

Status Report**Total Records: 364**

Top 3 County Records		Top 3 Log Type Records		Top 3 Coal Records		Top 3 Member Records	
Cass	364	Drillers Log	364	SPRINGFIELD	243	SPRINGFIELD COAL	243
				HERRIN	51	TURNER MINE BLACK SHALE	212
				BRIAR HILL	6	ST. DAVID LIMESTONE	138

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
DANVILLE	COAL	78.0	78.0	78.0	1.0	1.0	1.0
BRERETON	LIMESTONE	91.0	52.0	107.0	2.3	0.5	6.0
ANNA	SHALE	91.8	52.5	116.0	1.7	0.5	4.0
HERRIN	COAL	92.4	54.0	117.0	2.4	0.2	7.0
BRIAR HILL	COAL	77.6	34.0	105.0	1.2	0.5	1.8
ST. DAVID	LIMESTONE	111.6	27.0	153.5	1.5	0.3	8.5
TURNER MINE	SHALE	112.1	28.0	154.0	2.2	0.3	8.3
SPRINGFIELD	COAL	113.8	29.8	157.0	4.8	1.0	7.0
COLCHESTER	COAL	159.2	121.0	195.0	2.8	1.8	4.0
Net Coal					12.2		

Coal Logs

This report contains non-confidential coal log descriptions from the Coal Section's stratigraphic database in the county listed. Coal logs are sorted by township/range and section. For each log, North American Datum 1983 (NAD83) Longitude/Latitude coordinates in decimal degrees are provided as well as a legal description which uses the Public Land Survey System (PLSS). The following are two examples of coal log locations:

Example location 1: COUNTY: SALINE TWP/RNG: 7S 5E SECTION: 19 QUARTERS/FOOTAGES: 330'S line, 330'W line of SE NE
LONGITUDE: -88.691911 LATITUDE: 37.900435

This log is from a borehole located in Saline County, Township 7 South, Range 5 East, 330 feet from the south line and 330 feet from the west line of the southeast quarter of the northeast quarter of section 19.

Example location 2: COUNTY: SALINE TWP/RNG: 9S 5E SECTION: 36 QUARTERS/FOOTAGES: 530'N, 530'W, SE/c NE NW
LONGITUDE: -88.60834 LATITUDE: 37.700006

This log is from a borehole located in Saline County, Township 9 South, Range 5 East, 530 feet north and 530 feet west of the southeast corner of the northeast quarter of the northwest quarter of section 36.

Beneath the header is geology information for that data point. The Coal Section stratigraphic database from which this .PDF file is derived is a multi-project database which contains drill hole and outcrop descriptions of Pennsylvanian stratigraphy in Illinois. Consequently, the level of detail and accuracy in the data and their interpretation vary (sometimes widely) with the geologist, project type, or original data source. Multiple descriptions of a particular location may be present. Note that both the coal stratigraphic database and this .PDF listing are only a subset of the total amount of data available from the ISGS Geologic Records Library archives, and reflect only coal-specific data and interpretations of past and present Coal Section geologists. They are not a comprehensive listing of all data that may be available from the ISGS.

MAPID: 01720121000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 17N 8W SECTION: 4 QUARTERS/FOOTAGES: 15' N line, 66' E line of SW
QUADRANGLE: ASHLAND LONGITUDE: -90.004285 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.952694 DATE COLLECTED: 6 / 25 / 1969
SURFACE ELEVATION (FT.): 625.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON I521 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
625.0	PLEISTOCENE		CLAY	70.0	0.0
555.0	PLEISTOCENE		GRAVEL	1.0	70.0
554.0	PLEISTOCENE		CLAY	23.0	71.0
531.0	CARBONDALE		LIMESTONE	4.5	94.0
526.5	CARBONDALE		GRAY SHALE	22.5	98.5
504.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	121.0
502.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	123.0
500.5	CARBONDALE	SPRINGFIELD	COAL	5.2	124.5
495.3	CARBONDALE		UNDERCLAY	0.3	129.7

MAPID: 01720122000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 4 QUARTERS/FOOTAGES: 60' S line, 65' E line of NE
QUADRANGLE: TALLULA LONGITUDE: -89.994981 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.952902 DATE COLLECTED: 3 / 8 / 1972
SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON I525C WELL TYPE: Coal Test
COMMENT: FOOTAGES UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
620.0	PLEISTOCENE		CLAY	34.0	0.0
586.0	PLEISTOCENE		GRAVEL	28.0	34.0
558.0	PLEISTOCENE		CLAY	24.5	62.0
533.5	CARBONDALE		LIMESTONE	2.5	86.5
531.0	CARBONDALE		GRAY SHALE	6.0	89.0
525.0	CARBONDALE		BLACK SHALE	1.0	95.0
524.0	CARBONDALE		GRAY SHALE	16.0	96.0
508.0	CARBONDALE	ST. DAVID	LIMESTONE	6.0	112.0
502.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.0	118.0
498.0	CARBONDALE	SPRINGFIELD	COAL	4.1	122.0
493.9	CARBONDALE		UNDERCLAY	2.9	126.1

MAPID: 01720123000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 4 QUARTERS/FOOTAGES:
QUADRANGLE: ASHLAND LONGITUDE: -90.004049 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.952733 DATE COLLECTED: 5 / 9 / 1969
SURFACE ELEVATION (FT.): 625.0 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON I521 WELL TYPE: Coal Test
COMMENT: HOLE IN CENTER OF SECTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
625.0	PLEISTOCENE		CLAY	90.0	0.0
535.0	PLEISTOCENE		SAND	2.0	90.0
533.0	PLEISTOCENE		CLAY	11.0	92.0
522.0	CARBONDALE		LIMESTONE	2.0	103.0
520.0	CARBONDALE		GRAY SHALE	14.0	105.0
506.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	119.0
505.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	120.0
502.5	CARBONDALE	SPRINGFIELD	COAL	5.5	122.5
497.0	CARBONDALE		UNDERCLAY	1.0	128.0

MAPID: 01720124000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 5 QUARTERS/FOOTAGES: 45' S line, 15' E line of SW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.02747 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.952788 DATE COLLECTED: 5 / 9 / 1970
 SURFACE ELEVATION (FT.): 630.0 LOGGED (FT.): 141.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON I511 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0	PLEISTOCENE		SOIL	3.0	0.0	
627.0	PLEISTOCENE		CLAY	91.0	3.0	
536.0	CARBONDALE		LIMESTONE	4.0	94.0	
532.0	CARBONDALE		GRAY SHALE	3.0	98.0	
529.0	CARBONDALE	BRERETON	LIMESTONE	4.0	101.0	
525.0	CARBONDALE	HERRIN	COAL	0.2	105.0	
524.8	CARBONDALE		GRAY SHALE	19.3	105.2	
505.5	CARBONDALE		LIMESTONE	0.5	124.5	HARD
505.0	CARBONDALE		SHALE WITH LIMESTONE	7.0	125.0	INTERBEDDED LIMESTONE
498.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	132.0	
496.0	CARBONDALE	SPRINGFIELD	COAL	4.0	134.0	
492.0	CARBONDALE		UNDERCLAY	3.0	138.0	

MAPID: 01720125000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 5 QUARTERS/FOOTAGES: 285' N line, 30' W line of SW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.031999 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.955484 DATE COLLECTED: 5 / 11 / 1970
 SURFACE ELEVATION (FT.): 623.0 LOGGED (FT.): 135.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON I534C WELL TYPE: Coal Test
 COMMENT: DEPTHS APPEAR TO BE DECIMAL FT. IN LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
623.0	PLEISTOCENE		SOIL	18.9	0.0	
604.1	PLEISTOCENE		CLAY, SAND & GRAVEL	40.0	18.9	VARIOUS UNCONSOLIDATED SED.-SND,GRVL,CLY
564.1	PLEISTOCENE		CLAY	25.0	58.9	
539.1	CARBONDALE		LIMESTONE	7.0	83.9	
532.1	CARBONDALE		GRAY SHALE	3.0	90.9	
529.1	CARBONDALE		LIMESTONE	1.0	93.9	HARD
528.1	CARBONDALE	HERRIN	COAL	0.3	94.9	
527.8	CARBONDALE		GRAY SHALE	18.8	95.2	
509.0	CARBONDALE		LIMESTONE	9.0	114.0	
500.0	CARBONDALE	SPRINGFIELD	COAL	2.0	123.0	
498.0	CARBONDALE		SHALE	2.0	125.0	
496.0	CARBONDALE		UNDERCLAY	8.0	127.0	

MAPID: 01720126000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 5 QUARTERS/FOOTAGES: 204' S line, 12' E line of NW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.027437 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.956873 DATE COLLECTED: 5 / 9 / 1970
 SURFACE ELEVATION (FT.): 625.0 LOGGED (FT.): 132.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON 20126 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
625.0	PLEISTOCENE		SOIL	3.0	0.0	
622.0	PLEISTOCENE		CLAY	87.0	3.0	
535.0	CARBONDALE		LIMESTONE	4.0	90.0	
531.0	CARBONDALE		GRAY SHALE	2.0	94.0	
529.0	CARBONDALE	BRERETON	LIMESTONE	5.0	96.0	
524.0	CARBONDALE	HERRIN	COAL	0.2	101.0	
523.8	CARBONDALE		LIMESTONE	16.8	101.2	INTERBEDDED SHALE HARD
507.0	CARBONDALE		LIMESTONE	3.0	118.0	
504.0	CARBONDALE		GRAY SHALE	2.5	121.0	
501.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	123.5	
500.0	CARBONDALE	SPRINGFIELD	COAL	5.0	125.0	
495.0	CARBONDALE		UNDERCLAY	2.0	130.0	

MAPID: 01720127000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 5 QUARTERS/FOOTAGES: 18' S line, 54' W line of SW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.031913 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.952694 DATE COLLECTED: 5 / 3 / 1970
 SURFACE ELEVATION (FT.): 633.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON I509 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
633.0	PLEISTOCENE		SOIL	2.0	0.0	
631.0	PLEISTOCENE		CLAY	13.0	2.0	
618.0	PLEISTOCENE		CLAY & GRAVEL	60.0	15.0	CLAY WITH GRAVEL
558.0	PLEISTOCENE		CLAY	10.0	75.0	
548.0	CARBONDALE		GRAY SHALE	3.0	85.0	
545.0	CARBONDALE	BRERETON	LIMESTONE	4.0	88.0	HARD
541.0	CARBONDALE	HERRIN	COAL	5.2	92.0	
535.8	CARBONDALE		GRAY SHALE	16.3	97.2	
519.5	CARBONDALE	ST. DAVID	LIMESTONE	8.5	113.5	HARD
511.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	122.0	
509.0	CARBONDALE	SPRINGFIELD	COAL	5.0	124.0	
504.0	CARBONDALE		UNDERCLAY	1.0	129.0	

MAPID: 01720129000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 5 QUARTERS/FOOTAGES: 0' N line, 0' W line of NW

QUADRANGLE: ASHLAND LONGITUDE: -90.032107 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.959899 DATE COLLECTED: 5 / 28 / 1969

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 123.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I609 WELL TYPE: Coal Test

COMMENT: HOLE ON NW CORNER OF SECTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
620.0	PLEISTOCENE		CLAY	25.0	0.0
595.0	PLEISTOCENE		GRAVEL	5.0	25.0
590.0	PLEISTOCENE		CLAY	45.0	30.0
545.0	PLEISTOCENE		SAND & GRAVEL	6.0	75.0
539.0	PLEISTOCENE		CLAY	7.0	81.0
532.0	CARBONDALE		LIMESTONE	3.5	88.0
528.5	CARBONDALE		GRAY SHALE	6.5	91.5
522.0	CARBONDALE		LIMESTONE	2.5	98.0
519.5	CARBONDALE		GRAY SHALE	12.5	100.5
507.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	113.0
506.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	114.0
503.0	CARBONDALE	SPRINGFIELD	COAL	5.0	117.0
498.0	CARBONDALE		UNDERCLAY	1.0	122.0

MAPID: 01720130000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 5 QUARTERS/FOOTAGES: 18' N line, 72' E line of SE

QUADRANGLE: ASHLAND LONGITUDE: -90.013605 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.952681 DATE COLLECTED: 6 / 31 / 1969

SURFACE ELEVATION (FT.): 625.0 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I517 WELL TYPE: Coal Test

COMMENT: MONTH OF DATA UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
625.0	PLEISTOCENE		CLAY	68.0	0.0	
557.0	PLEISTOCENE		CLAY & GRAVEL	8.0	68.0	SANDY CLAY & GRAVEL
549.0	PLEISTOCENE		CLAY	10.0	76.0	
539.0	CARBONDALE		LIMESTONE	5.0	86.0	
534.0	CARBONDALE		GRAY SHALE	3.0	91.0	
531.0	CARBONDALE		LIMESTONE	2.5	94.0	
528.5	CARBONDALE		GRAY SHALE	8.5	96.5	
520.0	CARBONDALE		LIMESTONE	2.0	105.0	
518.0	CARBONDALE		GRAY SHALE	13.5	107.0	
504.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	120.5	
503.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	122.0	
501.0	CARBONDALE	SPRINGFIELD	COAL	2.5	124.0	BROKEN CORE
498.5	CARBONDALE	SPRINGFIELD	PYRITE	0.3	126.5	BROKEN CORE
498.2	CARBONDALE	SPRINGFIELD	COAL	2.0	126.8	BROKEN CORE
496.2	CARBONDALE		UNDERCLAY	0.2	128.8	

MAPID: 01720131000C

VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS

TWP/RNG: 17N 8W

SECTION: 5

QUARTERS/FOOTAGES: 576' S line, 189' E line of SE SW

QUADRANGLE: ASHLAND

LONGITUDE: -90.023464

GEOLOGIST: HAMER

CONFIDENTIAL: N

LATITUDE: 39.946955

DATE COLLECTED: 5 / 28 / 1969

SURFACE ELEVATION (FT.): 635.0

LOGGED (FT.): 135.0

LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I4120C

WELL TYPE: Coal Test

COMMENT: THICKNESS CORRECTED FOR MATH ERRORS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
635.0	PLEISTOCENE		CLAY	34.0	0.0
601.0	PLEISTOCENE		CLAY & GRAVEL	4.0	34.0
597.0	PLEISTOCENE		CLAY	43.0	38.0
554.0	CARBONDALE	ANNA	BLACK SHALE	2.5	81.0
551.5	CARBONDALE	HERRIN	COAL	1.5	83.5
550.0	CARBONDALE		GRAY SHALE	10.0	85.0
540.0	CARBONDALE		LIMESTONE	7.0	95.0
533.0	CARBONDALE		GRAY SHALE	8.0	102.0
525.0	CARBONDALE		LIMESTONE	2.0	110.0
523.0	CARBONDALE		GRAY SHALE	6.5	112.0
516.5	CARBONDALE		LIMESTONE	11.5	118.5
505.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.8	130.0
504.2	CARBONDALE	SPRINGFIELD	COAL	3.5	130.8
500.7	CARBONDALE		UNDERCLAY	0.7	134.3

MAPID: 01720132000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 6 QUARTERS/FOOTAGES: NW NW SW NE

QUADRANGLE: ASHLAND LONGITUDE: -90.040752 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.955817 DATE COLLECTED: 6 / 24 / 1969

SURFACE ELEVATION (FT.): 635.0 LOGGED (FT.): 141.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I555 WELL TYPE: Coal Test

COMMENT: DAY OF DATA UNCERTAIN,NO FOOTAGES GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
635.0	PLEISTOCENE		CLAY	5.0	0.0	SANDY
630.0	PLEISTOCENE		CLAY	30.0	5.0	
600.0	PLEISTOCENE		CLAY	51.4	35.0	WITH GRAVEL
548.6	CARBONDALE	ANNA	BLACK SHALE	2.7	86.4	
545.9	CARBONDALE	HERRIN	COAL	0.5	89.1	RASHY
545.4	CARBONDALE	HERRIN	COAL	2.4	89.6	
543.0	CARBONDALE		GRAY SHALE	14.0	92.0	W/INTERBEDDED LS
529.0	CARBONDALE		LIMESTONE	2.5	106.0	
526.5	CARBONDALE		GRAY SHALE	23.3	108.5	W/INTERBEDDED LS
503.2	CARBONDALE		LIMESTONE	0.2	131.8	DARK
503.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	132.0	
499.5	CARBONDALE	SPRINGFIELD	COAL	4.2	135.5	
495.3	CARBONDALE		UNDERCLAY	1.3	139.7	

MAPID: 01720133000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS

TWP/RNG: 17N 8W

SECTION: 7

QUARTERS/FOOTAGES: SE SE NW NE

QUADRANGLE: ASHLAND

LONGITUDE: -90.037312

GEOLOGIST: HAMER

CONFIDENTIAL: N

LATITUDE: 39.942245

DATE COLLECTED: 3 / 21 / 1972

SURFACE ELEVATION (FT.): 632.0

LOGGED (FT.): 123.0

LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I355

WELL TYPE: Coal Test

COMMENT: NO FOOTAGES GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
632.0	PLEISTOCENE		CLAY	12.0	0.0	
620.0	PLEISTOCENE		CLAY	9.0	12.0	WITH GRAVEL
611.0	PLEISTOCENE		CLAY	42.0	21.0	
569.0	CARBONDALE		GRAVEL	5.0	63.0	
564.0	CARBONDALE		CLAY	7.0	68.0	
557.0	CARBONDALE		LIMESTONE W/ SHALE	18.0	75.0	
539.0	CARBONDALE	ANNA	BLACK SHALE	1.0	93.0	THICKNESS CORRECTED
538.0	CARBONDALE	HERRIN	COAL	1.0	94.0	
537.0	CARBONDALE		LIMESTONE	6.0	95.0	
531.0	CARBONDALE		GRAY SHALE	5.0	101.0	
526.0	CARBONDALE		LIMESTONE	11.0	106.0	
515.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	117.0	
514.0	CARBONDALE	SPRINGFIELD	COAL	3.0	118.0	
511.0	CARBONDALE		UNDERCLAY	2.0	121.0	

MAPID: 01720134000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS

TWP/RNG: 17N 8W

SECTION: 7

QUARTERS/FOOTAGES: SE SE SE SW

QUADRANGLE: ASHLAND

LONGITUDE: -90.041734

GEOLOGIST: HAMER

CONFIDENTIAL: N

LATITUDE: 39.931295

DATE COLLECTED: 3 / 22 / 1972

SURFACE ELEVATION (FT.): 626.0

LOGGED (FT.): 97.0

LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I205

WELL TYPE: Coal Test

COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
626.0	PLEISTOCENE		CLAY	23.0	0.0	
603.0	PLEISTOCENE		GRAVEL	32.0	23.0	
571.0	PLEISTOCENE		CLAY	32.0	55.0	
539.0	CARBONDALE		GRAY SHALE	5.0	87.0	
534.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	92.0	CORRELATION UNCERTAIN
533.0	CARBONDALE	SPRINGFIELD	COAL	3.0	93.0	CORRELATION UNCERTAIN
530.0	CARBONDALE		UNDERCLAY	1.0	96.0	

MAPID: 01700035000C **VERSION:** 1 **PROJECT:** NCRDS99
COUNTY: CASS **TWP/RNG:** 17N 8W **SECTION:** 8 **QUARTERS/FOOTAGES:** SE NE NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.023944 **GEOLOGIST:** MCCracken
CONFIDENTIAL: N **LATITUDE:** 39.942664 **DATE COLLECTED:** 11 / 24 / 1958
SURFACE ELEVATION (FT.): 630.0 **LOGGED (FT.):** 122.0 **LOG TYPE:** Drillers Log
SOURCE: DONAN TP-9 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0	PLEISTOCENE		UNCONSOLIDATED	80.0	0.0	
550.0	CARBONDALE	ANNA	BLACK SHALE	1.8	80.0	
548.2	CARBONDALE	ANNA	CLAYSTONE & SILTSTONE	0.5	81.8	BLACK
547.7	CARBONDALE	HERRIN	COAL	0.8	82.3	
546.8	CARBONDALE		UNDERCLAY	3.6	83.2	
543.2	CARBONDALE		LIMESTONE	2.4	86.8	
540.8	CARBONDALE		CLAYSTONE & SILTSTONE	2.0	89.2	
538.8	CARBONDALE		COAL	0.9	91.2	
537.9	CARBONDALE		UNDERCLAY	4.8	92.1	
533.0	CARBONDALE		LIMESTONE	1.7	97.0	
531.3	CARBONDALE		CLAYSTONE & SILTSTONE	1.5	98.7	
529.8	CARBONDALE		SHALE	7.9	100.2	
522.0	CARBONDALE	ST. DAVID	LIMESTONE	7.0	108.0	
515.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.3	115.0	
514.7	CARBONDALE	SPRINGFIELD	COAL	4.1	115.3	
510.6	CARBONDALE		UNDERCLAY	2.6	119.4	

MAPID: 01720135000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 17N 8W **SECTION:** 8 **QUARTERS/FOOTAGES:** NW NW NW NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.031517 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.944929 **DATE COLLECTED:** 3 / 20 / 1972
SURFACE ELEVATION (FT.): 634.0 **LOGGED (FT.):** 128.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON I409 **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
634.0	PLEISTOCENE		CLAY	79.0	0.0	
555.0	CARBONDALE	ANNA	BLACK SHALE	1.0	79.0	
554.0	CARBONDALE	HERRIN	COAL	2.9	80.0	
551.1	CARBONDALE		GRAY SHALE	13.6	82.9	W/LIMESTONE LAMINAE
537.5	CARBONDALE		LIMESTONE	2.5	96.5	THICKNESS ADJUSTED
535.0	CARBONDALE		GRAY SHALE	18.0	99.0	W/LIMESTONE LAMINAE
517.0	CARBONDALE	ST. DAVID	LIMESTONE	4.0	117.0	
513.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	121.0	
512.0	CARBONDALE	SPRINGFIELD	COAL	4.3	122.0	
507.7	CARBONDALE		UNDERCLAY	1.7	126.3	

MAPID: 01720136000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 8 QUARTERS/FOOTAGES: NE NE NE SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.023323 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.937713 DATE COLLECTED: 3 / 22 / 1972
 SURFACE ELEVATION (FT.): 630.0 LOGGED (FT.): 127.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON I313 WELL TYPE: Coal Test
 COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0	PLEISTOCENE		CLAY	20.0	0.0	
610.0	PLEISTOCENE		CLAY	13.0	20.0	WITH GRAVEL
597.0	PLEISTOCENE		CLAY	46.0	33.0	
551.0	CARBONDALE	ANNA	BLACK SHALE	1.0	79.0	
550.0	CARBONDALE	HERRIN	COAL	2.0	80.0	
548.0	CARBONDALE		GRAY SHALE	5.0	82.0	
543.0	CARBONDALE		LIMESTONE W/ SHALE	10.0	87.0	
533.0	CARBONDALE		BLACK SHALE	1.0	97.0	
532.0	CARBONDALE		GRAY SHALE	16.0	98.0	
516.0	CARBONDALE	ST. DAVID	LIMESTONE	5.0	114.0	
511.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	119.0	
508.0	CARBONDALE	SPRINGFIELD	COAL	4.0	122.0	
504.0	CARBONDALE		UNDERCLAY	1.0	126.0	

MAPID: 01720137000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 8 QUARTERS/FOOTAGES: SW SW SW SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.031406 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.931293 DATE COLLECTED: 3 / 20 / 1972
 SURFACE ELEVATION (FT.): 637.0 LOGGED (FT.): 133.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON I209 WELL TYPE: Coal Test
 COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
637.0	PLEISTOCENE		CLAY	90.0	0.0	
547.0	CARBONDALE		LIMESTONE	4.0	90.0	
543.0	CARBONDALE		GRAY SHALE	7.0	94.0	
536.0	CARBONDALE	ANNA	BLACK SHALE	1.0	101.0	
535.0	CARBONDALE	HERRIN	COAL	1.0	102.0	
534.0	CARBONDALE		LIMESTONE W/ SHALE	16.0	103.0	
518.0	CARBONDALE		GRAY SHALE	7.0	119.0	
511.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	126.0	
510.0	CARBONDALE	SPRINGFIELD	COAL	3.5	127.0	
506.5	CARBONDALE		UNDERCLAY	2.5	130.5	

MAPID: 01720138000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 17N 8W SECTION: 8 QUARTERS/FOOTAGES: SW SW SW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.022107 GEOLOGIST: KOROSE
CONFIDENTIAL: N LATITUDE: 39.931425 DATE COLLECTED: 3 / 21 / 1972
SURFACE ELEVATION (FT.): 636.0 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON I213 WELL TYPE: Coal Test
COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
636.0	PLEISTOCENE		CLAY	82.0	0.0
554.0	PLEISTOCENE		GRAVEL	21.0	82.0
533.0	CARBONDALE		LIMESTONE W/ SHALE	22.0	103.0
511.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	125.0
510.0	CARBONDALE	SPRINGFIELD	COAL	3.5	126.0
506.5	CARBONDALE		UNDERCLAY	1.5	129.5

MAPID: 01720139000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 17N 8W SECTION: 9 QUARTERS/FOOTAGES: 42' S line, 7' W line of SW NW
QUADRANGLE: ASHLAND LONGITUDE: -90.013425 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.938336 DATE COLLECTED: 6 / 25 / 1969
SURFACE ELEVATION (FT.): 628.0 LOGGED (FT.): 134.5 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON I317 WELL TYPE: Coal Test
COMMENT: MONTH OF DATA UNCLEAR

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
628.0	PLEISTOCENE		CLAY	84.5	0.0
543.5	CARBONDALE	ANNA	BLACK SHALE	1.5	84.5
542.0	CARBONDALE	HERRIN	COAL	1.8	86.0
540.2	CARBONDALE		GRAY SHALE	9.7	87.8
530.5	CARBONDALE		LIMESTONE	4.0	97.5
526.5	CARBONDALE		GRAY SHALE	7.5	101.5
519.0	CARBONDALE		LIMESTONE	4.0	109.0
515.0	CARBONDALE		GRAY SHALE	9.0	113.0
506.0	CARBONDALE	ST. DAVID	LIMESTONE	4.0	122.0
502.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	126.0
499.0	CARBONDALE	SPRINGFIELD	COAL	4.9	129.0
494.1	CARBONDALE		UNDERCLAY	0.6	133.9

MAPID: 01720140000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 9 QUARTERS/FOOTAGES: 0' N line, 30' W line of NW NW

QUADRANGLE: ASHLAND LONGITUDE: -90.013397 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.945341 DATE COLLECTED: 6 / 20 / 1969

SURFACE ELEVATION (FT.): 630.0 LOGGED (FT.): 138.5 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I417 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0	PLEISTOCENE		CLAY	65.0	0.0	
565.0	PLEISTOCENE		GRAVEL	1.0	65.0	
564.0	PLEISTOCENE		CLAY	19.0	66.0	
545.0	CARBONDALE	ANNA	BLACK SHALE	2.0	85.0	
543.0	CARBONDALE	HERRIN	COAL	1.5	87.0	
541.5	CARBONDALE		GRAY SHALE	7.5	88.5	
534.0	CARBONDALE		LIMESTONE	2.0	96.0	THICKNESS CORRECTED
532.0	CARBONDALE		GRAY SHALE	4.0	98.0	
528.0	CARBONDALE		LIMESTONE	4.0	102.0	
524.0	CARBONDALE		GRAY SHALE	20.0	106.0	
504.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	126.0	
501.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.5	129.0	DARK SHALE
496.5	CARBONDALE	SPRINGFIELD	COAL	4.0	133.5	
492.5	CARBONDALE		UNDERCLAY	1.0	137.5	

MAPID: 01720141000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 9 QUARTERS/FOOTAGES: 8' N line, 249' W line of NW NE

QUADRANGLE: ASHLAND LONGITUDE: -90.003232 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.945401 DATE COLLECTED: 6 / 20 / 1969

SURFACE ELEVATION (FT.): 635.0 LOGGED (FT.): 134.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I427N WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
635.0	PLEISTOCENE		CLAY	75.0	0.0	
560.0	PLEISTOCENE		SAND & GRAVEL	5.0	75.0	
555.0	PLEISTOCENE		CLAY	12.0	80.0	
543.0	CARBONDALE		LIMESTONE	5.0	92.0	
538.0	CARBONDALE		GRAY SHALE	5.0	97.0	
533.0	CARBONDALE	HERRIN	COAL	0.4	102.0	CORRELATION UNCERTAIN
532.6	CARBONDALE		GRAY SHALE	8.6	102.4	
524.0	CARBONDALE		LIMESTONE	1.5	111.0	
522.5	CARBONDALE		GRAY SHALE	7.5	112.5	
515.0	CARBONDALE		LIMESTONE	9.0	120.0	
506.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	129.0	
505.5	CARBONDALE	SPRINGFIELD	COAL	3.3	129.5	
502.2	CARBONDALE		UNDERCLAY	1.2	132.8	

MAPID: 01720142000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 9 QUARTERS/FOOTAGES: 3' N line, 14' E line of NE SW

QUADRANGLE: ASHLAND LONGITUDE: -90.004102 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.938243 DATE COLLECTED: 6 / 19 / 1969

SURFACE ELEVATION (FT.): 634.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I321 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
634.0	PLEISTOCENE		CLAY	80.0	0.0	
554.0	PLEISTOCENE		CLAY	7.0	80.0	WITH GRAVEL
547.0	CARBONDALE	ANNA	BLACK SHALE	1.5	87.0	
545.5	CARBONDALE	HERRIN	COAL	1.9	88.5	
543.6	CARBONDALE		GRAY SHALE	5.6	90.4	
538.0	CARBONDALE		LIMESTONE	4.0	96.0	
534.0	CARBONDALE		LIMESTONE	5.0	100.0	W/SHALE LAMINAE
529.0	CARBONDALE		GRAY SHALE	9.0	105.0	
520.0	CARBONDALE		LIMESTONE	1.0	114.0	
519.0	CARBONDALE		GRAY SHALE	7.0	115.0	
512.0	CARBONDALE		LIMESTONE	10.0	122.0	
502.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	132.0	
501.0	CARBONDALE	SPRINGFIELD	COAL	3.8	133.0	
497.2	CARBONDALE		UNDERCLAY	1.2	136.8	

MAPID: 01720143000C

VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS

TWP/RNG: 17N 8W

SECTION: 9

QUARTERS/FOOTAGES: 43' S line, 177' W line of SE SW

QUADRANGLE: ASHLAND

LONGITUDE: -90.008048

GEOLOGIST: HAMER

CONFIDENTIAL: N

LATITUDE: 39.931213

DATE COLLECTED: 3 / 17 / 1969

SURFACE ELEVATION (FT.): 630.0

LOGGED (FT.): 131.0

LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON

I219N

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0	PLEISTOCENE		CLAY	65.0	0.0	
565.0	PLEISTOCENE		SAND & GRAVEL	10.0	65.0	
555.0	PLEISTOCENE		CLAY	7.0	75.0	
548.0	PLEISTOCENE		SAND & GRAVEL	4.0	82.0	
544.0	CARBONDALE	HERRIN	COAL	1.0	86.0	TOP ERODED
543.0	CARBONDALE		SHALE	3.0	87.0	
540.0	CARBONDALE		LIMESTONE	10.0	90.0	W/SH LAMINAE
530.0	CARBONDALE		GRAY SHALE	10.0	100.0	
520.0	CARBONDALE		SHALE	13.0	110.0	W/ LS LAMINAE
507.0	CARBONDALE		LIMESTONE	1.0	123.0	DARK
506.0	CARBONDALE		BLACK SHALE	1.0	124.0	
505.0	CARBONDALE		LIMESTONE	0.7	125.0	
504.3	CARBONDALE		COAL	2.9	125.7	
501.4	CARBONDALE	SPRINGFIELD	PYRITE	0.1	128.6	
501.3	CARBONDALE	SPRINGFIELD	COAL	1.9	128.7	
499.4	CARBONDALE		UNDERCLAY	0.4	130.6	

MAPID: 01720292000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 16 QUARTERS/FOOTAGES: 192' S line, 72' W line of SW SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.013024 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.916989 DATE COLLECTED: 5 / 18 / 1969
 SURFACE ELEVATION (FT.): 639.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON I17TB WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
639.0	PLEISTOCENE		CLAY	90.0	0.0	
549.0	CARBONDALE		LIMESTONE	2.0	90.0	
547.0	CARBONDALE		GRAY SHALE	7.0	92.0	
540.0	CARBONDALE		LIMESTONE	1.0	99.0	
539.0	CARBONDALE		GRAY SHALE	5.0	100.0	
534.0	CARBONDALE		LIMESTONE	2.0	105.0	
532.0	CARBONDALE		GRAY SHALE	7.0	107.0	
525.0	CARBONDALE		LIMESTONE	2.0	114.0	
523.0	CARBONDALE		SHALE	12.0	116.0	
511.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	128.0	DARK GRAY
510.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	129.0	
507.0	CARBONDALE	SPRINGFIELD	COAL	5.3	132.0	
501.7	CARBONDALE		UNDERCLAY	0.7	137.3	

MAPID: 01720293000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 16 QUARTERS/FOOTAGES: SE SE SE NE
 QUADRANGLE: TALLULA LONGITUDE: -89.995118 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.924241 DATE COLLECTED: 3 / 10 / 1972
 SURFACE ELEVATION (FT.): 639.0 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON I125 WELL TYPE: Coal Test
 COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
639.0	PLEISTOCENE		CLAY	14.0	0.0	
625.0	PLEISTOCENE		UNCONSOLIDATED	5.0	14.0	
620.0	PLEISTOCENE		CLAY	70.0	19.0	
550.0	CARBONDALE		LIMESTONE	4.0	89.0	
546.0	CARBONDALE		GRAY SHALE	1.0	93.0	
545.0	CARBONDALE	HERRIN	COAL	1.0	94.0	CORRELATION UNCERTAIN
544.0	CARBONDALE		GRAY SHALE	24.0	95.0	
520.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	119.0	
517.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	122.0	
515.0	CARBONDALE	SPRINGFIELD	COAL	5.9	124.0	
509.1	CARBONDALE		UNDERCLAY	1.0	129.9	

MAPID: 01720116000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 17 QUARTERS/FOOTAGES: SE SE SE SW

QUADRANGLE: ASHLAND LONGITUDE: -90.023194 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.916663 DATE COLLECTED: 3 / 20 / 1972

SURFACE ELEVATION (FT.): 640.0 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I13 WELL TYPE: Coal Test

COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
640.0	PLEISTOCENE		CLAY	105.0	0.0	
535.0	CARBONDALE		LIMESTONE W/ SHALE	9.0	105.0	
526.0	CARBONDALE		LIMESTONE	8.0	114.0	
518.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.9	122.0	
516.1	CARBONDALE	SPRINGFIELD	COAL	3.1	123.9	
513.0	CARBONDALE		UNDERCLAY	1.0	127.0	

MAPID: 01720290000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 17 QUARTERS/FOOTAGES: SW SW SE SW

QUADRANGLE: ASHLAND LONGITUDE: -90.026695 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.91657 DATE COLLECTED: 3 / 15 / 1972

SURFACE ELEVATION (FT.): 639.0 LOGGED (FT.): 163.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON I11 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
639.0	PLEISTOCENE		CLAY	163.0	0.0	HOLE BOTTTOMS IN CLAY

MAPID: 01720291000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 17N 8W **SECTION:** 17 **QUARTERS/FOOTAGES:** NW NW NE NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.026753 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.930444 **DATE COLLECTED:** 5 / 27 / 1969
SURFACE ELEVATION (FT.): 633.0 **LOGGED (FT.):** 135.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON I215 **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
633.0	PLEISTOCENE		CLAY	35.0	0.0	SILTY
598.0	PLEISTOCENE		CLAY	52.0	35.0	
546.0	PLEISTOCENE		GRAVEL	3.0	87.0	
543.0	PLEISTOCENE		CLAY	3.0	90.0	
540.0	CARBONDALE		LIMESTONE	6.0	93.0	
534.0	CARBONDALE		GRAY SHALE	11.0	99.0	W/LIMESTONE INTERBEDS
523.0	CARBONDALE		LIMESTONE	3.0	110.0	
520.0	CARBONDALE		GRAY SHALE	7.0	113.0	
513.0	CARBONDALE		LIMESTONE	9.5	120.0	W/SHALE INTERBEDS
503.5	CARBONDALE	SPRINGFIELD	COAL	4.0	129.5	
499.5	CARBONDALE		UNDERCLAY	1.5	133.5	

MAPID: 01720294000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 17N 8W **SECTION:** 18 **QUARTERS/FOOTAGES:** 1' S line, 400' W line of SE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.035135 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.915977 **DATE COLLECTED:** 3 / 14 / 1972
SURFACE ELEVATION (FT.): 637.0 **LOGGED (FT.):** 163.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON I7N **WELL TYPE:** Coal Test
COMMENT: YEAR OF DATA UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
637.0			CLAY	15.0	0.0	
622.0			UNCONSOLIDATED	5.0	15.0	WITH WOOD
617.0			CLAY	10.0	20.0	
607.0			CLAY	133.0	30.0	WITH GRAVEL

MAPID: 01720117000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 20 QUARTERS/FOOTAGES: SE SE NE SW
QUADRANGLE: ASHLAND LONGITUDE: -90.023075 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.906034 DATE COLLECTED: 5 / 27 / 1969
SURFACE ELEVATION (FT.): 640.0 LOGGED (FT.): 160.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON M463 WELL TYPE: Coal Test
COMMENT: NO FOOTAGES GIVEN;NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
640.0	PLEISTOCENE		CLAY	40.0	0.0	SILTY
600.0	PLEISTOCENE		CLAY	34.0	40.0	
566.0	PLEISTOCENE		CLAY & GRAVEL	10.0	74.0	
556.0	PLEISTOCENE		CLAY	9.0	84.0	
547.0	CARBONDALE		LIMESTONE	2.0	93.0	
545.0	CARBONDALE		GRAY SHALE	65.0	95.0	HOLE BOTTOMS IN GRAY SHALE

