	1182.0	
-599.0			SANDSTONE/SHALE	16.0	1332.0	
-496.0			LIMESTONE	23.0	1229.0	SANDY
-519.0			SHALE & SANDSTONE	78.0	1252.0	
-597.0			SHALE	14.0	1330.0	
-611.0			SANDSTONE	15.0	1344.0	HARD
-626.0			LIMESTONE	18.0	1359.0	
-644.0			LIMESTONE/SHALE/SA	24.0	1377.0	
-668.0			SHALE	66.0	1401.0	
-734.0			SHALE	45.0	1467.0	

-779.0	LIMESTONE	22.0	1512.0	
-801.0	SHALE	33.0	1534.0	
-834.0	SANDSTONE	5.0	1567.0	HARD
-839.0	SANDSTONE	10.0	1572.0	SOFT
-849.0	SANDSTONE	59.0	1582.0	HARD
-908.0	SHALE	56.0	1641.0	
-964.0	LIMESTONE W/ SHALE	14.0	1697.0	
-978.0	SANDSTONE/SHALE	24.0	1711.0	
-1002.0	SANDSTONE	5.0	1735.0	GAS
-1007.0	SANDSTONE	4.0	1740.0	CORE#1,V CALC,GR TO BR,BL SPECKS,OIL ST
-1114.0	SANDSTONE/SHALE	18.0	1847.0	BROKEN
-1011.0	LIMESTONE	20.0	1744.0	
-1031.0	LIMESTONE W/ SHALE	26.0	1764.0	
-1057.0	LIMESTONE	21.0	1790.0	BROKEN
-1078.0	LIMESTONE	38.0	1811.0	HARD
-1116.0	SHALE	3.3	1849.0	CORE,CALC,RED,GREEN,HEMTC CLTES,SS,LS
-1119.3	LIMESTONE	1.0	1852.3	SANDY,CLTC,CALCITE,GREEN SH PARTINGS
-1120.3	SANDSTONE	3.8	1853.3	V CALC. SH & LS PTGS. COLITIC
-1124.0	LIMESTONE	0.7	1857.0	OOLITOC, SANDY, GREEN SH STRKS NEAR TOP
-1124.7	SANDSTONE	3.0	1857.7	SL. CALC,LT GREY GREEN,FINE,DKRD SH PTG
732.8	SILTSTONE	2.3	0.2	CORE #3
-1127.7	LIMESTONE	14.5	1860.7	SANDY,OOLITIC,CRINORDS,BRY OZOAN,R&G SHP
-1142.2	SANDSTONE	1.2	1875.2	CALC,OOLITIC,GREY,RED,FINE
-1143.4	LIMESTONE	135.0	1876.4	NO CORE
-1278.4	DOLOMITE	0.4	2011.4	CORE #4, ARGILL,GRAY,FINE
-1278.8	SHALE	0.3	2011.8	CALC,BRITTLE
-1279.1	LIMESTONE	3.5	2012.1	GREY,PTLY XLINE,STYNLITES,4"CRSE,XLN
-1282.6	LIMESTONE	5.8	2015.6	OOLITES W/DARK CENTERS. FEW STYOLITES
730.5	LIMESTONE	63.0	2.5	
-1288.4	LIMESTONE/CHERT	1010.0	2021.4	INTERBEDDED
-2298.4	SHALE	82.0	3031.4	SANDY
-2380.4	BLACK SHALE	43.0	3113.4	
-2423.4	CALCAREOUS SHALE	169.0	3156.4	INTERBEDDED
-2592.4	LIMESTONE/CHERT	109.0	3325.4	INTERBEDDED
-2701.4	SANDSTONE/LIMESTON	3.0	3434.4	CHERTY
-2704.4	SANDSTONE	12.0	3437.4	
-2716.4	LIMESTONE	14.0	3449.4	SANDY

---

MAPID: 08720342000C VERSION: 1

PROJECT: COGEOMAP

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 24

FOOT (NS): 1650 N FOOT (EW): 2310 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.827379

GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 37.55185

DATE COLLECTED: 1 / 12 / 1980

SURFACE ELEVATION (FT.): 684.0 LOGGED (FT.): 2395.0

LOG TYPE:

SOURCE: R. L. MITCHELL & W. J. HAMILTON

WELL TYPE: Oil and Gas Test

COMMENT: MISS TOPS PICKED BY WEIBEL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNKNOWN	535.0		TOP MISS
149.0			SHALE	51.0	535.0	
98.0			LIMESTONE	169.0	586.0	
98.0			LIMESTONE	48.0	586.0	
50.0			SHALE	88.0	634.0	
-38.0			LIMESTONE	33.0	722.0	
-71.0			UNKNOWN	200.0	755.0	
-271.0			SANDSTONE	36.0	955.0	
-307.0			LIMESTONE	141.0	991.0	
-331.0			LIMESTONE	0.0	1015.0	
-389.0			LIMESTONE	0.0	1073.0	
-448.0			SANDSTONE	64.0	1132.0	
-512.0			LIMESTONE	8.0	1196.0	
-520.0			SANDSTONE	103.0	1204.0	
-623.0			LIMESTONE	74.0	1307.0	
-697.0			SANDSTONE	47.0	1381.0	
-744.0			LIMESTONE	120.0	1428.0	
-864.0			SHALE	87.0	1548.0	
-951.0			LIMESTONE	9.0	1635.0	
-960.0			SANDSTONE	94.0	1644.0	
-1054.0			UNKNOWN	36.0	1738.0	QUESTIONABLE
-1090.0			SANDSTONE	65.0	1774.0	
-1155.0			LIMESTONE	94.0	1839.0	
-1249.0			SANDSTONE	36.0	1933.0	QUESTIONABLE
-1285.0			LIMESTONE	0.0	1969.0	QUESTIONABLE

MAPID: 08720397000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 25

FOOT (NS): 1400 S FOOT (EW): 1250 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.823972

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.530897

DATE COLLECTED: 11 / 6 / 1985

SURFACE ELEVATION (FT.): 720.0 LOGGED (FT.): 151.0

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP C-3

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
720.0	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
709.0	ABBOTT		SANDSTONE	8.3	11.0	GRAY TO PINKISH, WEATHERS TO BROWN
700.7	ABBOTT		CORE LOSS	1.8	19.3	
699.0	ABBOTT		SANDSTONE	6.2	21.0	WITH MAFICS
692.8	ABBOTT		SANDSTONE	1.8	27.2	SHALEY
691.0	ABBOTT		CORE LOSS	5.0	29.0	
686.1	ABBOTT		SANDSTONE	7.1	33.9	PLANT DEBRIS; BROWN
679.0	ABBOTT		SANDSTONE	9.9	41.0	BROWN TO GRAY, AS ABOVE
669.2	ABBOTT		SHALE	1.7	50.8	SILTY; DARK
667.5	ABBOTT		SANDSTONE	8.5	52.5	SHALEY; GRAY
659.0	ABBOTT		SANDSTONE	1.1	61.0	CARBONACEOUS AT BASE
657.9	ABBOTT		SANDSTONE	22.7	62.1	SHALEY TO CLAYEY; BROWN
635.2	ABBOTT		SANDSTONE	14.9	84.8	SHALEY; GRAY
620.4	ABBOTT		SHALE	7.4	99.6	BLACK
613.0	ABBOTT		SANDSTONE	3.9	107.0	SHALEY, COAL STRINGERS AT BASE
609.1	ABBOTT		CORE LOSS	0.2	110.9	
609.0	ABBOTT		SHALE & SANDSTONE	13.5	111.0	GRAY
595.5	ABBOTT		SHALE	2.1	124.5	CALCAREOUS
593.4	ABBOTT		SHALE	3.0	126.6	CARBONACEOUS; DARK
590.4	ABBOTT		LIMESTONE	0.5	129.6	DARK
589.9	ABBOTT		SHALE	0.9	130.1	SILTY, HARD, DARK
589.0	ABBOTT		SHALE	8.4	131.0	SILTY AT TOP
580.6	ABBOTT		COAL	1.7	139.4	TUNNEL HILL MEMBER
579.0	ABBOTT		SILTSTONE	7.2	141.0	SHALEY, BIOTURBATED, GRAY
571.8	ABBOTT		SANDSTONE	2.5	148.2	LIGHT
569.3	ABBOTT		CORE LOSS	0.4	150.7	

MAPID: 08720398000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 26

FOOT (NS): 300 N FOOT (EW): 1200 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.84143

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.540636

DATE COLLECTED: 11 / 5 / 1985

SURFACE ELEVATION (FT.): 740.0 LOGGED (FT.): 80.8

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP C-8

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
740.0	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0	
731.0	ABBOTT		SANDSTONE	33.9	9.0	BROWN TO PINKISH GRAY, SIDERITIC
697.1	ABBOTT		SANDSTONE	11.1	42.9	SHALEY; BROWN
685.9	ABBOTT		SHALE	0.9	54.1	GRAY
685.0	ABBOTT		SHALE	12.1	55.0	BLACK, PYRITIC FOSSIL FRAGMENTS
672.9	ABBOTT		CALCAREOUS SHALE	5.3	67.1	AS ABOVE
667.6	ABBOTT		SANDSTONE/SHALE	8.5	72.4	CARBONACEOUS AT TOP; GRAY

MAPID: 087272D0047F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 26 NWSESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.841018

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.529581

DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 650.0 LOGGED (FT.): 25.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Roadcut

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
650.0			SANDSTONE	6.0	0.0	RED
644.0			SHALE	15.0	6.0	OLIVE, SANDY
629.0			SANDSTONE	4.0	21.0	

MAPID: 08720350000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 27 NENENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.857063

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.540496

DATE COLLECTED: 2 / 27 / 1980

SURFACE ELEVATION (FT.): 640.0 LOGGED (FT.): 500.0

LOG TYPE: Drillers Log

SOURCE: SERGENT, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
640.0			UNKNOWN	25.0	0.0	
615.0			UNKNOWN	40.0	25.0	
575.0			UNKNOWN	30.0	65.0	
545.0			UNKNOWN	405.0	95.0	

MAPID: 08700025000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 30 E2W2SWNE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GOREVILLE LONGITUDE: -88.918807

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.535461

DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 766.0 LOGGED (FT.): 525.0

LOG TYPE: Survey Sample Study

SOURCE: TUNNELHILL OIL

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
241.0	BASE OF PENN.		UNCLASSIFIED	-	525.0	

MAPID: 087272C0001F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 32 NWNESWSW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GOREVILLE LONGITUDE: -88.908463

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.514718

DATE COLLECTED: 0 / 0 / 1954

SURFACE ELEVATION (FT.): 650.0 LOGGED (FT.): 1.3

LOG TYPE: Measured section

SOURCE: FLD NOTES-STONEHOUSE

WELL TYPE: Underground mine

COMMENT: ABD DRIFT REPORTED BY WANLESS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-			COAL	1.3		

MAPID: 087272C0005F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 32 SW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GOREVILLE LONGITUDE: -88.906737

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.515168

DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 680.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-BROKAW

WELL TYPE: Outcrop

COMMENT: "COAL HAS BEEN WORKED"

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-			ROCK	-		
-			COAL	-		
-			SHALE	-		

MAPID: 087272C0006F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 32 SWSESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GOREVILLE

LONGITUDE: -88.90556

GEOLOGIST: BARGH M.

