

Status Report

Total Records: 1045

Top 3 County Records		Top 3 Log Type Records		Top 3 Coal Records		Top 3 Member Records	
Washington	1045	Electric Log	507	HERRIN	736	HERRIN COAL	736
		Drillers Log	204	DANVILLE	185	BANKSTON FORK LIMESTONE	546
		Other Core Study	77	COLCHESTER	170	PIASA LIMESTONE	380

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
CARTHAGE	LIMESTONE	146.7	19.0	382.0	7.4	3.0	18.0
NEW HAVEN	COAL	47.0	31.0	86.0	3.6	2.0	4.5
MACOUPIN	LIMESTONE	119.0	119.0	119.0	1.0	1.0	1.0
WOMAC	COAL	156.3	129.0	191.8	0.8	0.3	1.2
CHAPEL	COAL	178.5	44.0	342.8	1.3	0.3	5.0
TRIVOLI	SANDSTONE	59.8	12.0	185.0	54.4	13.9	88.3
GIMLET	SANDSTONE	119.2	94.3	155.0	6.8	2.5	21.2
LAKE CREEK	COAL	168.1	88.0	238.5	0.9	0.5	1.0
PIASA	LIMESTONE	276.5	73.0	618.0	7.9	1.0	25.9
DANVILLE	COAL	296.1	107.0	630.0	1.7	0.2	6.0
GALUM	LIMESTONE	397.6	142.3	631.0	3.9	0.3	9.0
ALLENBY	COAL	498.8	381.0	636.0	1.2	1.0	3.0
BANKSTON FORK	LIMESTONE	301.6	104.0	645.0	7.2	0.3	19.3
ANVIL ROCK	SANDSTONE	144.7	107.3	182.0	18.1	8.8	27.5
LAWSON	SHALE	328.2	114.4	652.0	16.6	0.6	137.0
CONANT	LIMESTONE	319.3	121.4	657.0	2.5	0.2	12.0
JAMESTOWN	COAL	365.9	167.3	566.0	1.0	0.0	14.6
BRERETON	LIMESTONE	322.9	120.0	662.0	4.6	0.1	17.0
ANNA	SHALE	330.1	112.5	671.0	2.7	0.1	18.0
ENERGY	SHALE	318.8	130.2	568.0	51.6	0.2	238.2
HERRIN	COAL	347.3	113.5	718.0	7.1	0.8	23.8
HIGGINSVILLE	LIMESTONE	199.9	141.7	287.1	3.6	0.1	10.0
TURNER MINE	SHALE	448.0	426.6	469.4	0.3	0.0	0.6
SPRINGFIELD	COAL	426.4	206.0	706.0	3.2	0.1	8.0
EXCELLO	SHALE	358.2	203.0	540.0	4.5	1.1	6.1
HOUCHIN CREEK	COAL	392.8	231.0	694.0	3.0	0.9	20.0
OAK GROVE	LIMESTONE	340.0	340.0	340.0	0.5	0.5	0.5
MECCA QUARRY	SHALE	355.9	276.9	581.0	2.7	1.1	4.0
COLCHESTER	COAL	530.1	279.2	830.0	1.2	0.8	1.5
SEELYVILLE	COAL	611.0	611.0	611.0	3.3	3.3	3.3

DEKOVEN	COAL	299.3	290.2	304.5	3.5	1.0	6.0
DAVIS	COAL	511.0	325.0	608.0	2.0	2.0	2.0
CARRIER MILLS	SHALE	622.9	622.9	622.9	1.7	1.7	1.7
BEECH CREEK	LIMESTONE	1230.1	980.0	1742.0	-	-	-
UPPER DEVONIAN S		2862.4	2534.0	3190.0	-	-	-
BASE UPPER DEVON		2904.9	2552.0	3248.0	-	-	-
GRASSY CREEK	SHALE	2866.6	2537.0	3192.0	-	-	-
				Net Coal	34.0		

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: 18900001000C VERSION: 1 PROJECT: CIRC 164
COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 25 QUARTERS/FOOTAGES: SE NW SE
QUADRANGLE: IRVINGTON LONGITUDE: -89.149877 GEOLOGIST:
CONFIDENTIAL: N LATITUDE: 38.4933 DATE COLLECTED: 0 / 0 / 1900
SURFACE ELEVATION (FT.): 486.8 LOGGED (FT.): 791.0 LOG TYPE:
SOURCE: EWING&MARQ, BREUER WM 1 WELL TYPE: Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
326.8	BOND	CARTHAGE	LIMESTONE	-	160.0
-39.2	CARBONDALE	HERRIN	COAL	-	526.0

MAPID: 18900002000C VERSION: 1 PROJECT: CIRC 164
COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 25 QUARTERS/FOOTAGES: SE NW SE
QUADRANGLE: IRVINGTON LONGITUDE: -89.149877 GEOLOGIST:
CONFIDENTIAL: N LATITUDE: 38.4933 DATE COLLECTED: 0 / 0 / 1922
SURFACE ELEVATION (FT.): 476.7 LOGGED (FT.): 764.0 LOG TYPE:
SOURCE: EWING&MARQ, BREUER WM 2 WELL TYPE: Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
321.7	BOND	CARTHAGE	LIMESTONE	-	155.0
-27.3	CARBONDALE	HERRIN	COAL	-	504.0

MAPID: 18900003000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 25 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.149877 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.4933 **DATE COLLECTED:** 0 / 0 / 1922
SURFACE ELEVATION (FT.): 475.5 **LOGGED (FT.):** 768.0 **LOG TYPE:**
SOURCE: EWING&MARQ, BREUER WM 3 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
317.5	BOND	CARTHAGE	LIMESTONE	-	158.0
-34.5	CARBONDALE	HERRIN	COAL	-	510.0

MAPID: 18900004000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 25 **QUARTERS/FOOTAGES:** NE NW NE
QUADRANGLE: CENTRALIA WEST **LONGITUDE:** -89.14965 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.502394 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 476.9 **LOGGED (FT.):** 767.0 **LOG TYPE:**
SOURCE: MERVERNDEV, FISHR&VEAH 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
326.9	BOND	CARTHAGE	LIMESTONE	-	150.0
-28.1	CARBONDALE	HERRIN	COAL	-	505.0

MAPID: 18900005000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 25 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.149833 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.495119 **DATE COLLECTED:** 0 / 0 / 1925
SURFACE ELEVATION (FT.): 495.9 **LOGGED (FT.):** 848.0 **LOG TYPE:**
SOURCE: PETRO OG, NORTON J 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
315.9	BOND	CARTHAGE	LIMESTONE	-	180.0
-32.1	CARBONDALE	HERRIN	COAL	-	528.0

MAPID: 18900050000C VERSION: 1

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 25 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.14515 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.496682 DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 532.3 LOG TYPE: Drillers Log

SOURCE: CENTRALIA COAL CO. WELL TYPE: Mine Shaft

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
497.0			UNCONSOLIDATED	16.0	0.0	
481.0	BOND		SHALE	42.0	16.0	
439.0	BOND		LIMESTONE	1.0	58.0	UNCERTAIN CORRELATION
438.0	BOND		BLACK SHALE	1.0	59.0	UNCERTAIN CORRELATION
437.0	BOND		COAL	0.3	60.0	
436.7	BOND		UNDERCLAY	11.5	60.3	
425.2	BOND		SHALE	14.0	71.8	
411.2	BOND		SANDSTONE	1.5	85.8	
409.7	BOND		SHALE	2.8	87.3	
407.0	BOND		LIMESTONE	0.5	90.0	
406.5	BOND		SHALE	3.0	90.5	
403.5	BOND		LIMESTONE	2.3	93.5	
401.2	BOND		SANDSTONE	1.8	95.8	
399.5	BOND		SHALE	2.5	97.5	
397.0	BOND		COAL	0.5	100.0	
396.5	BOND		UNDERCLAY	0.5	100.5	
396.0	BOND		SHALE	4.3	101.0	
391.7	BOND		SANDSTONE	3.0	105.3	
388.7	BOND		SHALE	0.3	108.3	
388.5	BOND		COAL	0.3	108.5	
388.2	BOND		UNDERCLAY	4.0	108.8	
384.2	BOND		SHALE	30.0	112.8	
354.2	BOND		LIMESTONE	2.0	142.8	
352.2	BOND		UNDERCLAY	4.0	144.8	
348.2	BOND		SHALE	25.0	148.8	
323.2	BOND	CARTHAGE	LIMESTONE	11.3	173.8	
312.0	MODESTO		BLACK SHALE	3.5	185.0	
308.5	MODESTO		SHALE	3.3	188.5	
305.2	MODESTO		COAL	0.3	191.8	
305.0	MODESTO		UNDERCLAY	6.8	192.0	
298.2	MODESTO		SHALE	47.0	198.8	
251.2	MODESTO		LIMESTONE	2.0	245.8	
249.2	MODESTO		BLACK SHALE	2.5	247.8	
246.7	MODESTO		LIMESTONE	1.5	250.3	
245.2	MODESTO		UNDERCLAY	5.0	251.8	
240.2	MODESTO		LIMESTONE	12.0	256.8	
228.2	MODESTO		SHALE	44.0	268.8	
184.2	MODESTO		SANDSTONE	10.0	312.8	
174.2	MODESTO		UNCLASSIFIED	3.0	322.8	

171.2	MODESTO		SHALE	11.0	325.8
160.2	MODESTO		LIMESTONE	1.0	336.8
159.2	MODESTO		DARK SHALE	5.0	337.8
154.2	MODESTO	CHAPEL	COAL	1.0	342.8
153.2	MODESTO		UNDERCLAY	3.0	343.8
150.2	MODESTO		UNCLASSIFIED	4.5	346.8
145.7	MODESTO		SHALE	4.0	351.3
141.7	MODESTO		SANDSTONE	4.0	355.3
137.7	MODESTO		SHALE	96.5	359.3
41.2	MODESTO		UNDERCLAY	3.0	455.8
38.2	MODESTO		SHALE	9.5	458.8
28.7	MODESTO		BLACK SHALE	0.5	468.3
28.2	MODESTO		UNDERCLAY	7.0	468.8
21.2	MODESTO		LIMESTONE	5.0	475.8
16.2	MODESTO		UNDERCLAY	4.0	480.8
12.2	MODESTO		DARK SHALE	2.8	484.8
9.5	MODESTO		COAL	1.5	487.5
8.0	MODESTO		UNDERCLAY	3.0	489.0
5.0	MODESTO		COAL	0.5	492.0
4.5	MODESTO		UNDERCLAY	1.5	492.5
3.0	MODESTO		DARK SHALE	0.3	494.0
2.7	CARBONDALE	DANVILLE	COAL	0.8	494.3
2.0	CARBONDALE		UNDERCLAY	2.0	495.0
0.0	CARBONDALE		LIMESTONE	1.5	497.0
-1.5	CARBONDALE		UNDERCLAY	2.3	498.5
-3.8	CARBONDALE		LIMESTONE	7.0	500.8
-10.8	CARBONDALE		DARK SHALE	9.0	507.8
-19.8	CARBONDALE	BRERETON	LIMESTONE	6.5	516.8
-26.3	CARBONDALE	ANNA	BLACK SHALE	2.0	523.3
-28.3	CARBONDALE	HERRIN	COAL	6.5	525.3
-34.8	CARBONDALE		UNDERCLAY	0.5	531.8

MAPID: 18900050000C VERSION: 2

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 25 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: IRVINGTON

LONGITUDE: -89.14515

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.496682

DATE COLLECTED: 0 / 0 / 1900

SURFACE ELEVATION (FT.): 504.3

LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: PEABODY CC, MINE 21

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
331.3	BOND	CARTHAGE	LIMESTONE	-	173.0
-27.7	CARBONDALE	HERRIN	COAL	6.5	532.0

MAPID: 18900050000C VERSION: 3

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 25 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.14515 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.496682 DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 532.3 LOG TYPE: Drillers Log

SOURCE: CENTRALIA COAL CO., SHAFT #5 MINE WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
497.0			UNCONSOLIDATED	16.0	0.0	
481.0	BOND		SHALE	4.0	16.0	
477.0	BOND		CLAYSTONE & SHALE	38.0	20.0	
439.0	BOND		CONGLOMERATE & LIMESTONE	1.0	58.0	
438.0	BOND		BLACK SHALE	1.0	59.0	
437.0	BOND		COAL	0.3	60.0	
436.7	BOND		UNDERCLAY	11.5	60.3	
425.2	BOND		SANDY SHALE	14.0	71.8	W/ SS PARTINGS
411.2	BOND		SANDSTONE & CONGLOMERATE	1.5	85.8	
409.7	BOND		SANDY SHALE	2.8	87.3	
407.0	BOND		LIMESTONE & CONGLOMERATE	0.5	90.0	
406.5	BOND		SANDY SHALE	3.0	90.5	
403.5	BOND		LIMESTONE & CONGLOMERATE	2.3	93.5	
401.2	BOND		SANDSTONE	1.8	95.8	
399.5	BOND		CLAYSTONE & SHALE	2.5	97.5	
397.0	BOND		COAL	0.5	100.0	
396.5	BOND		UNDERCLAY	0.5	100.5	
396.0	BOND		CLAYSTONE & SHALE	1.3	101.0	
394.7	BOND		SANDY SHALE	3.0	102.3	
391.7	BOND		SANDSTONE	3.0	105.3	
388.7	BOND		CLAYSTONE & SHALE	0.3	108.3	
388.5	BOND		COAL	0.3	108.5	
388.2	BOND		UNDERCLAY	4.0	108.8	
384.2	BOND		SANDY SHALE	16.0	112.8	W/ SS PARTINGS
368.2	BOND		CLAYSTONE & SHALE	14.0	128.8	
354.2	BOND		LIMESTONE	2.0	142.8	
352.3	BOND		UNDERCLAY	4.0	144.7	
348.2	BOND		CLAYSTONE & SHALE	25.0	148.8	
323.2	BOND	CARTHAGE	SHALY LIMESTONE	11.3	173.8	
312.0	MODESTO		BLACK SHALE	3.5	185.0	
308.5	MODESTO		CLAYSTONE & SHALE	3.3	188.5	
305.2	MODESTO	WOMAC	COAL	0.3	191.8	
305.0	MODESTO		UNDERCLAY	4.8	192.0	W/ LS PEBBLES
300.2	MODESTO		UNDERCLAY	2.0	196.8	W/ LS
298.2	MODESTO		SANDY SHALE	28.0	198.8	
270.2	MODESTO		CLAYSTONE & SHALE	19.0	226.8	

251.2	MODESTO		LIMESTONE & CONGLOMERATE	2.0	245.8	
249.2	MODESTO		BLACK SHALE	2.5	247.8	
246.7	MODESTO		LIMESTONE & CONGLOMERATE	1.5	250.3	
245.2	MODESTO		UNDERCLAY	5.0	251.8	
240.2	MODESTO		SANDY LIMESTONE	12.0	256.8	
228.2	MODESTO		CLAYSTONE & SHALE	44.0	268.8	
184.2	MODESTO		SANDSTONE	5.0	312.8	
179.2	MODESTO		SANDSTONE	5.0	317.8	W/ DARK SH PARTING
174.2	MODESTO		SANDY SHALE	3.0	322.8	W/ SS PARTING
171.2	MODESTO		CLAYSTONE & SHALE	11.0	325.8	W/ LS PARTING
160.2	MODESTO		LIMESTONE & CONGLOMERATE	1.0	336.8	
159.2	MODESTO		CLAYSTONE & SHALE	5.0	337.8	
154.2	MODESTO	CHAPEL	COAL	1.0	342.8	
153.2	MODESTO		UNDERCLAY	3.0	343.8	W/ LS PEBBLES
150.2	MODESTO		SANDY LIMESTONE	3.5	346.8	
146.7	MODESTO		ROCK	1.0	350.3	
145.7	MODESTO		SANDY SHALE	4.0	351.3	
141.7	MODESTO		SANDSTONE	4.0	355.3	OIL BEARING
137.7	MODESTO		SANDY SHALE	5.5	359.3	W/ SS PARTINGS
132.2	MODESTO		SANDY SHALE	68.0	364.8	
64.2	MODESTO		CLAYSTONE & SHALE	23.0	432.8	
41.2	MODESTO		UNDERCLAY	3.0	455.8	
38.2	MODESTO		SANDY SHALE	6.0	458.8	
32.2	MODESTO		SANDY SHALE	3.5	464.8	W/ SS PARTING
28.7	MODESTO		BLACK SHALE	0.5	468.3	
28.2	MODESTO		UNDERCLAY	7.0	468.8	
21.2	MODESTO	PIASA	LIMESTONE	5.0	475.8	
16.2	MODESTO		UNDERCLAY	4.0	480.8	
12.2	MODESTO		SHALE	2.8	484.8	
9.5	CARBONDALE	DANVILLE	COAL	1.5	487.5	
8.0	CARBONDALE		UNDERCLAY	3.0	489.0	
5.0	CARBONDALE		COAL	0.5	492.0	
4.5	CARBONDALE		UNDERCLAY	1.5	492.5	
3.0	CARBONDALE		SHALE	0.3	494.0	
2.7	CARBONDALE		COAL	0.8	494.3	
2.0	CARBONDALE		SANDY CLAYSTONE	2.0	495.0	
0.0	CARBONDALE		LIMESTONE & CONGLOMERATE	1.5	497.0	
-1.5	CARBONDALE		UNDERCLAY	2.3	498.5	W/ LS
-3.8	CARBONDALE		LIMESTONE	3.0	500.8	
-6.8	CARBONDALE		LIMESTONE W/ SHALE	3.0	503.8	
-9.8	CARBONDALE		LIMESTONE	1.0	506.8	
-10.8	CARBONDALE		SHALE	2.0	507.8	
-12.8	CARBONDALE		LIMESTONE	7.0	509.8	
-19.8	CARBONDALE	BRERETON	LIMESTONE	6.5	516.8	
-26.3	CARBONDALE	ANNA	BLACK SHALE	2.0	523.3	

-28.3 CARBONDALE HERRIN COAL 6.5 525.3
 -34.8 CARBONDALE UNDERCLAY 0.5 531.8

MAPID: 18900801000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 26 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: CENTRALIA WEST **LONGITUDE:** -89.177526 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.502022 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 471.0 **LOGGED (FT.):** 554.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-29.0	MODESTO	PIASA	LIMESTONE	4.0	500.0
-33.0	MODESTO		SHALE	5.0	504.0
-38.0	CARBONDALE	DANVILLE	BONE COAL	1.0	509.0
-39.0	CARBONDALE	GALUM	LIMESTONE & SHALE	3.0	510.0
-42.0	CARBONDALE		SHALE	5.0	513.0
-47.0	CARBONDALE	ALLENBY	BONE COAL	1.0	518.0
-48.0	CARBONDALE		SHALE	8.0	519.0
-56.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	527.0
-61.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	532.0
-63.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	534.0
-66.0	CARBONDALE	LAWSON	SHALE	5.0	537.0
-71.0	CARBONDALE	BRERETON	LIMESTONE	5.0	542.0
-76.0	CARBONDALE	HERRIN	COAL	7.0	547.0

MAPID: 18902925000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 26 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of NW
QUADRANGLE: CENTRALIA WEST **LONGITUDE:** -89.172832 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.503646 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 482.0 **LOGGED (FT.):** 1292.0 **LOG TYPE:** Electric Log
SOURCE: KUHN, GEORGE E. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-96.0	CARBONDALE	SPRINGFIELD	COAL	-	578.0
-200.0	CARBONDALE	COLCHESTER	COAL	-	682.0
-810.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1292.0

MAPID: 18900521000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 27 QUARTERS/FOOTAGES: SE SW NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.196264

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.499226

DATE COLLECTED:

SURFACE ELEVATION (FT.): 436.0 LOGGED (FT.): 546.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-50.0	MODESTO	PIASA	LIMESTONE	4.0	486.0
-54.0	CARBONDALE		SHALE	9.0	490.0
-63.0	CARBONDALE	GALUM	LIMESTONE & SHALE	3.0	499.0
-66.0	CARBONDALE		SHALE	6.0	502.0
-72.0	CARBONDALE	ALLENBY	BONE COAL	1.0	508.0
-73.0	CARBONDALE		SHALE	8.0	509.0
-81.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	517.0
-85.0	CARBONDALE	LAWSON	SHALE	3.0	521.0
-88.0	CARBONDALE	CONANT	LIMESTONE	2.0	524.0
-90.0	CARBONDALE	JAMESTOWN	BLACK SHALE	2.0	526.0
-92.0	CARBONDALE		SHALE	5.0	528.0
-97.0	CARBONDALE	BRERETON	LIMESTONE	5.0	533.0
-102.0	CARBONDALE	ANNA	BLACK SHALE	2.0	538.0
-104.0	CARBONDALE	HERRIN	COAL	6.0	540.0

MAPID: 18901933000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 27 QUARTERS/FOOTAGES: 330' N line, 330' E line of SE SW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.196369

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.491877

DATE COLLECTED:

SURFACE ELEVATION (FT.): 449.0 LOGGED (FT.): 1225.0

LOG TYPE: Electric Log

SOURCE: JENNEMAN E E

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-69.0	CARBONDALE	SPRINGFIELD	COAL	-	518.0
-171.0	CARBONDALE	COLCHESTER	COAL	-	620.0
-776.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1225.0

MAPID: 18900419000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 28 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.212418 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.49993 DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 1252.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-49.0	CARBONDALE	SPRINGFIELD	COAL	-	500.0	
-153.0	CARBONDALE	COLCHESTER	COAL	-	604.0	
-801.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1252.0	

MAPID: 18900419000C VERSION: 2

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 28 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.212418 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.49993 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 1731.0 LOG TYPE:

SOURCE: NAT ASSOC, KUHN A 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
350.0	BOND	CARTHAGE	LIMESTONE	-	101.0	
-27.0	CARBONDALE	HERRIN	COAL	-	478.0	

MAPID: 18900800000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 28 QUARTERS/FOOTAGES: NE NW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.205552 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.497801 DATE COLLECTED:

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 520.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
14.0	MODESTO	PIASA	LIMESTONE	3.0	461.0	
11.0	MODESTO		SHALE	5.0	464.0	
6.0	CARBONDALE	DANVILLE	BONE COAL	1.0	469.0	
5.0	CARBONDALE		SHALE	1.0	470.0	
4.0	CARBONDALE	GALUM	LIMESTONE & SHALE	2.0	471.0	
2.0	CARBONDALE		SHALE	7.0	473.0	
-5.0	CARBONDALE	ALLENBY	BONE COAL	1.0	480.0	
-6.0	CARBONDALE		SHALE	7.0	481.0	
-13.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	488.0	
-15.0	CARBONDALE	BANKSTON FORK	BONE COAL	1.0	490.0	
-16.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	491.0	
-19.0	CARBONDALE	LAWSON	SHALE	4.0	494.0	
-23.0	CARBONDALE	CONANT	LIMESTONE	2.0	498.0	
-25.0	CARBONDALE		SHALE	7.0	500.0	
-32.0	CARBONDALE	BRERETON	LIMESTONE	4.0	507.0	
-36.0	CARBONDALE	ANNA	BLACK SHALE	3.0	511.0	
-39.0	CARBONDALE	HERRIN	COAL	6.0	514.0	

MAPID: 18900864000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 29 QUARTERS/FOOTAGES: 330' N line, 330' W line of NE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.230972 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.499031 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 2964.0 LOG TYPE: Electric Log

SOURCE: TEXAS COMPANY, THE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-52.0	CARBONDALE	SPRINGFIELD	COAL	-	497.0	
-166.0	CARBONDALE	COLCHESTER	COAL	-	611.0	
-786.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1231.0	
-2456.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2901.0	TOP OF NEW ALBANY
-2467.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2912.0	
-2519.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2964.0	BASE OF NEW ALBANY

MAPID: 18900864000C **VERSION:** 2 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 29 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of NE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.230972 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.499031 **DATE COLLECTED:** 7 / 0 / 1957
SURFACE ELEVATION (FT.): 445.0 **LOGGED (FT.):** 445.0 **LOG TYPE:** Electric Log
SOURCE: TEXAS COMPANY, THE **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
0.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	445.0	THIN COAL

MAPID: 18924496000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 29 **QUARTERS/FOOTAGES:** NE NE SE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.228125 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.495706 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 510.7 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-415 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	6.7	504.0	

MAPID: 18924283000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of NE NW
QUADRANGLE: CENTRALIA WEST **LONGITUDE:** -89.249196 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.505471 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 435.0 **LOGGED (FT.):** 2939.0 **LOG TYPE:** Electric Log
SOURCE: PRIOR, JOHN **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-29.0	CARBONDALE	SPRINGFIELD	COAL	-	464.0	
-136.0	CARBONDALE	COLCHESTER	COAL	-	571.0	
-784.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1219.0	
-2449.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2884.0	TOP OF NEW ALBANY
-2459.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2894.0	
-2504.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2939.0	BASE OF NEW ALBANY

MAPID: 18923597000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 32 QUARTERS/FOOTAGES: 330' S line, 990' E line of SW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.226584 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.486028 DATE COLLECTED:

SURFACE ELEVATION (FT.): 462.0 LOGGED (FT.): 1284.0 LOG TYPE: Electric Log

SOURCE: KUHN, MONTY R. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-80.0	CARBONDALE	SPRINGFIELD	COAL	-	542.0	
-182.0	CARBONDALE	COLCHESTER	COAL	-	644.0	
-822.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1284.0	

MAPID: 18900092000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 33 QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.205673 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.490485 DATE COLLECTED: 0 / 0 / 1943

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 1700.0 LOG TYPE:

SOURCE: LUTTRELL H, NOLTING 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
331.0	BOND	CARTHAGE	LIMESTONE	-	132.0	
-52.0	CARBONDALE	HERRIN	COAL	-	515.0	

MAPID: 18900799000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 33 QUARTERS/FOOTAGES: NW NE SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.203484

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.483067

DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 520.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
10.0	MODESTO	PIASA	LIMESTONE & SHALE	2.0	460.0
8.0	MODESTO		SHALE	13.0	462.0
-5.0	CARBONDALE	DANVILLE	BONE COAL	2.0	475.0
-7.0	CARBONDALE		SHALE	2.0	477.0
-9.0	CARBONDALE	ALLENBY	BONE COAL	1.0	479.0
-10.0	CARBONDALE		SHALE	2.0	480.0
-12.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	3.0	482.0
-15.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	485.0
-17.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	487.0
-20.0	CARBONDALE	LAWSON	SHALE	4.0	490.0
-24.0	CARBONDALE	CONANT	LIMESTONE	3.0	494.0
-27.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	497.0
-29.0	CARBONDALE		CALCAREOUS SHALE	5.0	499.0
-34.0	CARBONDALE	BRERETON	LIMESTONE	6.0	504.0
-40.0	CARBONDALE	ANNA	BLACK SHALE	3.0	510.0
-44.0	CARBONDALE	HERRIN	COAL	6.0	514.0

MAPID: 18902300000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 33 QUARTERS/FOOTAGES: 365' S line, 330' E line of NE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.210327

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.488987

DATE COLLECTED:

SURFACE ELEVATION (FT.): 446.0 LOGGED (FT.): 1278.0

LOG TYPE: Electric Log

SOURCE: M T & R DRLG. CO.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-832.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1278.0

MAPID: 1892456000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.217462 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.478248 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 517.3 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-419 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.3	510.0	

MAPID: 18900796000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 1W **SECTION:** 34 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.189644 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.476915 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 472.0 **LOGGED (FT.):** 3062.0 **LOG TYPE:** Electric Log
SOURCE: HOPKINS, DALE **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-839.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1311.0	
-2512.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2984.0	TOP OF NEW ALBANY
-2522.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2994.0	
-2590.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3062.0	BASE OF NEW ALBANY

MAPID: 18901345000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 34 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.191842

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.48432

DATE COLLECTED:

SURFACE ELEVATION (FT.): 461.0

LOGGED (FT.): 523.5

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-3.0	MODESTO	PIASA	LIMESTONE	5.0	464.0
-8.0	MODESTO		SHALE	5.0	469.0
-13.0	CARBONDALE	DANVILLE	BONE COAL	2.0	474.0
-15.0	CARBONDALE		BLACK SHALE	2.0	476.0
-17.0	CARBONDALE	GALUM	LIMESTONE & SHALE	2.0	478.0
-19.0	CARBONDALE		SHALE	6.0	480.0
-25.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	4.0	486.0
-29.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	490.0
-30.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	491.0
-34.0	CARBONDALE	LAWSON	SHALE	3.0	495.0
-37.0	CARBONDALE	CONANT	LIMESTONE	2.0	498.0
-39.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	500.0
-41.0	CARBONDALE		SHALE	4.0	502.0
-45.0	CARBONDALE	BRERETON	LIMESTONE	8.0	506.0
-53.0	CARBONDALE	ANNA	BLACK SHALE	3.0	514.0
-56.0	CARBONDALE	HERRIN	COAL	6.5	517.0

MAPID: 18901351000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 35 QUARTERS/FOOTAGES: NW SW NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.180179

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.48558

DATE COLLECTED:

SURFACE ELEVATION (FT.): 461.0 LOGGED (FT.): 510.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
7.0	MODESTO	PIASA	LIMESTONE	4.0	454.0
3.0	CARBONDALE		SHALE	9.0	458.0
-6.0	CARBONDALE	GALUM	LIMESTONE & SHALE	2.0	467.0
-8.0	CARBONDALE	ALLENBY	BONE COAL	1.0	469.0
-9.0	CARBONDALE		SHALE	4.0	470.0
-13.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	3.0	474.0
-16.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	477.0
-17.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	478.0
-20.0	CARBONDALE	LAWSON	SHALE	3.0	481.0
-23.0	CARBONDALE	CONANT	LIMESTONE	3.0	484.0
-26.0	CARBONDALE	JAMESTOWN	BLACK SHALE	3.0	487.0
-29.0	CARBONDALE		CALCAREOUS SHALE	4.0	490.0
-33.0	CARBONDALE	BRERETON	LIMESTONE	6.0	494.0
-39.0	CARBONDALE	ANNA	BLACK SHALE	3.0	500.0
-42.0	CARBONDALE	HERRIN	COAL	7.0	503.0

MAPID: 18900006000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 36 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.152334

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.48796

DATE COLLECTED: 0 / 0 / 1925

SURFACE ELEVATION (FT.): 496.5 LOGGED (FT.): 790.0

LOG TYPE:

SOURCE: PETRO OG, DODILLET A 1

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
318.5	BOND	CARTHAGE	LIMESTONE	-	178.0
-59.5	CARBONDALE	HERRIN	COAL	-	556.0

MAPID: 18900857000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 36 QUARTERS/FOOTAGES: 850' N line, 330' W line of NE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.157015 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.486776 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 1340.0 LOG TYPE: Electric Log

SOURCE: CANTER DRILLING CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-89.0	CARBONDALE	SPRINGFIELD	COAL	-	582.0
-205.0	CARBONDALE	COLCHESTER	COAL	-	698.0
-847.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1340.0

MAPID: 18900857000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 1W SECTION: 36 QUARTERS/FOOTAGES: 850' N line, 330' W line of NE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.157015 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.486776 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 569.5 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-19.0	MODESTO	PIASA	LIMESTONE	4.0	512.0
-23.0	MODESTO		SHALE	2.0	516.0
-25.0	CARBONDALE	DANVILLE	BONE COAL	2.0	518.0
-27.0	CARBONDALE		SHALE	2.0	520.0
-29.0	CARBONDALE		SHALE	5.0	522.0
-34.0	CARBONDALE	ALLENBY	BONE COAL	2.0	527.0
-36.0	CARBONDALE		SHALE	5.0	529.0
-41.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	2.0	534.0
-43.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	536.0
-45.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	538.0
-48.0	CARBONDALE	LAWSON	SHALE	3.0	541.0
-51.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.0	544.0
-57.0	CARBONDALE		CALCAREOUS SHALE	4.0	550.0
-61.0	CARBONDALE	BRERETON	LIMESTONE	5.0	554.0
-66.0	CARBONDALE	ANNA	BLACK SHALE	3.0	559.0
-70.0	CARBONDALE	HERRIN	COAL	6.5	563.0

MAPID: 18900802000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 19 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: CARLYLE LONGITUDE: -89.358637 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.513953 DATE COLLECTED:

SURFACE ELEVATION (FT.): 419.0 LOGGED (FT.): 1066.0 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
46.0	CARBONDALE	SPRINGFIELD	COAL	-	373.0
-647.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1066.0

MAPID: 18900802000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 19 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: CARLYLE LONGITUDE: -89.358637 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.513953 DATE COLLECTED:

SURFACE ELEVATION (FT.): 419.0 LOGGED (FT.): 358.0 LOG TYPE: Electric Log

SOURCE: GOOD DESCRIPTION WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
103.0	MODESTO	PIASA	LIMESTONE	4.0	316.0
99.0	MODESTO		SHALE	8.0	320.0
91.0	CARBONDALE	DANVILLE	BONE COAL	1.0	328.0
90.0	CARBONDALE		SHALE	5.0	329.0
85.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	334.0
82.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	337.0
81.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	338.0
79.0	CARBONDALE		SHALE	5.0	340.0
74.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	5.0	345.0
69.0	CARBONDALE	HERRIN	COAL	8.0	350.0

MAPID: 18900422000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 20 QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: CARLYLE LONGITUDE: -89.333145 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.508883 DATE COLLECTED:

SURFACE ELEVATION (FT.): 423.0 LOGGED (FT.): 1085.0 LOG TYPE: Electric Log

SOURCE: GEORGE & WRATHER OIL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-101.0	CARBONDALE	COLCHESTER	COAL	-	524.0
-662.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1085.0

MAPID: 18900422000C **VERSION:** 2 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 20 **QUARTERS/FOOTAGES:** SW SE SE
QUADRANGLE: CARLYLE **LONGITUDE:** -89.333145 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.508883 **DATE COLLECTED:** 0 / 0 / 1946
SURFACE ELEVATION (FT.): 423.0 **LOGGED (FT.):** 1541.0 **LOG TYPE:**
SOURCE: GEO&WRTHER, BRINKMANN 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

MAPID: 18900416000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.309885 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.494444 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 453.0 **LOGGED (FT.):** 1610.0 **LOG TYPE:**
SOURCE: RICHRDSN C, KASTEN 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
359.0	BOND	CARTHAGE	LIMESTONE	-	94.0	
-24.0	CARBONDALE	HERRIN	COAL	-	477.0	

MAPID: 18900416000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.309885 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.494444 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 453.0 **LOGGED (FT.):** 17.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: POOR DESCRIPTION, DEPTHS CORRECTED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	CONANT	LIMESTONE	3.0		
-	CARBONDALE		LIMESTONE	3.0		
-	CARBONDALE	BRERETON	LIMESTONE	2.0		
-	CARBONDALE	ANNA	BLACK SHALE	2.0		
-	CARBONDALE	HERRIN	COAL	7.0		

MAPID: 18900416000C **VERSION:** 3 **PROJECT:** D JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.309885 **GEOLOGIST:** D. JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.494444 **DATE COLLECTED:** 9 / 0 / 1941
SURFACE ELEVATION (FT.): 453.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Electric Log
SOURCE: RICHARDSON C V **WELL TYPE:** Dry Hole
COMMENT: LOG TYPE UNCERTAIN, PROBABLY AN E-LOG

MAPID: 18900416000C **VERSION:** 4 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.309885 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.494444 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 453.0 **LOGGED (FT.):** 1160.0 **LOG TYPE:** Electric Log
SOURCE: RICHARDSON C V **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-49.0	CARBONDALE	SPRINGFIELD	COAL	-	502.0	
-170.0	CARBONDALE	COLCHESTER	COAL	-	623.0	
-707.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1160.0	

MAPID: 18900446000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SE SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.312712 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.37629 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 523.0 **LOGGED (FT.):** 3020.0 **LOG TYPE:** Electric Log
SOURCE: CHICAGO PETRO. CORP. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-57.0	CARBONDALE	COLCHESTER	COAL	-	580.0	
-747.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1270.0	
-2455.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2978.0	TOP OF NEW ALBANY
-2457.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2980.0	
-2497.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3020.0	BASE OF NEW ALBANY