MAPID: 01720118000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 17N 8W SECTION: 20 QUARTERS/FOOTAGES: 9' N line, 135' E line of SE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.013604 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.905714 DATE COLLECTED: 5 / 24 / 1969
SURFACE ELEVATION (FT.): 640.0 LOGGED (FT.): 107.5 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON M467 WELL TYPE: Coal Test
COMMENT: DAY OF DATA UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
640.0	PLEISTOCENE		CLAY	40.0	0.0	SILTY
600.0	PLEISTOCENE		CLAY	34.0	40.0	
566.0	PLEISTOCENE		UNCONSOLIDATED	3.0	74.0	UNSPECIFIED UNCONSOLIDATED
563.0	PLEISTOCENE		CLAY	23.0	77.0	
540.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	100.0	
537.5	CARBONDALE	SPRINGFIELD	COAL	4.9	102.5	
532.6	CARBONDALE		UNDERCLAY	0.1	107.4	

MAPID: 01720119000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 17N 8W **SECTION:** 28 **QUARTERS/FOOTAGES:** NW NW SW NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.012526 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.898016 **DATE COLLECTED:** 3 / 21 / 1972
SURFACE ELEVATION (FT.): 637.0 **LOGGED (FT.):** 123.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON M367 **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES RECORDED;NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
637.0	PLEISTOCENE		CLAY	25.0	0.0	
612.0	PLEISTOCENE		CLAY & GRAVEL	25.0	25.0	
587.0	PLEISTOCENE		CLAY	30.0	50.0	
557.0	CARBONDALE		BLACK SHALE	3.0	80.0	
554.0	CARBONDALE		GRAY SHALE	4.0	83.0	
550.0	CARBONDALE		LIMESTONE	1.0	87.0	
549.0	CARBONDALE		GRAY SHALE	24.0	88.0	
525.0	CARBONDALE		LIMESTONE W/ SHALE	11.0	112.0	

MAPID: 01720120000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 17N 8W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW SW SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.003213 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.880585 **DATE COLLECTED:** 5 / 12 / 1970
SURFACE ELEVATION (FT.): 632.0 **LOGGED (FT.):** 166.1 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON M121 **WELL TYPE:** Coal Test
COMMENT: MO&DAY UNCERTAIN;NO FOOTAGES;NO COAL LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
632.0	PLEISTOCENE		UNKNOWN	10.1	0.0	ILLEGABLE LITHOLOGY
621.9	PLEISTOCENE		UNCONSOLIDATED	81.1	10.1	
540.8	CARBONDALE		SHALE	1.1	91.2	PROBABLY SHALE
539.7	CARBONDALE		GRAY SHALE	16.3	92.3	
523.4	CARBONDALE		UNKNOWN	7.5	108.6	ILLEGABLE LITHOLOGY
515.9	CARBONDALE		GRAY SHALE	25.9	116.1	
490.0	CARBONDALE		GRAY SHALE & SANDSTONE	24.1	142.0	

MAPID: 01780000000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 17N 9W SECTION: 1 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.06465 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.945529 DATE COLLECTED: 10 / 28 / 1966
 SURFACE ELEVATION (FT.): 612.7 LOGGED (FT.): 99.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE G419 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.7	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
593.7	PLEISTOCENE		SAND & GRAVEL	51.0	19.0	HARDPAN
542.7	SHELBURN		MICACEOUS SHALE	5.0	70.0	LIMY
537.7	SHELBURN		LIMESTONE	2.0	75.0	HARD
535.7	SHELBURN		GRAY SHALE	12.0	77.0	SOFT
523.7	SHELBURN	BRERETON	LIMESTONE	0.5	89.0	HARD
523.2	CARBONDALE	ANNA	BLACK SHALE	2.0	89.5	SOFT
521.2	CARBONDALE		LIMESTONE	0.5	91.5	HARD
520.7	CARBONDALE	HERRIN	COAL	5.5	92.0	HARD
515.2	CARBONDALE		UNDERCLAY	1.5	97.5	

MAPID: 01790001000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 17N 9W SECTION: 1 QUARTERS/FOOTAGES: 1' S line, 880' W line of NE NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.061419 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.956248 DATE COLLECTED: 11 / 22 / 1966
 SURFACE ELEVATION (FT.): 623.7 LOGGED (FT.): 122.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE G507B WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
623.7	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0	
597.7	PLEISTOCENE		SAND & GRAVEL	53.0	26.0	HARDPAN
544.7	CARBONDALE		LIMESTONE	6.0	79.0	HARD
538.7	CARBONDALE		GRAY SHALE	8.0	85.0	
530.7	CARBONDALE	HERRIN	COAL	1.0	93.0	
529.7	CARBONDALE		UNDERCLAY	2.0	94.0	
527.7	CARBONDALE		GRAY SHALE	4.0	96.0	
523.7	CARBONDALE		LIMESTONE	2.0	100.0	HARD
521.7	CARBONDALE		GRAY SHALE	10.0	102.0	
511.7	CARBONDALE		LIMESTONE	1.0	112.0	HARD
510.7	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	113.0	
507.7	CARBONDALE	SPRINGFIELD	COAL	4.4	116.0	
503.3	CARBONDALE		UNDERCLAY	1.6	120.4	

MAPID: 01780002000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.088061 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.948884 DATE COLLECTED: 11 / 18 / 1966
SURFACE ELEVATION (FT.): 570.7 LOGGED (FT.): 59.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G461 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.7	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
560.7	PLEISTOCENE		CLAY	32.0	10.0	
528.7	SHELBURN		GRAY SHALE	10.0	42.0	
518.7	SHELBURN	BRERETON	LIMESTONE	0.5	52.0	HARD
518.2	CARBONDALE	ANNA	BLACK SHALE	1.5	52.5	SOFT
516.7	CARBONDALE	HERRIN	COAL	4.2	54.0	HARD
512.5	CARBONDALE		UNDERCLAY	0.8	58.2	

MAPID: 01780003000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 2 QUARTERS/FOOTAGES: 1' S line, 660' W line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.081079 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.956161 DATE COLLECTED: 10 / 28 / 1966
SURFACE ELEVATION (FT.): 617.0 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G562 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.0	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
610.0	PLEISTOCENE		CLAY	15.0	7.0	
595.0	PLEISTOCENE		CLAY	64.0	22.0	
531.0	CARBONDALE		LIMESTONE	3.0	86.0	HARD
528.0	CARBONDALE		SHALE WITH LIMESTONE	7.0	89.0	HARD
521.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	96.0	SOFT
519.0	CARBONDALE	SPRINGFIELD	BONE COAL	2.0	98.0	HARD
517.0	CARBONDALE	SPRINGFIELD	COAL	2.5	100.0	HARD
514.5	CARBONDALE		UNDERCLAY	3.5	102.5	
511.0	CARBONDALE		GRAY SHALE	22.0	106.0	

MAPID: 01780004000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 2 **QUARTERS/FOOTAGES:** 1' N line, 1' E line of SE NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.069259 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.956232 **DATE COLLECTED:** 10 / 28 / 1966
SURFACE ELEVATION (FT.): 620.2 **LOGGED (FT.):** 119.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE G567 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
620.2	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
610.2	PLEISTOCENE		CLAY	13.0	10.0
597.2	PLEISTOCENE		CLAY	55.0	23.0
542.2	SHELBURN		LIMESTONE	1.0	78.0
541.2	SHELBURN		SHALE WITH LIMESTONE	6.0	79.0
535.2	CARBONDALE	ANNA	BLACK SHALE	1.0	85.0
534.2	CARBONDALE	HERRIN	COAL	1.5	86.0 HARD
532.7	CARBONDALE		UNDERCLAY	0.5	87.5
532.2	CARBONDALE		SHALE WITH LIMESTONE	24.0	88.0
508.2	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	112.0
506.2	CARBONDALE	SPRINGFIELD	COAL	4.0	114.0 HARD
502.2	CARBONDALE		UNDERCLAY	1.0	118.0

MAPID: 01780005000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 3 **QUARTERS/FOOTAGES:** 1' S line, 660' W line of SE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.090376 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.945284 **DATE COLLECTED:** 10 / 31 / 1966
SURFACE ELEVATION (FT.): 616.3 **LOGGED (FT.):** 188.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE G408 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
616.3	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0
609.3	PLEISTOCENE		CLAY	5.0	7.0
604.3	PLEISTOCENE		CLAY	105.0	12.0
499.3	PLEISTOCENE		SAND & GRAVEL	7.0	117.0
492.3	CARBONDALE		GRAY SHALE	64.0	124.0

MAPID: 01780006000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 3 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of NW SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.102259 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.948956 **DATE COLLECTED:** 11 / 28 / 1966
SURFACE ELEVATION (FT.): 619.3 **LOGGED (FT.):** 168.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE G503 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.3	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
596.3	PLEISTOCENE		SAND & GRAVEL	69.0	23.0	HARDPAN
527.3	CARBONDALE		SHALE WITH LIMESTONE	39.0	92.0	
488.3	CARBONDALE		GRAY SHALE	37.0	131.0	

MAPID: 01780007000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 3 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.097571 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.952559 **DATE COLLECTED:** 10 / 31 / 1966
SURFACE ELEVATION (FT.): 620.1 **LOGGED (FT.):** 118.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE G505 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.1	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
601.1	PLEISTOCENE		SAND & GRAVEL	71.0	19.0	HARDPAN
530.1	CARBONDALE	ST. DAVID	LIMESTONE	1.0	90.0	HARD
529.1	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	91.0	SOFT
526.1	CARBONDALE	SPRINGFIELD	COAL	4.4	94.0	
521.7	CARBONDALE		UNDERCLAY	2.6	98.4	
519.1	CARBONDALE		SHALE WITH LIMESTONE	17.0	101.0	

MAPID: 01780008000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 4 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of SW NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.120993 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.952684 **DATE COLLECTED:** 11 / 25 / 1966
SURFACE ELEVATION (FT.): 620.9 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE HH519 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.9	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
613.9	PLEISTOCENE		CLAY	14.0	7.0	
599.9	PLEISTOCENE		CLAY	65.0	21.0	
534.9	CARBONDALE		GRAY SHALE	62.0	86.0	

MAPID: 01780009000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 4 QUARTERS/FOOTAGES: 30' N line, 50' W line of NE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.111499 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.952554 DATE COLLECTED: 10 / 29 / 1966
SURFACE ELEVATION (FT.): 615.1 LOGGED (FT.): 162.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH523 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.1	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
595.1	PLEISTOCENE		CLAY	55.0	20.0	
540.1	CARBONDALE		GRAY SHALE	24.0	75.0	
516.1	CARBONDALE		GRAY SHALE	38.0	99.0	
478.1	CARBONDALE		DARK SHALE	19.0	137.0	
459.1	CARBONDALE		BLACK SHALE	1.0	156.0	
458.1	CARBONDALE	COLCHESTER	COAL W/ BLACK SHALE	1.0	157.0	
457.1	CARBONDALE	COLCHESTER	COAL	3.0	158.0	HARD
454.1	CARBONDALE		UNDERCLAY	1.0	161.0	

MAPID: 01780010000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 5 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW NE
QUADRANGLE: VIRGINIA LONGITUDE: -90.130335 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.952748 DATE COLLECTED: 11 / 25 / 1966
SURFACE ELEVATION (FT.): 616.7 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH515 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.7	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
594.7	PLEISTOCENE		CLAY	62.0	22.0	
532.7	CARBONDALE		SHALE	10.0	84.0	SOFT
522.7	CARBONDALE		SHALE WITH LIMESTONE	24.0	94.0	

MAPID: 01780011000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 5 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.135042 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.956421 DATE COLLECTED: 11 / 17 / 1966
SURFACE ELEVATION (FT.): 619.9 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH563 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.9	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
612.9	PLEISTOCENE		CLAY	14.0	7.0	
598.9	PLEISTOCENE		CLAY	63.0	21.0	
535.9	CARBONDALE		GRAY SHALE	34.0	84.0	HARD

MAPID: 01780012000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 5 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE NE
QUADRANGLE: VIRGINIA LONGITUDE: -90.130365 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.956396 DATE COLLECTED: 10 / 12 / 1966
SURFACE ELEVATION (FT.): 615.0 LOGGED (FT.): 94.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH565 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.0	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
608.0	PLEISTOCENE		CLAY	15.0	7.0	
593.0	PLEISTOCENE		CLAY	56.0	22.0	
537.0	PLEISTOCENE		SAND & GRAVEL	11.0	78.0	
526.0	CARBONDALE	HERRIN	COAL	3.3	89.0	SOFT AND BONY; TOP ERODED
522.7	CARBONDALE		UNDERCLAY	1.7	92.3	

MAPID: 01780013000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 5 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.135064 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.960042 DATE COLLECTED: 11 / 17 / 1966
SURFACE ELEVATION (FT.): 617.5 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH613 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.5	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0	
591.5	PLEISTOCENE		SAND & GRAVEL	72.0	26.0	HARDPAN
519.5	CARBONDALE		SHALE WITH LIMESTONE	20.0	98.0	

MAPID: 01780014000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 17N 9W SECTION: 6 QUARTERS/FOOTAGES: 165' S line, 1' W line of NW NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.163198 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.957161 DATE COLLECTED: 11 / 18 / 1966
SURFACE ELEVATION (FT.): 600.2 LOGGED (FT.): 79.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE GG575J WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.2	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
593.2	PLEISTOCENE		CLAY	14.0	7.0	
579.2	PLEISTOCENE		CLAY	45.0	21.0	
534.2	SHELBURN		LIMESTONE	1.0	66.0	HARD
533.2	SHELBURN		DARK SHALE	1.5	67.0	SOFT
531.6	SHELBURN		BLACK SHALE	0.5	68.6	SOFT
531.2	SHELBURN		DARK SHALE	2.0	69.0	
529.2	CARBONDALE	ANNA	BLACK SHALE	2.0	71.0	
527.2	CARBONDALE	HERRIN	COAL	4.4	73.0	
522.8	CARBONDALE		UNDERCLAY	1.6	77.4	

MAPID: 01780015000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 17N 9W SECTION: 6 QUARTERS/FOOTAGES: 1' S line, 660' E line of SE SW
QUADRANGLE: VIRGINIA LONGITUDE: -90.156184 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.945798 DATE COLLECTED: 11 / 17 / 1966
SURFACE ELEVATION (FT.): 606.9 LOGGED (FT.): 87.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH404 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
606.9	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0	
581.9	PLEISTOCENE		SAND & GRAVEL	53.0	25.0	HARDPAN
528.9	SHELBURN	BRERETON	LIMESTONE	0.5	78.0	
528.4	CARBONDALE	ANNA	BLACK SHALE	2.5	78.5	
525.9	CARBONDALE	HERRIN	COAL	4.2	81.0	HARD
521.7	CARBONDALE		UNDERCLAY	1.8	85.2	

MAPID: 01780016000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 6 **QUARTERS/FOOTAGES:** 330' N line, 1' E line of NE SE
QUADRANGLE: VIRGINIA **LONGITUDE:** -90.14439 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.951965 **DATE COLLECTED:** 11 / 16 / 1966
SURFACE ELEVATION (FT.): 619.8 **LOGGED (FT.):** 89.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE HH484C **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.8	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
612.8	PLEISTOCENE		CLAY	9.0	7.0	
603.8	PLEISTOCENE		CLAY	46.0	16.0	
557.8	SHELBURN		SHALE	14.0	62.0	
543.8	SHELBURN		SHALE WITH LIMESTONE	3.0	76.0	HARD
540.8	SHELBURN		DARK SHALE	2.0	79.0	SOFT
538.8	CARBONDALE	ANNA	BLACK SHALE	2.0	81.0	SOFT
536.8	CARBONDALE	HERRIN	COAL	4.3	83.0	HARD
532.5	CARBONDALE		UNDERCLAY	1.8	87.3	

MAPID: 01780017000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 6 **QUARTERS/FOOTAGES:** 1' N line, 138' W line of NW SW
QUADRANGLE: VIRGINIA **LONGITUDE:** -90.162722 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.953078 **DATE COLLECTED:** 11 / 16 / 1966
SURFACE ELEVATION (FT.): 608.8 **LOGGED (FT.):** 85.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE HH501N **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
608.8	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
602.8	PLEISTOCENE		CLAY	9.0	6.0	
593.8	PLEISTOCENE		CLAY	50.0	15.0	AND SAND
543.8	SHELBURN		MICACEOUS SHALE	5.0	65.0	SOFT
538.8	SHELBURN		LIMESTONE	3.5	70.0	HARD
535.3	SHELBURN		DARK SHALE	4.5	73.5	SOFT
530.8	CARBONDALE	ANNA	BLACK SHALE	1.0	78.0	
529.8	CARBONDALE	HERRIN	COAL	4.0	79.0	
525.8	CARBONDALE		UNDERCLAY	2.0	83.0	

MAPID: 01780018000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 6 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SW
QUADRANGLE: VIRGINIA LONGITUDE: -90.153802 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.952979 DATE COLLECTED: 11 / 16 / 1966
SURFACE ELEVATION (FT.): 618.7 LOGGED (FT.): 96.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH505 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.7	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
608.7	PLEISTOCENE		CLAY	20.0	10.0	
588.7	PLEISTOCENE		CLAY	46.0	30.0	
542.7	SHELBURN		LIMESTONE	1.0	76.0	
541.7	SHELBURN		GRAY SHALE	11.0	77.0	
530.7	SHELBURN	BRERETON	LIMESTONE	1.5	88.0	
529.2	CARBONDALE	ANNA	BLACK SHALE	1.5	89.5	
527.7	CARBONDALE	HERRIN	COAL	4.0	91.0	HARD
523.7	CARBONDALE		UNDERCLAY	1.0	95.0	

MAPID: 01780019000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 7 QUARTERS/FOOTAGES: 1' S line, 660' E line of NW NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.160951 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.9422 DATE COLLECTED: 11 / 24 / 1966
SURFACE ELEVATION (FT.): 620.1 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH352 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.1	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
599.1	PLEISTOCENE		SAND & GRAVEL	77.0	21.0	HARDPAN
522.1	CARBONDALE		SHALE WITH LIMESTONE	50.0	98.0	

MAPID: 01780020000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 7 QUARTERS/FOOTAGES: 330' S line, 1' E line of NW NE
QUADRANGLE: VIRGINIA LONGITUDE: -90.149155 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.943033 DATE COLLECTED: 11 / 24 / 1966
SURFACE ELEVATION (FT.): 617.4 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH357C WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.4	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
597.4	PLEISTOCENE		SAND & GRAVEL	82.0	20.0	HARDPAN
515.4	CARBONDALE		GRAY SHALE	46.0	102.0	

MAPID: 01780021000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 8 QUARTERS/FOOTAGES: 1' N line, 330' W line of NW NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.143216 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.945676 DATE COLLECTED: 11 / 16 / 1966
SURFACE ELEVATION (FT.): 615.8 LOGGED (FT.): 93.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH409B WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.8	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
594.8	PLEISTOCENE		SAND & GRAVEL	51.0	21.0	HARDPAN
543.8	SHELBURN		GRAY SHALE	11.0	72.0	
532.8	SHELBURN		LIMESTONE	2.0	83.0	HARD
530.8	SHELBURN		BLACK SHALE	1.0	85.0	SOFT
529.8	SHELBURN	BRERETON	LIMESTONE	1.0	86.0	HARD
528.8	CARBONDALE	HERRIN	COAL	4.5	87.0	HARD
524.3	CARBONDALE		UNDERCLAY	1.5	91.5	

MAPID: 01780022000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.111622 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.938296 DATE COLLECTED: 11 / 18 / 1966
SURFACE ELEVATION (FT.): 628.1 LOGGED (FT.): 168.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE HH323 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
628.1	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0	
598.1	PLEISTOCENE		CLAY	73.0	30.0	
525.1	CARBONDALE		LIMESTONE	6.0	103.0	
519.1	CARBONDALE		SHALE WITH LIMESTONE	10.0	109.0	
509.1	CARBONDALE		GRAY SHALE	49.0	119.0	

MAPID: 01780023000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' E line of SE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.089258 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.938931 DATE COLLECTED: 11 / 22 / 1966
SURFACE ELEVATION (FT.): 625.2 LOGGED (FT.): 105.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G308A WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
625.2	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
619.2	PLEISTOCENE		CLAY	16.0	6.0	
603.2	PLEISTOCENE		CLAY	56.0	22.0	
547.2	SHELBURN		SANDSTONE	10.0	78.0	HARD
537.2	SHELBURN		SHALE WITH LIMESTONE	8.0	88.0	SOFT
529.2	SHELBURN		GRAY SHALE	2.0	96.0	SOFT
527.2	CARBONDALE	ANNA	BLACK SHALE	1.5	98.0	
525.7	CARBONDALE	HERRIN	COAL	3.5	99.5	
522.2	CARBONDALE		UNDERCLAY	2.0	103.0	

MAPID: 01780024000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 10 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.102206 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.945318 DATE COLLECTED: 11 / 23 / 1966
SURFACE ELEVATION (FT.): 627.5 LOGGED (FT.): 97.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G403 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
627.5	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
621.5	PLEISTOCENE		CLAY	14.0	6.0	
607.5	PLEISTOCENE		CLAY	60.0	20.0	
547.5	SHELBURN		SANDSTONE	6.0	80.0	SOFT
541.5	SHELBURN		GRAY SHALE	5.0	86.0	
536.5	CARBONDALE	ANNA	BLACK SHALE	1.0	91.0	SOFT
535.5	CARBONDALE	HERRIN	COAL	2.0	92.0	
533.5	CARBONDALE		LIMESTONE	1.0	94.0	HARD
532.5	CARBONDALE	HERRIN	COAL	1.5	95.0	
531.0	CARBONDALE		UNDERCLAY	0.5	96.5	

MAPID: 01780025000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 11 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of NE SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.083339 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.934373 **DATE COLLECTED:** 12 / 1 / 1966
SURFACE ELEVATION (FT.): 626.7 **LOGGED (FT.):** 138.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE G261 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
626.7	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0	
618.7	PLEISTOCENE		CLAY	15.0	8.0	
603.7	PLEISTOCENE		CLAY	49.0	23.0	
554.7	CARBONDALE		SANDSTONE	38.0	72.0	
516.7	CARBONDALE		GRAY SHALE	28.0	110.0	

MAPID: 01780026000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 17N 9W **SECTION:** 12 **QUARTERS/FOOTAGES:** 1' S line, 300' E line of SE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.051392 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.930837 **DATE COLLECTED:** 10 / 29 / 1966
SURFACE ELEVATION (FT.): 628.3 **LOGGED (FT.):** 113.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE G224B **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
628.3	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
605.3	PLEISTOCENE		SAND & GRAVEL	71.0	23.0	HARDPAN
534.3	SHELBURN		LIMESTONE	1.0	94.0	HARD
533.3	SHELBURN		GRAY SHALE	10.0	95.0	SOFT
523.3	SHELBURN	BRERETON	LIMESTONE	0.5	105.0	HARD
522.8	CARBONDALE	ANNA	BLACK SHALE	1.5	105.5	SOFT
521.3	CARBONDALE		ROCK	1.0	107.0	HARD
520.3	CARBONDALE	HERRIN	COAL	3.6	108.0	HARD
516.7	CARBONDALE		UNDERCLAY	1.4	111.6	

MAPID: 01780027000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 17N 9W SECTION: 12 QUARTERS/FOOTAGES: 660' S line, 1' W line of SW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.05967 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.932575 DATE COLLECTED: 10 / 3 / 1966
SURFACE ELEVATION (FT.): 634.1 LOGGED (FT.): 158.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G246 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
634.1	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
611.1	PLEISTOCENE		SAND & GRAVEL	78.0	23.0	HARDPAN
533.1	SHELBURN		GRAY SHALE	14.0	101.0	SOFT
519.1	CARBONDALE	ANNA	BLACK SHALE	2.0	115.0	SOFT
517.1	CARBONDALE	HERRIN	COAL	3.9	117.0	
513.2	CARBONDALE		UNDERCLAY	2.1	120.9	
511.1	CARBONDALE		GRAY SHALE	35.0	123.0	SOFT

MAPID: 01780028000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 17N 9W SECTION: 12 QUARTERS/FOOTAGES: 1' N line, 165' E line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.051383 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.945567 DATE COLLECTED: 11 / 23 / 1966
SURFACE ELEVATION (FT.): 625.8 LOGGED (FT.): 117.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G424P WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
625.8	PLEISTOCENE		SAND & GRAVEL	20.0	0.0	
605.8	PLEISTOCENE		CLAY	59.0	20.0	
546.8	SHELBURN		GRAY SHALE	7.0	79.0	
539.8	SHELBURN		LIMESTONE	4.0	86.0	
535.8	SHELBURN		SHALE WITH LIMESTONE	19.0	90.0	
516.8	CARBONDALE	ANNA	BLACK SHALE	1.5	109.0	
515.3	CARBONDALE	HERRIN	COAL	1.0	110.5	HARD
514.3	CARBONDALE		ROCK	0.8	111.5	
513.5	CARBONDALE	HERRIN	COAL	0.3	112.3	HARD
513.3	CARBONDALE		ROCK	0.5	112.5	
512.8	CARBONDALE		COAL	2.5	113.0	HARD
510.3	CARBONDALE		UNDERCLAY	1.5	115.5	

MAPID: 01780029000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 13 QUARTERS/FOOTAGES: 20' N line, 20' W line of NW NW
QUADRANGLE: ASHLAND LONGITUDE: -90.068857 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.93061 DATE COLLECTED: 10 / 29 / 1966
SURFACE ELEVATION (FT.): 619.6 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G192DL WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.6	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
612.6	PLEISTOCENE		CLAY	14.0	7.0	
598.6	PLEISTOCENE		CLAY	75.0	21.0	
523.6	CARBONDALE	ANNA	BLACK SHALE	1.0	96.0	SOFT
522.6	CARBONDALE	HERRIN	COAL	1.0	97.0	SOFT
521.6	CARBONDALE		UNDERCLAY	2.0	98.0	
519.6	CARBONDALE		MICACEOUS SHALE	38.0	100.0	

MAPID: 01780030000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 14 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.083221 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.923654 DATE COLLECTED: 11 / 23 / 1966
SURFACE ELEVATION (FT.): 631.6 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G111 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
631.6	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
625.6	PLEISTOCENE		CLAY	18.0	6.0	
607.6	PLEISTOCENE		CLAY	100.0	24.0	
507.6	CARBONDALE		SHALE	24.0	124.0	WHITE

MAPID: 01780031000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 9W SECTION: 15 QUARTERS/FOOTAGES: 1' N line, 660' E line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.090526 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.930799 DATE COLLECTED: 11 / 22 / 1966
SURFACE ELEVATION (FT.): 631.4 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE G208 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
631.4	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0	
607.4	PLEISTOCENE		SAND & GRAVEL	75.0	24.0	HARDPAN
532.4	CARBONDALE	ANNA	BLACK SHALE	1.0	99.0	SOFT
531.4	CARBONDALE	HERRIN	COAL	3.9	100.0	
527.5	CARBONDALE		UNDERCLAY	2.1	103.9	
525.4	CARBONDALE		MICACEOUS SHALE	12.0	106.0	LIMEY

MAPID: 01780032000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 10W SECTION: 1 QUARTERS/FOOTAGES: 330' S line, 1' E line of NE NE
QUADRANGLE: VIRGINIA LONGITUDE: -90.163206 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.957616 DATE COLLECTED: 11 / 17 / 1966
SURFACE ELEVATION (FT.): 616.6 LOGGED (FT.): 90.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE GG575C WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.6	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
610.6	PLEISTOCENE		CLAY	14.0	6.0	
596.6	PLEISTOCENE		CLAY	53.0	20.0	
543.6	SHELBURN		GRAY SHALE	8.0	73.0	SOFT
535.6	SHELBURN		ROCK	1.0	81.0	HARD
534.6	CARBONDALE	ANNA	BLACK SHALE	2.0	82.0	
532.6	CARBONDALE	HERRIN	COAL	4.7	84.0	HARD
527.9	CARBONDALE		UNDERCLAY	1.3	88.7	

MAPID: 01780033000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 10W SECTION: 1 QUARTERS/FOOTAGES: 1' N line, 660' E line of NW NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.179692 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.960528 DATE COLLECTED: 11 / 15 / 1966
SURFACE ELEVATION (FT.): 615.2 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE GG618 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.2	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
608.2	PLEISTOCENE		CLAY	14.0	7.0	
594.2	PLEISTOCENE		CLAY	97.0	21.0	
497.2	CARBONDALE		GRAY SHALE	30.0	118.0	

MAPID: 01780084000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 10W SECTION: 1 QUARTERS/FOOTAGES: 1' S line, 426' W line of SW NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.180539 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.953156 DATE COLLECTED: 11 / 16 / 1966
SURFACE ELEVATION (FT.): 611.2 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE GG517BB WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.2	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0	
581.2	PLEISTOCENE		CLAY	74.0	30.0	
507.2	CARBONDALE		SHALE	44.0	104.0	

MAPID: 01780085000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 10W SECTION: 1 QUARTERS/FOOTAGES: 1' S line, 220' E line of SE NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.173431 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.953131 DATE COLLECTED: 11 / 16 / 1966
SURFACE ELEVATION (FT.): 599.0 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE GG520BB WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
599.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
581.0	PLEISTOCENE		SAND & GRAVEL	54.0	18.0	HARDPAN
527.0	CARBONDALE		GRAY SHALE	56.0	72.0	HARD

MAPID: 01780081000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 10W SECTION: 2 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW SW
QUADRANGLE: VIRGINIA LONGITUDE: -90.19616 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.945887 DATE COLLECTED: 11 / 15 / 1966
SURFACE ELEVATION (FT.): 614.7 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE GG411 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.7	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
596.7	PLEISTOCENE		CLAY	12.0	18.0	
584.7	PLEISTOCENE		SAND & GRAVEL	118.0	30.0	

MAPID: 01780082000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 10W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW SW
QUADRANGLE: VIRGINIA LONGITUDE: -90.20083 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.953242 DATE COLLECTED: 11 / 15 / 1966
SURFACE ELEVATION (FT.): 620.5 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE GG509 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.5	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0	
587.5	PLEISTOCENE		SAND & GRAVEL	75.0	33.0	HARDPAN
512.5	CARBONDALE		GRAY SHALE	62.0	108.0	
450.5	CARBONDALE		BLACK SHALE	20.0	170.0	
430.5	CARBONDALE		GRAY SHALE	5.0	190.0	SOFT
425.5	CARBONDALE	COLCHESTER	COAL	2.5	195.0	
423.0	CARBONDALE		UNDERCLAY	2.5	197.5	
420.5	CARBONDALE		GRAY SHALE	38.0	200.0	HARD

MAPID: 01780083000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 17N 10W SECTION: 2 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.191452 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.953206 DATE COLLECTED: 11 / 15 / 1966
SURFACE ELEVATION (FT.): 621.8 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE GG513 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
621.8	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
614.8	PLEISTOCENE		CLAY	12.0	7.0	
602.8	PLEISTOCENE		CLAY	84.0	19.0	
518.8	CARBONDALE		GRAY SHALE	45.0	103.0	

MAPID: 01720128000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 5 QUARTERS/FOOTAGES: NW NW NE SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.017387 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.039071 DATE COLLECTED: 5 / 21 / 1970
SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A515 WELL TYPE: Coal Test
COMMENT: NO FOOTAGES;NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0	PLEISTOCENE		SOIL	4.0	0.0	
581.0	PLEISTOCENE		CLAY	21.0	4.0	
560.0	PLEISTOCENE		CLAY	95.0	25.0	WITH GRAVEL

MAPID: 01780063000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 5 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW SW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.027565 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.032303 DATE COLLECTED: 10 / 14 / 1965
SURFACE ELEVATION (FT.): 551.3 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T411 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
551.3	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
540.3	PLEISTOCENE		CLAY	7.0	11.0	
533.3	PLEISTOCENE		SAND & GRAVEL	76.0	18.0	HARDPAN
457.3	CARBONDALE		GRAY SHALE	14.0	94.0	HARD
443.3	CARBONDALE		BLACK SHALE	3.0	108.0	SOFT
440.3	CARBONDALE		GRAY SHALE	37.0	111.0	HARD

MAPID: 01780064000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 5 QUARTERS/FOOTAGES: 1' S line, 15' E line of SW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.018008 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.032335 DATE COLLECTED: 10 / 14 / 1965
SURFACE ELEVATION (FT.): 600.6 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T415 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.6	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
585.6	PLEISTOCENE		CLAY	10.0	15.0	
575.6	PLEISTOCENE		SAND & GRAVEL	123.0	25.0	HARD

MAPID: 01780071000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 5 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.02762 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.039562 DATE COLLECTED: 10 / 14 / 1965
SURFACE ELEVATION (FT.): 598.4 LOGGED (FT.): 147.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T511 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
598.4	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
578.4	PLEISTOCENE		CLAY	118.0	20.0	
460.4	CARBONDALE		GRAY SHALE	9.0	138.0	HARD

MAPID: 01780072000C VERSION: 1 PROJECT: NCRDS2
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 5 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE NE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.01799 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.039524 DATE COLLECTED: 10 / 14 / 1965
SURFACE ELEVATION (FT.): 569.0 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T515 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
569.0	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
562.0	PLEISTOCENE		CLAY	9.0	7.0	
553.0	PLEISTOCENE		CLAY	80.0	16.0	
473.0	CARBONDALE		GRAY SHALE	32.0	96.0	SOFT

MAPID: 01780073000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 5 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE NE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.013178 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.039506 DATE COLLECTED: 10 / 15 / 1965
SURFACE ELEVATION (FT.): 593.8 LOGGED (FT.): 135.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T517 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
593.8	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
586.8	PLEISTOCENE		CLAY	12.0	7.0	
574.8	PLEISTOCENE		CLAY	95.0	19.0	
479.8	CARBONDALE		GRAY SHALE	21.0	114.0	HARD

MAPID: 01780065000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW SW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.051164 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.035955 DATE COLLECTED: 10 / 15 / 1965
SURFACE ELEVATION (FT.): 599.2 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T451 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
599.2	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	
586.2	PLEISTOCENE		CLAY	13.0	13.0	
573.2	PLEISTOCENE		SAND & GRAVEL	102.0	26.0	HARDPAN
471.2	CARBONDALE		GRAY SHALE	20.0	128.0	HARDPAN

MAPID: 01780066000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 1' N line, 20' W line of SW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.041714 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.03594 DATE COLLECTED: 10 / 12 / 1965
SURFACE ELEVATION (FT.): 600.2 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T455 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.2	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
593.2	PLEISTOCENE		CLAY	9.0	7.0	
584.2	PLEISTOCENE		CLAY	117.0	16.0	
467.2	CARBONDALE		LIMESTONE	4.0	133.0	HARD
463.2	CARBONDALE		GRAY SHALE	27.0	137.0	HARD
436.2	CARBONDALE		BLACK SHALE	2.0	164.0	HARD
434.2	CARBONDALE		UNDERCLAY	5.0	166.0	NO COAL
429.2	CARBONDALE		GRAY SHALE	17.0	171.0	

MAPID: 01780067000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.0371 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.035934 DATE COLLECTED: 10 / 13 / 1965
SURFACE ELEVATION (FT.): 581.6 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T457 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
581.6	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
566.6	PLEISTOCENE		CLAY	6.0	15.0	
560.6	PLEISTOCENE		CLAY	91.0	21.0	
469.6	CARBONDALE		GRAY SHALE	10.0	112.0	SOFT
459.6	CARBONDALE		LIMESTONE	3.0	122.0	HARD
456.6	CARBONDALE		GRAY SHALE	3.0	125.0	

MAPID: 01780068000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 1' S line, 40' E line of SW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.046611 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.039597 DATE COLLECTED: 10 / 15 / 1965
SURFACE ELEVATION (FT.): 594.9 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T503 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
594.9	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0	
569.9	PLEISTOCENE		CLAY	99.0	25.0	
470.9	CARBONDALE		DARK SHALE	14.0	124.0	

MAPID: 01780069000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.041796 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.039591 DATE COLLECTED: 10 / 12 / 1965
SURFACE ELEVATION (FT.): 600.9 LOGGED (FT.): 167.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T505 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.9	PLEISTOCENE	COLCHESTER	UNCONSOLIDATED	11.0	0.0	
589.9	PLEISTOCENE		CLAY	13.0	11.0	
576.9	PLEISTOCENE		SAND & GRAVEL	111.0	24.0	HARDPAN
465.9	CARBONDALE		GRAY SHALE	28.0	135.0	HARD
437.9	CARBONDALE		BLACK SHALE	1.0	163.0	SOFT
436.9	CARBONDALE		COAL	2.0	164.0	FAIR
434.9	CARBONDALE		UNDERCLAY	1.0	166.0	

MAPID: 01780070000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW NE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.037121 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.039585 DATE COLLECTED: 10 / 12 / 1965
SURFACE ELEVATION (FT.): 601.2 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T507 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
601.2	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
591.2	PLEISTOCENE		CLAY	30.0	10.0	
561.2	PLEISTOCENE		CLAY	108.0	40.0	

MAPID: 01780074000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 165' N line, 20' W line of SW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.051049 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.042789 DATE COLLECTED: 10 / 13 / 1965
SURFACE ELEVATION (FT.): 600.5 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T526D WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.5	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
584.5	PLEISTOCENE		CLAY	9.0	16.0	
575.5	PLEISTOCENE		CLAY	100.0	25.0	
475.5	CARBONDALE		SANDY SHALE	23.0	125.0	HARD

MAPID: 01780075000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 20' N line, 20' E line of SW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.046528 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.043182 DATE COLLECTED: 10 / 15 / 1965
SURFACE ELEVATION (FT.): 604.0 LOGGED (FT.): 147.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T553 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
604.0	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0	
595.0	PLEISTOCENE		CLAY	21.0	9.0	
574.0	PLEISTOCENE		CLAY	117.0	30.0	

MAPID: 01780076000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.041802 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.043229 DATE COLLECTED: 10 / 12 / 1965
SURFACE ELEVATION (FT.): 603.4 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T555 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.4	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
587.4	PLEISTOCENE		CLAY	9.0	16.0	
578.4	PLEISTOCENE		SAND & GRAVEL	103.0	25.0	HARDPAN
475.4	CARBONDALE		LIMESTONE	1.0	128.0	HARD
474.4	CARBONDALE		SANDY SHALE	19.0	129.0	HARD

MAPID: 01780077000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 6 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW NE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.037142 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.043225 DATE COLLECTED: 10 / 13 / 1965
SURFACE ELEVATION (FT.): 596.7 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T557 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
596.7	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
586.7	PLEISTOCENE		CLAY	22.0	10.0	
564.7	PLEISTOCENE		CLAY	116.0	32.0	