CONFIDENTIAL: N

LATITUDE: 37.512396

DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 6.7

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Outcrop

COMMENT: TOPOGRAPHY ALTERED BY INTERSTATE HIGHWAY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			ROCK	1.0	
-			COAL	2.0	
-			ROCK	4.7	

---

MAPID: 08720399000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 35

FOOT (NS): 150 N FOOT (EW): 2050 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.848846

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.526316

DATE COLLECTED: 11 / 4 / 85

SURFACE ELEVATION (FT.): 740.0 LOGGED (FT.): 110.0

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP C-1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
740.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
726.0	ABBOTT		SANDSTONE	1.4	14.0	
724.6	ABBOTT		SHALE & SANDSTONE	2.3	15.4	SOFT, TAN
722.3	ABBOTT		SANDSTONE	2.6	17.7	MASSIVE
719.7	ABBOTT		CORE LOSS	0.3	20.3	
719.5	ABBOTT		SANDSTONE	4.8	20.5	
714.7	ABBOTT		CORE LOSS	5.2	25.3	FRACTURED AT BASE
709.5	ABBOTT		SANDSTONE	3.6	30.5	ABRASION SURFACES; BROWN
705.9	ABBOTT		CORE LOSS	6.4	34.1	
699.5	ABBOTT		SANDSTONE	3.0	40.5	LIGHT
696.6	ABBOTT		SILTSTONE	1.6	43.4	SHALEY; GRAY
695.0	ABBOTT		SANDSTONE	3.9	45.0	MASSIVE
691.2	ABBOTT		SILTSTONE	1.6	48.8	SHALEY; GRAY
689.6	ABBOTT		CORE LOSS	0.1	50.4	
689.5	ABBOTT		SILTSTONE	0.6	50.5	GRAY
688.9	ABBOTT		SANDSTONE	4.2	51.1	SHALEY; LIGHT
684.7	ABBOTT		CORE LOSS	3.1	55.3	
681.7	ABBOTT		SHALE	2.1	58.3	LIMEY; DARK
679.6	ABBOTT		SANDSTONE	0.2	60.4	LIGHT
679.5	ABBOTT		SHALE	2.2	60.5	DARK
677.3	ABBOTT		SANDSTONE	0.3	62.7	LIGHT
677.0	ABBOTT		SILTSTONE	4.3	63.0	DENSE
672.7	ABBOTT		SANDSTONE	3.3	67.3	LIGHT
669.5	ABBOTT		SANDSTONE	6.9	70.5	LIMEY; LIGHT
662.6	ABBOTT		SANDSTONE	0.8	77.4	LIMEY; LIGHT
661.9	ABBOTT		CORE LOSS	2.4	78.1	
659.5	ABBOTT		SANDSTONE	9.8	80.5	VERY LIGHT GRAY TO BUFF
649.7	ABBOTT		CORE LOSS	0.3	90.3	
649.5	ABBOTT		SANDSTONE	1.2	90.5	
648.3	ABBOTT		SANDSTONE	3.2	91.7	SILTY AT TOP
645.1	ABBOTT		SHALE	0.8	94.9	SANDY AT BASE; DARK
644.3	ABBOTT		SANDSTONE	0.6	95.7	SOME COAL INCLUSIONS; LIGHT
643.7	ABBOTT		SHALE	0.2	96.3	SANDY
643.5	ABBOTT		SHALE	1.8	96.5	LIMEY
641.7	ABBOTT		SANDSTONE	1.8	98.3	CLAYEY; GRAY
640.0	ABBOTT		SILTSTONE	0.5	100.0	LIGHT
639.5	ABBOTT		SANDSTONE	1.7	100.5	MASSIVE; LIGHT
637.8	ABBOTT		SHALE	0.8	102.2	SILTY
637.0	ABBOTT		SANDSTONE	1.4	103.0	SILTY

635.6 ABBOTT

SANDSTONE

6.2 104.4 SOME SILT

MAPID: 087272D0048F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 35 SESESENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.838208

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.51995

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 700.0 LOGGED (FT.): 53.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Roadcut

COMMENT: NORTH END OF R. R. TUNNEL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SHALE	20.0		
680.0			SANDSTONE	6.0	20.0	MASSIVE, SLABBY STRUCTURE
674.0			SHALE	22.0	26.0	CARBON STREAKS. GRADES INTO SS
652.0			SHALE	3.0	48.0	BL GR, SILTY, HARD
-			SANDSTONE	2.0		MASSIVE, LOOKS LIKE "RED SANDSTONE"

MAPID: 087272D0049F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 35 NENESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.838782

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.518556

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 700.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Roadcut

COMMENT: S. END OF TUNNEL. SEQ. 15' HIGHER THAN N

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	26.0		MASSIVE, RED SS BEDS RISING TO 5.
674.0			SHALE	18.0	26.0	BL. GR., IRONSTONE CONC.
656.0			SANDSTONE	0.8	44.0	LT. GR. SOME ROOT IMP. NO COAL
655.2			SANDSTONE	2.0	44.8	GR. POORLY BEDDED
653.2			SANDSTONE	6.0	46.8	MASSIVE W CARBON STRKS
647.2			SANDSTONE	2.0	52.8	SHLY, MICACEOUS,
645.2			SHALE	4.0	54.8	SOFT, BL GR, THIN SS INTERBEDDED.

MAPID: 08720419000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 3E SECTION: 36

FOOT (NS): 900 S FOOT (EW): 600 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.821724

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.514892

DATE COLLECTED: 7 / 16 / 1986

SURFACE ELEVATION (FT.): 760.0 LOGGED (FT.): 247.3

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP C-5

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
760.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
744.0	ABBOTT		SANDSTONE	26.1	16.0	CLAYEY, BROWN TO ORANGE, HARD
717.9	ABBOTT		SHALE	7.5	42.1	SILTY
710.4	ABBOTT		SANDSTONE	16.3	49.6	SHALEY; GRAY
694.1	ABBOTT		SHALE	0.2	65.9	DARK
694.0	ABBOTT		SANDSTONE	11.5	66.0	SCATTERED SHALE PARTINGS; LIGHT
682.5	ABBOTT		CLAYSTONE & SILTST	0.4	77.5	GRAY
682.1	ABBOTT		SANDSTONE	48.7	77.9	LIGHT, SHALE PARTINGS
633.4	ABBOTT		SHALE	15.1	126.6	SILTY
618.3	ABBOTT		SANDSTONE	3.1	141.7	SILTY; LIGHT
615.2	ABBOTT		SHALE	0.9	144.8	
614.3	ABBOTT		SANDSTONE	2.3	145.7	SHALEY, BIOTURBATED, GRAY
612.1	ABBOTT		SHALE	17.3	147.9	SILTY;
594.8	ABBOTT		SHALE	0.7	165.2	DARK
594.1	ABBOTT		SHALE	2.3	165.9	PLANT FRAGMENTS; BLACK
591.8	ABBOTT		COAL	1.7	168.2	TUNNEL HILL MEMBER
590.1	ABBOTT		SHALE/COAL	0.9	169.9	TUNNEL HILL;SOFT,BLACK,CARBONACE
589.3	ABBOTT		UNDERCLAY	2.3	170.7	
587.0	ABBOTT		SHALE	2.6	173.0	SILTY
584.4	ABBOTT		SANDSTONE	3.0	175.6	CLAYEY
581.4	ABBOTT		SILTSTONE	17.4	178.6	SIDERITE BANDS; DARK
564.0	ABBOTT		SILTSTONE	10.0	196.0	OLIVE-GRAY, BURROWS
554.0	ABBOTT		SANDSTONE	3.3	206.0	
550.7	ABBOTT		SILTSTONE	0.5	209.3	PLANT DEBRIS; GRAY
550.2	ABBOTT	REYNOLDSBURG	COAL	0.3	209.8	
549.9			UNDERCLAY	0.3	210.1	
549.6			SILTSTONE	5.9	210.4	SCATTERED PLANT DEBRIS; GRAY
543.7			CLAYSTONE & SILTST	1.0	216.3	
542.7			SHALE	6.9	217.3	SILTY TO SANDY; GRAY
535.9			SANDSTONE	3.3	224.1	LIGHT
532.6			SILTSTONE	19.9	227.4	

MAPID: 087273C0046F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 1 SENESENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.709222

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.594283

DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-BROKAW

WELL TYPE: Outcrop

COMMENT: SEE MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-		ELEV 550 DIP 3 DEG SE
-			SANDSTONE	-		.9 MI W OF ABOVE, THIN ELEV 650

MAPID: 087273C0047F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 1 NE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.713217

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.59576

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 610.0

LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: NOTES AVAILABLE ON 3 RAVINES N. SEC. 1

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-		MASSIVE
-			SANDSTONE	-		SLABBY DIP 18 DEG N

MAPID: 087273C0048F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 1 SW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.722481

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.588905

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 660.0

LOGGED (FT.): 60.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: RAVINE W OF WALNUT SCHOOL.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
660.0			SANDSTONE	30.0	0.0	RED. FAULT AT BASE? DEPS
630.0			UNKNOWN	30.0	30.0	
-			SHALE	-		LT GR SOAPY
-			SANDSTONE	-		THIN BEDS. SECTION CONT. DOWN CREEK

MAPID: 087273C0019F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 2 SWSWSWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.744434

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.593169

DATE COLLECTED: 0 / 0 / 0

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: ALL UNITS DIP STEEPLY NORTH

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			ROCK	-	
-			COAL	-	
-			ROCK	-	

MAPID: 087273C0049F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 2 SWNWNWSW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.744415

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.591325

DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 540.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NTOES-BROKAW

WELL TYPE: Outcrop

COMMENT: N. SLOPE OF RIDGE 600' N OF ROAD

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-	DIP 19 DEG N 15 DEG W, DENSE
-			SANDSTONE	-	DIP 8 DEG 45 DEG E, SW CORNER SEC 2

MAPID: 087273C0050F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 2 NENWSE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.732639

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.591754

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 0.3

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: OTHER NOTES ON RAVINES IN SEC. 2.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-				-	COARSE, ARGILL
-			SHALE	0.3	WHITISH, LIKE "SODOM" SH
-			SANDSTONE	-	MASSIVE, COARSE, FERRUGENOUS
-			SANDSTONE	-	SLABBY, CURLY SURF. DIP S 20DEG E 2-3 D

MAPID: 087273C0051F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 2 SWSESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.739354

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.586308

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 32.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: FAULTED AREA? STRIKE VALLEY-MANY NOTES.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			BLACK SHALE	2.0		NEARLY HORIZONTAL AT 630' ELEV
-			SANDSTONE	-		FINE, PUNKISH
-			SANDSTONE	-		AT 620' ELEV
-			SHALE	-		FRACTURED
-			SANDSTONE	30.0		AT 610
						X BEDDED, FERRUG. DIP S.

MAPID: 087273C0052F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 2 SENWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.74165

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.597269

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: GENERAL NOTES IN RAVINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			SANDSTONE	0.0	0.0	UPPER X BED. DIP NW 30, THEN SH. LAM
-			SHALE	-		
-			SANDSTONE	-		SMALL FAULT
-			SHALE	-		SANDY MICACEOUS

MAPID: 08700026000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 SESESWSE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.750192

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.585913

DATE COLLECTED: 0 / 0 / 1900

SURFACE ELEVATION (FT.): 643.0 LOGGED (FT.): 455.0

LOG TYPE: Drillers Log

SOURCE: WHITNEL & CUNNINGHAM

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
188.0	BASE OF PENN.		UNCLASSIFIED	-	455.0	

MAPID: 08700026000C VERSION: 2

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 SESESWE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.750192

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.585913

DATE COLLECTED: 0 / 0 / 0

SURFACE ELEVATION (FT.): 645.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: WHETNEL-CUNNINGHAM

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
645.0			CLAYSTONE	29.0	0.0	
616.0			UNKNOWN	171.0	29.0	WHITE
445.0			SANDSTONE	20.0	200.0	SLATE
425.0			SILTSTONE	15.0	220.0	
410.0			SANDSTONE	115.0	235.0	
295.0			SILTSTONE	105.0	350.0	
190.0			SANDSTONE	120.0	455.0	WATER SAND
70.0			LIMESTONE	3.0	575.0	"RED ROCK"
67.0			UNKNOWN	67.0	578.0	RED ROCK
0.0			LIMESTONE	5.0	645.0	
-5.0			ROCK	72.0	650.0	
-77.0			SANDSTONE	70.0	722.0	
-147.0			LIMESTONE	45.0	792.0	
-192.0			ROCK	45.0	837.0	
-237.0			SANDSTONE	10.0	882.0	WATER SAND
-247.0			LIMESTONE/SILTSTON	225.0	892.0	SOME SLATE
-472.0			SILTSTONE/LIMESTON	95.0	1117.0	SOME SHELLS
-567.0			SILTSTONE	25.0	1212.0	
-592.0			LIMESTONE	10.0	1237.0	
-602.0			COAL	60.0	1247.0	
-662.0			SILTSTONE/LIMESTON	20.0	1307.0	
-682.0			SANDSTONE	30.0	1327.0	
-712.0			LIMESTONE	50.0	1357.0	
-762.0			SILTSTONE	60.0	1407.0	
-822.0			LIMESTONE	60.0	1467.0	
-882.0			SILTSTONE	48.0	1527.0	
-930.0			SILTSTONE/LIMESTON	45.0	1575.0	
-975.0			LIMESTONE	48.0	1620.0	

MAPID: 08700421500M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 SWNESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.748453

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.590021

DATE COLLECTED: 0 / 0 / 0

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: TOPO MAP-COZANT MINE

WELL TYPE: Underground mine

COMMENT: FLD NOTES-SEVERAL DRIFT MINES IN AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.0			UNKNOWN	0.0	0.0	

MAPID: 087272D0002F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 NWSESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.757784

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.58839

DATE COLLECTED: 0 / 0 / 1932

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.0			UNKNOWN	0.0	0.0	

MAPID: 087272D0003F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 SWNESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.757762

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.590228

DATE COLLECTED: 0 / 0 / 0

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 59.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.0			SANDSTONE	-	0.0	SLUMP BLOCKS
-			SHALE	6.0		MED SOFT, GR, IRON CONC
-			COAL	3.0		SH PTG .12'
-			UNKNOWN	4.0		COVERED
-			SHALE	6.0		LT GR.
-			UNKNOWN	4.0		
-	SPOON	CURLEW	LIMESTONE	2.0		LT BL GR, FOSSIL
-			UNKNOWN	1.5		
-			SHALE	5.0		SANDY, SS LENTIL
-			UNKNOWN	25.0		COAL DUMP NEARBY - MURPHYSBORO?