MAPID: 18900446000C **VERSION:** 2 **PROJECT:** D JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SE SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.312712 **GEOLOGIST:** D. JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.37629 **DATE COLLECTED:** 9 / 0 / 1947
SURFACE ELEVATION (FT.): 423.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Drillers Log
SOURCE: CHICAGO PETRO. CORP. **WELL TYPE:** Coal Test
COMMENT:

MAPID: 18924561000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** NE NE SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.302799 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.499918 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 470.5 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-115 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	5.5	465.0	

MAPID: 18900902000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.369869 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.493661 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 2690.0 **LOG TYPE:** Electric Log
SOURCE: BAYER, KENNETH M. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
40.0	CARBONDALE	SPRINGFIELD	COAL	-	380.0	
-70.0	CARBONDALE	COLCHESTER	COAL	-	490.0	
-647.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1067.0	
-2218.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2638.0	TOP OF NEW ALBANY
-2227.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2647.0	
-2270.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2690.0	BASE OF NEW ALBANY

MAPID: 18900902000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.369869 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.493661 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 402.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	7.0		
-	CARBONDALE	LAWSON	SHALE	5.0		
-	CARBONDALE	CONANT	LIMESTONE	2.0		
-	CARBONDALE		COAL	1.0		
-	CARBONDALE	BRERETON	LIMESTONE & SHALE	1.0		
-	CARBONDALE	ANNA	BLACK SHALE	2.0		
-	CARBONDALE	HERRIN	COAL	7.0		

MAPID: 18900128000C VERSION: 1

PROJECT: D JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 31 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: HOYLETON LONGITUDE: -89.361136 GEOLOGIST: D. JOHNSON

CONFIDENTIAL: N LATITUDE: 38.492002 DATE COLLECTED: 0 / 0 / 1938

SURFACE ELEVATION (FT.): LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: SCHLAFLY H J ETAL WELL TYPE: Dry Hole

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	COAL	2.0	

MAPID: 18900128000C VERSION: 2

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 31 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: HOYLETON LONGITUDE: -89.361136 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.492002 DATE COLLECTED: 0 / 0 / 1938

SURFACE ELEVATION (FT.): 438.0 LOGGED (FT.): 1270.0 LOG TYPE:

SOURCE: SCHLFY ETL, BRINKMAN C 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
10.0	CARBONDALE	HERRIN	COAL	- 428.0	

MAPID: 18924493000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 31 QUARTERS/FOOTAGES: 45' N line, 73' E line

QUADRANGLE: HOYLETON LONGITUDE: -89.348393 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.492828 DATE COLLECTED: 11 / 13 / 1967

SURFACE ELEVATION (FT.): 442.0 LOGGED (FT.): 415.2 LOG TYPE: Other Core Study

SOURCE: CARTER OIL COMPANY WF-72 WELL TYPE: Coal Test

COMMENT: CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
61.0	CARBONDALE		SHALE	3.4	381.0	CORE 381-416
57.6	CARBONDALE		LIMESTONE	0.7	384.4	
56.9	CARBONDALE		SHALE	0.4	385.1	
56.5	CARBONDALE		LIMESTONE	3.8	385.5	
52.7	CARBONDALE		SHALE	0.4	389.3	
52.3	CARBONDALE		LIMESTONE	2.5	389.7	
49.8	CARBONDALE		BLACK SHALE	10.8	392.2	
39.0	CARBONDALE		LIMESTONE	2.0	403.0	
37.0	CARBONDALE		DARK SHALE	0.1	405.0	CARBONACEOUS
36.9	CARBONDALE	HERRIN	COAL	5.1	405.1	COAL ANALYZED
31.8	CARBONDALE	HERRIN	PYRITE	0.1	410.2	
31.7	CARBONDALE	HERRIN	COAL	0.2	410.3	
31.5	CARBONDALE	HERRIN	CLAYSTONE	0.2	410.5	
31.3	CARBONDALE	HERRIN	COAL	0.2	410.7	
31.1	CARBONDALE		UNDERCLAY	3.7	410.9	
27.4	CARBONDALE		LIMESTONE	0.2	414.6	
27.2	CARBONDALE		SILTSTONE	0.4	414.8	

MAPID: 18924465000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 32 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE

QUADRANGLE: HOYLETON LONGITUDE: -89.338026 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.479632 DATE COLLECTED:

SURFACE ELEVATION (FT.): 436.0 LOGGED (FT.): 2782.0 LOG TYPE: Electric Log

SOURCE: CENEX, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-139.0	CARBONDALE	COLCHESTER	COAL	-	575.0	
-674.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1110.0	
-2290.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2726.0	TOP OF NEW ALBANY
-2300.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2736.0	
-2346.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2782.0	BASE OF NEW ALBANY

MAPID: 18900417000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 33 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.319323

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.485277

DATE COLLECTED: 0 / 0 / 1946

SURFACE ELEVATION (FT.): 449.0 LOGGED (FT.): 1534.0

LOG TYPE:

SOURCE: COLLNS BRO, SACHTLEBEN 1

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
334.0	BOND	CARTHAGE	LIMESTONE	-	115.0
-53.0	CARBONDALE	HERRIN	COAL	-	502.0

MAPID: 18900417000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 33 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.319323

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.485277

DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 502.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-13.0	MODESTO	PIASA	CALCAREOUS SHALE	2.0	466.0
-15.0	MODESTO		SHALE	2.0	468.0
-17.0	CARBONDALE	DANVILLE	BONE COAL	2.0	470.0
-19.0	CARBONDALE		SHALE	6.0	472.0
-25.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	478.0
-27.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	480.0
-29.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	482.0
-31.0	CARBONDALE	LAWSON	SHALE	2.0	484.0
-33.0	CARBONDALE	CONANT	LIMESTONE	2.0	486.0
-35.0	CARBONDALE		SHALE	5.0	488.0
-40.0	CARBONDALE	BRERETON	LIMESTONE	4.0	493.0
-44.0	CARBONDALE	ANNA	BLACK SHALE	1.0	497.0
-45.0	CARBONDALE	HERRIN	COAL	4.0	498.0

MAPID: 18900417000C VERSION: 3

PROJECT: D JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 33 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.319323

GEOLOGIST: D. JOHNSON

CONFIDENTIAL: N LATITUDE: 38.485277

DATE COLLECTED: 5 / 0 / 1946

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 0.0

LOG TYPE: Electric Log

SOURCE: COLLINS BROTHERS OIL CO.

WELL TYPE: Dry Hole

COMMENT: LOG TYPE UNCERTAIN, PROBABLY AN E-LOG

MAPID: 18900417000C VERSION: 4

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 33 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.319323 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.485277 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 1160.0 LOG TYPE: Electric Log

SOURCE: COLLINS BROTHERS OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-69.0	CARBONDALE	SPRINGFIELD	COAL	-	522.0
-187.0	CARBONDALE	COLCHESTER	COAL	-	640.0
-707.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1160.0

MAPID: 18900518000C VERSION: 1

PROJECT: D JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 35 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.282048 GEOLOGIST: D. JOHNSON

CONFIDENTIAL: N LATITUDE: 38.485467 DATE COLLECTED: 7 / 0 / 1955

SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 0.0 LOG TYPE: Electric Log

SOURCE: NIAGARA OIL CORP WELL TYPE: Dry Hole

COMMENT: LOG TYPE UNCERTAIN, PROBABLY AN E-LOG

MAPID: 18900518000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 2W SECTION: 35 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.282048 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.485467 DATE COLLECTED:

SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 518.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
1.0	MODESTO	PIASA	LIMESTONE	5.0	465.0
-4.0	CARBONDALE		SHALE	18.0	470.0
-22.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	488.0
-26.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	492.0
-27.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	493.0
-29.0	CARBONDALE	LAWSON	SHALE	3.0	495.0
-32.0	CARBONDALE	CONANT	LIMESTONE	2.0	498.0
-34.0	CARBONDALE		SHALE	6.0	500.0
-40.0	CARBONDALE	BRERETON	LIMESTONE	4.0	506.0
-44.0	CARBONDALE	ANNA	BLACK SHALE	2.0	510.0
-46.0	CARBONDALE	HERRIN	COAL	6.0	512.0

MAPID: 18900518000C **VERSION:** 3 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 35 **QUARTERS/FOOTAGES:** NW NW SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.282048 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.485467 **DATE COLLECTED:** 7 / 0 / 1955
SURFACE ELEVATION (FT.): 466.0 **LOGGED (FT.):** 528.0 **LOG TYPE:** Electric Log
SOURCE: NIAGARA OIL CORP **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-62.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	528.0	THIN COAL

MAPID: 18900518000C **VERSION:** 4 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 35 **QUARTERS/FOOTAGES:** NW NW SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.282048 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.485467 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 464.0 **LOGGED (FT.):** 2917.0 **LOG TYPE:** Electric Log
SOURCE: NIAGARA OIL CORP **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-63.0	CARBONDALE	SPRINGFIELD	COAL	-	527.0	
-173.0	CARBONDALE	COLCHESTER	COAL	-	637.0	
-780.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1244.0	
-2394.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2858.0	TOP OF NEW ALBANY
-2404.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2868.0	
-2453.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2917.0	BASE OF NEW ALBANY

MAPID: 18900129000C **VERSION:** 1 **PROJECT:** D JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 36 **QUARTERS/FOOTAGES:** NW NW NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.272597 **GEOLOGIST:** D. JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.492839 **DATE COLLECTED:** 11 / 0 / 1937
SURFACE ELEVATION (FT.): 459.0 **LOGGED (FT.):** 514.0 **LOG TYPE:** Drillers Log
SOURCE: LAMBERT & MILLIKEN **WELL TYPE:** Dry Hole
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-49.0	CARBONDALE	HERRIN	COAL	6.0	508.0	

MAPID: 18900129000C **VERSION:** 2 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 36 **QUARTERS/FOOTAGES:** NW NW NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.272597 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.492839 **DATE COLLECTED:** 0 / 0 / 1937
SURFACE ELEVATION (FT.): 459.0 **LOGGED (FT.):** 1666.0 **LOG TYPE:**
SOURCE: LAM&MILLKN, LESEMAN 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-49.0	CARBONDALE	HERRIN	COAL	-	508.0	

MAPID: 18923358000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 36 **QUARTERS/FOOTAGES:** 660' N line, 660' E line of NE SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.266898 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.484648 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 479.0 **LOGGED (FT.):** 1270.0 **LOG TYPE:** Electric Log
SOURCE: TEXAS PACIFIC OIL CO. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-49.0	CARBONDALE	SPRINGFIELD	COAL	-	528.0	
-159.0	CARBONDALE	COLCHESTER	COAL	-	638.0	
-791.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1270.0	

MAPID: 18924562000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1N 2W **SECTION:** 36 **QUARTERS/FOOTAGES:** NE NW NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.270265 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.492854 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 498.6 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-110 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	6.6	492.0	

MAPID: 18924495000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 32 QUARTERS/FOOTAGES: SE SE SE NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.445697 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.485179 DATE COLLECTED: 7 / 9 / 1981

SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 389.0 LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-677 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
110.0	MODESTO	PIASA	LIMESTONE	8.0	315.0	DRILLER'S LOG 0-3357
102.0			DARK SHALE	11.0	323.0	
91.0			CLAYSTONE	4.8	334.0	CORE 335.7-389
86.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	338.8	
82.5	CARBONDALE	BANKSTON FORK	SHALE	1.7	342.5	
80.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.1	344.1	
78.8	CARBONDALE		DARK SHALE	4.4	346.2	
74.5	CARBONDALE	CONANT	LIMESTONE	3.8	350.5	
70.7	CARBONDALE	JAMESTOWN	COAL	0.1	354.3	
70.6	CARBONDALE		LIMESTONE	0.2	354.4	
70.4	CARBONDALE		SHALE	3.7	354.6	
66.7	CARBONDALE	BRERETON	LIMESTONE	3.5	358.3	
63.2	CARBONDALE	ANNA	BLACK SHALE	1.1	361.8	
62.1	CARBONDALE	HERRIN	COAL	5.7	362.9	
56.4	CARBONDALE	HERRIN	CLAYSTONE	0.1	368.6	
56.3	CARBONDALE	HERRIN	COAL	1.4	368.7	
54.9	CARBONDALE		CLAYSTONE	0.2	370.1	
54.8	CARBONDALE		CORE LOSS	17.1	370.2	
37.7	CARBONDALE		LIMESTONE	1.7	387.3	

MAPID: 18900803000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 33 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.428095 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.486125 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 2598.0 LOG TYPE: Electric Log

SOURCE: GENTLES, ALBERT WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
49.0	CARBONDALE	SPRINGFIELD	COAL	-	396.0	
-61.0	CARBONDALE	COLCHESTER	COAL	-	506.0	
-542.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	987.0	
-2110.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2555.0	TOP OF NEW ALBANY
-2119.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2564.0	
-2153.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2598.0	BASE OF NEW ALBANY

MAPID: 18900803000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 33 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.428095

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.486125

DATE COLLECTED:

SURFACE ELEVATION (FT.): 447.0

LOGGED (FT.): 381.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
117.0	MODESTO	PIASA	LIMESTONE	9.0	330.0	
108.0	CARBONDALE		SHALE	14.0	339.0	
94.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	353.0	
90.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	357.0	
88.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	359.0	
86.0	CARBONDALE		SHALE	5.0	361.0	
81.0	CARBONDALE	BRERETON	LIMESTONE	6.0	366.0	
75.0	CARBONDALE	ANNA	SHALE	3.0	372.0	
72.0	CARBONDALE	HERRIN	COAL	6.0	375.0	

MAPID: 18900804000C VERSION: 1

PROJECT: D JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 34 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.414012

GEOLOGIST: D. JOHNSON

CONFIDENTIAL: N LATITUDE: 38.478896

DATE COLLECTED: 6 / 0 / 1951

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 0.0

LOG TYPE: Electric Log

SOURCE: POWELL GRAHAM

WELL TYPE: Dry Hole

COMMENT: LOG TYPE UNCERTAIN, PROBABLY AN E-LOG

MAPID: 18900804000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 34 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.414012 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.478896 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 366.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
126.0	MODESTO	PIASA	LIMESTONE	7.0	314.0	
119.0	CARBONDALE		SHALE	16.0	321.0	
103.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	337.0	
100.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	340.0	
99.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	341.0	
97.0	CARBONDALE	LAWSON	SHALE	4.0	343.0	
93.0	CARBONDALE	CONANT	LIMESTONE	3.0	347.0	
90.0	CARBONDALE		SHALE	6.0	350.0	
84.0	CARBONDALE	BRERETON	LIMESTONE	4.0	356.0	
80.0	CARBONDALE	ANNA	SHALE	1.0	360.0	
79.0	CARBONDALE	HERRIN	COAL	5.0	361.0	

MAPID: 18900804000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 34 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.414012 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.478896 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 2624.0 LOG TYPE: Electric Log

SOURCE: POWELL GRAHAM WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
53.0	CARBONDALE	SPRINGFIELD	COAL	-	387.0	
-64.0	CARBONDALE	COLCHESTER	COAL	-	504.0	
-574.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1014.0	
-2142.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2582.0	TOP OF NEW ALBANY
-2149.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2589.0	
-2184.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2624.0	BASE OF NEW ALBANY

MAPID: 18924497000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 34 QUARTERS/FOOTAGES: SW SW SW NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.426758 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.48539 DATE COLLECTED: 8 / 7 / 1981

SURFACE ELEVATION (FT.): 443.0 LOGGED (FT.): 393.9 LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-684 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
121.0	MODESTO	PIASA	LIMESTONE	7.0	322.0	DRILLER'S LOG 0-345
114.0			GRAY SHALE	15.0	329.0	
99.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	344.0	CORE 345-346.8
96.2	CARBONDALE	BANKSTON FORK	SHALE	1.6	346.8	
94.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	348.4	
92.1	CARBONDALE		SHALE	3.8	350.9	
88.4	CARBONDALE	CONANT	LIMESTONE	3.8	354.6	
84.6	CARBONDALE		GRAY & BLACK SHALE	3.6	358.4	
81.0	CARBONDALE	BRERETON	LIMESTONE	4.4	362.0	
76.6	CARBONDALE	ANNA	BLACK SHALE	1.0	366.4	
75.6	CARBONDALE	HERRIN	COAL	4.8	367.4	
70.8	CARBONDALE	HERRIN	COAL WITH SHALE	1.4	372.2	0.1' PTGS
69.4	CARBONDALE	HERRIN	COAL	1.4	373.6	
68.0	CARBONDALE		CLAYSTONE & SILTSTONE	2.0	375.0	CORE LOSS 376.6-377.0
66.0	CARBONDALE		SANDY CLAYSTONE	9.6	377.0	
56.4	CARBONDALE		CLAYSTONE & SHALE	3.1	386.6	
53.3	CARBONDALE		LIMESTONE	3.0	389.7	
50.3	CARBONDALE		CLAYSTONE & SILTSTONE	1.2	392.7	

MAPID: 18924498000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 35 QUARTERS/FOOTAGES: 25' S line, 742' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.405384 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.478047 DATE COLLECTED: 8 / 4 / 1970

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 360.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WF-391 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
143.0	MODESTO	PIASA	LIMESTONE	7.5	289.0	DRILLER'S LOG 0-313
135.5			GRAY SHALE	15.0	296.5	
120.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	311.5	CORE 313-361
117.2	CARBONDALE	BANKSTON FORK	SHALE WITH LIMESTONE	2.0	314.8	
115.2	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	316.8	
113.7	CARBONDALE		SHALE	3.9	318.3	
109.8	CARBONDALE		COAL	0.1	322.2	
109.7	CARBONDALE		LIMESTONE	0.8	322.3	
108.9	CARBONDALE	JAMESTOWN	COAL	0.2	323.1	
108.7	CARBONDALE		LIMESTONE	0.5	323.3	
108.2	CARBONDALE		SHALE	6.1	323.8	
102.1	CARBONDALE	BRERETON	LIMESTONE	4.0	329.9	
98.1	CARBONDALE	ANNA	SHALE	0.2	333.9	
98.0	CARBONDALE	HERRIN	COAL	5.4	334.0	
92.6	CARBONDALE	HERRIN	COAL/CLAYSTONE	0.1	339.4	BLUE BAND
92.6	CARBONDALE	HERRIN	COAL	0.9	339.4	
91.7	CARBONDALE		UNDERCLAY	2.7	340.3	
89.0	CARBONDALE		SANDSTONE	5.3	343.0	
83.7	CARBONDALE		SANDSTONE/LIMESTONE	8.5	348.3	W/ LS NODS. APPRCHS 50% LS
75.2	CARBONDALE		CLAYSTONE & SILTSTONE	0.3	356.8	
74.9	CARBONDALE		SANDSTONE	1.3	357.1	
73.6	CARBONDALE	SPRINGFIELD	COAL	0.1	358.4	W/ PYRITE PARTING
73.5	CARBONDALE		CLAYSTONE	1.5	358.5	

MAPID: 18900772000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 36 QUARTERS/FOOTAGES: 330' N line, 330' E line of SE

QUADRANGLE: HOYLETON LONGITUDE: -89.372078 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.484602 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 2671.0 LOG TYPE: Electric Log

SOURCE: GULF REFINING CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
20.0	CARBONDALE	SPRINGFIELD	COAL	-	400.0	
-110.0	CARBONDALE	COLCHESTER	COAL	-	530.0	
-642.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1062.0	
-2203.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2623.0	TOP OF NEW ALBANY
-2212.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2632.0	
-2251.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2671.0	BASE OF NEW ALBANY

MAPID: 18901045000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1N 3W SECTION: 36 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.385941 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.484498 DATE COLLECTED: 9 / 0 / 1958

SURFACE ELEVATION (FT.): 418.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: SUN PRODUCTION COMPANY WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18900007000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 1 QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.145718 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.465812 DATE COLLECTED: 0 / 0 / 1923

SURFACE ELEVATION (FT.): 517.5 LOGGED (FT.): 1623.0 LOG TYPE:

SOURCE: PETRO OG, BALDRIDGE WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
211.5	BOND	CARTHAGE	LIMESTONE	-	306.0	
-200.5	CARBONDALE	HERRIN	COAL	-	718.0	

MAPID: 18901898000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 2 QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.166654 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.464925 DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 1413.0 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-115.0	CARBONDALE	SPRINGFIELD	COAL	-	612.0
-230.0	CARBONDALE	COLCHESTER	COAL	-	727.0
-916.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1413.0

MAPID: 18901898000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 2 QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.166654 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.464925 DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 601.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-43.0	MODESTO	PIASA	LIMESTONE	4.0	540.0
-47.0	CARBONDALE		SHALE	15.0	544.0
-62.0	CARBONDALE	ALLENBY	BONE COAL	3.0	559.0
-65.0	CARBONDALE		SHALE	5.0	562.0
-70.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	567.0
-72.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	569.0
-75.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	572.0
-76.0	CARBONDALE	LAWSON	SHALE	6.0	573.0
-82.0	CARBONDALE	CONANT	LIMESTONE	2.0	579.0
-84.0	CARBONDALE		CALCAREOUS SHALE	5.0	581.0
-89.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	6.0	586.0
-95.0	CARBONDALE	ANNA	BLACK SHALE	2.0	592.0
-97.0	CARBONDALE	HERRIN	COAL	7.0	594.0

MAPID: 18900326000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 3 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194325 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.462342 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 479.0 **LOGGED (FT.):** 1350.0 **LOG TYPE:** Electric Log
SOURCE: WILLIAMS H S **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-161.0	CARBONDALE	COLCHESTER	COAL	-	640.0	
-871.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1350.0	

MAPID: 18900326000C **VERSION:** 2 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 3 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194325 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.462342 **DATE COLLECTED:** 0 / 0 / 1943
SURFACE ELEVATION (FT.): 479.0 **LOGGED (FT.):** 1585.0 **LOG TYPE:**
SOURCE: WILLIAMS H, HOHMAN 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
344.0	BOND	CARTHAGE	LIMESTONE	-	135.0	
-45.0	CARBONDALE	HERRIN	COAL	-	524.0	

MAPID: 18900712000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 3 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of NE NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.19427 **GEOLOGIST:** C TREWORY
CONFIDENTIAL: N **LATITUDE:** 38.475313 **DATE COLLECTED:** 5 / 0 / 1956
SURFACE ELEVATION (FT.): 467.0 **LOGGED (FT.):** 525.0 **LOG TYPE:** Electric Log
SOURCE: HOPKINS, DALE **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-58.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	525.0	THIN COAL

MAPID: 18900022000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: IRVINGTON LONGITUDE: -89.209237

GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.469413

DATE COLLECTED: 9 / 0 / 1903

SURFACE ELEVATION (FT.): LOGGED (FT.): 652.0

LOG TYPE: Drillers Log

SOURCE: IRVINGTON COAL

WELL TYPE: Coal Test

COMMENT: LOG PROB. MIS-LOC.;DOES NOT FIT LOC. TRN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SOIL	4.0	0.0	
-			CLAY	6.0	4.0	
-			SANDSTONE	15.0	10.0	LOG HAS "PLYERS"
-			BLACK SHALE	2.0	25.0	
-			COAL	1.0	27.0	
-			SANDSTONE	3.0	28.0	"PLYERS"
-			SANDSTONE & CONGLOMERATE	4.0	31.0	LOG HAS "SAND AND GRAVEL"
-			SHALE	12.0	35.0	
-			SHALE	2.0	47.0	
-			SANDSTONE	5.0	49.0	"PLYERS"
-			BLACK SHALE	2.0	54.0	
-			CONGLOMERATE	2.0	56.0	
-			BLACK SHALE	2.0	58.0	
-			COAL	0.5	60.0	
-			SHALE	22.0	60.5	
-			SHALE	15.0	82.5	
-			SANDSTONE	25.0	97.5	"PLYERS"
-			SHALE	6.0	122.5	
-			BLACK SHALE	1.0	128.5	
-			LIMESTONE	2.0	129.5	
-			COAL	0.5	131.5	
-			UNDERCLAY	10.0	132.0	
-			SANDSTONE	15.0	142.0	"PLYERS"
-			SHALE	12.0	157.0	
-			LIMESTONE	5.0	169.0	
-			COAL	1.4	174.0	
-			UNDERCLAY	3.0	175.4	
-			SHALE	25.0	178.4	
-			SANDSTONE	31.0	203.4	"PLYERS"
-			SHALE	20.0	234.4	
-			LIMESTONE	10.0	254.4	
-			BLACK SHALE	6.0	264.4	
-			SHALE	10.0	270.4	
-			COAL	1.0	280.4	
-			SHALE	30.0	281.4	
-			SHALE	15.0	311.4	
-			SANDSTONE	18.0	326.4	"PLYERS"
-			BLACK SHALE	2.0	344.4	

-	SHALE	22.0	346.4	
-	SANDSTONE	42.0	368.4	"PLYERS"
-	SANDSTONE	15.0	410.4	
-	SHALE	10.0	425.4	
-	BLACK SHALE	3.0	435.4	
-	COAL	1.4	438.4	
-	UNDERCLAY	15.0	439.8	
-	SANDSTONE	15.0	454.8	"PLYERS"
-	SHALE	35.0	469.8	
-	COAL	0.5	504.8	
-	SHALE	20.0	505.3	
-	SHALE	15.0	525.3	
-	SHALE	10.0	540.3	
-	COAL	0.7	550.3	
-	UNDERCLAY	5.0	551.0	
-	BLACK SHALE	12.0	556.0	
-	UNDERCLAY	10.0	568.0	
-	SANDSTONE	3.0	578.0	
-	COAL	0.7	581.0	
-	LIMESTONE	0.5	581.7	
-	UNDERCLAY	19.8	582.2	
-	UNDERCLAY	15.0	602.0	
-	SANDSTONE	2.0	617.0	"PLYERS"
-	SHALE	10.0	619.0	
-	SANDSTONE	10.0	629.0	"PLYERS"
-	SHALE	13.0	639.0	

MAPID: 18900176000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SE NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.210382 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.470401 **DATE COLLECTED:** 0 / 0 / 1939
SURFACE ELEVATION (FT.): 467.0 **LOGGED (FT.):** 1866.0 **LOG TYPE:**
SOURCE: GULF REF, BALDWN G W 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-42.0	CARBONDALE	HERRIN	COAL	-	509.0	

MAPID: 18901175000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 4 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.212705

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.462933

DATE COLLECTED:

SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 512.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
26.0	MODESTO	PIASA	LIMESTONE	5.0	445.0
21.0	MODESTO		SHALE	8.0	450.0
13.0	CARBONDALE	DANVILLE	BONE COAL	2.0	458.0
11.0	CARBONDALE	GALUM	LIMESTONE & SHALE	5.0	460.0
6.0	CARBONDALE	ALLENBY	BONE COAL	1.0	465.0
5.0	CARBONDALE		SHALE	7.0	466.0
-2.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	473.0
-4.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	475.0
-6.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	477.0
-10.0	CARBONDALE	LAWSON	SHALE	4.0	481.0
-14.0	CARBONDALE	CONANT	LIMESTONE	3.0	485.0
-17.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	488.0
-18.0	CARBONDALE		SHALE	8.0	489.0
-26.0	CARBONDALE	BRERETON	LIMESTONE	6.0	497.0
-32.0	CARBONDALE	ANNA	BLACK SHALE	2.0	503.0
-34.0	CARBONDALE	HERRIN	COAL	7.0	505.0

MAPID: 18900465000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 5 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.226389

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.469187

DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 1289.0

LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-62.0	CARBONDALE	SPRINGFIELD	COAL	-	521.0
-171.0	CARBONDALE	COLCHESTER	COAL	-	630.0
-830.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1289.0

MAPID: 18900465000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 5 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.226389

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.469187

DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.0

LOGGED (FT.): 514.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
9.0	MODESTO	PIASA	LIMESTONE	7.0	450.0
2.0	MODESTO		SHALE	7.0	457.0
-5.0	CARBONDALE	DANVILLE	BONE COAL	1.5	464.0
-6.5	CARBONDALE		SHALE	0.5	465.5
-7.0	CARBONDALE	GALUM	LIMESTONE & SHALE	3.0	466.0
-10.0	CARBONDALE		SHALE	6.0	469.0
-16.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	5.8	475.0
-21.8	CARBONDALE	BANKSTON FORK	SHALE	1.8	480.8
-23.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	482.5
-26.0	CARBONDALE	LAWSON	SHALE	4.0	485.0
-30.0	CARBONDALE	CONANT	LIMESTONE	2.0	489.0
-32.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	491.0
-34.0	CARBONDALE		SHALE	6.0	493.0
-40.0	CARBONDALE	BRERETON	LIMESTONE	4.0	499.0
-44.0	CARBONDALE	ANNA	BLACK SHALE	4.0	503.0
-48.0	CARBONDALE	HERRIN	COAL	7.0	507.0

MAPID: 18901176000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 6 QUARTERS/FOOTAGES: NW SW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.245005

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.466054

DATE COLLECTED:

SURFACE ELEVATION (FT.): 472.0

LOGGED (FT.): 505.5

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
28.0	MODESTO	PIASA	LIMESTONE	6.0	444.0
22.0	CARBONDALE	DANVILLE	BONE COAL	1.0	450.0
21.0	CARBONDALE		SHALE	5.0	451.0
16.0	CARBONDALE	GALUM	LIMESTONE & SHALE	4.0	456.0
12.0	CARBONDALE		SHALE	4.0	460.0
8.0	CARBONDALE	ALLENBY	BONE COAL	1.0	464.0
7.0	CARBONDALE		SHALE	7.0	465.0
0.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	472.0
-4.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	476.0
-6.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	478.0
-9.0	CARBONDALE	LAWSON	SHALE	4.0	481.0
-13.0	CARBONDALE	CONANT	LIMESTONE	2.5	485.0
-15.5	CARBONDALE		SHALE	2.5	487.5
-18.0	CARBONDALE	BRERETON	LIMESTONE	2.0	490.0
-20.0	CARBONDALE	ANNA	SHALE	7.0	492.0
-27.0	CARBONDALE	HERRIN	COAL	6.5	499.0

MAPID: 18900517000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 7 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.249876

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.456982

DATE COLLECTED:

SURFACE ELEVATION (FT.): 484.0 LOGGED (FT.): 513.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
34.0	MODESTO	PIASA	LIMESTONE	6.0	450.0
28.0	MODESTO		SHALE	3.0	456.0
25.0	CARBONDALE	DANVILLE	BONE COAL	1.0	459.0
24.0	CARBONDALE		SHALE	2.0	460.0
22.0	CARBONDALE	GALUM	LIMESTONE W/ SHALE	6.0	462.0
16.0	CARBONDALE		SHALE	4.0	468.0
12.0	CARBONDALE	ALLENBY	BONE COAL	2.0	472.0
10.0	CARBONDALE		SHALE	2.0	474.0
8.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	476.0
5.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	479.0
3.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	481.0
0.0	CARBONDALE	LAWSON	SHALE	3.0	484.0
-3.0	CARBONDALE	CONANT	LIMESTONE	2.0	487.0
-5.0	CARBONDALE		SHALE	8.0	489.0
-13.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	6.0	497.0
-19.0	CARBONDALE	ANNA	BLACK SHALE	3.0	503.0
-22.0	CARBONDALE	HERRIN	COAL	7.0	506.0

MAPID: 18902000000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 7 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.24284

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.45303

DATE COLLECTED:

SURFACE ELEVATION (FT.): 479.0 LOGGED (FT.): 1332.0

LOG TYPE: Electric Log

SOURCE: MITCHELL ROBERT J

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-59.0	CARBONDALE	SPRINGFIELD	COAL	-	538.0
-161.0	CARBONDALE	COLCHESTER	COAL	-	640.0
-853.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1332.0

MAPID: 18924563000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 7 **QUARTERS/FOOTAGES:** SE SE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.238084 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.456453 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 528.5 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-414 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.5	521.0	

MAPID: 18901177000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NE NE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.228904 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.454331 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 464.0 **LOGGED (FT.):** 1305.0 **LOG TYPE:** Electric Log
SOURCE: MAZZARINO, M. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-76.0	CARBONDALE	SPRINGFIELD	COAL	-	540.0	
-186.0	CARBONDALE	COLCHESTER	COAL	-	650.0	
-841.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1305.0	

MAPID: 18901177000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 8 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.228904

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.454331

DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.0 LOGGED (FT.): 532.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
0.0	MODESTO	PIASA	LIMESTONE	7.0	464.0
-7.0	MODESTO		SHALE	9.0	471.0
-16.0	CARBONDALE	DANVILLE	BONE COAL	2.0	480.0
-18.0	CARBONDALE		SHALE	1.0	482.0
-19.0	CARBONDALE	GALUM	LIMESTONE & SHALE	2.0	483.0
-21.0	CARBONDALE		SHALE	9.0	485.0
-30.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	494.0
-33.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	497.0
-35.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	499.0
-38.0	CARBONDALE	LAWSON	SHALE	3.0	502.0
-41.0	CARBONDALE	CONANT	LIMESTONE	3.0	505.0
-44.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	508.0
-46.0	CARBONDALE		SHALE	6.0	510.0
-52.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	5.0	516.0
-57.0	CARBONDALE	ANNA	BLACK SHALE	4.0	521.0
-61.0	CARBONDALE	HERRIN	COAL	7.0	525.0

MAPID: 18902428000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 8 QUARTERS/FOOTAGES: 41' N line, 157' W line of NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.236243

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.462622

DATE COLLECTED: 12 / 5 / 1968

SURFACE ELEVATION (FT.): 469.0 LOGGED (FT.): 508.0

LOG TYPE: Survey Core Study

SOURCE: HUMBLE OIL CO. WF-106

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-28.0			COAL	-	497.0 "COAL REPORTED ABOVE CORE(497)"-SEE LOG

MAPID: 18902428000C VERSION: 2

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 8 QUARTERS/FOOTAGES: 41' N line, 157' W line of NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.236243 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.462622 DATE COLLECTED: 1 / 29 / 1968

SURFACE ELEVATION (FT.): 469.0 LOGGED (FT.): 508.0 LOG TYPE: Multiple log types

SOURCE: HUMBLE OIL CO. WF-106 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
191.0			GRAY SHALE	163.5	278.0	DRILLER'S LOG 0-477
27.5	MODESTO	PIASA	LIMESTONE	4.0	441.5	
23.5	MODESTO		GRAY SHALE	12.5	445.5	
11.0	CARBONDALE	DANVILLE	COAL	0.3	458.0	
10.7	CARBONDALE		GRAY SHALE	11.2	458.3	
-0.5	CARBONDALE		LIMESTONE	1.8	469.5	
-2.3	CARBONDALE		GRAY SHALE	4.7	471.3	
-7.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	476.0	CORE 477-508
-10.3	CARBONDALE		GRAY & BLACK SHALE	5.7	479.3	
-16.0	CARBONDALE		COAL	0.2	485.0	SHALEY
-16.2	CARBONDALE		CALCAREOUS SHALE	0.4	485.2	
-16.6	CARBONDALE	CONANT	LIMESTONE	1.6	485.6	
-18.2	CARBONDALE		CORE LOSS	2.8	487.2	
-21.0	CARBONDALE	BRERETON	LIMESTONE	4.0	490.0	"5 NATURAL BREAKS" IN UNIT
-25.0	CARBONDALE	ANNA	BLACK SHALE	2.9	494.0	
-27.9	CARBONDALE	HERRIN	COAL	7.3	496.9	
-35.2	CARBONDALE		CLAYSTONE & SILTSTONE	3.2	504.2	
-38.4	CARBONDALE		LIMESTONE	0.6	507.4	NODULAR

MAPID: 18900394000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 9 QUARTERS/FOOTAGES: SE NE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.201268 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.458893 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 464.0 LOGGED (FT.): 1524.0 LOG TYPE:

SOURCE: HELGEN V I, HOLLE H 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
348.0	BOND	CARTHAGE	LIMESTONE	-	116.0	
-50.0	CARBONDALE	HERRIN	COAL	-	514.0	

MAPID: 18900395000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 9 QUARTERS/FOOTAGES: SE NW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.215154