MAPID: 01780061000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 7 QUARTERS/FOOTAGES: 1' N line, 20' E line of SE NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.041884 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.028734 DATE COLLECTED: 10 / 13 / 1965
SURFACE ELEVATION (FT.): 599.5 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T35S WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
599.5	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
593.5	PLEISTOCENE		CLAY	9.0	6.0	
584.5	PLEISTOCENE		CLAY	104.0	15.0	
480.5	CARBONDALE		GRAY SHALE	15.0	119.0	SOFT
465.5	CARBONDALE		GRAY SHALE	14.0	134.0	

MAPID: 01780062000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 7 QUARTERS/FOOTAGES: 30' N line, 1' W line of NW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.051192 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.032232 DATE COLLECTED: 10 / 14 / 1965
SURFACE ELEVATION (FT.): 600.2 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T401 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.2	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
580.2	PLEISTOCENE		CLAY	108.0	20.0	
472.2	CARBONDALE		GRAY SHALE	12.0	128.0	
460.2	CARBONDALE		LIMESTONE	2.0	140.0	
458.2	CARBONDALE		SHALE WITH LIMESTONE	6.0	142.0	

MAPID: 01720295000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 8 QUARTERS/FOOTAGES: SW SW SE NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.027047 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.02555 DATE COLLECTED: 5 / 20 / 1970
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A311 WELL TYPE: Coal Test
COMMENT: NO FOOTAGES; NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	130.0	0.0	WITH GRAVEL

MAPID: 01720296000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 9 **QUARTERS/FOOTAGES:** NE SW SW NE
QUADRANGLE: NEWMANSVILLE **LONGITUDE:** -90.001977 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 40.02631 **DATE COLLECTED:** 5 / 20 / 1970
SURFACE ELEVATION (FT.): 563.0 **LOGGED (FT.):** 160.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON A328D **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES;NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
563.0	PLEISTOCENE		SOIL	10.0	0.0	
553.0	PLEISTOCENE		CLAY	20.0	10.0	SANDY
533.0	PLEISTOCENE		CLAY	60.0	30.0	
473.0	PLEISTOCENE		GRAVEL	30.0	90.0	ARTESIAN AQUIFER
443.0	PLEISTOCENE		CLAY, SAND & GRAVEL	40.0	120.0	

MAPID: 01770000000C **VERSION:** 1 **PROJECT:** NCRDS
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 9 **QUARTERS/FOOTAGES:** 350' S line, 100' E line
QUADRANGLE: OAKFORD **LONGITUDE:** -89.994621 **GEOLOGIST:** LOUCHIOS
CONFIDENTIAL: N **LATITUDE:** 40.018572 **DATE COLLECTED:** 0 / 0 / 1949
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Drillers Log
SOURCE: UTAH INTERNATIONAL 01C32 **WELL TYPE:** Coal Test
COMMENT: CODED COAL LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			NO RECORD	34.0	0.0	
561.0			DARK SHALE	35.0	34.0	
526.0			SHALE	74.0	69.0	
452.0			UNCLASSIFIED	15.0	143.0	
437.0			SHALE	22.0	158.0	
415.0			LIMESTONE	10.0	180.0	
405.0			SHALE	25.0	190.0	
380.0			LIMESTONE	25.0	215.0	
355.0			SHALE	25.0	240.0	
330.0			COAL	5.0	265.0	
325.0			CLAYSTONE	5.0	270.0	
320.0			SHALE	5.0	275.0	

MAPID: 01780056000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE SW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.008629 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.02132 DATE COLLECTED: 10 / 13 / 1966
SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T269 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
570.0	PLEISTOCENE		CLAY	30.0	15.0	
540.0	PLEISTOCENE		SAND & GRAVEL	7.0	45.0	
533.0	PLEISTOCENE		CLAY	79.0	52.0	
454.0	CARBONDALE		GRAY SHALE	17.0	131.0	

MAPID: 01780057000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE SW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.003844 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.021299 DATE COLLECTED: 10 / 13 / 1966
SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T271 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0	PLEISTOCENE		UNCONSOLIDATED	4.0	0.0	
581.0	PLEISTOCENE		CLAY	20.0	4.0	
561.0	PLEISTOCENE		SAND & GRAVEL	10.0	24.0	
551.0	PLEISTOCENE		CLAY	70.0	34.0	
481.0	CARBONDALE		DARK SHALE	44.0	104.0	

MAPID: 01780058000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 9 QUARTERS/FOOTAGES: 165' S line, 1' E line of SW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.008555 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.025435 DATE COLLECTED: 10 / 30 / 1966
SURFACE ELEVATION (FT.): 607.0 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T319J WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
607.0	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0	
578.0	PLEISTOCENE		SAND & GRAVEL	115.0	29.0	HARDPAN
463.0	CARBONDALE		GRAY SHALE	4.0	144.0	

MAPID: 01780059000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 9 QUARTERS/FOOTAGES: 165' S line, 1' E line of SE NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.00378 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.025406 DATE COLLECTED: 10 / 13 / 1966
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T321J WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.0	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
594.0	PLEISTOCENE		CLAY	23.0	6.0
571.0	PLEISTOCENE		CLAY	60.0	29.0
511.0	PLEISTOCENE		SAND & GRAVEL	36.0	89.0
475.0	CARBONDALE		GRAY SHALE	23.0	125.0

MAPID: 01780060000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 9 QUARTERS/FOOTAGES: 165' S line, 1' E line of SW NE
QUADRANGLE: OAKFORD LONGITUDE: -89.999009 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.025376 DATE COLLECTED: 10 / 13 / 1966
SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE T323J WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
585.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
575.0	PLEISTOCENE		CLAY	20.0	10.0
555.0	PLEISTOCENE		CLAY	90.0	30.0
465.0	PLEISTOCENE		SAND & GRAVEL	10.0	120.0
455.0	CARBONDALE		GRAY SHALE	18.0	130.0

MAPID: 01720156000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 10 QUARTERS/FOOTAGES: NW NW SE SE
QUADRANGLE: OAKFORD LONGITUDE: -89.979743 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.020833 DATE COLLECTED: 2 / 22 / 1972
SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 122.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A73 WELL TYPE: Coal Test
COMMENT: HOLE ON 1/4-LINE INTERSECTIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
611.0	PLEISTOCENE		CLAY	113.0	0.0
498.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	113.0
497.0	CARBONDALE	TURNER MINE	SHALE	2.0	114.0
495.0	CARBONDALE	SPRINGFIELD	COAL	5.0	116.0
490.0	CARBONDALE		UNDERCLAY	1.0	121.0

MAPID: 01720145000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: 0' N line, 330' W line of NW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.002628 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.010469 DATE COLLECTED: 2 / 25 / 1972
SURFACE ELEVATION (FT.): 603.0 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A1213 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
603.0	PLEISTOCENE		CLAY	48.0	0.0
555.0	PLEISTOCENE		CLAY & GRAVEL	7.0	48.0
548.0	PLEISTOCENE		CLAY	48.0	55.0
500.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	103.0
498.5	CARBONDALE	SPRINGFIELD	COAL	1.5	104.5
497.0	CARBONDALE		UNDERCLAY	2.0	106.0

MAPID: 01720146000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: 0' N line, 660' E line of NW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.001365 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.01046 DATE COLLECTED: 2 / 25 / 1972
SURFACE ELEVATION (FT.): 607.0 LOGGED (FT.): 114.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A122 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
607.0	PLEISTOCENE		CLAY	35.0	0.0
572.0	PLEISTOCENE		CLAY & GRAVEL	10.0	35.0
562.0	PLEISTOCENE		CLAY	63.0	45.0
499.0	CARBONDALE	SPRINGFIELD	COAL	5.0	108.0 TOP ERODED
494.0	CARBONDALE		UNDERCLAY	1.0	113.0

MAPID: 01720147000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: 12' S line, 81' E line of SW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.008917 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.01053 DATE COLLECTED: 6 / 12 / 1969
SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 84.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A119 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0	PLEISTOCENE		CLAY	16.0	0.0	SANDY
569.0	PLEISTOCENE		CLAY	30.0	16.0	WITH GRAVEL
539.0	PLEISTOCENE		CLAY	27.0	46.0	SANDY
512.0	PLEISTOCENE		CLAY	4.0	73.0	WITH GRAVEL AND FLOAT COAL
508.0	CARBONDALE		SHALE	2.5	77.0	DARK
505.5	CARBONDALE		COAL	0.5	79.5	
505.0	CARBONDALE		UNDERCLAY	4.0	80.0	

MAPID: 01720148000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: 25' N line, 0' E line of NE SW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.003812 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.010406 DATE COLLECTED: 3 / 11 / 1970
SURFACE ELEVATION (FT.): LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A21 WELL TYPE: Coal Test
COMMENT: ELEV. ILLEGABLE;NO SIGNIFICAN COAL LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	10.0	0.0	
-	PLEISTOCENE		CLAY	75.0	10.0	WITH GRAVEL
-	PLEISTOCENE		CLAY	13.5	85.0	THICKNESS ADJUSTED
-	CARBONDALE		LIMESTONE	1.5	98.5	WEATHERED
-	CARBONDALE		BLACK SHALE	1.0	100.0	
-	CARBONDALE		COAL	0.2	101.0	LOG REPORTS "COAL & GRAVEL"
-	CARBONDALE		GRAY SHALE	18.8	101.2	LS INTERBEDS

MAPID: 01720149000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 16 **QUARTERS/FOOTAGES:** 30' N line, 0' E line of NW SE
QUADRANGLE: OAKFORD **LONGITUDE:** -89.998995 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 40.010368 **DATE COLLECTED:** 3 / 11 / 1970
SURFACE ELEVATION (FT.): 613.0 **LOGGED (FT.):** 119.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON A123 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEV. RECONSTRUCTED FROM C. ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
613.0	PLEISTOCENE		CLAY	35.0	0.0	
578.0	PLEISTOCENE		CLAY	76.0	35.0	W/GRAVLE
502.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	111.0	WEATHERED
500.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	112.5	
499.0	CARBONDALE	SPRINGFIELD	COAL	4.5	114.0	
494.5	CARBONDALE		UNDERCLAY	0.5	118.5	

MAPID: 01720150000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 16 **QUARTERS/FOOTAGES:** 450' S line, 0' W line of SE SW
QUADRANGLE: NEWMANSVILLE **LONGITUDE:** -90.008557 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 40.004581 **DATE COLLECTED:** 2 / 29 / 1972
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 79.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON A19D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0	PLEISTOCENE		CLAY	58.0	0.0	
512.0	PLEISTOCENE		CLAY & GRAVEL	13.0	58.0	
499.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	71.0	
498.5	CARBONDALE	SPRINGFIELD	COAL	6.3	71.5	
492.2	CARBONDALE		UNDERCLAY	1.2	77.8	

MAPID: 01720151000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 16 **QUARTERS/FOOTAGES:** SE NW SE SW
QUADRANGLE: NEWMANSVILLE **LONGITUDE:** -90.006763 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 40.005566 **DATE COLLECTED:** 6 / 2 / 1969
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 100.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON A44DI **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES RECORDED;HOLE#UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0	PLEISTOCENE	SPRINGFIELD	CLAY	30.0	0.0	
565.0			SAND & GRAVEL	2.0	30.0	
563.0	PLEISTOCENE		CLAY	43.0	32.0	
520.0	PLEISTOCENE		CLAY, SAND & GRAVEL	15.0	75.0	
505.0	PLEISTOCENE		CLAY	4.0	90.0	
501.0	CARBONDALE		COAL	5.4	94.0	TOP ERODED
495.6	CARBONDALE		UNDERCLAY	0.6	99.4	

MAPID: 01720152000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 16 **QUARTERS/FOOTAGES:** 230' S line, 0' W line of NE SW
QUADRANGLE: NEWMANSVILLE **LONGITUDE:** -90.008593 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 40.007554 **DATE COLLECTED:** 2 / 28 / 1972
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 110.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON A69C **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE	SPRINGFIELD	CLAY	103.0	0.0	
497.0	PLEISTOCENE		SAND & GRAVEL	3.0	103.0	
494.0	CARBONDALE		COAL	3.0	106.0	TOP ERODED
491.0	CARBONDALE		UNDERCLAY	1.0	109.0	

MAPID: 01720153000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: 0' S line, 660' E line of NE SW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.006137 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.006905 DATE COLLECTED: 2 / 26 / 1972
SURFACE ELEVATION (FT.): 614.0 LOGGED (FT.): 119.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A70 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.0	PLEISTOCENE		CLAY	89.0	0.0	
525.0	PLEISTOCENE		BOULDER	2.0	89.0	
523.0	PLEISTOCENE		SAND & GRAVEL	17.0	91.0	
506.0	PLEISTOCENE		CLAY	4.0	108.0	
502.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	112.0	
501.0	CARBONDALE	SPRINGFIELD	COAL	5.5	113.0	
495.5	CARBONDALE		UNDERCLAY	0.5	118.5	

MAPID: 01720154000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: NW NW SW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.003162 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.00644 DATE COLLECTED: 2 / 24 / 1972
SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 116.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A71 WELL TYPE: Coal Test
COMMENT: NO FOOTAGES GIVEN;HOLE ON 1/4-LINE INTER

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0	PLEISTOCENE		CLAY	45.0	0.0	
560.0	PLEISTOCENE		SAND & GRAVEL	10.0	45.0	
550.0	PLEISTOCENE		CLAY	25.0	55.0	
525.0	PLEISTOCENE		CLAY	28.0	80.0	WITH GRAVEL
497.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	108.0	
496.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	109.0	
494.5	CARBONDALE	SPRINGFIELD	COAL	5.0	110.5	
489.5	CARBONDALE		UNDERCLAY	0.5	115.5	DEPTH AJUSTED

MAPID: 01720155000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: 330' S line, 0' W line of NW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.003779 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.007801 DATE COLLECTED: 2 / 25 / 1972
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 121.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A71C WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE	SPRINGFIELD	CLAY	40.0	0.0	TOP ERODED
572.0	PLEISTOCENE		CLAY & GRAVEL	5.0	40.0	
567.0	PLEISTOCENE		CLAY	71.0	45.0	
496.0	CARBONDALE		COAL	4.5	116.0	
491.5	CARBONDALE		UNDERCLAY	0.5	120.5	

MAPID: 01720157000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: 660' N line, 0' W line of NW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.003792 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.008651 DATE COLLECTED: 2 / 24 / 1972
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A96 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	35.0	0.0	
565.0	PLEISTOCENE		CLAY & GRAVEL	5.0	35.0	
560.0	PLEISTOCENE		CLAY	69.0	40.0	
491.0	PLEISTOCENE		BOULDER	1.5	109.0	LOG SAYS "LIMESTONE"
489.5	CARBONDALE		SHALE	4.5	110.5	GRAY & BLACK SHALE
485.0	CARBONDALE		GRAY SHALE	5.0	115.0	STICKY

MAPID: 01720158000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 16 QUARTERS/FOOTAGES: 660' N line, 0' E line of NE SE
 QUADRANGLE: OAKFORD LONGITUDE: -89.994163 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 40.008603 DATE COLLECTED: 3 / 3 / 1972
 SURFACE ELEVATION (FT.): 614.0 LOGGED (FT.): 123.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON A100 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.0	PLEISTOCENE		CLAY	27.0	0.0	
587.0	PLEISTOCENE		CLAY & GRAVEL	23.0	27.0	
564.0	PLEISTOCENE		GRAVEL	5.0	50.0	
559.0	PLEISTOCENE		CLAY	62.5	55.0	
496.5	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	117.5	
496.0	CARBONDALE	SPRINGFIELD	COAL	4.0	118.0	
492.0	CARBONDALE		UNDERCLAY	1.0	122.0	

MAPID: 01720159000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 17 QUARTERS/FOOTAGES: 120' S line, 411' W line of SW SW
 QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.030701 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 40.003725 DATE COLLECTED: 6 / 11 / 1969
 SURFACE ELEVATION (FT.): 603.0 LOGGED (FT.): 104.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON A9LB WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.0	PLEISTOCENE		SILTY CLAY	15.0	0.0	
588.0	PLEISTOCENE		CLAY	24.0	15.0	
564.0	PLEISTOCENE		CLAY & GRAVEL	5.0	39.0	
559.0	PLEISTOCENE		CLAY	36.0	44.0	
523.0	PLEISTOCENE		CLAY & GRAVEL	15.5	80.0	
507.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	95.5	
507.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	96.0	
506.5	CARBONDALE	SPRINGFIELD	COAL	5.6	96.5	
500.9	CARBONDALE		UNDERCLAY	1.9	102.1	THICKNESS AND DEPTH ADJUSTED

MAPID: 01720160000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 17 **QUARTERS/FOOTAGES:** SW SW SE NE
QUADRANGLE: NEWMANSVILLE **LONGITUDE:** -90.017577 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 40.011006 **DATE COLLECTED:** 6 / 12 / 1969
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 118.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON A115 **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES;NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
600.0			CLAY	19.0	0.0	SNDY
581.0			CLAY	22.0	19.0	WITH GRAVEL
559.0			GRAVEL	2.0	41.0	
557.0			CLAY	54.0	43.0	SNDY
503.0			GRAVEL	0.5	97.0	W/LIMESTONE/FLOAT COAL
502.5			GRAY SHALE	20.5	97.5	LIMESTONE LAMINAE

MAPID: 01720161000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 17 **QUARTERS/FOOTAGES:** 10' S line, 75' W line of SW NW
QUADRANGLE: NEWMANSVILLE **LONGITUDE:** -90.032053 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 40.010718 **DATE COLLECTED:** 6 / 12 / 1969
SURFACE ELEVATION (FT.): 609.0 **LOGGED (FT.):** 117.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON A109 **WELL TYPE:** Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
609.0	PLEISTOCENE		CLAY	20.0	0.0	SANDY
589.0	PLEISTOCENE		CLAY	18.0	20.0	WITH GRAVEL
571.0	PLEISTOCENE		SAND & GRAVEL	1.5	38.0	
569.5	PLEISTOCENE		CLAY	46.5	39.5	
523.0	PLEISTOCENE		CLAY	19.0	86.0	WITH GRAVEL
504.0	PLEISTOCENE		CLAY	12.0	105.0	W/SD,GVL,BLDR,+FLOAT COAL (107+)

MAPID: 01780055000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 17 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of NW SW
QUADRANGLE: NEWMANSVILLE **LONGITUDE:** -90.032241 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 40.007047 **DATE COLLECTED:** 10 / 13 / 1966
SURFACE ELEVATION (FT.): 599.0 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE T59 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
599.0	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
571.0	PLEISTOCENE		SAND & GRAVEL	110.0	28.0	HARDPAN
461.0	CARBONDALE		GRAY SHALE	10.0	138.0	

MAPID: 01720162000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 18 QUARTERS/FOOTAGES: 51' S line, 48' W line of SW SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.04157 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.003538 DATE COLLECTED: 6 / 12 / 1969
SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON A5 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0	PLEISTOCENE		CLAY	90.0	0.0	
515.0	PLEISTOCENE		BOULDER	0.5	90.0	
514.5	PLEISTOCENE		CLAY	6.5	90.5	
508.0	PLEISTOCENE		BOULDER	5.0	97.0	WEATHERED LIMESTONE
503.0	PLEISTOCENE		CLAY	13.0	102.0	
490.0	CARBONDALE		GRAY SHALE	2.0	115.0	
488.0	CARBONDALE		LIMESTONE	0.5	117.0	
487.5	CARBONDALE		GRAY SHALE	2.5	117.5	

MAPID: 01720163000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 19 QUARTERS/FOOTAGES: 12' S line, 45' E line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.032319 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.999838 DATE COLLECTED: 3 / 31 / 1970
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E559 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	42.0	0.0	
570.0	PLEISTOCENE		CLAY & GRAVEL	8.0	42.0	
562.0	PLEISTOCENE		CLAY	55.0	50.0	
507.0	PLEISTOCENE		CLAY & GRAVEL	9.0	105.0	
498.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	114.0	
497.0	CARBONDALE	SPRINGFIELD	COAL	4.5	115.0	
492.5	CARBONDALE		UNDERCLAY	0.5	119.5	

MAPID: 01720164000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 19 QUARTERS/FOOTAGES: 40' S line, 450' E line of SE NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.033759 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.996329 DATE COLLECTED: 3 / 13 / 1970
 SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E508N WELL TYPE: Coal Test
 COMMENT: RECON.-BEDROCK ELEV. NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0			CLAY	42.0	0.0	
563.0			CLAY & GRAVEL	6.0	42.0	
557.0			CLAY	32.0	48.0	
525.0			CLAY & GRAVEL	23.0	80.0	
502.0			BOULDERS & CLAY	20.0	103.0	
482.0			SHALE	4.0	123.0	
478.0			BLACK SHALE	1.0	127.0	
477.0			SHALE	12.0	128.0	W/LIMESTONE INTERBEDS

MAPID: 01720165000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 19 QUARTERS/FOOTAGES: 696' N line, 15' W line of NW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.041499 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.994342 DATE COLLECTED: 6 / 12 / 1968
 SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 137.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E540 WELL TYPE: Coal Test
 COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0	PLEISTOCENE		CLAY	15.0	0.0	+FILL
550.0	PLEISTOCENE		WOOD	20.0	15.0	SILTY
530.0	PLEISTOCENE		CLAY	17.0	35.0	
513.0	PLEISTOCENE		GRAVEL	9.0	52.0	
504.0	CARBONDALE		GRAY SHALE	4.0	61.0	
500.0	CARBONDALE		BLACK SHALE	1.5	65.0	
498.5	CARBONDALE		GRAY SHALE	3.5	66.5	
495.0	CARBONDALE		SHALE	15.0	70.0	W/LIMESTONE INTERBEDS
480.0	PLEISTOCENE		GRAY SHALE	43.0	85.0	DARK
437.0	CARBONDALE		BLACK SHALE	1.0	128.0	
436.0	CARBONDALE		SANDY SHALE	8.0	129.0	HARD

MAPID: 01720166000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 120' S line, 660' W line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.029765 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.992949 DATE COLLECTED: 2 / 15 / 1972
SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E460J WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0			CLAY	31.0	0.0	SILTY
574.0			CLAY	13.0	31.0	
561.0			CLAY	78.5	44.0	WITH GRAVEL
482.5			LIMESTONE	0.5	122.5	
482.0			BROWN SHALE	4.0	123.0	
478.0			BLACK SHALE	0.5	127.0	
477.5			GRAY SHALE	12.5	127.5	

MAPID: 01720167000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 35' N line, 10' E line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.0275 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.996114 DATE COLLECTED: 1 / 27 / 1972
SURFACE ELEVATION (FT.): 614.0 LOGGED (FT.): 125.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E511 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.0	PLEISTOCENE		CLAY	26.0	0.0	SILTY
588.0	PLEISTOCENE		CLAY	22.0	26.0	SANDY
566.0	PLEISTOCENE		CLAY	65.5	48.0	WITH GRAVEL
500.5	CARBONDALE		BLACK SHALE	1.5	113.5	
499.0	CARBONDALE		GRAY SHALE	2.5	115.0	
496.5	CARBONDALE	TURNER MINE	BLACK SHALE	0.9	117.5	
495.6	CARBONDALE	SPRINGFIELD	COAL	5.3	118.4	
490.3	CARBONDALE		UNDERCLAY	1.3	123.7	

MAPID: 01720168000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 660' S line, 12' W line of SW NW
QUADRANGLE: ASHLAND LONGITUDE: -90.032107 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.998031 DATE COLLECTED: 2 / 1 / 1972
SURFACE ELEVATION (FT.): 607.0 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E534 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
607.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
593.0	PLEISTOCENE		UNCONSOLIDATED	23.0	14.0	SURFACE + CLAY
570.0	PLEISTOCENE		CLAY	18.0	37.0	WITH GRAVEL
552.0	PLEISTOCENE		CLAY	13.0	55.0	
539.0	PLEISTOCENE		CLAY	37.0	68.0	WITH GRAVEL
502.0	PLEISTOCENE		SAND & GRAVEL	24.0	105.0	W/CLAY BANDS
478.0	CARBONDALE		BLACK SHALE	0.5	129.0	
477.5	CARBONDALE		GRAY SHALE	10.5	129.5	SILTY

MAPID: 01720169000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 990' S line, 60' W line of SW NW
QUADRANGLE: ASHLAND LONGITUDE: -90.031939 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.998942 DATE COLLECTED: 2 / 1 / 1972
SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E534CB WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0	PLEISTOCENE		CLAY	32.0	0.0	
573.0	PLEISTOCENE		CLAY	73.0	32.0	WITH GRAVEL
500.0	PLEISTOCENE		CLAY	8.0	105.0	SILTY W/GRAVEL
492.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	113.0	
491.5	CARBONDALE	SPRINGFIELD	COAL	4.5	113.5	
487.0	CARBONDALE		UNDERCLAY	0.0	118.0	THICKNESS NOT RECORDED

MAPID: 01720170000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 27' S line, 10' E line of NW NW
QUADRANGLE: ASHLAND LONGITUDE: -90.027499 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.999876 DATE COLLECTED: 3 / 31 / 1970
SURFACE ELEVATION (FT.): 619.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E561 WELL TYPE: Coal Test
COMMENT: ELEV RECONSTRUCTED FROM ELV OF COAL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
619.0	PLEISTOCENE		CLAY	15.0	0.0
604.0	PLEISTOCENE		SAND	10.0	15.0
594.0	PLEISTOCENE		CLAY	15.0	25.0
579.0	PLEISTOCENE		CLAY & GRAVEL	21.0	40.0
558.0	PLEISTOCENE		CLAY	44.0	61.0
514.0	PLEISTOCENE		BOULDER	6.0	105.0
508.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	111.0
507.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	112.0
505.0	CARBONDALE	SPRINGFIELD	COAL	5.2	114.0
499.8	CARBONDALE		UNDERCLAY	0.8	119.2

MAPID: 01720171000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 0' S line, 20' W line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.018011 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.999796 DATE COLLECTED: 3 / 21 / 1970
SURFACE ELEVATION (FT.): 615.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E565 WELL TYPE: Coal Test
COMMENT: ELEV RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
615.0	PLEISTOCENE		CLAY	100.0	0.0
515.0	PLEISTOCENE		CLAY & GRAVEL	3.5	100.0
511.5	CARBONDALE		SHALE	7.5	103.5
504.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	111.0
501.0	CARBONDALE	SPRINGFIELD	COAL	5.4	114.0
495.6	CARBONDALE		UNDERCLAY	0.6	119.4

MAPID: 01720172000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 327' N line, 72' E line of NE NE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.013627 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.002468 DATE COLLECTED: 6 / 10 / 1969
SURFACE ELEVATION (FT.): 602.0 LOGGED (FT.): 109.5 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E617DG WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0	PLEISTOCENE	SPRINGFIELD	CLAY	38.0	0.0	
564.0	PLEISTOCENE		GRAVEL	7.0	38.0	SOFT
557.0	PLEISTOCENE		CLAY	58.0	45.0	
499.0	CARBONDALE		COAL	5.8	103.0	TOP OF COAL ERODED
493.2	CARBONDALE		UNDERCLAY	0.7	108.8	

MAPID: 01720173000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 50' N line, 20' E line of NW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.027539 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.003254 DATE COLLECTED: 4 / 1 / 1970
SURFACE ELEVATION (FT.): 607.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E611 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
607.0			CLAY	15.0	0.0	
592.0			WOOD/CLAY	10.0	15.0	
582.0			CLAY	20.0	25.0	
562.0			SAND & GRAVEL	5.0	45.0	
557.0			CLAY	45.0	50.0	
512.0			CLAY & GRAVEL	13.0	95.0	INCLUDES FLOAT
499.0			COAL	2.0	108.0	
497.0			LIMESTONE	2.5	110.0	
494.5			SHALE	7.5	112.5	W/ LIMESTONE INTERBEDS

MAPID: 01720174000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 20' N line, 12' W line of NW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.032126 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.003341 DATE COLLECTED: 3 / 21 / 1970
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E611 WELL TYPE: Coal Test
COMMENT: ELEV RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	95.0	0.0	
505.0	PLEISTOCENE		CLAY & GRAVEL	4.0	95.0	
501.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	99.0	
498.5	CARBONDALE	SPRINGFIELD	COAL	5.2	101.5	
493.3	CARBONDALE		UNDERCLAY	1.3	106.7	

MAPID: 01720175000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 660' S line, 0' W line of SE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.027464 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.998032 DATE COLLECTED: 2 / 14 / 1972
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 124.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E536 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	21.0	0.0	
591.0	PLEISTOCENE		CLAY	5.0	21.0	WITH GRAVEL
586.0	PLEISTOCENE		SAND & GRAVEL	15.0	26.0	W/CLY BANDS
571.0	PLEISTOCENE		CLAY	68.5	41.0	WITH GRAVEL
502.5	CARBONDALE	TURNER MINE	BLACK SHALE	8.3	109.5	
494.2	CARBONDALE	SPRINGFIELD	COAL	5.4	117.8	
488.8	CARBONDALE		UNDERCLAY	0.8	123.2	

MAPID: 01720176000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 810' S line, 51' E line of SE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.01359 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.998452 DATE COLLECTED: 6 / 11 / 1969
SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 97.5 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E542D WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
580.0	PLEISTOCENE		CLAY	80.0	0.0
500.0	CARBONDALE		GRAY SHALE	7.5	80.0
492.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	87.5
492.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	88.0
490.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.3	90.0
488.7	CARBONDALE	SPRINGFIELD	COAL	5.8	91.3
482.9	CARBONDALE		UNDERCLAY	0.4	97.1

MAPID: 01720177000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 54' S line, 96' W line of SW NW
QUADRANGLE: ASHLAND LONGITUDE: -90.0318 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.996357 DATE COLLECTED: 1 / 31 / 1972
SURFACE ELEVATION (FT.): 592.0 LOGGED (FT.): 105.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E508 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
592.0	PLEISTOCENE		CLAY	16.0	0.0
576.0	PLEISTOCENE		CLAY & GRAVEL	31.0	16.0
545.0	PLEISTOCENE		CLAY	52.0	47.0 WITH GRAVEL
493.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	99.0
492.5	CARBONDALE	SPRINGFIELD	COAL	4.7	99.5
487.8	CARBONDALE		UNDERCLAY	0.8	104.2

MAPID: 01720178000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 330' S line, 0' W line of SW NW
QUADRANGLE: ASHLAND LONGITUDE: -90.032147 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.99712 DATE COLLECTED: 1 / 25 / 1972
SURFACE ELEVATION (FT.): 602.0 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E509C WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0	PLEISTOCENE		CLAY	17.0	0.0	SILTY
585.0	PLEISTOCENE		CLAY	7.0	17.0	
578.0	PLEISTOCENE		CLAY	27.0	24.0	WITH GRAVEL
551.0	PLEISTOCENE		CLAY	12.0	51.0	
539.0	PLEISTOCENE		CLAY	48.8	63.0	WITH GRAVEL
490.2	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	111.8	
489.7	CARBONDALE	SPRINGFIELD	COAL	4.8	112.3	
484.9	CARBONDALE		UNDERCLAY	0.9	117.1	

MAPID: 01720179000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 30' N line, 660' W line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.029775 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.996129 DATE COLLECTED: 1 / 31 / 1972
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 110.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E510 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	12.0	0.0	SILTY
588.0	PLEISTOCENE		CLAY	15.0	12.0	
573.0	PLEISTOCENE		CLAY & GRAVEL	11.0	27.0	
562.0	PLEISTOCENE		CLAY	54.0	38.0	WITH GRAVEL
508.0	PLEISTOCENE		CLAY & GRAVEL	6.0	92.0	
502.0	CARBONDALE		GRAY SHALE	2.5	98.0	
499.5	CARBONDALE		SANDSTONE	0.5	100.5	POSSIBLY LIMESTONE
499.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.2	101.0	
495.8	CARBONDALE	SPRINGFIELD	COAL	4.8	104.2	
491.0	CARBONDALE		UNDERCLAY	1.0	109.0	

MAPID: 01720180000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 20 **QUARTERS/FOOTAGES:** NW NW NW SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.022201 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.995765 **DATE COLLECTED:** 3 / 12 / 1970
SURFACE ELEVATION (FT.): 618.0 **LOGGED (FT.):** 131.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E513 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.0	PLEISTOCENE		CLAY	35.0	0.0	
583.0	PLEISTOCENE		BOULDERS & CLAY	12.0	35.0	
571.0	PLEISTOCENE		CLAY	33.0	47.0	
538.0	PLEISTOCENE		CLAY	35.0	80.0	WITH GRAVEL
503.0	CARBONDALE		SHALE	7.0	115.0	
496.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	122.0	
493.5	CARBONDALE	SPRINGFIELD	COAL	5.7	124.5	
487.8	CARBONDALE		UNDERCLAY	0.8	130.2	

MAPID: 01720181000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 20 **QUARTERS/FOOTAGES:** NE NE NW SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.018695 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.995767 **DATE COLLECTED:** 3 / 12 / 1970
SURFACE ELEVATION (FT.): 606.0 **LOGGED (FT.):** 117.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E515 **WELL TYPE:** Coal Test
COMMENT: ELEV.RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
606.0	PLEISTOCENE		CLAY	35.0	0.0	
571.0	PLEISTOCENE		CLAY & GRAVEL	5.0	35.0	
566.0	PLEISTOCENE		CLAY	35.0	40.0	
531.0	PLEISTOCENE		CLAY	28.0	75.0	WITH GRAVEL
503.0	CARBONDALE		SHALE	5.0	103.0	
498.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	108.0	
497.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	109.0	
495.0	CARBONDALE	SPRINGFIELD	COAL	5.5	111.0	
489.5	CARBONDALE		UNDERCLAY	0.5	116.5	

MAPID: 01720182000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 0' N line, 75' W line of SW NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.031868 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.994414 DATE COLLECTED: 2 / 14 / 1972
SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E484 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		CLAY	14.0	0.0	SILTY
596.0	PLEISTOCENE		CLAY	24.0	14.0	SANDY WITH GRAVEL WITH GRAVEL
572.0	PLEISTOCENE		CLAY	66.0	38.0	
506.0	PLEISTOCENE		CLAY	23.0	104.0	SANDY WITH GRAVEL
483.0	CARBONDALE		LIMESTONE	0.5	127.0	
482.5	CARBONDALE		BLACK SHALE	1.0	127.5	
481.5	CARBONDALE		GRAY SHALE	11.5	128.5	SOFT

MAPID: 01720183000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 660' N line, 330' W line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.030953 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.994387 DATE COLLECTED: 2 / 15 / 1972
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E484B WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	22.0	0.0	SILTY
590.0	PLEISTOCENE		CLAY	12.0	22.0	
578.0	PLEISTOCENE		CLAY	79.0	34.0	WITH GRAVEL
499.0	CARBONDALE		BLACK SHALE	2.0	113.0	
497.0	CARBONDALE		GRAY SHALE	5.0	115.0	

MAPID: 01720184000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 330' N line, 200' W line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.031423 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.995299 DATE COLLECTED: 2 / 14 / 1972
SURFACE ELEVATION (FT.): 608.0 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E484H WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
608.0	PLEISTOCENE		CLAY	17.0	0.0	SILTY
591.0	PLEISTOCENE		SAND & GRAVEL	4.0	17.0	W/CLY BANDS
587.0	PLEISTOCENE		CLAY	91.2	21.0	WITH GRAVEL
495.8	CARBONDALE	TURNER MINE	BLACK SHALE	0.6	112.2	
495.2	CARBONDALE	SPRINGFIELD	COAL	4.7	112.8	
490.5	CARBONDALE		UNDERCLAY	0.5	117.5	

MAPID: 01720185000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 660' N line, 660' W line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.029769 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.99439 DATE COLLECTED: 2 / 15 / 1972
SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E485 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.0	PLEISTOCENE		CLAY	26.0	0.0	SILTY
585.0	PLEISTOCENE		SAND & GRAVEL	6.0	26.0	
579.0	PLEISTOCENE		CLAY	77.0	32.0	WITH GRAVEL
502.0	CARBONDALE		LIMESTONE	0.5	109.0	
501.5	CARBONDALE		GRAY SHALE	3.9	109.5	
497.6	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	113.4	
497.1	CARBONDALE	SPRINGFIELD	COAL	5.1	113.9	
492.0	CARBONDALE		UNDERCLAY	1.0	119.0	

MAPID: 01720186000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 18' N line, 63' W line of SW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.022572 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.992578 DATE COLLECTED: 3 / 12 / 1979
SURFACE ELEVATION (FT.): 599.0 LOGGED (FT.): 114.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E463 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
599.0	PLEISTOCENE		CLAY	75.0	0.0	
524.0	PLEISTOCENE		CLAY	20.0	75.0	WITH GRAVEL
504.0	CARBONDALE		SHALE	8.0	95.0	
496.0	CARBONDALE	ST. DAVID	LIMESTONE	2.5	103.0	
493.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	105.5	
491.0	CARBONDALE	SPRINGFIELD	COAL	5.5	108.0	
485.5	CARBONDALE		UNDERCLAY	0.5	113.5	

MAPID: 01720187000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: NW NW SE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.017549 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.992186 DATE COLLECTED: 5 / 11 / 1970
SURFACE ELEVATION (FT.): 607.0 LOGGED (FT.): 112.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E465 WELL TYPE: Coal Test
COMMENT: ELEV RECONSTRUCTED FROM COAL ELEV.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
607.0	PLEISTOCENE		CLAY	100.0	0.0	
507.0	CARBONDALE		SHALE	2.0	100.0	
505.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	102.0	
504.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	103.0	
501.0	CARBONDALE	SPRINGFIELD	COAL	5.4	106.0	
495.6	CARBONDALE		UNDERCLAY	0.6	111.4	