MAPID: 087272D0004F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 NWSESW

FOOT (NS): 5 S FOOT (EW): 5 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.758945

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.587511

DATE COLLECTED: 0 / 0 / 1954

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-STONEHOUSE

WELL TYPE: Underground mine

COMMENT: SEVERAL ABANDONED SHAFTS IN THIS AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
490.0			UNKNOWN	0.0	0.0	

MAPID: 087272D0065F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 SW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.758936

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.589333

DATE COLLECTED: 0 / 0 / 1931

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 3.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Underground mine

COMMENT: ABD. BALD HILL MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.0			UNKNOWN	3.5	0.0	
-	SPOON	NEW BURNSIDE	COAL	-		

MAPID: 087272D0066F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 NENWSW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.76006

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.592114

DATE COLLECTED: 0 / 0 / 1932

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 43.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	SPOON	WILEY	SANDSTONE	15.0		MASSIVE
515.0			UNKNOWN	10.0	15.0	COVERED
505.0	SPOON	STONEFORT	UNKNOWN	1.0	25.0	
504.0			UNKNOWN	4.0	26.0	
500.0			UNDERCLAY	6.0	30.0	
494.0			LIMESTONE	1.0	36.0	
493.0			CLAYSTONE & SHALE	5.0	37.0	MOSTLY COVERED
488.0			CLAYSTONE	1.0	42.0	
-			UNKNOWN	-		LARGELY COVERED BELOW

MAPID: 087273C0017F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 SWSENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.746761

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.596897

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 540.0

LOGGED (FT.): 4.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-		WEATHERS THIN BEDS
-			SHALE	2.0		BL GR
-			SHALE	-		SOAPSTONE
-			BLACK SHALE	2.0		
-			COAL	-		THIN
-			LIMESTONE	-		
-			SHALE	-		
-			COAL	4.0		
-			SHALE	-		

MAPID: 087273C0053F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 3 NESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.747295

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.590916

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 520.0

LOGGED (FT.): 100.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			UNKNOWN	5.3		SEVERAL SS & SH SEQUENCES IN NOTES
-			SANDSTONE	-		STIGMANIAN D
-			SHALE	-		GREEN, ALL DIP N
-			SANDSTONE	50.0		RED
-			BLACK SHALE	100.0		
-			SANDSTONE	25.0		RED
-			SHALE	50.0		GREY, SOAPY
-			SANDSTONE	10.0		
-			SHALE	-		BK NEAR TOP
-			SANDSTONE	-		"A"

MAPID: 08700147000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 4  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.781152  
CONFIDENTIAL: N LATITUDE: 37.592558  
SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 71.0  
SOURCE: Q. RICHEY, DRILLER  
COMMENT:

FOOT (NS): 2900 N FOOT (EW): 200 W  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 6 / 4 / 1969  
LOG TYPE: Drillers Log  
WELL TYPE: Water Well

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0			CLAYSTONE	10.0	0.0	
600.0			SANDSTONE	58.0	10.0	
542.0			COAL	2.0	68.0	
540.0			UNDERCLAY	1.0	70.0	

MAPID: 087272D0005F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 4 SWNENW  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.776079  
CONFIDENTIAL: N LATITUDE: 37.597851  
SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 67.3  
SOURCE: FLD NOTES-FULLER  
COMMENT: SECTION DOWN GULLY

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 0  
LOG TYPE: Measured section  
WELL TYPE: Outcrop

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			SANDSTONE	25.0	0.0	BR GREY, MASSIVE
525.0			SHALE	9.6	25.0	
515.4			COAL	2.5	34.6	
512.9			UNDERCLAY	1.5	37.1	
511.4			SHALE	8.0	38.6	LT GREY, WELL BEDDED
503.4	SPOON	NEW BURNSIDE	COAL	5.3	46.6	CL PTG .66
498.1			UNDERCLAY	1.5	51.9	MED BL. GR.
496.6			UNKNOWN	3.0	53.4	
493.6			SANDSTONE	2.0	56.4	LT GR.
491.6			SHALE	7.0	58.4	

MAPID: 08700075000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 NW  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.796568  
CONFIDENTIAL: N LATITUDE: 37.597952  
SURFACE ELEVATION (FT.): 623.0 LOGGED (FT.): 975.0  
SOURCE: FARRAR, FLETCHER F.  
COMMENT:

FOOT (NS): 990 N FOOT (EW): 990 W  
GEOLOGIST:  
DATE COLLECTED: 3 / 0 / 1956  
LOG TYPE: Electric Log  
WELL TYPE: Producer-Oil and Gas

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-352.0	BASE OF PENN.		UNCLASSIFIED	-	975.0	

**MAPID:** 08700075000C    **VERSION:** 2  
**COUNTY:** JOHNSON    **TWP/RNG:** 11S 4E    **SECTION:** 5 NW  
**QUADRANGLE:** CREAL SPRINGS    **LONGITUDE:** -88.796568  
**CONFIDENTIAL:** N    **LATITUDE:** 37.597952  
**SURFACE ELEVATION (FT.):** 623.0    **LOGGED (FT.):** 2333.0  
**SOURCE:** FARRAR OIL CO  
**COMMENT:** 1,4,5 S#26387 (STUDY BY R. J. JACOBSON)

**PROJECT:** BLM  
**FOOT (NS):** 990 N    **FOOT (EW):** 990 W  
**GEOLOGIST:** BARGH,M  
**DATE COLLECTED:** 0 / 0 / 1981  
**LOG TYPE:** Multiple log types  
**WELL TYPE:** Oil and Gas Test

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
623.0			UNKNOWN	128.0	0.0	
495.0			SANDSTONE	10.0	128.0	
485.0	SPOON	BIDWELL	COAL	10.0	138.0	SOME SH, SS, CLAY
475.0			SHALE	30.0	148.0	SOME BK, CLAYSTONE, SILTSTONE
445.0			SANDSTONE/SILTSTON	10.0	178.0	
435.0			SANDSTONE	10.0	188.0	FINE, SH, SOME COAL
425.0			SHALE	10.0	198.0	SOME COAL
415.0			SHALE & SANDSTONE	60.0	208.0	
355.0			SANDSTONE/SHALE	10.0	268.0	SOME COAL
345.0			SANDSTONE/SHALE	30.0	278.0	
315.0			DARK SHALE	10.0	308.0	COAL, SOME LS.
305.0			SANDSTONE	20.0	318.0	FINE, SOME COAL
285.0			SANDSTONE	70.0	338.0	
215.0			SANDSTONE/SHALE	10.0	408.0	A LITTLE COAL
205.0			SANDSTONE/SHALE	180.0	418.0	
25.0			SANDSTONE/SHALE	10.0	598.0	A LITTLE COAL
15.0			SANDSTONE/SHALE	70.0	608.0	LT TAN, SS, MED GREY SH
-55.0			SANDSTONE	80.0	678.0	MED GRAINED, WHITE
-135.0			SANDSTONE/SHALE	10.0	758.0	SOME COAL
-145.0			SANDSTONE/SHALE	60.0	768.0	
-205.0			SANDSTONE	10.0	828.0	
-215.0			SANDSTONE/SHALE	30.0	838.0	A LITTLE COAL
-245.0			SANDSTONE/SHALE	40.0	868.0	
-285.0			SHALE & SANDSTONE	40.0	908.0	SOME COAL
-325.0			SANDSTONE	30.0	948.0	

**MAPID:** 08700089300M    **VERSION:** 1  
**COUNTY:** JOHNSON    **TWP/RNG:** 11S 4E    **SECTION:** 5 SWSWSE  
**QUADRANGLE:** CREAL SPRINGS    **LONGITUDE:** -88.789851  
**CONFIDENTIAL:** N    **LATITUDE:** 37.587045  
**SURFACE ELEVATION (FT.):** 580.0    **LOGGED (FT.):** 0.0  
**SOURCE:** MINE NOTES-NEW BURNSIDE C C  
**COMMENT:**

**PROJECT:** BLM  
**FOOT (NS):** 0    **FOOT (EW):** 0  
**GEOLOGIST:** BARGH,M  
**DATE COLLECTED:** 0 / 0 / 1972  
**LOG TYPE:**  
**WELL TYPE:** Strip Mine

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	SPOON	NEW BURNSIDE	COAL	-		

MAPID: 08700089700M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 SESESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.791566

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.586528

DATE COLLECTED: 0 / 0 / 1969

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: MINE NOTES-JOBE C C

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			UNKNOWN	0.0	0.0	

MAPID: 08700094500M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 SENESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.791552

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.58835

DATE COLLECTED: 4 / 20 / 1977

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 29.2

LOG TYPE:

SOURCE: MINE NOTES-NELSON, E & L MINE

WELL TYPE: Strip Mine

COMMENT: OTHER NOTES AVAILABLE ON THIS MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			UNCONSOLIDATED	-	0.0	
-			SANDSTONE	6.0		
-			SHALE	2.0		
-			COAL	0.5		
-			SANDSTONE	12.0		
-	SPOON	NEW BURNSIDE	COAL	2.7		
-	SPOON		ROCK	6.0		
-	SPOON		COAL	-		CONCEALED

MAPID: 08700095100M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.790948

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.593368

DATE COLLECTED: 4 / 20 / 1977

SURFACE ELEVATION (FT.): LOGGED (FT.): 24.3

LOG TYPE:

SOURCE: MINE NOTES-OXFORD MNG C

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNKNOWN	20.0	0.0	
-	SPOON	NEW BURNSIDE	COAL	2.5	20.0	SH PTGS .16'
-	SPOON		CLAYSTONE	0.5	22.5	
-	SPOON	NEW BURNSIDE	COAL	1.3	23.0	LOWER BENCH

MAPID: 08700098000M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 SESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.792134

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.586962

DATE COLLECTED: 2 / 28 / 1980

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 28.0

LOG TYPE:

SOURCE: MINE NOTES-INDUSTRIAL COAL PRODUCERS

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			UNCONSOLIDATED	12.0	0.0	
538.0			SHALE	16.0	12.0	
-	SPOON	NEW BURNSIDE	COAL	-		"SAID TO BE 5'

MAPID: 08700252800M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.790948

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.593368

DATE COLLECTED: 0 / 0 / 1972

SURFACE ELEVATION (FT.): LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: MINE NOTES-KNICKERBOCKER C C

WELL TYPE: Strip Mine

COMMENT: MANY SMALL MINES IN THIS AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	SPOON	NEW BURNSIDE	COAL	-		

MAPID: 08700262100M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5

FOOT (NS): 400 S FOOT (EW): 1300 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.786365

GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 37.587379

DATE COLLECTED: 0 / 0 / 1973

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: DEATON C C

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	SPOON	NEW BURNSIDE	COAL	-		

MAPID: 08720416000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5

FOOT (NS): 2000 N FOOT (EW): 2000 E

QUADRANGLE: CREAL SPRINGS

LONGITUDE: -88.78878

GEOLOGIST: C KOROSE

CONFIDENTIAL: N

LATITUDE: 37.595102

DATE COLLECTED: 7 / 25 / 1986

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 154.0

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP C-7

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
585.0			SANDSTONE	35.5	10.0	CLAYEY, LIGHT TO TAN
549.5			SANDSTONE	0.5	45.5	AS ABOVE
549.0			SANDSTONE/SHALE	29.6	46.0	COAL PEBBLES AT BASE; GRAY
519.4			SHALE	12.6	75.6	SILTY, BURROWED
506.8	SPOON	DELWOOD	COAL	1.4	88.2	BRIGHT BANDED; GRAY
505.4	SPOON		SHALE/COAL	1.2	89.6	BRIGHT-BANDED TO DULL
504.2	SPOON		CLAYSTONE & SILTST	0.8	90.8	DARK
503.4	SPOON	DELWOOD	COAL	2.6	91.6	
500.8			UNDERCLAY	6.2	94.2	SILTY; DARK
494.6			SILTSTONE	2.0	100.4	
492.6			SANDSTONE	5.6	102.4	SILTY, RIPPLE MARKS AT 106.0
487.0			SANDSTONE/SHALE	46.0	108.0	GRAY

MAPID: 087272D0006F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 SWSWSWSE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS

LONGITUDE: -88.790425

GEOLOGIST: BARGH,M

CONFIDENTIAL: N

LATITUDE: 37.586571

DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 570.0

LOGGED (FT.): 28.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-BROKAW

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	12.0		
-	SPOON	NEW BURNSIDE	COAL	3.0		(THICKNESS FROM BROKAW,1916)
-	SPOON		SHALE	16.0		
-	SPOON	BIDWELL	COAL	3.5		