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.452081

DATE COLLECTED: 0 / 0 / 1943

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 1562.0

LOG TYPE:

SOURCE: GERSON A W, KASTEN 1

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
320.0	BOND	CARTHAGE	LIMESTONE	-	155.0
-75.0	CARBONDALE	HERRIN	COAL	-	550.0

MAPID: 18901360000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 9 QUARTERS/FOOTAGES: NW SW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.208181

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.457301

DATE COLLECTED:

SURFACE ELEVATION (FT.): 473.0 LOGGED (FT.): 531.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
5.0	MODESTO	PIASA	LIMESTONE	5.0	468.0
0.0	MODESTO		SHALE	7.0	473.0
-7.0	CARBONDALE	DANVILLE	BONE COAL	2.0	480.0
-9.0	CARBONDALE		SHALE	8.0	482.0
-17.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	490.0
-20.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	493.0
-22.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	495.0
-26.0	CARBONDALE	LAWSON	SHALE	2.0	499.0
-28.0	CARBONDALE	CONANT	LIMESTONE	3.0	501.0
-31.0	CARBONDALE		CALCAREOUS SHALE	16.0	504.0
-47.0	CARBONDALE	BRERETON	LIMESTONE	2.0	520.0
-49.0	CARBONDALE	ANNA	BLACK SHALE	2.0	522.0
-51.0	CARBONDALE	HERRIN	COAL	7.0	524.0

MAPID: 18901367000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 9 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.212869 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.450187 DATE COLLECTED: 8 / 0 / 1954

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 680.0 LOG TYPE: Electric Log

SOURCE: MAZZARINO & KAPP WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
320.0	BOND	CARTHAGE	UNCLASSIFIED	-	155.0
41.0	MODESTO	PIASA	UNCLASSIFIED	-	434.0
-26.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	501.0
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	
-159.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	634.0
-205.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	680.0

MAPID: 18901375000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 9 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.208145 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.45912 DATE COLLECTED:

SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 1321.0 LOG TYPE: Electric Log

SOURCE: MAZZARINO & KAPP WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-59.0	CARBONDALE	SPRINGFIELD	COAL	-	530.0
-154.0	CARBONDALE	COLCHESTER	COAL	-	625.0
-850.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1321.0

MAPID: 18900041000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 10 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.187592 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.447573 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 486.0 LOGGED (FT.): 1531.0 LOG TYPE:

SOURCE: OHIO OIL, PGGNMLLR C 2 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
345.0	BOND	CARTHAGE	LIMESTONE	-	141.0
-57.0	CARBONDALE	HERRIN	COAL	-	543.0

MAPID: 18900042000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.189891 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.44764 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 485.0 **LOGGED (FT.):** 1523.0 **LOG TYPE:**
SOURCE: OHIO OIL, PGGNMLLR C 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
337.0	BOND	CARTHAGE	LIMESTONE	-	148.0
-73.0	CARBONDALE	HERRIN	COAL	-	558.0

MAPID: 18900045000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.192165 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.449529 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 491.0 **LOGGED (FT.):** 1528.0 **LOG TYPE:**
SOURCE: GULF REF, MASCHOFF M 2 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
349.0	BOND	CARTHAGE	LIMESTONE	-	142.0
-63.0	CARBONDALE	HERRIN	COAL	-	554.0

MAPID: 18900046000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194464 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.449596 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 490.0 **LOGGED (FT.):** 1527.0 **LOG TYPE:**
SOURCE: GULF REF, MASCHOFF M 3 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
346.0	BOND	CARTHAGE	LIMESTONE	-	144.0
-60.0	CARBONDALE	HERRIN	COAL	-	550.0

MAPID: 18900292000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.19676 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.449663 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 488.0 **LOGGED (FT.):** 1525.0 **LOG TYPE:**
SOURCE: GULF REF, MASCHOFF M 5 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
324.0	BOND	CARTHAGE	LIMESTONE	-	164.0
-68.0	CARBONDALE	HERRIN	COAL	-	556.0

MAPID: 18900345000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194483 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.447774 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 490.0 **LOGGED (FT.):** 1190.0 **LOG TYPE:**
SOURCE: GULF REF, MASCHOFF MSWD1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
345.0	BOND	CARTHAGE	LIMESTONE	-	145.0
-53.0	CARBONDALE	HERRIN	COAL	-	543.0

MAPID: 18900346000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SE SW NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.196705 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.455124 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 480.0 **LOGGED (FT.):** 1519.0 **LOG TYPE:**
SOURCE: GULF REF, HOLSHR O H 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
339.0	BOND	CARTHAGE	LIMESTONE	-	141.0
-54.0	CARBONDALE	HERRIN	COAL	-	534.0

MAPID: 18900351000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194395 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.455057 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 483.0 **LOGGED (FT.):** 1336.0 **LOG TYPE:** Electric Log
SOURCE: ROMINE LARRY **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-62.0	CARBONDALE	SPRINGFIELD	COAL	-	545.0	
-161.0	CARBONDALE	COLCHESTER	COAL	-	644.0	
-853.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1336.0	

MAPID: 18900351000C **VERSION:** 2 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194395 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.455057 **DATE COLLECTED:** 0 / 0 / 1942
SURFACE ELEVATION (FT.): 483.0 **LOGGED (FT.):** 1525.0 **LOG TYPE:**
SOURCE: ROMINE L, HOLSCHER O 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
337.0	BOND	CARTHAGE	LIMESTONE	-	146.0	
-54.0	CARBONDALE	HERRIN	COAL	-	537.0	

MAPID: 18900396000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SE NW SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.196742 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.451482 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 486.0 **LOGGED (FT.):** 1526.0 **LOG TYPE:**
SOURCE: AMERLAGENE, ERBS HEIRS 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
331.0	BOND	CARTHAGE	LIMESTONE	-	155.0	
-55.0	CARBONDALE	HERRIN	COAL	-	541.0	

MAPID: 18900397000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** NE NW SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.196723 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.453302 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 479.0 **LOGGED (FT.):** 1522.0 **LOG TYPE:**
SOURCE: AMERLAGENE, ERBS HEIRS 2 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
337.0	BOND	CARTHAGE	LIMESTONE	-	142.0
-54.0	CARBONDALE	HERRIN	COAL	-	533.0

MAPID: 18900398000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SE NE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.192147 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.451349 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 488.0 **LOGGED (FT.):** 1532.0 **LOG TYPE:**
SOURCE: REWARD OC, MASCHOFF M 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
343.0	BOND	CARTHAGE	LIMESTONE	-	145.0
-59.0	CARBONDALE	HERRIN	COAL	-	547.0

MAPID: 18900399000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194442 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.451415 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 494.0 **LOGGED (FT.):** 1531.0 **LOG TYPE:**
SOURCE: REWARD OC, MASCHOFF M 2 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
349.0	BOND	CARTHAGE	LIMESTONE	-	145.0
-41.0	CARBONDALE	HERRIN	COAL	-	535.0

MAPID: 18900400000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** NW NE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194424 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.453238 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 483.0 **LOGGED (FT.):** 1522.0 **LOG TYPE:**
SOURCE: REWARD ETL, MASCHOFF M 3 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
343.0	BOND	CARTHAGE	LIMESTONE	-	140.0
-60.0	CARBONDALE	HERRIN	COAL	-	543.0

MAPID: 18900401000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.189847 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.451285 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 477.0 **LOGGED (FT.):** 1534.0 **LOG TYPE:**
SOURCE: CITIESSERV, PGGNMOLLER 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
323.0	BOND	CARTHAGE	LIMESTONE	-	154.0
-78.0	CARBONDALE	HERRIN	COAL	-	555.0

MAPID: 18902348000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 11 **QUARTERS/FOOTAGES:** NW SE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.17595 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.456263 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 497.0 **LOGGED (FT.):** 1439.0 **LOG TYPE:** Electric Log
SOURCE: WHITTINGHILL F T JR **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-107.0	CARBONDALE	SPRINGFIELD	COAL	-	604.0
-223.0	CARBONDALE	COLCHESTER	COAL	-	720.0
-942.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1439.0

MAPID: 18902348000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 11 QUARTERS/FOOTAGES: NW SE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.17595 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.456263 DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 598.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-41.0	MODESTO	PIASA	LIMESTONE	6.0	538.0
-47.0	MODESTO		SHALE	4.0	544.0
-51.0	CARBONDALE	DANVILLE	BONE COAL	2.0	548.0
-53.0	CARBONDALE		SHALE	12.0	550.0
-65.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	562.0
-67.0	CARBONDALE	BANKSTON FORK	SHALE	4.0	564.0
-71.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	568.0
-73.0	CARBONDALE	LAWSON	SHALE	4.0	570.0
-77.0	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	574.0
-79.0	CARBONDALE		LIMESTONE & SHALE	10.0	576.0
-89.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	2.0	586.0
-91.0	CARBONDALE	ANNA	SHALE	2.0	588.0
-93.0	CARBONDALE	HERRIN	COAL	8.0	590.0

MAPID: 18900048000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 14 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.181043 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.434558 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 1534.0 LOG TYPE:

SOURCE: GULF REF, BRINK C H 2 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
361.0	BOND	CARTHAGE	LIMESTONE	-	147.0

MAPID: 18900049000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 14 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.181 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.436382 DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 1348.0 LOG TYPE: Electric Log

SOURCE: GULF REFINING CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-195.0	CARBONDALE	COLCHESTER	COAL	-	710.0
-833.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1348.0

MAPID: 18900049000C VERSION: 2

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 14 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.181 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.436382 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 512.0 LOGGED (FT.): 1539.0 LOG TYPE:

SOURCE: GULF REF, BRINK C H 3 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
350.0	BOND	CARTHAGE	LIMESTONE	-	162.0

MAPID: 18900348000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 14 QUARTERS/FOOTAGES: 332' N line, 331' W line of SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.180943 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.438213 DATE COLLECTED: 0 / 0 / 1942

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 1546.0 LOG TYPE:

SOURCE: GULF REF, BRINK C H 4 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
346.0	BOND	CARTHAGE	LIMESTONE	-	169.0

MAPID: 18900348000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 14 QUARTERS/FOOTAGES: 332' N line, 331' W line of SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.180943

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.438213

DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0

LOGGED (FT.): 610.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
68.0	MODESTO	PIASA	LIMESTONE	5.0	447.0
63.0	CARBONDALE		SILTY SHALE	38.0	452.0
25.0	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	5.0	490.0
20.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	495.0
18.0	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	3.0	497.0
15.0	CARBONDALE	LAWSON	SILTY SHALE	10.0	500.0
5.0	CARBONDALE	ENERGY	SHALE & SANDSTONE	100.0	510.0

MAPID: 18900402000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 14 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.180885

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.440043

DATE COLLECTED: 0 / 0 / 1943

SURFACE ELEVATION (FT.): 513.0

LOGGED (FT.): 1558.0

LOG TYPE:

SOURCE: RICHSN&REA, NIEMIER E 1

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
345.0	BOND	CARTHAGE	LIMESTONE	-	168.0

MAPID: 18900058000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.185681

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.432873

DATE COLLECTED: 0 / 0 / 1942

SURFACE ELEVATION (FT.): 504.0

LOGGED (FT.): 1538.0

LOG TYPE:

SOURCE: MAGNOLIA, KOELLING C 2

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
334.0	BOND	CARTHAGE	LIMESTONE	-	170.0
-71.0	CARBONDALE	HERRIN	COAL	-	575.0

MAPID: 18900059000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.187976 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.432934 DATE COLLECTED:

SURFACE ELEVATION (FT.): 519.0 LOGGED (FT.): 3106.0 LOG TYPE: Electric Log

SOURCE: KINGWOOD OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-123.0	CARBONDALE	SPRINGFIELD	COAL	-	642.0	
-231.0	CARBONDALE	COLCHESTER	COAL	-	750.0	
-843.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1362.0	
-2511.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3030.0	TOP OF NEW ALBANY
-2517.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3036.0	
-2587.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3106.0	BASE OF NEW ALBANY

MAPID: 18900059000C VERSION: 2

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.187976 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.432934 DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 516.0 LOGGED (FT.): 3362.0 LOG TYPE:

SOURCE: KINGWOODOC, BRINK C H 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
359.0	BOND	CARTHAGE	LIMESTONE	-	157.0	

MAPID: 18900199000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.192219 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.44588 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 1532.0 LOG TYPE:

SOURCE: POWEL&RISK, HOLLE H 2 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
342.0	BOND	CARTHAGE	LIMESTONE	-	152.0	
-56.0	CARBONDALE	HERRIN	COAL	-	550.0	

MAPID: 18900329000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** SE SE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183195 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.440124 **DATE COLLECTED:** 0 / 0 / 1942
SURFACE ELEVATION (FT.): 509.0 **LOGGED (FT.):** 1536.0 **LOG TYPE:**
SOURCE: MAGNOLIA, KOELLING C 4 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
345.0	BOND	CARTHAGE	LIMESTONE	-	164.0	

MAPID: 18900330000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NE SE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183145 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.441951 **DATE COLLECTED:** 0 / 0 / 1942
SURFACE ELEVATION (FT.): 509.0 **LOGGED (FT.):** 1546.0 **LOG TYPE:**
SOURCE: MAGNOLIA, KOELLING C 5 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
338.0	BOND	CARTHAGE	LIMESTONE	-	171.0	
-66.0	CARBONDALE	HERRIN	COAL	-	575.0	

MAPID: 18900334000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183245 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.438294 **DATE COLLECTED:** 0 / 0 / 1942
SURFACE ELEVATION (FT.): 502.0 **LOGGED (FT.):** 1539.0 **LOG TYPE:**
SOURCE: KINGWOODOC, BRINK C H 7 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
338.0	BOND	CARTHAGE	LIMESTONE	-	164.0	

MAPID: 18900335000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183245 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.438294 **DATE COLLECTED:** 0 / 0 / 1942
SURFACE ELEVATION (FT.): 508.0 **LOGGED (FT.):** 1531.0 **LOG TYPE:**
SOURCE: KINGWOODOC, BRINK C H 8 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
346.0	BOND	CARTHAGE	LIMESTONE	-	162.0	

MAPID: 18900336000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** SE SW NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.187768 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.440255 **DATE COLLECTED:** 0 / 0 / 1942
SURFACE ELEVATION (FT.): 495.0 **LOGGED (FT.):** 1531.0 **LOG TYPE:**
SOURCE: MAGNOLIA, KOELLING C 3 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
328.0	BOND	CARTHAGE	LIMESTONE	-	167.0	
-61.0	CARBONDALE	HERRIN	COAL	-	556.0	

MAPID: 18900341000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NW SE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.185433 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.442018 **DATE COLLECTED:** 0 / 0 / 1942
SURFACE ELEVATION (FT.): 502.0 **LOGGED (FT.):** 1539.0 **LOG TYPE:**
SOURCE: MAGNOLIA, KOELLING C 6 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
336.0	BOND	CARTHAGE	LIMESTONE	-	166.0	
-64.0	CARBONDALE	HERRIN	COAL	-	566.0	

MAPID: 18900347000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: NE SW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.187722

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.442085

DATE COLLECTED: 0 / 0 / 1942

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 1538.0

LOG TYPE:

SOURCE: MAGNOLIA, KOELLING C 7

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
338.0	BOND	CARTHAGE	LIMESTONE	-	159.0	
-50.0	CARBONDALE	HERRIN	COAL	-	547.0	

MAPID: 18900357000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: NW SE SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.18563

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.4347

DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 511.0 LOGGED (FT.): 1530.0

LOG TYPE:

SOURCE: KINGWOODOC, BRINK C H 6

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
356.0	BOND	CARTHAGE	LIMESTONE	-	155.0	

MAPID: 18900358000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: SE NE SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.183299

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.436463

DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 1526.0

LOG TYPE:

SOURCE: KINGWOODOC, BRINK C H 5

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
349.0	BOND	CARTHAGE	LIMESTONE	-	153.0	

MAPID: 18900359000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NE NW NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.187628 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.445746 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 491.0 **LOGGED (FT.):** 1533.0 **LOG TYPE:**
SOURCE: MAGNOLIA, KOELLING C 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
342.0	BOND	CARTHAGE	LIMESTONE	-	149.0
-59.0	CARBONDALE	HERRIN	COAL	-	550.0

MAPID: 18900360000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.194512 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.445947 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 492.0 **LOGGED (FT.):** 1531.0 **LOG TYPE:**
SOURCE: POWEL&RISK, HOLLE H 4 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
340.0	BOND	CARTHAGE	LIMESTONE	-	152.0
-44.0	CARBONDALE	HERRIN	COAL	-	536.0

MAPID: 18900361000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NW NW NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.189924 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.445813 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 487.0 **LOGGED (FT.):** 1527.0 **LOG TYPE:**
SOURCE: POWEL&RISK, HOLLE H 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
337.0	BOND	CARTHAGE	LIMESTONE	-	150.0
-61.0	CARBONDALE	HERRIN	COAL	-	548.0

MAPID: 18900403000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NE SE SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183349 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.434636 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 513.0 **LOGGED (FT.):** 1532.0 **LOG TYPE:**
SOURCE: KINGWOODOC, BRINK C H 4 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
356.0	BOND	CARTHAGE	LIMESTONE	-	157.0	

MAPID: 18900404000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.187861 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.436597 **DATE COLLECTED:** 0 / 0 / 1945
SURFACE ELEVATION (FT.): 495.0 **LOGGED (FT.):** 1533.0 **LOG TYPE:**
SOURCE: MAGNOLIA, KOELLING C 8 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
342.0	BOND	CARTHAGE	LIMESTONE	-	153.0	
-53.0	CARBONDALE	HERRIN	COAL	-	548.0	

MAPID: 18900405000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.185383 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.443849 **DATE COLLECTED:** 0 / 0 / 1945
SURFACE ELEVATION (FT.): 497.0 **LOGGED (FT.):** 1534.0 **LOG TYPE:**
SOURCE: MAGNOLIA, KOELLING C 9 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
334.0	BOND	CARTHAGE	LIMESTONE	-	163.0	
-62.0	CARBONDALE	HERRIN	COAL	-	559.0	

MAPID: 18900406000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: SE NE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.183091

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.443782

DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 501.0 LOGGED (FT.): 1542.0

LOG TYPE:

SOURCE: MAGNOLIA, KOELLING C 10

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
326.0	BOND	CARTHAGE	LIMESTONE	-	175.0	
-82.0	CARBONDALE	HERRIN	COAL	-	583.0	

MAPID: 18901387000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.192384

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.438559

DATE COLLECTED: 12 / 0 / 1953

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 700.0

LOG TYPE: Electric Log

SOURCE: WIX E T

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
328.0	BOND	CARTHAGE	UNCLASSIFIED	-	172.0	
-76.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	576.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
-157.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	657.0	
-200.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	700.0	

MAPID: 18901387000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.192384

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.438559

DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0

LOGGED (FT.): 581.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
6.0	MODESTO	PIASA	CALCAREOUS SHALE	3.0	494.0
3.0	CARBONDALE		SILTY SHALE	40.0	497.0
-37.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	9.0	537.0
-46.0	CARBONDALE	LAWSON	SHALE	3.0	546.0
-49.0	CARBONDALE	CONANT	LIMESTONE	2.0	549.0
-51.0	CARBONDALE	JAMESTOWN	BONE COAL	3.0	551.0
-54.0	CARBONDALE		SHALE	4.0	554.0
-58.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	14.0	558.0
-72.0	CARBONDALE	ANNA	BLACK SHALE	2.0	572.0
-74.0	CARBONDALE	HERRIN	COAL	7.0	574.0

MAPID: 18923458000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.189956

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.443977

DATE COLLECTED:

SURFACE ELEVATION (FT.): 492.0

LOGGED (FT.): 3074.0

LOG TYPE: Electric Log

SOURCE: ALLISON DAVID

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN COMMENT	
-73.0	CARBONDALE	SPRINGFIELD	COAL	-	565.0	
-176.0	CARBONDALE	COLCHESTER	COAL	-	668.0	
-833.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1325.0	
-2521.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3013.0	TOP OF NEW ALBANY
-2523.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3015.0	
-2582.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3074.0	BASE OF NEW ALBANY

MAPID: 18924275000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** 660' S line, 660' E line of NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.184339 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.441063 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 507.0 **LOGGED (FT.):** 3090.0 **LOG TYPE:** Electric Log
SOURCE: PRIOR, JOHN **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-85.0	CARBONDALE	SPRINGFIELD	COAL	-	592.0	
-179.0	CARBONDALE	COLCHESTER	COAL	-	686.0	
-841.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1348.0	
-2526.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3033.0	TOP OF NEW ALBANY
-2529.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3036.0	
-2583.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3090.0	BASE OF NEW ALBANY

MAPID: 18924564000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** SE SW NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.215306 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.441163 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 602.9 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-113 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.9	595.0	

MAPID: 18923825000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 17 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.226892 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.434258 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 488.0 **LOGGED (FT.):** 1365.0 **LOG TYPE:** Electric Log
SOURCE: EVANS, CHARLES T. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-114.0	CARBONDALE	SPRINGFIELD	COAL	-	602.0	
-219.0	CARBONDALE	COLCHESTER	COAL	-	707.0	
-877.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1365.0	

MAPID: 18901215000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 18 QUARTERS/FOOTAGES: 390' S line, 400' E line of NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.247951 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.44252 DATE COLLECTED: 12 / 0 / 1959

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 648.0 LOG TYPE: Electric Log

SOURCE: TROOP J B WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
361.0	BOND	CARTHAGE	UNCLASSIFIED	-	124.0
8.0	MODESTO	PIASA	UNCLASSIFIED	-	477.0
-42.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	527.0
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	
-127.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	612.0
-163.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	648.0

MAPID: 18901215000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 18 QUARTERS/FOOTAGES: 390' S line, 400' E line of NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.247951 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.44252 DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 536.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
17.0	MODESTO	PIASA	LIMESTONE	4.0	468.0
13.0	MODESTO		SHALE	8.0	472.0
5.0	CARBONDALE	DANVILLE	BONE COAL	2.0	480.0
3.0	CARBONDALE		SHALE	1.0	482.0
2.0	CARBONDALE	GALUM	LIMESTONE & SHALE	2.0	483.0
0.0	CARBONDALE		SHALE	9.0	485.0
-9.0	CARBONDALE	ALLENBY	BONE COAL	1.0	494.0
-10.0	CARBONDALE		SHALE	2.0	495.0
-12.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	497.0
-15.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	500.0
-17.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	502.0
-21.0	CARBONDALE	LAWSON	SHALE	3.0	506.0
-24.0	CARBONDALE	CONANT	LIMESTONE	2.0	509.0
-26.0	CARBONDALE	JAMESTOWN	BONE COAL	3.0	511.0
-29.0	CARBONDALE		SHALE	7.0	514.0
-36.0	CARBONDALE	BRERETON	LIMESTONE	5.0	521.0
-41.0	CARBONDALE	ANNA	BLACK SHALE	3.0	526.0
-44.0	CARBONDALE	HERRIN	COAL	7.0	529.0

MAPID: 18901215000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 18 QUARTERS/FOOTAGES: 390' S line, 400' E line of NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.247951 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.44252 DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 1340.0 LOG TYPE: Electric Log

SOURCE: TROOP J B WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-65.0	CARBONDALE	SPRINGFIELD	COAL	-	550.0	
-160.0	CARBONDALE	COLCHESTER	COAL	-	645.0	
-855.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1340.0	

MAPID: 18924565000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 18 QUARTERS/FOOTAGES: NW NE SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.240686 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.440207 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 524.5 LOG TYPE: Company map

SOURCE: CARTER OIL COMPANY WF-413 WELL TYPE: Coal Test

COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.5	517.0	

MAPID: 18900421000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 19 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.247929 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.42778 DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 1621.0 LOG TYPE:

SOURCE: DORAN PAUL, NEUHAUS 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
382.0	BOND	CARTHAGE	LIMESTONE	-	121.0	
-11.0	CARBONDALE	HERRIN	COAL	-	514.0	

MAPID: 18900421000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 19 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.247929

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.42778

DATE COLLECTED:

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 522.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
41.0	MODESTO	PIASA	LIMESTONE	8.0	462.0	
33.0	MODESTO		SHALE	5.0	470.0	
28.0	CARBONDALE	DANVILLE	BONE COAL	4.0	475.0	
24.0	CARBONDALE		SHALE	6.0	479.0	
18.0	CARBONDALE	ALLENBY	BONE COAL	1.0	485.0	
17.0	CARBONDALE		SHALE	2.0	486.0	
15.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	488.0	
11.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	492.0	
9.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	494.0	
5.0	CARBONDALE	LAWSON	SHALE	3.0	498.0	
2.0	CARBONDALE	CONANT	LIMESTONE	3.0	501.0	
-1.0	CARBONDALE		SHALE	3.0	504.0	
-4.0	CARBONDALE	BRERETON	LIMESTONE	3.0	507.0	
-7.0	CARBONDALE	ANNA	BLACK SHALE	4.0	510.0	
-11.0	CARBONDALE	HERRIN	COAL	8.0	514.0	

MAPID: 18922993000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 20 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.236188

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.425426

DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 3120.0

LOG TYPE: Electric Log

SOURCE: BALDRIDGE, N. A. DRLG.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-883.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1376.0	
-2567.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3060.0	TOP OF NEW ALBANY
-2571.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3064.0	
-2627.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3120.0	BASE OF NEW ALBANY

MAPID: 18924566000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 20 QUARTERS/FOOTAGES: NW SW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.227001 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.421479 DATE COLLECTED:

SURFACE ELEVATION (FT.): 492.0 LOGGED (FT.): 599.8 LOG TYPE: Company map

SOURCE: CARTER OIL COMPANY WF-411 WELL TYPE: Coal Test

COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-100.0	CARBONDALE	HERRIN	COAL	7.8	592.0	

MAPID: 18901254000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 21 QUARTERS/FOOTAGES: 380' N line, 330' E line of NW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.215449 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.42462 DATE COLLECTED:

SURFACE ELEVATION (FT.): 491.0 LOGGED (FT.): 596.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-31.0	MODESTO	PIASA	LIMESTONE	9.0	522.0	
-40.0	MODESTO		SHALE	3.0	531.0	
-43.0	CARBONDALE	DANVILLE	BONE COAL	2.0	534.0	
-45.0	CARBONDALE	GALUM	LIMESTONE & SHALE	4.0	536.0	
-49.0	CARBONDALE	ALLENBY	BONE COAL	1.0	540.0	
-50.0	CARBONDALE		SHALE	9.0	541.0	
-59.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	550.0	
-61.5	CARBONDALE	BANKSTON FORK	SHALE	2.0	552.5	
-63.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	554.5	
-68.0	CARBONDALE	LAWSON	SHALE	5.0	559.0	
-73.0	CARBONDALE	CONANT	LIMESTONE	2.0	564.0	
-75.0	CARBONDALE	JAMESTOWN	COAL	2.0	566.0	
-77.0	CARBONDALE		SHALE	3.0	568.0	
-80.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	15.0	571.0	
-95.0	CARBONDALE	HERRIN	COAL	10.0	586.0	

MAPID: 18902025000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 21 **QUARTERS/FOOTAGES:** 330' S line, 330' E line of SW NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.206227 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.426276 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 502.0 **LOGGED (FT.):** 1388.0 **LOG TYPE:** Electric Log
SOURCE: BURKETT, M. D. OIL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-886.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1388.0	

MAPID: 18900060000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 22 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183425 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.430981 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 521.0 **LOGGED (FT.):** 1536.0 **LOG TYPE:**
SOURCE: MAGNOLIA, RAHN OTTO 8 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
358.0	BOND	CARTHAGE	LIMESTONE	-	163.0	

MAPID: 18900060000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 22 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183425 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.430981 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 521.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	LAWSON	SANDSTONE		75.0	

MAPID: 18900327000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 22 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.185692 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.425603 **DATE COLLECTED:** 0 / 0 / 1940
SURFACE ELEVATION (FT.): 531.0 **LOGGED (FT.):** 3198.0 **LOG TYPE:**
SOURCE: MUDGE OC, MITCHELL E 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
367.0	BOND	CARTHAGE	LIMESTONE	-	164.0	

MAPID: 18923419000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 22 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of SE SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183435 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.420078 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 513.0 **LOGGED (FT.):** 3060.0 **LOG TYPE:** Electric Log
SOURCE: ALLISON DAVID **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-145.0	CARBONDALE	COLCHESTER	COAL	-	658.0	
-825.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1338.0	
-2491.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3004.0	TOP OF NEW ALBANY
-2497.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3010.0	
-2547.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3060.0	BASE OF NEW ALBANY

MAPID: 18923609000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 22 **QUARTERS/FOOTAGES:** 330' S line, 380' E line of NE SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.183613 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.421907 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 531.0 **LOGGED (FT.):** 3080.0 **LOG TYPE:** Electric Log
SOURCE: ALLISON, DAVID **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-149.0	CARBONDALE	COLCHESTER	COAL	-	680.0	
-819.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1350.0	
-2489.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3020.0	TOP OF NEW ALBANY
-2491.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3022.0	
-2549.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3080.0	BASE OF NEW ALBANY

MAPID: 18900008000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 23 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.164867 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.423074 **DATE COLLECTED:** 0 / 0 / 1926
SURFACE ELEVATION (FT.): 535.5 **LOGGED (FT.):** 1631.0 **LOG TYPE:**
SOURCE: PETRO OG, ALDAG L **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
303.5	BOND	CARTHAGE	LIMESTONE	-	232.0	
-79.5	CARBONDALE	HERRIN	COAL	-	615.0	

MAPID: 18900089000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 23 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.176466 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.425291 **DATE COLLECTED:** 0 / 0 / 1941
SURFACE ELEVATION (FT.): 538.0 **LOGGED (FT.):** 3150.0 **LOG TYPE:**
SOURCE: SHELL OC, BROWN B B 4C **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
343.0	BOND	CARTHAGE	LIMESTONE	-	195.0
-73.0	CARBONDALE	HERRIN	COAL	-	611.0

MAPID: 18900105000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 23 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.176466 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.425291 **DATE COLLECTED:** 0 / 0 / 1940
SURFACE ELEVATION (FT.): 534.0 **LOGGED (FT.):** 1553.0 **LOG TYPE:**
SOURCE: SHELL OC, BROWN B B 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
335.0	BOND	CARTHAGE	LIMESTONE	-	199.0
-83.0	CARBONDALE	HERRIN	COAL	-	617.0

MAPID: 18900391000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 23 **QUARTERS/FOOTAGES:** NE SE NW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.174132 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.427018 **DATE COLLECTED:** 0 / 0 / 1944
SURFACE ELEVATION (FT.): 537.0 **LOGGED (FT.):** 1616.0 **LOG TYPE:**
SOURCE: SHELL OC, BROWN B B 5 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
327.0	BOND	CARTHAGE	LIMESTONE	-	210.0
-85.0	CARBONDALE	HERRIN	COAL	-	622.0

MAPID: 18900407000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 23 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.181119

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.425453

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 531.0 LOGGED (FT.): 1547.0

LOG TYPE:

SOURCE: SHELL OC, LANCEL W 1

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
369.0	BOND	CARTHAGE	LIMESTONE	- 162.0	

MAPID: 18900408000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 23 QUARTERS/FOOTAGES: SE NW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.178802

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.421741

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 539.0 LOGGED (FT.): 1559.0

LOG TYPE:

SOURCE: MAGNOLIA, TIEMANN C 2

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
344.0	BOND	CARTHAGE	LIMESTONE	- 195.0	
-84.0	CARBONDALE	HERRIN	COAL	- 623.0	

MAPID: 18900551000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 23 QUARTERS/FOOTAGES: 1060' S line, 330' W line of SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.171862

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.419908

DATE COLLECTED:

SURFACE ELEVATION (FT.): 538.0

LOGGED (FT.): 579.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
11.0	MODESTO	PIASA	CALCAREOUS SHALE	4.0	527.0
7.0	CARBONDALE		SHALE	6.0	531.0
1.0	CARBONDALE	GALUM	LIMESTONE & SHALE	4.0	537.0
-3.0	CARBONDALE		SHALE	8.0	541.0
-11.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	549.0
-13.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	551.0
-14.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	552.0
-17.0	CARBONDALE	LAWSON	SHALE	5.0	555.0
-22.0	CARBONDALE	CONANT	LIMESTONE	4.0	560.0
-26.0	CARBONDALE	JAMESTOWN	SHALE	6.0	564.0
-32.0	CARBONDALE		LIMESTONE & SHALE	4.0	570.0
-36.0	CARBONDALE	BRERETON	LIMESTONE	4.0	574.0
-40.0	CARBONDALE	ANNA	BLACK SHALE	2.0	578.0
-34.0	CARBONDALE	HERRIN	COAL	7.0	572.0

MAPID: 18900597000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 23 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.171848

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.421512

DATE COLLECTED: 12 / 0 / 1955

SURFACE ELEVATION (FT.): 527.0

LOGGED (FT.): 645.0

LOG TYPE: Electric Log

SOURCE: MARCH DRILLING CO.