MAPID: 01720188000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 110' S line, 330' E line of NW SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.028649 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.992924 DATE COLLECTED: 2 / 16 / 1972
 SURFACE ELEVATION (FT.): 562.0 LOGGED (FT.): 80.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E460L WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
562.0	PLEISTOCENE		SANDY CLAY	26.0	0.0	
536.0	PLEISTOCENE		SAND & GRAVEL	6.0	26.0	
530.0	PLEISTOCENE		CLAY	39.5	32.0	WITH GRAVEL
490.5	CARBONDALE		LIMESTONE	0.5	71.5	
490.0	CARBONDALE		GRAY SHALE	1.5	72.0	
488.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	73.5	
487.5	CARBONDALE	TURNER MINE	BLACK SHALE	0.8	74.5	
486.7	CARBONDALE	SPRINGFIELD	COAL	4.5	75.3	
482.2	CARBONDALE		UNDERCLAY	0.2	79.8	

MAPID: 01720189000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 20 QUARTERS/FOOTAGES: 66' S line, 8' E line of SW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.01818 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.989233 DATE COLLECTED: 6 / 12 / 1969
 SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 128.5 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E 415 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	80.0	0.0	
532.0	PLEISTOCENE		SAND & GRAVEL	10.0	80.0	
522.0	PLEISTOCENE		CLAY	10.0	90.0	
512.0	PLEISTOCENE		GRAVEL	15.0	100.0	SNDY THICKNESS ADJUSTED
497.0	CARBONDALE		GRAY SHALE	5.5	115.0	
491.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	120.5	
490.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.3	121.5	
489.2	CARBONDALE	SPRINGFIELD	COAL	0.2	122.8	FISHTAIL
489.0	CARBONDALE	SPRINGFIELD	COAL	5.1	123.0	
483.9	CARBONDALE		UNDERCLAY	0.4	128.1	

MAPID: 01720190000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 45' N line, 33' E line of NE SE
QUADRANGLE: TALLULA LONGITUDE: -89.994734 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.995585 DATE COLLECTED: 6 / 9 / 1969
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 160.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E525 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	30.0	0.0	
582.0	PLEISTOCENE		SAND & GRAVEL	2.0	30.0	
580.0	PLEISTOCENE		CLAY	58.0	32.0	
522.0	PLEISTOCENE		CLAY	40.0	90.0	SILTY
482.0	PLEISTOCENE		CLAY	7.5	130.0	
474.5	PLEISTOCENE		SAND & GRAVEL	2.5	137.5	WITH FLOAT COAL
472.0	CARBONDALE		LIMESTONE	1.0	140.0	
471.0	CARBONDALE		GRAY SHALE	5.0	141.0	
466.0	CARBONDALE		LIMESTONE	1.0	146.0	
465.0	CARBONDALE		GRAY SHALE	13.0	147.0	

MAPID: 01720191000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 0' S line, 660' E line of SE NE
QUADRANGLE: TALLULA LONGITUDE: -89.996758 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.996098 DATE COLLECTED: 2 / 25 / 1972
SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 133.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E524 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0	PLEISTOCENE		CLAY	23.0	0.0	
572.0	PLEISTOCENE		GRAVEL	2.0	23.0	
570.0	PLEISTOCENE		CLAY	86.5	25.0	
483.5	CARBONDALE		BLACK SHALE	3.5	111.5	
480.0	CARBONDALE		GRAY SHALE	18.0	115.0	

MAPID: 01720192000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 0' S line, 330' W line of SE NE
 QUADRANGLE: TALLULA LONGITUDE: -89.997967 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.996107 DATE COLLECTED: 2 / 25 / 1972
 SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 113.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E523B WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	85.0	0.0	
515.0	CARBONDALE		GRAY SHALE	18.0	85.0	
497.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	103.0	
496.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	104.0	
494.5	CARBONDALE	TURNER MINE	LIMESTONE	0.5	105.5	CONCRETION
494.0	CARBONDALE	SPRINGFIELD	COAL	6.0	106.0	
488.0	CARBONDALE		UNDERCLAY	1.0	112.0	

MAPID: 01720193000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: NW NW NE SE
 QUADRANGLE: TALLULA LONGITUDE: -89.998571 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.995663 DATE COLLECTED: 6 / 2 / 1969
 SURFACE ELEVATION (FT.): 594.0 LOGGED (FT.): 109.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E523 WELL TYPE: Coal Test
 COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
594.0	PLEISTOCENE		CLAY	20.0	0.0	
574.0	PLEISTOCENE		CLAY & GRAVEL	5.0	20.0	
569.0	PLEISTOCENE		CLAY	65.0	25.0	
504.0	CARBONDALE		SHALE	1.0	90.0	LIMEY
503.0	CARBONDALE		GRAY SHALE	9.0	91.0	
494.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	100.0	
492.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	101.5	
491.0	CARBONDALE	SPRINGFIELD	COAL	5.5	103.0	
485.5	CARBONDALE		UNDERCLAY	0.5	108.5	

MAPID: 01720195000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 90' E line of NE SE
QUADRANGLE: TALLULA LONGITUDE: -89.994786 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.994321 DATE COLLECTED: 2 / 28 / 1972
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E500 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
612.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
594.0	PLEISTOCENE		CLAY	91.0	18.0
503.0	CARBONDALE	ST. DAVID	LIMESTONE	7.0	109.0
496.0	CARBONDALE	TURNER MINE	BLACK SHALE	5.0	116.0
491.0	CARBONDALE	SPRINGFIELD	COAL	4.0	121.0
487.0	CARBONDALE		UNDERCLAY	5.0	125.0

MAPID: 01720196000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 330' S line, 0' E line of NE SE
QUADRANGLE: TALLULA LONGITUDE: -89.994795 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.994599 DATE COLLECTED: 2 / 28 / 1973
SURFACE ELEVATION (FT.): 615.0 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E475C WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
615.0	PLEISTOCENE		CLAY	17.0	0.0
598.0	PLEISTOCENE		UNCONSOLIDATED	4.0	17.0
594.0	PLEISTOCENE		CLAY	34.0	21.0
560.0	PLEISTOCENE		GRAVEL	5.0	55.0
555.0	PLEISTOCENE		CLAY	59.0	60.0
496.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	119.0
493.0	CARBONDALE	SPRINGFIELD	COAL	5.0	122.0
488.0	CARBONDALE		UNDERCLAY	4.0	127.0

MAPID: 01720197000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: NE NE SE SE
 QUADRANGLE: TALLULA LONGITUDE: -89.995151 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.992056 DATE COLLECTED: 5 / 12 / 1970
 SURFACE ELEVATION (FT.): 614.0 LOGGED (FT.): 136.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E475 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.0	PLEISTOCENE		SOIL	4.0	0.0	
610.0	PLEISTOCENE		CLAY	120.0	4.0	
490.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	124.0	CORRELATION UNCERTAIN
489.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	124.5	CORRELATION UNCERTAIN
487.5	CARBONDALE	SPRINGFIELD	COAL	2.8	126.5	CORRELATION UNCERTAIN
484.7	CARBONDALE		LIMESTONE	1.0	129.3	HARD
483.7	CARBONDALE	SPRINGFIELD	COAL	4.2	130.3	CORRELATION UNCERTAIN
479.5	CARBONDALE		UNDERCLAY	1.5	134.5	

MAPID: 01720198000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: SW SW NE SE
 QUADRANGLE: TALLULA LONGITUDE: -89.998663 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.992977 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 617.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E473 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.0	PLEISTOCENE		SOIL	3.0	0.0	
614.0	PLEISTOCENE		CLAY	31.0	3.0	DEPTH AND THICKNESS UNCERTAIN
583.0	PLEISTOCENE		CLAY	65.0	34.0	W/GRAVEL;DEPTH UNCERTAIN
518.0			UNCLASSIFIED	30.0	99.0	LITH. ILLEGABLE;D&T UNCERTAIN
488.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	129.0	HARD; THICKNESS UNCERTAIN
487.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	129.5	
486.0	CARBONDALE	SPRINGFIELD	COAL	5.5	131.0	
480.5	CARBONDALE		UNDERCLAY	1.5	136.5	

MAPID: 01720199000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 0' S line, 660' E line of NE NE
QUADRANGLE: TALLULA LONGITUDE: -89.996611 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.999678 DATE COLLECTED: 2 / 24 / 1972
SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 143.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E574 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
611.0	PLEISTOCENE		CLAY	23.0	0.0
588.0	PLEISTOCENE		CLAY & GRAVEL	5.0	23.0
583.0	PLEISTOCENE		CLAY	107.0	28.0
476.0	CARBONDALE		GRAY SHALE	8.0	135.0

MAPID: 01720200000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 0' S line, 330' W line of NE NE
QUADRANGLE: TALLULA LONGITUDE: -89.997849 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.999687 DATE COLLECTED: 2 / 25 / 1972
SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 126.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E573B WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
611.0	PLEISTOCENE		CLAY	15.0	0.0
596.0	PLEISTOCENE		GRAVEL	14.0	15.0
582.0	PLEISTOCENE		CLAY	6.0	29.0
576.0	PLEISTOCENE		CLAY & GRAVEL	50.0	35.0
526.0	PLEISTOCENE		CLAY	5.0	85.0
521.0	CARBONDALE		SHALE WITH LIMESTONE	11.0	90.0
510.0	CARBONDALE		GRAY SHALE	16.0	101.0
494.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	117.0
492.0	CARBONDALE	SPRINGFIELD	COAL	5.5	119.0
486.5	CARBONDALE		UNDERCLAY	1.5	124.5

MAPID: 01720201000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 21 **QUARTERS/FOOTAGES:** NE
QUADRANGLE: TALLULA **LONGITUDE:** -89.999034 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.999696 **DATE COLLECTED:** 2 / 25 / 1972
SURFACE ELEVATION (FT.): 602.0 **LOGGED (FT.):** 117.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E573 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0	PLEISTOCENE		CLAY	21.0	0.0	
581.0	PLEISTOCENE		GRAVEL	14.0	21.0	WITH FLOAT COAL
567.0	PLEISTOCENE		CLAY	37.0	35.0	
530.0	PLEISTOCENE		GRAVEL	8.0	72.0	
522.0	PLEISTOCENE		CLAY	16.0	80.0	
506.0	CARBONDALE		GRAY SHALE	12.0	96.0	
494.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.6	108.0	
492.4	CARBONDALE	SPRINGFIELD	COAL	5.4	109.6	
487.0	CARBONDALE		UNDERCLAY	2.0	115.0	

MAPID: 01720202000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 21 **QUARTERS/FOOTAGES:** 0' N line, 270' E line of NW NW
QUADRANGLE: NEWMANSVILLE **LONGITUDE:** -90.009514 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 40.003346 **DATE COLLECTED:** 2 / 29 / 1972
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 75.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E618B **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0	PLEISTOCENE		CLAY	68.0	0.0	
502.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	68.0	
501.5	CARBONDALE	SPRINGFIELD	COAL	5.2	68.5	
496.3	CARBONDALE		UNDERCLAY	1.3	73.7	

MAPID: 01720203000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 0' N line, 2000' E line of NE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.00127 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.003291 DATE COLLECTED: 3 / 12 / 1970
SURFACE ELEVATION (FT.): 596.0 LOGGED (FT.): 96.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E622 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
596.0	PLEISTOCENE		CLAY	3.0	0.0	
593.0	PLEISTOCENE		CLAY	12.0	3.0	SILTY
581.0	PLEISTOCENE		CLAY	70.0	15.0	WITH GRAVEL
511.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	85.0	
509.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	86.5	
507.0	CARBONDALE	SPRINGFIELD	COAL	6.4	89.0	
500.6	CARBONDALE		UNDERCLAY	0.6	95.4	

MAPID: 01720204000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 0' N line, 1000' E line of NE NE
QUADRANGLE: OAKFORD LONGITUDE: -89.997685 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.003267 DATE COLLECTED: 3 / 12 / 1970
SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 123.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E623B WELL TYPE: Coal Test
COMMENT: ELEV RECON. FROM COAL LEVEL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.0	PLEISTOCENE		CLAY	15.0	0.0	
596.0	PLEISTOCENE		CLAY	65.0	15.0	WITH GRAVEL
531.0	PLEISTOCENE		CLAY	14.0	80.0	
517.0	CARBONDALE		GRAY SHALE	19.0	94.0	
498.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	113.0	
497.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	114.0	
494.5	CARBONDALE	SPRINGFIELD	COAL	5.7	116.5	
488.8	CARBONDALE		UNDERCLAY	0.8	122.2	

MAPID: 01720205000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: NE NE NE NE
QUADRANGLE: OAKFORD LONGITUDE: -89.994717 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.002802 DATE COLLECTED: 5 / 14 / 1969
SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 160.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E625 WELL TYPE: Coal Test
COMMENT: NO FOOTAGES GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		CLAY	121.5	0.0	
488.5	CARBONDALE	SPRINGFIELD	COAL	2.0	121.5	TOP ERODED
486.5	CARBONDALE		UNDERCLAY	0.5	123.5	
486.0	CARBONDALE		GRAY SHALE	17.0	124.0	
469.0	CARBONDALE		LIMESTONE	0.5	141.0	
468.5	CARBONDALE		GRAY SHALE	12.5	141.5	
456.0	CARBONDALE		LIMESTONE W/ SHALE	6.0	154.0	

MAPID: 01720206000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 72' N line, 819' E line of NE SW
QUADRANGLE: ASHLAND LONGITUDE: -90.006851 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.99597 DATE COLLECTED: 6 / 10 / 1969
SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 124.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E519BB WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		CLAY	25.0	0.0	
585.0	PLEISTOCENE		CLAY & GRAVEL	5.0	25.0	
580.0	PLEISTOCENE		CLAY	68.0	30.0	
512.0	PLEISTOCENE		GRAVEL	4.0	98.0	
508.0	CARBONDALE		LIMESTONE	4.0	102.0	STREAKS
504.0	CARBONDALE		GRAY SHALE	10.5	106.0	
493.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	116.5	
492.5	CARBONDALE	SPRINGFIELD	COAL	5.7	117.5	ANALYSIS AVAILABLE
486.8	CARBONDALE		UNDERCLAY	0.8	123.2	

MAPID: 01720207000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: NW SW NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.012854 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.993976 DATE COLLECTED: 5 / 8 / 1969
SURFACE ELEVATION (FT.): 582.0 LOGGED (FT.): 104.5 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E467D WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
582.0	PLEISTOCENE		SILT	18.0	0.0	
564.0	PLEISTOCENE		GRAVEL	2.0	18.0	
562.0	PLEISTOCENE		CLAY	60.0	20.0	
502.0	PLEISTOCENE		CLAY	10.0	80.0	POSSIBLY GYSH
492.0	CARBONDALE		LIMESTONE	4.0	90.0	
488.0	CARBONDALE		GRAY SHALE	1.0	94.0	
487.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.3	95.0	SOFT
485.7	CARBONDALE	SPRINGFIELD	COAL	6.7	96.3	ANALYSIS AVAILABLE
479.0	CARBONDALE		UNDERCLAY	1.5	103.0	

MAPID: 01720208000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 31' S line, 42' E line of SE SE
QUADRANGLE: TALLULA LONGITUDE: -89.994835 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.989002 DATE COLLECTED: 6 / 9 / 1969
SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E425 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		CLAY	28.0	0.0	
582.0	PLEISTOCENE		CLAY & GRAVEL	12.0	28.0	
570.0	PLEISTOCENE		CLAY	58.0	40.0	
512.0	PLEISTOCENE		CLAY & GRAVEL	2.0	98.0	
510.0	CARBONDALE		LIMESTONE	2.5	100.0	
507.5	CARBONDALE		SHALE	3.0	102.5	WITH COAL
504.5	CARBONDALE		LIMESTONE	2.5	105.5	
502.0	CARBONDALE		GRAY SHALE	17.0	108.0	
485.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	125.0	
482.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.8	128.0	
478.2	CARBONDALE	SPRINGFIELD	COAL	5.6	131.8	
472.6	CARBONDALE		UNDERCLAY	0.6	137.4	

MAPID: 01780182000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 660' N line, 30' W line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.013338 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.994393 DATE COLLECTED: 6 / 20 / 1966
SURFACE ELEVATION (FT.): 586.9 LOGGED (FT.): 106.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N492 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
586.9	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
571.9	PLEISTOCENE		CLAY	70.0	15.0	
501.9	PLEISTOCENE		GRAY SHALE	11.0	85.0	
490.9	CARBONDALE	ST. DAVID	LIMESTONE	0.8	96.0	
490.1	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	96.8	SOFT
487.9	CARBONDALE	SPRINGFIELD	COAL	5.8	99.0	HARD
482.1	CARBONDALE		UNDERCLAY	1.2	104.8	

MAPID: 01780183000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SE
QUADRANGLE: TALLULA LONGITUDE: -89.999155 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.996113 DATE COLLECTED: 6 / 10 / 1966
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 132.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N523 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
580.0	PLEISTOCENE		CLAY	10.0	20.0	
570.0	PLEISTOCENE		CLAY	78.0	30.0	
492.0	CARBONDALE		GRAY SHALE	10.0	108.0	
482.0	CARBONDALE		LIMESTONE	1.8	118.0	
480.2	CARBONDALE		BLACK SHALE	5.3	119.8	SOFT
475.0	CARBONDALE		COAL	5.9	125.0	GOOD
469.1	CARBONDALE		UNDERCLAY	1.1	130.9	

MAPID: 01720209000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 27' S line, 1026' E line of SW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.012439 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.981881 DATE COLLECTED: 6 / 13 / 1969
 SURFACE ELEVATION (FT.): 623.0 LOGGED (FT.): 144.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E31811B WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
623.0	PLEISTOCENE		CLAY	40.0	0.0	SANDY6
583.0	PLEISTOCENE		CLAY & GRAVEL	6.0	40.0	
577.0	PLEISTOCENE		CLAY	37.0	46.0	
540.0	PLEISTOCENE		SAND & GRAVEL	2.0	83.0	
538.0	PLEISTOCENE		CLAY	22.0	85.0	
516.0	CARBONDALE	BRERETON	LIMESTONE	6.0	107.0	
510.0	CARBONDALE	ANNA	BLACK SHALE	0.5	113.0	
509.5	CARBONDALE	HERRIN	COAL	0.8	113.5	
508.7	CARBONDALE		GRAY SHALE	3.7	114.3	
505.0	CARBONDALE		LIMESTONE	2.0	118.0	
503.0	CARBONDALE		SHALE	8.0	120.0	W/LIMESTONE LAMINAE
495.0	CARBONDALE		SHALE	7.0	128.0	
488.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	135.0	
487.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	135.5	
485.0	CARBONDALE	SPRINGFIELD	BONE COAL	0.6	138.0	
484.4	CARBONDALE	SPRINGFIELD	COAL	4.9	138.6	
479.5	CARBONDALE		UNDERCLAY	0.5	143.5	

MAPID: 01720210000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: NW NW NW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.012904 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.988605 DATE COLLECTED: 3 / 13 / 1970
 SURFACE ELEVATION (FT.): 597.0 LOGGED (FT.): 119.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E417 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
597.0	PLEISTOCENE		CLAY	3.0	0.0	
594.0	PLEISTOCENE		CLAY	22.0	3.0	WITH GRAVEL
572.0	PLEISTOCENE		CLAY	30.0	25.0	
542.0	PLEISTOCENE		CLAY	39.0	55.0	WITH GRAVEL
503.0	CARBONDALE		GRAY SHALE	15.0	94.0	LIMESTONE INTERBEDS
488.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	109.0	HARD
487.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	109.5	
484.0	CARBONDALE	SPRINGFIELD	COAL	5.3	113.0	
478.7	CARBONDALE		UNDERCLAY	0.7	118.3	

MAPID: 01720211000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 25' N line, 47' E line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.00426 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.988921 DATE COLLECTED: 4 / 15 / 1970
SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 117.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E419 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0	PLEISTOCENE		CLAY	78.0	0.0	
512.0	PLEISTOCENE		CLAY & GRAVEL	7.0	78.0	
505.0	CARBONDALE	ANNA	BLACK SHALE	1.0	85.0	WITH COAL
504.0	CARBONDALE		SHALE	4.0	86.0	
500.0	CARBONDALE		LIMESTONE	2.0	90.0	
498.0	CARBONDALE		SHALE	15.5	92.0	
482.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	107.5	
482.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	108.0	
480.0	CARBONDALE	SPRINGFIELD	COAL	5.7	110.0	
474.3	CARBONDALE		UNDERCLAY	1.3	115.7	

MAPID: 01720212000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 12' N line, 35' W line of NW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.003966 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.988955 DATE COLLECTED: 4 / 15 / 1970
SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E421 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0	PLEISTOCENE		CLAY	95.0	0.0	
510.0	PLEISTOCENE		CLAY & GRAVEL	8.0	95.0	
502.0	CARBONDALE		SHALE	13.0	103.0	
489.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	116.0	
487.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	117.5	
484.0	CARBONDALE	SPRINGFIELD	COAL	6.0	121.0	
478.0	CARBONDALE		UNDERCLAY	1.0	127.0	

MAPID: 01720213000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 66' N line, 615' E line of SW NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.001603 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.985176 DATE COLLECTED: 6 / 13 / 1969
 SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 133.7 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E322 WELL TYPE: Coal Test
 COMMENT: MONTH OF DATA UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	76.0	0.0	
524.0	MODESTO		BLACK SHALE	2.0	76.0	
522.0	CARBONDALE	DANVILLE	COAL	1.0	78.0	
521.0	CARBONDALE		GRAY SHALE	11.0	79.0	
510.0	CARBONDALE		LIMESTONE	4.5	90.0	
505.5	CARBONDALE		GRAY SHALE	7.0	94.5	
498.5	CARBONDALE	HERRIN	COAL	0.5	101.5	
498.0	CARBONDALE		GRAY SHALE	6.0	102.0	
492.0	CARBONDALE		LIMESTONE	3.0	108.0	
489.0	CARBONDALE		GRAY SHALE	13.5	111.0	
475.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	124.5	
475.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	125.0	
474.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	126.0	W/PYRITE & BONE;THICKNESS ADJUSTED
472.0	CARBONDALE	SPRINGFIELD	COAL	5.5	128.0	
466.5	CARBONDALE		UNDERCLAY	0.2	133.5	

MAPID: 01720214000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 12' N line, 20' E line of NW NE
 QUADRANGLE: TALLULA LONGITUDE: -89.999459 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.988919 DATE COLLECTED: 4 / 15 / 1970
 SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 141.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E423 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		CLAY	40.0	0.0	
580.0	PLEISTOCENE		SAND & GRAVEL	20.0	40.0	WITH FLOAT COAL
560.0	PLEISTOCENE		CLAY	55.0	60.0	
505.0	CARBONDALE		LIMESTONE	1.0	115.0	
504.0	CARBONDALE		SHALE	11.0	116.0	
493.0	CARBONDALE	ST. DAVID	LIMESTONE	3.5	127.0	
489.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	130.5	
486.5	CARBONDALE	SPRINGFIELD	COAL	6.8	133.5	
479.7	CARBONDALE		UNDERCLAY	0.7	140.3	

MAPID: 01720215000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 25' N line, 330' W line of SW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.012281 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.985359 DATE COLLECTED: 4 / 16 / 1970
 SURFACE ELEVATION (FT.): 613.0 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E367B WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
613.0	PLEISTOCENE		SOIL	2.5	0.0	SANDY
610.5	PLEISTOCENE		CLAY	103.5	2.5	
507.0	CARBONDALE		GRAY SHALE	10.0	106.0	
497.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	116.0	HARD
496.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.1	117.0	
491.9	CARBONDALE	SPRINGFIELD	COAL	6.1	121.1	
485.8	CARBONDALE		UNDERCLAY	1.8	127.2	

MAPID: 01720216000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 0' S line, 10' W line of NE NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.008741 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.985405 DATE COLLECTED: 4 / 15 / 1970
 SURFACE ELEVATION (FT.): 613.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E36? WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
613.0	PLEISTOCENE		CLAY	95.0	0.0	
518.0	CARBONDALE		LIMESTONE	2.5	95.0	
515.5	CARBONDALE		SHALE	7.5	97.5	
508.0	CARBONDALE	ANNA	BLACK SHALE	1.0	105.0	WITH COAL
507.0	CARBONDALE		SHALE	6.0	106.0	
501.0	CARBONDALE		LIMESTONE	1.0	112.0	
500.0	CARBONDALE		SHALE	14.5	113.0	
485.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	127.5	
485.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.0	128.0	
481.0	CARBONDALE	SPRINGFIELD	COAL	5.5	132.0	
475.5	CARBONDALE	SPRINGFIELD	COAL	0.5	137.5	

MAPID: 01720217000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 8' S line, 12' E line of NW NE
 QUADRANGLE: TALLULA LONGITUDE: -89.999441 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.985365 DATE COLLECTED: 4 / 16 / 1970
 SURFACE ELEVATION (FT.): 616.0 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E373 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.0	PLEISTOCENE		CLAY	98.0	0.0	
518.0	CARBONDALE		SHALE	7.0	98.0	LIMESTONE
511.0	CARBONDALE		LIMESTONE	3.0	105.0	
508.0	CARBONDALE		SHALE	12.0	108.0	
496.0	CARBONDALE		LIMESTONE	2.0	120.0	
494.0	CARBONDALE		SHALE	16.0	122.0	
478.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	138.0	
477.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	139.0	
474.5	CARBONDALE	SPRINGFIELD	COAL	6.1	141.5	
468.4	CARBONDALE		UNDERCLAY	0.4	147.6	

MAPID: 01720218000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 25' S line, 330' W line of SW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.012252 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.981876 DATE COLLECTED: 4 / 15 / 1970
 SURFACE ELEVATION (FT.): 617.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E318B WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.0	PLEISTOCENE		SOIL	2.5	0.0	SANDY
614.5	PLEISTOCENE		CLAY	77.5	2.5	
537.0	CARBONDALE		GRAY SHALE	15.0	80.0	
522.0	CARBONDALE	BRERETON	LIMESTONE	2.0	95.0	HARD
520.0	CARBONDALE	HERRIN	COAL	7.0	97.0	LITHOLOGY UNCERTAIN
513.0	CARBONDALE		SHALE	27.0	104.0	LIMESTONE INTERBEDS
486.0	CARBONDALE	SPRINGFIELD	COAL	1.5	131.0	
484.5	CARBONDALE	SPRINGFIELD	LIMESTONE	0.4	132.5	
484.1	CARBONDALE	SPRINGFIELD	COAL	3.1	132.9	
481.0	CARBONDALE		UNDERCLAY	2.0	136.0	

MAPID: 01720220000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 0' S line, 900' E line of NE SE
QUADRANGLE: TALLULA LONGITUDE: -89.997979 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.978112 DATE COLLECTED: 2 / 24 / 1972
SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E265B WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.0	PLEISTOCENE		CLAY	31.0	0.0	SILTY
580.0	PLEISTOCENE		CLAY	38.0	31.0	WITH GRAVEL
542.0	PLEISTOCENE		CLAY	26.0	69.0	SANDY WITH GRAVEL
516.0	CARBONDALE	BRERETON	LIMESTONE	2.5	95.0	
513.5	CARBONDALE	ANNA	BLACK SHALE	0.5	97.5	
513.0	CARBONDALE		GRAY SHALE	22.2	98.0	
490.8	CARBONDALE	ST. DAVID	LIMESTONE	1.0	120.2	
489.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.9	121.2	
486.9	CARBONDALE	SPRINGFIELD	COAL	5.2	124.1	
481.7	CARBONDALE		UNDERCLAY	0.7	129.3	

MAPID: 01780177000C VERSION: 1

PROJECT: NCRDS012

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 28 QUARTERS/FOOTAGES: 825' S line, 1' E line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.004093 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.987649 DATE COLLECTED: 10 / 19 / 1965
SURFACE ELEVATION (FT.): 597.6 LOGGED (FT.): 114.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N388J WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
597.6	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
583.6	PLEISTOCENE		CLAY	9.0	14.0	
574.6	PLEISTOCENE		SAND & GRAVEL	63.0	23.0	
511.6	CARBONDALE		GRAY SHALE	19.0	86.0	
492.6	CARBONDALE	ST. DAVID	LIMESTONE	1.0	105.0	HARD
491.6	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	106.0	SOFT
489.6	CARBONDALE	SPRINGFIELD	COAL	4.8	108.0	HARD
484.8	CARBONDALE		UNDERCLAY	1.2	112.8	

MAPID: 01720219000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 660' N line, 0' W line of SE SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.018109 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.976361 DATE COLLECTED: 2 / 28 / 1972
 SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 139.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E240 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		CLAY	17.0	0.0	SILTY
603.0	PLEISTOCENE		CLAY	21.0	17.0	SANDY
582.0	PLEISTOCENE		CLAY	31.0	38.0	WITH GRAVEL
551.0	PLEISTOCENE		CLAY	25.0	69.0	SANDY WITH GRAVEL
526.0	PLEISTOCENE		SAND & GRAVEL	3.5	94.0	W/CLAY BEDS
522.5	CARBONDALE	BRERETON	LIMESTONE	3.0	97.5	
519.5	CARBONDALE	ANNA	BLACK SHALE	0.5	100.5	
519.0	CARBONDALE		GRAY SHALE	15.5	101.0	HARD
503.5	CARBONDALE		LIMESTONE	0.5	116.5	
503.0	CARBONDALE		GRAY SHALE	12.8	117.0	
490.2	CARBONDALE	ST. DAVID	LIMESTONE	0.7	129.8	
489.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	130.5	
486.7	CARBONDALE	SPRINGFIELD	COAL	5.0	133.3	DEPTH ADJUSTED TO COAL THICKNESS
481.7	CARBONDALE		UNDERCLAY	0.7	138.3	

MAPID: 01720221000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 700' N line, 900' E line of NE SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.01665 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.979876 DATE COLLECTED: 3 / 25 / 1972
 SURFACE ELEVATION (FT.): 619.0 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E290B WELL TYPE: Coal Test
 COMMENT: MONTH OF DATA UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.0	PLEISTOCENE		CLAY	13.0	0.0	SILTY
606.0	PLEISTOCENE		CLAY	24.0	13.0	SANDY WITH GRAVEL
582.0	PLEISTOCENE		CLAY	21.0	37.0	WITH GRAVEL
561.0	PLEISTOCENE		CLAY	47.5	58.0	SANDY WITH GRAVEL
513.5	CARBONDALE		LIMESTONE	2.0	105.5	
511.5	CARBONDALE		GRAY SHALE	15.8	107.5	
495.7	CARBONDALE	TURNER MINE	BLACK SHALE	1.8	123.3	
493.9	CARBONDALE	SPRINGFIELD	COAL	4.9	125.1	
489.0	CARBONDALE		UNDERCLAY	1.0	130.0	

MAPID: 01720222000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 250' N line, 110' W line of NE SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.017729 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.981116 DATE COLLECTED: 3 / 25 / 1972
 SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E290F WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	15.0	0.0	SILTY
597.0	PLEISTOCENE		CLAY	20.5	15.0	SANDY WITH GRAVEL
576.5	PLEISTOCENE		CLAY	21.5	35.5	WITH GRAVEL
555.0	PLEISTOCENE		CLAY	45.0	57.0	SANDY WITH GRAVEL
510.0	CARBONDALE		LIMESTONE	1.5	102.0	
508.5	CARBONDALE		GRAY SHALE	15.5	103.5	
493.0	CARBONDALE	ST. DAVID	LIMESTONE	1.3	119.0	
491.7	CARBONDALE	TURNER MINE	BLACK SHALE	1.8	120.3	
489.9	CARBONDALE	SPRINGFIELD	COAL	5.1	122.1	
484.8	CARBONDALE		UNDERCLAY	0.8	127.2	

MAPID: 01720223000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 140' N line, 0' W line of NW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.032126 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.988636 DATE COLLECTED: 3 / 14 / 1970
 SURFACE ELEVATION (FT.): 609.0 LOGGED (FT.): 123.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON 20223 WELL TYPE: Coal Test
 COMMENT: ELEV. RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
609.0	PLEISTOCENE		CLAY	40.0	0.0	
569.0	PLEISTOCENE		SAND & GRAVEL	3.0	40.0	
566.0	PLEISTOCENE		CLAY	53.0	43.0	WITH GRAVEL
513.0	CARBONDALE		SHALE	18.0	96.0	LIMESTONE INTERBEDS
495.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	114.0	HARD
494.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	114.5	
492.0	CARBONDALE	SPRINGFIELD	COAL	5.7	117.0	
486.3	CARBONDALE		UNDERCLAY	0.3	122.7	

MAPID: 01720224000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 500' N line, 0' E line of NW NW

QUADRANGLE: ASHLAND LONGITUDE: -90.027472 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.987652 DATE COLLECTED: 3 / 14 / 1970

SURFACE ELEVATION (FT.): 608.0 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E386CJ WELL TYPE: Coal Test

COMMENT: ELEV. RECONSTRUCTED FROM COAL ELEV.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
608.0	PLEISTOCENE		CLAY	85.0	0.0	
523.0	PLEISTOCENE		CLAY	24.0	85.0	WITH GRAVEL
499.0	CARBONDALE		SHALE	12.0	109.0	
487.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	121.0	
485.5	CARBONDALE	SPRINGFIELD	COAL	5.5	122.5	
480.0	CARBONDALE		UNDERCLAY	1.0	128.0	

MAPID: 01720225000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: NW NW NW NE

QUADRANGLE: ASHLAND LONGITUDE: -90.022226 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.988589 DATE COLLECTED: 3 / 13 / 1970

SURFACE ELEVATION (FT.): 607.0 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E413 WELL TYPE: Coal Test

COMMENT: ELEV. RECONSTRUCTED FROM COAL ELEV.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
607.0	PLEISTOCENE		CLAY	85.0	0.0	
522.0	PLEISTOCENE		CLAY	23.0	85.0	WITH GRAVEL
499.0	CARBONDALE		SHALE	14.0	108.0	
485.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	122.0	
482.5	CARBONDALE	SPRINGFIELD	COAL	5.3	124.5	
477.2	CARBONDALE		UNDERCLAY	1.2	129.8	

MAPID: 01720226000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: NW NW SW NW

QUADRANGLE: ASHLAND LONGITUDE: -90.031581 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.984951 DATE COLLECTED: 3 / 15 / 1970

SURFACE ELEVATION (FT.): 592.0 LOGGED (FT.): 113.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E359 WELL TYPE: Coal Test

COMMENT: ELEV. RECONSTRUCTED FROM COAL ELEV.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
592.0	PLEISTOCENE		CLAY	3.0	0.0	
589.0	PLEISTOCENE		CLAY	27.0	3.0	SANDY
562.0	PLEISTOCENE		CLAY	56.0	30.0	
506.0	CARBONDALE		GRAY SHALE	18.5	86.0	LIMESTONE INTERBEDS
487.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	104.5	
485.5	CARBONDALE	SPRINGFIELD	COAL	5.5	106.5	
480.0	CARBONDALE		UNDERCLAY	1.0	112.0	

MAPID: 01720227000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 0' S line, 12' E line of NW NW

QUADRANGLE: ASHLAND LONGITUDE: -90.02753 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.985411 DATE COLLECTED: 3 / 16 / 1970

SURFACE ELEVATION (FT.): 602.0 LOGGED (FT.): 116.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E361 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0	PLEISTOCENE		CLAY	25.0	0.0	
577.0	PLEISTOCENE		CLAY	15.0	25.0	WITH GRAVEL
562.0	PLEISTOCENE		CLAY	55.0	40.0	
507.0	PLEISTOCENE		GRAVEL	1.0	95.0	FLOAT COAL
506.0	CARBONDALE		SHALE	10.5	96.0	
495.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	106.5	
494.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	107.5	
492.0	CARBONDALE	SPRINGFIELD	COAL	5.5	110.0	
486.5	CARBONDALE		UNDERCLAY	0.5	115.5	

MAPID: 01720228000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 0' N line, 330' W line of SE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.016953 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.98543 DATE COLLECTED: 3 / 14 / 1970
SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E363B WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		CLAY	98.0	0.0	
512.0	PLEISTOCENE		CLAY & GRAVEL	11.0	98.0	
501.0	CARBONDALE		SHALE	13.0	109.0	
488.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	122.0	
486.5	CARBONDALE	SPRINGFIELD	COAL	2.5	123.5	
484.0	CARBONDALE	SPRINGFIELD	LIMESTONE	1.5	126.0	CONCRETION
482.5	CARBONDALE	SPRINGFIELD	COAL	1.3	127.5	
481.2	CARBONDALE		UNDERCLAY	1.2	128.8	

MAPID: 01720229000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 0' S line, 570' W line of NW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.020767 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.985424 DATE COLLECTED: 2 / 22 / 1972
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 121.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E364 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	31.0	0.0	SILTY
581.0	PLEISTOCENE		CLAY	35.0	31.0	WITH GRAVEL
546.0	PLEISTOCENE		GLACIAL DRIFT	8.0	66.0	VERY SOFT
538.0	PLEISTOCENE		CLAY	34.0	74.0	SANDY
504.0	CARBONDALE		LIMESTONE	1.5	108.0	
502.5	CARBONDALE		GRAY SHALE	2.7	109.5	
499.8	CARBONDALE	ST. DAVID	LIMESTONE	1.0	112.2	
498.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	113.2	
496.3	CARBONDALE	SPRINGFIELD	COAL	5.1	115.7	
491.2	CARBONDALE		UNDERCLAY	0.2	120.8	

MAPID: 01720230000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 8' N line, 15' W line of SW NE

QUADRANGLE: ASHLAND LONGITUDE: -90.022758 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.985399 DATE COLLECTED: 3 / 13 / 1970

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 113.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E356 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	85.0	0.0	
515.0	CARBONDALE		SHALE	19.0	85.0	
496.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	104.0	
495.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.9	105.0	
493.1	CARBONDALE	SPRINGFIELD	COAL	4.9	106.9	
488.2	CARBONDALE		UNDERCLAY	1.2	111.8	

MAPID: 01720231000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 0' N line, 21' E line of SW SW

QUADRANGLE: ASHLAND LONGITUDE: -90.027608 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.978168 DATE COLLECTED: 3 / 19 / 1970

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 134.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E261 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		CLAY	3.0	0.0	
617.0	PLEISTOCENE		CLAY & GRAVEL	32.0	3.0	
585.0	PLEISTOCENE		CLAY	37.0	35.0	
548.0	PLEISTOCENE		CLAY	35.0	72.0	WITH GRAVEL
513.0	CARBONDALE		GRAY SHALE	16.0	107.0	LIMESTONE INTERBEDS
497.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	123.0	
495.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	125.0	
492.5	CARBONDALE	SPRINGFIELD	COAL	5.5	127.5	
487.0	CARBONDALE		UNDERCLAY	1.0	133.0	