MAPID: 087272D0007F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 SESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.792134

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.586962

DATE COLLECTED: 0 / 0 / 1932

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 19.8

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Roadcut

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			SANDSTONE	5.5	0.0	MED. GR. RED STREAKS
544.5			COAL	1.3	5.5	
543.2			CLAYSTONE	3.0	6.8	
540.2			SANDSTONE	2.0	9.8	W. IRON OXIDE
538.2			SHALE	2.0	11.8	SANDY, CONCRETIONS
536.2				4.0	13.8	LT GREY

MAPID: 087272D0008F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 SE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.78641

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.589856

DATE COLLECTED: 0 / 0 / 1932

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 21.2

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Underground mine

COMMENT: ABANDONED SLOPE MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	14.0		
566.0			SHALE	1.7	14.0	
564.3	SPOON	NEW BURNSIDE	COAL	3.5	15.7	
560.8	SPOON		UNDERCLAY	1.0	19.2	
-			SANDSTONE	-		

MAPID: 087272D0009F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 NESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.79212

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.588787

DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 510.0 LOGGED (FT.): 5.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-WELLER

WELL TYPE: Outcrop

COMMENT: OUTCROP IN CREEK BED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
510.0			COAL	5.5	0.0	CLAY PTG .5'

MAPID: 087272D0010F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 SENESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.792109

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.590612

DATE COLLECTED: 0 / 0 / 1956

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 49.6

LOG TYPE: Measured section

SOURCE: FLD NOTES-KOSANKE

WELL TYPE: Outcrop

COMMENT: L.NEW BR.IN CREEK;U.NEW BR.IN PROS.PIT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			SANDSTONE	18.5	0.0	INTERBEDDED WITH 15%
531.5			CONGLOMERATE	1.5	18.5	SANDY W SS, SH PEBBLES, SOME COAL
530.0			SHALE	1.0	20.0	W CARBON SH STRINGERS
529.0	SPOON	NEW BURNSIDE	COAL	3.0	21.0	RISES SHARPLY (5'IN75') TO S. BASE OF V
526.0	SPOON	NEW BURNSIDE	UNKNOWN	6.5	24.0	COVERED. SOME SS
519.5	SPOON	NEW BURNSIDE	SHALE	11.5	30.5	GR, SANDY
508.0	SPOON	NEW BURNSIDE	CONGLOMERATE	2.0	42.0	CONSPIC HEMATITE. SS,SH,CH PEBBLES
506.0	SPOON	NEW BURNSIDE	COAL	1.4	44.0	25% COALY SH INTERLAM.
504.6	SPOON	NEW BURNSIDE	COAL	0.1	45.4	BRIGHT, BLOCKY
504.5	SPOON	NEW BURNSIDE		0.1	45.5	
504.4	SPOON	NEW BURNSIDE		0.1	45.6	
504.3	SPOON	NEW BURNSIDE	COAL	0.1	45.7	
504.2	SPOON	NEW BURNSIDE		0.9	45.8	BASE OF NEW BURNSIDE LOWER CASE
503.3			CLAYSTONE	3.0	46.7	

MAPID: 087272D0011F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5 SWSESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.792708

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.586486

DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 540.0 LOGGED (FT.): 3.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-WELLER

WELL TYPE: Outcrop

COMMENT: OTHER NOTES IN THIS AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	SPOON	NEW BURNSIDE	COAL	3.5		

MAPID: 087272D0050F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 5

FOOT (NS): 600 S FOOT (EW): 1800 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.793876

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.587639

DATE COLLECTED: 0 / 0 / 1960

SURFACE ELEVATION (FT.): 510.0

LOGGED (FT.): 49.7

LOG TYPE: Measured section

SOURCE: FLD. NOTES-RI214

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
510.0	SPOON	GRANGER	SANDSTONE	18.5	0.0	IRREG INTERBED W 10%-15% SH PTGS
491.5	SPOON		CONGLOMERATE	1.5	18.5	SS,SH PEBBLES
490.0	SPOON		SHALE	1.0	20.0	GR, SNDY, INTERBED W CARBON SH
489.0	SPOON	NEW BURNSIDE	COAL	3.0	21.0	
486.0	SPOON		UNKNOWN	6.6	24.0	COVERED. SOME SS
479.4	SPOON		SHALE	11.5	30.6	GR, SANDY
467.9	SPOON		CONGLOMERATE	2.0	42.1	SS, SH, CH PEBBLES, IRON, RED COLOR
465.9	SPOON	BIDWELL	COAL	1.4	44.1	DISCONF. AVOVE. INTERBED W CLY SH
464.5	SPOON	BIDWELL	COAL	0.1	45.5	
464.4	SPOON	BIDWELL	CLAYSTONE	0.1	45.6	
464.3	SPOON	BIDWELL	SHALE	0.1	45.7	COALY
464.2	SPOON	BIDWELL	COAL	0.1	45.8	BRIGHT
464.1	SPOON		SHALE	0.2	45.9	COALY
463.9	SPOON		SHALE	0.7	46.1	COALY, FISSILE
463.3	SPOON		CLAYSTONE	3.0	46.7	LT. GR. SANDY, BASE CONCEALED

MAPID: 087272D0051F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 6

FOOT (NS): 800 S FOOT (EW): 500 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.81724

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.588396

DATE COLLECTED: 0 / 0 / 1932

SURFACE ELEVATION (FT.): 500.0

LOGGED (FT.): 25.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-FULLER

WELL TYPE: Outcrop

COMMENT: COAL DRIFT 200' SOUTH

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.0			SANDSTONE	25.0	0.0	

MAPID: 087272D0012F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 7  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.81556  
CONFIDENTIAL: N LATITUDE: 37.585866  
SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 0.0  
SOURCE: FLD NOTES-STONEHOUSE  
COMMENT: "OLD DRIFT MINE"

FOOT (NS): 100 N FOOT (EW): 990 W  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1954  
LOG TYPE: Measured section  
WELL TYPE: Underground mine

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			UNKNOWN	0.0	0.0

MAPID: 08700077800M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 NENENE  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.783001  
CONFIDENTIAL: N LATITUDE: 37.585476  
SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 47.5  
SOURCE: FLD NOTES-SMITH  
COMMENT: JENNINGS CC MINE. AVERAGE SECTION

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1956  
LOG TYPE:  
WELL TYPE: Strip Mine

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
550.0			UNCONSOLIDATED	6.0	0.0
544.0			SANDSTONE	15.0	6.0
529.0	SPOON	NEW BURNSIDE	COAL	3.5	21.0
-	SPOON		UNDERCLAY	-	
-			ROCK	23.0	

MAPID: 08700077801M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.790994  
CONFIDENTIAL: N LATITUDE: 37.578682  
SURFACE ELEVATION (FT.): LOGGED (FT.): 19.3  
SOURCE: MINE NOTES-SIMON, JENNINGS C C  
COMMENT: AVERAGED THICKNESSES

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 8 / 8 / 1956  
LOG TYPE:  
WELL TYPE: Strip Mine

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	5.0	0.0
-			SANDSTONE	5.0	5.0
-			SANDSTONE/SHALE	6.0	10.0
-	SPOON	NEW BURNSIDE	COAL	3.3	16.0
-	SPOON		UNDERCLAY	-	

MAPID: 08700252900M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.785339  
CONFIDENTIAL: N LATITUDE: 37.580245  
SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 0.0  
SOURCE: MINE NOTES-TREECE  
COMMENT: SLOPE MINE

FOOT (NS): 2200 N FOOT (EW): 1000 E  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1937  
LOG TYPE: Measured section  
WELL TYPE: Underground mine

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0			UNKNOWN	45.0	0.0	
575.0	SPOON	BIDWELL	COAL	3.5	45.0	

MAPID: 087272D0013F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 SWSWNE  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.789854  
CONFIDENTIAL: N LATITUDE: 37.57965  
SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 0.0  
SOURCE: FLD NOTES-BROKAW  
COMMENT:

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1916  
LOG TYPE: Measured section  
WELL TYPE: Underground mine

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0			UNKNOWN	0.0	0.0	

MAPID: 087272D0014F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 NWNENWSE  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.788147  
CONFIDENTIAL: N LATITUDE: 37.578322  
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 19.5  
SOURCE: FLD NOTES-WELLER  
COMMENT: SEVERAL MINES ALONG ROAD

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1939  
LOG TYPE: Measured section  
WELL TYPE: Roadcut

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	-		
-			COAL	2.5		HAS BEEN MINED
-			SHALE	17.0		
-			COAL	-		

MAPID: 087272D0015F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 SWSESWNE  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.788145  
CONFIDENTIAL: N LATITUDE: 37.57925  
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 0.0  
SOURCE: FLD NOTES-OSTROM  
COMMENT: DRIFT MINE

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1954  
LOG TYPE: Measured section  
WELL TYPE: Underground mine

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
600.0			UNKNOWN	0.0	0.0	

MAPID: 087272D0016F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 SE  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.786437  
CONFIDENTIAL: N LATITUDE: 37.575134  
SURFACE ELEVATION (FT.): LOGGED (FT.): 29.0  
SOURCE: FLD NOTES-OSTROM  
COMMENT: COMPOSITE SECTION

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1954  
LOG TYPE: Measured section  
WELL TYPE: Outcrop

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-		
-	SPOON	NEW BURNSIDE	COAL	4.0		AVERAGE THICKNESS
-	SPOON		UNDERCLAY	-		
-			ROCK	20.0		
-			COAL	5.0		OUTCROPS AT BASE OF HILL

MAPID: 087272D0017F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 SWSWNENE  
QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.78586  
CONFIDENTIAL: N LATITUDE: 37.583045  
SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 17.0  
SOURCE: FLD NOTES-OSTROM  
COMMENT: OLD DRIFT MINE IN HILLSIDE

FOOT (NS): 0 FOOT (EW): 0  
GEOLOGIST: BARGH,M  
DATE COLLECTED: 0 / 0 / 1954  
LOG TYPE: Measured section  
WELL TYPE: Underground mine

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-		
-			COAL	2.0		
-			UNKNOWN	15.0		
-			SHALE	-		CARBONACEOUS W/COAL VEINLET OUTCROP

MAPID: 087272D0018F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 NESENE

FOOT (NS): 10 N FOOT (EW): 330 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.783009

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.58266

DATE COLLECTED: 0 / 0 / 1961

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 18.7

LOG TYPE:

SOURCE: FLD NOTES-PARHAM

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			UNCONSOLIDATED	5.0	0.0	
595.0			SANDSTONE	10.0	5.0	
585.0	SPOON	NEW BURNSIDE	COAL	3.0	15.0	AVERAGE THICKNESS
582.0	SPOON		UNDERCLAY	0.7	18.0	

MAPID: 087272D0019F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 NENWSENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.78472

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.58216

DATE COLLECTED: 0 / 0 / 1961

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 13.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-PARHAM

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			UNKNOWN	10.0	0.0	
540.0	SPOON	BIDWELL	COAL	1.0	10.0	SHALEY, ORGANIC
539.0			UNDERCLAY	2.5	11.0	SHALEY

MAPID: 087272D0052F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 SESESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.783026

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.572465

DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-BROKAW

WELL TYPE: Outcrop

COMMENT: DEP 26 DEGREES N, 20 DEGREES W

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	-	-	"MOSTLY SHALE COUNTRY"

MAPID: 087272D0053F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 SWNE

FOOT (NS): 1 S FOOT (EW): 50 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.790821

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.578692

DATE COLLECTED: 0 / 0 / 1954

SURFACE ELEVATION (FT.): 550.0

LOGGED (FT.): 24.8

LOG TYPE: Measured section

SOURCE: FLD NOTES-OSTROM

WELL TYPE: Roadcut

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			SANDSTONE	6.0	0.0	LT BR. MICACEOUS
544.0			SHALE	3.0	6.0	
541.0			SANDSTONE	4.0	9.0	
537.0			SHALE	2.5	13.0	SOFT, WEATHERED
534.5	SPOON	NEW BURNSIDE	COAL	4.0	15.5	
530.5	SPOON		CLAYSTONE & SHALE	5.3	19.5	

MAPID: 087272D0054F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 8 SESENW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.792137

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.579567

DATE COLLECTED: 0 / 0 / 1954

SURFACE ELEVATION (FT.): 550.0

LOGGED (FT.): 14.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-OSTROM

WELL TYPE: Roadcut

COMMENT: FROM TOP OF HILL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			SANDSTONE	1.0	0.0	WH TO LT GR. MASSIVE
549.0			SANDSTONE	6.0	1.0	TAN, THIN BEDDED
543.0			SHALE	3.0	7.0	BUFF, LT GREEN GR
540.0			UNKNOWN	1.0	10.0	
539.0			BLACK SHALE	1.5	11.0	V. CARBONACEOUS,
537.5			UNKNOWN	0.5	12.5	
537.0			SHALE	1.0	13.0	LT. GR