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
330.0	BOND	CARTHAGE	UNCLASSIFIED	-	197.0
17.0	MODESTO	PIASA	UNCLASSIFIED	-	510.0
-52.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	579.0
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	
-118.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	645.0

MAPID: 18900641000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 23 QUARTERS/FOOTAGES: 330' N line, 360' W line of SE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.176386 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.419841 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 3068.0 LOG TYPE: Electric Log

SOURCE: GULF REFINING CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-90.0	CARBONDALE	SPRINGFIELD	COAL	-	610.0	
-161.0	CARBONDALE	COLCHESTER	COAL	-	681.0	
-816.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1336.0	
-2478.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2998.0	TOP OF NEW ALBANY
-2480.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3000.0	
-2548.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3068.0	BASE OF NEW ALBANY

MAPID: 18923617000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 23 QUARTERS/FOOTAGES: 330' S line, 380' W line of SW NW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.180946 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.421816 DATE COLLECTED:

SURFACE ELEVATION (FT.): 527.0 LOGGED (FT.): 3067.0 LOG TYPE: Electric Log

SOURCE: SEIP, FRED WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-819.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1346.0	
-2490.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3017.0	TOP OF NEW ALBANY
-2493.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3020.0	
-2540.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3067.0	BASE OF NEW ALBANY

MAPID: 18900009000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 24 QUARTERS/FOOTAGES: NE NE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.146252 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.429686 DATE COLLECTED: 0 / 0 / 1900

SURFACE ELEVATION (FT.): 551.2 LOGGED (FT.): 0.0 LOG TYPE:

SOURCE: CRAVAT CC, STEINHLL H WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
169.2	BOND	CARTHAGE	LIMESTONE	-	382.0	

MAPID: 18901178000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 24 QUARTERS/FOOTAGES: SE SE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.160311 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.4175 DATE COLLECTED:

SURFACE ELEVATION (FT.): 549.0 LOGGED (FT.): 1510.0 LOG TYPE: Electric Log

SOURCE: WINN C R WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-143.0	CARBONDALE	SPRINGFIELD	COAL	-	692.0
-256.0	CARBONDALE	COLCHESTER	COAL	-	805.0
-961.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1510.0

MAPID: 18901178000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 24 QUARTERS/FOOTAGES: SE SE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.160311 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.4175 DATE COLLECTED:

SURFACE ELEVATION (FT.): 549.0 LOGGED (FT.): 679.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-61.0	MODESTO	PIASA	LIMESTONE	5.0	610.0
-66.0	MODESTO		SHALE	10.0	615.0
-76.0	CARBONDALE	DANVILLE	BONE COAL	1.0	625.0
-77.0	CARBONDALE	GALUM	LIMESTONE & SHALE	3.0	626.0
-80.0	CARBONDALE	ALLENBY	BONE COAL	1.0	629.0
-81.0	CARBONDALE		SHALE	9.0	630.0
-90.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	639.0
-92.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	641.0
-94.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	643.0
-99.0	CARBONDALE	LAWSON	SHALE	4.0	648.0
-103.0	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	652.0
-105.0	CARBONDALE		SHALE	1.0	654.0
-106.0	CARBONDALE	BRERETON	CALCAREOUS SHALE	14.0	655.0
-120.0	CARBONDALE	ANNA	DARK GRAY SHALE	2.0	669.0
-121.0	CARBONDALE	HERRIN	COAL	9.0	670.0

MAPID: 18901415000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 25 QUARTERS/FOOTAGES: NW NE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.158052 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.408408 DATE COLLECTED:

SURFACE ELEVATION (FT.): 547.0 LOGGED (FT.): 681.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-71.0	MODESTO	PIASA	LIMESTONE	3.0	618.0
-74.0	MODESTO		SHALE	9.0	621.0
-83.0	CARBONDALE	DANVILLE	BONE COAL	1.0	630.0
-84.0	CARBONDALE	GALUM	LIMESTONE & SHALE	5.0	631.0
-89.0	CARBONDALE	ALLENBY	BONE COAL	1.0	636.0
-90.0	CARBONDALE		SHALE	8.0	637.0
-98.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	645.0
-100.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	647.0
-101.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	648.0
-105.0	CARBONDALE	LAWSON	SHALE	5.0	652.0
-110.0	CARBONDALE	CONANT	LIMESTONE & SHALE	3.0	657.0
-113.0	CARBONDALE		SHALE	2.0	660.0
-115.0	CARBONDALE	BRERETON	CALCAREOUS SHALE	9.0	662.0
-124.0	CARBONDALE	ANNA	DARK GRAY SHALE	2.0	671.0
-126.0	CARBONDALE	HERRIN	COAL	8.0	673.0

MAPID: 18901418000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 25 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.155704 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.413721 DATE COLLECTED:

SURFACE ELEVATION (FT.): 549.0 LOGGED (FT.): 1552.0 LOG TYPE: Electric Log

SOURCE: ALEXIS ENTERPRISES WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-157.0	CARBONDALE	SPRINGFIELD	COAL	-	706.0
-263.0	CARBONDALE	COLCHESTER	COAL	-	812.0
-1003.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1552.0

MAPID: 18900010000C VERSION: 1

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: NE SE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.164974 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.412263 DATE COLLECTED: 3 / 1 / 1921

SURFACE ELEVATION (FT.): 549.0 LOGGED (FT.): 750.0 LOG TYPE: Drillers Log

SOURCE: PETRO O & G WELL TYPE: Producer-Oil and Gas

COMMENT: LOG DIFFICULT TO CORRELATE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
549.0			UNCONSOLIDATED	19.0	0.0	
530.0	BOND		UNCLASSIFIED	38.0	19.0	
492.0	BOND		SHALE	98.0	57.0	
394.0	BOND		SANDSTONE	5.0	155.0	
389.0	BOND		SHALE	2.0	160.0	
387.0	BOND		LIMESTONE	5.0	162.0	
382.0	BOND		SHALE	67.0	167.0	
315.0	BOND	CARTHAGE	LIMESTONE	10.0	234.0	
305.0	MODESTO		SHALE	6.0	244.0	
299.0			LIMESTONE	12.0	250.0	
287.0			COAL	2.0	262.0	
285.0			SHALE	36.0	264.0	
249.0			LIMESTONE	60.0	300.0	
189.0			SHALE	40.0	360.0	
149.0				15.0	400.0	
134.0			SHALE	155.0	415.0	
-21.0			UNCLASSIFIED	6.0	570.0	
-27.0			LIMESTONE	12.0	576.0	
-39.0			SHALE	5.0	588.0	
-44.0			UNCLASSIFIED	5.0	593.0	
-49.0			SHALE	5.0	598.0	
-54.0			LIMESTONE	12.0	603.0	
-66.0			SHALE	3.0	615.0	
-69.0			LIMESTONE	19.0	618.0	
-88.0			UNCLASSIFIED	3.0	637.0	
-91.0	CARBONDALE	HERRIN	COAL	8.0	640.0	UNCERTAIN CORRELATION
-99.0			UNDERCLAY	6.0	648.0	
-105.0			SHALE	66.0	654.0	
-171.0			LIMESTONE	8.0	720.0	
-179.0			COAL	4.0	728.0	
-183.0			SHALE	18.0	732.0	

MAPID: 18900010000C **VERSION:** 2 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 26 **QUARTERS/FOOTAGES:** NE SE NE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.164974 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.412263 **DATE COLLECTED:** 0 / 0 / 1921
SURFACE ELEVATION (FT.): 548.9 **LOGGED (FT.):** 1735.0 **LOG TYPE:**
SOURCE: PETRO OG, COOPER **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
298.9	BOND	CARTHAGE	LIMESTONE	-	250.0
-91.1	CARBONDALE	HERRIN	COAL	-	640.0

MAPID: 18900011000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 26 **QUARTERS/FOOTAGES:** NE NE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.1742 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.408921 **DATE COLLECTED:** 0 / 0 / 1917
SURFACE ELEVATION (FT.): 566.3 **LOGGED (FT.):** 856.0 **LOG TYPE:**
SOURCE: ANGELCA OC, COOPR&STAN **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
324.3	BOND	CARTHAGE	LIMESTONE	-	242.0
-55.7	CARBONDALE	HERRIN	COAL	-	622.0

MAPID: 18900012000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 26 **QUARTERS/FOOTAGES:** NE SE SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.164998 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.405063 **DATE COLLECTED:** 0 / 0 / 1918
SURFACE ELEVATION (FT.): 547.9 **LOGGED (FT.):** 1705.0 **LOG TYPE:**
SOURCE: ANGELCA OC, COOPR&STAN 2 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
312.9	BOND	CARTHAGE	LIMESTONE	-	235.0
-72.1	CARBONDALE	HERRIN	COAL	-	620.0

MAPID: 18900013000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: IRVINGTON LONGITUDE: -89.1719 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.407051 DATE COLLECTED: 0 / 0 / 1918

SURFACE ELEVATION (FT.): 563.3 LOGGED (FT.): 1610.0 LOG TYPE:

SOURCE: ANGELCA OC, COOPR&STAN WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-58.7	CARBONDALE	HERRIN	COAL	-	622.0	

MAPID: 18900322000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: SW NE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.176502 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.414413 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 536.0 LOGGED (FT.): 1559.0 LOG TYPE:

SOURCE: GULF REF, STANTON A 6 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
327.0	BOND	CARTHAGE	LIMESTONE	-	209.0	
-63.0	CARBONDALE	HERRIN	COAL	-	599.0	

MAPID: 18900323000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.17881 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.414486 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 531.0 LOGGED (FT.): 1555.0 LOG TYPE:

SOURCE: GULF REF, STANTON A 7 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
327.0	BOND	CARTHAGE	LIMESTONE	-	204.0	
-76.0	CARBONDALE	HERRIN	COAL	-	607.0	

MAPID: 18900331000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.171887 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.416079 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 551.0 LOGGED (FT.): 1569.0 LOG TYPE:

SOURCE: WHITE G L, KOELLING 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
329.0	BOND	CARTHAGE	LIMESTONE	-	222.0
-52.0	CARBONDALE	HERRIN	COAL	-	603.0

MAPID: 18900352000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.176503 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.412605 DATE COLLECTED: 0 / 0 / 1943

SURFACE ELEVATION (FT.): 549.0 LOGGED (FT.): 1569.0 LOG TYPE:

SOURCE: GULF REF, STANTON A 8 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
325.0	BOND	CARTHAGE	LIMESTONE	-	224.0
-79.0	CARBONDALE	HERRIN	COAL	-	628.0

MAPID: 18900409000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: NE NW NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.178809 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.416297 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 529.0 LOGGED (FT.): 1204.0 LOG TYPE:

SOURCE: GULF REF, STANTON A SWD1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
329.0	BOND	CARTHAGE	LIMESTONE	-	200.0
-64.0	CARBONDALE	HERRIN	COAL	-	593.0

MAPID: 18900676000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.171887 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.416079 DATE COLLECTED:

SURFACE ELEVATION (FT.): 553.0 LOGGED (FT.): 631.5 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
1.2	MODESTO		CALCAREOUS SHALE	3.0	551.8	
-1.8	CARBONDALE	LAWSON	GRAY SHALE	60.0	554.8	
-61.8	CARBONDALE	CONANT	LIMESTONE	2.2	614.8	
-64.0	CARBONDALE		SHALE	1.0	617.0	
-65.0	CARBONDALE	BRERETON	LIMESTONE	4.0	618.0	
-69.0	CARBONDALE	ANNA	BLACK SHALE	3.0	622.0	
-72.0	CARBONDALE	HERRIN	COAL	6.5	625.0	

MAPID: 18924491000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 26 QUARTERS/FOOTAGES: 330' N line, 380' W line of NE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.176322 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.416213 DATE COLLECTED:

SURFACE ELEVATION (FT.): 553.0 LOGGED (FT.): 3095.0 LOG TYPE: Electric Log

SOURCE: TENNESSEE EASTERN GAS & OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-64.0	CARBONDALE	SPRINGFIELD	COAL	-	617.0	
-229.0	CARBONDALE	COLCHESTER	COAL	-	782.0	
-829.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1382.0	
-2485.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3038.0	TOP OF NEW ALBANY
-2487.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3040.0	
-2542.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3095.0	BASE OF NEW ALBANY

MAPID: 18900410000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 28 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.21095 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.410052 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 505.0 LOGGED (FT.): 1911.0 LOG TYPE:

SOURCE: AETNA OC, GILLIAN M 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
322.0	BOND	CARTHAGE	LIMESTONE	-	183.0	
-72.0	CARBONDALE	HERRIN	COAL	-	577.0	

MAPID: 18900410000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 28 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.21095 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.410052 DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.0 LOGGED (FT.): 589.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-8.0	MODESTO	PIASA	LIMESTONE	4.0	518.0
-12.0	MODESTO		SHALE	8.0	522.0
-20.0	CARBONDALE	DANVILLE	BONE COAL	2.0	530.0
-22.0	CARBONDALE		SHALE	2.0	532.0
-24.0	CARBONDALE	GALUM	LIMESTONE	6.0	534.0
-30.0	CARBONDALE	ALLENBY	BONE COAL	2.0	540.0
-32.0	CARBONDALE		SHALE	6.0	542.0
-38.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	548.0
-40.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	550.0
-42.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	552.0
-46.0	CARBONDALE	LAWSON	SHALE	6.0	556.0
-52.0	CARBONDALE	CONANT	LIMESTONE	2.0	562.0
-54.0	CARBONDALE		SHALE	6.0	564.0
-60.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	7.0	570.0
-67.0	CARBONDALE	ANNA	DARK GRAY SHALE	3.0	577.0
-70.0	CARBONDALE	HERRIN	COAL	9.0	580.0

MAPID: 18901968000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 28 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.203999 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.411663 DATE COLLECTED:

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 1445.0 LOG TYPE: Electric Log

SOURCE: ESTATE OF N.A. BALDRIDGE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-923.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1445.0

MAPID: 18900420000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 29 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.236497

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.40908

DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.): 538.0 LOGGED (FT.): 1811.0

LOG TYPE:

SOURCE: DORAN PAUL, BECKMYR G 1

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
288.0	BOND	CARTHAGE	LIMESTONE	-	250.0
-110.0	CARBONDALE	HERRIN	COAL	-	648.0

MAPID: 18900420000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 29 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: IRVINGTON LONGITUDE: -89.236497

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.40908

DATE COLLECTED:

SURFACE ELEVATION (FT.): 538.0 LOGGED (FT.): 656.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-52.0	MODESTO	PIASA	LIMESTONE	6.0	590.0
-58.0	CARBONDALE		SHALE	4.0	596.0
-62.0	CARBONDALE	GALUM	LIMESTONE	4.0	600.0
-66.0	CARBONDALE		SHALE	12.0	604.0
-78.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	616.0
-80.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	618.0
-82.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	620.0
-86.0	CARBONDALE	LAWSON	SHALE	6.0	624.0
-92.0	CARBONDALE	CONANT	LIMESTONE	3.0	630.0
-95.0	CARBONDALE		SHALE	3.0	633.0
-98.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	12.0	636.0
-110.0	CARBONDALE	ANNA	DARK GRAY SHALE	2.0	648.0
-112.0	CARBONDALE	HERRIN	COAL	6.0	650.0

MAPID: 18924567000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 29 **QUARTERS/FOOTAGES:** NE NE NE SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.219589 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.410777 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 638.5 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-295 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.5	631.0	

MAPID: 18924568000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** NE NW NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.252751 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.41884 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 525.0 **LOGGED (FT.):** 543.9 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-105 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-12.0	CARBONDALE	HERRIN	COAL	6.9	537.0	

MAPID: 18923418000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of SW SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.227284 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.392458 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 548.0 **LOGGED (FT.):** 3248.0 **LOG TYPE:** Electric Log
SOURCE: COLLINS BROTHERS OIL CO. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-122.0	CARBONDALE	SPRINGFIELD	COAL	-	670.0	
-237.0	CARBONDALE	COLCHESTER	COAL	-	785.0	
-934.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1482.0	
-2642.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3190.0	TOP OF NEW ALBANY
-2644.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3192.0	
-2700.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3248.0	BASE OF NEW ALBANY

MAPID: 18924569000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE NE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.229596 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.396163 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 515.0 **LOGGED (FT.):** 605.7 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-417 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-82.0	CARBONDALE	HERRIN	COAL	8.7	597.0	"SPLIT"

MAPID: 18901886000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 35 **QUARTERS/FOOTAGES:** 330' S line, 330' E line of NE SW
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.174254 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.39255 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 542.0 **LOGGED (FT.):** 1435.0 **LOG TYPE:** Electric Log
SOURCE: WINN, C. R. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-98.0	CARBONDALE	SPRINGFIELD	COAL	-	640.0	
-169.0	CARBONDALE	COLCHESTER	COAL	-	711.0	
-893.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1435.0	

MAPID: 18901919000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1S 1W **SECTION:** 35 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of NW SE
QUADRANGLE: IRVINGTON **LONGITUDE:** -89.169658 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.394251 **DATE COLLECTED:** 11 / 0 / 1962
SURFACE ELEVATION (FT.): 555.0 **LOGGED (FT.):** 650.0 **LOG TYPE:** Electric Log
SOURCE: THOMPSON & EVANS, ETAL **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-95.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	650.0	

MAPID: 18901923000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 35 QUARTERS/FOOTAGES: SW SE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.167341

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.396014

DATE COLLECTED:

SURFACE ELEVATION (FT.): 551.0 LOGGED (FT.): 642.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-35.0	MODESTO	PIASA	LIMESTONE	4.0	586.0
-39.0	MODESTO		SHALE	4.0	590.0
-43.0	CARBONDALE	DANVILLE	BONE COAL	2.0	594.0
-45.0	CARBONDALE		SHALE	1.0	596.0
-46.0	CARBONDALE	GALUM	LIMESTONE & SHALE	5.0	597.0
-51.0	CARBONDALE	ALLENBY	BONE COAL	1.0	602.0
-52.0	CARBONDALE		SHALE	3.0	603.0
-55.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	606.0
-57.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	608.0
-58.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	609.0
-64.0	CARBONDALE	LAWSON	SHALE	9.0	615.0
-73.0	CARBONDALE	CONANT	LIMESTONE	3.0	624.0
-76.0	CARBONDALE		DARK GRAY SHALE	2.0	627.0
-78.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	6.0	629.0
-84.0	CARBONDALE	ANNA	SHALE	4.0	635.0
-87.0	CARBONDALE	HERRIN	COAL	4.0	638.0

MAPID: 18901932000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 1W SECTION: 36 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.162743

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.395882

DATE COLLECTED:

SURFACE ELEVATION (FT.): 528.0 LOGGED (FT.): 1499.0

LOG TYPE: Electric Log

SOURCE: ESTATE OF N.A. BALDRIDGE

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-971.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1499.0

MAPID: 18902024000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 1 QUARTERS/FOOTAGES: NE SW NW

QUADRANGLE: HOYLETON LONGITUDE: -89.270599 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.474324 DATE COLLECTED:

SURFACE ELEVATION (FT.): 488.0 LOGGED (FT.): 2966.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-27.0	CARBONDALE	SPRINGFIELD	COAL	-	515.0	
-143.0	CARBONDALE	COLCHESTER	COAL	-	631.0	
-798.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1286.0	
-2430.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2918.0	TOP OF NEW ALBANY
-2439.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2927.0	
-2478.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2966.0	BASE OF NEW ALBANY

MAPID: 18902024000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 1 QUARTERS/FOOTAGES: NE SW NW

QUADRANGLE: HOYLETON LONGITUDE: -89.270599 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.474324 DATE COLLECTED:

SURFACE ELEVATION (FT.): 488.0 LOGGED (FT.): 511.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
41.0	MODESTO	PIASA	LIMESTONE	5.0	447.0	
36.0	MODESTO		SHALE	11.0	452.0	
25.0	CARBONDALE	DANVILLE	BONE COAL	2.0	463.0	
23.0	CARBONDALE		SHALE	5.0	465.0	
18.0	CARBONDALE	ALLENBY	BONE COAL	1.0	470.0	
17.0	CARBONDALE		SHALE	8.0	471.0	
9.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	479.0	
7.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	481.0	
4.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	484.0	
1.0	CARBONDALE	LAWSON	SHALE	4.0	487.0	
-3.0	CARBONDALE	CONANT	LIMESTONE	3.0	491.0	
-6.0	CARBONDALE		SHALE	5.0	494.0	
-11.0	CARBONDALE	BRERETON	LIMESTONE	2.0	499.0	
-13.0	CARBONDALE	ANNA	BLACK SHALE	3.0	501.0	
-16.0	CARBONDALE	HERRIN	COAL	7.0	504.0	

MAPID: 18924169000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 3 **QUARTERS/FOOTAGES:** 380' N line, 330' W line of NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.310456 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.477933 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 456.0 **LOGGED (FT.):** 1172.0 **LOG TYPE:** Electric Log
SOURCE: FIDELITY ENERGY RES. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-67.0	CARBONDALE	SPRINGFIELD	COAL	-	523.0
-177.0	CARBONDALE	COLCHESTER	COAL	-	633.0
-716.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1172.0

MAPID: 18924570000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 3 **QUARTERS/FOOTAGES:** SE SE SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.294036 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.464915 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 544.3 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-108 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	7.3	537.0

MAPID: 18900337000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SE NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.321838 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.472501 **DATE COLLECTED:** 0 / 0 / 1942
SURFACE ELEVATION (FT.): 457.0 **LOGGED (FT.):** 1501.0 **LOG TYPE:**
SOURCE: RICHRDSN C, WEIHE 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
373.0	BOND	CARTHAGE	LIMESTONE	-	84.0
2.0	CARBONDALE	HERRIN	COAL	-	455.0

MAPID: 18900337000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 4 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: HOYLETON LONGITUDE: -89.321838

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.472501

DATE COLLECTED:

SURFACE ELEVATION (FT.): 457.0

LOGGED (FT.): 460.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
38.0	CARBONDALE	DANVILLE	BONE COAL	2.0	419.0
36.0	CARBONDALE		SHALE	12.0	421.0
24.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	9.0	433.0
15.0	CARBONDALE	LAWSON	SHALE	2.0	442.0
13.0	CARBONDALE	CONANT	LIMESTONE	3.0	444.0
10.0	CARBONDALE		SHALE	1.0	447.0
9.0	CARBONDALE	BRERETON	LIMESTONE	4.0	448.0
5.0	CARBONDALE	ANNA	BLACK SHALE	3.0	452.0
2.0	CARBONDALE	HERRIN	COAL	5.0	455.0

MAPID: 18924571000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 4 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: HOYLETON LONGITUDE: -89.328736

GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.465193

DATE COLLECTED:

SURFACE ELEVATION (FT.):

LOGGED (FT.): 485.8

LOG TYPE: Company map

SOURCE: CARTER OIL COMPANY 8W-578

WELL TYPE: Coal Test

COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	6.8	479.0

MAPID: 18901295000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 5 QUARTERS/FOOTAGES: NE NE NE

QUADRANGLE: HOYLETON LONGITUDE: -89.331019

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.477943

DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 452.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
54.0	MODESTO	PIASA	LIMESTONE	5.0	396.0	
49.0	MODESTO		SHALE	9.0	401.0	
40.0	CARBONDALE	DANVILLE	BONE COAL	2.0	410.0	
38.0	CARBONDALE		SHALE	13.0	412.0	
25.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	425.0	
22.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	428.0	
20.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	430.0	
18.0	CARBONDALE	LAWSON	SHALE	2.0	432.0	
16.0	CARBONDALE	CONANT	LIMESTONE & SHALE	1.0	434.0	
15.0	CARBONDALE		SHALE	5.0	435.0	
10.0	CARBONDALE	BRERETON	LIMESTONE	4.0	440.0	
6.0	CARBONDALE	ANNA	BLACK SHALE	2.0	444.0	
4.0	CARBONDALE	HERRIN	COAL	6.0	446.0	

MAPID: 18923704000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 5 QUARTERS/FOOTAGES: 330' S line, 980' W line of NW NW

QUADRANGLE: HOYLETON LONGITUDE: -89.344992

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.475853

DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 2783.0

LOG TYPE: Electric Log

SOURCE: EVANS, CHARLES T.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-13.0	CARBONDALE	SPRINGFIELD	COAL	-	463.0	
-134.0	CARBONDALE	COLCHESTER	COAL	-	584.0	
-669.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1119.0	
-2292.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2742.0	TOP OF NEW ALBANY
-2300.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2750.0	
-2333.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2783.0	BASE OF NEW ALBANY

MAPID: 18924499000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 5 QUARTERS/FOOTAGES: 72' N line, 41' W line of SW

QUADRANGLE: HOYLETON LONGITUDE: -89.34831 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.47104 DATE COLLECTED: 11 / 11 / 1970

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 459.4 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WF-418 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
51.4	MODESTO	PIASA	LIMESTONE	8.4	393.6	DRILLER'S LOG 0-420
43.0	MODESTO		GRAY SHALE	2.5	402.0	
40.5	MODESTO		BLACK SHALE	6.0	404.5	GREY-BLACK, CARBONACEOUS
34.5	CARBONDALE	DANVILLE	COAL	0.3	410.5	
34.2	CARBONDALE		GRAY SHALE	6.9	410.8	
27.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.4	417.7	CORE 420
23.9	CARBONDALE	BANKSTON FORK	SHALE	1.7	421.1	
22.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.9	422.8	
19.3	CARBONDALE		CALCAREOUS SHALE	2.3	425.7	
17.0	CARBONDALE	CONANT	LIMESTONE	2.6	428.0	
14.4	CARBONDALE	JAMESTOWN	BLACK SHALE	0.2	430.6	
14.2	CARBONDALE	JAMESTOWN	COAL	0.4	430.8	
13.8	CARBONDALE		CALCAREOUS SHALE	5.7	431.2	
8.1	CARBONDALE	BRERETON	LIMESTONE	2.4	436.9	
5.7	CARBONDALE	ANNA	BLACK SHALE	1.9	439.3	
3.8	CARBONDALE	HERRIN	COAL	5.6	441.2	COAL ANALYZED
-1.8	CARBONDALE	HERRIN	CLAYSTONE	0.1	446.8	BLUE BAND (CLAY, PYRITE, BONE)
-1.9	CARBONDALE	HERRIN	COAL	1.0	446.9	
-2.9	CARBONDALE		UNDERCLAY	1.1	447.9	W/ COAL PARTINGS, UPPER SURF IRREGULAR
-4.0	CARBONDALE		CLAYSTONE & SILTSTONE	0.5	449.0	
-4.5	CARBONDALE		SILTSTONE	9.9	449.5	

MAPID: 18901180000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 6 QUARTERS/FOOTAGES: NW SW NE

QUADRANGLE: HOYLETON LONGITUDE: -89.358222 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.473858 DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 425.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
91.0	MODESTO	PIASA	LIMESTONE	6.0	360.0
85.0	MODESTO		SHALE	4.0	366.0
81.0	CARBONDALE	DANVILLE	BONE COAL	4.0	370.0
77.0	CARBONDALE		SHALE	7.0	374.0
70.0	CARBONDALE	ALLENBY	BONE COAL	1.0	381.0
69.0	CARBONDALE		SHALE	5.0	382.0
64.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	387.0
59.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	392.0
58.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	393.0
55.0	CARBONDALE	LAWSON	SHALE	2.0	396.0
53.0	CARBONDALE	CONANT	LIMESTONE & SHALE	3.0	398.0
50.0	CARBONDALE		CALCAREOUS SHALE	3.0	401.0
47.0	CARBONDALE	BRERETON	LIMESTONE	4.0	404.0
43.0	CARBONDALE	ANNA	SHALE	3.0	408.0
40.0	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	14.0	411.0

MAPID: 1892450000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 6 QUARTERS/FOOTAGES: 80' S line, 120' E line

QUADRANGLE: HOYLETON LONGITUDE: -89.348901 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.464167 DATE COLLECTED: 5 / 3 / 1972

SURFACE ELEVATION (FT.): 443.0 LOGGED (FT.): 475.7 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-577 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
35.5	MODESTO	PIASA	LIMESTONE	8.5	407.5	DRILLER'S LOG 0-440
27.0	MODESTO		GRAY SHALE	6.0	416.0	
21.0	CARBONDALE	DANVILLE	COAL	4.0	422.0	
17.0	CARBONDALE		CLAYSTONE	2.0	426.0	
15.0	CARBONDALE		GRAY SHALE	6.5	428.0	W/LS NODULES
8.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	434.5	
5.0	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.5	438.0	
3.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	439.5	CORE 440-475.7
0.8	CARBONDALE		GRAY SHALE	2.3	442.2	
-1.5	CARBONDALE		CALCAREOUS SHALE	3.1	444.5	
-4.6	CARBONDALE	JAMESTOWN	COAL	0.2	447.6	
-4.8	CARBONDALE		GRAY SHALE	5.6	447.8	
-10.4	CARBONDALE		CALCAREOUS SHALE	3.0	453.4	
-13.4	CARBONDALE	BRERETON	LIMESTONE	2.1	456.4	
-15.5	CARBONDALE	HERRIN	COAL	5.7	458.5	COAL ANALYZED
-21.2	CARBONDALE	HERRIN	CLAYSTONE	0.0	464.2	BLUE BAND
-21.2	CARBONDALE	HERRIN	COAL	1.0	464.2	
-22.2	CARBONDALE		CLAYSTONE	1.8	465.2	W/PYRITE & LS NODS
-24.0	CARBONDALE		SILTY SHALE	4.8	467.0	W/LS NODULES
-28.8	CARBONDALE		SILTSTONE	3.9	471.8	

MAPID: 18924501000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 6 QUARTERS/FOOTAGES: 1223' N line, 1982' W line

QUADRANGLE: HOYLETON LONGITUDE: -89.363849 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.475005 DATE COLLECTED: 11 / 6 / 1974

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 427.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-889 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
79.5	MODESTO	PIASA	LIMESTONE	9.5	365.5	DRILLER'S LOG 0-392.7
70.0	MODESTO		GRAY SHALE	5.0	375.0	
65.0	CARBONDALE	DANVILLE	COAL	0.5	380.0	
64.5	CARBONDALE		UNDERCLAY	1.5	380.5	
63.0	CARBONDALE		GRAY SHALE	6.5	382.0	
56.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	388.5	
53.5	CARBONDALE	BANKSTON FORK	SHALE	0.5	391.5	
53.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	392.0	
50.0	CARBONDALE		SHALE	2.1	395.0	CORE 392.7-427
47.9	CARBONDALE	CONANT	LIMESTONE	1.5	397.1	
46.4	CARBONDALE		CALCAREOUS SHALE	1.1	398.6	
45.3	CARBONDALE	JAMESTOWN	BLACK SHALE	0.3	399.7	GREY-BLACK, CARBONACEOUS
45.0	CARBONDALE	JAMESTOWN	COAL	0.2	400.0	
44.9	CARBONDALE		CALCAREOUS SHALE	3.9	400.1	LS 400.1-400.2
41.0	CARBONDALE	BRERETON	LIMESTONE	3.2	404.0	
37.8	CARBONDALE		BLACK SHALE	0.9	407.2	GY-BK, CARB; CORE LOSS 407.2-407.8
36.9	CARBONDALE	HERRIN	COAL	5.4	408.1	
31.5	CARBONDALE		PYRITE	0.1	413.5	80% PYRITE; BLUE BAND?
31.5	CARBONDALE		COAL	0.9	413.5	
30.6	CARBONDALE		UNDERCLAY	1.8	414.4	CORE LOSS 415-415.8
28.8	CARBONDALE		SHALE	0.8	416.2	
28.0	CARBONDALE		SILTSTONE/SANDSTONE	10.0	417.0	

MAPID: 18924502000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 7 QUARTERS/FOOTAGES: 2638' N line, 2730' W line

QUADRANGLE: HOYLETON LONGITUDE: -89.361062 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.456465 DATE COLLECTED: 11 / 5 / 1974

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 452.8 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-888 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
63.0	MODESTO	PIASA	LIMESTONE	7.5	389.0	DRILLERS LOG 0-414
55.5	MODESTO		GRAY SHALE	4.5	396.5	
51.0	CARBONDALE	DANVILLE	COAL	2.0	401.0	
49.0	CARBONDALE		SHALE	4.5	403.0	
44.5	CARBONDALE	BANKSTON FORK	LIMESTONE	9.6	407.5	CORE 414-452.8
34.9	CARBONDALE		CALCAREOUS SHALE	1.6	417.1	
33.3	CARBONDALE	CONANT	LIMESTONE	1.4	418.7	
31.9	CARBONDALE		CALCAREOUS SHALE	2.7	420.1	
29.2	CARBONDALE	JAMESTOWN	COAL	0.2	422.8	
29.0	CARBONDALE	ANNA	BLACK SHALE	5.7	423.0	GREY-BLK. CARBONACEOUS
23.3	CARBONDALE	ANNA	CORE LOSS	3.7	428.7	
19.6	CARBONDALE	ANNA	BLACK SHALE	0.5	432.4	W/ PYRITE NODULES
19.1	CARBONDALE	HERRIN	COAL	6.2	432.9	
12.9	CARBONDALE		CLAYSTONE	0.1	439.1	BLUE BAND
12.8	CARBONDALE		COAL	1.0	439.2	
11.8	CARBONDALE		UNDERCLAY	1.8	440.2	CORE LOSS 440.2-441.5
10.0	CARBONDALE		CLAYSTONE & SILTSTONE	2.5	442.0	
7.5	CARBONDALE		SILTSTONE	7.7	444.5	SLIGHTLY SHALY
-0.2	CARBONDALE		LIMESTONE	0.6	452.2	

MAPID: 18900694000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 8 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: HOYLETON LONGITUDE: -89.3404 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.4577 DATE COLLECTED: 6 / 0 / 1956

SURFACE ELEVATION (FT.): 467.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: HILL, T. G. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18900694000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 8 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: HOYLETON LONGITUDE: -89.3404 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.4577 DATE COLLECTED:

SURFACE ELEVATION (FT.): 467.0 LOGGED (FT.): 464.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
55.0	MODESTO	PIASA	LIMESTONE	8.0	412.0	
47.0	MODESTO		SHALE	5.0	420.0	
42.0	CARBONDALE	DANVILLE	BONE COAL	1.0	425.0	
41.0	CARBONDALE		SHALE	5.0	426.0	
36.0	CARBONDALE	ALLENBY	BONE COAL	1.0	431.0	
35.0	CARBONDALE		SHALE	4.0	432.0	
31.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	436.0	
28.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	439.0	
26.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	441.0	
24.0	CARBONDALE	LAWSON	SHALE	2.0	443.0	
22.0	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	445.0	
20.0	CARBONDALE	JAMESTOWN	BLACK SHALE	1.0	447.0	
19.0	CARBONDALE		SHALE	2.0	448.0	
17.0	CARBONDALE	BRERETON	LIMESTONE	4.0	450.0	
13.0	CARBONDALE	ANNA	BLACK SHALE	3.0	454.0	
10.0	CARBONDALE	ENERGY	GRAY SHALE	100.0	457.0	
9.0	CARBONDALE	HERRIN	BLACK SHALE	6.0	458.0	

MAPID: 18924371000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 8 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE SE

QUADRANGLE: HOYLETON LONGITUDE: -89.33108 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.454153 DATE COLLECTED:

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 2835.0 LOG TYPE: Electric Log

SOURCE: BUFAY OIL COMPANY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-26.0	CARBONDALE	SPRINGFIELD	COAL	-	491.0	
-118.0	CARBONDALE	COLCHESTER	COAL	-	583.0	
-690.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1155.0	
-2321.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2786.0	TOP OF NEW ALBANY
-2327.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2792.0	
-2370.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2835.0	BASE OF NEW ALBANY

MAPID: 18924503000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 8 QUARTERS/FOOTAGES: 396' S line, 65' W line

QUADRANGLE: HOYLETON LONGITUDE: -89.347972 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.450179 DATE COLLECTED: 8 / 31 / 1967

SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 464.4 LOG TYPE: Other Core Study

SOURCE: CARTER OIL COMPANY WF-50 WELL TYPE: Coal Test

COMMENT: CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
22.8	CARBONDALE	BANKSTON FORK	LIMESTONE	1.8	432.2	CORE 432.2-464.4
21.0	CARBONDALE	BANKSTON FORK	SHALE	1.2	434.0	
19.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.2	435.2	
16.6	CARBONDALE		SHALE	2.3	438.4	
14.3	CARBONDALE	CONANT	LIMESTONE	3.5	440.7	
10.8	CARBONDALE	JAMESTOWN	COAL	0.1	444.2	RASHY
10.7	CARBONDALE		SHALE	1.4	444.3	
9.3	CARBONDALE	BRERETON	LIMESTONE	6.3	445.7	
3.0	CARBONDALE	ANNA	BLACK SHALE	3.3	452.0	
-0.3	CARBONDALE	HERRIN	COAL	7.2	455.3	COAL ANALYZED
-7.5	CARBONDALE		GRAY & BLACK SHALE	0.1	462.5	
-7.6	CARBONDALE		CLAYSTONE	1.8	462.6	

MAPID: 18924504000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 8 QUARTERS/FOOTAGES: 322' S line, 245' W line

QUADRANGLE: HOYLETON LONGITUDE: -89.347789 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.450284 DATE COLLECTED: 11 / 12 / 1974

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 473.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-891 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
43.0	MODESTO	PIASA	LIMESTONE	8.0	410.0	DRILLER'S LOG 0-439
35.0	MODESTO		GRAY SHALE	4.0	418.0	
31.0	MODESTO		BLACK SHALE	0.5	422.0	GREY-BLACK, CARBONACEOUS
30.5	CARBONDALE	DANVILLE	COAL	1.0	422.5	
29.5	CARBONDALE		GRAY SHALE	9.5	423.5	
20.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.5	433.0	CORE 439-473
11.5	CARBONDALE		CALCAREOUS SHALE	1.0	441.5	
10.5	CARBONDALE		SHALE	1.5	442.5	
9.0	CARBONDALE		CALCAREOUS SHALE	3.5	444.0	
5.5	CARBONDALE	JAMESTOWN	COAL	0.1	447.5	
5.4	CARBONDALE		UNDERCLAY	0.7	447.6	
4.7	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	2.1	448.3	
2.6	CARBONDALE	ANNA	BLACK SHALE	3.6	450.4	GREY-BLACK; CARBONACEOUS
-1.0	CARBONDALE	HERRIN	COAL	7.4	454.0	
-8.4	CARBONDALE		UNDERCLAY	1.6	461.4	
-10.0	CARBONDALE		CLAYSTONE & SILTSTONE	4.6	463.0	
-14.6	CARBONDALE		SILTSTONE	4.2	467.6	
-18.8	CARBONDALE		SHALE	1.2	471.8	

MAPID: 18901181000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 9 QUARTERS/FOOTAGES: NE SE SE

QUADRANGLE: HOYLETON LONGITUDE: -89.312477 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.45225 DATE COLLECTED:

SURFACE ELEVATION (FT.): 487.0 LOGGED (FT.): 389.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
98.0	CARBONDALE	ENERGY	UNCLASSIFIED	100.0	389.0	