MAPID: 01720233000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 30' N line, 20' E line of NW SW

QUADRANGLE: ASHLAND LONGITUDE: -90.027581 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.981707 DATE COLLECTED: 3 / 16 / 1970

SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 104.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E311 WELL TYPE: Coal Test

COMMENT: ,

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0	PLEISTOCENE		CLAY	76.0	0.0	
514.0	CARBONDALE		LIMESTONE	3.0	76.0	WEATHERED
511.0	CARBONDALE		GRAY SHALE	14.0	79.0	LIMESTONE INTERBEDS
497.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	93.0	HARD
495.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	94.5	
493.0	CARBONDALE	SPRINGFIELD	COAL	6.0	97.0	
487.0	CARBONDALE		UNDERCLAY	1.0	103.0	

MAPID: 01720234000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 39' S line, 609' W line of SE NW

QUADRANGLE: ASHLAND LONGITUDE: -90.025322 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.981902 DATE COLLECTED: 6 / 9 / 1969

SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 135.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E312 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	40.0	0.0	SANDY
572.0	PLEISTOCENE		CLAY	68.0	40.0	WITH GRAVEL
504.0	PLEISTOCENE		CLAY	18.2	108.0	LIMESTONE RIBS
485.8	CARBONDALE	ST. DAVID	LIMESTONE	0.3	126.2	DARK
485.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	126.5	SOFT
482.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	130.0	
481.5	CARBONDALE	SPRINGFIELD	COAL	4.2	130.5	
477.3	CARBONDALE		UNDERCLAY	0.3	134.7	

MAPID: 01720235000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 450' S line, 550' E line of SW NE

QUADRANGLE: ASHLAND LONGITUDE: -90.020104 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.983045 DATE COLLECTED: 2 / 22 / 1972

SURFACE ELEVATION (FT.): 614.0 LOGGED (FT.): 135.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E314E WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.0	PLEISTOCENE		CLAY	34.0	0.0	SILTY
580.0	PLEISTOCENE		CLAY	37.0	34.0	WITH GRAVEL
543.0	PLEISTOCENE		CLAY	37.0	71.0	SANDY WITH GRAVEL
506.0	CARBONDALE		LIMESTONE	1.5	108.0	
504.5	CARBONDALE		GRAY SHALE	15.0	109.5	
489.5	CARBONDALE	ST. DAVID	LIMESTONE	1.2	124.5	
488.3	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	125.7	
485.2	CARBONDALE	SPRINGFIELD	COAL	4.9	128.8	
480.3	CARBONDALE		UNDERCLAY	1.3	133.7	

MAPID: 01720236000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 234' S line, 687' E line of SW NE

QUADRANGLE: ASHLAND LONGITUDE: -90.020594 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.982447 DATE COLLECTED: 6 / 19 / 1969

SURFACE ELEVATION (FT.): 617.0 LOGGED (FT.): 132.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E314S WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.0	PLEISTOCENE		CLAY	40.0	0.0	SANDY
577.0	PLEISTOCENE		CLAY	69.0	40.0	WITH GRAVEL
508.0	PLEISTOCENE		CLAY	12.0	109.0	
496.0	CARBONDALE	ST. DAVID	LIMESTONE	1.2	121.0	
494.8	CARBONDALE	TURNER MINE	BLACK SHALE	4.1	122.2	
490.7	CARBONDALE	SPRINGFIELD	COAL	4.9	126.3	
485.8	CARBONDALE		UNDERCLAY	0.8	131.2	

MAPID: 01720237000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 0' N line, 800' W line of NW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.019947 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.981801 DATE COLLECTED: 2 / 24 / 1972
 SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 116.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E314N WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	12.0	0.0	SILTY
588.0	PLEISTOCENE		CLAY	79.0	12.0	WITH GRAVEL
509.0	CARBONDALE		LIMESTONE	1.3	91.0	
507.7	CARBONDALE		GRAY SHALE	15.0	92.3	
492.7	CARBONDALE	ST. DAVID	LIMESTONE	1.1	107.3	
491.6	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	108.4	
489.3	CARBONDALE	SPRINGFIELD	COAL	4.9	110.7	
484.4	CARBONDALE		UNDERCLAY	0.4	115.6	

MAPID: 01720238000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 18' S line, 48' W line of SW SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.032108 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.974591 DATE COLLECTED: 3 / 16 / 1970
 SURFACE ELEVATION (FT.): 628.0 LOGGED (FT.): 150.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E209 WELL TYPE: Coal Test
 COMMENT: ELEV. RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
628.0	PLEISTOCENE		CLAY	35.0	0.0	
593.0	PLEISTOCENE		CLAY & GRAVEL	10.0	35.0	
583.0	PLEISTOCENE		CLAY	57.0	45.0	
526.0	CARBONDALE		LIMESTONE & SHALE	14.0	102.0	
512.0	CARBONDALE	ANNA	BLACK SHALE	1.0	116.0	W/COAL, REPORTED AS #6
511.0	CARBONDALE		SHALE	24.0	117.0	
487.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	141.0	
486.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	142.0	
483.5	CARBONDALE	SPRINGFIELD	COAL	5.0	144.5	
478.5	CARBONDALE		UNDERCLAY	0.5	149.5	

MAPID: 01720239000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 132' S line, 330' E line of SW SW

QUADRANGLE: ASHLAND LONGITUDE: -90.028739 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.974909 DATE COLLECTED: 3 / 16 / 1970

SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E210 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0	PLEISTOCENE		CLAY	59.0	0.0	
546.0	PLEISTOCENE		CLAY & GRAVEL	4.0	59.0	
542.0	PLEISTOCENE		CLAY	27.0	63.0	
515.0	PLEISTOCENE		GRAVEL	6.0	90.0	W/LIMESTONE BOULDERS
509.0	CARBONDALE	HERRIN	SHALE/COAL	1.0	96.0	
508.0	CARBONDALE		SHALE	13.0	97.0	LIMESTONE INTERBEDS
495.0	CARBONDALE		SHALE	10.5	110.0	
484.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	120.5	
483.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	121.5	
482.0	CARBONDALE	SPRINGFIELD	COAL	5.4	123.0	
476.6	CARBONDALE		UNDERCLAY	0.6	128.4	

MAPID: 01720240000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 230' S line, 45' W line of SE SE

QUADRANGLE: ASHLAND LONGITUDE: -90.017943 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.975195 DATE COLLECTED: 3 / 6 / 1972

SURFACE ELEVATION (FT.): 616.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E215J WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.0	PLEISTOCENE		CLAY	14.0	0.0	SILTY
602.0	PLEISTOCENE		CLAY	22.0	14.0	
580.0	PLEISTOCENE		SAND & GRAVEL	15.0	36.0	
565.0	PLEISTOCENE		CLAY	33.0	51.0	W/GRAVEL, LOST DRILING FLUID
532.0	PLEISTOCENE		CLAY	9.0	84.0	SANDY WITH GRAVEL
523.0	PLEISTOCENE		BOULDER	1.0	93.0	LIKELY BOULDER
522.0	PLEISTOCENE		CLAY	2.5	94.0	
519.5	CARBONDALE		LIMESTONE	5.5	96.5	
514.0	CARBONDALE		GRAY SHALE	14.0	102.0	
500.0	CARBONDALE		GRAY SHALE	12.0	116.0	LIMESTONE INTERBEDS
488.0	CARBONDALE	ST. DAVID	LIMESTONE	1.1	128.0	
486.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.2	129.1	
483.7	CARBONDALE	SPRINGFIELD	COAL	4.8	132.3	
478.9	CARBONDALE		UNDERCLAY	0.9	137.1	

MAPID: 01720242000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: SW NW NW SW

QUADRANGLE: ASHLAND LONGITUDE: -90.031629 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.980425 DATE COLLECTED: 5 / 9 / 1969

SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E294C WELL TYPE: Coal Test

COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		CLAY	20.0	0.0	SANDY
590.0	PLEISTOCENE		CLAY	56.0	20.0	
534.0	PLEISTOCENE		SAND & GRAVEL	4.0	76.0	
530.0	PLEISTOCENE		CLAY	19.0	80.0	
511.0	CARBONDALE		SHALE	7.0	99.0	LIMESTONE INTERBEDS
504.0	CARBONDALE		GRAY SHALE	6.0	106.0	
498.0	CARBONDALE		LIMESTONE	6.0	112.0	
492.0	CARBONDALE		GRAY SHALE	1.5	118.0	
490.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	119.5	
488.5	CARBONDALE	SPRINGFIELD	COAL	5.5	121.5	
483.0	CARBONDALE		UNDERCLAY	1.0	127.0	

MAPID: 01780155000C VERSION: 1 PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 660' E line of SE SW

QUADRANGLE: ASHLAND LONGITUDE: -90.025195 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.974553 DATE COLLECTED: 10 / 5 / 1966

SURFACE ELEVATION (FT.): 619.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE N212 WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.0	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0	
589.0	PLEISTOCENE		CLAY	79.0	30.0	
510.0	CARBONDALE		GRAY SHALE	20.0	109.0	
490.0	CARBONDALE		LIMESTONE	1.0	129.0	
489.0	CARBONDALE		BLACK SHALE	1.0	130.0	
488.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	131.0	
487.5	CARBONDALE	SPRINGFIELD	COAL	4.9	131.5	HARD
482.6	CARBONDALE		UNDERCLAY	1.6	136.4	

MAPID: 01780156000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of SE SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.022831 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.974558 **DATE COLLECTED:** 5 / 31 / 1966
SURFACE ELEVATION (FT.): 620.4 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N213 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
620.4	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0
582.4	PLEISTOCENE		GRAVEL	3.0	38.0
579.4	PLEISTOCENE		SAND & GRAVEL	58.0	41.0
521.4	CARBONDALE		LIMESTONE	0.8	99.0
520.6	CARBONDALE		GRAY SHALE	17.2	99.8
503.4	CARBONDALE		SANDSTONE	3.0	117.0
500.4	CARBONDALE		SANDY SHALE	16.0	120.0
484.4	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	136.0
483.9	CARBONDALE	SPRINGFIELD	COAL	1.5	136.5 SOFT
482.4	CARBONDALE		UNDERCLAY	10.0	138.0

MAPID: 01780157000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1' S line, 225' W line of SE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.017296 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.974563 **DATE COLLECTED:** 6 / 6 / 1966
SURFACE ELEVATION (FT.): 621.0 **LOGGED (FT.):** 137.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N215NB **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
621.0	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0
614.0	PLEISTOCENE		CLAY	22.0	7.0
592.0	PLEISTOCENE		CLAY	70.0	29.0
522.0	CARBONDALE		SHALE	1.0	99.0 SOFT
521.0	CARBONDALE		LIMESTONE	1.0	100.0
520.0	CARBONDALE		COAL	1.0	101.0
519.0	CARBONDALE		GRAY SHALE	25.0	102.0
494.0	CARBONDALE		ROCK	1.0	127.0
493.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	128.0
491.0	CARBONDALE	SPRINGFIELD	COAL	5.3	130.0 HARD
485.7	CARBONDALE		UNDERCLAY	1.7	135.3

MAPID: 01780158000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.025195 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.976371 DATE COLLECTED: 10 / 5 / 1966
 SURFACE ELEVATION (FT.): 616.0 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N237 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0	
592.0	PLEISTOCENE		SAND & GRAVEL	56.0	24.0	
536.0	CARBONDALE		GRAY SHALE	22.0	80.0	SOFT
514.0	CARBONDALE		SHALE WITH LIMESTONE	4.0	102.0	HARD
510.0	CARBONDALE		GRAY SHALE	2.0	106.0	
508.0	CARBONDALE		COAL	1.0	108.0	
507.0	CARBONDALE		GRAY SHALE	6.0	109.0	
501.0	CARBONDALE		LIMESTONE	2.0	115.0	HARD
499.0	CARBONDALE		GRAY SHALE	13.0	117.0	
486.0	CARBONDALE		LIMESTONE	1.5	130.0	HARD
484.5	CARBONDALE		BLACK SHALE	0.5	131.5	SOFT
484.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	132.0	SOFT
482.0	CARBONDALE	SPRINGFIELD	COAL	4.3	134.0	
477.7	CARBONDALE		UNDERCLAY	1.8	138.3	

MAPID: 01780159000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 660' N line, 1' E line of SE SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.02283 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.976354 DATE COLLECTED: 10 / 5 / 1966
 SURFACE ELEVATION (FT.): 580.4 LOGGED (FT.): 103.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N238 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.4	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
573.4	PLEISTOCENE		CLAY	5.0	7.0	
568.4	PLEISTOCENE		CLAY	48.0	12.0	
520.4	CARBONDALE		SHALE WITH LIMESTONE	11.0	60.0	HARD
509.4	CARBONDALE		BLACK SHALE	1.0	71.0	SOFT
508.4	CARBONDALE		COAL	1.0	72.0	HARD
507.4	CARBONDALE		GRAY SHALE	21.0	73.0	
486.4	CARBONDALE	ST. DAVID	LIMESTONE	1.0	94.0	HARD CAPROCK
485.4	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	95.0	
483.9	CARBONDALE	SPRINGFIELD	COAL	5.0	96.5	HARD
478.9	CARBONDALE		UNDERCLAY	1.5	101.5	

MAPID: 01780162000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE SW
QUADRANGLE: ASHLAND LONGITUDE: -90.027529 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.978172 DATE COLLECTED: 10 / 18 / 1965
SURFACE ELEVATION (FT.): 618.2 LOGGED (FT.): 136.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N261 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.2	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
608.2	PLEISTOCENE		CLAY	20.0	10.0	
588.2	PLEISTOCENE		CLAY	81.0	30.0	
507.2	CARBONDALE		LIMESTONE	1.0	111.0	
506.2	CARBONDALE		SHALE WITH LIMESTONE	13.0	112.0	
493.2	CARBONDALE	ST. DAVID	LIMESTONE	1.9	125.0	
491.3	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	126.9	
488.2	CARBONDALE	SPRINGFIELD	COAL	4.6	130.0	HARD
483.6	CARBONDALE		UNDERCLAY	1.4	134.6	

MAPID: 01780163000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE SW
QUADRANGLE: ASHLAND LONGITUDE: -90.022826 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.978179 DATE COLLECTED: 5 / 31 / 1966
SURFACE ELEVATION (FT.): 619.9 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N263 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.9	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
612.9	PLEISTOCENE		CLAY	11.0	7.0	
601.9	PLEISTOCENE		SAND & GRAVEL	85.0	18.0	
516.9	CARBONDALE		LIMESTONE	4.0	103.0	HARD
512.9	CARBONDALE		BLACK SHALE	2.0	107.0	SOFT
510.9	CARBONDALE		GRAY SHALE	21.0	109.0	
489.9	CARBONDALE	ST. DAVID	LIMESTONE	1.5	130.0	HARD
488.4	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	131.5	SOFT
486.9	CARBONDALE	SPRINGFIELD	COAL	3.8	133.0	
483.1	CARBONDALE		UNDERCLAY	1.2	136.8	

MAPID: 01780164000C **VERSION:** 1 **PROJECT:** NCRSD02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of NE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.018112 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.978186 **DATE COLLECTED:** 5 / 31 / 1966
SURFACE ELEVATION (FT.): 619.6 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N265 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.6	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0	
595.6	PLEISTOCENE		SAND & GRAVEL	62.0	24.0	
533.6	CARBONDALE		GRAY SHALE	15.0	86.0	SOFT
518.6	CARBONDALE		SHALE WITH LIMESTONE	6.0	101.0	HARD
512.6	CARBONDALE		GRAY SHALE	10.0	107.0	SOFT
502.6	CARBONDALE		COAL W/ BLACK SHALE	1.0	117.0	
501.6	CARBONDALE		GRAY SHALE	15.0	118.0	HARD
486.6	CARBONDALE	ST. DAVID	LIMESTONE	1.0	133.0	HARD
485.6	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	134.0	SOFT
482.6	CARBONDALE	SPRINGFIELD	COAL	3.9	137.0	
478.7	CARBONDALE		UNDERCLAY	1.1	140.9	
477.6	CARBONDALE		GRAY SHALE	6.0	142.0	

MAPID: 01780167000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 29 **QUARTERS/FOOTAGES:** 20' N line, 1' W line of NE SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.027506 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.981735 **DATE COLLECTED:** 10 / 4 / 1965
SURFACE ELEVATION (FT.): 586.4 **LOGGED (FT.):** 108.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N311 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
586.4	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0	
577.4	PLEISTOCENE		CLAY	14.0	9.0	
563.4	PLEISTOCENE		CLAY	57.0	23.0	
506.4	CARBONDALE		GRAY SHALE	14.0	80.0	SOFT
492.4	CARBONDALE	ST. DAVID	LIMESTONE	1.0	94.0	
491.4	CARBONDALE	TURNER MINE	BLACK SHALE	4.0	95.0	SOFT
487.4	CARBONDALE	SPRINGFIELD	COAL	4.3	99.0	
483.1	CARBONDALE		UNDERCLAY	4.8	103.3	

MAPID: 01780168000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 300' W line of SW NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.021741 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.981802 DATE COLLECTED: 10 / 12 / 1965
 SURFACE ELEVATION (FT.): 574.2 LOGGED (FT.): 93.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N313B WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
574.2	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	
561.2	PLEISTOCENE		CLAY	50.0	13.0	
511.2	CARBONDALE		LIMESTONE	0.8	63.0	
510.4	CARBONDALE		SHALE WITH LIMESTONE	3.2	63.8	
507.2	CARBONDALE		LIMESTONE	0.8	67.0	
506.4	CARBONDALE		GRAY SHALE	16.3	67.8	
490.2	CARBONDALE	ST. DAVID	LIMESTONE	1.5	84.0	
488.7	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	85.5	
487.2	CARBONDALE	SPRINGFIELD	COAL	4.9	87.0	GOOD
482.3	CARBONDALE		UNDERCLAY	1.1	91.9	

MAPID: 01780169000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 20' S line, 20' E line of SW NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.018201 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.981861 DATE COLLECTED: 10 / 8 / 1965
 SURFACE ELEVATION (FT.): 593.1 LOGGED (FT.): 105.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N315 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
593.1	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0	
584.1	PLEISTOCENE		CLAY	6.0	9.0	
578.1	PLEISTOCENE		CLAY	71.0	15.0	
507.1	CARBONDALE		LIMESTONE	1.0	86.0	SOFT
506.1	CARBONDALE		GRAY SHALE	7.0	87.0	LIMY
499.1	CARBONDALE	ST. DAVID	LIMESTONE	1.0	94.0	HARD
498.1	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	95.0	SOFT
495.1	CARBONDALE	SPRINGFIELD	COAL	5.0	98.0	
490.1	CARBONDALE		UNDERCLAY	2.0	103.0	

MAPID: 01780170000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 29 **QUARTERS/FOOTAGES:** 660' S line, 165' W line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.022225 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.983621 **DATE COLLECTED:** 10 / 27 / 1965
SURFACE ELEVATION (FT.): 568.6 **LOGGED (FT.):** 83.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N338N **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
568.6	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
561.6	PLEISTOCENE		CLAY	14.0	7.0	
547.6	PLEISTOCENE		CLAY	40.0	21.0	
507.6	CARBONDALE		GRAY SHALE	12.0	61.0	
495.6	CARBONDALE	ST. DAVID	LIMESTONE	2.0	73.0	HARD
493.6	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	75.0	SOFT
492.6	CARBONDALE	SPRINGFIELD	COAL	4.8	76.0	
487.8	CARBONDALE		BLACK SHALE	1.0	80.8	
486.8	CARBONDALE		UNDERCLAY	1.2	81.8	

MAPID: 01780171000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of NW NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.032155 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.985404 **DATE COLLECTED:** 10 / 6 / 1965
SURFACE ELEVATION (FT.): 588.7 **LOGGED (FT.):** 110.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N359 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
588.7	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
581.7	PLEISTOCENE		CLAY	12.0	7.0	
569.7	PLEISTOCENE		CLAY	63.0	19.0	
506.7	CARBONDALE		COAL W/ BLACK SHALE	2.0	82.0	TOP ERODED
504.7	CARBONDALE		GRAY SHALE	18.0	84.0	
486.7	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	102.0	SOFT
484.7	CARBONDALE	SPRINGFIELD	COAL	3.5	104.0	GOOD
481.2	CARBONDALE		UNDERCLAY	2.5	107.5	

MAPID: 01780172000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of NW NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.027491 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.985414 **DATE COLLECTED:** 10 / 6 / 1965
SURFACE ELEVATION (FT.): 600.4 **LOGGED (FT.):** 118.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N361 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.4	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0	
588.4	PLEISTOCENE		CLAY	6.0	12.0	
582.4	PLEISTOCENE		SAND & GRAVEL	78.0	18.0	
504.4	CARBONDALE		LIMESTONE	2.0	96.0	SOFT
502.4	CARBONDALE		SHALE WITH LIMESTONE	11.0	98.0	
491.4	CARBONDALE	ST. DAVID	LIMESTONE	1.0	109.0	
490.4	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	110.0	SOFT
488.4	CARBONDALE	SPRINGFIELD	COAL	4.9	112.0	GOOD
483.5	CARBONDALE		UNDERCLAY	1.1	116.9	

MAPID: 01780173000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1' N line, 105' E line of SE NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.023189 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.985416 **DATE COLLECTED:** 10 / 8 / 1965
SURFACE ELEVATION (FT.): 562.3 **LOGGED (FT.):** 81.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N363 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
562.3	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
555.3	PLEISTOCENE		CLAY	9.0	7.0	
546.3	PLEISTOCENE		CLAY	32.0	16.0	
514.3	CARBONDALE		LIMESTONE	1.5	48.0	
512.8	CARBONDALE		GRAY SHALE	18.5	49.5	
494.3	CARBONDALE	ST. DAVID	LIMESTONE	1.0	68.0	HARD
493.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	69.0	SOFT
491.3	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	71.0	HARD
488.3	CARBONDALE	SPRINGFIELD	COAL	4.3	74.0	GOOD
484.0	CARBONDALE		UNDERCLAY	2.7	78.3	

MAPID: 01780174000C VERSION: 1 PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 15' E line of SW NE

QUADRANGLE: ASHLAND LONGITUDE: -90.018191 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.985425 DATE COLLECTED: 10 / 7 / 1965

SURFACE ELEVATION (FT.): 603.5 LOGGED (FT.): 114.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE N365 WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.5	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0	
594.5	PLEISTOCENE		CLAY	14.0	9.0	
580.5	PLEISTOCENE		CLAY	40.0	23.0	
540.5	PLEISTOCENE		BOULDER	1.5	63.0	
539.0	CARBONDALE		CLAY	23.5	64.5	
515.5	CARBONDALE		GRAY SHALE	16.0	88.0	SOFT
499.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	104.0	SOFT
497.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	106.0	
496.5	CARBONDALE	SPRINGFIELD	COAL	4.7	107.0	GOOD
491.8	CARBONDALE		UNDERCLAY	2.3	111.7	

MAPID: 01780176000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NW

QUADRANGLE: ASHLAND LONGITUDE: -90.025179 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.987237 DATE COLLECTED: 10 / 28 / 1965

SURFACE ELEVATION (FT.): 557.3 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE N387 WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
557.3	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
547.3	PLEISTOCENE		SAND & GRAVEL	41.0	10.0
506.3	CARBONDALE		GRAY SHALE	12.0	51.0
494.3	CARBONDALE	ST. DAVID	LIMESTONE	0.5	63.0
493.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	63.5
491.3	CARBONDALE	SPRINGFIELD	COAL	4.3	66.0
487.0	CARBONDALE		UNDERCLAY	1.7	70.3
485.3	CARBONDALE		SHALE WITH LIMESTONE	31.0	72.0
454.3	CARBONDALE		DARK SHALE	40.0	103.0
414.3	CARBONDALE		LIMESTONE	3.3	143.0
411.0	CARBONDALE		DARK SHALE	4.7	146.3
406.3	CARBONDALE		LIMESTONE	2.0	151.0
404.3	CARBONDALE		DARK SHALE	5.0	153.0
399.3	CARBONDALE		LIMESTONE	1.0	158.0
398.3	CARBONDALE	COLCHESTER	COAL	3.8	159.0
394.5	CARBONDALE		UNDERCLAY	2.2	162.8
392.3	CARBONDALE		GRAY SHALE	15.0	165.0
377.3	CARBONDALE		LIMESTONE	2.7	180.0
374.6	CARBONDALE		GRAY SHALE	4.3	182.7
370.3	CARBONDALE		LIMESTONE	1.0	187.0

MAPID: 01780178000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 120' N line, 1' W line of NW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.032119 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.988691 DATE COLLECTED: 10 / 13 / 1965
 SURFACE ELEVATION (FT.): 605.2 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N409 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.2	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0	
593.2	PLEISTOCENE		CLAY	20.0	12.0	
573.2	PLEISTOCENE		CLAY	6.0	32.0	
567.2	PLEISTOCENE		SAND & GRAVEL	4.0	38.0	
563.2	CARBONDALE		CLAY	50.0	42.0	
513.2	CARBONDALE		BLACK SHALE	10.0	92.0	
503.2	CARBONDALE		COAL	0.4	102.0	
502.8	CARBONDALE		GRAY SHALE	2.6	102.4	
500.2	CARBONDALE		LIMESTONE	0.8	105.0	
499.4	CARBONDALE		GRAY SHALE	7.3	105.8	
492.2	CARBONDALE	ST. DAVID	LIMESTONE	0.6	113.0	
491.6	CARBONDALE	TURNER MINE	BLACK SHALE	3.4	113.6	
488.2	CARBONDALE	SPRINGFIELD	COAL	4.8	117.0	GOOD
483.4	CARBONDALE		UNDERCLAY	6.2	121.8	

MAPID: 01780179000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.027468 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.989029 DATE COLLECTED: 10 / 6 / 1965
 SURFACE ELEVATION (FT.): 551.4 LOGGED (FT.): 74.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N411 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
551.4	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
545.4	PLEISTOCENE		CLAY	5.0	6.0	
540.4	PLEISTOCENE		CLAY	41.0	11.0	
499.4	CARBONDALE		LIMESTONE	1.0	52.0	HARD
498.4	CARBONDALE		GRAY SHALE	11.0	53.0	SOFT
487.4	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	64.0	
485.4	CARBONDALE	SPRINGFIELD	COAL	5.3	66.0	GOOD
480.1	CARBONDALE		UNDERCLAY	2.8	71.3	

MAPID: 01780180000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.022811 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.989039 DATE COLLECTED: 10 / 29 / 1965
SURFACE ELEVATION (FT.): 611.9 LOGGED (FT.): 132.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N413 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.9	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
604.9	PLEISTOCENE		CLAY	22.0	7.0	
582.9	PLEISTOCENE		CLAY	50.0	29.0	
532.9	CARBONDALE		LIMESTONE	1.0	79.0	HARD
531.9	CARBONDALE		GRAY SHALE	41.0	80.0	
490.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	121.0	SOFT
487.9	CARBONDALE	SPRINGFIELD	COAL	5.3	124.0	
482.6	CARBONDALE		UNDERCLAY	2.8	129.3	

MAPID: 01780181000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.018153 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.989048 DATE COLLECTED: 10 / 8 / 1965
SURFACE ELEVATION (FT.): 613.0 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N415 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
613.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
595.0	PLEISTOCENE		CLAY	14.0	18.0	
581.0	PLEISTOCENE		CLAY	76.0	32.0	
505.0	CARBONDALE		GRAY SHALE	12.0	108.0	
493.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	120.0	
492.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	120.5	
490.0	CARBONDALE	SPRINGFIELD	COAL	5.0	123.0	GOOD
485.0	CARBONDALE		UNDERCLAY	1.0	128.0	

MAPID: 01720232000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 30 QUARTERS/FOOTAGES: 0' S line, 12' E line of SW NE

QUADRANGLE: ASHLAND LONGITUDE: -90.036888 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.981781 DATE COLLECTED: 3 / 17 / 1970

SURFACE ELEVATION (FT.): 615.0 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E307 WELL TYPE: Coal Test

COMMENT: ELEV. RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.0	PLEISTOCENE		CLAY	35.0	0.0	
580.0	PLEISTOCENE		CLAY & GRAVEL	5.0	35.0	
575.0	PLEISTOCENE		CLAY	35.0	40.0	
540.0	PLEISTOCENE		CLAY & GRAVEL	5.0	75.0	INCLUDING BOULDERS
535.0	PLEISTOCENE		CLAY	15.0	80.0	
520.0	PLEISTOCENE		CLAY & GRAVEL	10.0	95.0	
510.0	CARBONDALE		LIMESTONE	3.0	105.0	
507.0	CARBONDALE		SHALE	8.5	108.0	
498.5	CARBONDALE		LIMESTONE	2.0	116.5	
496.5	CARBONDALE		GRAY SHALE	1.5	118.5	DARK
495.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	120.0	WITH BONE
492.5	CARBONDALE	SPRINGFIELD	COAL	5.8	122.5	
486.7	CARBONDALE		UNDERCLAY	0.7	128.3	

MAPID: 01720241000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 30 QUARTERS/FOOTAGES: NW NW NW SE

QUADRANGLE: ASHLAND LONGITUDE: -90.040913 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.981321 DATE COLLECTED: 3 / 17 / 1971

SURFACE ELEVATION (FT.): 615.0 LOGGED (FT.): 111.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E305 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.0	PLEISTOCENE		CLAY	75.0	0.0	
540.0	PLEISTOCENE		CLAY & GRAVEL	10.0	75.0	
530.0	CARBONDALE		GRAY SHALE	12.0	85.0	
518.0	CARBONDALE	ST. DAVID	LIMESTONE	6.0	97.0	
512.0	CARBONDALE	TURNER MINE	SHALE	2.0	103.0	DARK
510.0	CARBONDALE	SPRINGFIELD	COAL	5.0	105.0	
505.0	CARBONDALE		UNDERCLAY	1.0	110.0	

MAPID: 01720243000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 30 QUARTERS/FOOTAGES: 476' S line, 960' E line of NE SW

QUADRANGLE: ASHLAND LONGITUDE: -90.044949 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.979401 DATE COLLECTED: 6 / 23 / 1969

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E257MK WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		CLAY	10.0	0.0	SANDY
610.0	PLEISTOCENE		CLAY	55.0	10.0	WITH GRAVEL
555.0	PLEISTOCENE		CLAY	16.0	65.0	
539.0	PLEISTOCENE		CLAY	23.0	81.0	WITH LIMESTONE "RIBS"
516.0	PLEISTOCENE		BOULDER	2.5	104.0	BOULDER
513.5	PLEISTOCENE		CLAY	17.0	106.5	WITH LIMESTONE "RIBS"
496.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.2	123.5	
495.3	CARBONDALE	TURNER MINE	LIMESTONE	0.4	124.7	CONCRETION
494.9	CARBONDALE	SPRINGFIELD	COAL	5.3	125.1	
489.6	CARBONDALE		UNDERCLAY	0.6	130.4	

MAPID: 01720244000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 30 QUARTERS/FOOTAGES: SW SW SE NW

QUADRANGLE: ASHLAND LONGITUDE: -90.045552 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.982243 DATE COLLECTED: 3 / 18 / 1970

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 160.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E303 WELL TYPE: Coal Test

COMMENT: ELEV RECONSTRUCTED FROM BEDROCK ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		CLAY	20.0	0.0	
600.0	PLEISTOCENE		CLAY	10.0	20.0	INCLUDES WOOD
590.0	PLEISTOCENE		CLAY	65.0	30.0	
525.0	PLEISTOCENE		CLAY & GRAVEL	7.0	95.0	
518.0	CARBONDALE		LIMESTONE	10.0	102.0	
508.0	CARBONDALE		BLACK SHALE	1.5	112.0	INCLUDES COAL
506.5	CARBONDALE		SHALE	46.5	113.5	LIMESTONE INTERBEDS

MAPID: 01720245000C

VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS

TWP/RNG: 18N 8W

SECTION: 30

QUARTERS/FOOTAGES: NE NE SW SW

QUADRANGLE: ASHLAND

LONGITUDE: -90.046732

GEOLOGIST: HAMER

CONFIDENTIAL: N

LATITUDE: 39.977612

DATE COLLECTED: 3 / 9 / 1970

SURFACE ELEVATION (FT.): 621.0

LOGGED (FT.): 123.0

LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON

E253

WELL TYPE: Coal Test

COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
621.0	PLEISTOCENE		CLAY	15.0	0.0	
606.0	PLEISTOCENE		CLAY	10.0	15.0	WITH WOOD
596.0	PLEISTOCENE		CLAY	60.0	25.0	
536.0	PLEISTOCENE		CLAY & GRAVEL	21.0	85.0	
515.0	CARBONDALE		SHALE	6.5	106.0	
508.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	112.5	
507.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	113.5	
505.0	CARBONDALE	SPRINGFIELD	BONE COAL	0.6	116.0	
504.4	CARBONDALE	SPRINGFIELD	COAL	5.4	116.6	
499.0	CARBONDALE		UNDERCLAY	1.0	122.0	

MAPID: 01720246000C

VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS

TWP/RNG: 18N 8W

SECTION: 30

QUARTERS/FOOTAGES: 10' N line, 70' E line of SE SE

QUADRANGLE: ASHLAND

LONGITUDE: -90.032494

GEOLOGIST: HAMER

CONFIDENTIAL: N

LATITUDE: 39.978133

DATE COLLECTED: 3 / 16 / 1970

SURFACE ELEVATION (FT.): 622.0

LOGGED (FT.): 138.0

LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON

E259

WELL TYPE: Coal Test

COMMENT: ELEV. RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
622.0	PLEISTOCENE		CLAY	3.0	0.0	
619.0	PLEISTOCENE		CLAY	22.0	3.0	WITH GRAVEL
597.0	PLEISTOCENE		CLAY	53.0	25.0	
544.0	PLEISTOCENE		CLAY	32.5	78.0	WITH GRAVEL
511.5	CARBONDALE		LIMESTONE	3.5	110.5	WEATHERED
508.0	CARBONDALE		GRAY SHALE	15.5	114.0	THICKNESS ADJUSTED LIMESTONE INTERBEDS
492.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	129.5	HARD
492.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	130.0	
490.0	CARBONDALE	SPRINGFIELD	COAL	5.0	132.0	
485.0	CARBONDALE		UNDERCLAY	1.0	137.0	

MAPID: 01720247000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 30 QUARTERS/FOOTAGES: 27' S line, 15' W line of SW SW

QUADRANGLE: ASHLAND LONGITUDE: -90.050739 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.974398 DATE COLLECTED: 3 / 24 / 1970

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E201 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE	SPRINGFIELD	CLAY	35.0	0.0	
585.0	PLEISTOCENE		CLAY & GRAVEL	35.0	35.0	
550.0	PLEISTOCENE		CLAY	34.0	70.0	
516.0	CARBONDALE		LIMESTONE	5.5	104.0	W/CLAY SEAMS
510.5	CARBONDALE		GRAY SHALE	14.5	109.5	LIMESTONE INTERBEDS
496.0	CARBONDALE		COAL	5.0	124.0	
491.0	CARBONDALE		UNDERCLAY	1.0	129.0	

MAPID: 01720248000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 30 QUARTERS/FOOTAGES: 25' S line, 35' E line of SW SW

QUADRANGLE: ASHLAND LONGITUDE: -90.046291 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.974443 DATE COLLECTED: 3 / 30 / 1970

SURFACE ELEVATION (FT.): 622.0 LOGGED (FT.): 133.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E203 WELL TYPE: Coal Test

COMMENT: ELEV RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
622.0	PLEISTOCENE	TURNER MINE	CLAY	38.0	0.0	
584.0	PLEISTOCENE		CLAY	34.0	38.0	WITH GRAVEL
550.0	PLEISTOCENE		CLAY	29.0	72.0	
521.0	CARBONDALE		GRAY SHALE	9.0	101.0	
512.0	CARBONDALE		LIMESTONE	2.0	110.0	
510.0	CARBONDALE		GRAY SHALE	14.0	112.0	LIMESTONE INTERBEDS
496.0	CARBONDALE		BLACK SHALE	0.5	126.0	
495.5	CARBONDALE	SPRINGFIELD	COAL	5.5	126.5	
490.0	CARBONDALE		UNDERCLAY	1.0	132.0	

MAPID: 01720249000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 30 **QUARTERS/FOOTAGES:** 30' S line, 0' E line of SE SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.041539 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.974515 **DATE COLLECTED:** 3 / 18 / 1970
SURFACE ELEVATION (FT.): 623.0 **LOGGED (FT.):** 141.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E203 **WELL TYPE:** Coal Test
COMMENT: ELEV RECONSTRUCTED FROM COAL ELEV

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
623.0	PLEISTOCENE		CLAY	35.0	0.0	
588.0	PLEISTOCENE		CLAY & GRAVEL	15.0	35.0	
573.0	PLEISTOCENE		CLAY	47.0	50.0	
526.0	PLEISTOCENE		CLAY & GRAVEL	8.0	97.0	
518.0	CARBONDALE		LIMESTONE	4.0	105.0	
514.0	CARBONDALE	ANNA	BLACK SHALE	1.0	109.0	INCLUDES COAL
513.0	CARBONDALE		SHALE	11.0	110.0	LIMESTONE INTERBEDS
502.0	CARBONDALE		SHALE	12.0	121.0	
490.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.3	133.0	
488.7	CARBONDALE	SPRINGFIELD	BONE COAL	0.5	134.3	
488.2	CARBONDALE	SPRINGFIELD	COAL	5.7	134.8	
482.5	CARBONDALE		UNDERCLAY	0.5	140.5	

MAPID: 01720250000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 30 **QUARTERS/FOOTAGES:** 139' S line, 12' W line of SE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.036863 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.97487 **DATE COLLECTED:** 6 / 27 / 1969
SURFACE ELEVATION (FT.): 624.0 **LOGGED (FT.):** 149.5 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E204 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
624.0	PLEISTOCENE		CLAY	30.0	0.0	
594.0	PLEISTOCENE		CLAY & GRAVEL	5.0	30.0	
589.0	PLEISTOCENE		CLAY	72.0	35.0	
517.0	CARBONDALE		LIMESTONE	5.0	107.0	
512.0	CARBONDALE		GRAY SHALE	5.5	112.0	
506.5	CARBONDALE		LIMESTONE	1.0	117.5	
505.5	CARBONDALE		GRAY SHALE	4.5	118.5	
501.0	CARBONDALE		LIMESTONE	2.0	123.0	
499.0	CARBONDALE		GRAY SHALE	15.5	125.0	
483.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	140.5	
482.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	142.0	
481.0	CARBONDALE	SPRINGFIELD	LIMESTONE	0.1	143.0	BONE
480.9	CARBONDALE	SPRINGFIELD	COAL	5.8	143.1	
475.1	CARBONDALE		UNDERCLAY	0.6	148.9	