MAPID: 087272D0020F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 9 SWSWNWNE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.772209

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.582829

DATE COLLECTED: 0 / 0 / 1932

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 29.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0			SANDSTONE	8.0	0.0	MASSIVE
572.0			SHALE	0.3	8.0	
571.7			SANDSTONE	0.6	8.3	LARGE
571.1			SHALE	1.5	8.9	
569.6	SPOON	NEW BURNSIDE	COAL	3.2	10.4	
566.4			UNDERCLAY	0.8	13.6	
565.6			UNKNOWN	2.0	14.4	COVERED
563.6			SHALE	5.0	16.4	WITH PLANTS, SOME LEAVES
558.6			BLACK SHALE	0.8	21.4	FIS SHARK TEETH, SCALES, SPORES, COALY
557.7			SHALE	2.8	22.3	THIN SS LENSES
555.0			SHALE	0.3	25.0	DK, SLATY, PLANT TRACES
554.7			SHALE	0.4	25.3	SOFT, GREY
554.3			COAL	1.0	25.7	
553.3			UNDERCLAY	1.5	26.7	

MAPID: 087272D0021F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 9

FOOT (NS): 1600 N FOOT (EW): 2500 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.773195

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.581706

DATE COLLECTED: 0 / 0 / 1936

SURFACE ELEVATION (FT.): 600.0

LOGGED (FT.): 20.4

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Roadcut

COMMENT: AVERAGE THICKNESSES

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	2.0		
598.0			SHALE	3.0	2.0	WITH SS LENSES
595.0	SPOON	NEW BURNSIDE	COAL	3.2	5.0	
591.8	SPOON		UNDERCLAY	1.0	8.2	
590.8			UNKNOWN	4.0	9.2	
586.8			SHALE	6.0	13.2	
580.8			COAL	1.3	19.2	
-			UNDERCLAY	-		

MAPID: 087272D0055F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 9 SENENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.764825

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.583013

DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-BROKAW

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
550.0			SHALE & SANDSTONE	-	0.0	BL SH&MASSIVE SS 20-30 DGRS. N 45 DGRS

MAPID: 08700074000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 10 NW

FOOT (NS): 330 S FOOT (EW): 330 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.755573

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.579092

DATE COLLECTED: 11 / 0 / 1955

SURFACE ELEVATION (FT.): 625.0 LOGGED (FT.): 382.0

LOG TYPE: Electric Log

SOURCE: SHURE OIL CORP.

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
243.0	BASE OF PENN.		UNCLASSIFIED	-	382.0	

MAPID: 08700074000C VERSION: 2

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 10 NW

FOOT (NS): 330 S FOOT (EW): 330 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.755573

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.579092

DATE COLLECTED: 11 / 0 / 1955

SURFACE ELEVATION (FT.): 625.0 LOGGED (FT.): 2230.0

LOG TYPE: Multiple log types

SOURCE: SHURE OIL CO.

WELL TYPE: Oil and Gas Test

COMMENT: 1,4,5 SAMPLE STUDY BY ATHERTON SS#26163

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
625.0			UNCONSOLIDATED	120.0	0.0	
505.0			SANDSTONE	30.0	120.0	TOP OF PENNSYLVANIAN
505.0			SANDSTONE	30.0	120.0	SH; TRACE OF COAL
475.0			SANDSTONE	60.0	150.0	FINE, GREY
415.0			SANDSTONE	60.0	210.0	W SH SLIGHTLY CARBONACEOUS
355.0			SANDSTONE	50.0	270.0	LT GREY, FINE
305.0			SANDSTONE	31.0	320.0	BROWN, WHITE QTZ PEBBLES
274.0			LIMESTONE	19.0	351.0	TOP OF MISS
255.0			SHALE	60.0	370.0	WITH SOME LS
195.0			LIMESTONE	37.0	430.0	CHERTY
158.0			SHALE	13.0	467.0	
145.0			LIMESTONE	55.0	480.0	
90.0			SHALE	12.0	535.0	
78.0			LIMESTONE	32.0	547.0	
16.0			SHALE	41.0	609.0	SH, SS, SILTSTONE
-25.0			UNKNOWN	113.0	650.0	
-138.0			UNKNOWN	74.0	763.0	
-212.0			UNKNOWN	148.0	837.0	
-360.0			SHALE	41.0	985.0	
-401.0			LIMESTONE	22.0	1026.0	
-423.0			SANDSTONE/SILTSTON	100.0	1048.0	
-523.0			LIMESTONE W/ SHALE	71.0	1148.0	
-594.0			SANDSTONE/SHALE	80.0	1219.0	
-674.0			LIMESTONE W/ SHALE	181.0	1299.0	
-855.0			SHALE & SANDSTONE	80.0	1480.0	
-935.0			CALCAREOUS SHALE	106.0	1560.0	
-1041.0			SANDSTONE	14.0	1666.0	
-1055.0			LIMESTONE	23.0	1680.0	
-1078.0			LIMESTONE W/ SHALE	56.0	1703.0	
-1134.0			SANDSTONE/SHALE	43.0	1759.0	
-1177.0			LIMESTONE	193.0	1802.0	TOP OF VALMEYER.SH,SS AT TOP
-1370.0			LIMESTONE	0.0	1995.0	

**MAPID:** 087273C0054F    **VERSION:** 1  
**COUNTY:** JOHNSON    **TWP/RNG:** 11S 4E    **SECTION:** 10    **NESENE**  
**QUADRANGLE:** STONEFORT    **LONGITUDE:** -88.746249  
**CONFIDENTIAL:** N    **LATITUDE:** 37.580783  
**SURFACE ELEVATION (FT.):** 580.0    **LOGGED (FT.):** 0.0  
**SOURCE:** FLD NOTES-BROKAW  
**COMMENT:** ALSO CADY FLD NOTES FOR THIS SECTION

**PROJECT:** BLM  
**FOOT (NS):** 0    **FOOT (EW):** 0  
**GEOLOGIST:** BARGH,M  
**DATE COLLECTED:** 0 / 0 / 1916  
**LOG TYPE:** Measured section  
**WELL TYPE:** Outcrop

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-		LAMINATED, DIPS 10 DEG S 40 DEG E
-			BLACK SHALE	-		

**MAPID:** 087273C0055F    **VERSION:** 1  
**COUNTY:** JOHNSON    **TWP/RNG:** 11S 4E    **SECTION:** 11    **NWNWNW**  
**QUADRANGLE:** STONEFORT    **LONGITUDE:** -88.743831  
**CONFIDENTIAL:** N    **LATITUDE:** 37.58443  
**SURFACE ELEVATION (FT.):** 560.0    **LOGGED (FT.):** 0.0  
**SOURCE:** FLD NOTES-CADY  
**COMMENT:** JUNCTION OF RAVINES & DOWNSTREAM

**PROJECT:** BLM  
**FOOT (NS):** 0    **FOOT (EW):** 0  
**GEOLOGIST:** BARGH,M  
**DATE COLLECTED:** 0 / 0 / 1926  
**LOG TYPE:** Measured section  
**WELL TYPE:** Outcrop

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			SHALE	-		
-			SANDSTONE	-		COARSE, GRITTY
-			BLACK SHALE	-		DARK GREEN, DI
-			SANDSTONE	-		STIGMARIAN
-				-		100 YDS BELOW, BEARS S 20 DEG W
-			BLACK SHALE	-		.04 COAL, ON SIDE OF STREAM
-			SANDSTONE	-		DIP 5 DEG S 70 E. DOWNSTREAM

**MAPID:** 087273C0056F    **VERSION:** 1  
**COUNTY:** JOHNSON    **TWP/RNG:** 11S 4E    **SECTION:** 11    **SESENE**  
**QUADRANGLE:** STONEFORT    **LONGITUDE:** -88.728363  
**CONFIDENTIAL:** N    **LATITUDE:** 37.579007  
**SURFACE ELEVATION (FT.):** 480.0    **LOGGED (FT.):** 0.0  
**SOURCE:** FLD NOTES-WELLER  
**COMMENT:** 2 LOCATIONS, A & B

**PROJECT:** BLM  
**FOOT (NS):** 0    **FOOT (EW):** 0  
**GEOLOGIST:** BARGH,M  
**DATE COLLECTED:** 0 / 0 / 1939  
**LOG TYPE:** Measured section  
**WELL TYPE:** Roadcut

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-			SHALE	-		IN CREEK BED
-			SANDSTONE	-		MASSIVE ABOVE ROAD
-			SANDSTONE	-		X BEDDED. DIP NORTH

MAPID: 087273C0057F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 12 SENESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.709985

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.574931

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 540.0 LOGGED (FT.): 3.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-HENDRICK

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-			SANDSTONE	-	WHITE TO BUFF. POOR BED
-			SANDSTONE	-	FERRUG. STIGMARIA
-			SHALE	3.0	SS AT TOP. DIP 3 DEG N 30 DEG W

MAPID: 087273C0058F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 12 NENW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.720264

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.583408

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: ALONG BED OF CREEK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-			SANDSTONE	-	
-			SHALE	-	EARTHY MUD SH
-			BLACK SHALE	3.0	ALMOST SLATE
-			SANDSTONE	-	CONGL. PLANT STEMS, FE PEBBLES
-			SANDSTONE	-	DOWN STREAM. RIPPLE MARKED

MAPID: 087273C0059F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 12 NWNWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.725996

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.584565

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0				9.0	0.0	
571.0			SANDSTONE	11.0	9.0	
560.0			SHALE	11.0	20.0	
-			SANDSTONE	-		SLABBY
-			SHALE	-		
-			SANDSTONE/SHALE	42.0		THIN BEDDED
-			SANDSTONE	10.0		THIN BEDDED
-			SANDSTONE	21.0		MASSIVE

MAPID: 087273C0060F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 13 NWNWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.726246

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.569685

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: TRAVERSE DOWN CLIFTY CR ALONG DIP.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0			SANDSTONE	20.0	0.0	RED

MAPID: 087273C0061F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 14 SENESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.728684

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.56052

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-HENDRICKS

WELL TYPE: Outcrop

COMMENT: FAULTED AREA. TRAV. DOWN STREAM

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SHALE	-		
-			SANDSTONE	-		"FOR 200 PACES"
-			SHALE	-		DIP 5 DEG N. FOLDED & FAULTED
-			SANDSTONE	-		

MAPID: 08700001000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 15 NENENESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.755052

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.562945

DATE COLLECTED: 0 / 0 / 1908

SURFACE ELEVATION (FT.): 566.0 LOGGED (FT.): 530.0

LOG TYPE: Drillers Log

SOURCE: REEVES W W

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
36.0	BASE OF PENN.		UNCLASSIFIED	-	530.0

---

MAPID: 08700001000C VERSION: 2

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 15 NENENESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.755052

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.562945

DATE COLLECTED: 0 / 0 / 1908

SURFACE ELEVATION (FT.): 566.0 LOGGED (FT.): 1560.0

LOG TYPE: Drillers Log

SOURCE: C. E. GIBSON CO.