MAPID: 18902946000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 9 **QUARTERS/FOOTAGES:** 330' N line, 990' W line of NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.326423 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.463356 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.0 **LOGGED (FT.):** 2837.0 **LOG TYPE:** Electric Log
SOURCE: DULL JOE A SLEDGE GE **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-42.0	CARBONDALE	SPRINGFIELD	COAL	-	499.0	
-143.0	CARBONDALE	COLCHESTER	COAL	-	600.0	
-688.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1145.0	
-2330.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2787.0	TOP OF NEW ALBANY
-2337.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2794.0	
-2380.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2837.0	BASE OF NEW ALBANY

MAPID: 18924572000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.31946 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.457802 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 0.0 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-112 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL		4.0	

MAPID: 18900415000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 10 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.296305 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.457576 **DATE COLLECTED:** 0 / 0 / 1900
SURFACE ELEVATION (FT.): 479.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: LACY W F, RENKNMYER 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
2.0	CARBONDALE	HERRIN	COAL	-	477.0	

MAPID: 18901087000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 10 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: HOYLETON LONGITUDE: -89.305524 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.450331 DATE COLLECTED:

SURFACE ELEVATION (FT.): 478.0 LOGGED (FT.): 2932.0 LOG TYPE: Electric Log

SOURCE: SCHIERMANN, AL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-40.0	CARBONDALE	SPRINGFIELD	COAL	-	518.0	
-142.0	CARBONDALE	COLCHESTER	COAL	-	620.0	
-736.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1214.0	
-2401.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2879.0	TOP OF NEW ALBANY
-2408.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2886.0	
-2454.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2932.0	BASE OF NEW ALBANY

MAPID: 18901087000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 10 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: HOYLETON LONGITUDE: -89.305524 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.450331 DATE COLLECTED:

SURFACE ELEVATION (FT.): 478.0 LOGGED (FT.): 502.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
29.0	CARBONDALE	DANVILLE	BONE COAL	2.0	449.0	
27.0	CARBONDALE		SHALE	12.0	451.0	
15.0	CARBONDALE	ALLENBY	BONE COAL	1.0	463.0	
14.0	CARBONDALE		SHALE	6.0	464.0	
8.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	470.0	
6.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	472.0	
3.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	475.0	
1.0	CARBONDALE	LAWSON	SHALE	2.0	477.0	
-1.0	CARBONDALE	CONANT	LIMESTONE & SHALE	3.0	479.0	
-4.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	482.0	
-5.0	CARBONDALE		SHALE	6.0	483.0	
-11.0	CARBONDALE	BRERETON	LIMESTONE	4.0	489.0	
-15.0	CARBONDALE	ANNA	BLACK SHALE	3.0	493.0	
-18.0	CARBONDALE	HERRIN	COAL	6.0	496.0	

MAPID: 18901182000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 12 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: HOYLETON LONGITUDE: -89.266204 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.457718 DATE COLLECTED:

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 1316.0 LOG TYPE: Electric Log

SOURCE: GLASS, THEO G. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
11.0	CARBONDALE	SPRINGFIELD	COAL	-	492.0
-98.0	CARBONDALE	COLCHESTER	COAL	-	601.0
-813.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1316.0

MAPID: 18901182000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 12 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: HOYLETON LONGITUDE: -89.266204 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.457718 DATE COLLECTED:

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 488.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
74.0	MODESTO	PIASA	LIMESTONE	7.0	429.0
67.0	MODESTO		SHALE	5.0	436.0
62.0	CARBONDALE	DANVILLE	BONE COAL	3.0	441.0
59.0	CARBONDALE		BLACK SHALE	2.0	444.0
57.0	CARBONDALE		SHALE	6.0	446.0
51.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	452.0
48.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	455.0
45.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	458.0
42.0	CARBONDALE	LAWSON	SHALE	2.0	461.0
40.0	CARBONDALE	CONANT	LIMESTONE	2.0	463.0
38.0	CARBONDALE		SHALE	6.0	465.0
32.0	CARBONDALE	BRERETON	LIMESTONE	3.0	471.0
29.0	CARBONDALE	ANNA	BLACK SHALE	3.0	474.0
23.0	CARBONDALE	HERRIN	COAL	8.0	480.0

MAPID: 18900324000C **VERSION:** 1 **PROJECT:** CIRC 164
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 13 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.259353 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.448648 **DATE COLLECTED:** 0 / 0 / 1940
SURFACE ELEVATION (FT.): 504.0 **LOGGED (FT.):** 1547.0 **LOG TYPE:**
SOURCE: GASS H C, **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-3.0	CARBONDALE	HERRIN	COAL	-	507.0	

MAPID: 18924573000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 13 **QUARTERS/FOOTAGES:** SE SW NE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.26173 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.443087 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 508.5 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-293 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.5	501.0	

MAPID: 18924574000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 14 **QUARTERS/FOOTAGES:** NW NW NW NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.292222 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.44882 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 508.6 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY 8E-561 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.6	501.0	

MAPID: 18901183000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NE SW

QUADRANGLE: HOYLETON LONGITUDE: -89.305623

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.439459

DATE COLLECTED:

SURFACE ELEVATION (FT.): 492.0

LOGGED (FT.): 2959.0

LOG TYPE: Electric Log

SOURCE: ASHLAND-CANTERBURY

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-27.0	CARBONDALE	SPRINGFIELD	COAL	-	519.0	
-128.0	CARBONDALE	COLCHESTER	COAL	-	620.0	
-743.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1235.0	
-2416.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2908.0	TOP OF NEW ALBANY
-2424.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2916.0	
-2467.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2959.0	BASE OF NEW ALBANY

MAPID: 18924575000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 15 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: HOYLETON LONGITUDE: -89.294002

GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.435643

DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 443.4

LOG TYPE: Company map

SOURCE: CARTER OIL COMPANY WF-104

WELL TYPE: Coal Test

COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.4	436.0	

MAPID: 18900418000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 16 QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: HOYLETON LONGITUDE: -89.314964

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.439541

DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 2965.0

LOG TYPE:

SOURCE: HORTON L, HUCK BEN 1

WELL TYPE: Oil and Gas Test

COMMENT:

MAPID: 18900788000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 16 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.317346 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.435917 DATE COLLECTED:

SURFACE ELEVATION (FT.): 491.0 LOGGED (FT.): 2856.0 LOG TYPE: Electric Log

SOURCE: DUNCAN, WALTER WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
4.0	CARBONDALE	SPRINGFIELD	COAL	-	487.0	
-109.0	CARBONDALE	COLCHESTER	COAL	-	600.0	
-659.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1150.0	
-2315.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2806.0	TOP OF NEW ALBANY
-2323.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2814.0	
-2365.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2856.0	BASE OF NEW ALBANY

MAPID: 18900788000C VERSION: 2

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 16 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.317346 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.435917 DATE COLLECTED: 12 / 0 / 1956

SURFACE ELEVATION (FT.): 491.0 LOGGED (FT.): 600.0 LOG TYPE: Electric Log

SOURCE: DUNCAN, WALTER WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
71.0	MODESTO	PIASA	UNCLASSIFIED	-	420.0	
20.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	471.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG
-71.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	562.0	
-109.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	600.0	

MAPID: 18924576000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 16 QUARTERS/FOOTAGES: NW NW SW

QUADRANGLE: HOYLETON LONGITUDE: -89.328898 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.441362 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 517.5 LOG TYPE: Company map

SOURCE: CARTER OIL COMPANY 8W-573 WELL TYPE: Coal Test

COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.5	510.0	

MAPID: 18924505000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 17 QUARTERS/FOOTAGES: 285' S line, 45' W line of NW

QUADRANGLE: HOYLETON LONGITUDE: -89.348567 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.442903 DATE COLLECTED: 4 / 19 / 1972

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 484.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-572 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
44.0	MODESTO	PIASA	LIMESTONE	8.0	421.0	DRILLER'S LOG 0-440
36.0			GRAY SHALE	3.5	429.0	
32.5	CARBONDALE	DANVILLE	COAL	2.0	432.5	
30.5	CARBONDALE		GRAY SHALE	5.5	434.5	CORE 448-484
25.0	CARBONDALE	BANKSTON FORK	LIMESTONE	13.5	440.0	W/ SH BREAKS
11.5	CARBONDALE		SHALE	3.0	453.5	
8.5	CARBONDALE		LIMESTONE	2.0	456.5	
6.5	CARBONDALE		SHALE	1.5	458.5	
5.0	CARBONDALE	CONANT	LIMESTONE	2.0	460.0	
3.0	CARBONDALE	JAMESTOWN	COAL	0.2	462.0	SLATEY
2.8	CARBONDALE	BRERETON	LIMESTONE	1.3	462.2	
1.5	CARBONDALE	ANNA	BLACK SHALE	3.2	463.5	
-1.7	CARBONDALE	HERRIN	COAL	6.0	466.7	COAL ANALYZED
-7.7	CARBONDALE	HERRIN	CLAYSTONE	0.2	472.7	BLUE BAND
-7.9	CARBONDALE	HERRIN	COAL	1.0	472.9	
-8.8	CARBONDALE		UNDERCLAY	0.1	473.8	
-8.9	CARBONDALE		SANDY CLAYSTONE	1.5	473.9	
-10.4	CARBONDALE		SILTSTONE	3.7	475.4	
-14.1	CARBONDALE		SHALE	4.9	479.1	

MAPID: 18901185000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 18 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.355406 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.435703 DATE COLLECTED: 5 / 0 / 1951

SURFACE ELEVATION (FT.): 474.0 LOGGED (FT.): 581.0 LOG TYPE: Electric Log

SOURCE: PURE OIL CO., THE WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
62.0	MODESTO	PIASA	UNCLASSIFIED	-	412.0	
16.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	458.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
-76.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	550.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
-107.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	581.0	

MAPID: 18901185000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 18 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.355406 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.435703 DATE COLLECTED:

SURFACE ELEVATION (FT.): 474.0 LOGGED (FT.): 465.0 LOG TYPE:

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
60.0	MODESTO	PIASA	LIMESTONE	6.0	414.0	
54.0	MODESTO		SHALE	5.0	420.0	
49.0	CARBONDALE	DANVILLE	SHALE	1.0	425.0	
48.0	CARBONDALE		SHALE	5.0	426.0	
43.0	CARBONDALE	ALLENBY	BONE COAL	1.0	431.0	
42.0	CARBONDALE		SHALE	9.0	432.0	
33.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	441.0	
29.5	CARBONDALE	BANKSTON FORK	SHALE	2.0	444.5	
27.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	446.5	
24.0	CARBONDALE	LAWSON	SHALE	2.0	450.0	
22.0	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	452.0	
20.0	CARBONDALE		SHALE	1.0	454.0	
19.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	2.0	455.0	
17.0	CARBONDALE	ANNA	BLACK SHALE	1.0	457.0	
16.0	CARBONDALE	HERRIN	COAL	7.0	458.0	

MAPID: 18901185000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 18 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.355406 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.435703 DATE COLLECTED:

SURFACE ELEVATION (FT.): 474.0 LOGGED (FT.): 2889.0 LOG TYPE: Electric Log

SOURCE: PURE OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-6.0	CARBONDALE	SPRINGFIELD	COAL	-	480.0	
-106.0	CARBONDALE	COLCHESTER	COAL	-	580.0	
-721.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1195.0	
-2364.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2838.0	TOP OF NEW ALBANY
-2370.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2844.0	
-2415.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2889.0	BASE OF NEW ALBANY

MAPID: 18924506000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 18 QUARTERS/FOOTAGES: 61' S line, 56' E line of NW

QUADRANGLE: HOYLETON LONGITUDE: -89.359861 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.442191 DATE COLLECTED: 10 / 30 / 1974

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 458.1 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-887 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
70.5	MODESTO	PIASA	LIMESTONE	6.0	394.5	DRILLER'S LOG 0-421
64.5			SHALE	20.0	400.5	
44.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	420.5	CORE 421-458
39.5	CARBONDALE	BANKSTON FORK	SHALE	1.0	425.5	
38.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	426.5	426.5-427 INTERVAL "W/ BLACK SHALE"
34.5	CARBONDALE		SHALE	4.1	430.5	
30.4	CARBONDALE	JAMESTOWN	COAL	0.1	434.6	
30.3	CARBONDALE		UNDERCLAY	0.5	434.7	
29.8	CARBONDALE	ANNA	BLACK SHALE	2.8	435.2	GRY-BLK, CARBONACEOUS
27.0	CARBONDALE	ENERGY	GRAY SHALE	1.0	438.0	
26.0	CARBONDALE	HERRIN	COAL	6.1	439.0	
19.9	CARBONDALE	HERRIN	BLUE BAND	0.1	445.1	BLUE BAND
19.8	CARBONDALE	HERRIN	COAL	1.1	445.2	
18.7	CARBONDALE		UNDERCLAY	1.8	446.3	CORE LOSS 447.2-448
17.0	CARBONDALE		CLAYSTONE	1.4	448.0	
15.6	CARBONDALE		SILTSTONE	6.0	449.4	
9.6	CARBONDALE		SHALE	2.7	455.4	

MAPID: 18924507000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 19 QUARTERS/FOOTAGES: 571' S line, 12' W line of SE

QUADRANGLE: HOYLETON LONGITUDE: -89.359902 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.421612 DATE COLLECTED: 12 / 2 / 1970

SURFACE ELEVATION (FT.): 473.0 LOGGED (FT.): 482.6 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WF-424 WELL TYPE: Coal Test

COMMENT: CORE REPORT, DRILLER' LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
62.5	MODESTO		SANDSTONE	5.3	410.5	DRILLER'S LOG 0-431
57.2	MODESTO		BLACK SHALE	0.5	415.8	
56.7	CARBONDALE	DANVILLE	COAL	1.5	416.3	
55.2	CARBONDALE		GRAY SHALE	8.2	417.8	
47.0	CARBONDALE		LIMESTONE	2.5	426.0	
44.5	CARBONDALE		GRAY SHALE	4.5	428.5	CORE 431-482.6
40.0	CARBONDALE		GRAY SHALE	9.3	433.0	W/ LS NODULES/CHUNKS
30.7	CARBONDALE		LIMESTONE	2.2	442.3	
28.5	CARBONDALE		SHALE	0.5	444.5	
28.0	CARBONDALE		LIMESTONE	1.5	445.0	
26.5	CARBONDALE		DARK SHALE	1.5	446.5	STRIPED W/ LIME CHUNKS
25.0	CARBONDALE	BRERETON	LIMESTONE	3.1	448.0	
21.9	CARBONDALE		CALCAREOUS SHALE	3.8	451.1	
18.1	CARBONDALE	ANNA	BLACK SHALE	3.0	454.9	
15.1	CARBONDALE	ENERGY	GRAY SHALE	3.3	457.9	SANDY W/ BASAL .2' SILTY
11.8	CARBONDALE	HERRIN	COAL	6.5	461.2	COAL ANALYZED
5.3	CARBONDALE	HERRIN	SHALE	0.2	467.7	PYRITIC SHALE; BLUE BAND
5.1	CARBONDALE	HERRIN	COAL	0.9	467.9	
4.2	CARBONDALE		SANDY SHALE	9.5	468.8	W/ NODULES
-5.2	CARBONDALE		SHALE/COAL	1.1	478.2	SHALE & SLATY COAL
-6.3	CARBONDALE	SPRINGFIELD	COAL	2.4	479.3	
-8.7	CARBONDALE		GRAY SHALE	0.9	481.7	

MAPID: 18924508000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 19 QUARTERS/FOOTAGES: 672' S line, 52' W line of SE

QUADRANGLE: HOYLETON LONGITUDE: -89.359757 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.421891 DATE COLLECTED: 11 / 26 / 1974

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 473.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-895-A WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
56.5	MODESTO		COAL	1.0	418.5	DRILLER'S LOG 0-441.5
55.5	MODESTO		GRAY SHALE	2.5	419.5	
53.0	MODESTO	PIASA	LIMESTONE	5.5	422.0	
47.5			CALCAREOUS SHALE	14.0	427.5	
33.5	CARBONDALE	BANKSTON FORK	LIMESTONE	7.3	441.5	CORE 441.5-473
26.2	CARBONDALE		SHALE	1.5	448.8	
24.7	CARBONDALE	CONANT	LIMESTONE	3.2	450.3	
21.5	CARBONDALE		CALCAREOUS SHALE	3.7	453.5	
17.8	CARBONDALE	JAMESTOWN	COAL	0.1	457.2	
17.7	CARBONDALE		CLAYSTONE	0.3	457.3	
17.4	CARBONDALE	ANNA	BLACK SHALE	2.0	457.6	GREY-BLACK, CARBONACEOUS
15.4	CARBONDALE	ENERGY	GRAY SHALE	2.6	459.6	PYRITIZED FOSSILS
12.8	CARBONDALE	HERRIN	COAL	6.6	462.2	
6.2	CARBONDALE	HERRIN	CLAYSTONE	0.1	468.8	W/ 20% COAL LENSES, BLUE BAND
6.1	CARBONDALE	HERRIN	COAL	0.9	468.9	
5.2	CARBONDALE		UNDERCLAY	1.7	469.8	
3.5	CARBONDALE		SILTSTONE	1.5	471.5	

MAPID: 18924509000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 20 QUARTERS/FOOTAGES: 375' N line, 50' W line of SW NW

QUADRANGLE: HOYLETON LONGITUDE: -89.34877 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.430137 DATE COLLECTED: 4 / 27 / 1972

SURFACE ELEVATION (FT.): 478.0 LOGGED (FT.): 503.2 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-574 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
18.0			SILTY SHALE	3.5	460.0	DRILLER'S LOG 0-469
14.5			LIMESTONE	0.5	463.5	
14.0			GRAY SHALE	3.5	464.0	
10.5			SILTSTONE	4.5	467.5	CORE 469-503.3; BASAL HALF W/ SS SEAMS
6.0			CLAYSTONE	0.4	472.0	
5.6	CARBONDALE	CONANT	LIMESTONE	4.5	472.4	
1.1	CARBONDALE		CALCAREOUS SHALE	4.9	476.9	
-3.8	CARBONDALE	JAMESTOWN	COAL	0.2	481.8	
-4.0	CARBONDALE		LIMESTONE	1.1	482.0	
-5.0	CARBONDALE		CALCAREOUS SHALE	2.0	483.0	
-7.0	CARBONDALE	BRERETON	LIMESTONE	6.0	485.0	
-13.0	CARBONDALE	ANNA	BLACK SHALE	2.1	491.0	
-15.1	CARBONDALE	HERRIN	COAL	6.0	493.1	COAL ANALYZED
-21.0	CARBONDALE	HERRIN	CLAYSTONE	0.2	499.0	
-21.2	CARBONDALE	HERRIN	COAL	1.0	499.2	BLUE BAND
-22.1	CARBONDALE		UNDERCLAY	0.5	500.1	
-22.6	CARBONDALE		SILTSTONE	2.6	500.6	

MAPID: 18924577000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 20 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.338615 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.421167 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 491.9 LOG TYPE: Company map

SOURCE: CARTER OIL COMPANY WF-140 WELL TYPE: Coal Test

COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.9	484.0	

MAPID: 18901186000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 21 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: HOYLETON LONGITUDE: -89.319769 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.428582 DATE COLLECTED:

SURFACE ELEVATION (FT.): 484.0 LOGGED (FT.): 2878.0 LOG TYPE: Electric Log

SOURCE: GULF REFINING CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
4.0	CARBONDALE	SPRINGFIELD	COAL	-	480.0	
-101.0	CARBONDALE	COLCHESTER	COAL	-	585.0	
-672.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1156.0	
-2342.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2826.0	TOP OF NEW ALBANY
-2348.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2832.0	
-2394.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2878.0	BASE OF NEW ALBANY

MAPID: 18901186000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 21 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: HOYLETON LONGITUDE: -89.319769 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.428582 DATE COLLECTED:

SURFACE ELEVATION (FT.): 484.0 LOGGED (FT.): 464.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
77.0	MODESTO	PIASA	LIMESTONE	5.0	407.0	
72.0	MODESTO		SHALE	6.0	412.0	
66.0	CARBONDALE	DANVILLE	BONE COAL	2.0	418.0	
64.0	CARBONDALE		SHALE	12.0	420.0	
52.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	432.0	
48.5	CARBONDALE	BANKSTON FORK	SHALE	2.0	435.5	
46.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	437.5	
43.0	CARBONDALE	LAWSON	SHALE	3.0	441.0	
40.0	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	444.0	
38.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	446.0	
37.0	CARBONDALE		SHALE	3.0	447.0	
34.0	CARBONDALE	BRERETON	LIMESTONE	3.0	450.0	
31.0	CARBONDALE	ANNA	BLACK SHALE	4.0	453.0	
27.0	CARBONDALE	HERRIN	COAL	7.0	457.0	

MAPID: 18924578000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 21 **QUARTERS/FOOTAGES:** NW NW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.329123 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.426733 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 463.3 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-138 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.3	456.0	

MAPID: 18924579000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 21 **QUARTERS/FOOTAGES:**
QUADRANGLE: HOYLETON **LONGITUDE:** -89.32094 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.42767 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 495.3 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY S-17 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.3	488.0	

MAPID: 18900485000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 22 **QUARTERS/FOOTAGES:** 360' S line, 400' E line of SW SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.299087 **GEOLOGIST:** C TREWORGY
CONFIDENTIAL: N **LATITUDE:** 38.421152 **DATE COLLECTED:** 4 / 0 / 1963
SURFACE ELEVATION (FT.): 481.0 **LOGGED (FT.):** 579.0 **LOG TYPE:** Electric Log
SOURCE: DUNCAN, WALTER **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
97.0	MODESTO	PIASA	UNCLASSIFIED	-	384.0	
40.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	441.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
-52.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	533.0	
-98.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	579.0	

MAPID: 18900485000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 22 QUARTERS/FOOTAGES: 360' S line, 400' E line of SW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.299087 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.421152 DATE COLLECTED:

SURFACE ELEVATION (FT.): 481.0 LOGGED (FT.): 448.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
95.0	MODESTO	PIASA	LIMESTONE	6.0	386.0
89.0	MODESTO		SHALE	6.0	392.0
83.0	CARBONDALE	DANVILLE	BONE COAL	2.0	398.0
81.0	CARBONDALE		SHALE	7.0	400.0
74.0	CARBONDALE	ALLENBY	BONE COAL	1.0	407.0
73.0	CARBONDALE		SHALE	4.0	408.0
69.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	412.0
65.5	CARBONDALE	BANKSTON FORK	SHALE	2.0	415.5
63.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	417.5
60.0	CARBONDALE	LAWSON	SHALE	2.0	421.0
58.0	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	423.0
56.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	425.0
54.0	CARBONDALE		SHALE	6.0	427.0
48.0	CARBONDALE	BRERETON	LIMESTONE	6.0	433.0
42.0	CARBONDALE	ANNA	BLACK SHALE	2.0	439.0
40.0	CARBONDALE	HERRIN	COAL	7.0	441.0

MAPID: 18900485000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 22 QUARTERS/FOOTAGES: 360' S line, 400' E line of SW SE

QUADRANGLE: HOYLETON LONGITUDE: -89.299087 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.421152 DATE COLLECTED:

SURFACE ELEVATION (FT.): 481.0 LOGGED (FT.): 2950.0 LOG TYPE: Electric Log

SOURCE: DUNCAN, WALTER OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
16.0	CARBONDALE	SPRINGFIELD	COAL	-	465.0
-96.0	CARBONDALE	COLCHESTER	COAL	-	577.0
-741.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1222.0
-2419.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2900.0
-2425.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2906.0
-2469.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2950.0

TOP OF NEW
ALBANY

BASE OF NEW
ALBANY

MAPID: 18900411000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 24 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: HOYLETON LONGITUDE: -89.268834

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.420968

DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 517.0 LOGGED (FT.): 1566.0

LOG TYPE:

SOURCE: WHITKR ETL, GARNHOLZ 1

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
11.0	CARBONDALE	HERRIN	COAL	-	506.0	

MAPID: 18901187000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 24 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: HOYLETON LONGITUDE: -89.264191

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.42833

DATE COLLECTED: 6 / 0 / 1953

SURFACE ELEVATION (FT.): 524.0 LOGGED (FT.): 624.0

LOG TYPE: Electric Log

SOURCE: DUNCAN, WALTER

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.0	BOND	CARTHAGE	UNCLASSIFIED	-	108.0	
77.0	MODESTO	PIASA	UNCLASSIFIED	-	447.0	
19.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	505.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
-70.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	594.0	
-100.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	624.0	

MAPID: 18901187000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 24 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: HOYLETON LONGITUDE: -89.264191

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.42833

DATE COLLECTED:

SURFACE ELEVATION (FT.): 524.0 LOGGED (FT.): 512.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
76.0	MODESTO	PIASA	LIMESTONE	5.0	448.0
71.0	MODESTO		SHALE	5.0	453.0
66.0	CARBONDALE	DANVILLE	BONE COAL	2.0	458.0
64.0	CARBONDALE		SHALE	1.0	460.0
63.0	CARBONDALE	GALUM	LIMESTONE & SHALE	5.0	461.0
58.0	CARBONDALE		SHALE	10.1	466.0
47.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	476.1
44.9	CARBONDALE	BANKSTON FORK	SHALE	2.0	479.1
42.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	481.1
39.9	CARBONDALE	LAWSON	SHALE	3.0	484.1
36.9	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	487.1
34.9	CARBONDALE	JAMESTOWN	BONE COAL	2.0	489.1
32.9	CARBONDALE		SHALE	6.0	491.1
26.9	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	6.0	497.1
20.9	CARBONDALE	ANNA	BLACK SHALE	2.0	503.1
19.0	CARBONDALE	HERRIN	COAL	7.0	505.0

MAPID: 18901187000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 24 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: HOYLETON LONGITUDE: -89.264191

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.42833

DATE COLLECTED:

SURFACE ELEVATION (FT.): 524.0 LOGGED (FT.): 3077.0

LOG TYPE: Electric Log

SOURCE: DUNCAN, WALTER OIL CO.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
5.0	CARBONDALE	SPRINGFIELD	COAL	-	519.0
-93.0	CARBONDALE	COLCHESTER	COAL	-	617.0
-823.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1347.0
-2497.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3021.0
-2503.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3027.0
-2553.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3077.0

TOP OF NEW ALBANY

BASE OF NEW ALBANY

MAPID: 1892458000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.273649 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.406255 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 554.5 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-294 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.5	547.0	

MAPID: 18924581000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 26 **QUARTERS/FOOTAGES:** SE NE NE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.275755 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.41728 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 0.0 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-450 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

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

MAPID: 18901927000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.310699 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.406661 **DATE COLLECTED:** 11 / 0 / 1962
SURFACE ELEVATION (FT.): 499.0 **LOGGED (FT.):** 9999.9 **LOG TYPE:** Electric Log
SOURCE: DUNCAN, WALTER **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18923595000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of NW SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.301384 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.410168 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 496.0 **LOGGED (FT.):** 2964.0 **LOG TYPE:** Electric Log
SOURCE: FARRAR, FLETCHER F. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
18.0	CARBONDALE	SPRINGFIELD	COAL	-	478.0	
-74.0	CARBONDALE	COLCHESTER	COAL	-	570.0	
-736.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1232.0	
-2416.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2912.0	TOP OF NEW ALBANY
-2422.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2918.0	
-2468.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2964.0	BASE OF NEW ALBANY

MAPID: 18924583000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 28 **QUARTERS/FOOTAGES:** NW SW SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.329532 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.408488 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 461.5 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-139 **WELL TYPE:** Coal Test
COMMENT: LOCATION, DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.5	454.0	

MAPID: 18923758000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 29 **QUARTERS/FOOTAGES:** 330' S line, 990' E line of SW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.343525 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.406542 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 484.0 **LOGGED (FT.):** 2933.0 **LOG TYPE:** Electric Log
SOURCE: FULK, PERRY **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-11.0	CARBONDALE	SPRINGFIELD	COAL	-	495.0	
-111.0	CARBONDALE	COLCHESTER	COAL	-	595.0	
-714.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1198.0	
-2406.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2890.0	TOP OF NEW ALBANY
-2412.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2896.0	
-2449.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2933.0	BASE OF NEW ALBANY

MAPID: 18924775000C VERSION: 1

PROJECT: NCRDS 2013

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 29 QUARTERS/FOOTAGES: 2172' S line, 2340' E line

QUADRANGLE: HOYLETON LONGITUDE: -89.338805 GEOLOGIST: LOUCHIOS

CONFIDENTIAL: N LATITUDE: 38.411659 DATE COLLECTED: 9 / 8 / 2006

SURFACE ELEVATION (FT.): 471.9 LOGGED (FT.): 884.0 LOG TYPE: Other Core Study

SOURCE: BPI INDUSTRIES 1 WELL TYPE: Coal Test

COMMENT: POOR BOX LABELS BY CO., LOGGED BY WJN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
471.9			NO RECORD	394.8	0.0	
77.1	SHELBURN		CLAYSTONE & SILTSTONE	1.0	394.8	
76.1	SHELBURN	PIASA	LIMESTONE	6.5	395.8	
69.6	SHELBURN		GRAY SHALE	6.6	402.3	
63.0	SHELBURN	DANVILLE	COAL	3.2	408.9	
59.8	SHELBURN		CLAYSTONE & SILTSTONE	2.3	412.1	
57.5	SHELBURN		MUDSTONE	1.4	414.4	PYRITE, LARGE STIGMARIAN ROOTS
56.1	SHELBURN		MUDSTONE	5.6	415.8	
50.5	SHELBURN		DOLOMITE	0.8	421.4	
49.7	SHELBURN		LIMESTONE & CLAY	4.6	422.2	
45.1	SHELBURN		GRAY SHALE	1.3	426.8	
43.8	SHELBURN		LIMESTONE	2.7	428.1	
41.1	SHELBURN		GREEN SHALE	2.0	430.8	
39.1	SHELBURN	CONANT	LIMESTONE	0.5	432.8	
38.6	SHELBURN		DARK SHALE	1.9	433.3	
36.7	SHELBURN		SHALE/COAL	0.3	435.2	
36.4	SHELBURN		GRAY & BLACK SHALE	2.7	435.5	
33.7	SHELBURN		NO RECORD	0.8	438.2	ADJUSTMENT IN STATED DPH #7 AND #6 COALS
32.9	SHELBURN	BRERETON	LIMESTONE	9.5	439.0	
23.4	CARBONDALE	ANNA	BLACK SHALE	0.6	448.5	
22.8	CARBONDALE		CORE LOSS	1.9	449.1	BOX READS "MISSING ENERGY SHALE"
20.9	CARBONDALE	HERRIN	COAL	6.2	451.0	REMOVED BY COMPANY
14.7	CARBONDALE		MUDSTONE	3.6	457.2	
11.1	CARBONDALE		SANDSTONE	4.8	460.8	
6.3	CARBONDALE		SILTSTONE	3.2	465.6	
3.1	CARBONDALE		NO RECORD	70.4	468.8	
-67.3	CARBONDALE		GRAY SHALE	0.3	539.2	
-67.6	CARBONDALE		DARK SHALE	0.5	539.5	
-68.1	CARBONDALE	EXCELLO	BLACK SHALE	4.5	540.0	
-72.6	CARBONDALE	HOUCHIN CREEK	COAL	2.3	544.5	
-74.9	CARBONDALE		CLAYSTONE & SILTSTONE	2.8	546.8	
-77.7	CARBONDALE		DOLOMITE	2.3	549.6	
-80.0	CARBONDALE		CLAYSTONE & SHALE	3.1	551.9	
-83.1	CARBONDALE		GREEN SHALE	4.5	555.0	
-87.6	CARBONDALE		DARK SHALE	13.0	559.5	
-100.6	CARBONDALE		LIMESTONE	1.0	572.5	
-101.6	CARBONDALE		DARK SHALE	7.5	573.5	2.1' CORE PRESENT; WIRELINE LOG 7.5'
-109.1	CARBONDALE	MECCA QUARRY	BLACK SHALE	3.0	581.0	
-112.1	CARBONDALE	COLCHESTER	COAL	1.0	584.0	1" COAL IN BOX, WIRELINE LOG 1'

-113.1	CARBONDALE		CLAYSTONE & SILTSTONE	1.1	585.0	
-114.2	CARBONDALE		LIMESTONE	1.2	586.1	
-115.4	CARBONDALE		CLAYSTONE & SILTSTONE	2.6	587.3	
-118.0	CARBONDALE		SILTSTONE	2.6	589.9	POSITION OF DEKOVEN COAL?
-120.6	CARBONDALE		CLAYSTONE & SILTSTONE	4.4	592.5	
-125.0	CARBONDALE		DARK SHALE	3.3	596.9	
-128.3	CARBONDALE		BLACK SHALE	2.9	600.2	
-131.2	CARBONDALE		DARK SHALE	7.9	603.1	
-139.1	CARBONDALE	SEELYVILLE	COAL	3.3	611.0	BRIGHT BANDED; VERY PYRITIC
-142.4	TRADEWATER		MUDSTONE	2.5	614.3	
-144.9	TRADEWATER		SILTSTONE	3.7	616.8	
-148.6	TRADEWATER		MUDSTONE	2.4	620.5	
-151.0	TRADEWATER	CARRIER MILLS	GRAY & BLACK SHALE	1.7	622.9	
-152.7	TRADEWATER		CLAYSTONE & SILTSTONE	1.5	624.6	
-154.2	TRADEWATER		MUDSTONE	5.8	626.1	
-160.0	TRADEWATER		SILTSTONE	2.0	631.9	
-162.0	TRADEWATER		MUDSTONE	5.0	633.9	
-167.0	TRADEWATER		NO RECORD	212.1	638.9	
-379.1	TRADEWATER		CLAYSTONE & SILTSTONE	3.0	851.0	
-382.1	TRADEWATER		SANDSTONE/SHALE	30.0	854.0	INTERBEDDED

MAPID: 18923775000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 30 QUARTERS/FOOTAGES: 2310' S line, 990' W line of SW

QUADRANGLE: HOYLETON LONGITUDE: -89.367261 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.411845 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 2872.0 LOG TYPE: Electric Log

SOURCE: MIDWEST OIL PRODUCERS WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	OVERBURDEN	COMMENT
30.0	CARBONDALE	SPRINGFIELD	COAL	-	440.0	
-63.0	CARBONDALE	COLCHESTER	COAL	-	533.0	
-688.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1158.0	
-2356.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2826.0	TOP OF NEW ALBANY
-2360.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2830.0	
-2402.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2872.0	BASE OF NEW ALBANY

MAPID: 18924510000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 30 QUARTERS/FOOTAGES: 52' S line, 615' E line

QUADRANGLE: HOYLETON LONGITUDE: -89.351863 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.405871 DATE COLLECTED: 9 / 5 / 1967

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 470.3 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WF-52 WELL TYPE: Coal Test

COMMENT: CORE REPORT, E-LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
12.3	CARBONDALE		LIMESTONE	3.3	452.7	CORE 455-TD; E-LOG USED FOR TOP
9.0	CARBONDALE		BLACK SHALE	1.8	456.0	
7.2	CARBONDALE	BRERETON	LIMESTONE	1.1	457.8	
6.2	CARBONDALE	ANNA	BLACK SHALE	1.1	458.8	
5.1	CARBONDALE	HERRIN	COAL	2.5	459.9	
2.6	CARBONDALE	HERRIN	SHALE	0.0	462.4	
2.6	CARBONDALE	HERRIN	COAL	2.8	462.4	COAL ANALYZED
-0.2	CARBONDALE	HERRIN	BONE COAL	0.1	465.2	
-0.3	CARBONDALE	HERRIN	COAL	2.2	465.3	
-2.5	CARBONDALE		CLAYSTONE	2.8	467.5	

MAPID: 18924511000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 30 QUARTERS/FOOTAGES: 1320' S line, 235' W line

QUADRANGLE: HOYLETON LONGITUDE: -89.369322 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.409663 DATE COLLECTED: 10 / 12 / 1972