MAPID: 01780152000C VERSION: 1 PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 30 QUARTERS/FOOTAGES: 20' S line, 1' E line of SW SE

QUADRANGLE: ASHLAND LONGITUDE: -90.036911 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.974541 DATE COLLECTED: 10 / 5 / 1965

SURFACE ELEVATION (FT.): 625.0 LOGGED (FT.): 151.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE N207 WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
625.0	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	
612.0	PLEISTOCENE		CLAY	7.0	13.0	
605.0	PLEISTOCENE		CLAY	75.0	20.0	
530.0	CARBONDALE		GRAY SHALE	15.0	95.0	SOFT
515.0	CARBONDALE		LIMESTONE	4.0	110.0	
511.0	CARBONDALE		GRAY SHALE	14.0	114.0	SOFT
497.0	CARBONDALE		LIMESTONE	4.0	128.0	
493.0	CARBONDALE		SANDY SHALE	8.0	132.0	
485.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	140.0	HARD
484.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	141.0	SOFT
481.0	CARBONDALE	SPRINGFIELD	COAL	2.7	144.0	GOOD
478.3	CARBONDALE	SPRINGFIELD	COAL	2.6	146.7	SOFT
475.7	CARBONDALE		UNDERCLAY	1.8	149.3	

MAPID: 01780153000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 30 **QUARTERS/FOOTAGES:** 20' S line, 30' E line of SE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.032388 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.974595 **DATE COLLECTED:** 10 / 5 / 1965
SURFACE ELEVATION (FT.): 626.0 **LOGGED (FT.):** 149.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N209 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
626.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
612.0	PLEISTOCENE		CLAY	7.0	14.0	
605.0	PLEISTOCENE		SAND & GRAVEL	67.0	21.0	
538.0	CARBONDALE		GRAY SHALE	18.0	88.0	SOFT
520.0	CARBONDALE		LIMESTONE	1.0	106.0	
519.0	CARBONDALE		GRAY SHALE	5.0	107.0	SOFT
514.0	CARBONDALE		LIMESTONE	4.0	112.0	
510.0	CARBONDALE		COAL	1.0	116.0	SOFT
509.0	CARBONDALE		GRAY SHALE	4.0	117.0	SOFT
505.0	CARBONDALE		GRAY SHALE	7.0	121.0	HARD
498.0	CARBONDALE		GRAY SHALE	12.0	128.0	
486.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	140.0	HARD
485.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	140.5	SOFT
483.0	CARBONDALE	SPRINGFIELD	COAL	4.8	143.0	
478.2	CARBONDALE		UNDERCLAY	1.3	147.8	

MAPID: 01780160000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 30 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of NW SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.036881 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.978138 **DATE COLLECTED:** 10 / 18 / 1965
SURFACE ELEVATION (FT.): 603.8 **LOGGED (FT.):** 117.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N257 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.8	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
592.8	PLEISTOCENE		CLAY	7.0	11.0	
585.8	PLEISTOCENE		SAND & GRAVEL	75.0	18.0	
510.8	CARBONDALE		LIMESTONE	1.0	93.0	SOFT
509.8	CARBONDALE		GRAY SHALE	10.0	94.0	SOFT
499.8	CARBONDALE		LIMESTONE	1.5	104.0	HARD
498.3	CARBONDALE		MICACEOUS SHALE	1.5	105.5	SOFT
496.8	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	107.0	SOFT
493.8	CARBONDALE	SPRINGFIELD	COAL	5.5	110.0	HARD
488.3	CARBONDALE		UNDERCLAY	1.5	115.5	

MAPID: 01780161000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 30 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of NE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.032243 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.978164 **DATE COLLECTED:** 10 / 5 / 1965
SURFACE ELEVATION (FT.): 621.6 **LOGGED (FT.):** 137.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N259 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
621.6	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0	
612.6	PLEISTOCENE		CLAY	14.0	9.0	
598.6	PLEISTOCENE		CLAY	52.0	23.0	
546.6	CARBONDALE		LIMESTONE	8.0	75.0	HARD
538.6	CARBONDALE		LIMESTONE	5.0	83.0	SOFT
533.6	CARBONDALE		LIMESTONE	24.0	88.0	
509.6	CARBONDALE		LIMESTONE	1.0	112.0	HARD
508.6	CARBONDALE		GRAY SHALE	14.0	113.0	SOFT
494.6	CARBONDALE	ST. DAVID	LIMESTONE	1.0	127.0	HARD
493.6	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	128.0	SOFT
491.6	CARBONDALE	SPRINGFIELD	COAL	4.9	130.0	GOOD
486.7	CARBONDALE		UNDERCLAY	2.1	134.9	

MAPID: 01780165000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 30 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.036848 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.981784 **DATE COLLECTED:** 10 / 7 / 1965
SURFACE ELEVATION (FT.): 613.5 **LOGGED (FT.):** 126.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N307 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
613.5	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	
600.5	PLEISTOCENE		CLAY	7.0	13.0	
593.5	PLEISTOCENE		SAND & GRAVEL	66.0	20.0	
527.5	PLEISTOCENE		CLAY	16.0	86.0	
511.5	CARBONDALE		LIMESTONE	2.0	102.0	SOFT
509.5	CARBONDALE		SHALE WITH LIMESTONE	11.0	104.0	SOFT
498.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	115.0	HARD
497.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	116.0	SOFT
494.5	CARBONDALE		ROCK	1.0	119.0	
493.5	CARBONDALE	SPRINGFIELD	COAL	4.5	120.0	GOOD
489.0	CARBONDALE		UNDERCLAY	1.5	124.5	

MAPID: 01780166000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 30 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of SE NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.032203 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.981785 **DATE COLLECTED:** 10 / 5 / 1965
SURFACE ELEVATION (FT.): 615.8 **LOGGED (FT.):** 138.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N309 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.8	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
595.8	PLEISTOCENE		CLAY	84.0	20.0	
511.8	CARBONDALE		LIMESTONE	1.2	104.0	
510.6	CARBONDALE		SHALE WITH LIMESTONE	1.8	105.2	
508.8	CARBONDALE		LIMESTONE	0.6	107.0	
508.2	CARBONDALE		SHALE WITH LIMESTONE	2.4	107.6	
505.8	CARBONDALE		GRAY SHALE	14.0	110.0	
491.8	CARBONDALE	ST. DAVID	LIMESTONE	0.5	124.0	
491.3	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	124.5	
487.8	CARBONDALE	SPRINGFIELD	COAL	4.7	128.0	GOOD
483.1	CARBONDALE		UNDERCLAY	5.3	132.7	

MAPID: 01780175000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 30 **QUARTERS/FOOTAGES:** 165' N line, 660' E line of NE NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.034493 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.988592 **DATE COLLECTED:** 10 / 19 / 1965
SURFACE ELEVATION (FT.): 559.4 **LOGGED (FT.):** 77.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N383D **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
559.4	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
553.4	PLEISTOCENE		CLAY	15.0	6.0	
538.4	PLEISTOCENE		CLAY	32.0	21.0	
506.4	CARBONDALE		GRAY SHALE	11.0	53.0	
495.4	CARBONDALE	ST. DAVID	LIMESTONE	1.0	64.0	HARD
494.4	CARBONDALE	TURNER MINE	BLACK SHALE	5.0	65.0	
489.4	CARBONDALE	SPRINGFIELD	COAL	4.3	70.0	HARD
485.1	CARBONDALE		UNDERCLAY	2.8	74.3	

MAPID: 01720251000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 31 QUARTERS/FOOTAGES: 432' N line, 50' W line of NE SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.045812 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.96592 DATE COLLECTED: 6 / 25 / 1969
 SURFACE ELEVATION (FT.): 622.0 LOGGED (FT.): 145.5 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E78J WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
622.0	PLEISTOCENE		CLAY	80.0	0.0	
542.0	CARBONDALE		GRAY SHALE	14.0	80.0	
528.0	CARBONDALE	HERRIN	COAL	2.0	94.0	
526.0	CARBONDALE		GRAY SHALE	9.0	96.0	
517.0	CARBONDALE		LIMESTONE	10.0	105.0	
507.0	CARBONDALE		GRAY SHALE	7.0	115.0	
500.0	CARBONDALE		LIMESTONE	4.0	122.0	SHALE LAMINAE
496.0	CARBONDALE		GRAY SHALE	11.5	126.0	
484.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	137.5	
483.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	138.5	
482.0	CARBONDALE	SPRINGFIELD	COAL	5.1	140.0	
476.9	CARBONDALE		UNDERCLAY	0.4	145.1	

MAPID: 01720252000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 31 QUARTERS/FOOTAGES: 15' N line, 0' W line of NW SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.05062 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.967032 DATE COLLECTED: 3 / 23 / 1970
 SURFACE ELEVATION (FT.): 627.0 LOGGED (FT.): 149.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E101 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
627.0	PLEISTOCENE		CLAY	20.0	0.0	
607.0	PLEISTOCENE		CLAY	10.0	20.0	WITH WOOD
597.0	PLEISTOCENE		CLAY	50.0	30.0	
547.0	PLEISTOCENE		CLAY & GRAVEL	5.0	80.0	
542.0	PLEISTOCENE		CLAY	19.0	85.0	
523.0	CARBONDALE		LIMESTONE	6.0	104.0	
517.0	CARBONDALE		SHALE	13.0	110.0	
504.0	CARBONDALE		LIMESTONE	2.0	123.0	
502.0	CARBONDALE		SHALE	15.5	125.0	
486.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	140.5	
485.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	141.5	
484.0	CARBONDALE	SPRINGFIELD	COAL	5.5	143.0	
478.5	CARBONDALE		UNDERCLAY	0.5	148.5	

MAPID: 01720253000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 31 **QUARTERS/FOOTAGES:** 0' N line, 54' W line of SW SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.050341 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.963451 **DATE COLLECTED:** 3 / 23 / 1940
SURFACE ELEVATION (FT.): 627.0 **LOGGED (FT.):** 140.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E51 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
627.0	PLEISTOCENE	ANNA	CLAY	15.0	0.0	WITH WOOD
612.0	PLEISTOCENE		CLAY	10.0	15.0	
602.0	PLEISTOCENE		CLAY, SAND & GRAVEL	20.0	25.0	
582.0	PLEISTOCENE		CLAY	41.0	45.0	INCLUDES COAL
541.0	CARBONDALE		BLACK SHALE	2.5	86.0	
538.5	CARBONDALE		SHALE	9.0	88.5	
529.5	CARBONDALE		LIMESTONE	5.5	97.5	
524.0	CARBONDALE		SHALE	28.5	103.0	
495.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	131.5	
494.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	132.5	
492.5	CARBONDALE	SPRINGFIELD	COAL	5.0	134.5	
487.5	CARBONDALE		UNDERCLAY	0.5	139.5	

MAPID: 01720254000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 31 **QUARTERS/FOOTAGES:** 0' N line, 35' E line of SW SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.046065 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.963476 **DATE COLLECTED:** 3 / 23 / 1970
SURFACE ELEVATION (FT.): 626.0 **LOGGED (FT.):** 140.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E53 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
626.0	PLEISTOCENE	ANNA	CLAY	15.0	0.0	INCLUDES WOOD
611.0	PLEISTOCENE		CLAY	10.0	15.0	
601.0	PLEISTOCENE		CLAY	10.0	25.0	
591.0	PLEISTOCENE		CLAY, SAND & GRAVEL	10.0	35.0	
581.0	PLEISTOCENE		CLAY	41.0	45.0	
540.0	CARBONDALE		BLACK SHALE	3.0	86.0	
537.0	CARBONDALE		GRAY SHALE	8.0	89.0	
529.0	CARBONDALE		LIMESTONE	9.0	97.0	
520.0	CARBONDALE	TURNER MINE	SHALE	10.5	106.0	
509.5	CARBONDALE		LIMESTONE	2.0	116.5	
507.5	CARBONDALE		SHALE	14.0	118.5	
493.5	CARBONDALE		BLACK SHALE	2.0	132.5	
491.5	CARBONDALE		COAL	5.0	134.5	
486.5	CARBONDALE		UNDERCLAY	0.5	139.5	

MAPID: 01720255000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 31 QUARTERS/FOOTAGES: 18' S line, 25' W line of SW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.041192 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.959911 DATE COLLECTED: 3 / 25 / 1970
 SURFACE ELEVATION (FT.): 628.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E5 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
628.0	PLEISTOCENE		CLAY	10.0	0.0	
618.0	PLEISTOCENE		CLAY	15.0	10.0	INCLUDES WOOD
603.0	PLEISTOCENE		CLAY	8.0	25.0	
595.0	PLEISTOCENE		CLAY & GRAVEL	5.0	33.0	
590.0	PLEISTOCENE		CLAY	42.0	38.0	
548.0	PLEISTOCENE		SAND & GRAVEL	10.0	80.0	
538.0	CARBONDALE		SHALE	5.0	90.0	
533.0	CARBONDALE		LIMESTONE	8.0	95.0	
525.0	CARBONDALE		SHALE	11.0	103.0	
514.0	CARBONDALE		LIMESTONE	1.0	114.0	
513.0	CARBONDALE		SHALE	13.0	115.0	
500.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	128.0	
498.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	129.5	
496.5	CARBONDALE	SPRINGFIELD	COAL	5.8	131.5	
490.7	CARBONDALE		UNDERCLAY	0.7	137.3	

MAPID: 01720256000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 31 QUARTERS/FOOTAGES: SW SW SE SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.036128 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.960339 DATE COLLECTED: 3 / 21 / 1970
 SURFACE ELEVATION (FT.): 625.0 LOGGED (FT.): 132.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E-7 WELL TYPE: Coal Test
 COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
625.0	PLEISTOCENE		CLAY	10.0	0.0	
615.0	PLEISTOCENE		CLAY	10.0	10.0	INCLUDES WOOD
605.0	PLEISTOCENE		CLAY	70.0	20.0	
535.0	PLEISTOCENE		CLAY & GRAVEL	4.0	90.0	
531.0	CARBONDALE		LIMESTONE	4.0	94.0	
527.0	CARBONDALE		SHALE	12.0	98.0	LIMESTONE INTERBEDS
515.0	CARBONDALE		SHALE	14.0	110.0	
501.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	124.0	
500.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	124.5	
499.0	CARBONDALE	SPRINGFIELD	COAL	5.5	126.0	
493.5	CARBONDALE		UNDERCLAY	0.5	131.5	

MAPID: 01780135000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 31 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of SW SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.041278 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.959866 **DATE COLLECTED:** 10 / 31 / 1966
SURFACE ELEVATION (FT.): 628.2 **LOGGED (FT.):** 137.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N5 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
628.2	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
618.2	PLEISTOCENE		CLAY	20.0	10.0	
598.2	PLEISTOCENE		CLAY	54.0	30.0	
544.2	CARBONDALE		COAL	1.3	84.0	TOP ERODED
542.9	CARBONDALE		UNDERCLAY	0.8	85.3	
542.2	CARBONDALE		SHALE WITH LIMESTONE	41.0	86.0	
501.2	CARBONDALE	ST. DAVID	LIMESTONE	1.0	127.0	
500.2	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	128.0	
498.2	CARBONDALE	SPRINGFIELD	COAL W/ BLACK SHALE	1.0	130.0	
497.2	CARBONDALE	SPRINGFIELD	COAL	4.6	131.0	HARD
492.6	CARBONDALE		UNDERCLAY	1.4	135.6	

MAPID: 01720257000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 32 **QUARTERS/FOOTAGES:** 0' S line, 25' W line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.022648 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.967283 **DATE COLLECTED:** 5 / 8 / 1970
SURFACE ELEVATION (FT.): 612.0 **LOGGED (FT.):** 128.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E113 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	98.0	0.0	
514.0	PLEISTOCENE		COAL	1.0	98.0	BOULDER
513.0	PLEISTOCENE		CLAY	4.0	99.0	
509.0	CARBONDALE		LIMESTONE	1.0	103.0	HARD
508.0	CARBONDALE		GRAY SHALE	15.0	104.0	
493.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	119.0	
490.5	CARBONDALE	SPRINGFIELD	COAL	5.0	121.5	
485.5	CARBONDALE		UNDERCLAY	1.5	126.5	

MAPID: 01720258000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 50' N line, 36' E line of SE NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.013459 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.970818 DATE COLLECTED: 6 / 18 / 1969
 SURFACE ELEVATION (FT.): 623.0 LOGGED (FT.): 134.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E165 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
623.0	PLEISTOCENE		CLAY	14.0	0.0	SANDY
609.0	PLEISTOCENE		SAND & GRAVEL	16.0	14.0	W/CLAY BANDS
593.0	PLEISTOCENE		CLAY	15.0	30.0	
578.0	PLEISTOCENE		CLAY	59.0	45.0	WITH GRAVEL
519.0	CARBONDALE	ANNA	BLACK SHALE	1.0	104.0	RASHY
518.0	CARBONDALE		GRAY SHALE	3.0	105.0	
515.0	CARBONDALE		GRAY SHALE	18.8	108.0	
496.2	CARBONDALE	TURNER MINE	BLACK SHALE	1.7	126.8	RASHY
494.5	CARBONDALE	SPRINGFIELD	COAL	5.3	128.5	
489.2	CARBONDALE		UNDERCLAY	0.2	133.8	

MAPID: 01720259000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: NE NE SW NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.018643 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.97048 DATE COLLECTED: 6 / 20 / 1969
 SURFACE ELEVATION (FT.): 621.0 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E165 WELL TYPE: Coal Test
 COMMENT: NO FOOTAGES GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
621.0	PLEISTOCENE		CLAY	30.0	0.0	
591.0	PLEISTOCENE		CLAY & GRAVEL	5.0	30.0	
586.0	PLEISTOCENE		CLAY	35.0	35.0	
551.0	PLEISTOCENE		BOULDER	3.0	70.0	BOULDER
548.0	PLEISTOCENE		CLAY	34.0	73.0	
514.0	CARBONDALE		LIMESTONE	1.5	107.0	
512.5	CARBONDALE		GRAY SHALE	14.5	108.5	
498.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	123.0	
497.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	124.0	
495.5	CARBONDALE	SPRINGFIELD	COAL	5.2	125.5	
490.3	CARBONDALE		UNDERCLAY	0.3	130.7	

MAPID: 01720260000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 32 **QUARTERS/FOOTAGES:** 35' N line, 18' W line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.022717 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.970821 **DATE COLLECTED:** 4 / 4 / 1970
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 116.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E163 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0	PLEISTOCENE		CLAY	82.0	0.0	
508.0	CARBONDALE	ANNA	BLACK SHALE	1.0	82.0	INCLUDES COAL
507.0	CARBONDALE		LIMESTONE & SHALE	7.0	83.0	
500.0	CARBONDALE		SHALE	17.0	90.0	
483.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	107.0	
482.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	108.0	
480.5	CARBONDALE	SPRINGFIELD	COAL	5.5	109.5	
475.0	CARBONDALE		UNDERCLAY	1.0	115.0	

MAPID: 01720261000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SE SW SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.027976 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.960404 **DATE COLLECTED:** 5 / 8 / 1970
SURFACE ELEVATION (FT.): 610.0 **LOGGED (FT.):** 129.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E11 **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		SOIL	2.0	0.0	
608.0	PLEISTOCENE		CLAY	89.0	2.0	
519.0	CARBONDALE		LIMESTONE	2.0	91.0	HARD
517.0	CARBONDALE		GRAY SHALE	12.0	93.0	
505.0	CARBONDALE		LIMESTONE	1.0	105.0	HARD
504.0	CARBONDALE		GRAY SHALE	12.0	106.0	
492.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	118.0	LIMESTONE INTERBEDS
489.5	CARBONDALE	SPRINGFIELD	COAL	6.0	120.5	
483.5	CARBONDALE		UNDERCLAY	2.5	126.5	

MAPID: 01720262000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 0' N line, 330' E line of SE NW

QUADRANGLE: ASHLAND LONGITUDE: -90.023966 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.970912 DATE COLLECTED: 5 / 9 / 1969

SURFACE ELEVATION (FT.): 593.0 LOGGED (FT.): 119.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E161B WELL TYPE: Coal Test

COMMENT: SECOND LOCATION MARKED:SENW, 0N,530W

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
593.0	PLEISTOCENE		CLAY	65.0	0.0	
528.0	PLEISTOCENE		SAND & GRAVEL	3.0	65.0	
525.0	PLEISTOCENE		CLAY	41.0	68.0	DEPTH ADJUSTED
484.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	109.0	
482.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	110.5	
481.0	CARBONDALE	SPRINGFIELD	COAL	6.0	112.0	
475.0	CARBONDALE		UNDERCLAY	1.0	118.0	

MAPID: 01720263000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 40' N line, 350' W line of NE SE

QUADRANGLE: ASHLAND LONGITUDE: -90.016754 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.967212 DATE COLLECTED: 4 / 5 / 1972

SURFACE ELEVATION (FT.): 616.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON E115B WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.0	PLEISTOCENE		CLAY	26.0	0.0	
590.0	PLEISTOCENE		CLAY	14.0	26.0	WITH GRAVEL
576.0	PLEISTOCENE		CLAY	61.0	40.0	
515.0	CARBONDALE		GRAY SHALE	20.5	101.0	
494.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	121.5	
493.0	CARBONDALE	SPRINGFIELD	COAL	5.4	123.0	
487.6	CARBONDALE		UNDERCLAY	1.6	128.4	

MAPID: 01720264000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 330' N line, 150' W line of SE NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.017507 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.970027 DATE COLLECTED: 3 / 11 / 1972
 SURFACE ELEVATION (FT.): 616.0 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E140C WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.0	PLEISTOCENE		CLAY	8.0	0.0	SILTY
608.0	PLEISTOCENE		CLAY	20.0	8.0	SANDY WITH GRAVEL
588.0	PLEISTOCENE		CLAY	8.0	28.0	
580.0	PLEISTOCENE		CLAY	33.0	36.0	WITH GRAVEL
547.0	PLEISTOCENE		CLAY	9.5	69.0	SANDY
537.5	PLEISTOCENE		CLAY	28.5	78.5	WITH GRAVEL
509.0	CARBONDALE		LIMESTONE	1.3	107.0	
507.7	CARBONDALE		GRAY SHALE	13.2	108.3	
494.5	CARBONDALE	ST. DAVID	LIMESTONE	2.2	121.5	
492.3	CARBONDALE	TURNER MINE	BLACK SHALE	1.8	123.7	
490.5	CARBONDALE	SPRINGFIELD	COAL	4.8	125.5	
485.7	CARBONDALE		UNDERCLAY	0.7	130.3	

MAPID: 01720265000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 400' S line, 0' W line of NW NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.022798 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.972021 DATE COLLECTED: 3 / 11 / 1972
 SURFACE ELEVATION (FT.): 621.0 LOGGED (FT.): 132.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E165C WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
621.0	PLEISTOCENE		CLAY	12.0	0.0	SILTY
609.0	PLEISTOCENE		CLAY	19.0	12.0	SANDY WITH GRAVEL
590.0	PLEISTOCENE		CLAY	18.0	31.0	SILTY
572.0	PLEISTOCENE		CLAY	36.5	49.0	WITH GRAVEL
535.5	PLEISTOCENE		SAND & GRAVEL	0.5	85.5	
535.0	PLEISTOCENE		CLAY	10.5	86.0	WITH GRAVEL
524.5	CARBONDALE	BRERETON	LIMESTONE	1.5	96.5	
523.0	CARBONDALE	ANNA	BLACK SHALE	0.5	98.0	
522.5	CARBONDALE		GRAY SHALE	7.5	98.5	
515.0	CARBONDALE		LIMESTONE W/ SHALE	17.5	106.0	
497.5	CARBONDALE	ST. DAVID	LIMESTONE	2.1	123.5	
495.4	CARBONDALE	TURNER MINE	BLACK SHALE	1.4	125.6	
494.0	CARBONDALE	SPRINGFIELD	COAL	4.7	127.0	
489.3	CARBONDALE		UNDERCLAY	0.3	131.7	

MAPID: 01720266000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 750' S line, 110' E line of NW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.018479 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.973004 DATE COLLECTED: 3 / 17 / 1972
SURFACE ELEVATION (FT.): 621.0 LOGGED (FT.): 126.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E189P WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
621.0	PLEISTOCENE		CLAY	12.0	0.0	SILTY
609.0	PLEISTOCENE		CLAY	20.0	12.0	SANDY WITH GRAVEL WITH GRAVEL
589.0	PLEISTOCENE		CLAY	72.5	32.0	
516.5	CARBONDALE		GRAY SHALE	13.0	104.5	
503.5	CARBONDALE		LIMESTONE	1.0	117.5	
502.5	CARBONDALE		BLACK SHALE	0.8	118.5	
501.7	CARBONDALE	ST. DAVID	LIMESTONE	0.7	119.3	
501.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	120.0	
500.5	CARBONDALE	SPRINGFIELD	COAL	4.6	120.5	
495.9	CARBONDALE		UNDERCLAY	0.9	125.1	

MAPID: 01720267000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 330' N line, 100' W line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.017734 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.97365 DATE COLLECTED: 3 / 10 / 1972
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E190C WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	17.0	0.0	SILTY
595.0	PLEISTOCENE		CLAY	14.0	17.0	SANDY WITH GRAVEL WITH GRAVEL
581.0	PLEISTOCENE		CLAY	73.0	31.0	
508.0	CARBONDALE		LIMESTONE	2.0	104.0	
506.0	CARBONDALE		GRAY SHALE	9.0	106.0	LIMESTONE INTERBEDS
497.0	CARBONDALE		GRAY SHALE	7.0	115.0	
490.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	122.0	
489.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	123.0	
487.5	CARBONDALE	SPRINGFIELD	COAL	4.6	124.5	
482.9	CARBONDALE		UNDERCLAY	0.9	129.1	

MAPID: 01720268000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 150' N line, 330' W line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.016913 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.974148 DATE COLLECTED: 3 / 6 / 1972
SURFACE ELEVATION (FT.): 621.0 LOGGED (FT.): 133.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E190J WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
621.0	PLEISTOCENE		CLAY	37.0	0.0	SILTY
584.0	PLEISTOCENE		GRAVEL	3.5	37.0	
580.5	PLEISTOCENE		CLAY	57.0	40.5	WITH GRAVEL
523.5	CARBONDALE		LIMESTONE	1.5	97.5	
522.0	CARBONDALE		GRAY SHALE	25.5	99.0	LIMESTONE INTERBEDS
496.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	124.5	
495.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	125.5	
493.5	CARBONDALE	SPRINGFIELD	COAL	4.8	127.5	
488.7	CARBONDALE		UNDERCLAY	0.7	132.3	

MAPID: 01720269000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 800' S line, 400' W line of NE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.016558 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.965913 DATE COLLECTED: 4 / 7 / 1970
SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E90L WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		CLAY	100.0	0.0	
520.0	PLEISTOCENE		CLAY & GRAVEL	4.0	100.0	
516.0	CARBONDALE		LIMESTONE	2.5	104.0	
513.5	CARBONDALE		SHALE	13.5	106.5	
500.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	120.0	
498.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	121.5	
496.0	CARBONDALE	SPRINGFIELD	COAL	5.4	124.0	
490.6	CARBONDALE		UNDERCLAY	0.6	129.4	

MAPID: 01720270000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 650' N line, 600' E line of NE SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.015411 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.965538 DATE COLLECTED: 4 / 5 / 1972
 SURFACE ELEVATION (FT.): 622.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E91 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
622.0	PLEISTOCENE		CLAY	33.0	0.0	WITH GRAVEL
589.0	PLEISTOCENE		CLAY	47.0	33.0	THICKNESS ADJUSTED
542.0	CARBONDALE		GRAY SHALE	27.0	80.0	
515.0	CARBONDALE	ANNA	BLACK SHALE	2.0	107.0	
513.0	CARBONDALE		GRAY SHALE	4.0	109.0	
509.0	CARBONDALE		LIMESTONE	2.0	113.0	
507.0	CARBONDALE		SHALE	13.0	115.0	
494.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	128.0	
493.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	129.0	
490.5	CARBONDALE	SPRINGFIELD	COAL	5.0	131.5	
485.5	CARBONDALE		UNDERCLAY	1.5	136.5	

MAPID: 01720271000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 150' N line, 18' E line of NE SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.013341 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.966929 DATE COLLECTED: 4 / 7 / 1970
 SURFACE ELEVATION (FT.): 618.0 LOGGED (FT.): 135.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E920 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.0	PLEISTOCENE		CLAY	30.0	0.0	
588.0	PLEISTOCENE		SAND & GRAVEL	10.0	30.0	
578.0	PLEISTOCENE		CLAY	28.0	40.0	
550.0	PLEISTOCENE		BOULDER	4.0	68.0	
546.0	PLEISTOCENE		CLAY	38.0	72.0	
508.0	CARBONDALE		LIMESTONE	2.5	110.0	
505.5	CARBONDALE		SHALE	13.0	112.5	
492.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	125.5	
491.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	126.5	
489.5	CARBONDALE	SPRINGFIELD	COAL	5.5	128.5	
484.0	CARBONDALE		UNDERCLAY	1.0	134.0	

MAPID: 01720272000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 240' S line, 300' E line of NE SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.014319 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.964389 DATE COLLECTED: 4 / 5 / 1972
 SURFACE ELEVATION (FT.): 617.0 LOGGED (FT.): 133.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E66A WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.0	PLEISTOCENE		CLAY	26.0	0.0	
591.0	PLEISTOCENE		GRAVEL	4.0	26.0	
587.0	PLEISTOCENE		CLAY	20.0	30.0	
567.0	PLEISTOCENE		CLAY	36.0	50.0	WITH GRAVEL
531.0	CARBONDALE		LIMESTONE	4.0	86.0	
527.0	CARBONDALE		GRAY SHALE	12.0	90.0	
515.0	CARBONDALE		LIMESTONE	7.0	102.0	
508.0	CARBONDALE		GRAY SHALE	14.0	109.0	
494.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	123.0	
493.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.8	124.0	
491.2	CARBONDALE	SPRINGFIELD	COAL	5.5	125.8	
485.7	CARBONDALE		UNDERCLAY	1.7	131.3	

MAPID: 01780136000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.022644 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.960016 DATE COLLECTED: 10 / 20 / 1965
 SURFACE ELEVATION (FT.): 618.8 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N13 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.8	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
597.8	PLEISTOCENE		CLAY	64.0	21.0	
533.8	CARBONDALE		BLACK SHALE	1.0	85.0	
532.8	CARBONDALE		COAL	1.6	86.0	
531.2	CARBONDALE		UNDERCLAY	3.4	87.6	
527.8	CARBONDALE		SHALE WITH LIMESTONE	20.0	91.0	
507.8	CARBONDALE		LIMESTONE	1.3	111.0	
506.5	CARBONDALE		SHALE WITH LIMESTONE	12.8	112.3	HARD
493.8	CARBONDALE		LIMESTONE	1.3	125.0	
492.5	CARBONDALE		BLACK SHALE	5.8	126.3	
486.8	CARBONDALE	SPRINGFIELD	COAL	5.3	132.0	HARD
481.5	CARBONDALE		UNDERCLAY	0.7	137.3	

MAPID: 01780137000C

VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS

TWP/RNG: 18N 8W

SECTION: 32

QUARTERS/FOOTAGES: 1' S line, 1' E line of SW SE

QUADRANGLE: ASHLAND

LONGITUDE: -90.01792

GEOLOGIST: STRAAYER

CONFIDENTIAL: N

LATITUDE: 39.96007

DATE COLLECTED: 10 / 29 / 1965

SURFACE ELEVATION (FT.): 616.8

LOGGED (FT.): 134.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE

N15

WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.8	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
606.8	PLEISTOCENE		CLAY	8.0	10.0	
598.8	PLEISTOCENE		CLAY	35.0	18.0	
563.8	CARBONDALE		GRAY SHALE	36.0	53.0	SOFT
527.8	CARBONDALE		LIMESTONE	2.0	89.0	
525.8	CARBONDALE		SHALE WITH LIMESTONE	2.0	91.0	
523.8	CARBONDALE		LIMESTONE	1.3	93.0	
522.5	CARBONDALE		SHALE WITH LIMESTONE	4.7	94.3	
517.8	CARBONDALE		LIMESTONE	0.8	99.0	
517.0	CARBONDALE		SHALE WITH LIMESTONE	9.2	99.8	
507.8	CARBONDALE		LIMESTONE	1.2	109.0	
506.6	CARBONDALE		SHALE WITH LIMESTONE	10.8	110.2	
495.8	CARBONDALE	ST. DAVID	LIMESTONE	0.8	121.0	
495.0	CARBONDALE	TURNER MINE	BLACK SHALE	5.2	121.8	
489.8	CARBONDALE	SPRINGFIELD	COAL	5.3	127.0	
484.5	CARBONDALE		UNDERCLAY	1.8	132.3	

MAPID: 01780138000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 165' N line, 1' W line of SW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.022685 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.963193 DATE COLLECTED: 10 / 19 / 1965
 SURFACE ELEVATION (FT.): 583.2 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N38D WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
583.2	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
576.2	PLEISTOCENE		CLAY	14.0	7.0	
562.2	PLEISTOCENE		CLAY	43.0	21.0	
519.2	CARBONDALE		LIMESTONE	1.0	64.0	HARD
518.2	CARBONDALE		GRAY SHALE	9.0	65.0	SOFT
509.2	CARBONDALE		LIMESTONE	2.0	74.0	
507.2	CARBONDALE		GRAY SHALE	11.0	76.0	
496.2	CARBONDALE	ST. DAVID	LIMESTONE	1.0	87.0	
495.2	CARBONDALE		GRAY SHALE	1.0	88.0	SOFT
494.2	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	89.0	
493.2	CARBONDALE	SPRINGFIELD	COAL	5.2	90.0	
488.0	CARBONDALE		UNDERCLAY	2.8	95.2	

MAPID: 01780139000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 495' S line, 660' W line of NW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.020343 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.965036 DATE COLLECTED: 10 / 28 / 1965
 SURFACE ELEVATION (FT.): 583.6 LOGGED (FT.): 96.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N64D WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
583.6	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
569.6	PLEISTOCENE		CLAY	22.0	14.0	
547.6	CARBONDALE		SANDY SHALE	28.0	36.0	
519.6	CARBONDALE		COAL W/ BLACK SHALE	1.0	64.0	
518.6	CARBONDALE		GRAY SHALE	7.0	65.0	
511.6	CARBONDALE		LIMESTONE	2.0	72.0	SOFT
509.6	CARBONDALE		GRAY SHALE	15.0	74.0	
494.6	CARBONDALE	ST. DAVID	LIMESTONE	0.5	89.0	HARD
494.1	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	89.5	SOFT
492.6	CARBONDALE	SPRINGFIELD	COAL	4.5	91.0	STREAKED
488.1	CARBONDALE		UNDERCLAY	0.5	95.5	

MAPID: 01780142000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 660' N line, 1' W line of NE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.017986 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.965493 DATE COLLECTED: 10 / 19 / 1965
SURFACE ELEVATION (FT.): 578.1 LOGGED (FT.): 93.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N90 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
578.1	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
564.1	PLEISTOCENE		SAND & GRAVEL	49.0	14.0	
515.1	CARBONDALE		COAL W/ BLACK SHALE	1.0	63.0	TOP ERODED
514.1	CARBONDALE		MICACEOUS SHALE	2.0	64.0	SOFT
512.1	CARBONDALE		LIMESTONE	2.0	66.0	
510.1	CARBONDALE		SHALE WITH LIMESTONE	17.0	68.0	HARD
493.1	CARBONDALE		BLACK SHALE	2.0	85.0	SOFT
491.1	CARBONDALE		COAL	4.9	87.0	HARD
486.2	CARBONDALE		UNDERCLAY	1.1	91.9	

MAPID: 01780143000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.022734 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.967286 DATE COLLECTED: 10 / 18 / 1965
SURFACE ELEVATION (FT.): 614.6 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N113 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.6	PLEISTOCENE		UNKNOWN	123.0	0.0	
491.6			COAL	4.3	123.0	GOOD
487.3			UNDERCLAY	2.7	127.3	

MAPID: 01780144000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 32 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.018014 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.967317 **DATE COLLECTED:** 6 / 3 / 1966
SURFACE ELEVATION (FT.): 576.4 **LOGGED (FT.):** 94.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N115 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
576.4	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
569.4	PLEISTOCENE		CLAY	14.0	7.0	
555.4	PLEISTOCENE		CLAY	35.0	21.0	
520.4	CARBONDALE		GRAY SHALE	5.0	56.0	SOFT
515.4	CARBONDALE		BLACK SHALE	1.0	61.0	SOFT
514.4	CARBONDALE		COAL	1.0	62.0	
513.4	CARBONDALE		GRAY SHALE	10.0	63.0	SOFT
503.4	CARBONDALE		GRAY SHALE	11.0	73.0	
492.4	CARBONDALE	ST. DAVID	LIMESTONE	1.0	84.0	CAP ROCK
491.4	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	85.0	SOFT
489.4	CARBONDALE	SPRINGFIELD	COAL	5.0	87.0	
484.4	CARBONDALE		UNDERCLAY	2.0	92.0	

MAPID: 01780145000C **VERSION:** 1 **PROJECT:** NCRDSX02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 32 **QUARTERS/FOOTAGES:** 1' S line, 30' E line of SE NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.01339 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.967346 **DATE COLLECTED:** 6 / 3 / 1966
SURFACE ELEVATION (FT.): 591.8 **LOGGED (FT.):** 105.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N117 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
591.8	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0	
579.8	PLEISTOCENE		SAND & GRAVEL	70.0	12.0	
509.8	CARBONDALE		GRAY SHALE	16.0	82.0	SOFT
493.8	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	98.0	SOFT
492.8	CARBONDALE	SPRINGFIELD	COAL	5.0	99.0	
487.8	CARBONDALE		UNDERCLAY	1.0	104.0	SOFT