WELL TYPE: Oil and Gas Test

COMMENT: QUESTIONABLE THICKNESSES

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
566.0			UNCONSOLIDATED	6.0	0.0	
560.0			ROCK	74.0	6.0	
486.0			SILTSTONE	20.0	80.0	
466.0			SANDSTONE	15.0	100.0	
451.0			BLACK SHALE	4.0	115.0	SOFT
447.0			LIMESTONE	11.0	119.0	
436.0			SILTSTONE	10.0	130.0	
426.0			LIMESTONE	105.0	140.0	
321.0			SILTSTONE	13.0	245.0	
308.0			COAL	6.0	258.0	
302.0			SILTSTONE	36.0	264.0	
266.0			SANDSTONE	27.0	300.0	
239.0			COAL	2.0	327.0	
237.0			SILTSTONE	3.0	329.0	
234.0			SANDSTONE	18.0	332.0	
216.0			COAL	2.0	350.0	
214.0			SILTSTONE	13.0	352.0	
201.0			SANDSTONE	18.0	365.0	
183.0			SILTSTONE	90.0	383.0	
93.0			SANDSTONE	57.0	473.0	BASE OF PA
36.0			LIMESTONE	20.0	530.0	CONGL
16.0			SHALE	20.0	550.0	BLUE MUD
-4.0			LIMESTONE	5.0	570.0	
-9.0			SHALE	50.0	575.0	
-59.0			LIMESTONE	22.0	625.0	
-81.0			SILTSTONE	23.0	647.0	
-104.0			LIMESTONE	30.0	670.0	
-134.0			SILTSTONE	20.0	700.0	
-154.0			LIMESTONE	20.0	720.0	
-174.0			SILTSTONE	25.0	740.0	
-199.0			LIMESTONE	20.0	765.0	
-219.0			ROCK	10.0	785.0	RED
-229.0			SILTSTONE/SANDSTON	155.0	795.0	ALTERNATING
-384.0			SILTSTONE	82.0	950.0	WITH LIMEY SHELLS
-466.0			LIMESTONE	42.0	1032.0	
-508.0			SILTSTONE	16.0	1074.0	
-524.0			LIMESTONE	20.0	1090.0	
-544.0			BLACK SHALE	140.0	1110.0	"PENCIL CAVE"-FRACTURED HARD SLATE
-684.0			SILTSTONE	170.0	1250.0	"DARK SLATE & SHELLS"

-854.0	SANDSTONE	20.0	1420.0	OIL SAND
-874.0	SILTSTONE	5.0	1440.0	
-879.0	LIMESTONE	115.0	1445.0	

MAPID: 08720417000C    VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON    TWP/RNG: 11S 4E    SECTION: 15

FOOT (NS): 2600 S    FOOT (EW): 2170 E

QUADRANGLE: CREAL SPRINGS    LONGITUDE: -88.753031

GEOLOGIST: C KOROSE

CONFIDENTIAL: N    LATITUDE: 37.563188

DATE COLLECTED: 8 / 15 / 1986

SURFACE ELEVATION (FT.): 620.0    LOGGED (FT.): 266.3

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP    C-6

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
620.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
606.0	ABBOTT	MURRAY BLUFF	SANDSTONE/SHALE	12.0	14.0	RED TO ORANGE
594.0	ABBOTT	MURRAY BLUFF	UNDERCLAY	0.7	26.0	COAL STRINGER
593.3	ABBOTT	MURRAY BLUFF	SANDSTONE/SHALE	22.6	26.7	GRAY
570.7	ABBOTT		SHALE	11.9	49.3	OLIVE SHALE MEMBER; SANDY
558.8	ABBOTT		SANDSTONE	8.2	61.2	OLIVE SHALE; GRAY, CLAYEY
550.6	ABBOTT		SHALE	19.2	69.4	OLIVE SHALE MEMBER
531.4	ABBOTT		CLAYSTONE & SILTST	7.0	88.6	OLIVE SHALE MEMBER; DARK
524.4	ABBOTT		SANDSTONE	23.5	95.6	GRAY, OLIVE SHALE MEMBER; BIOTURBATED
500.9	ABBOTT		SANDSTONE	38.2	119.1	OLIVE SHALE MEMBER; SHALEY; GRAY
462.7	ABBOTT		SANDSTONE	7.0	157.3	CARBONACEOUS
455.7	ABBOTT		SANDSTONE/SHALE	12.6	164.3	GRAY
443.1	ABBOTT		SHALE	2.8	176.9	VERY CARBONACEOUS AT BASE; BLACK
440.3	ABBOTT		COAL	1.0	179.7	TUNNEL HILL MEMBER; BRIGHT BANDED
439.3	ABBOTT		UNDERCLAY	0.3	180.7	
439.0	ABBOTT		SANDSTONE	85.3	181.0	CLAYEY; LIGHT

MAPID: 08700027000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 16 NESWNE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.769301

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.56646

DATE COLLECTED: 0 / 0 / 1936

SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 300.0

LOG TYPE: Drillers Log

SOURCE: LANCASTER & SONS

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
610.0			UNCONSOLIDATED	14.0	0.0
596.0			SANDSTONE	30.0	14.0
566.0				2.0	44.0
564.0			SANDSTONE	34.0	46.0
530.0			SHALE	18.0	80.0
512.0			SANDSTONE	140.0	98.0
372.0			SHALE	2.0	238.0
370.0			LIMESTONE	1.0	240.0
-			SHALE	59.0	

MAPID: 08720343000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 16

FOOT (NS): 330 N FOOT (EW): 1650 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.769423

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.57016

DATE COLLECTED: 0 / 0 / 0

SURFACE ELEVATION (FT.): 653.0 LOGGED (FT.): 440.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Dry Hole

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
213.0	BASE OF PENN.		UNCLASSIFIED	-	440.0

MAPID: 08720343000C VERSION: 2

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 16

FOOT (NS): 330 N FOOT (EW): 1650 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.769423

GEOLOGIST: WEIBEL,CP

CONFIDENTIAL: N LATITUDE: 37.57016

DATE COLLECTED: 1 / 24 / 1980

SURFACE ELEVATION (FT.): 653.0 LOGGED (FT.): 2075.0

LOG TYPE: Electric Log

SOURCE: R.L. MITCHELL & W.J. HAMILTON

WELL TYPE: Oil and Gas Test

COMMENT: SAMPLE SET #62375

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
211.0			UNKNOWN	55.0	442.0	TOP MISS
156.0			UNKNOWN	44.0	497.0	
112.0			UNKNOWN	193.0	541.0	
-81.0			UNKNOWN	55.0	734.0	
-136.0			UNKNOWN	143.0	789.0	
-279.0			UNKNOWN	43.0	932.0	
-322.0			UNKNOWN	23.0	975.0	
-345.0			UNKNOWN	80.0	998.0	
-425.0			UNKNOWN	53.0	1078.0	
-478.0			UNKNOWN	98.0	1131.0	
-576.0			UNKNOWN	115.0	1229.0	
-691.0			UNKNOWN	73.0	1344.0	
-764.0			UNKNOWN	104.0	1417.0	BEECH CREEK ABSENT
-870.0			UNKNOWN	84.0	1523.0	QUESTIONABLE
-952.0			UNKNOWN	0.0	1605.0	

MAPID: 08700028000C VERSION: 1

PROJECT: CUSMAP

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 17

FOOT (NS): 2300 N FOOT (EW): 700 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.797776

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.564698

DATE COLLECTED: 0 / 0 / 1917

SURFACE ELEVATION (FT.): 557.0 LOGGED (FT.): 530.0

LOG TYPE: Drillers Log

SOURCE: WRIGHTSMAN CHAS

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
27.0	BASE OF PENN.		UNCLASSIFIED	-	530.0	

MAPID: 08700028000C VERSION: 2

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 17

FOOT (NS): 2300 N FOOT (EW): 700 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.797776

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.564698

DATE COLLECTED: 0 / 0 / 1917

SURFACE ELEVATION (FT.): 577.0 LOGGED (FT.): 2009.0

LOG TYPE: Drillers Log

SOURCE: FRESHWATER & HITCHCOCK

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
577.0			UNCONSOLIDATED	20.0	0.0	
557.0			CLAYSTONE	6.0	20.0	FIRECLAY
551.0			ROCK	26.0	26.0	
525.0			SILTSTONE/SANDSTON	335.0	52.0	ALTERNATING BEDS
190.0			SANDSTONE	125.0	387.0	
65.0			SILTSTONE	10.0	512.0	
55.0			LIMESTONE	10.0	522.0	
45.0			SANDSTONE	35.0	532.0	
10.0			SILTSTONE	15.0	567.0	
-5.0			LIMESTONE	53.0	582.0	
-58.0			ROCK	8.0	635.0	RED
-66.0			LIMESTONE	54.0	643.0	
-120.0			SILTSTONE	7.0	697.0	
-127.0			LIMESTONE	43.0	704.0	
-170.0			ROCK	8.0	747.0	RED
-178.0			SILTSTONE	22.0	755.0	
-200.0			LIMESTONE	25.0	777.0	
-225.0			SILTSTONE	5.0	802.0	
-230.0			LIMESTONE	40.0	807.0	
-270.0			SANDSTONE	40.0	847.0	
-310.0			SILTSTONE	25.0	887.0	SLATE & SHELLS
-335.0			BLACK SHALE	10.0	912.0	
-345.0			LIMESTONE/SILTSTON	235.0	922.0	ALTERNATING BEDS
-580.0			SANDSTONE	6.0	1157.0	
-586.0			SILTSTONE	49.0	1163.0	
-635.0			LIMESTONE	6.0	1212.0	
-641.0			SILTSTONE	49.0	1218.0	SLATE & SHELLS
-690.0			SANDSTONE	3.0	1267.0	
-693.0			SILTSTONE	52.0	1270.0	
-745.0			LIMESTONE	10.0	1322.0	
-755.0			SILTSTONE	15.0	1332.0	
-770.0			SANDSTONE	15.0	1347.0	
-785.0			SILTSTONE	35.0	1362.0	
-820.0			SANDSTONE	15.0	1397.0	
-835.0			LIMESTONE	125.0	1412.0	
-960.0			ROCK	5.0	1537.0	RED
-965.0			SILTSTONE/LIMESTON	345.0	1542.0	ALTERNATING
-1310.0			ROCK	5.0	1887.0	RED
-1315.0			SILTSTONE	10.0	1892.0	SLATE & SHELLS

-1325.0	LIMESTONE	35.0	1902.0	
-1360.0	ROCK	8.0	1937.0	RED
-1368.0	LIMESTONE	52.0	1945.0	SANDY
-1420.0	ROCK	4.0	1997.0	RED
-1424.0	LIMESTONE	8.0	2001.0	

MAPID: 087272D0056F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 17 SWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.797903

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.565555

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 119.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT: TRAVERSE UP SUGAR CREEK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SHALE	20.0		W SS BEDS DP N
480.0			SANDSTONE	20.0	20.0	NEAR PARKER STA.
460.0			SANDSTONE	15.0	40.0	
445.0			UNKNOWN	3.0	55.0	
442.0			SANDSTONE	6.0	58.0	THIN, FINE GR
436.0			UNKNOWN	30.0	64.0	
406.0			SANDSTONE	25.0	94.0	MASSIVE, RED-GR. BEDS TO 3' THK. DIP N

MAPID: 087272D0037F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 19 NESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.811047

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.544294

DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 2.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-WELLER

WELL TYPE: Roadcut

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			COAL	1.0		HORIZ.
-			SANDSTONE	-		RED,CROSS-BEDDED,DIP 6 DEGREES S. THICK
-			SHALE	-		DK. GR, SLTY. FLOAT

MAPID: 08720444000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 23

FOOT (NS): 2600 S FOOT (EW): 1800 E

QUADRANGLE: STONEFORT LONGITUDE: -88.733891

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.548558

DATE COLLECTED: 8 / 20 / 1990

SURFACE ELEVATION (FT.): LOGGED (FT.): 340.0

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP LT-1

WELL TYPE: Stratigraphic Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0	
-			SANDSTONE	30.3	29.0	SHALEY; GRAY
-			SANDSTONE	17.7	59.3	SHALEY, COAL STREAKS AT TOP
-			SANDSTONE	10.5	77.0	SHALEY, SOME COAL STREAKS AT TOP
-			SILTSTONE	50.9	87.5	BIOTURBATED NEAR BASE
-			SANDSTONE	12.1	138.4	
-			SHALE	0.2	150.5	SOFT; BLACK
-			SANDSTONE/SHALE	20.3	150.7	GRAY
-			SILTSTONE	8.8	171.0	
-			SANDSTONE	42.8	179.8	SHALEY; GRAY
-			SANDSTONE	11.6	222.6	CLEAN
-			SHALE & SANDSTONE	41.3	234.2	
-			SHALE	10.6	275.4	SILTY; RED
-			SANDSTONE/SHALE	54.0	286.0	

MAPID: 08720418000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 25

FOOT (NS): 1925 N FOOT (EW): 1600 W

QUADRANGLE: STONEFORT LONGITUDE: -88.722198

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.536106

DATE COLLECTED: 7 / 24 / 1987

SURFACE ELEVATION (FT.): 720.0 LOGGED (FT.): 346.0

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP S-4

WELL TYPE: Stratigraphic Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
720.0	PLEISTOCENE		UNCONSOLIDATED	26.3	0.0	
693.7	ABBOTT	MURRAY BLUFF	SANDSTONE	8.6	26.3	WITH SOME COAL ZONES; DARK
685.2	ABBOTT	MURRAY BLUFF	SHALE	3.5	34.8	SANDY; GRAY
681.7	ABBOTT	MURRAY BLUFF	SANDSTONE	89.3	38.3	SHALEY; GRAY
592.4	ABBOTT	MURRAY BLUFF	SHALE	0.5	127.6	SANDY, CONGLOMERATE, SIDERITE NODULES
591.9	ABBOTT	MURRAY BLUFF	SANDSTONE/SHALE	6.9	128.1	
585.0	ABBOTT		SILTSTONE	103.1	135.0	OLIVE SHALE MEMBER; SOME BURROWING
481.9	ABBOTT		SANDSTONE	3.0	238.1	SILTY, CONGLOMERATE, SIDERITE NODULES
478.9	ABBOTT		SHALE	0.4	241.1	HARD; BLACK
478.5	ABBOTT		SANDSTONE	1.8	241.5	SHALEY, CONGLOMERATIC
476.7	ABBOTT		SANDSTONE	24.6	243.3	LIGHT
452.1	ABBOTT		SANDSTONE	4.6	267.9	SHALEY, CONGLOMERATIC
447.5	ABBOTT		SHALE & SANDSTONE	5.0	272.5	
442.5	ABBOTT		SANDSTONE	1.5	277.5	COAL DEBRIS AT BASE; GRAY
441.0	ABBOTT		COAL	0.1	279.0	
441.0	ABBOTT		UNDERCLAY	1.6	279.0	OLIVE
439.4	ABBOTT		SANDSTONE	7.4	280.6	SHALE; LIGHT
432.0	ABBOTT		SHALE & SANDSTONE	19.9	288.0	SILTY
412.1	ABBOTT		SHALE	15.9	307.9	COAL STRINGERS; DARK
396.2	ABBOTT	REYNOLDSBURG	COAL	0.6	323.8	BRIGHT-BANDED
395.7	ABBOTT		UNDERCLAY	2.8	324.3	
392.9	ABBOTT		SHALE	6.2	327.1	DARK
386.7	ABBOTT	REYNOLDSBURG	COAL	0.9	333.3	BRIGHT BANDED
385.8	ABBOTT		UNDERCLAY	1.3	334.2	BROWN
384.5	CASEYVILLE		SANDSTONE	10.5	335.5	