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 476.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-649 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORTS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
70.0	MODESTO		COAL	1.5	395.0	DRILLER'S LOG 0-443'
68.5	MODESTO		CLAYSTONE	5.5	396.5	
63.0	MODESTO		GRAY SHALE	1.0	402.0	
62.0	MODESTO	PIASA	LIMESTONE	8.0	403.0	
54.0			GRAY SHALE	3.0	411.0	
51.0			BLACK SHALE	0.5	414.0	
50.5			CLAYSTONE	3.0	414.5	
47.5			GRAY SHALE	6.5	417.5	
41.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	424.0	
36.5	CARBONDALE	BANKSTON FORK	GREEN SHALE	1.0	428.5	
35.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	429.5	
32.5	CARBONDALE		GRAY SHALE	2.2	432.5	CORE REPORT 433-472
30.3	CARBONDALE	CONANT	LIMESTONE	1.3	434.7	
29.0	CARBONDALE		CALCAREOUS SHALE	1.4	436.0	
27.6	CARBONDALE	JAMESTOWN	BLACK SHALE	0.4	437.4	"BLACK SHALE & COAL"
27.2	CARBONDALE		LIMESTONE	0.4	437.8	
26.8	CARBONDALE		CALCAREOUS SHALE	4.3	438.2	
22.5	CARBONDALE	BRERETON	LIMESTONE	3.3	442.5	5 BEDDING PLANE-POOR ANCHOR?
19.2	CARBONDALE	ANNA	BLACK SHALE	3.2	445.8	
16.0	CARBONDALE	HERRIN	COAL	6.1	449.0	COAL ANALYZED
9.9	CARBONDALE	HERRIN	CLAY & COAL	0.1	455.1	BLUE BAND
9.8	CARBONDALE	HERRIN	COAL	1.3	455.2	
8.5	CARBONDALE		UNDERCLAY	0.7	456.5	
7.8	CARBONDALE		SILTSTONE	3.2	457.2	
4.6	CARBONDALE		SANDSTONE	4.0	460.4	W/ LS NODULES
0.6	CARBONDALE		CALCAREOUS SHALE	4.5	464.4	
-3.9	CARBONDALE		GRAY SHALE	0.5	468.9	
-4.4	CARBONDALE	TURNER MINE	BLACK SHALE	0.6	469.4	
-5.0	CARBONDALE	SPRINGFIELD	COAL	2.4	470.0	
-7.4	CARBONDALE		SANDSTONE	0.1	472.4	
-7.5	CARBONDALE		UNDERCLAY	0.5	472.5	
-8.0	CARBONDALE		CLAYSTONE & SHALE	1.6	473.0	
-9.6	CARBONDALE		CLAYSTONE	1.0	474.6	
-10.6	CARBONDALE		LIMESTONE	0.4	475.6	

MAPID: 18924512000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 30 QUARTERS/FOOTAGES: 39' S line, 297' W line of SW SW SW

QUADRANGLE: HOYLETON LONGITUDE: -89.368954 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.40545 DATE COLLECTED: 7 / 11 / 1968

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 456.3 LOG TYPE: Multiple log types

SOURCE: HUMBLE OIL CO. WF-141 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
67.5	MODESTO	PIASA	LIMESTONE	9.5	392.5	DRILLER'S LOG 0-417
58.0			GRAY SHALE	14.0	402.0	
44.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.3	416.0	CORE 417-456.3
42.7	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.6	417.3	
41.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.1	418.9	
38.0	CARBONDALE		CALCAREOUS SHALE	1.7	422.0	
36.3	CARBONDALE	CONANT	LIMESTONE	1.3	423.7	
35.0	CARBONDALE		BLACK SHALE	1.1	425.0	
33.9	CARBONDALE	JAMESTOWN	COAL	0.2	426.1	
33.7	CARBONDALE		LIMESTONE	0.5	426.3	
33.2	CARBONDALE		BLACK SHALE	2.1	426.8	
31.2	CARBONDALE	BRERETON	LIMESTONE	12.1	428.8	
19.1	CARBONDALE	ANNA	BLACK SHALE	0.3	440.9	
18.8	CARBONDALE	HERRIN	COAL	1.7	441.2	COAL ANALYZED
17.1	CARBONDALE	HERRIN	CLAYSTONE	0.0	442.9	
17.1	CARBONDALE	HERRIN	COAL	0.5	442.9	
16.6	CARBONDALE	HERRIN	CLAYSTONE	0.0	443.4	
16.5	CARBONDALE	HERRIN	COAL	0.7	443.5	
15.8	CARBONDALE	HERRIN	CLAYSTONE	0.1	444.2	
15.7	CARBONDALE	HERRIN	COAL	2.3	444.3	
13.5	CARBONDALE	HERRIN	PYRITE	0.0	446.5	
13.4	CARBONDALE	HERRIN	COAL	0.1	446.6	
13.3	CARBONDALE	HERRIN	CLAYSTONE	0.0	446.7	BLUE BAND
13.3	CARBONDALE	HERRIN	COAL	0.8	446.7	
12.5	CARBONDALE	HERRIN	CLAYSTONE	0.1	447.5	
12.4	CARBONDALE	HERRIN	COAL	1.0	447.6	
11.5	CARBONDALE		SHALE	0.5	448.5	
11.0	CARBONDALE		CLAYSTONE	1.2	449.0	
9.8	CARBONDALE		SANDSTONE	6.1	450.2	

MAPID: 18924171000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 31 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE SW

QUADRANGLE: HOYLETON LONGITUDE: -89.361413 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.395301 DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 1202.0 LOG TYPE: Electric Log

SOURCE: FIDELITY ENERGY RES. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-743.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1202.0

MAPID: 18924513000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 31 QUARTERS/FOOTAGES: 3820' N line, 1600' W line

QUADRANGLE: HOYLETON LONGITUDE: -89.365244 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.394935 DATE COLLECTED: 12 / 17 / 1974

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 481.3 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY \8W-900 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
56.5	MODESTO	PIASA	LIMESTONE	11.0	403.5
45.5			SHALE	1.5	414.5
44.0	CARBONDALE	DANVILLE	COAL	0.5	416.0
43.5	CARBONDALE		SHALE	22.0	416.5
21.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	438.5
17.4	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	1.2	442.6
16.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	443.8
12.1	CARBONDALE		SHALE	3.8	447.9
8.3	CARBONDALE	JAMESTOWN	COAL	0.1	451.7 BONY
8.2	CARBONDALE	BRERETON	LIMESTONE	0.5	451.8
7.7	CARBONDALE	ANNA	DARK SHALE	9.0	452.3 CARBONACEOUS, PLANT DEBRIS, OCC PY
-1.3	CARBONDALE	HERRIN	COAL	7.5	461.3
-8.8	CARBONDALE	HERRIN	BLUE BAND	0.1	468.8 85/15% BLUE BAND
-8.8	CARBONDALE	HERRIN	COAL	1.6	468.8
-10.4	CARBONDALE		UNDERCLAY	0.8	470.4
-11.2	CARBONDALE		LIMESTONE	1.0	471.2
-12.2	CARBONDALE		CLAYSTONE & SILTSTONE	3.8	472.2 W/ LS NODULES
-16.0	CARBONDALE		SHALE	0.5	476.0
-16.5	CARBONDALE		LIMESTONE/SILTSTONE	1.9	476.5
-18.4	CARBONDALE		SILTSTONE	2.6	478.4
-21.0	CARBONDALE		SHALE	0.3	481.0

MAPID: 18900412000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 32 QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: HOYLETON LONGITUDE: -89.345951

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.402873

DATE COLLECTED: 0 / 0 / 1946

SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 1567.0

LOG TYPE:

SOURCE: CUMMINGS N, BRINK IDA 1

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	BOND	CARTHAGE	LIMESTONE	-	51.0
4.0	CARBONDALE	HERRIN	COAL	-	467.0

MAPID: 18900412000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 2W SECTION: 32 QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: HOYLETON LONGITUDE: -89.345951

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.402873

DATE COLLECTED:

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 489.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
57.0	MODESTO	PIASA	LIMESTONE	8.0	418.0
49.0	MODESTO		SHALE	4.0	426.0
45.0	CARBONDALE	DANVILLE	BONE COAL	2.0	430.0
43.0	CARBONDALE		SHALE	10.0	432.0
33.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	442.0
27.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	448.0
25.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	450.0
21.0	CARBONDALE	LAWSON	SHALE	4.0	454.0
17.0	CARBONDALE	CONANT	LIMESTONE & SHALE	7.0	458.0
10.0	CARBONDALE		SHALE	5.0	465.0
5.0	CARBONDALE	BRERETON	LIMESTONE	8.0	470.0
-3.0	CARBONDALE	ANNA	BLACK SHALE	4.0	478.0
-7.0	CARBONDALE	HERRIN	COAL	7.0	482.0

MAPID: 18900412000C **VERSION:** 3 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.345951 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.402873 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 475.0 **LOGGED (FT.):** 1199.0 **LOG TYPE:** Electric Log
SOURCE: CUMMINGS N A **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-39.0	CARBONDALE	SPRINGFIELD	COAL	-	514.0	
-125.0	CARBONDALE	COLCHESTER	COAL	-	600.0	
-724.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1199.0	

MAPID: 18924582000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.313072 **GEOLOGIST:** E. PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.404859 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 0.0 **LOG TYPE:** Company map
SOURCE: CARTER OIL COMPANY WF-103 **WELL TYPE:** Coal Test
COMMENT: LOCATION , DATA FROM HOYLETON E & W MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL		7.2	

MAPID: 18900715000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 1 **QUARTERS/FOOTAGES:** SE NW NE
QUADRANGLE: ADDIEVILLE **LONGITUDE:** -89.37674 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.47548 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 2704.0 **LOG TYPE:** Electric Log
SOURCE: HAMMER, A. J. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
10.0	CARBONDALE	SPRINGFIELD	COAL	-	415.0	
-113.0	CARBONDALE	COLCHESTER	COAL	-	538.0	
-657.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1082.0	
-2229.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2654.0	TOP OF NEW ALBANY
-2239.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2664.0	
-2279.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2704.0	BASE OF NEW ALBANY

MAPID: 18900715000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 1 QUARTERS/FOOTAGES: SE NW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.37674

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.47548

DATE COLLECTED:

SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 393.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
81.0	MODESTO	PIASA	LIMESTONE	7.0	344.0
74.0	MODESTO		SHALE	4.0	351.0
70.0	CARBONDALE	DANVILLE	BONE COAL	1.0	355.0
69.0	CARBONDALE		SHALE	11.0	356.0
58.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	367.0
55.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	370.0
54.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	371.0
51.0	CARBONDALE	LAWSON	SHALE	2.0	374.0
49.0	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	376.0
47.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	378.0
45.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	4.0	380.0
41.0	CARBONDALE	ANNA	DARK GRAY SHALE	2.0	384.0
39.0	CARBONDALE	HERRIN	BLACK SHALE	7.0	386.0

MAPID: 18924514000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 1 QUARTERS/FOOTAGES: 131' N line, 10' E line of SE NW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.375626 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.476059 DATE COLLECTED: 11 / 18 / 1966

SURFACE ELEVATION (FT.): 443.0 LOGGED (FT.): 436.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY W-17 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
443.0			UNCONSOLIDATED	44.0	0.0	DRILLER'S LOG 0-340'
399.0			UNCLASSIFIED	4.0	44.0	
395.0	BOND	CARTHAGE	LIMESTONE	6.0	48.0	
389.0	MODESTO		UNCLASSIFIED	286.0	54.0	
103.0	MODESTO		GRAY SHALE	9.8	340.0	CORE REPORT 340-436'
93.2	MODESTO	PIASA	LIMESTONE	8.8	349.8	
84.4	MODESTO		BLACK SHALE	3.4	358.6	
81.0	CARBONDALE	DANVILLE	COAL	0.7	362.0	
80.3	CARBONDALE		SHALE	5.0	362.7	
75.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.6	367.7	
71.7	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	3.0	371.3	
68.7	CARBONDALE	BANKSTON FORK	LIMESTONE	3.4	374.3	
65.3	CARBONDALE		CALCAREOUS SHALE	1.6	377.7	CA\
63.7	CARBONDALE		LIMESTONE	2.0	379.3	
61.7	CARBONDALE		CALCAREOUS SHALE	0.7	381.3	
61.0	CARBONDALE		BLACK SHALE	1.5	382.0	
59.5	CARBONDALE		LIMESTONE	1.7	383.5	
57.8	CARBONDALE		BLACK SHALE	1.1	385.2	
56.7	CARBONDALE	JAMESTOWN	COAL	0.3	386.3	
56.4	CARBONDALE		BLACK SHALE	6.7	386.6	
49.7	CARBONDALE	BRERETON	LIMESTONE	2.3	393.3	
47.4	CARBONDALE	ANNA	BLACK SHALE	0.3	395.6	
47.1	CARBONDALE	HERRIN	COAL	5.5	395.9	
41.6	CARBONDALE	HERRIN	BLACK SHALE	0.1	401.4	
41.5	CARBONDALE	HERRIN	COAL	0.6	401.5	
40.9	CARBONDALE		SHALE	5.0	402.1	
35.9	CARBONDALE		SANDSTONE	19.5	407.1	
16.4	CARBONDALE	TURNER MINE	BLACK SHALE	0.0	426.6	
16.4	CARBONDALE	SPRINGFIELD	COAL	1.7	426.6	
14.7	CARBONDALE		SHALE	2.2	428.3	
12.5	CARBONDALE		LIMESTONE	0.8	430.5	
11.7	CARBONDALE		SHALE	1.8	431.3	
9.9	CARBONDALE		SANDSTONE	2.9	433.1	

MAPID: 18924515000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 1 QUARTERS/FOOTAGES: 31' N line, 55' W line of SW NE SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.384874 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.468946 DATE COLLECTED: 5 / 21 / 1975

SURFACE ELEVATION (FT.): 438.0 LOGGED (FT.): 419.7 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-908 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
438.0			UNCONSOLIDATED	79.0	0.0	DRILLER'S LOG 0-375
359.0	MODESTO		SHALE	90.0	79.0	
269.0	MODESTO		SANDSTONE	80.0	169.0	
189.0	MODESTO		SHALE	100.5	249.0	
88.5	MODESTO		SANDSTONE	2.0	349.5	
86.5	MODESTO	PIASA	LIMESTONE	7.0	351.5	
79.5	MODESTO		BLACK SHALE	3.0	358.5	
76.5	CARBONDALE	DANVILLE	COAL	1.5	361.5	
75.0	CARBONDALE		UNDERCLAY	1.0	363.0	
74.0	CARBONDALE		SHALE	8.0	364.0	
66.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	372.0	
61.9	CARBONDALE	BANKSTON FORK	SHALE	0.8	376.1	CORE REPORT 376-421
61.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	376.9	
58.7	CARBONDALE		GRAY SHALE	5.1	379.3	
53.6	CARBONDALE	JAMESTOWN	COAL	0.3	384.4	
53.3	CARBONDALE		GRAY SHALE	6.0	384.7	
47.3	CARBONDALE	BRERETON	LIMESTONE	3.3	390.7	
44.0	CARBONDALE	ANNA	BLACK SHALE	0.8	394.0	
43.2	CARBONDALE	HERRIN	COAL	6.6	394.8	COAL ANALYZED
36.6	CARBONDALE		UNDERCLAY	5.4	401.4	CORE LOSS 403.7-404
31.3	CARBONDALE		SILTSTONE	9.5	406.7	
21.8	CARBONDALE		GRAY SHALE	1.5	416.2	
20.3	CARBONDALE	SPRINGFIELD	COAL	1.3	417.7	
19.0	CARBONDALE		UNDERCLAY	0.7	419.0	

MAPID: 18924516000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 1 QUARTERS/FOOTAGES: NW NW NE SE

QUADRANGLE: HOYLETON LONGITUDE: -89.374726

GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.470743

DATE COLLECTED: 7 / 1 / 1981

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 446.0

LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-675

WELL TYPE: Coal Test

COMMENT: GR. DENSITY, DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			UNCONSOLIDATED	55.5	0.0	GR AND DENSITY 0-86'
384.5	BOND	CARTHAGE	LIMESTONE	6.5	55.5	
378.0	MODESTO		SHALE	5.0	62.0	
373.0	MODESTO		BLACK SHALE	2.5	67.0	
370.5	MODESTO		SHALE	14.5	69.5	
356.0	MODESTO		COAL	2.0	84.0	NON-MARINE ROOF
354.0	MODESTO		GRAY SHALE	41.0	86.0	DRILLER'S LOG 86'-394'
313.0	MODESTO		COAL	1.0	127.0	
312.0	MODESTO		SHALE	42.0	128.0	
270.0			UNCLASSIFIED	224.7	170.0	
45.3			CLAYSTONE	4.8	394.7	CORE 394.7-446'
40.5	CARBONDALE		LIMESTONE	2.5	399.5	
38.0	CARBONDALE		SHALE	4.3	402.0	
33.7	CARBONDALE		SHALE WITH LIMESTONE	2.7	406.3	
31.0	CARBONDALE	CONANT	LIMESTONE	1.5	409.0	
29.5	CARBONDALE		BLACK SHALE	1.6	410.5	
27.9	CARBONDALE		GRAY SHALE	0.1	412.1	
27.8	CARBONDALE	JAMESTOWN	COAL	0.2	412.2	
27.6	CARBONDALE		LIMESTONE	0.1	412.4	
27.5	CARBONDALE		BLACK SHALE	4.0	412.5	
23.5	CARBONDALE	BRERETON	LIMESTONE	1.0	416.5	
22.5	CARBONDALE	ANNA	BLACK SHALE	1.7	417.5	
20.8	CARBONDALE	HERRIN	COAL	2.4	419.2	
18.5	CARBONDALE	HERRIN	CLAYSTONE	0.0	421.5	
18.4	CARBONDALE	HERRIN	COAL	2.9	421.6	
15.5	CARBONDALE	HERRIN	CLAYSTONE	0.2	424.5	
15.4	CARBONDALE	HERRIN	COAL	0.5	424.6	
14.8	CARBONDALE		CLAYSTONE	4.1	425.2	
10.7	CARBONDALE		SHALE	2.7	429.3	
8.0	CARBONDALE		SANDSTONE/SHALE	0.8	432.0	
7.2	CARBONDALE		SANDSTONE	13.2	432.8	

MAPID: 18901279000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 2 QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.397974

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.468005

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 353.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
135.0	MODESTO	PIASA	LIMESTONE	6.0	305.0
129.0	CARBONDALE		SHALE	17.0	311.0
112.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	328.0
110.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	330.0
109.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	331.0
106.0	CARBONDALE	LAWSON	SHALE	5.0	334.0
101.0	CARBONDALE	BRERETON	LIMESTONE	3.0	339.0
98.0	CARBONDALE	ANNA	DARK GRAY SHALE	2.0	342.0
95.0	CARBONDALE	HERRIN	BLACK SHALE	8.0	345.0

MAPID: 18924517000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 2 QUARTERS/FOOTAGES: 22' S line, 51' W line of SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.399107 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.463904 DATE COLLECTED: 5 / 7 / 1975

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 380.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-906 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.0			UNCONSOLIDATED	36.5	0.0	DRILLER'S LOG 0-340
408.5			SANDSTONE/SHALE	73.5	36.5	
335.0			SANDSTONE	61.0	110.0	
274.0			SANDSTONE/SHALE	138.0	171.0	
136.0			BLACK SHALE	0.5	309.0	
135.5			UNDERCLAY	2.5	309.5	
133.0	MODESTO	PIASA	LIMESTONE	9.5	312.0	
123.5			SHALE	14.5	321.5	
109.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	336.0	
104.7	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.1	340.3	CORE 340-380
103.6	CARBONDALE		LIMESTONE	2.0	341.4	
101.6	CARBONDALE		GRAY SHALE	4.2	343.4	
97.4	CARBONDALE	CONANT	LIMESTONE	3.1	347.6	
94.3	CARBONDALE	JAMESTOWN	COAL	0.3	350.7	
94.0	CARBONDALE		CALCAREOUS SHALE	1.6	351.0	
92.5	CARBONDALE	BRERETON	LIMESTONE	1.7	352.5	
90.8	CARBONDALE		DARK SHALE	1.7	354.2	
89.1	CARBONDALE	HERRIN	COAL	6.5	355.9	COAL ANALYZED
82.6	CARBONDALE	HERRIN	PYRITE	0.2	362.4	
82.5	CARBONDALE		UNDERCLAY	2.5	362.5	CORE LOSS 362.65-363
80.0	CARBONDALE		SILTSTONE	10.9	365.0	
69.1	CARBONDALE		LIMESTONE	2.6	375.9	
66.5	CARBONDALE		SHALE	1.5	378.5	

MAPID: 18901190000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 3 QUARTERS/FOOTAGES: 330' N line, 330' W line of NE SW NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.423764 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.473398 DATE COLLECTED:

SURFACE ELEVATION (FT.): 446.0 LOGGED (FT.): 2595.0 LOG TYPE: Electric Log

SOURCE: CARTER OIL COMPANY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
56.0	CARBONDALE	SPRINGFIELD	COAL	-	390.0	
-58.0	CARBONDALE	COLCHESTER	COAL	-	504.0	
-542.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	988.0	
-2108.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2554.0	TOP OF NEW ALBANY
-2114.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2560.0	
-2149.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2595.0	BASE OF NEW ALBANY

MAPID: 18901797000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 3 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.416822 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.469754 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 331.5 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
156.0	MODESTO	PIASA	LIMESTONE	7.0	284.0	
149.0	CARBONDALE		SHALE	14.0	291.0	
135.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	305.0	
132.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	308.0	
131.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	309.0	
129.0	CARBONDALE	LAWSON	SHALE	4.0	311.0	
125.0	CARBONDALE	BRERETON	LIMESTONE	3.0	315.0	
122.0	CARBONDALE	ANNA	DARK GRAY SHALE	6.0	318.0	
115.0	CARBONDALE	HERRIN	BLACK SHALE	6.5	325.0	

MAPID: 18924518000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 3 QUARTERS/FOOTAGES: NE NE NE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.408955 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.470668 DATE COLLECTED: 7 / 6 / 1981

SURFACE ELEVATION (FT.): 438.0 LOGGED (FT.): 356.0 LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-676 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
438.0			UNCONSOLIDATED	61.0	0.0	DRILLER'S LOG 0-308
377.0			UNCLASSIFIED	247.0	61.0	
130.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.4	308.0	CORE 309-356
128.6	CARBONDALE	BANKSTON FORK	CALCAREOUS CLAYSTONE	3.1	309.4	
125.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	312.5	
124.5	MODESTO		SHALE	4.4	313.5	
120.2	CARBONDALE	CONANT	LIMESTONE	1.4	317.8	
118.8	MODESTO		GRAY SHALE	7.0	319.2	
111.8	CARBONDALE	BRERETON	LIMESTONE	3.2	326.2	
108.6	CARBONDALE	HERRIN	COAL	1.3	329.4	
107.3	CARBONDALE	HERRIN	SHALE	0.1	330.7	
107.2	CARBONDALE	HERRIN	COAL	3.8	330.8	
103.5	CARBONDALE	HERRIN	CLAYSTONE	0.1	334.5	
103.3	CARBONDALE	HERRIN	COAL	0.7	334.7	
102.7	CARBONDALE		CLAYSTONE	1.1	335.3	
101.6	CARBONDALE		SANDSTONE	3.3	336.4	
98.3	CARBONDALE		CORE LOSS	2.3	339.7	
96.0	CARBONDALE		SANDSTONE/SHALE	3.0	342.0	
93.0	CARBONDALE		SHALE	1.7	345.0	
91.3	CARBONDALE		LIMESTONE	4.6	346.7	
86.7	CARBONDALE		CLAYSTONE	2.7	351.3	
84.0	CARBONDALE		SANDSTONE/SHALE	2.0	354.0	

MAPID: 18924519000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 3 QUARTERS/FOOTAGES: 45' S line, 65' E line of NE SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.418279 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.467489 DATE COLLECTED: 5 / 12 / 1975

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 344.1 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-907 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			UNCONSOLIDATED	24.0	0.0	DRILLER'S LOG 0-306
416.0			SHALE	80.0	24.0	
336.0			SANDSTONE	55.0	104.0	TRIVOLI SS AT 113'-159'
281.0			SHALE	119.5	159.0	
161.5	MODESTO	PIASA	LIMESTONE	8.0	278.5	
153.5			SHALE	14.5	286.5	
139.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	301.0	
135.0	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	1.0	305.0	CORE 306'-345'
134.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.6	306.0	
132.4	CARBONDALE		SHALE	2.7	307.6	
129.7	CARBONDALE		LIMESTONE	0.9	310.3	
128.8	CARBONDALE		SHALE	0.8	311.2	
128.0	CARBONDALE	CONANT	LIMESTONE	3.0	312.0	
125.0	CARBONDALE		GRAY SHALE	5.3	315.0	
119.7	CARBONDALE	BRERETON	LIMESTONE	2.7	320.3	
117.0	CARBONDALE	HERRIN	COAL	6.8	323.0	COAL ANALYZED
110.2	CARBONDALE		UNDERCLAY	2.4	329.8	CORE LOSS 329.9-331'
107.8	CARBONDALE		LIMESTONE	0.4	332.2	
107.4	CARBONDALE		SILTSTONE	6.4	332.6	
101.0	CARBONDALE		LIMESTONE	4.9	339.0	
96.1	CARBONDALE		SHALE	0.2	343.9	

MAPID: 18901191000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 4 QUARTERS/FOOTAGES: NE NW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.433039

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.469696

DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.0

LOGGED (FT.): 406.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
118.0	MODESTO	PIASA	LIMESTONE	10.0	350.0
108.0	MODESTO		SHALE	3.0	360.0
105.0	CARBONDALE	DANVILLE	COAL	2.0	363.0
103.0	CARBONDALE		SHALE	10.0	365.0
93.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	375.0
87.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	381.0
86.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	382.0
84.0	CARBONDALE	LAWSON	SHALE	5.0	384.0
79.0	CARBONDALE	CONANT	LIMESTONE	3.0	389.0
76.0	CARBONDALE		SHALE	3.0	392.0
73.0	CARBONDALE	BRERETON	LIMESTONE	3.0	395.0
70.0	CARBONDALE	ANNA	BLACK SHALE	2.0	398.0
68.0	CARBONDALE	HERRIN	BLACK SHALE	6.0	400.0

MAPID: 18924520000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 4 QUARTERS/FOOTAGES: 33' N line, 1440' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.432304 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.477967 DATE COLLECTED: 11 / 16 / 1967

SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 381.6 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WF-73 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
441.0			UNCLASSIFIED	60.0	0.0	DRILLER'S LOG 0-330
381.0			SANDSTONE/SHALE	240.0	60.0	
141.0			LIMESTONE	10.0	300.0	
131.0			SHALE	9.0	310.0	
122.0	MODESTO	PIASA	LIMESTONE	5.0	319.0	
117.0			GRAY SHALE	7.2	324.0	
109.8	CARBONDALE	DANVILLE	COAL	2.4	331.2	CORE 330-381.55
107.4	CARBONDALE		GRAY SHALE	13.7	333.6	
93.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.4	347.3	
89.4	CARBONDALE	BANKSTON FORK	SHALE WITH LIMESTONE	3.5	351.6	
85.9	CARBONDALE		CORE LOSS	1.9	355.1	
84.0	CARBONDALE		BLACK SHALE	4.5	357.0	
79.5	CARBONDALE	BRERETON	LIMESTONE	5.5	361.5	
74.0	CARBONDALE	ANNA	BLACK SHALE	2.9	367.0	
71.1	CARBONDALE	HERRIN	COAL	7.7	369.9	COAL ANALYZED
63.4	CARBONDALE		UNDERCLAY	1.1	377.6	
62.4	CARBONDALE		LIMESTONE	3.0	378.6	

MAPID: 18924521000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 4 QUARTERS/FOOTAGES: 45' N line, 420' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.444424 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.477888 DATE COLLECTED: 5 / 2 / 1972

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 393.6 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-579 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOGS (2), CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			UNCONSOLIDATED	50.0	0.0	COMPLETE DRILLER'S LOG 0-356.9
390.0			SHALE	4.5	50.0	
385.5			COAL	0.5	54.5	
385.0			SHALE	122.0	55.0	
263.0			SANDSTONE	59.5	177.0	
203.5			SHALE	96.2	236.5	
107.3	MODESTO	PIASA	LIMESTONE	5.9	332.7	
101.4	MODESTO		BLACK SHALE	0.9	338.6	
100.5	MODESTO		GRAY SHALE	4.3	339.5	
96.2	CARBONDALE	DANVILLE	COAL	2.8	343.8	
93.4	CARBONDALE		UNDERCLAY	2.4	346.6	
91.0	CARBONDALE		SHALE	1.0	349.0	
90.0	CARBONDALE		CALCAREOUS SHALE	6.9	350.0	
83.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	356.9	CORE REPORT 356.9-393.6
80.8	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.6	359.2	
78.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	361.8	
75.7	CARBONDALE		CALCAREOUS SHALE	5.7	364.3	
70.0	CARBONDALE	BRERETON	LIMESTONE	3.0	370.0	
67.0	CARBONDALE	BRERETON	CALCAREOUS SHALE	0.3	373.0	
66.7	CARBONDALE	BRERETON	LIMESTONE	1.0	373.3	
65.7	CARBONDALE		CALCAREOUS SHALE	0.2	374.3	
65.5	CARBONDALE	ANNA	BLACK SHALE	2.9	374.5	
62.6	CARBONDALE	HERRIN	COAL	7.8	377.4	COAL ANALYZED CORE LOSS 385.15-386.05
54.8	CARBONDALE		UNDERCLAY	4.1	385.2	
50.8	CARBONDALE		LIMESTONE	4.4	389.2	

MAPID: 18924522000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 4 QUARTERS/FOOTAGES: SW SW NE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.431802 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.46686 DATE COLLECTED: 7 / 22 / 1981

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 415.9 LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-680 WELL TYPE: Coal Test

COMMENT: GR, DENSITY, DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
475.0			UNCONSOLIDATED	18.0	0.0	GR & DENSITY 0-66'
457.0			UNCLASSIFIED	30.0	18.0	
427.0	MODESTO		BLACK SHALE	3.0	48.0	
424.0	MODESTO		SHALE	13.0	51.0	
411.0	MODESTO		COAL	2.0	64.0	NON-MARINE ROOF
409.0	MODESTO		SHALE	129.0	66.0	DRILLER'S LOG 66- 366.2'
280.0	MODESTO		SANDSTONE	45.0	195.0	
235.0	MODESTO		SHALE	103.0	240.0	
132.0	MODESTO	PIASA	LIMESTONE	6.0	343.0	
126.0	MODESTO		GRAY SHALE	7.0	349.0	
119.0	CARBONDALE	DANVILLE	COAL	0.5	356.0	
118.5	CARBONDALE		SHALE	8.5	356.5	
110.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.1	365.0	
103.9	CARBONDALE	BANKSTON FORK	BLACK SHALE	1.6	371.1	CORE REPORT 366.2- 416'
102.3	CARBONDALE	BANKSTON FORK	LIMESTONE	0.9	372.7	
101.4	CARBONDALE		SHALE	1.0	373.6	
100.4	CARBONDALE		COAL	0.1	374.6	
100.3	CARBONDALE	CONANT	LIMESTONE	2.8	374.7	
97.5	CARBONDALE		DARK SHALE	6.0	377.5	
91.5	CARBONDALE	BRERETON	LIMESTONE	4.3	383.5	
87.2	CARBONDALE	ANNA	BLACK SHALE	0.9	387.8	
86.3	CARBONDALE	HERRIN	COAL	5.9	388.7	
80.5	CARBONDALE	HERRIN	PYRITE	0.2	394.5	
80.3	CARBONDALE	HERRIN	COAL	1.1	394.7	
79.2	CARBONDALE	HERRIN	PYRITE	0.1	395.8	
79.1	CARBONDALE	HERRIN	COAL	0.2	395.9	
78.9	CARBONDALE		CLAYSTONE	9.1	396.1	CORE LOSS 397.8- 399'
69.9	CARBONDALE		SANDSTONE	1.5	405.1	
68.4	CARBONDALE		SHALE	1.9	406.6	
66.5	CARBONDALE		CLAYSTONE	3.5	408.5	
63.0	CARBONDALE		SHALE	3.9	412.0	

MAPID: 18924523000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 4 QUARTERS/FOOTAGES: SE SE SE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.427473 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.463401 DATE COLLECTED: 7 / 28 / 1981

SURFACE ELEVATION (FT.): 482.0 LOGGED (FT.): 429.0 LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-681 WELL TYPE: Coal Test

COMMENT: GR, DENSITY, DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
482.0			UNCONSOLIDATED	36.0	0.0	GR AND DENSITY 0-71'
446.0	MODESTO		SHALE	14.5	36.0	
431.5	MODESTO		BLACK SHALE	3.0	50.5	
428.5	MODESTO		SHALE	16.0	53.5	
412.5	MODESTO		COAL	1.5	69.5	NON-MARINE ROOF
411.0	MODESTO		SHALE & SANDSTONE	139.0	71.0	DRILLER'S LOG 71-384'
272.0	MODESTO		SANDSTONE	90.0	210.0	
182.0			SHALE	54.0	300.0	
128.0	CARBONDALE	BANKSTON FORK	LIMESTONE	11.0	354.0	
117.0	CARBONDALE		SHALE	18.0	365.0	
99.0	CARBONDALE		LIMESTONE	1.0	383.0	
98.0	CARBONDALE		CALCAREOUS SHALE	2.1	384.0	CORE 384-429
95.9	CARBONDALE		LIMESTONE	3.2	386.1	
92.7	CARBONDALE		GRAY SHALE	6.3	389.3	
86.5	CARBONDALE	BRERETON	LIMESTONE	3.4	395.5	
83.1	CARBONDALE	ANNA	BLACK SHALE	2.7	398.9	
80.5	CARBONDALE	ANNA	CORE LOSS	0.5	401.5	
80.0	CARBONDALE	ANNA	BLACK SHALE	0.1	402.0	
79.9	CARBONDALE	HERRIN	COAL	5.6	402.1	
74.3	CARBONDALE	HERRIN	CLAYSTONE	0.2	407.7	
74.1	CARBONDALE	HERRIN	COAL	1.2	407.9	
73.0	CARBONDALE		CLAYSTONE	4.0	409.0	
69.0	CARBONDALE		LIMESTONE	8.3	413.0	
60.7	CARBONDALE		SHALE	0.7	421.3	
60.0	CARBONDALE		CLAYSTONE	3.6	422.0	
56.4	CARBONDALE		SHALE	3.4	425.6	

MAPID: 18924524000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 4 QUARTERS/FOOTAGES: NE SE SE NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.436531 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.472381 DATE COLLECTED: 7 / 29 / 1981

SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 411.0 LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-682 WELL TYPE: Coal Test

COMMENT: GR, DENSITY, DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.0			UNCONSOLIDATED	23.0	0.0	GR & DENSITY 0-54'
432.0			UNCLASSIFIED	13.0	23.0	
419.0	MODESTO		BLACK SHALE	2.0	36.0	
417.0	MODESTO		SHALE	14.5	38.0	
402.5	MODESTO		COAL	1.5	52.5	NON-MARINE ROOF
401.0	MODESTO		SHALE	126.0	54.0	DRILLER'S LOG 54- 362'
275.0	MODESTO		SANDSTONE	60.0	180.0	
215.0	MODESTO		SHALE & SANDSTONE	94.0	240.0	
121.0	MODESTO	PIASA	LIMESTONE	7.0	334.0	
114.0			SHALE	19.0	341.0	
95.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.2	360.0	CORE 362-413
88.8	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.7	366.2	
86.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	368.9	
84.1	CARBONDALE		GRAY SHALE	4.1	370.9	
80.0	CARBONDALE		LIMESTONE	0.9	375.0	
79.1	CARBONDALE		GRAY & BLACK SHALE	1.6	375.9	
77.5	CARBONDALE	BRERETON	LIMESTONE	5.2	377.5	
72.3	CARBONDALE	ANNA	BLACK SHALE	2.7	382.7	
69.6	CARBONDALE	HERRIN	COAL	5.7	385.4	
63.9	CARBONDALE	HERRIN	BLACK SHALE	0.2	391.1	
63.7	CARBONDALE	HERRIN	COAL	0.2	391.3	
63.6	CARBONDALE	HERRIN	BLACK SHALE	0.2	391.4	
63.4	CARBONDALE	HERRIN	COAL	1.3	391.6	
62.1	CARBONDALE		BLACK SHALE	0.2	392.9	
62.0	CARBONDALE		CLAYSTONE	4.8	393.0	CORE LOSS 394.7- 395'
57.2	CARBONDALE		SANDSTONE/SILTSTONE	7.2	397.8	
50.0	CARBONDALE		CLAYSTONE	6.0	405.0	