MAPID: 01780148000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 102' N line, 1' W line of SW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.022777 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.970636 DATE COLLECTED: 10 / 7 / 1965
SURFACE ELEVATION (FT.): 594.2 LOGGED (FT.): 114.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N163 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
594.2	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
588.2	PLEISTOCENE		CLAY	74.0	6.0	
514.2	CARBONDALE		LIMESTONE	1.8	80.0	
512.4	CARBONDALE		SHALE WITH LIMESTONE	7.2	81.8	
505.2	CARBONDALE		LIMESTONE	1.3	89.0	
503.9	CARBONDALE		SHALE WITH LIMESTONE	16.8	90.3	
487.2	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	107.0	
486.2	CARBONDALE	SPRINGFIELD	COAL	5.0	108.0	GOOD
481.2	CARBONDALE		UNDERCLAY	1.0	113.0	

MAPID: 01780149000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 32 QUARTERS/FOOTAGES: 20' N line, 480' W line of SW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.02097 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.963609 DATE COLLECTED: 10 / 28 / 1965
SURFACE ELEVATION (FT.): 572.1 LOGGED (FT.): 88.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N163P WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
572.1	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
561.1	PLEISTOCENE		CLAY	4.0	11.0	
557.1	PLEISTOCENE		SAND & GRAVEL	49.0	15.0	
508.1	CARBONDALE		SANDY SHALE	15.0	64.0	
493.1	CARBONDALE	ST. DAVID	LIMESTONE	1.0	79.0	
492.1	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	80.0	SOFT
490.1	CARBONDALE	SPRINGFIELD	COAL	5.0	82.0	GOOD
485.1	CARBONDALE		UNDERCLAY	1.0	87.0	

MAPID: 01780150000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 32 **QUARTERS/FOOTAGES:** 15' N line, 1' E line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.018062 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.970894 **DATE COLLECTED:** 10 / 7 / 1965
SURFACE ELEVATION (FT.): 621.4 **LOGGED (FT.):** 133.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N165 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
621.4	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
614.4	PLEISTOCENE		CLAY	11.0	7.0	
603.4	PLEISTOCENE		CLAY	85.0	18.0	
518.4	CARBONDALE		LIMESTONE	2.0	103.0	HARD
516.4	CARBONDALE		GRAY SHALE	18.0	105.0	GRAY
498.4	CARBONDALE	ST. DAVID	LIMESTONE	1.0	123.0	HARD
497.4	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	124.0	
495.4	CARBONDALE	SPRINGFIELD	COAL	5.0	126.0	
490.4	CARBONDALE		UNDERCLAY	2.0	131.0	

MAPID: 01780154000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 32 **QUARTERS/FOOTAGES:** 20' N line, 20' W line of NE NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.027483 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.974493 **DATE COLLECTED:** 10 / 12 / 1965
SURFACE ELEVATION (FT.): 619.9 **LOGGED (FT.):** 139.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE N211 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.9	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
609.9	PLEISTOCENE		CLAY	17.0	10.0	
592.9	PLEISTOCENE		CLAY	82.0	27.0	
510.9	CARBONDALE		LIMESTONE	0.8	109.0	
510.1	CARBONDALE		SHALE WITH LIMESTONE	3.3	109.8	
506.9	CARBONDALE		LIMESTONE	1.5	113.0	
505.4	CARBONDALE		SHALE WITH LIMESTONE	17.5	114.5	
487.9	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	132.0	
485.9	CARBONDALE	SPRINGFIELD	COAL	3.9	134.0	
482.0	CARBONDALE		UNDERCLAY	1.1	137.9	

MAPID: 01720273000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW SW SE NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.008078 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.967766 **DATE COLLECTED:** 4 / 4 / 1970
SURFACE ELEVATION (FT.): 617.0 **LOGGED (FT.):** 146.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E119 **WELL TYPE:** Coal Test
COMMENT: ELEV RECONSTRUCTED FROM COAL ELEVN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.0	PLEISTOCENE		CLAY	40.0	0.0	
577.0	PLEISTOCENE		CLAY	10.0	40.0	INCLUDES WOOD
567.0	PLEISTOCENE		CLAY	35.0	50.0	
532.0	CARBONDALE		SHALE	5.0	85.0	
527.0	CARBONDALE	ANNA	BLACK SHALE	3.0	90.0	
524.0	CARBONDALE	HERRIN	COAL	1.5	93.0	
522.5	CARBONDALE		SHALE	7.5	94.5	
515.0	CARBONDALE		LIMESTONE	6.0	102.0	
509.0	CARBONDALE		SHALE	13.0	108.0	
496.0	CARBONDALE		LIMESTONE	2.0	121.0	
494.0	CARBONDALE		LIMESTONE	14.5	123.0	
479.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	137.5	
478.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	138.5	
477.0	CARBONDALE	SPRINGFIELD	COAL	5.2	140.0	
471.8	CARBONDALE		UNDERCLAY	0.8	145.2	

MAPID: 01720274000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 33 **QUARTERS/FOOTAGES:** 24' N line, 7' W line of NW SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.003999 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.967223 **DATE COLLECTED:** 6 / 18 / 1969
SURFACE ELEVATION (FT.): 628.0 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E121 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
628.0	PLEISTOCENE		CLAY	40.0	0.0	SANDY
588.0	PLEISTOCENE		CLAY	65.0	40.0	WITH GRAVEL
523.0	CARBONDALE		LIMESTONE	1.5	105.0	
521.5	CARBONDALE		GRAY SHALE	4.0	106.5	W/PIECES OF LIMESTONE
517.5	CARBONDALE		LIMESTONE	3.5	110.5	
514.0	CARBONDALE		GRAY SHALE	23.5	114.0	W/PIECES OF LIMESTONE DARK
490.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	137.5	
490.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.2	138.0	
485.8	CARBONDALE	SPRINGFIELD	COAL	5.2	142.2	
480.6	CARBONDALE		UNDERCLAY	0.6	147.4	

MAPID: 01720275000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 100' S line, 0' W line of SW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.003974 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.960329 DATE COLLECTED: 6 / 17 / 1969
 SURFACE ELEVATION (FT.): 624.0 LOGGED (FT.): 163.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E21 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
624.0	PLEISTOCENE		CLAY	65.0	0.0	SANDY
559.0	PLEISTOCENE		CLAY	35.0	65.0	WITH GRAVEL
524.0	PLEISTOCENE		CLAY	10.0	100.0	
514.0	CARBONDALE	ANNA	BLACK SHALE	2.5	110.0	
511.5	CARBONDALE	HERRIN	COAL	2.8	112.5	
508.7	CARBONDALE		GRAY SHALE	6.7	115.3	
502.0	CARBONDALE		GRAY SHALE	2.5	122.0	LIMESTONE INTERBEDS
499.5	CARBONDALE		GRAY SHALE	29.0	124.5	
470.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	153.5	DARK
470.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	154.0	
467.0	CARBONDALE	SPRINGFIELD	COAL	5.1	157.0	
461.9	CARBONDALE		UNDERCLAY	0.9	162.1	

MAPID: 01720276000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 0' N line, 280' E line of NW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.009731 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.974551 DATE COLLECTED: 5 / 7 / 1970
 SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 136.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E218B WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.0	PLEISTOCENE		CLAY	92.0	0.0	
519.0	CARBONDALE		LIMESTONE	6.0	92.0	SHALE INTERBEDS
513.0	CARBONDALE	ANNA	SHALE	4.0	98.0	CORRELATION UNCERTAIN
509.0	CARBONDALE	HERRIN	COAL	2.5	102.0	
506.5	CARBONDALE		GRAY SHALE	2.5	104.5	
504.0	CARBONDALE		LIMESTONE	7.0	107.0	SHALE INTERBEDS
497.0	CARBONDALE		GRAY SHALE	11.0	114.0	
486.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	125.0	HARD
484.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	127.0	
482.0	CARBONDALE	SPRINGFIELD	COAL	6.0	129.0	
476.0	CARBONDALE		UNDERCLAY	1.0	135.0	

MAPID: 01720277000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 75' S line, 250' E line of NW NW
 QUADRANGLE: ASHLAND LONGITUDE: -90.009587 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.971143 DATE COLLECTED: 4 / 6 / 1970
 SURFACE ELEVATION (FT.): 628.0 LOGGED (FT.): 147.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E1168BB WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
628.0	PLEISTOCENE		CLAY	78.0	0.0	
550.0	PLEISTOCENE		CLAY & GRAVEL	2.0	78.0	
548.0	PLEISTOCENE		CLAY	14.0	80.0	
534.0	CARBONDALE	ANNA	BLACK SHALE	3.0	94.0	INCLUDES COAL (HERRIN)
531.0	CARBONDALE		SHALE	8.0	97.0	
523.0	CARBONDALE		LIMESTONE	7.0	105.0	SHALE INTERBEDS
516.0	CARBONDALE		SHALE	9.0	112.0	
507.0	CARBONDALE		LIMESTONE	1.0	121.0	
506.0	CARBONDALE		SHALE	17.0	122.0	
489.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	139.0	
488.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	140.0	
486.5	CARBONDALE	SPRINGFIELD	COAL	5.0	141.5	
481.5	CARBONDALE		UNDERCLAY	0.5	146.5	

MAPID: 01720278000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 50' N line, 30' W line of NW NE
 QUADRANGLE: ASHLAND LONGITUDE: -90.003965 GEOLOGIST: HAMER
 CONFIDENTIAL: N LATITUDE: 39.974388 DATE COLLECTED: 6 / 18 / 1969
 SURFACE ELEVATION (FT.): 627.0 LOGGED (FT.): 157.0 LOG TYPE: Drillers Log
 SOURCE: COMMONWEALTH EDISON E221 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
627.0	PLEISTOCENE		SANDY CLAY	16.0	0.0	
611.0	PLEISTOCENE		CLAY	24.0	16.0	WITH GRAVEL
587.0	PLEISTOCENE		CLAY	30.0	40.0	
557.0	PLEISTOCENE		CLAY	27.5	70.0	WITH GRAVEL
529.5	CARBONDALE	ANNA	BLACK SHALE	2.5	97.5	
527.0	CARBONDALE	HERRIN	COAL	2.8	100.0	
524.2	CARBONDALE		GRAY SHALE	32.2	102.8	LIMESTONE INTERBEDS
492.0	CARBONDALE		GRAY SHALE	11.0	135.0	
481.0	CARBONDALE	ST. DAVID	LIMESTONE	2.7	146.0	DARK
478.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.6	148.7	RASHY
475.7	CARBONDALE	SPRINGFIELD	COAL	4.9	151.3	
470.8	CARBONDALE		UNDERCLAY	0.8	156.2	

MAPID: 01720279000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 122' S line, 18' W line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.013176 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.964071 DATE COLLECTED: 4 / 6 / 1970
SURFACE ELEVATION (FT.): 618.0 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E69 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.0	PLEISTOCENE		CLAY	65.0	0.0	
553.0	PLEISTOCENE		CLAY	15.0	65.0	WITH GRAVEL
538.0	PLEISTOCENE		CLAY	20.0	80.0	
518.0	CARBONDALE		LIMESTONE	10.0	100.0	SHALE INTERBEDS
508.0	CARBONDALE		SHALE	22.0	110.0	
486.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	132.0	
485.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	133.0	
484.0	CARBONDALE	SPRINGFIELD	COAL	5.5	134.0	
478.5	CARBONDALE		UNDERCLAY	0.5	139.5	

MAPID: 01720280000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: SE SE NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.009199 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.96416 DATE COLLECTED: 4 / 7 / 1970
SURFACE ELEVATION (FT.): 624.0 LOGGED (FT.): 151.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON E68 WELL TYPE: Coal Test
COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
624.0	PLEISTOCENE		CLAY	95.0	0.0	
529.0	CARBONDALE	ANNA	BLACK SHALE	3.0	95.0	
526.0	CARBONDALE	HERRIN	COAL	1.0	98.0	
525.0	CARBONDALE		SHALE	9.0	99.0	
516.0	CARBONDALE		LIMESTONE	9.0	108.0	SHALE INTERBEDS
507.0	CARBONDALE		SHALE	8.0	117.0	
499.0	CARBONDALE		LIMESTONE	2.0	125.0	
497.0	CARBONDALE		SHALE	15.0	127.0	
482.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	142.0	
480.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	143.5	
478.5	CARBONDALE	SPRINGFIELD	COAL	5.0	145.5	
473.5	CARBONDALE		UNDERCLAY	0.5	150.5	

MAPID: 01720281000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 33 **QUARTERS/FOOTAGES:** SE SE NW SE
QUADRANGLE: TALLULA **LONGITUDE:** -89.999959 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.964097 **DATE COLLECTED:** 4 / 14 / 1970
SURFACE ELEVATION (FT.): 627.0 **LOGGED (FT.):** 145.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E73 **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
627.0	PLEISTOCENE		SOIL	2.0	0.0	
625.0	PLEISTOCENE		CLAY	78.0	2.0	
547.0	CARBONDALE		GRAY SHALE	14.0	80.0	
533.0	CARBONDALE	ANNA	BLACK SHALE	2.0	94.0	WITH COAL
531.0	CARBONDALE		GRAY SHALE	3.0	96.0	
528.0	CARBONDALE		LIMESTONE	8.0	99.0	SHALE INTERBEDS
520.0	CARBONDALE		LIMESTONE	3.0	107.0	HARD
517.0	CARBONDALE		SHALE	25.0	110.0	LIMESTONE INTERBEDS
492.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	135.0	
489.0	CARBONDALE	SPRINGFIELD	COAL	1.8	138.0	
487.2	CARBONDALE	SPRINGFIELD	LIMESTONE	0.3	139.8	
486.9	CARBONDALE	SPRINGFIELD	COAL	3.9	140.1	
483.0	CARBONDALE		UNDERCLAY	1.0	144.0	

MAPID: 01720282000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 8W **SECTION:** 33 **QUARTERS/FOOTAGES:** SE SE SW SE
QUADRANGLE: TALLULA **LONGITUDE:** -89.999944 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.960476 **DATE COLLECTED:** 4 / 13 / 1970
SURFACE ELEVATION (FT.): 630.0 **LOGGED (FT.):** 158.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON E23 **WELL TYPE:** Coal Test
COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0	PLEISTOCENE		SOIL	2.0	0.0	
628.0	PLEISTOCENE		CLAY	83.0	2.0	
545.0	CARBONDALE		GRAY SHALE	9.5	85.0	THICKNESS ADJUSTED, LIMESTONE INTERBEDS
535.5	CARBONDALE	ANNA	BLACK SHALE	2.0	94.5	
533.5	CARBONDALE	HERRIN	COAL	1.5	96.5	
532.0	CARBONDALE		GRAY SHALE	7.0	98.0	
525.0	CARBONDALE		LIMESTONE W/ SHALE	43.0	105.0	
482.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	148.0	
479.5	CARBONDALE	SPRINGFIELD	COAL	6.0	150.5	
473.5	CARBONDALE		UNDERCLAY	1.5	156.5	

MAPID: 01780140000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.013183 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.960127 DATE COLLECTED: 6 / 2 / 1966
 SURFACE ELEVATION (FT.): 618.8 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N67 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.8	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
611.8	PLEISTOCENE		CLAY	22.0	7.0	
589.8	PLEISTOCENE		CLAY	67.0	29.0	
522.8	CARBONDALE		LIMESTONE	6.0	96.0	HARD
516.8	CARBONDALE		GRAY SHALE	2.0	102.0	SOFT
514.8	CARBONDALE		SHALE WITH LIMESTONE	6.0	104.0	HARD
508.8	CARBONDALE		GRAY SHALE	21.0	110.0	
487.8	CARBONDALE	ST. DAVID	LIMESTONE	1.0	131.0	CAP ROCK
486.8	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	132.0	SOFT
485.8	CARBONDALE	SPRINGFIELD	COAL	5.3	133.0	HARD
480.5	CARBONDALE		UNDERCLAY	1.8	138.3	

MAPID: 01780141000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 30' N line, 1' E line of SW SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.008618 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.963621 DATE COLLECTED: 6 / 6 / 1966
 SURFACE ELEVATION (FT.): 623.7 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE N69 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
623.7	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
604.7	PLEISTOCENE		SAND & GRAVEL	47.0	19.0	
557.7	CARBONDALE		GRAY SHALE	29.0	66.0	SOFT
528.7	CARBONDALE		BLACK SHALE	2.0	95.0	SOFT
526.7	CARBONDALE		COAL W/ BLACK SHALE	1.0	97.0	SOFT
525.7	CARBONDALE		GRAY SHALE	8.0	98.0	SOFT
517.7	CARBONDALE		SHALE WITH LIMESTONE	12.0	106.0	HARD
505.7	CARBONDALE		SHALE WITH LIMESTONE	20.0	118.0	
485.7	CARBONDALE	ST. DAVID	LIMESTONE	1.0	138.0	HARD
484.7	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	139.0	SOFT
482.7	CARBONDALE	SPRINGFIELD	COAL	5.7	141.0	
477.0	CARBONDALE		UNDERCLAY	1.3	146.7	

MAPID: 01780146000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES:

QUADRANGLE: ASHLAND LONGITUDE: -90.004025

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.96729

DATE COLLECTED: 6 / 3 / 1966

SURFACE ELEVATION (FT.): 618.3 LOGGED (FT.): 146.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE N119

WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.3	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
596.3	PLEISTOCENE		CLAY	57.0	22.0	
539.3	CARBONDALE		GRAY SHALE	12.0	79.0	
527.3	CARBONDALE		BLACK SHALE	2.0	91.0	
525.3	CARBONDALE		COAL	1.0	93.0	
524.3	CARBONDALE		UNDERCLAY	1.0	94.0	
523.3	CARBONDALE		GRAY SHALE	6.0	95.0	
517.3	CARBONDALE		LIMESTONE	4.2	101.0	
513.1	CARBONDALE		GRAY SHALE	14.8	105.2	
498.3	CARBONDALE		LIMESTONE	1.0	120.0	
497.3	CARBONDALE		GRAY SHALE	14.0	121.0	
483.3	CARBONDALE	ST. DAVID	LIMESTONE	1.3	135.0	
482.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.8	136.3	
478.3	CARBONDALE	SPRINGFIELD	COAL	4.5	140.0	
473.8	CARBONDALE		UNDERCLAY	1.5	144.5	

MAPID: 01780147000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 290' N line, 180' E line of SW NW

QUADRANGLE: ASHLAND LONGITUDE: -90.009329

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.970134

DATE COLLECTED: 6 / 6 / 1966

SURFACE ELEVATION (FT.): 617.8 LOGGED (FT.): 137.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE N143I

WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.8	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
595.8	PLEISTOCENE		SAND & GRAVEL	72.0	22.0	
523.8	CARBONDALE		SHALE WITH LIMESTONE	12.0	94.0	
511.8	CARBONDALE		COAL	1.0	106.0	SOFT
510.8	CARBONDALE		GRAY SHALE	22.0	107.0	LIMY
488.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	129.0	
486.8	CARBONDALE	SPRINGFIELD	COAL	5.0	131.0	
481.8	CARBONDALE		UNDERCLAY	1.0	136.0	

MAPID: 01780151000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 8W SECTION: 33 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW NW
QUADRANGLE: ASHLAND LONGITUDE: -90.013327 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.970951 DATE COLLECTED: 6 / 6 / 1966
SURFACE ELEVATION (FT.): 623.7 LOGGED (FT.): 134.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE N167 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
623.7	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
603.7	PLEISTOCENE		CLAY	10.0	20.0
593.7	PLEISTOCENE		SAND & GRAVEL	3.0	30.0
590.7	PLEISTOCENE		CLAY	71.0	33.0
519.7	CARBONDALE		GRAY SHALE	6.0	104.0
513.7	CARBONDALE		GRAY SHALE	2.0	110.0
511.7	CARBONDALE		GRAY SHALE	13.0	112.0
498.7	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	125.0
495.7	CARBONDALE	SPRINGFIELD	COAL	5.0	128.0
490.7	CARBONDALE		UNDERCLAY	1.0	133.0

MAPID: 01780047000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 13 QUARTERS/FOOTAGES: 250' S line, 1' E line of NW SW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.065294 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.007823 DATE COLLECTED: 5 / 23 / 1966
SURFACE ELEVATION (FT.): 565.1 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE S69 WELL TYPE: Coal Test
COMMENT: NEWMANSVILLE BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
565.1	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
555.1	PLEISTOCENE		CLAY	61.0	10.0
494.1	CARBONDALE		GRAY SHALE	25.0	71.0
469.1	CARBONDALE		LIMESTONE	0.5	96.0
468.6	CARBONDALE		GRAY SHALE	20.5	96.5
448.1	CARBONDALE		SANDSTONE	3.0	117.0

MAPID: 01780048000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 13 QUARTERS/FOOTAGES: 825' S line, 1' E line of NW SW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.065296 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.00941 DATE COLLECTED: 5 / 23 / 1966
SURFACE ELEVATION (FT.): 523.4 LOGGED (FT.): 107.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE S94J WELL TYPE: Coal Test
COMMENT: NEWMANSVILLE BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
523.4	PLEISTOCENE		UNCONSOLIDATED	5.0	0.0
518.4	PLEISTOCENE		CLAY	6.0	5.0
512.4	PLEISTOCENE		CLAY	27.0	11.0
485.4	CARBONDALE		SHALE	30.0	38.0
455.4	CARBONDALE		GRAY SHALE	10.0	68.0
445.4	CARBONDALE		GRAY SHALE	29.0	78.0

MAPID: 01780050000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 13 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.069957 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.014499 DATE COLLECTED: 5 / 23 / 1966
SURFACE ELEVATION (FT.): 600.9 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE S169 WELL TYPE: Coal Test
COMMENT: NEWMANSVILLE BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.9	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0
559.9	PLEISTOCENE		CLAY	17.0	41.0
542.9	PLEISTOCENE		SAND & GRAVEL	9.0	58.0
533.9	PLEISTOCENE		CLAY	40.0	67.0
493.9	CARBONDALE		GRAY SHALE	41.0	107.0

MAPID: 01780051000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 13 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.069957 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.014499 DATE COLLECTED: 5 / 23 / 1966
SURFACE ELEVATION (FT.): 584.5 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE S167 WELL TYPE: Coal Test
COMMENT: NEWMANSVILLE BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
584.5	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0
577.5	PLEISTOCENE		CLAY	12.0	7.0
565.5	PLEISTOCENE		CLAY	81.0	19.0
484.5			GRAY SHALE	48.0	100.0

MAPID: 01780053000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 13 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.069962 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.018175 DATE COLLECTED: 5 / 16 / 1966
SURFACE ELEVATION (FT.): 595.8 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE S217 WELL TYPE: Coal Test
COMMENT: NEWMANSVILLE BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.8	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0
558.8	PLEISTOCENE		CLAY	78.0	37.0
480.8	CARBONDALE		GRAY SHALE	12.0	115.0
468.8	CARBONDALE		LIMESTONE	1.0	127.0
467.8	CARBONDALE		DARK SHALE	4.0	128.0
463.8	CARBONDALE		LIMESTONE	3.0	132.0
460.8	CARBONDALE		BLACK SHALE	13.0	135.0

MAPID: 01780054000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 13 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.065313 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.018162 DATE COLLECTED: 5 / 16 / 1966
SURFACE ELEVATION (FT.): 600.5 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE S219 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.5	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0
593.5	PLEISTOCENE		CLAY	20.0	7.0
573.5	PLEISTOCENE		CLAY	93.0	27.0
480.5	CARBONDALE		GRAY SHALE	20.0	120.0
460.5	CARBONDALE		LIMESTONE	2.0	140.0 HARD
458.5	CARBONDALE		DARK SHALE	5.0	142.0
453.5	CARBONDALE		LIMESTONE	1.0	147.0 HARD

MAPID: 01720144000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 14 QUARTERS/FOOTAGES: SW SW SW NW
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.088258 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 40.011415 DATE COLLECTED: 5 / 23 / 1970
SURFACE ELEVATION (FT.): 569.0 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON AW109 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
569.0	PLEISTOCENE		CLAY	100.0	0.0

MAPID: 01780049000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 14 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE NE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.069964 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.014507 DATE COLLECTED: 5 / 16 / 1966
SURFACE ELEVATION (FT.): 561.8 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE S165 WELL TYPE: Coal Test
COMMENT: NEWMANSVILLE BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
561.8	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
543.8	PLEISTOCENE		CLAY	57.0	18.0	
486.8	CARBONDALE		GRAY SHALE	26.0	75.0	
460.8	CARBONDALE		LIMESTONE	2.0	101.0	
458.8	CARBONDALE		GRAY SHALE	5.0	103.0	

MAPID: 01780052000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 14 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE NE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.074711 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.018194 DATE COLLECTED: 5 / 16 / 1966
SURFACE ELEVATION (FT.): 547.0 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE S215 WELL TYPE: Coal Test
COMMENT: NEWMANSVILLE BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
547.0	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
541.0	PLEISTOCENE		CLAY	5.0	6.0	
536.0	PLEISTOCENE		CLAY	49.0	11.0	
487.0	CARBONDALE		GRAY SHALE	25.0	60.0	
462.0	CARBONDALE		LIMESTONE	4.0	85.0	HARD
458.0	CARBONDALE		GRAY SHALE	19.0	89.0	

MAPID: 01720283000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 22 QUARTERS/FOOTAGES: SE SE SE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.098555 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.996794 DATE COLLECTED: 5 / 22 / 1970
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON EW505 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED, NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		SOIL	2.0	0.0	
598.0	PLEISTOCENE		CLAY	98.0	2.0	

MAPID: 01720284000C **VERSION:** 1 **PROJECT:** NCRDS96
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 23 **QUARTERS/FOOTAGES:** SW SW SE NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.073899 **GEOLOGIST:** HAMER
CONFIDENTIAL: N **LATITUDE:** 39.996767 **DATE COLLECTED:** 5 / 21 / 1970
SURFACE ELEVATION (FT.): 607.0 **LOGGED (FT.):** 120.0 **LOG TYPE:** Drillers Log
SOURCE: COMMONWEALTH EDISON EW515 **WELL TYPE:** Coal Test
COMMENT: NO COAL LOGGED;NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
607.0	PLEISTOCENE		CLAY	120.0	0.0

MAPID: 01780132000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 24 **QUARTERS/FOOTAGES:** 100' S line, 1' E line of NW SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.065041 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.993009 **DATE COLLECTED:** 5 / 19 / 1966
SURFACE ELEVATION (FT.): 563.6 **LOGGED (FT.):** 128.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M469 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
563.6	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
545.6	PLEISTOCENE		SAND & GRAVEL	43.0	18.0
502.6	CARBONDALE		SANDSTONE	3.0	61.0 SOFT
499.6	CARBONDALE		GRAY SHALE	2.0	64.0 SOFT
497.6	CARBONDALE		SANDSTONE	5.0	66.0
492.6	CARBONDALE		GRAY SHALE	41.0	71.0
451.6	CARBONDALE		DARK SHALE	16.0	112.0

MAPID: 01780133000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 24 **QUARTERS/FOOTAGES:** 40' N line, 1' E line of NW SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.065114 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.996197 **DATE COLLECTED:** 5 / 20 / 1960
SURFACE ELEVATION (FT.): 598.4 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M519 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
598.4	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
577.4	PLEISTOCENE		CLAY	14.0	21.0
563.4	PLEISTOCENE		SAND & GRAVEL	6.0	35.0
557.4	PLEISTOCENE		CLAY	57.0	41.0
500.4	CARBONDALE		GRAY SHALE	50.0	98.0

MAPID: 01780134000C VERSION: 1 PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 24 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE NE

QUADRANGLE: ASHLAND LONGITUDE: -90.05118 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.999859 DATE COLLECTED: 5 / 20 / 1966

SURFACE ELEVATION (FT.): 595.3 LOGGED (FT.): 147.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE MK575 WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.3	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
588.3	PLEISTOCENE		CLAY	20.0	7.0	
568.3	PLEISTOCENE		CLAY	73.0	27.0	
495.3	CARBONDALE		GRAY SHALE	47.0	100.0	

MAPID: 01720285000C VERSION: 1 PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: NE NE NE SE

QUADRANGLE: ASHLAND LONGITUDE: -90.051371 GEOLOGIST: HAMER

CONFIDENTIAL: N LATITUDE: 39.981311 DATE COLLECTED: 6 / 29 / 1969

SURFACE ELEVATION (FT.): 617.0 LOGGED (FT.): 114.0 LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON EW325 WELL TYPE: Coal Test

COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.0	PLEISTOCENE		CLAY	10.0	0.0	SANDY
607.0	PLEISTOCENE		CLAY	69.5	10.0	WITH GRAVEL
537.5	PLEISTOCENE		BOULDER	1.5	79.5	LIMESTONE
536.0	PLEISTOCENE		CLAY	21.1	81.0	WITH GRAVEL
514.9	CARBONDALE		LIMESTONE	5.4	102.1	
509.5	CARBONDALE		GRAY SHALE	0.6	107.5	
508.9	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	108.1	RASHY
508.4	CARBONDALE	SPRINGFIELD	COAL	3.6	108.6	
504.8	CARBONDALE		UNDERCLAY	1.8	112.2	

MAPID: 01720286000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 200' N line, 0' W line of SE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.05549 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.98494 DATE COLLECTED: 6 / 23 / 1969
SURFACE ELEVATION (FT.): 614.0 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON EW348D WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.0	PLEISTOCENE	TURNER MINE SPRINGFIELD	CLAY	10.0	0.0	SANDY
604.0	PLEISTOCENE		CLAY	75.0	10.0	WITH GRAVEL
529.0	PLEISTOCENE		CLAY	18.5	85.0	WITH LIMESTONE "RIBS"
510.5	CARBONDALE		BLACK SHALE	0.5	103.5	RASHY
510.0	CARBONDALE		COAL	1.6	104.0	
508.4	CARBONDALE		UNDERCLAY	8.4	105.6	COAL, BLACK SHALE, & LIMESTONE INTERBEDS
500.0	CARBONDALE		GRAY SHALE	4.0	114.0	

MAPID: 01780120000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 1' S line, 330' W line of SE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.063705 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.981766 DATE COLLECTED: 6 / 2 / 1966
SURFACE ELEVATION (FT.): 559.5 LOGGED (FT.): 53.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M319B WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
559.5	PLEISTOCENE	ST. DAVID TURNER MINE SPRINGFIELD	UNCONSOLIDATED	18.0	0.0	
541.5	PLEISTOCENE		CLAY	21.0	18.0	
520.5	CARBONDALE		LIMESTONE	2.0	39.0	
518.5	CARBONDALE		BLACK SHALE	5.0	41.0	
513.5	CARBONDALE		COAL	5.3	46.0	SOFT
508.2	CARBONDALE		UNDERCLAY	1.8	51.3	

MAPID: 01780121000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 25 **QUARTERS/FOOTAGES:** 2640' S line, 2640' E line
QUADRANGLE: ASHLAND **LONGITUDE:** -90.060253 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.981636 **DATE COLLECTED:** 6 / 2 / 1966
SURFACE ELEVATION (FT.): 610.8 **LOGGED (FT.):** 105.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M321 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.8	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0	
586.8	PLEISTOCENE		SAND & GRAVEL	71.0	24.0	
515.8	CARBONDALE	ST. DAVID	LIMESTONE	2.0	95.0	HARD
513.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	97.0	HARD
511.8	CARBONDALE	SPRINGFIELD	COAL	2.9	99.0	GOOD
508.9	CARBONDALE		ROCK	0.5	101.9	
508.4	CARBONDALE	SPRINGFIELD	COAL	1.6	102.4	GOOD
506.8	CARBONDALE		UNDERCLAY	1.0	104.0	

MAPID: 01780122000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 25 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of NE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.055475 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.978057 **DATE COLLECTED:** 5 / 12 / 1966
SURFACE ELEVATION (FT.): 617.7 **LOGGED (FT.):** 168.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M323 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.7	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
602.7	PLEISTOCENE		CLAY	10.0	15.0	
592.7	PLEISTOCENE		CLAY	54.0	25.0	
538.7	PLEISTOCENE		BOULDER	2.0	79.0	
536.7	PLEISTOCENE		CLAY	15.0	81.0	
521.7	CARBONDALE		LIMESTONE	3.0	96.0	
518.7	CARBONDALE		SANDSTONE	6.0	99.0	
512.7	CARBONDALE		GRAY SHALE	1.0	105.0	
511.7	CARBONDALE	SPRINGFIELD	COAL	4.0	106.0	POOR FLOAT
507.7	CARBONDALE		UNDERCLAY	1.0	110.0	
506.7	CARBONDALE		GRAY SHALE	2.0	111.0	
504.7	CARBONDALE		LIMESTONE	1.0	113.0	
503.7	CARBONDALE		GRAY SHALE	17.0	114.0	SOFT
486.7	CARBONDALE		GRAY SHALE	37.0	131.0	HARD

MAPID: 01780123000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 25 **QUARTERS/FOOTAGES:** 1' N line, 1' E line of NE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.050786 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.981777 **DATE COLLECTED:** 5 / 12 / 1966
SURFACE ELEVATION (FT.): 617.9 **LOGGED (FT.):** 188.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M325 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.9	PLEISTOCENE	SPRINGFIELD	UNCONSOLIDATED	17.0	0.0	
600.9	PLEISTOCENE		SAND & GRAVEL	77.0	17.0	
523.9	CARBONDALE		GRAY SHALE	10.0	94.0	SOFT
513.9	CARBONDALE		SANDSTONE	5.0	104.0	HARD
508.9	CARBONDALE		GRAY SHALE	1.0	109.0	SOFT
507.9	CARBONDALE		COAL	2.5	110.0	BONEY
505.4	CARBONDALE		UNDERCLAY	1.5	112.5	
503.9	CARBONDALE		GRAY SHALE	74.0	114.0	LIMY

MAPID: 01780124000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 25 **QUARTERS/FOOTAGES:** 1' S line, 270' W line of NE NW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.063951 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.985466 **DATE COLLECTED:** 6 / 1 / 1966
SURFACE ELEVATION (FT.): 561.9 **LOGGED (FT.):** 57.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M369NB **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
561.9	PLEISTOCENE	TURNER MINE SPRINGFIELD	UNCONSOLIDATED	5.0	0.0	
556.9	PLEISTOCENE		CLAY	9.0	5.0	
547.9	PLEISTOCENE		CLAY	26.0	14.0	
521.9	CARBONDALE		SANDSTONE	5.0	40.0	HARD
516.9	CARBONDALE		GRAY SHALE	5.0	45.0	
511.9	CARBONDALE		BLACK SHALE	1.0	50.0	
510.9	CARBONDALE		COAL	4.0	51.0	HARD
506.9	CARBONDALE		UNDERCLAY	2.0	55.0	

MAPID: 01780125000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 30' S line, 1' E line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.060209 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.985558 DATE COLLECTED: 5 / 13 / 1966
SURFACE ELEVATION (FT.): LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M371 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0	
-	PLEISTOCENE		CLAY	62.0	34.0	
-	CARBONDALE	ST. DAVID	LIMESTONE	1.0	96.0	
-	CARBONDALE		GRAY SHALE	2.0	97.0	
-	CARBONDALE	SPRINGFIELD	COAL W/ BLACK SHALE	2.0	99.0	SOFT
-	CARBONDALE	SPRINGFIELD	COAL	1.0	101.0	FIAR
-	CARBONDALE		UNDERCLAY	1.0	102.0	
-	CARBONDALE		GRAY SHALE	5.0	103.0	

MAPID: 01780126000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 30' S line, 20' E line of NW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.055559 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.985575 DATE COLLECTED: 5 / 12 / 1966
SURFACE ELEVATION (FT.): 612.1 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M373 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.1	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
606.1	PLEISTOCENE		CLAY	19.0	6.0	
587.1	PLEISTOCENE		CLAY	40.0	25.0	
547.1	CARBONDALE		SANDSTONE	38.0	65.0	SOFT
509.1	CARBONDALE		LIMESTONE	2.0	103.0	HARD
507.1	CARBONDALE		GRAY SHALE	5.0	105.0	SOFT
502.1	CARBONDALE		BLACK SHALE	3.0	110.0	
499.1	CARBONDALE		SHALE	35.0	113.0	WHITE

MAPID: 01780127000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.050776 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.985512 DATE COLLECTED: 5 / 13 / 1966
SURFACE ELEVATION (FT.): 615.9 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M375 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.9	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
596.9	PLEISTOCENE		SAND & GRAVEL	93.0	19.0	
503.9	CARBONDALE	ST. DAVID	LIMESTONE	5.0	112.0	HARD
498.9	CARBONDALE		GRAY SHALE	1.0	117.0	SOFT
497.9	CARBONDALE	SPRINGFIELD	COAL W/ BLACK SHALE	3.5	118.0	SOFT
494.4	CARBONDALE		UNDERCLAY	2.5	121.5	
491.9	CARBONDALE		GRAY SHALE	4.0	124.0	HARD

MAPID: 01780128000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 660' S line, 350' W line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.063675 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.987286 DATE COLLECTED: 6 / 2 / 1966
SURFACE ELEVATION (FT.): 553.0 LOGGED (FT.): 46.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M394N WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
553.0	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0	
547.0	PLEISTOCENE		CLAY	10.0	6.0	
537.0	PLEISTOCENE		CLAY	23.0	16.0	
514.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	39.0	SOFT
513.0	CARBONDALE	SPRINGFIELD	COAL	3.5	40.0	SOFT
509.5	CARBONDALE		UNDERCLAY	2.5	43.5	

MAPID: 01780129000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 660' S line, 1' E line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.060216 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.987297 DATE COLLECTED: 6 / 1 / 1966
SURFACE ELEVATION (FT.): 607.2 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M400 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
607.2	PLEISTOCENE	SPRINGFIELD	UNCONSOLIDATED	12.0	0.0
595.2	PLEISTOCENE		CLAY	18.0	12.0
577.2	PLEISTOCENE		CLAY	6.0	30.0
571.2	PLEISTOCENE		SAND & GRAVEL	4.0	36.0
567.2	PLEISTOCENE		CLAY	62.0	40.0
505.2	CARBONDALE		COAL	1.0	102.0 TOP ERODED
504.2	CARBONDALE		LIMESTONE	5.0	103.0
499.2	CARBONDALE		GRAY SHALE	12.0	108.0
487.2	CARBONDALE		LIMESTONE	2.0	120.0
485.2	CARBONDALE		GRAY SHALE	26.0	122.0