MAPID: 087273C0062F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 25 SESESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.710691

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.527392

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	-	-	STRIKE N 75 E. DIP 15 DEG N 45 W

MAPID: 087273C0063F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 25 SENESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.71979

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.531179

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 640.0 LOGGED (FT.): 44.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	20.0		DIP 3 DEG N 25 W
620.0			SHALE	4.0	20.0	LT BK-GREY
616.0			SANDSTONE	10.0	24.0	
606.0			SHALE	6.0	34.0	LT BLUE-GR
600.0			SANDSTONE	4.0	40.0	CLAYEY

MAPID: 087273C0082F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 25 NENE

FOOT (NS): 1 N FOOT (EW): 660 E

QUADRANGLE: STONEFORT LONGITUDE: -88.711534

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.541297

DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 635.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-HENBEST

WELL TYPE: Outcrop

COMMENT: "MASSIVE CANYON FORMING SS"

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
635.0			SHALE	-	0.0	
-			SANDSTONE	-		MASSIVE, DIP NW

MAPID: 08720277000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 26 NWSWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.74457

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.536621

DATE COLLECTED: 10 / 26 / 1973

SURFACE ELEVATION (FT.): 680.0 LOGGED (FT.): 250.0

LOG TYPE: Drillers Log

SOURCE: RICHEY, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
680.0			CLAYSTONE	12.0	0.0	
668.0			SANDSTONE	78.0	12.0	
590.0			SANDSTONE/SHALE	160.0	90.0	

MAPID: 087273C0064F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 26 NENESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.737858

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.533012

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 680.0

LOGGED (FT.): 75.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			SANDSTONE	-	
-				20.0	
-			SANDSTONE	5.0	STIGMARIA. 10" CONGL AT TOP
-			SHALE	-	THIN SS PLIERS
-			BLACK SHALE	40.0	
-			SANDSTONE	10.0	MASSIVE

MAPID: 087272D0022F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 27 NESESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.755249

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.527924

DATE COLLECTED: 0 / 0 / 1918

SURFACE ELEVATION (FT.): 460.0

LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: REPORT ON BLANCHARD OIL SH

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-				-	SLABBY
-			SHALE	6.0	HARD, CARBONACEOUS
-			SHALE	2.7	.16' COAL IN LOWER .33'
-			UNDERCLAY	5.0	

MAPID: 087272D0024F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 27 SENESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.755743

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.53116

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 43.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT: TRAVERSE DOWN RAVINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
-			SANDSTONE	2.5		
477.5			SHALE	0.8	2.5	SILTY
476.7			SILTSTONE	0.7	3.3	CANNELOID
476.0	ABBOTT	REYNOLDSBURG	COAL	0.5	4.0	BANDED
475.5				0.0	4.5	W ROOT IMPRESSIONS
475.5			SANDSTONE	1.5	4.5	
474.0			UNKNOWN	3.0	6.0	
471.0			SANDSTONE	1.0	9.0	QUARTZITIC
470.0			UNKNOWN	3.0	10.0	
467.0	CASEYVILLE		SANDSTONE	30.0	13.0	HARD, LT GR.

MAPID: 087272D0057F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 27 SENWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.759993

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.538602

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 79.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT: R R CUT. CONTINUED ON F272D058

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
620.0			SANDSTONE	10.0	0.0	DIP SLIGHTLY N. MASSIVE
610.0			SANDSTONE	5.0	10.0	INTERBED W BL. GR. SHALE
605.0			SANDSTONE	7.0	15.0	CROSS BEDDED
598.0			SHALE	5.0	22.0	INTERBED W SS.
-			SANDSTONE	2.0		BR. GR. MASSIVE
-			UNKNOWN	5.0		COVERED
-			SANDSTONE	4.0		ATZITIC
-			SHALE	2.0		PLASTIC CLAY
-			SHALE	1.5		SANDY, IRON CONCRET.
-			SANDSTONE	18.0		SOME RIPPLE MARKS
-			SANDSTONE	2.5		INTERBED W BL GR SH
-			UNKNOWN	3.0		
-			SHALE	14.0		W BEDS OF SS RIPPLE MARKED

MAPID: 087272D0058F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 27 SENWSW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.760214

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.531186

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 150.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT: CONT. FURTHER S. DOWN RAVINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	3.0		
527.0			SILTSTONE	14.0	3.0	INTERBED W GR. SANDY SH
513.0			UNKNOWN	4.0	17.0	CONCEALED
509.0			SHALE	4.0	21.0	DK BL GR.
505.0			UNKNOWN	10.0	25.0	
-			SANDSTONE	-		RIPPLE MARKED
-			SHALE	3.0		BL GR. SOFT THIN BEDDED
-			SHALE	1.8		CARBONACEOUS BAND
-			SANDSTONE	3.5		RESEMBLING GRINDSTAFF
-			SHALE	1.5		BL GR. UPPER 3" COALY
-			CLAYSTONE	0.7		
-			SILTSTONE	10.0		ALT LAYERS STS & SANDY SH.
-			SANDSTONE	2.0		MASSIVE
-			UNKNOWN	12.0		
-			SANDSTONE	25.0		MASSIVE
-			UNKNOWN	6.0		
-			SANDSTONE	6.0		
-			UNKNOWN	1.5		
-			UNDERCLAY	2.0		GRADES INTO SHALE BELOW
-			SHALE	15.0		SANDY
-			SILTSTONE	4.0		
-			UNKNOWN	4.0		
-			SANDSTONE	8.0		
-			SHALE	3.0		INTERLAM W WHITE SS
-			SHALE	2.0		DK BL TO BK. WELL JOINTED
-			SANDSTONE	2.0		SLABBY WITH PLANT IMPRESSIONS

MAPID: 08700098600M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31 NESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.803137

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.517842

DATE COLLECTED: 12 / 2 / 1978

SURFACE ELEVATION (FT.): 540.0 LOGGED (FT.): 52.6

LOG TYPE:

SOURCE: MINE NOTES-JOHN NELSON, ENERGY EXPLOR.CO

WELL TYPE: Strip Mine

COMMENT: EST. SECTION N. E. CORNER OF PIT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
540.0			UNDERCLAY/SHALE	20.0	0.0	
520.0			SHALE	30.0	20.0	
490.0			COAL	2.6	50.0	PYRITE PTG .01', .03', .01', .02', '15'
-			SHALE	-		WITH ABUNDANT PLANT DEBRIS

MAPID: 08700098601M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31 SWSENESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.802565

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.516458

DATE COLLECTED: 12 / 2 / 1978

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 2.3

LOG TYPE:

SOURCE: MINE NOTES-JOHN NELSON, ENERGY EXPLOR.CO

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SHALE	-		
-			COAL	2.3		PYRITE PTGS .01', .02', .02', .03'
-			SHALE	-		

MAPID: 08700098602M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31 SWNESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.804328

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.51693

DATE COLLECTED: 12 / 2 / 1978

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 2.3

LOG TYPE:

SOURCE: MINE NOTES-JOHN NELSON, ENERGY EXPLOR.CO

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SHALE	-		
-			COAL	2.3		PYRITE PTGS .02', .01', .02', .02'
-			SHALE	-		

MAPID: 087272D0025F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31 SENESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.801968

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.516915

DATE COLLECTED: 0 / 0 / 1929

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 20.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-			SANDSTONE	-		
-			SHALE	20.0		
-	ABBOTT		COAL	-		

MAPID: 087272D0026F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31 NWSWNESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.804913

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.517392

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 5.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-			SHALE	5.0		COAL FRAGMENTS IN DUMP

MAPID: 087272D0027F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31 NESESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.811408

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.515137

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Underground mine

COMMENT: MANY ABANDONED DRIFTS IN THIS AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
550.0			UNKNOWN	0.0	0.0	

MAPID: 087272D0028F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.810203

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.519718

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): LOGGED (FT.): 74.3

LOG TYPE: Measured section

SOURCE: FLD NOTES-FULLER

WELL TYPE: Outcrop

COMMENT: INCLUDES DUMP OF OLD MINE DRIFT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	20.0		
-			SHALE	9.0	20.0	
-			UNKNOWN	3.0	29.0	
-			SANDSTONE	8.0	32.0	
-			UNKNOWN	8.0	40.0	
-			SHALE	2.0	48.0	
-			UNKNOWN	4.0	50.0	
-			SHALE	2.0	54.0	DUMP BEGINS
-			COAL	3.0	56.0	REPORTED NOT SEEN
-			UNKNOWN	3.0	59.0	
-			ROCK	13.3	62.0	

MAPID: 087272D0033F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31 SWSESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.813768

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.513318

DATE COLLECTED: 0 / 0 / 1964

SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 17.7

LOG TYPE:

SOURCE: MINE NOTES-GLUSKOTER

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0			UNCONSOLIDATED	15.0	0.0	
595.0	ABBOTT	REYNOLDSBURG	COAL	2.7	15.0	

MAPID: 087272D0059F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 31 SENESENV

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.810785

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.522012

DATE COLLECTED: 0 / 0 / 1932

SURFACE ELEVATION (FT.): 700.0 LOGGED (FT.): 110.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
700.0			SANDSTONE	2.0	0.0	RED, HARD, DIPS TO S
698.0			SANDSTONE	4.0	2.0	LT GR
694.0			UNKNOWN	10.0	6.0	
684.0			SANDSTONE	8.0	16.0	POSSIBLY SAME AS ABOVE
676.0			SHALE	3.0	24.0	
673.0			SANDSTONE	25.0	27.0	"RED" SS
648.0			UNKNOWN	4.0	52.0	
644.0			SHALE	0.5	56.0	HARD, SANDY
643.5			UNKNOWN	6.0	56.5	
637.5			SHALE	2.5	62.5	GREEN
635.0			UNKNOWN	5.0	65.0	
630.0	ABBOTT	GRINDSTAFF	SANDSTONE	40.0	70.0	MASSIVE BEDS UPTO 2' THICK

MAPID: 08700087500M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 32 NESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.784565

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.517843

DATE COLLECTED: 6 / 8 / 1965

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 6.8

LOG TYPE:

SOURCE: MINE NOTES-HARRISON HEROD MNG CO.

WELL TYPE: Strip Mine

COMMENT: OTHER SAMPLES FROM THIS HIGHWALL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SHALE	4.5		
545.5			SANDSTONE	0.4	4.5	
545.1	ABBOTT	REYNOLDSBURG	COAL	1.5	4.9	BONE LOWEST .04'
543.6			UNDERCLAY	0.4	6.4	

MAPID: 08700087501M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 32 NWSENESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.784001

GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 37.517386

DATE COLLECTED: 6 / 0 / 1965

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 28.8

LOG TYPE:

SOURCE: MINE NOTES - HEROD MNG CO.

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			UNCONSOLIDATED	18.0	0.0	
532.0			SHALE	9.0	18.0	WELL LAMINATED, SILTY
523.0			SILTSTONE	0.1	27.0	
522.9	ABBOTT		COAL	1.3	27.1	BRIGHT, FINE TO MED BANDS
521.6	ABBOTT		UNDERCLAY	0.4	28.4	

MAPID: 08700087502M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 32 NESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.784565

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.517843

DATE COLLECTED: 6 / 8 / 1965

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 7.8

LOG TYPE: Measured section

SOURCE: HEROD MNG CO.