MAPID: 18924525000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 4 QUARTERS/FOOTAGES: 465' S line, 74' E line of SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.436818 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.464914 DATE COLLECTED: 5 / 15 / 1975

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 407.2 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-903 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOGS, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
465.0			UNCONSOLIDATED	16.5	0.0	DRILLER'S LOG 0-370'
448.5	BOND		SANDSTONE/SHALE	17.5	16.5	
431.0	BOND	CARTHAGE	LIMESTONE	8.5	34.0	
422.5	MODESTO		SHALE	7.5	42.5	
415.0	MODESTO		UNDERCLAY	2.5	50.0	
412.5	MODESTO		SANDSTONE/SHALE	238.5	52.5	
174.0	MODESTO		GRAY SHALE	52.0	291.0	
122.0	MODESTO	PIASA	LIMESTONE	9.5	343.0	
112.5	MODESTO		BLACK SHALE	0.5	352.5	
112.0	CARBONDALE	DANVILLE	COAL	3.0	353.0	
109.0	CARBONDALE		GRAY SHALE	10.0	356.0	
99.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.7	366.0	
91.3	CARBONDALE		GRAY SHALE	3.4	373.7	CORE REPORT 370-408'
87.9	CARBONDALE	CONANT	LIMESTONE	0.7	377.1	
87.2	CARBONDALE		CALCAREOUS SHALE	1.5	377.8	
85.7	CARBONDALE	JAMESTOWN	BLACK SHALE	0.1	379.3	"COAL LAMS-JAMESTOWN"
85.6	CARBONDALE		LIMESTONE	2.6	379.4	CHERT 381.4-381.6
83.0	CARBONDALE		CALCAREOUS SHALE	6.0	382.0	
77.0	CARBONDALE	BRERETON	LIMESTONE	1.9	388.0	
75.1	CARBONDALE		CALCAREOUS SHALE	0.1	389.9	
75.0	CARBONDALE	ANNA	BLACK SHALE	0.5	390.0	
74.5	CARBONDALE	HERRIN	COAL	7.6	390.5	COAL ANALYZED
66.9	CARBONDALE		UNDERCLAY	0.6	398.1	
66.4	CARBONDALE		CLAYSTONE & SILTSTONE	2.4	398.6	
64.0	CARBONDALE		SILTSTONE	2.4	401.0	
61.6	CARBONDALE		CLAYSTONE & SILTSTONE	0.4	403.4	
61.2	CARBONDALE		LIMESTONE	2.8	403.8	
58.4	CARBONDALE		CLAYSTONE & SILTSTONE	0.6	406.6	

MAPID: 18924526000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 4 QUARTERS/FOOTAGES: 1000' S line, 50' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.4274 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.465993 DATE COLLECTED: 9 / 20 / 1978

SURFACE ELEVATION (FT.): 477.0 LOGGED (FT.): 482.9 LOG TYPE: Other Core Study

SOURCE: CARTER OIL COMPANY 8W-988 WELL TYPE: Coal Test

COMMENT: CORE STUDY (CONTINUOUS CORE DRILL HOLE)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
131.3	MODESTO	PIASA	LIMESTONE	8.7	345.7	
122.6			SHALE	2.1	354.4	
120.5			CLAYSTONE	5.8	356.5	
114.7			SHALE	4.4	362.3	
110.3	CARBONDALE	BANKSTON FORK	LIMESTONE	0.9	366.7	
109.4	CARBONDALE	BANKSTON FORK	SHALE	2.1	367.6	
107.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	369.7	
104.5	CARBONDALE		SHALE WITH LIMESTONE	2.6	372.5	
101.9	CARBONDALE	CONANT	LIMESTONE	1.8	375.1	
100.1	CARBONDALE		SHALE	4.9	376.9	
95.2	CARBONDALE	JAMESTOWN	BLACK SHALE	0.4	381.8	DKGRY CALC & GYBLK CARB, W/ COAL LAMS
94.8	CARBONDALE		LIMESTONE	2.6	382.2	
92.2	CARBONDALE		SHALE	7.0	384.8	
85.2	CARBONDALE		LIMESTONE W/ SHALE	1.3	391.8	INTERVAL OF LS, SH ALL < 0.4' THICK
83.9	CARBONDALE	BRERETON	LIMESTONE	1.4	393.1	
82.5	CARBONDALE		SHALE	0.4	394.5	
82.1	CARBONDALE	HERRIN	COAL	5.8	394.9	
76.3	CARBONDALE	HERRIN	CLAYSTONE	0.3	400.7	BLUE BAND
76.1	CARBONDALE	HERRIN	COAL	1.0	400.9	
75.1	CARBONDALE		UNDERCLAY	1.1	401.9	
74.0	CARBONDALE		CLAYSTONE	3.3	403.0	
70.7	CARBONDALE		SILTSTONE	6.0	406.3	
64.7	CARBONDALE		SHALE WITH LIMESTONE	3.1	412.3	
61.6	CARBONDALE		CLAYSTONE	5.8	415.4	
55.8	CARBONDALE		SHALE	3.8	421.2	
52.0	CARBONDALE		SILTSTONE	15.0	425.0	
37.0	CARBONDALE		SANDSTONE	17.6	440.0	
19.4	CARBONDALE		SHALE	25.3	457.6	

MAPID: 18901192000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 5 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.458326 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.464275 DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 1035.0 LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
11.0	CARBONDALE	SPRINGFIELD	COAL	-	430.0	
-93.0	CARBONDALE	COLCHESTER	COAL	-	534.0	
-594.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1035.0	

MAPID: 18901192000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 5 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.458326 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.464275 DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 404.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
89.0	MODESTO	PIASA	LIMESTONE	10.0	352.0	
79.0	CARBONDALE		SHALE	12.0	362.0	
67.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	374.0	
63.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	378.0	
61.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	380.0	
59.0	CARBONDALE	LAWSON	SHALE	4.0	382.0	
55.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	4.0	386.0	
51.0	CARBONDALE		SHALE	2.0	390.0	
49.0	CARBONDALE	BRERETON	LIMESTONE	2.0	392.0	
47.0	CARBONDALE	ANNA	BLACK SHALE	4.0	394.0	
43.0	CARBONDALE	HERRIN	BLACK SHALE	6.0	398.0	

MAPID: 18924527000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 5 QUARTERS/FOOTAGES: 102' N line, 133' W line of NW NE NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.449939 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.477749 DATE COLLECTED: 8 / 6 / 1970

SURFACE ELEVATION (FT.): 424.0 LOGGED (FT.): 371.5 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WF-392 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
424.0			UNCONSOLIDATED	27.0	0.0	DRILLER'S LOG 0-330
397.0			SANDY SHALE	74.0	27.0	
323.0			SANDSTONE	72.0	101.0	
251.0			GRAY SHALE	5.0	173.0	
246.0			SANDSTONE	6.0	178.0	
240.0			SANDY LIMESTONE	1.5	184.0	
238.5			SANDSTONE	32.5	185.5	
206.0			SANDY LIMESTONE	1.0	218.0	
205.0			SHALE	22.0	219.0	
183.0			LIMESTONE	2.0	241.0	
181.0			SHALE	61.3	243.0	W/ LS SMS
119.7	MODESTO	PIASA	LIMESTONE	6.7	304.3	
113.0			SHALE	19.0	311.0	
94.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	330.0	CORE 330-371.5
91.0	CARBONDALE		SHALE	3.0	333.0	
88.0	CARBONDALE		LIMESTONE	1.8	336.0	
86.2	CARBONDALE		SHALE	5.3	337.8	
81.0	CARBONDALE	BRERETON	LIMESTONE	4.0	343.0	
77.0	CARBONDALE	ANNA	BLACK SHALE	3.5	347.0	
73.5	CARBONDALE	HERRIN	COAL	6.1	350.5	COAL ANALYZED
67.4	CARBONDALE	HERRIN	CLAYSTONE	0.2	356.6	
67.2	CARBONDALE	HERRIN	COAL	0.8	356.8	
66.4	CARBONDALE		UNDERCLAY	6.7	357.6	
59.7	CARBONDALE		CLAYSTONE & SILTSTONE	3.7	364.3	
56.0	CARBONDALE		SHALE	3.5	368.0	

MAPID: 18924528000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 5 QUARTERS/FOOTAGES: 155' S line, 2200' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.456332 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.463771 DATE COLLECTED: 5 / 10 / 1972

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 418.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-591 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.0			UNCONSOLIDATED	42.0	0.0	DRILLER'S LOG 0-380
403.0	BOND		SHALE	8.0	42.0	
395.0	BOND	CARTHAGE	LIMESTONE	5.5	50.0	
389.5	MODESTO		BLACK SHALE	12.0	55.5	
377.5	MODESTO		COAL	1.0	67.5	
376.5	MODESTO		SHALE	12.5	68.5	
364.0	MODESTO		SANDSTONE	32.0	81.0	
332.0	MODESTO		SHALE	62.0	113.0	
270.0	MODESTO		SANDSTONE	88.0	175.0	250'-LOSING WATER IN HOLE
182.0	MODESTO		CALCAREOUS SANDSTONE	8.0	263.0	
174.0	MODESTO		SHALE WITH LIMESTONE	4.0	271.0	
170.0	MODESTO		SANDY SHALE	54.0	275.0	
116.0	MODESTO		BLACK SHALE	0.5	329.0	
115.5	MODESTO		SHALE	22.5	329.5	
93.0	MODESTO	PIASA	LIMESTONE	4.5	352.0	
88.5	MODESTO		GRAY SHALE	8.0	356.5	
80.5	CARBONDALE	DANVILLE	COAL	0.5	364.5	
80.0	CARBONDALE		GRAY SHALE	10.5	365.0	
69.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	375.5	
66.0	CARBONDALE		GRAY SHALE	9.0	379.0	CORE 380-418'
57.0	CARBONDALE		BLACK SHALE	0.9	388.0	
56.1	CARBONDALE	CONANT	LIMESTONE	0.9	388.9	
55.2	CARBONDALE		CALCAREOUS SHALE	1.6	389.8	
53.6	CARBONDALE		BLACK SHALE	0.2	391.4	
53.4	CARBONDALE	JAMESTOWN	COAL	0.2	391.6	
53.2	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	5.2	391.8	
48.0	CARBONDALE	ANNA	BLACK SHALE	2.7	397.0	
45.3	CARBONDALE	HERRIN	COAL	8.3	399.7	COAL ANALYZED
37.0	CARBONDALE		UNDERCLAY	3.2	408.0	
33.8	CARBONDALE		LIMESTONE & CONGLOMERATE	6.8	411.2	

MAPID: 18902647000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 6 QUARTERS/FOOTAGES: 1146' S line, 81' W line of NW SE

QUADRANGLE: ADDIEVILLE

LONGITUDE: -89.472977

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.470325

DATE COLLECTED: 6 / 21 / 1968

SURFACE ELEVATION (FT.): 446.8

LOGGED (FT.): 407.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 63-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8549

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
81.0	CARBONDALE	DANVILLE	COAL	2.5	365.8
44.6	CARBONDALE	HERRIN	COAL	8.1	402.2

MAPID: 18902647000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 6 QUARTERS/FOOTAGES: 1146' S line, 81' W line of NW SE

QUADRANGLE: ADDIEVILLE

LONGITUDE: -89.472977

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.470325

DATE COLLECTED:

SURFACE ELEVATION (FT.): 447.0

LOGGED (FT.): 402.1

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 63-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN COMMENT	
98.0	MODESTO	PIASA	LIMESTONE	6.8	349.0	
91.2	MODESTO		GRAY SHALE	7.5	355.8	
83.7	CARBONDALE	DANVILLE	COAL	2.5	363.3	
81.2	CARBONDALE		GRAY SHALE	1.5	365.8	
79.7	CARBONDALE		CALCAREOUS SHALE	5.5	367.3	
74.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	372.8	UPPER BENCH
70.9	CARBONDALE	BANKSTON FORK	GRAY SHALE	0.7	376.1	SHALE PARTING
70.2	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	0.8	376.8	LOWER BENCH
69.4	CARBONDALE	LAWSON	GRAY SHALE	0.6	377.6	
68.8	CARBONDALE	CONANT	LIMESTONE W/ SHALE	2.9	378.2	
65.8	CARBONDALE	JAMESTOWN	DARK GRAY SHALE	3.5	381.2	
62.3	CARBONDALE		CALCAREOUS SHALE	3.6	384.7	
58.7	CARBONDALE	BRERETON	LIMESTONE	3.1	388.3	
55.7	CARBONDALE	ANNA	DARK GRAY SHALE	2.7	391.3	
53.0	CARBONDALE	HERRIN	COAL	8.1	394.0	

MAPID: 18924529000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 6 QUARTERS/FOOTAGES: 1375' S line, 260' W line of SE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.467099 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.468421 DATE COLLECTED: 5 / 5 / 1975

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 403.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-904 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
435.0			UNCONSOLIDATED	42.0	0.0	DRILLER'S LOG 0-380'
393.0	MODESTO		GRAY & BLACK SHALE	7.0	42.0	
386.0	MODESTO		GRAY SHALE	11.0	49.0	
375.0	MODESTO		COAL	0.5	60.0	
374.5	MODESTO		SHALE	11.5	60.5	
363.0	MODESTO		SANDSTONE	16.0	72.0	
347.0	MODESTO		SHALE	48.0	88.0	
299.0	MODESTO		SANDY SHALE	49.0	136.0	
250.0	MODESTO	TRIVOLI	SANDSTONE	58.0	185.0	
192.0	MODESTO		LIMESTONE AND SANDSTONE	2.5	243.0	
189.5	MODESTO		SANDY SHALE	69.5	245.5	
120.0	MODESTO		SHALE	22.0	315.0	BK SHALE AT 315-315.5' 326-326.5
98.0	MODESTO	PIASA	LIMESTONE	9.0	337.0	
89.0	CARBONDALE		BLACK SHALE	1.5	346.0	
87.5	CARBONDALE	DANVILLE	COAL	0.5	347.5	
87.0	CARBONDALE		UNDERCLAY	1.0	348.0	
86.0	CARBONDALE		SHALE	8.0	349.0	
78.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	357.0	
70.0	CARBONDALE		SHALY LIMESTONE	1.0	365.0	
69.0	CARBONDALE		GRAY SHALE	1.9	366.0	
67.1	CARBONDALE		LIMESTONE	0.7	367.9	
66.4	CARBONDALE		CALCAREOUS SHALE	2.2	368.6	
64.2	CARBONDALE		LIMESTONE	0.6	370.8	
63.6	CARBONDALE		CALCAREOUS SHALE	4.6	371.4	
59.0	CARBONDALE	BRERETON	LIMESTONE	2.8	376.0	
56.2	CARBONDALE	ANNA	BLACK SHALE	1.2	378.8	
55.0	CARBONDALE	HERRIN	COAL	5.8	380.0	COAL ANALYZED, COAL CORE 380-388'
49.2	CARBONDALE	HERRIN	CLAYSTONE	0.3	385.8	
48.8	CARBONDALE	HERRIN	BONE COAL	0.1	386.2	
48.8	CARBONDALE	HERRIN	CLAYSTONE	0.4	386.2	"BLUE BAND"
48.4	CARBONDALE	HERRIN	COAL	1.4	386.6	
47.0	CARBONDALE		UNDERCLAY	2.0	388.0	CORE LOSS 388.1-389', DRILLER'S LOG TO TD
45.0	CARBONDALE		LIMESTONE & CONGLOMERATE	6.2	390.0	
38.8	CARBONDALE		GRAY SHALE	2.4	396.2	
36.4	CARBONDALE		LIMESTONE	1.3	398.6	
35.1	CARBONDALE		LIMESTONE	2.6	399.9	

MAPID: 18901193000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 7 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.472102 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.455334 DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 980.0 LOG TYPE: Electric Log

SOURCE: GOLDSCHMIDT ETAL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
27.0	CARBONDALE	SPRINGFIELD	COAL	-	425.0
-66.0	CARBONDALE	COLCHESTER	COAL	-	518.0
-528.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	980.0

MAPID: 18901193000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 7 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.472102 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.455334 DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 392.0 LOG TYPE: Electric Log

SOURCE: GOOD DESCRIPTION WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
117.0	MODESTO	PIASA	LIMESTONE	6.0	335.0
111.0	MODESTO		SHALE	8.0	341.0
103.0	CARBONDALE	DANVILLE	COAL	2.0	349.0
101.0	CARBONDALE		SHALE	9.0	351.0
92.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	2.0	360.0
90.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	362.0
89.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	363.0
85.0	CARBONDALE	LAWSON	SHALE	2.0	367.0
83.0	CARBONDALE	CONANT	LIMESTONE	3.0	369.0
80.0	CARBONDALE		SHALE	4.0	372.0
76.0	CARBONDALE	BRERETON	LIMESTONE	5.0	376.0
71.0	CARBONDALE	ANNA	DARK GRAY SHALE	4.0	381.0
67.0	CARBONDALE	HERRIN	COAL	7.0	385.0

MAPID: 18900108000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 8 QUARTERS/FOOTAGES: 1700' S line, 350' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.446828 GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.453293 DATE COLLECTED: 0 / 0 / 1938

SURFACE ELEVATION (FT.): 461.6 LOGGED (FT.): 1499.0 LOG TYPE:

SOURCE: COX ETAL WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
61.6	CARBONDALE	HERRIN	COAL	-	400.0	

MAPID: 18902648000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 8 QUARTERS/FOOTAGES: 27' S line, 15' W line of NW SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.463923 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.452546 DATE COLLECTED: 5 / 29 / 1968

SURFACE ELEVATION (FT.): 456.7 LOGGED (FT.): 480.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 59-OK WELL TYPE: Coal Test

COMMENT: CORE C-8545

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
98.9	CARBONDALE	DANVILLE	COAL	2.3	357.8	
60.2	CARBONDALE	HERRIN	COAL	7.0	396.5	

MAPID: 18902648000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 8 QUARTERS/FOOTAGES: 27' S line, 15' W line of NW SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.463923

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.452546

DATE COLLECTED:

SURFACE ELEVATION (FT.): 457.0 LOGGED (FT.): 399.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 59-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
113.7	MODESTO	PIASA	LIMESTONE AND SANDSTONE	4.4	343.3	
109.3	MODESTO		SHALE	7.8	347.7	
101.5	CARBONDALE	DANVILLE	COAL	2.3	355.5	
99.2	CARBONDALE		SHALE	8.9	357.8	
90.2	CARBONDALE	GALUM	LIMESTONE	1.9	366.8	
88.3	CARBONDALE		CALCAREOUS SHALE	1.0	368.7	
87.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	369.6	UPPER BENCH
85.2	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	3.3	371.8	SHALE PARTING
81.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	375.1	LOWER BENCH
79.6	CARBONDALE	LAWSON	DARK GRAY SHALE	3.8	377.4	
75.8	CARBONDALE	CONANT	CALCAREOUS SHALE	2.4	381.2	
73.4	CARBONDALE		DARK GRAY SHALE	0.3	383.6	
73.1	CARBONDALE	BRERETON	LIMESTONE	4.8	383.9	
68.3	CARBONDALE	ENERGY	CARBONACEOUS SHALE	2.3	388.7	
66.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	8.0	391.0	

MAPID: 18902649000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 8 QUARTERS/FOOTAGES: 29' S line, 26' E line of NE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.44567

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.452326

DATE COLLECTED: 6 / 6 / 1968

SURFACE ELEVATION (FT.): 464.9 LOGGED (FT.): 485.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 60-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8546

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.6			COAL	1.2	53.3	
75.9	CARBONDALE	HERRIN	COAL	5.3	389.0	

MAPID: 1892453000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 8 QUARTERS/FOOTAGES: 12' N line, 50' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.463699 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.463238 DATE COLLECTED: 9 / 7 / 1967

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 380.1 LOG TYPE: Other Core Study

SOURCE: CARTER OIL COMPANY WF-54 WELL TYPE: Coal Test

COMMENT: CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
435.0			UNCLASSIFIED	355.9	0.0	
79.1	CARBONDALE		LIMESTONE	1.6	355.9	CORE REPORT 355.9-380.1
77.5	CARBONDALE		GRAY SHALE	1.1	357.5	CALCAREOUS
76.4	CARBONDALE	JAMESTOWN	COAL	0.3	358.6	
76.1	CARBONDALE		LIMESTONE	1.2	358.9	
75.0	CARBONDALE		SHALE	2.0	360.0	
73.0	CARBONDALE	BRERETON	LIMESTONE	4.4	362.0	
68.6	CARBONDALE	ANNA	BLACK SHALE	1.5	366.4	
67.1	CARBONDALE	HERRIN	COAL	5.5	367.9	COAL ANALYZED
61.6	CARBONDALE	HERRIN	CLAY & COAL	0.9	373.4	MANY PARTINGS, MAX OF 2.5" THICKNESS
60.7	CARBONDALE	HERRIN	COAL	1.7	374.3	
59.0	CARBONDALE		BLACK CLAYSTONE	0.1	376.0	
58.9	CARBONDALE		CORE LOSS	2.7	376.1	
56.2	CARBONDALE		CLAYSTONE	1.3	378.8	W/LS NODULES

MAPID: 18924531000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 8 QUARTERS/FOOTAGES: 1275' S line, 45' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.445639 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.451849 DATE COLLECTED: 12 / 5 / 1967

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 396.8 LOG TYPE: Other Core Study

SOURCE: CARTER OIL COMPANY WF-89 WELL TYPE: Coal Test

COMMENT: CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
465.0			UNCLASSIFIED	361.0	0.0	
104.0			LIMESTONE	0.9	361.0	
103.1			GRAY SHALE	1.1	361.9	
102.0			LIMESTONE	2.9	363.0	
99.1			GRAY SHALE	0.7	365.9	
98.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	366.6	
93.6	CARBONDALE		SHALE	4.2	371.4	
89.4	CARBONDALE		BLACK SHALE	0.6	375.6	
88.8	CARBONDALE		LIMESTONE	0.7	376.2	
88.1	CARBONDALE	JAMESTOWN	BLACK SHALE	1.9	376.9	
86.2	CARBONDALE		SHALE/COAL	0.3	378.8	CARBONACEOUS SHALE
85.9	CARBONDALE		LIMESTONE	0.6	379.1	
85.3	CARBONDALE		CALCAREOUS SHALE	0.5	379.7	
84.8	CARBONDALE	BRERETON	LIMESTONE	2.4	380.2	
82.4	CARBONDALE	ANNA	BLACK SHALE	1.4	382.6	
81.0	CARBONDALE	ANNA	SHALE	0.3	384.0	
80.7	CARBONDALE	ANNA	BLACK SHALE	0.7	384.3	
80.0	CARBONDALE	HERRIN	COAL	2.5	385.0	COAL ANALYZED
77.5	CARBONDALE	HERRIN	CLAY & COAL	0.1	387.5	
77.5	CARBONDALE	HERRIN	COAL	0.9	387.5	
76.6	CARBONDALE	HERRIN	CLAYSTONE	0.0	388.4	
76.5	CARBONDALE	HERRIN	COAL	1.8	388.5	
74.8	CARBONDALE	HERRIN	CLAY & COAL	0.2	390.2	
74.6	CARBONDALE	HERRIN	COAL	0.3	390.4	
74.3	CARBONDALE	HERRIN	CLAY & COAL	0.4	390.7	
73.9	CARBONDALE	HERRIN	COAL	1.3	391.1	
72.6	CARBONDALE		UNDERCLAY	3.1	392.4	
69.5	CARBONDALE		LIMESTONE	0.7	395.5	
68.8	CARBONDALE		SHALE	0.6	396.2	

MAPID: 18924532000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 8 QUARTERS/FOOTAGES: 60' S line, 62' E line of NE SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.455482 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.452756 DATE COLLECTED: 4 / 28 / 1975

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 396.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-902 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0			UNCONSOLIDATED	27.5	0.0	DRILLER'S LOG 0-369
432.5	BOND	CARTHAGE	LIMESTONE	5.5	27.5	
427.0	MODESTO		GRAY SHALE	12.0	33.0	
415.0	MODESTO		COAL	1.5	45.0	
413.5	MODESTO		GRAY SHALE	9.5	46.5	
404.0	MODESTO		SANDSTONE	21.0	56.0	
383.0	MODESTO		SHALE & SANDSTONE	93.0	77.0	68
290.0	MODESTO	TRIVOLI	SANDSTONE	68.0	170.0	
222.0	MODESTO		LIMESTONE	4.5	238.0	
217.5	MODESTO		GRAY SHALE	92.5	242.5	
125.0	CARBONDALE	DANVILLE	COAL	1.0	335.0	BONY
124.0	CARBONDALE		SHALE	18.0	336.0	
106.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	354.0	
101.5	CARBONDALE		SHALE	0.5	358.5	
101.0	CARBONDALE		LIMESTONE	2.0	359.0	
99.0	CARBONDALE		GRAY SHALE	6.0	361.0	TRACE OF JAMESTOWN COAL
93.0	CARBONDALE	BRERETON	LIMESTONE	3.8	367.0	
89.2	CARBONDALE	ANNA	BLACK SHALE	3.5	370.8	CORE REPORT 369-396
85.7	CARBONDALE	HERRIN	COAL	6.4	374.3	COAL ANALYZED
79.3	CARBONDALE	HERRIN	CLAYSTONE	0.2	380.7	BLUE BAND
79.2	CARBONDALE	HERRIN	COAL	1.7	380.8	
77.5	CARBONDALE		UNDERCLAY	0.7	382.5	W/ PYRITE AND COAL
76.8	CARBONDALE		UNDERCLAY	0.8	383.2	CORE LOSS 383.5-384.0
76.0	CARBONDALE		LIMESTONE	4.0	384.0	
72.0	CARBONDALE		GREEN SHALE	5.0	388.0	
67.0	CARBONDALE		SHALE WITH LIMESTONE	3.0	393.0	

MAPID: 18902650000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 9 QUARTERS/FOOTAGES: 34' N line, 1287' W line of SE

QUADRANGLE: ADDIEVILLE

LONGITUDE: -89.431876

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.455825

DATE COLLECTED: 6 / 12 / 1968

SURFACE ELEVATION (FT.): 475.7

LOGGED (FT.): 465.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 61-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8547

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
141.9	CARBONDALE	DANVILLE	COAL	1.0	333.8
100.4	CARBONDALE	HERRIN	COAL	6.3	375.3
22.0	CARBONDALE	HOUCHIN CREEK	COAL	0.9	453.7

MAPID: 18902650000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 9 QUARTERS/FOOTAGES: 34' N line, 1287' W line of SE

QUADRANGLE: ADDIEVILLE

LONGITUDE: -89.431876

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.455825

DATE COLLECTED:

SURFACE ELEVATION (FT.): 476.0

LOGGED (FT.): 375.3

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 61-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
149.6	MODESTO	PIASA	LIMESTONE/UNDERCLAY	11.9	326.4
137.7	MODESTO		GRAY SHALE	2.0	338.3
135.7	CARBONDALE	DANVILLE	COAL	1.0	340.3
134.7	CARBONDALE		GRAY SHALE	2.8	341.3
131.9	CARBONDALE		CALCAREOUS SHALE	0.9	344.1
131.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	344.9 UPPER BENCH
127.8	CARBONDALE	BANKSTON FORK	GRAY SHALE	0.5	348.2 SHALE PARTING
127.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.9	348.7 LOWER BENCH
124.3	CARBONDALE	LAWSON	CALCAREOUS SHALE	0.6	351.7
123.7	CARBONDALE	LAWSON	DARK GRAY SHALE	2.1	352.3
121.6	CARBONDALE	LAWSON	CALCAREOUS SHALE	3.5	354.4
118.1	CARBONDALE	LAWSON	DARK GRAY SHALE	2.4	357.9
115.7	CARBONDALE		CALCAREOUS SHALE	7.5	360.3
108.2	CARBONDALE	BRERETON	LIMESTONE	1.2	367.8
107.0	CARBONDALE	HERRIN	COAL	6.3	369.0

MAPID: 18924533000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 9 QUARTERS/FOOTAGES: 70' S line, 60' W line of SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.436457 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.448821 DATE COLLECTED: 10 / 6 / 1972

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 379.5 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY 8W-648 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
475.0			UNCONSOLIDATED	19.0	0.0	DRILLER'S LOG 0-339'
456.0	BOND	CARTHAGE	LIMESTONE	6.0	19.0	
450.0	MODESTO		GRAY SHALE	22.0	25.0	
428.0	MODESTO		COAL	1.5	47.0	
426.5	MODESTO		UNDERCLAY	1.0	48.5	
425.5	MODESTO		GRAY SHALE	10.5	49.5	
415.0	MODESTO		SANDSTONE	7.5	60.0	
407.5	MODESTO		SHALE	116.5	67.5	
291.0	MODESTO		SANDSTONE	27.0	184.0	
264.0	MODESTO		COAL	1.0	211.0	
263.0	MODESTO		SANDSTONE	3.0	212.0	
260.0	MODESTO		SHALE	98.5	215.0	
161.5	MODESTO	PIASA	LIMESTONE	6.5	313.5	
155.0			SHALE	2.0	320.0	
153.0			DARK SHALE	1.5	322.0	
151.5			SHALE	10.0	323.5	
141.5	CARBONDALE	BANKSTON FORK	LIMESTONE	7.3	333.5	CORE REPORT 339-379.2'
134.2	CARBONDALE		SHALE	3.7	340.8	
130.5	CARBONDALE		LIMESTONE	0.4	344.5	
130.1	CARBONDALE		CALCAREOUS SHALE	2.8	344.9	
127.3	CARBONDALE	JAMESTOWN	COAL	0.2	347.7	
127.1	CARBONDALE		LIMESTONE	0.9	347.9	
126.2	CARBONDALE		GRAY SHALE	1.7	348.8	
124.5	CARBONDALE	BRERETON	LIMESTONE	2.7	350.5	
121.8	CARBONDALE	ANNA	BLACK SHALE	1.5	353.2	
120.3	CARBONDALE	HERRIN	COAL	7.0	354.7	COAL ANALYZED
113.3	CARBONDALE		UNDERCLAY	3.5	361.7	
109.8	CARBONDALE		LIMESTONE	3.3	365.2	
106.5	CARBONDALE		SANDSTONE	6.6	368.5	
99.9	CARBONDALE		SHALE	3.2	375.1	
96.7	CARBONDALE		SILTSTONE	1.2	378.3	

MAPID: 18924534000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 9 QUARTERS/FOOTAGES: NE SW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.431927 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.458017 DATE COLLECTED: 8 / 3 / 1981

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 405.0 LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-683 WELL TYPE: Coal Test

COMMENT: GR, DENSITY, DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
465.0			UNCONSOLIDATED	27.0	0.0	GR, DENSITY 0-56.5'
438.0			UNCLASSIFIED	11.0	27.0	
427.0	MODESTO		BLACK SHALE	2.0	38.0	
425.0	MODESTO		SHALE	15.0	40.0	
410.0	MODESTO		COAL	1.5	55.0	NON-MARINE ROOF
408.5	MODESTO		SHALE & SANDSTONE	183.5	56.5	DRILLER'S REPORT 56.5- 358
225.0	MODESTO		SANDSTONE	10.0	240.0	
215.0	MODESTO		GRAY SHALE	82.0	250.0	
133.0	MODESTO		LIMESTONE	8.0	332.0	
125.0	MODESTO		GRAY SHALE	7.0	340.0	
118.0	CARBONDALE	DANVILLE	COAL	1.0	347.0	
117.0	CARBONDALE		GRAY SHALE	8.0	348.0	
109.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	356.0	
106.3	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	4.8	358.7	CORE REPORT 358- 405'
101.5	CARBONDALE		GRAY SHALE	3.5	363.5	
98.1	CARBONDALE		LIMESTONE	0.3	366.9	
97.8	CARBONDALE		GRAY SHALE	3.1	367.2	
94.7	CARBONDALE		BLACK SHALE	0.7	370.3	
94.1	CARBONDALE		LIMESTONE	0.6	370.9	
93.5	CARBONDALE		GRAY SHALE	3.2	371.5	
90.4	CARBONDALE	BRERETON	LIMESTONE	2.0	374.6	
88.4	CARBONDALE	ANNA	BLACK SHALE	0.7	376.6	
87.7	CARBONDALE	HERRIN	COAL	5.1	377.3	
82.6	CARBONDALE	HERRIN	COAL/CLAYSTONE	1.2	382.4	15% CLAYSTONE
81.4	CARBONDALE	HERRIN	COAL	0.9	383.6	
80.6	CARBONDALE		UNDERCLAY	3.3	384.4	
77.3	CARBONDALE		LIMESTONE	6.2	387.7	CORE LOSS 389.2- 390'
71.1	CARBONDALE		SANDSTONE	1.0	393.9	
70.2	CARBONDALE		LIMESTONE	1.1	394.8	
69.1	CARBONDALE		SHALE	1.4	395.9	
67.7	CARBONDALE		LIMESTONE	1.2	397.3	
66.6	CARBONDALE		CLAYSTONE	3.0	398.4	
63.6	CARBONDALE		SANDSTONE	3.6	401.4	

MAPID: 18900069000C **VERSION:** 1 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 10 **QUARTERS/FOOTAGES:** 2700' S line, 425' E line
QUADRANGLE: ADDIEVILLE **LONGITUDE:** -89.409946 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.45631 **DATE COLLECTED:** 0 / 0 / 1936
SURFACE ELEVATION (FT.): 453.5 **LOGGED (FT.):** 1320.0 **LOG TYPE:**
SOURCE: FRICKE R M **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
69.5	CARBONDALE	HERRIN	COAL	6.0	384.0	

MAPID: 18900572000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 10 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: ADDIEVILLE **LONGITUDE:** -89.421396 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.462395 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 477.0 **LOGGED (FT.):** 2678.0 **LOG TYPE:** Electric Log
SOURCE: GULF REFINING CO-EPD **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
107.0	CARBONDALE	SPRINGFIELD	COAL	-	370.0	
6.0	CARBONDALE	COLCHESTER	COAL	-	471.0	
-575.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1052.0	
-2161.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2638.0	TOP OF NEW ALBANY
-2169.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2646.0	
-2201.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2678.0	BASE OF NEW ALBANY

MAPID: 18900572000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 10 QUARTERS/FOOTAGES: NW NE NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.421396

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.462395

DATE COLLECTED:

SURFACE ELEVATION (FT.): 477.0

LOGGED (FT.): 350.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
167.0	MODESTO	PIASA	LIMESTONE	7.0	310.0
160.0	CARBONDALE		SHALE	15.0	317.0
145.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	332.0
142.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	335.0
141.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	336.0
138.0	CARBONDALE	LAWSON	SHALE	4.0	339.0
134.0	CARBONDALE	CONANT	LIMESTONE	3.0	343.0
131.0	CARBONDALE		SHALE	3.0	346.0
128.0	CARBONDALE	BRERETON	LIMESTONE	3.0	349.0
125.0	CARBONDALE	ANNA	BLACK SHALE	2.0	352.0
133.0	CARBONDALE	HERRIN	COAL	6.0	344.0

MAPID: 18924535000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 10 QUARTERS/FOOTAGES: 20' N line, 63' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.408683 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.463238 DATE COLLECTED: 9 / 12 / 1967

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 339.0 LOG TYPE: Multiple log types