MAPID: 01780130000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 1' N line, 270' E line of NE NW
QUADRANGLE: ASHLAND LONGITUDE: -90.061189 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.989178 DATE COLLECTED: 5 / 13 / 1966
SURFACE ELEVATION (FT.): 610.6 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M421 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
610.6	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0
603.6	PLEISTOCENE		CLAY	14.0	7.0
589.6	PLEISTOCENE		CLAY	86.0	21.0
503.6	CARBONDALE		LIMESTONE	1.0	107.0
502.6	CARBONDALE		GRAY SHALE	3.0	108.0
499.6	CARBONDALE		BLACK SHALE	1.0	111.0
498.6	CARBONDALE		SHALE WITH LIMESTONE	36.0	112.0

MAPID: 01780131000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 25 QUARTERS/FOOTAGES: 1' N line, 60' W line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.05528 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.989208 DATE COLLECTED: 6 / 1 / 1966
SURFACE ELEVATION (FT.): 605.4 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M423 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.4	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
586.4	PLEISTOCENE		SAND & GRAVEL	80.0	19.0	
506.4	CARBONDALE		BLACK SHALE	1.0	99.0	
505.4	CARBONDALE		SHALE WITH LIMESTONE	48.0	100.0	

MAPID: 01720287000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 26 QUARTERS/FOOTAGES: SW SW SW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.078311 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.982234 DATE COLLECTED: 5 / 23 / 1970
SURFACE ELEVATION (FT.): 608.0 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON EW365 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED;NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
608.0	PLEISTOCENE		CLAY	91.0	0.0	
517.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	91.0	CORRELATION UNCERTAIN
515.0	CARBONDALE		GRAY SHALE	7.0	93.0	

MAPID: 01720288000C VERSION: 1 PROJECT: NCRDS96
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 27 QUARTERS/FOOTAGES: SW SW NW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.097045 GEOLOGIST: HAMER
CONFIDENTIAL: N LATITUDE: 39.985947 DATE COLLECTED: 5 / 23 / 1970
SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log
SOURCE: COMMONWEALTH EDISON EW355 WELL TYPE: Coal Test
COMMENT: NO COAL LOGGED,NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		CLAY	100.0	0.0	

MAPID: 01780118000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 27 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.097633 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.978279 DATE COLLECTED: 10 / 6 / 1966
SURFACE ELEVATION (FT.): 540.1 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M255 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
540.1	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0
532.1	PLEISTOCENE		SAND & GRAVEL	52.0	8.0
480.1	CARBONDALE		GRAY SHALE	38.0	60.0

MAPID: 01780119000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 27 QUARTERS/FOOTAGES: 990' S line, 1' W line of NW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.097631 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.981014 DATE COLLECTED: 10 / 10 / 1966
SURFACE ELEVATION (FT.): 566.5 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M280C WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
566.5	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0
558.5	PLEISTOCENE		SAND & GRAVEL	56.0	8.0
502.5	CARBONDALE		GRAY SHALE	64.0	64.0

MAPID: 01780034000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 28 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.116461 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.974719 DATE COLLECTED: 10 / 4 / 1966
SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE JJ221 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
611.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
596.0	PLEISTOCENE		CLAY	20.0	15.0
576.0	PLEISTOCENE		CLAY	108.0	35.0
468.0	CARBONDALE		GRAY SHALE	5.0	143.0

MAPID: 01780035000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 28 **QUARTERS/FOOTAGES:** 165' S line, 1' W line of SW SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.116457 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.975171 **DATE COLLECTED:** 10 / 4 / 1966
SURFACE ELEVATION (FT.): 602.0 **LOGGED (FT.):** 158.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE JJ269 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
586.0	PLEISTOCENE		CLAY	18.0	16.0	
568.0	PLEISTOCENE		SAND & GRAVEL	112.0	34.0	HARDPAN
456.0	CARBONDALE		GRAY SHALE	12.0	146.0	

MAPID: 01780036000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 28 **QUARTERS/FOOTAGES:** 1' N line, 1' W line of NE SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.121102 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.981953 **DATE COLLECTED:** 10 / 4 / 1966
SURFACE ELEVATION (FT.): 612.0 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE JJ319 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0	
571.0	PLEISTOCENE		SAND & GRAVEL	92.0	41.0	HARDPAN
479.0	CARBONDALE		GRAY SHALE	15.0	133.0	SOFT

MAPID: 01780037000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 28 **QUARTERS/FOOTAGES:** 1' S line, 165' W line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.115839 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.981967 **DATE COLLECTED:** 10 / 4 / 1966
SURFACE ELEVATION (FT.): 603.0 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE JJ321N **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.0	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
596.0	PLEISTOCENE		CLAY	15.0	7.0	
581.0	PLEISTOCENE		CLAY	86.0	22.0	
495.0	CARBONDALE		DARK SHALE	40.0	108.0	

MAPID: 01780038000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 28 QUARTERS/FOOTAGES:

QUADRANGLE: ASHLAND LONGITUDE: -90.116431

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.981964

DATE COLLECTED: 10 / 4 / 1966

SURFACE ELEVATION (FT.): 613.0 LOGGED (FT.): 148.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE JJ246D

WELL TYPE: Coal Test

COMMENT: BOX 44 SAME AS JJ271

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
613.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0	
578.0	PLEISTOCENE		SAND & GRAVEL	73.0	35.0	HARDPAN
505.0	CARBONDALE		GRAY SHALE	40.0	108.0	

MAPID: 01780039000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 31 QUARTERS/FOOTAGES: 660' S line, 1' E line of SE SW

QUADRANGLE: VIRGINIA LONGITUDE: -90.153739

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.962007

DATE COLLECTED: 11 / 17 / 1966

SURFACE ELEVATION (FT.): 618.4 LOGGED (FT.): 92.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE JJ30

WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.4	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0	
588.4	PLEISTOCENE		SAND & GRAVEL	51.0	30.0	HARDPAN
537.4	CARBONDALE		GRAY SHALE	5.0	81.0	
532.4	CARBONDALE		DARK SHALE	4.0	86.0	LIMY
528.4	CARBONDALE	HERRIN	COAL	0.6	90.0	
527.8	CARBONDALE		UNDERCLAY	1.4	90.6	

MAPID: 01780040000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 32 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE SE

QUADRANGLE: VIRGINIA LONGITUDE: -90.130401

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 39.960045

DATE COLLECTED: 10 / 12 / 1966

SURFACE ELEVATION (FT.): 615.0 LOGGED (FT.): 108.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE JJ15

WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.0	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
592.0	PLEISTOCENE		SAND & GRAVEL	71.0	23.0	HARDPAN
521.0	CARBONDALE		LIMESTONE	2.0	94.0	HARD
519.0	CARBONDALE		BLACK SHALE	2.0	96.0	SOFT
517.0	CARBONDALE		SHALE WITH LIMESTONE	10.0	98.0	HARD

MAPID: 01780041000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 32 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.139658 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.967439 DATE COLLECTED: 10 / 11 / 1966
SURFACE ELEVATION (FT.): 606.9 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE JJ111 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
606.9	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
599.9	PLEISTOCENE		CLAY	22.0	7.0	
577.9	PLEISTOCENE		CLAY	57.0	29.0	
520.9	CARBONDALE		DARK SHALE	62.0	86.0	

MAPID: 01780042000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 32 QUARTERS/FOOTAGES: 4' N line, 1' E line of NE SW
QUADRANGLE: VIRGINIA LONGITUDE: -90.13503 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.967395 DATE COLLECTED: 10 / 11 / 1966
SURFACE ELEVATION (FT.): 595.4 LOGGED (FT.): 158.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE JJ113 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.4	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
576.4	PLEISTOCENE		SAND & GRAVEL	71.0	19.0	HARDPAN
505.4	CARBONDALE		GRAY SHALE	22.0	90.0	
483.4	CARBONDALE		DARK SHALE	34.0	112.0	
449.4	CARBONDALE		BLACK SHALE	10.0	146.0	SOFT
439.4	CARBONDALE		SHALE WITH LIMESTONE	2.0	156.0	HARD

MAPID: 01780043000C VERSION: 1 PROJECT: NCRDS-2
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 32 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SE
QUADRANGLE: VIRGINIA LONGITUDE: -90.130403 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.967373 DATE COLLECTED: 10 / 12 / 1966
SURFACE ELEVATION (FT.): 607.5 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE JJ115 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
607.5	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0	
581.5	PLEISTOCENE		SAND & GRAVEL	82.0	26.0	HARDPAN
499.5	CARBONDALE		GRAY SHALE	40.0	108.0	HARD

MAPID: 01780045000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 32 QUARTERS/FOOTAGES: 1' S line, 1' E line of NW NW
QUADRANGLE: VIRGINIA LONGITUDE: -90.139627 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.971132 DATE COLLECTED: 10 / 12 / 1966
SURFACE ELEVATION (FT.): 585.9 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE JJ161 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.9	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0	
573.9	PLEISTOCENE		SAND & GRAVEL	76.0	12.0	HARDPAN
497.9	CARBONDALE		GRAY SHALE	40.0	88.0	

MAPID: 01780046000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 32 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NE
QUADRANGLE: VIRGINIA LONGITUDE: -90.125798 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.974648 DATE COLLECTED: 10 / 2 / 1966
SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 88.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE JJ217 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0	
556.0	PLEISTOCENE		CLAY	74.0	9.0	
482.0	CARBONDALE		GRAY SHALE	4.0	83.0	
478.0	CARBONDALE		LIMESTONE	1.0	87.0	

MAPID: 01780086000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 34 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.092955 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.95977 DATE COLLECTED: 10 / 7 / 1966
SURFACE ELEVATION (FT.): 620.5 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M7 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.5	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0	
612.5	PLEISTOCENE		CLAY	17.0	8.0	
595.5	PLEISTOCENE		CLAY	93.0	25.0	
502.5	CARBONDALE		DARK SHALE	10.0	118.0	

MAPID: 01780087000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 34 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.088235 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.95973 DATE COLLECTED: 10 / 7 / 1966
SURFACE ELEVATION (FT.): 618.5 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M9 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.5	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0	
585.5	PLEISTOCENE		CLAY	76.0	33.0	
509.5	CARBONDALE		GRAY SHALE	11.0	109.0	
498.5	CARBONDALE		SHALE WITH LIMESTONE	8.0	120.0	
490.5	CARBONDALE		LIMESTONE	7.0	128.0	
483.5	CARBONDALE		SHALE WITH LIMESTONE	13.0	135.0	

MAPID: 01780090000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 34 QUARTERS/FOOTAGES: 1' S line, 1' E line of NW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.09294 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.963485 DATE COLLECTED: 10 / 10 / 1966
SURFACE ELEVATION (FT.): 619.5 LOGGED (FT.): 112.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M57 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
619.5	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
596.5	PLEISTOCENE		SAND & GRAVEL	52.0	23.0	HARDPAN
544.5	CARBONDALE		GRAY SHALE	29.0	75.0	
515.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	104.0	SOFT
513.5	CARBONDALE	SPRINGFIELD	COAL	4.2	106.0	HAD
509.3	CARBONDALE		UNDERCLAY	1.8	110.2	

MAPID: 01780091000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 34 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.088213 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.963439 DATE COLLECTED: 10 / 10 / 1966
SURFACE ELEVATION (FT.): 617.0 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M59 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.0	PLEISTOCENE	SPRINGFIELD	UNCONSOLIDATED	33.0	0.0	
584.0	PLEISTOCENE		SAND & GRAVEL	59.0	33.0	HARDPAN
525.0	CARBONDALE		BLACK SHALE	5.0	92.0	
520.0	CARBONDALE		COAL	2.0	97.0	BLOSSOM
518.0	CARBONDALE		UNDERCLAY	0.5	99.0	
517.5	CARBONDALE		GRAY SHALE	8.5	99.5	

MAPID: 01780102000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 34 QUARTERS/FOOTAGES: 1' N line, 30' W line of NE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.09281 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.967192 DATE COLLECTED: 10 / 7 / 1966
SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M107 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.0	PLEISTOCENE	SPRINGFIELD	UNCONSOLIDATED	29.0	0.0	
582.0	PLEISTOCENE		SAND & GRAVEL	47.0	29.0	HARDPAN
535.0	CARBONDALE		GRAY SHALE	20.0	76.0	
515.0	CARBONDALE		LIMESTONE	2.0	96.0	HARD
513.0	CARBONDALE		GRAY SHALE	8.0	98.0	SOFT
505.0	CARBONDALE		COAL	3.5	106.0	SOFT, NO GOOD
501.5	CARBONDALE		UNDERCLAY	1.5	109.5	
500.0	CARBONDALE		SHALE WITH LIMESTONE	17.0	111.0	

MAPID: 01780103000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 34 **QUARTERS/FOOTAGES:** 1' N line, 1' E line of NE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.08819 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.967146 **DATE COLLECTED:** 10 / 7 / 1966
SURFACE ELEVATION (FT.): 615.7 **LOGGED (FT.):** 111.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M109 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.7	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0	
582.7	PLEISTOCENE		SAND & GRAVEL	52.0	33.0	HARDPAN
530.7	CARBONDALE		GRAY SHALE	19.0	85.0	
511.7	CARBONDALE		BLACK SHALE	1.0	104.0	
510.7	CARBONDALE	SPRINGFIELD	COAL	4.8	105.0	
505.9	CARBONDALE		UNDERCLAY	1.3	109.8	

MAPID: 01780111000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 34 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of NW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.097638 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.97096 **DATE COLLECTED:** 10 / 6 / 1966
SURFACE ELEVATION (FT.): 616.1 **LOGGED (FT.):** 109.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M155 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.1	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
609.1	PLEISTOCENE		CLAY	14.0	7.0	
595.1	PLEISTOCENE		CLAY	63.0	21.0	
532.1	PLEISTOCENE		SAND	11.0	84.0	
521.1	CARBONDALE		SHALE	5.0	95.0	SOFT
516.1	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	100.0	
514.1	CARBONDALE	SPRINGFIELD	COAL	5.3	102.0	HARD
508.8	CARBONDALE		UNDERCLAY	1.8	107.3	

MAPID: 01780112000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 34 QUARTERS/FOOTAGES: 30' S line, 50' E line of NW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.093113 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.963567 DATE COLLECTED: 10 / 10 / 1966
SURFACE ELEVATION (FT.): 562.2 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M157 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
562.2	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
555.2	PLEISTOCENE		CLAY	10.0	7.0	
545.2	PLEISTOCENE		CLAY	33.0	17.0	
512.2	CARBONDALE		LIMESTONE	1.5	50.0	HARD
510.7	CARBONDALE		GRAY SHALE	3.5	51.5	
507.2	CARBONDALE		BLACK SHALE	2.0	55.0	SOFT
505.2	CARBONDALE		GRAY SHALE	10.0	57.0	SOFT
495.2	CARBONDALE		SHALE WITH LIMESTONE	31.0	67.0	HARD

MAPID: 01780113000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 34 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.097631 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.974672 DATE COLLECTED: 10 / 6 / 1966
SURFACE ELEVATION (FT.): 614.7 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M205 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.7	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0	
588.7	PLEISTOCENE		SAND & GRAVEL	82.0	26.0	
506.7	CARBONDALE		SHALE WITH LIMESTONE	20.0	108.0	

MAPID: 01780114000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 34 QUARTERS/FOOTAGES: 50' N line, 100' W line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.092528 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.97448 DATE COLLECTED: 10 / 6 / 1966
SURFACE ELEVATION (FT.): 544.7 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M207 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
544.7	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
533.7	PLEISTOCENE		SAND & GRAVEL	37.0	11.0	
496.7	CARBONDALE		MICACEOUS SHALE	8.0	48.0	HARD
488.7	CARBONDALE		LIMESTONE	3.0	56.0	HARD
485.7	CARBONDALE		SHALE WITH LIMESTONE	39.0	59.0	

MAPID: 01780088000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 1' S line, 165' W line of SE SW
QUADRANGLE: ASHLAND LONGITUDE: -90.082895 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.959751 DATE COLLECTED: 11 / 21 / 1966
SURFACE ELEVATION (FT.): 558.3 LOGGED (FT.): 49.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M11N-1 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
558.3	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
547.3	PLEISTOCENE		SAND & GRAVEL	20.0	11.0	HARDPAN
527.3	CARBONDALE		GRAY SHALE	10.0	31.0	SOFT
517.3	CARBONDALE	ST. DAVID	LIMESTONE	0.5	41.0	
516.8	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	41.5	SOFT
515.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	43.0	SOFT
513.3	CARBONDALE	SPRINGFIELD	COAL	3.3	45.0	
510.0	CARBONDALE		UNDERCLAY	0.7	48.3	

MAPID: 01780089000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 100' S line, 1' E line of SE SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.078748 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.960044 **DATE COLLECTED:** 9 / 29 / 1966
SURFACE ELEVATION (FT.): 598.8 **LOGGED (FT.):** 87.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M13 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
598.8	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
583.8	PLEISTOCENE		CLAY	48.0	15.0	
535.8	CARBONDALE		SHALE WITH LIMESTONE	15.0	63.0	
520.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	78.0	
518.8	CARBONDALE	SPRINGFIELD	COAL	5.3	80.0	SOFT
513.5	CARBONDALE		UNDERCLAY	1.8	85.3	

MAPID: 01780092000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 165' S line, 1' E line of NW SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.083489 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.963896 **DATE COLLECTED:** 9 / 28 / 1966
SURFACE ELEVATION (FT.): 567.2 **LOGGED (FT.):** 44.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M61J **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
567.2	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0	
555.2	PLEISTOCENE		SAND & GRAVEL	19.0	12.0	HARDPAN
536.2	CARBONDALE		GRAY SHALE	4.0	31.0	SOFT
532.2	CARBONDALE	ST. DAVID	LIMESTONE	1.0	35.0	HARD
531.2	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	36.0	SOFT
529.2	CARBONDALE	SPRINGFIELD	COAL	4.3	38.0	
524.9	CARBONDALE		UNDERCLAY	1.8	42.3	

MAPID: 01780093000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of NE SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.078769 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.963447 **DATE COLLECTED:** 9 / 28 / 1966
SURFACE ELEVATION (FT.): 613.0 **LOGGED (FT.):** 98.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M63 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
613.0	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
606.0	PLEISTOCENE		CLAY	28.0	7.0	
578.0	PLEISTOCENE		CLAY	35.0	35.0	
543.0	CARBONDALE		GRAY SHALE	18.0	70.0	
525.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	88.0	HARD
523.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	89.5	SOFT
521.0	CARBONDALE	SPRINGFIELD	COAL	4.8	92.0	
516.2	CARBONDALE		UNDERCLAY	1.2	96.8	

MAPID: 01780094000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 495' S line, 1' E line of NW SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.07406 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.964812 **DATE COLLECTED:** 9 / 28 / 1966
SURFACE ELEVATION (FT.): 569.3 **LOGGED (FT.):** 68.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M65D **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
569.3	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0	
555.3	PLEISTOCENE		SAND & GRAVEL	17.0	14.0	HARDPAN
538.3	CARBONDALE		GRAY SHALE	3.0	31.0	SOFT
535.3	CARBONDALE	BRIAR HILL	COAL	1.5	34.0	SOFT
533.8	CARBONDALE		UNDERCLAY	1.5	35.5	
532.3	CARBONDALE		GRAY SHALE	7.0	37.0	
525.3	CARBONDALE		LIMESTONE	1.0	44.0	HARD
524.3	CARBONDALE		GRAY SHALE	14.0	45.0	SOFT
510.3	CARBONDALE	ST. DAVID	LIMESTONE	0.5	59.0	HARD
509.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	59.5	SOFT
507.3	CARBONDALE	SPRINGFIELD	COAL	4.5	62.0	
502.8	CARBONDALE		UNDERCLAY	1.5	66.5	

MAPID: 01780095000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of NE SE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.069321 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.963452 **DATE COLLECTED:** 9 / 27 / 1966
SURFACE ELEVATION (FT.): 620.5 **LOGGED (FT.):** 137.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M67 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.5	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0	
585.5	PLEISTOCENE		SAND & GRAVEL	56.0	35.0	HARDPAN
529.5	CARBONDALE		SANDY SHALE	4.0	91.0	
525.5	CARBONDALE		LIMESTONE	1.5	95.0	HARD
524.0	CARBONDALE		SANDY SHALE	8.5	96.5	
515.5	CARBONDALE	BRIAR HILL	COAL	0.5	105.0	HARD
515.0	CARBONDALE		CLAYSTONE	0.2	105.5	
514.8	CARBONDALE	BRIAR HILL	COAL	1.3	105.7	
513.5	CARBONDALE		UNDERCLAY	1.0	107.0	
512.5	CARBONDALE		SANDY SHALE	21.0	108.0	
491.5	CARBONDALE		BLACK SHALE	1.0	129.0	
490.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	130.0	
489.5	CARBONDALE	SPRINGFIELD	COAL	4.4	131.0	HARD
485.1	CARBONDALE		UNDERCLAY	1.6	135.4	

MAPID: 01780097000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 630' N line, 1' E line of NW SW
QUADRANGLE: ASHLAND **LONGITUDE:** -90.083487 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.965395 **DATE COLLECTED:** 11 / 30 / 1966
SURFACE ELEVATION (FT.): 554.5 **LOGGED (FT.):** 38.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M86 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
554.5	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0	
545.5	PLEISTOCENE		SAND & GRAVEL	3.0	9.0	
542.5	PLEISTOCENE		CLAY	15.0	12.0	
527.5	CARBONDALE	ST. DAVID	LIMESTONE	3.0	27.0	HARD
524.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	30.0	
521.5	CARBONDALE	SPRINGFIELD	COAL	3.9	33.0	
517.6	CARBONDALE		UNDERCLAY	1.1	36.9	SOFT

MAPID: 01780098000C VERSION: 1

PROJECT: NCRD02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 660' S line, 1' E line of NE SW
 QUADRANGLE: ASHLAND LONGITUDE: -90.078777 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.965266 DATE COLLECTED: 11 / 30 / 1966
 SURFACE ELEVATION (FT.): 614.5 LOGGED (FT.): 105.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE M88 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
614.5	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
586.5	PLEISTOCENE		SAND & GRAVEL	56.0	28.0	
530.5	CARBONDALE		GRAY SHALE	13.0	84.0	
517.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	97.0	HARD
516.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	98.0	
514.5	CARBONDALE	SPRINGFIELD	COAL	4.0	100.0	
510.5	CARBONDALE		UNDERCLAY	1.0	104.0	

MAPID: 01780099000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 660' N line, 660' W line of NW SE
 QUADRANGLE: ASHLAND LONGITUDE: -90.076406 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 39.965292 DATE COLLECTED: 11 / 29 / 1966
 SURFACE ELEVATION (FT.): 564.3 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE M89 WELL TYPE: Coal Test
 COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
564.3	PLEISTOCENE		UNCONSOLIDATED	5.0	0.0	
559.3	PLEISTOCENE		CLAY	6.0	5.0	
553.3	PLEISTOCENE		CLAY	23.0	11.0	
530.3	CARBONDALE		LIMESTONE	1.5	34.0	HARD
528.8	CARBONDALE		GRAY SHALE	10.5	35.5	SOFT
518.3	CARBONDALE		MICACEOUS SHALE	5.0	46.0	SOFT
513.3	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	51.0	SOFT
512.3	CARBONDALE	SPRINGFIELD	COAL	4.3	52.0	
508.0	CARBONDALE		UNDERCLAY	1.7	56.3	

MAPID: 0178010000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 660' N line, 1' E line of NW SE
QUADRANGLE: ASHLAND LONGITUDE: -90.074067 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.965284 DATE COLLECTED: 11 / 29 / 1966
SURFACE ELEVATION (FT.): 595.4 LOGGED (FT.): 95.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M90 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.4	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
579.4	PLEISTOCENE		CLAY	49.0	16.0	
530.4	CARBONDALE	BRIAR HILL	COAL	0.5	65.0	TOP ERODED
529.9	CARBONDALE		GRAY SHALE	18.5	65.5	
511.4	CARBONDALE	ST. DAVID	LIMESTONE	2.0	84.0	
509.4	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	86.0	SOFT
506.4	CARBONDALE	SPRINGFIELD	COAL	4.3	89.0	
502.1	CARBONDALE		UNDERCLAY	1.8	93.3	SOFT

MAPID: 01780101000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 660' N line, 660' W line of NE SE
QUADRANGLE: ASHLAND LONGITUDE: -90.071696 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.965279 DATE COLLECTED: 11 / 30 / 1966
SURFACE ELEVATION (FT.): 606.7 LOGGED (FT.): 113.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M91 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
606.7	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
599.7	PLEISTOCENE		CLAY	10.0	7.0	
589.7	PLEISTOCENE		CLAY	55.0	17.0	
534.7	CARBONDALE		GRAY SHALE	14.0	72.0	SOFT
520.7	CARBONDALE		LIMESTONE	1.5	86.0	HARD
519.2	CARBONDALE		GRAY SHALE	10.5	87.5	HARD
508.7	CARBONDALE		GRAY SHALE	8.0	98.0	SOFT
500.7	CARBONDALE	ST. DAVID	LIMESTONE	0.5	106.0	HARD
500.2	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	106.5	SOFT
498.7	CARBONDALE	SPRINGFIELD	COAL	3.5	108.0	
495.2	CARBONDALE		UNDERCLAY	1.5	111.5	

MAPID: 01780104000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SW
QUADRANGLE: ASHLAND LONGITUDE: -90.083487 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.967131 DATE COLLECTED: 5 / 28 / 1966
SURFACE ELEVATION (FT.): 554.0 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M111 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
554.0	PLEISTOCENE	SPRINGFIELD	UNCONSOLIDATED	6.0	0.0
548.0	PLEISTOCENE		CLAY	6.0	6.0
542.0	PLEISTOCENE		SAND & GRAVEL	17.5	12.0
524.5	CARBONDALE		ROCK	0.5	29.5
524.0	CARBONDALE		COAL	4.8	30.0
519.2	CARBONDALE		UNDERCLAY	3.2	34.8
516.0	CARBONDALE		SANDY SHALE	30.0	38.0

MAPID: 01780105000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 1' N line, 660' W line of NE SW
QUADRANGLE: ASHLAND LONGITUDE: -90.081116 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.967123 DATE COLLECTED: 11 / 30 / 1966
SURFACE ELEVATION (FT.): 557.1 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M112 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
557.1	PLEISTOCENE	ST. DAVID TURNER MINE SPRINGFIELD	UNCONSOLIDATED	16.0	0.0
541.1	PLEISTOCENE		SAND & GRAVEL	3.0	16.0
538.1	PLEISTOCENE		CLAY	8.5	19.0
529.6	CARBONDALE		LIMESTONE	0.5	27.5
529.1	CARBONDALE		BLACK SHALE	1.8	28.0
527.3	CARBONDALE		COAL	3.3	29.8 SOFT
524.1	CARBONDALE		GRAY SHALE	65.0	33.0

MAPID: 01780106000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.078781 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.967124 **DATE COLLECTED:** 9 / 28 / 1966
SURFACE ELEVATION (FT.): 564.5 **LOGGED (FT.):** 88.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M113 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
564.5	PLEISTOCENE	SPRINGFIELD	UNCONSOLIDATED	23.0	0.0	
541.5	PLEISTOCENE		SAND & GRAVEL	14.0	23.0	HARDPAN
527.5	CARBONDALE		SHALE WITH LIMESTONE	11.0	37.0	
516.5	CARBONDALE		COAL	2.0	48.0	SOFT
514.5	CARBONDALE		UNDERCLAY	1.0	50.0	
513.5	CARBONDALE		SHALE WITH LIMESTONE	37.0	51.0	

MAPID: 01780107000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 1' S line, 660' W line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.076418 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.967116 **DATE COLLECTED:** 11 / 29 / 1966
SURFACE ELEVATION (FT.): 575.9 **LOGGED (FT.):** 68.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M114 **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
575.9	PLEISTOCENE	TURNER MINE SPRINGFIELD	UNCONSOLIDATED	6.0	0.0	
569.9	PLEISTOCENE		CLAY	5.0	6.0	
564.9	PLEISTOCENE		CLAY	9.0	11.0	
555.9	CARBONDALE		SAND & GRAVEL	10.0	20.0	
545.9	CARBONDALE		SANDSTONE	22.0	30.0	HARD
523.9	CARBONDALE		GRAY SHALE	10.0	52.0	
513.9	CARBONDALE		BLACK SHALE	1.5	62.0	SOFT
512.4	CARBONDALE		COAL	3.0	63.5	SOFT
509.4	CARBONDALE		UNDERCLAY	1.5	66.5	

MAPID: 01780108000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 1' S line, 192' E line of SW NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.074771 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.96711 **DATE COLLECTED:** 9 / 27 / 1966
SURFACE ELEVATION (FT.): 617.2 **LOGGED (FT.):** 148.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M114P **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
617.2	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
610.2	PLEISTOCENE		CLAY	9.0	7.0	
601.2	PLEISTOCENE		CLAY	80.0	16.0	
521.2	CARBONDALE		SHALE WITH LIMESTONE	52.0	96.0	

MAPID: 01780109000C **VERSION:** 1 **PROJECT:** NCRDS02
COUNTY: CASS **TWP/RNG:** 18N 9W **SECTION:** 35 **QUARTERS/FOOTAGES:** 1' S line, 495' W line of SE NE
QUADRANGLE: ASHLAND **LONGITUDE:** -90.072307 **GEOLOGIST:** STRAAYER
CONFIDENTIAL: N **LATITUDE:** 39.967103 **DATE COLLECTED:** 11 / 30 / 1966
SURFACE ELEVATION (FT.): 611.9 **LOGGED (FT.):** 120.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE M115P **WELL TYPE:** Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.9	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
604.9	PLEISTOCENE		CLAY	15.0	7.0	
589.9	PLEISTOCENE		CLAY	54.0	22.0	
535.9	CARBONDALE		LIMESTONE	2.0	76.0	
533.9	CARBONDALE		GRAY SHALE	11.0	78.0	SOFT
522.9	CARBONDALE	BRIAR HILL	COAL	1.5	89.0	
521.4	CARBONDALE		UNDERCLAY	2.5	90.5	
518.9	CARBONDALE		GRAY SHALE	16.0	93.0	
502.9	CARBONDALE		LIMESTONE	3.0	109.0	HARD
499.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	112.0	SOFT
496.9	CARBONDALE	SPRINGFIELD	COAL	3.7	115.0	
493.2	CARBONDALE		UNDERCLAY	1.3	118.7	

MAPID: 01780110000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.069387 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.967095 DATE COLLECTED: 9 / 27 / 1966
SURFACE ELEVATION (FT.): 612.5 LOGGED (FT.): 126.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M117 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.5	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
596.5	PLEISTOCENE		SAND & GRAVEL	59.0	16.0	HARDPAN
537.5	CARBONDALE		SANDSTONE	3.0	75.0	
534.5	CARBONDALE		GRAY SHALE	17.0	78.0	SOFT
517.5	CARBONDALE	BRIAR HILL	COAL	0.5	95.0	HARD
517.0	CARBONDALE		UNDERCLAY	1.5	95.5	
515.5	CARBONDALE		SHALE WITH LIMESTONE	13.0	97.0	
502.5	CARBONDALE	ST. DAVID	LIMESTONE	7.0	110.0	HARD
495.5	CARBONDALE		GRAY SHALE	3.0	117.0	SOFT
492.5	CARBONDALE	SPRINGFIELD	COAL	4.0	120.0	
488.5	CARBONDALE		UNDERCLAY	2.0	124.0	

MAPID: 01780115000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 35 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NE
QUADRANGLE: ASHLAND LONGITUDE: -90.078821 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.97447 DATE COLLECTED: 11 / 28 / 1966
SURFACE ELEVATION (FT.): 618.8 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M213 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.8	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
602.8	PLEISTOCENE		SAND & GRAVEL	90.0	16.0	
512.8	CARBONDALE		BLACK SHALE	0.5	106.0	SOFT
512.3	CARBONDALE		UNDERCLAY	1.5	106.5	NO COAL
510.8	CARBONDALE		MICACEOUS SHALE	30.0	108.0	HARD

MAPID: 01720289000C VERSION: 1

PROJECT: NCRDS96

COUNTY: CASS

TWP/RNG: 18N 9W

SECTION: 36

QUARTERS/FOOTAGES: SE SE SW SE

QUADRANGLE: ASHLAND

LONGITUDE: -90.055749

GEOLOGIST: HAMER

CONFIDENTIAL: N

LATITUDE: 39.960274

DATE COLLECTED: 6 / 20 / 1969

SURFACE ELEVATION (FT.): 620.0

LOGGED (FT.): 120.0

LOG TYPE: Drillers Log

SOURCE: COMMONWEALTH EDISON EW23

WELL TYPE: Coal Test

COMMENT: NO FOOTAGES RECORDED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		CLAY	10.0	0.0	SANDY
610.0	PLEISTOCENE		CLAY	15.0	10.0	
595.0	PLEISTOCENE		CLAY	42.6	25.0	WITH GRAVEL
552.4	CARBONDALE	ANNA	BLACK SHALE	2.8	67.6	
549.6	CARBONDALE	HERRIN	COAL	2.5	70.4	
547.1	CARBONDALE		CLAYSTONE	8.1	72.9	W/LIMESTONE "RIBS",THICKNESS ADJUSTED
539.0	CARBONDALE		LIMESTONE	2.0	81.0	
537.0	CARBONDALE		CLAYSTONE	28.7	83.0	W/LIMESTONE RIBS
508.3	CARBONDALE	ST. DAVID	LIMESTONE	0.4	111.7	DARK
507.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	112.1	
504.6	CARBONDALE	SPRINGFIELD	COAL	4.3	115.4	
500.3	CARBONDALE		UNDERCLAY	0.3	119.7	

MAPID: 01780096000C VERSION: 1

PROJECT: NCRDS02

COUNTY: CASS

TWP/RNG: 18N 9W

SECTION: 36

QUARTERS/FOOTAGES: 1' S line, 1' E line of NW SE

QUADRANGLE: ASHLAND

LONGITUDE: -90.055236

GEOLOGIST: STRAAYER

CONFIDENTIAL: N

LATITUDE: 39.963453

DATE COLLECTED: 10 / 29 / 1966

SURFACE ELEVATION (FT.): 626.3

LOGGED (FT.): 141.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE M73

WELL TYPE: Coal Test

COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
626.3	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
619.3	PLEISTOCENE		CLAY	18.0	7.0	
601.3	PLEISTOCENE		CLAY	73.0	25.0	
528.3	CARBONDALE		LIMESTONE	5.0	98.0	
523.3	CARBONDALE		SHALE	6.0	103.0	
517.3	CARBONDALE		BLACK SHALE	1.0	109.0	
516.3	CARBONDALE		GRAY SHALE	5.0	110.0	
511.3	CARBONDALE		LIMESTONE	2.0	115.0	
509.3	CARBONDALE		GRAY SHALE	15.0	117.0	
494.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	132.0	
492.3	CARBONDALE	SPRINGFIELD	COAL	5.8	134.0	HARD
486.5	CARBONDALE		UNDERCLAY	1.2	139.8	

MAPID: 01780117000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 18N 9W SECTION: 36 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE NE
QUADRANGLE: ASHLAND LONGITUDE: -90.05547 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 39.974331 DATE COLLECTED: 10 / 31 / 1966
SURFACE ELEVATION (FT.): 618.9 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE M223 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
618.9	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
598.9	PLEISTOCENE		CLAY	10.0	20.0	
588.9	PLEISTOCENE		CLAY	75.0	30.0	
513.9	CARBONDALE		SHALE WITH LIMESTONE	15.0	105.0	
498.9	CARBONDALE	ST. DAVID	LIMESTONE	1.0	120.0	
497.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	121.0	
494.9	CARBONDALE	SPRINGFIELD	COAL	4.5	124.0	
490.4	CARBONDALE		UNDERCLAY	1.5	128.5	

MAPID: 01780078000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 19N 9W SECTION: 36 QUARTERS/FOOTAGES: 560' N line, 1' E line of NE SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.050885 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.052559 DATE COLLECTED: 5 / 2 / 1966
SURFACE ELEVATION (FT.): 582.2 LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE Y100 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
582.2	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
564.2	PLEISTOCENE		SAND & GRAVEL	98.0	18.0	HARDPAN
466.2	CARBONDALE		BLACK SHALE	3.0	116.0	
463.2	CARBONDALE		DARK SHALE	2.0	119.0	
461.2	CARBONDALE	COLCHESTER	COAL	1.8	121.0	HARD
459.4	CARBONDALE		UNDERCLAY	1.2	122.8	
458.2	CARBONDALE		GRAY SHALE	4.0	124.0	HARD

MAPID: 01780079000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 19N 9W SECTION: 36 QUARTERS/FOOTAGES: 1' N line, 1' W line of SE SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.055692 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.050514 DATE COLLECTED: 5 / 2 / 1966
SURFACE ELEVATION (FT.): 607.2 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE Y73 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
607.2	PLEISTOCENE		UNCONSOLIDATED	5.0	0.0	
602.2	PLEISTOCENE		CLAY	20.0	5.0	
582.2	PLEISTOCENE		CLAY	99.0	25.0	
483.2	CARBONDALE		SHALE WITH LIMESTONE	10.0	124.0	HARD
473.2	CARBONDALE		GRAY SHALE	14.0	134.0	HARD

MAPID: 01780080000C VERSION: 1 PROJECT: NCRDS02
COUNTY: CASS TWP/RNG: 19N 9W SECTION: 36 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE SE
QUADRANGLE: NEWMANSVILLE LONGITUDE: -90.051092 GEOLOGIST: STRAAYER
CONFIDENTIAL: N LATITUDE: 40.046889 DATE COLLECTED: 5 / 2 / 1966
SURFACE ELEVATION (FT.): 606.4 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log
SOURCE: AYRSHIRE Y25 WELL TYPE: Coal Test
COMMENT: BOX 44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
606.4	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0	
581.4	PLEISTOCENE		CLAY	32.0	25.0	
549.4	PLEISTOCENE		CLAY	91.0	57.0	