WELL TYPE: Outcrop

COMMENT: SAMPLED S. END OF PIT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			UNCONSOLIDATED	6.0	0.0	
544.0			SANDSTONE	0.4	6.0	YELLOW TO RED STAINED
543.6	ABBOTT	REYNOLDSBURG	COAL	1.4	6.4	
542.2	ABBOTT		UNDERCLAY	0.0	7.8	GRAY

MAPID: 087272D0029F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 32 SWNWSW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.799632

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.516909

DATE COLLECTED: 0 / 0 / 1954

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 11.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-OSTROM

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
530.0			UNCONSOLIDATED	6.0	0.0	
524.0	ABBOTT	REYNOLDSBURG	COAL	2.8	6.0	
521.2			BLACK SHALE	2.3	8.8	

MAPID: 087272D0030F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 32 SWNWSE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.790379

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.516921

DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 15.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-WELLER

WELL TYPE: Underground mine

COMMENT: MANY OLD WORKINGS ON N. SIDE OF VALLEY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			BLACK SHALE	-		
-			COAL	-		
-			UNKNOWN	15.0		
-			ROCK	-		CONGLOMERATE

MAPID: 087272D0031F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 32 SENESW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.792694

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.516919

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 9.3

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			BLACK SHALE	3.0		
527.0			COAL	2.3	3.0	
-			UNDERCLAY	-		REPORTED, NOT SEEN
-			UNKNOWN	4.0		
-	CASEYVILLE		SANDSTONE	-		"UPPER CONGLOMERATES" CASEYVILLE

MAPID: 08700091000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 34

FOOT (NS): 1200 S FOOT (EW): 2700 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.75495

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.515293

DATE COLLECTED: 6 / 0 / 1959

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 165.0

LOG TYPE: Drillers Log

SOURCE: RICHEY, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
490.0			CLAYSTONE	7.0	0.0	
483.0			SANDSTONE	53.0	7.0	BROWN
430.0			SHALE	20.0	60.0	GRAY
410.0			SANDSTONE	25.0	80.0	HARD,BROWN
385.0			SANDSTONE	60.0	105.0	WHITE

MAPID: 087272D0023F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 34

FOOT (NS): 2800 S FOOT (EW): 3200 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.752991

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.519697

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			COAL	-	BL. SH OR CANNEL COAL

MAPID: 087272D0032F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 34 NESENWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.759893

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.52428

DATE COLLECTED: 11 / 18 / 1981

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 0.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-JACOBSON

WELL TYPE: Roadcut

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			ROCK	-	
-			COAL	0.5	
-			ROCK	-	

MAPID: 087273C0018F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 34 NENENENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.746264

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.52606

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: FLD NOTES-CADY

WELL TYPE: Strip Mine

COMMENT: "COAL MINE OR TEST PIT"

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			SHALE	-	SANDY
-			BLACK SHALE	-	
-			COAL	3.0	CANNEL?

MAPID: 087273C0065F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 34 SWNE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.749168

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.52379

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: FLD NOTES-CADY

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-			COAL	-		CANNEL

MAPID: 08700421600M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 35 SWSNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.742993

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.523333

DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: FLD NOTES-WHITE

WELL TYPE: Strip Mine

COMMENT: WANLESS "COAL REPORTED TO BE 3.5" 1933

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-			COAL	-		CANNEL
-			SHALE	-		

MAPID: 087273C0066F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 35 NW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.741327

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.522883

DATE COLLECTED: 0 / 0 / 0

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: FLD NOTES-CADY

WELL TYPE: Strip Mine

COMMENT: PIT 1000' SE OF TEST PIT IN SEC 34.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
520.0			UNKNOWN	22.0	0.0	
-			BLACK SHALE	-		SANDY
-			BLACK SHALE	-		UNDER ALL OF SEC 35
-			COAL	-		
-			BLACK SHALE	-		
-				5.0		

MAPID: 087273C0067F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 35 NESWSE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.733598

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.514677

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-HENDRICKS

WELL TYPE: Roadcut

COMMENT: SECTION DOWN RAVINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	CASEYVILLE		CONGLOMERATE	-	0.0	DIP 30 DEG N 60 W
-			LIMESTONE	-		THIN BEDDED. ARGILLACEOUS

MAPID: 087273C0068F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 35 NENW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.739051

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.52472

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 70.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: RAVINE FROM FALLS N. TO SEC. 26

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	-		RED
-			SHALE	-		NO OUTCROP
-			SANDSTONE/SHALE	-		THIN
-			SANDSTONE	-		X BEDDED
-			SANDSTONE	30.0		THIN BEDDED, RIPPLE MARKED
-			SANDSTONE	40.0		WH. MASSIVE
-			CONGLOMERATE	-		DIP N ELEV 54°

MAPID: 087273C0069F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 36 NWSE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.716518

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.517398

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: EAST LIMB OF ANTICLINE FAULTS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	-		SLICKENSIDED CONGL. BELOW
-			CONGLOMERATE	-		FAULT ZONE. ROCKS GREATLY CRUSHED

MAPID: 087273C0070F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 11S 4E SECTION: 36 NWSWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.726762

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.522009

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 0.5

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: MOUTH OF RAVINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	-		
-			SHALE	-		DIP 10 DEG N
-				0.5		FIRECLAY
-			SANDSTONE	-		
-			CONGLOMERATE	-		MASSIVE LEDGE
-			SHALE & SANDSTONE	-		

MAPID: 087272C0007F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 2E SECTION: 4 NWNENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GOREVILLE LONGITUDE: -88.98745

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.508484

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 66.9

LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS

WELL TYPE: Outcrop

COMMENT: N. FLOWING RAVINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			ROCK	1.5	0.0	
448.5			COAL	1.8	1.5	
446.7			ROCK	50.2	3.3	

MAPID: 087272D0061F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 3E SECTION: 2

FOOT (NS): 1450 N FOOT (EW): 1450 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.851101

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.507881

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 27.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Roadcut

COMMENT: R R CUT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0			SANDSTONE	12.0	0.0	LT GR. MASSIVE, FC PEBBLES ON LOWER 1'
548.0			SANDSTONE	15.0	12.0	UNCONFORM. CONTACT W ABOVE. LENTIC. SH

MAPID: 087272D0062F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 3E SECTION: 3 NWNE

FOOT (NS): 330 S FOOT (EW): 660 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.862965

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.509121

DATE COLLECTED: 0 / 0 / 1933

SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 10.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-WANLESS

WELL TYPE: Roadcut

COMMENT: R R TRAVERSE CONT. TO W.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
570.0	CASEYVILLE		SANDSTONE	10.0	0.0	MASSIVE, LT. FINE FR. CASEYVILLE?

MAPID: 087273C0033F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 4E SECTION: 3 SENESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.748323

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.501599

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT: S. SLOPE. HILL COVERED W CH, SS, SOME LS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-			SANDSTONE	-		MISS. "DIP N 10 DEG W 40 DEG

MAPID: 087273C0034F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 4E SECTION: 3 NENESE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.748363

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.503476

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-	CASEYVILLE			-		DIP N40W 25

MAPID: 087273C0035F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 4E SECTION: 3 NWSENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.750701

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.507232

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 185.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-CADY

WELL TYPE: Roadcut

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0			CONGLOMERATE	45.0	0.0	
515.0			UNKNOWN	35.0	45.0	
480.0			SANDSTONE	45.0	80.0	MASSIVE, NON CONGL.
435.0			UNKNOWN	40.0	125.0	
-			SANDSTONE	10.0		NON CONGL. FLAGSTONE LIKE

MAPID: 087273C0036F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 4E SECTION: 3 SESENE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: STONEFORT LONGITUDE: -88.748399

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.505354

DATE COLLECTED: 0 / 0 / 1931

SURFACE ELEVATION (FT.): 395.0 LOGGED (FT.): 440.0

LOG TYPE: Measured section

SOURCE: FLD NOTES-HENDRICKS

WELL TYPE: Roadcut

COMMENT: MISSISSIPPIAN ACROSS ROAD

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
395.0	CASEYVILLE		CONGLOMERATE	440.0	0.0	STEEP DIP STRIKE E-W

MAPID: 08700253000M VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 4E SECTION: 6 NWNWNWNW

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.819079

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.511964

DATE COLLECTED: 0 / 0 / 1970

SURFACE ELEVATION (FT.): 650.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: MINE NOTES-HOLLY MNG C

WELL TYPE: Strip Mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
650.0			UNKNOWN	0.0	0.0	

MAPID: 08720353000C VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 4E SECTION: 6 NW

FOOT (NS): 650 S FOOT (EW): 670 E

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.812925

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.506473

DATE COLLECTED: 10 / 9 / 1979

SURFACE ELEVATION (FT.): 700.0 LOGGED (FT.): 335.0

LOG TYPE: Drillers Log

SOURCE: Q. RICHEY, DRILLER

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
700.0			CLAYSTONE	7.0	0.0	
693.0			SANDSTONE	13.0	7.0	BROWN
680.0			SHALE	5.0	20.0	BROWN
675.0			COAL	2.5	25.0	
672.5			UNDERCLAY/SHALE	5.0	27.5	
667.5			SHALE	32.5	32.5	BROWN
635.0			SANDSTONE	20.0	65.0	BROWN,HARD
615.0			SHALE & SANDSTONE	18.0	85.0	
597.0			COAL	1.5	103.0	
595.5			UNDERCLAY/SHALE	3.0	104.5	
592.5			SANDSTONE	92.0	107.5	BROWN,HARD
500.5			SHALE & SANDSTONE	18.0	199.5	
482.5			SANDSTONE	117.5	217.5	WITH SH PTGS

MAPID: 087272D0063F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 12S 4E SECTION: 6

FOOT (NS): 4400 N FOOT (EW): 3100 W

QUADRANGLE: CREAL SPRINGS LONGITUDE: -88.809059

GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 37.500214

DATE COLLECTED: 0 / 0 / 1929

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 30.0

LOG TYPE: Measured section

SOURCE: FLD. NOTES-CODY

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	30.0		MASSIVE, WH, *WELL BELOW TOP OF L. CONG

MAPID: 08720443000C VERSION: 1

PROJECT: NCRDS99

COUNTY: JOHNSON TWP/RNG: 12S 4E SECTION: 12

FOOT (NS): 2500 N FOOT (EW): 1400 W

QUADRANGLE: GLENDALE LONGITUDE: -88.723248

GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.490618

DATE COLLECTED: 7 / 6 / 1987

SURFACE ELEVATION (FT.): 640.0 LOGGED (FT.): 206.0

LOG TYPE: Survey Core Study

SOURCE: COGEOMAP GD-1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
640.0	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
629.0	CASEYVILLE		SANDSTONE	6.0	11.0	BROWN
623.0	CASEYVILLE		CLAYSTONE & SILTST	4.5	17.0	SHALEY, RED AND GREEN
618.5	CASEYVILLE		SANDSTONE	3.1	21.5	WHITE TO ORANGE, CLAY CLASTS
615.4	CASEYVILLE		SHALE	4.0	24.6	BIOTURBATED
611.4	CASEYVILLE		SANDSTONE/SHALE	17.4	28.6	.17 COAL WITH PYRITE AT BASE
594.0	CASEYVILLE		SANDSTONE	73.9	46.0	GRAY TO TAN, COAL STREAKS, QUARTZ PEBBLE
520.1	CASEYVILLE		SANDSTONE	5.9	119.9	CONGLOMERATE, PLANT DEBRIS
514.2			SHALE	1.5	125.8	DARK
512.7			SANDSTONE	11.6	127.3	SILTY
501.1			SHALE	8.9	138.9	SILTY
492.3	MISSISSIPPIAN	KINKAID	LIMESTONE	1.2	147.7	RED TO LIGHT GRAY AT BASE
491.1	MISSISSIPPIAN	KINKAID	SHALE	17.8	148.9	CLAYEY, NON-CALCAREOUS
473.3	MISSISSIPPIAN	KINKAID	LIMESTONE	1.9	166.7	DARK
471.4	MISSISSIPPIAN	KINKAID	CALCAREOUS SHALE	37.4	168.6	

MAPID: 087278B0001F VERSION: 1

PROJECT: BLM

COUNTY: JOHNSON TWP/RNG: 13S 4E SECTION: 12 SESWSWNE

FOOT (NS): 0 FOOT (EW): 0

QUADRANGLE: GLENDALE LONGITUDE: -88.71803

GEOLOGIST: BARGH M.

CONFIDENTIAL: N LATITUDE: 37.402341

DATE COLLECTED: 0 / 0 / 1926

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 76.6

LOG TYPE: Measured section

SOURCE: FLD NOTES-WORKMAN

WELL TYPE: Roadcut

COMMENT: R. R. CUT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SANDSTONE	33.0		
407.0			LIMESTONE	20.0	33.0	
387.0			SHALE	0.5	53.0	
386.5			COAL	0.2	53.5	BRIGHT
386.3			SANDSTONE	6.0	53.7	
380.3			SHALE	8.0	59.7	
372.3			ROCK	7.6	67.7	
364.7			SHALE	0.3	75.3	COALY
364.4			UNDERCLAY	1.0	75.6	