SOURCE: HUMBLE OIL CO. WF-55 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	35.0	0.0	DRILLER'S LOG 0-307.3
415.0			UNCLASSIFIED	6.0	35.0	
409.0			SHALE & SANDSTONE	99.0	41.0	
310.0			SANDSTONE	50.0	140.0	
260.0			SHALY LIMESTONE	2.0	190.0	
258.0			SHALE & SANDSTONE	88.5	192.0	
169.5			COAL	0.5	280.5	
169.0			SHALE	6.0	281.0	
163.0			LIMESTONE	8.0	287.0	
155.0	CARBONDALE		BLACK SHALE	2.0	295.0	
153.0	CARBONDALE		SHALE	11.0	297.0	CORE 307.3-TD
142.0	CARBONDALE		LIMESTONE	2.9	308.0	
139.1	CARBONDALE		GRAY SHALE	0.4	310.9	
138.7	CARBONDALE		LIMESTONE	8.5	311.3	
130.3	CARBONDALE		CALCAREOUS SHALE	3.9	319.7	
126.4	CARBONDALE	BRERETON	LIMESTONE	4.9	323.6	
121.5	CARBONDALE	HERRIN	COAL	6.5	328.5	COAL ANALYZED SANDY
115.0	CARBONDALE		UNDERCLAY	3.0	335.0	
112.1	CARBONDALE		SANDSTONE	1.1	337.9	

MAPID: 18924536000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 10 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.422154 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.45615 DATE COLLECTED: 10 / 27 / 1970

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 388.6 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WF-412 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
475.0			UNCONSOLIDATED	17.0	0.0	DRILLER'S LOG 0-346
458.0	BOND		SHALE	8.7	17.0	
449.3	BOND	CARTHAGE	LIMESTONE	8.3	25.7	
441.0	MODESTO		GRAY SHALE	25.0	34.0	
416.0	MODESTO		BLACK SHALE	1.5	59.0	
414.5	MODESTO		COAL	0.8	60.5	
413.7	MODESTO		SHALE	143.8	61.3	
270.0	MODESTO		SANDSTONE	30.0	205.0	
240.0	MODESTO		SILTSTONE	36.0	235.0	
204.0	MODESTO		SHALE	51.0	271.0	
153.0	MODESTO	PIASA	LIMESTONE	8.0	322.0	
145.0	MODESTO		GRAY SHALE	4.0	330.0	
141.0	CARBONDALE	DANVILLE	COAL	0.3	334.0	
140.7	CARBONDALE		SHALE	9.3	334.3	
131.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	343.5	
129.5	CARBONDALE	BANKSTON FORK	SHALE	2.9	345.5	CORE REPORT 346-388.6
126.6	CARBONDALE	BANKSTON FORK	LIMESTONE	1.9	348.4	
124.7	CARBONDALE		GRAY SHALE	2.4	350.3	
122.3	CARBONDALE		BLACK SHALE	2.6	352.7	
119.7	CARBONDALE	JAMESTOWN	COAL	0.2	355.3	
119.5	CARBONDALE		GRAY SHALE	0.4	355.5	
119.1	CARBONDALE		LIMESTONE	0.3	355.9	
118.8	CARBONDALE		CALCAREOUS SHALE	7.6	356.2	
111.2	CARBONDALE	BRERETON	LIMESTONE	3.0	363.8	
108.2	CARBONDALE	HERRIN	COAL	5.4	366.8	COAL ANALYZED
102.8	CARBONDALE	HERRIN	CLAYSTONE	0.2	372.2	
102.7	CARBONDALE	HERRIN	COAL	1.0	372.3	
101.7	CARBONDALE		CORE LOSS	2.2	373.3	
99.5	CARBONDALE		CLAYSTONE	1.5	375.5	W/LS NODS
98.0	CARBONDALE		LIMESTONE	0.4	377.0	
97.6	CARBONDALE		SANDY SHALE	3.7	377.4	
93.9	CARBONDALE		LIMESTONE	7.2	381.1	
86.7	CARBONDALE		SHALE	0.3	388.3	

MAPID: 18902651000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 11 QUARTERS/FOOTAGES: 1111' N line, 15' W line of SW NW

QUADRANGLE: ADDIEVILLE

LONGITUDE: -89.408407

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.45675

DATE COLLECTED: 6 / 18 / 1968

SURFACE ELEVATION (FT.): 447.6

LOGGED (FT.): 394.5

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 62-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8548

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
57.3	CARBONDALE	HERRIN	COAL	6.3	390.3

MAPID: 18924537000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 11 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.393037 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.460685 DATE COLLECTED: 7 / 15 / 1968

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 406.8 LOG TYPE: Other Core Study

SOURCE: CARTER OIL COMPANY WF-143 WELL TYPE: Coal Test

COMMENT: CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			UNCLASSIFIED	310.0	0.0	
130.0	MODESTO		GRAY SHALE	28.0	310.0	
102.0	MODESTO		BLACK SHALE	3.8	338.0	
98.2	MODESTO		COAL	0.7	341.8	
97.5	MODESTO		GRAY SHALE	6.6	342.5	
90.9	MODESTO		SILTSTONE	1.9	349.1	
89.0	MODESTO		BLACK SHALE	2.0	351.0	
87.0	CARBONDALE	DANVILLE	COAL	1.1	353.0	
85.9	CARBONDALE		UNDERCLAY	2.7	354.1	
83.2	CARBONDALE		CALCAREOUS SHALE	13.4	356.8	
69.8	CARBONDALE	BANKSTON FORK	LIMESTONE	7.8	370.2	
62.0	CARBONDALE		BLACK SHALE	2.8	378.0	
59.2	CARBONDALE	CONANT	LIMESTONE	3.8	380.8	
55.4	CARBONDALE	JAMESTOWN	COAL	0.4	384.6	
55.0	CARBONDALE		BLACK SHALE	2.8	385.0	
52.2	CARBONDALE	BRERETON	LIMESTONE	2.4	387.8	
49.8	CARBONDALE	ANNA	BLACK SHALE	2.0	390.2	
47.8	CARBONDALE	HERRIN	COAL	3.8	392.2	
44.0	CARBONDALE		PYRITE	0.0	396.0	
44.0	CARBONDALE	HERRIN	COAL	1.8	396.0	
42.2	CARBONDALE	HERRIN	SHALE	0.1	397.8	
42.0	CARBONDALE	HERRIN	COAL	0.6	398.0	
41.4	CARBONDALE		GRAY SHALE	1.4	398.6	
40.0	CARBONDALE		SANDSTONE	1.3	400.0	
38.7	CARBONDALE		SHALE	3.1	401.3	W/ LS NODULES
35.6	CARBONDALE		SANDSTONE	2.4	404.4	

MAPID: 18900109000C **VERSION:** 1 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 350' S line, 680' E line
QUADRANGLE: HOYLETON **LONGITUDE:** -89.37299 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.44995 **DATE COLLECTED:** 0 / 0 / 1938
SURFACE ELEVATION (FT.): 440.1 **LOGGED (FT.):** 1551.0 **LOG TYPE:**
SOURCE: GORDON LG **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
25.1	CARBONDALE	HERRIN	COAL	-	415.0	

MAPID: 18900109000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 350' S line, 680' E line
QUADRANGLE: HOYLETON **LONGITUDE:** -89.37299 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.44995 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 412.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
77.0	MODESTO	PIASA	LIMESTONE	7.0	363.0	
70.0	CARBONDALE		SHALE	15.0	370.0	
55.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	385.0	
51.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	389.0	
49.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	391.0	
46.0	CARBONDALE		SHALE	13.0	394.0	
35.0	CARBONDALE	HERRIN	COAL	7.0	405.0	

MAPID: 18902427000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 142' N line, 105' E line of SE SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.370894 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.451847 **DATE COLLECTED:** 12 / 5 / 1968
SURFACE ELEVATION (FT.): 438.0 **LOGGED (FT.):** 419.2 **LOG TYPE:** Survey Core Study
SOURCE: HUMBLE OIL CO. WF-101 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
31.0			COAL	-	407.0	"COAL REPORTED ABOVE CORE(407)"-SEE LOG

MAPID: 18902427000C VERSION: 2

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 12 QUARTERS/FOOTAGES: 142' N line, 105' E line of SE SE

QUADRANGLE: HOYLETON LONGITUDE: -89.370894 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.451847 DATE COLLECTED: 1 / 15 / 1968

SURFACE ELEVATION (FT.): 438.0 LOGGED (FT.): 419.2 LOG TYPE: Multiple log types

SOURCE: HUMBLE OIL CO. WF-101 WELL TYPE: Coal Test

COMMENT: CORE REPORT, SURVEY CORE STUDY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
438.0			UNCONSOLIDATED	25.0	0.0	
413.0			UNCLASSIFIED	354.5	25.0	
58.5	CARBONDALE		CALCAREOUS SHALE	8.8	379.5	CORE 379.5-413.55; CORE LOSS 381.3-381.8
49.7	CARBONDALE		LIMESTONE	5.7	388.3	
44.1	CARBONDALE		SHALE	1.1	393.9	
43.0	CARBONDALE		LIMESTONE	2.3	395.0	
40.7	CARBONDALE		CALCAREOUS BLACK SHALE	5.6	397.3	
35.1	CARBONDALE	BRERETON	LIMESTONE	2.4	402.9	
32.7	CARBONDALE		GRAY SHALE	1.3	405.3	
31.5	CARBONDALE		SILTSTONE	0.5	406.5	
31.0	CARBONDALE	HERRIN	COAL	5.3	407.0	COAL ANALYZED
25.7	CARBONDALE	HERRIN	CLAYSTONE	0.1	412.3	
25.7	CARBONDALE	HERRIN	COAL	1.2	412.3	
24.4	CARBONDALE		UNDERCLAY	0.1	413.6	SURVEY CORE STUDY 413.55- 419.2
24.4	CARBONDALE		SILTSTONE	1.9	413.6	
22.5	CARBONDALE		SANDSTONE	3.7	415.5	

MAPID: 18923809000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 12 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.388224 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.453323 DATE COLLECTED:

SURFACE ELEVATION (FT.): 421.0 LOGGED (FT.): 2705.0 LOG TYPE: Electric Log

SOURCE: NETEMEYER,CLETUS &MONICA WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-2243.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2664.0	TOP OF NEW ALBANY
-2253.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2674.0	
-2284.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2705.0	BASE OF NEW ALBANY

MAPID: 18924538000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 12 QUARTERS/FOOTAGES: 65' S line, 85' E line of NE SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.380091 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.452575 DATE COLLECTED: 9 / 29 / 1972

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 437.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL 8W-646 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			UNCONSOLIDATED	49.0	0.0	DRILLER'S LOG 0-387
391.0	BOND		SHALE & SANDSTONE	40.5	49.0	
350.5	BOND	CARTHAGE	LIMESTONE	3.0	89.5	
347.5	MODESTO		SHALE & SANDSTONE	14.5	92.5	
333.0	MODESTO		BLACK SHALE	1.0	107.0	
332.0	MODESTO		GRAY SHALE	107.5	108.0	
224.5	MODESTO		BLACK SHALE	0.5	215.5	
224.0	MODESTO		COAL	0.5	216.0	
223.5	MODESTO		UNDERCLAY	1.0	216.5	
222.5	MODESTO		SHALE	15.0	217.5	
207.5	MODESTO		SANDSTONE	20.0	232.5	
187.5	MODESTO		GRAY SHALE	110.0	252.5	
77.5	MODESTO		BLACK SHALE	1.0	362.5	
76.5	MODESTO		COAL	1.5	363.5	
75.0	MODESTO	PIASA	LIMESTONE	5.5	365.0	
69.5			SHALE	16.2	370.5	
53.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.4	386.7	CORE 387-473
49.9	CARBONDALE		LIMESTONE W/ SHALE	7.7	390.1	
42.2	CARBONDALE		GRAY SHALE	1.2	397.8	
41.0	CARBONDALE		BLACK SHALE	0.1	399.0	
40.9	CARBONDALE		CORE LOSS	0.4	399.1	RECOVERED FRAGS OF JAMESTOWN COAL & CALC
40.5	CARBONDALE		CALCAREOUS SHALE	8.5	399.5	
32.0	CARBONDALE	BRERETON	LIMESTONE	2.5	408.0	
29.5	CARBONDALE	HERRIN	COAL	5.8	410.5	COAL ANALYZED
23.7	CARBONDALE	HERRIN	CLAY & COAL	0.2	416.3	BLUE BAND
23.6	CARBONDALE	HERRIN	COAL	0.7	416.4	
22.9	CARBONDALE		UNDERCLAY	1.7	417.1	
21.3	CARBONDALE		CALCAREOUS SHALE	4.3	418.7	
17.0	CARBONDALE		SANDSTONE	5.8	423.0	
11.2	CARBONDALE		SILTSTONE	6.2	428.8	
5.0	CARBONDALE		LIMESTONE	0.8	435.0	
4.2	CARBONDALE		GRAY SHALE	0.7	435.8	
3.5	CARBONDALE	SPRINGFIELD	COAL	0.5	436.5	

MAPID: 18924539000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 13 QUARTERS/FOOTAGES: 18' N line, 58' E line of SW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.375479 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.437938 DATE COLLECTED: 11 / 19 / 1974

SURFACE ELEVATION (FT.): 462.0 LOGGED (FT.): 431.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL 8W-892 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
462.0			UNCONSOLIDATED	25.5	0.0	DRILLER'S LOG
436.5			SANDSTONE	19.5	25.5	
417.0			SHALE & SANDSTONE	64.0	45.0	
353.0			SANDY SHALE	108.0	109.0	
245.0			COAL	1.0	217.0	
244.0			CALCAREOUS SHALE	4.0	218.0	
240.0			SANDSTONE	4.0	222.0	
236.0			SANDY SHALE	134.0	226.0	
102.0			BLACK SHALE	3.0	360.0	
99.0	MODESTO		SILTY SHALE	6.5	363.0	
92.5	MODESTO		SHALY LIMESTONE	0.5	369.5	
92.0	MODESTO		SANDY SHALE	1.5	370.0	
90.5	MODESTO		COAL	0.2	371.5	
90.3	MODESTO		GRAY SHALE	10.8	371.7	
79.5	CARBONDALE	DANVILLE	COAL	1.5	382.5	
78.0	CARBONDALE		GRAY SHALE	4.0	384.0	
74.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.5	388.0	CORE REPORT 395-TD
65.5	CARBONDALE		CALCAREOUS SHALE	4.0	396.5	
61.5	CARBONDALE	JAMESTOWN	COAL	0.2	400.5	
61.3	CARBONDALE		LIMESTONE	0.2	400.7	
61.1	CARBONDALE		CALCAREOUS SHALE	7.3	400.9	
53.8	CARBONDALE	BRERETON	LIMESTONE	2.8	408.2	
51.0	CARBONDALE		CALCAREOUS SHALE	0.4	411.0	
50.6	CARBONDALE	ANNA	BLACK SHALE	1.1	411.4	
49.5	CARBONDALE	HERRIN	COAL	5.8	412.5	
43.7	CARBONDALE	HERRIN	BLUE BAND	0.1	418.3	BLUE BAND
43.6	CARBONDALE	HERRIN	COAL	0.9	418.4	
42.8	CARBONDALE		UNDERCLAY	2.2	419.2	CORE LOSS 419.9-421
40.6	CARBONDALE		SILTSTONE	3.2	421.4	
37.4	CARBONDALE		SANDY SHALE	6.4	424.6	

MAPID: 18900656000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 14 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.39288 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.43697 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 2755.0 LOG TYPE: Electric Log

SOURCE: DUNBAR PRICE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
20.0	CARBONDALE	SPRINGFIELD	COAL	-	438.0	
-84.0	CARBONDALE	COLCHESTER	COAL	-	542.0	
-654.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1112.0	
-2255.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2713.0	TOP OF NEW ALBANY
-2260.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2718.0	
-2297.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2755.0	BASE OF NEW ALBANY

MAPID: 18901041000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 14 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.402368 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.436997 DATE COLLECTED: 10 / 0 / 1958

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 520.0 LOG TYPE: Electric Log

SOURCE: VANDENBARK JAMES H WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
112.0	MODESTO	PIASA	UNCLASSIFIED	-	344.0	
65.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	391.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
-30.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	486.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
-64.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	520.0	

MAPID: 18901259000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 14 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.402393 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.444278 DATE COLLECTED:

SURFACE ELEVATION (FT.): 431.0 LOGGED (FT.): 2718.0 LOG TYPE: Electric Log

SOURCE: SHULMAN BROS. INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
10.0	CARBONDALE	SPRINGFIELD	COAL	-	421.0	
-94.0	CARBONDALE	COLCHESTER	COAL	-	525.0	
-641.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1072.0	
-2244.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2675.0	TOP OF NEW ALBANY
-2252.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2683.0	
-2287.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2718.0	BASE OF NEW ALBANY

MAPID: 18902425000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 14 QUARTERS/FOOTAGES: 1' N line, 660' E line of NW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.394513 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.45977 DATE COLLECTED: 12 / 5 / 1968

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 413.7 LOG TYPE: Other Core Study

SOURCE: HUMBLE OIL CO. WF-142 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
40.9	CARBONDALE	HERRIN	COAL	7.1	399.1	REMOVED BY CO.

MAPID: 18902425000C VERSION: 2

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 14 QUARTERS/FOOTAGES: 1' N line, 660' E line of NW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.394513 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.45977 DATE COLLECTED: 7 / 16 / 1968

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 413.7 LOG TYPE: Multiple log types

SOURCE: HUMBLE OIL CO. WF-142 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			UNCONSOLIDATED	56.0	0.0	DRILLER'S LOG 0-378
384.0			GRAY SHALE	7.0	56.0	
377.0			COAL	1.5	63.0	
375.5			GRAY SHALE	10.5	64.5	
365.0			SHALE & SANDSTONE	126.5	75.0	
238.5			BLACK SHALE	1.0	201.5	
237.5			LIMESTONE	1.5	202.5	
236.0			COAL	0.5	204.0	
235.5			SHALE & SANDSTONE	32.5	204.5	
203.0			LIMESTONE	1.0	237.0	
202.0			SHALE	117.0	238.0	1.5' BKSH
85.0	MODESTO	PIASA	LIMESTONE	5.5	355.0	
79.5			SHALE	15.5	360.5	
64.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	376.0	CORE 378-TD
61.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	379.0	
60.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	380.0	
57.5	CARBONDALE		BLACK SHALE	0.2	382.5	
57.3	CARBONDALE		SHALE	2.3	382.7	
55.0	CARBONDALE	CONANT	LIMESTONE	1.8	385.0	
53.2	CARBONDALE		BLACK SHALE	1.5	386.8	
51.7	CARBONDALE	JAMESTOWN	COAL	0.3	388.3	
51.4	CARBONDALE		SHALE	5.2	388.6	
46.2	CARBONDALE	BRERETON	LIMESTONE	3.0	393.8	
43.2	CARBONDALE		SHALE	0.5	396.8	
42.8	CARBONDALE	ANNA	BLACK SHALE	2.0	397.2	
40.8	CARBONDALE	HERRIN	COAL	0.1	399.2	COAL ANALYZED
40.7	CARBONDALE	HERRIN	PYRITE	0.1	399.3	
40.7	CARBONDALE	HERRIN	COAL	7.0	399.3	
33.7	CARBONDALE		UNDERCLAY	2.8	406.3	
31.0	CARBONDALE		SHALE	1.5	409.0	
29.5	CARBONDALE		SANDSTONE	3.2	410.5	

MAPID: 18924540000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 14 QUARTERS/FOOTAGES: 100' S line, 50' W line of NW NE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.393872 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.439972 DATE COLLECTED: 3 / 28 / 1968

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 418.0 LOG TYPE: Drillers Log

SOURCE: HUMBLE OIL CO. WF-116 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	24.5	0.0	DRILLER'S LOG 0-419
425.5	BOND	CARTHAGE	LIMESTONE	6.5	24.5	
419.0	MODESTO		BLACK SHALE	5.0	31.0	
414.0	MODESTO		GRAY SHALE	15.5	36.0	
398.5	MODESTO		COAL	0.5	51.5	
398.0	MODESTO		SANDY SHALE	37.5	52.0	W/ SANDSTONE
360.5	MODESTO		COAL	2.0	89.5	
358.5	MODESTO		SANDY SHALE	118.5	91.5	W/ SANDSTONE
240.0	MODESTO		LIMESTONE	2.0	210.0	
238.0	MODESTO		SANDY SHALE	138.0	212.0	
100.0	MODESTO		BLACK SHALE	1.5	350.0	
98.5	MODESTO		SHALE	5.5	351.5	
93.0	MODESTO	PIASA	LIMESTONE	6.5	357.0	
86.5			SHALE	15.5	363.5	
71.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	379.0	CORE 381-418
68.2	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	2.6	381.8	
65.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	384.4	
62.8	CARBONDALE		SHALE	1.2	387.2	
61.6	CARBONDALE	CONANT	LIMESTONE	1.8	388.4	
59.8	CARBONDALE		SHALE	1.1	390.2	
58.7	CARBONDALE	JAMESTOWN	COAL	0.2	391.3	
58.5	CARBONDALE		CALCAREOUS SHALE	11.5	391.5	
47.0	CARBONDALE	BRERETON	LIMESTONE	4.8	403.0	
42.2	CARBONDALE	ANNA	BLACK SHALE	0.7	407.8	
41.6	CARBONDALE	HERRIN	COAL	3.5	408.4	
38.1	CARBONDALE	HERRIN	BONE COAL	0.0	411.9	
38.1	CARBONDALE	HERRIN	COAL	1.7	411.9	
36.4	CARBONDALE	HERRIN	BONE COAL	0.1	413.6	
36.3	CARBONDALE	HERRIN	COAL	0.3	413.7	
36.0	CARBONDALE	HERRIN	SHALE	0.2	414.0	
35.8	CARBONDALE	HERRIN	COAL	1.1	414.2	
34.7	CARBONDALE		SILTY SHALE	0.8	415.3	
34.0	CARBONDALE		CLAYSTONE	1.7	416.0	
32.3	CARBONDALE		SHALE	0.3	417.7	W/ LS NODULES

MAPID: 18924541000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 14 QUARTERS/FOOTAGES: 49' N line, 668' E line of NW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.3969 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.448019 DATE COLLECTED: 11 / 19 / 1974

SURFACE ELEVATION (FT.): 442.0 LOGGED (FT.): 418.9 LOG TYPE: Multiple log types

SOURCE: CARTER OIL 8W-893 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.0			UNCONSOLIDATED	59.0	0.0	DRILLER'S LOG 0-381
383.0	MODESTO		GRAY SHALE	3.5	59.0	
379.5	MODESTO		COAL	1.0	62.5	
378.5	MODESTO		GRAY SHALE	94.0	63.5	
284.5	MODESTO		SANDSTONE	9.5	157.5	
275.0	MODESTO		SHALE	35.0	167.0	
240.0	MODESTO		BLACK SHALE	1.5	202.0	
238.5	MODESTO		COAL	0.5	203.5	
238.0	MODESTO		SHALE	40.0	204.0	
198.0			SANDSTONE	8.0	244.0	
190.0			SHALE	124.5	252.0	
65.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	376.5	SHALE BREAK 379-379.5
63.0	CARBONDALE	BANKSTON FORK	GRAY SHALE	2.5	379.0	CORE REPORT 381-418.9'
60.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.6	381.5	
57.9	CARBONDALE		CALCAREOUS SHALE	2.9	384.1	
55.0	CARBONDALE	CONANT	LIMESTONE	1.0	387.0	
54.0	CARBONDALE		CALCAREOUS SHALE	2.4	388.0	
51.6	CARBONDALE	JAMESTOWN	COAL	0.2	390.4	
51.4	CARBONDALE		CALCAREOUS SHALE	3.9	390.6	
47.5	CARBONDALE	BRERETON	LIMESTONE	2.7	394.5	
44.8	CARBONDALE	ANNA	BLACK SHALE	3.3	397.2	
41.6	CARBONDALE	ANNA	LIMESTONE	0.6	400.4	PROBABLY A CONCRETION
41.0	CARBONDALE	HERRIN	COAL	7.2	401.0	COAL ANALYZED
33.8	CARBONDALE		UNDERCLAY	1.1	408.2	
32.7	CARBONDALE		SHALE	3.0	409.3	CORE LOSS 411-411.5'
29.7	CARBONDALE		SILTSTONE	2.7	412.3	
27.0	CARBONDALE		LIMESTONE	3.9	415.0	

MAPID: 18901194000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 990' W line of NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.423524 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.442342 DATE COLLECTED:

SURFACE ELEVATION (FT.): 437.0 LOGGED (FT.): 1079.0 LOG TYPE: Electric Log

SOURCE: INLAND OIL CO WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
18.0	CARBONDALE	SPRINGFIELD	COAL	-	419.0
-90.0	CARBONDALE	COLCHESTER	COAL	-	527.0
-642.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1079.0

MAPID: 18901194000C VERSION: 2

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 990' W line of NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.423524 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.442342 DATE COLLECTED: 3 / 0 / 1948

SURFACE ELEVATION (FT.): 437.0 LOGGED (FT.): 533.0 LOG TYPE: Electric Log

SOURCE: INLAND OIL CO WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
94.0	MODESTO	PIASA	UNCLASSIFIED	-	343.0
45.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	392.0
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	
-43.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	480.0
-96.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	533.0

MAPID: 18924542000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 15 QUARTERS/FOOTAGES: 300' S line, 195' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.426235 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.435011 DATE COLLECTED: 11 / 30 / 1967

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 381.5 LOG TYPE: Multiple log types

SOURCE: HUMBLE OIL CO. WF-84 WELL TYPE: Coal Test

COMMENT: SAMPLE LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
435.0	MODESTO		UNCLASSIFIED	322.0	0.0	SAMPLE LOG 0-344'
113.0	MODESTO	PIASA	LIMESTONE	6.0	322.0	
107.0			CALCAREOUS SHALE	16.8	328.0	CORE 344-381.5
90.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	344.8	
85.5	CARBONDALE	BANKSTON FORK	SHALE	1.3	349.5	
84.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	350.8	
81.8	CARBONDALE		BLACK SHALE	2.9	353.2	
78.9	CARBONDALE	CONANT	LIMESTONE	1.2	356.1	
77.7	CARBONDALE		BLACK SHALE	1.2	357.3	
76.5	CARBONDALE		CALCAREOUS SHALE	1.0	358.5	
75.5	CARBONDALE	BRERETON	LIMESTONE	5.8	359.5	
69.7	CARBONDALE	ANNA	BLACK SHALE	3.0	365.3	
66.8	CARBONDALE	HERRIN	COAL	4.3	368.2	THREE 1/4" PYRITE PARTINGS
62.5	CARBONDALE	HERRIN	COAL WITH SHALE	2.6	372.5	
60.0	CARBONDALE		COAL	1.3	375.0	THIN BANDED, CALCITE CLEAT
58.7	CARBONDALE		UNDERCLAY	4.3	376.3	
54.5	CARBONDALE		SHALE WITH LIMESTONE	1.0	380.5	

MAPID: 18924543000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 15 QUARTERS/FOOTAGES: 660' N line, 1' W line of SW NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.400698 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.478659 DATE COLLECTED: 7 / 18 / 1968

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 407.0 LOG TYPE: Drillers Log

SOURCE: HUMBLE OIL CO. WF-144 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	DRILLER'S LOG 0-372
444.0	BOND		SHALE	17.0	16.0	
427.0	BOND	CARTHAGE	LIMESTONE	8.5	33.0	
418.5	MODESTO		BLACK SHALE	8.0	41.5	
410.5	MODESTO		SANDY SHALE	13.0	49.5	
397.5	MODESTO		COAL	1.0	62.5	
396.5	MODESTO		SANDY SHALE	94.5	63.5	
302.0	MODESTO		SANDSTONE	85.0	158.0	
217.0	MODESTO		SHALE	80.0	243.0	
137.0	MODESTO		BLACK SHALE	0.5	323.0	
136.5	MODESTO		SHALE	22.5	323.5	
114.0	MODESTO	PIASA	LIMESTONE	10.5	346.0	
103.5			BLACK SHALE	2.0	356.5	
101.5			SHALE	9.5	358.5	
92.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	368.0	CORE 372-TD
85.7	CARBONDALE	BANKSTON FORK	SHALE	0.7	374.3	
85.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	375.0	
82.0	CARBONDALE		SHALE	3.5	378.0	
78.5	CARBONDALE	CONANT	LIMESTONE	1.3	381.5	
77.2	CARBONDALE		SHALE	1.8	382.8	
75.5	CARBONDALE	JAMESTOWN	COAL	0.4	384.5	SLATY
75.1	CARBONDALE		LIMESTONE	0.3	384.9	
74.8	CARBONDALE		SHALE	1.5	385.2	
73.3	CARBONDALE	BRERETON	LIMESTONE	3.3	386.7	
70.0	CARBONDALE	ANNA	BLACK SHALE	3.1	390.0	
66.9	CARBONDALE	HERRIN	COAL	5.8	393.1	COAL ANALYZED
61.1	CARBONDALE	HERRIN	SHALE	0.1	398.9	
61.1	CARBONDALE	HERRIN	COAL	1.5	398.9	
59.6	CARBONDALE		UNDERCLAY	1.4	400.4	
58.2	CARBONDALE		COAL	0.0	401.8	
58.2	CARBONDALE		CLAYSTONE	3.2	401.8	
55.0	CARBONDALE		LIMESTONE	2.0	405.0	

MAPID: 18924544000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 15 QUARTERS/FOOTAGES: 200' S line, 2100' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.415631 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.434788 DATE COLLECTED: 5 / 9 / 1972

SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 415.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL 8W-593 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.0			UNCONSOLIDATED	32.0	0.0	DRILLER'S LOG 0-415'
423.0	BOND		SHALE WITH LIMESTONE	3.4	32.0	
419.6	BOND	CARTHAGE	LIMESTONE	6.0	35.4	
413.6	MODESTO		GRAY SHALE	1.0	41.4	
412.6	MODESTO		BLACK SHALE	10.6	42.4	
402.0	MODESTO		GRAY SHALE	3.0	53.0	
399.0	MODESTO		SANDSTONE	6.5	56.0	
392.5	MODESTO		SHALE	3.5	62.5	
389.0	MODESTO		COAL	0.8	66.0	
388.2	MODESTO		CLAYSTONE	1.2	66.8	
387.0	MODESTO		SANDY SHALE	101.0	68.0	
286.0	MODESTO		SANDSTONE	82.0	169.0	
204.0	MODESTO		SHALE	101.0	251.0	
103.0	MODESTO	PIASA	LIMESTONE	6.5	352.0	
96.5			SHALE	12.5	358.5	
84.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	371.0	
82.0	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	3.1	373.0	
78.9	CARBONDALE	BANKSTON FORK	LIMESTONE	1.2	376.1	
77.7	CARBONDALE		CALCAREOUS SHALE	2.7	377.3	CORE REPORT START HERE
75.0	CARBONDALE	CONANT	LIMESTONE	2.4	380.0	
72.6	CARBONDALE		DARK SHALE	5.9	382.4	
66.7	CARBONDALE		BLACK SHALE	0.2	388.3	
66.6	CARBONDALE	JAMESTOWN	COAL	0.3	388.4	
66.3	CARBONDALE		LIMESTONE	0.4	388.7	
66.0	CARBONDALE		BLACK SHALE	0.5	389.0	
65.5	CARBONDALE	BRERETON	LIMESTONE	2.6	389.5	
62.9	CARBONDALE	ANNA	BLACK SHALE	3.5	392.1	
59.4	CARBONDALE	HERRIN	COAL	7.2	395.6	COAL ANALYZED
52.2	CARBONDALE		UNDERCLAY	0.9	402.8	CORE REPORT 402.8- 403.7'
51.3	CARBONDALE		CLAYSTONE	1.7	403.7	
49.6	CARBONDALE		SHALE WITH LIMESTONE	6.5	405.4	SHALE W/ LS NODS
43.1	CARBONDALE		SANDSTONE	3.1	411.9	

MAPID: 18924545000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 15 QUARTERS/FOOTAGES: 190' N line, 760' W line of SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.415058 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.44127 DATE COLLECTED: 12 / 28 / 1972

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 418.5 LOG TYPE: Multiple log types

SOURCE: CARTER OIL 8W-674 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.0			UNCONSOLIDATED	37.0	0.0	DRILLER'S LOG 0-372'
408.0	MODESTO		BLACK SHALE	2.0	37.0	
406.0	MODESTO		GRAY SHALE	20.0	39.0	
386.0	MODESTO		COAL	1.0	59.0	
385.0	MODESTO		CLAYSTONE	0.5	60.0	
384.5	MODESTO		SHALE & SANDSTONE	116.5	60.5	
268.0	MODESTO		SANDSTONE	33.5	177.0	
234.5	MODESTO		SHALE	17.5	210.5	
217.0	MODESTO		SANDSTONE	42.0	228.0	
175.0	MODESTO		GRAY SHALE	78.0	270.0	
97.0	MODESTO		BLACK SHALE	1.0	348.0	
96.0	MODESTO		COAL	1.5	349.0	
94.5	MODESTO		SHALE	3.0	350.5	
91.5	MODESTO	PIASA	LIMESTONE	2.5	353.5	
89.0	MODESTO		SHALE	7.0	356.0	
82.0	CARBONDALE	DANVILLE	COAL	2.0	363.0	
80.0	CARBONDALE		CLAYSTONE	5.5	365.0	
74.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	370.5	CORE REPORT 372-TD
70.4	CARBONDALE	BANKSTON FORK	GRAY SHALE	0.7	374.6	
69.7	CARBONDALE	BANKSTON FORK	LIMESTONE	1.1	375.3	
68.6	CARBONDALE		CALCAREOUS SHALE	1.4	376.4	
67.2	CARBONDALE	CONANT	LIMESTONE	2.0	377.8	
65.2	CARBONDALE	CONANT	CALCAREOUS SHALE	0.2	379.8	
65.0	CARBONDALE	CONANT	LIMESTONE	0.3	380.0	
64.7	CARBONDALE		GRAY SHALE	5.4	380.3	
59.3	CARBONDALE	JAMESTOWN	COAL	0.3	385.7	
59.0	CARBONDALE		GRAY SHALE	11.7	386.0	
47.3	CARBONDALE	BRERETON	LIMESTONE	3.0	397.7	
44.3	CARBONDALE	HERRIN	COAL	7.7	400.7	COAL ANALYZED
36.6	CARBONDALE		CLAYSTONE	2.8	408.4	
33.8	CARBONDALE		SILTSTONE	7.3	411.2	

MAPID: 18924546000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 16 QUARTERS/FOOTAGES: 100' S line, 60' W line of SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.436 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.434418 DATE COLLECTED: 11 / 20 / 1967

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 377.5 LOG TYPE: Other Core Study

SOURCE: CARTERO OIL WF-85 WELL TYPE: Coal Test

COMMENT: COAL VERY POOR QUAL.-NO SUMMARY OR ANAL.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
121.0	CARBONDALE		SHALE	11.5	330.0	
109.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	341.5	
105.8	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.8	345.2	
103.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	348.0	
100.0	CARBONDALE		BLACK SHALE	3.3	351.0	CARBONACEOUS SHALE
96.7	CARBONDALE		CARBONACEOUS SHALE	0.7	354.3	
96.0	CARBONDALE		BLACK SHALE	2.8	355.0	
93.2	CARBONDALE	BRERETON	LIMESTONE	3.3	357.8	
89.9	CARBONDALE	ANNA	BLACK SHALE	2.7	361.1	
87.2	CARBONDALE	HERRIN	COAL	1.6	363.8	
85.6	CARBONDALE	HERRIN	SHALY COAL	0.6	365.4	
85.0	CARBONDALE	HERRIN	COAL	0.1	366.0	
85.0	CARBONDALE	HERRIN	SHALE	0.8	366.0	PYRITIC
84.2	CARBONDALE	HERRIN	COAL	3.5	366.8	
80.7	CARBONDALE	HERRIN	SHALE	1.5	370.3	PYRITIC. W/ THIN COAL STREAKS
79.2	CARBONDALE	HERRIN	COAL	1.1	371.8	
78.2	CARBONDALE		UNDERCLAY	4.0	372.8	
74.2	CARBONDALE		LIMESTONE	0.7	376.8	

MAPID: 18924547000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 17 QUARTERS/FOOTAGES: 66' S line, 715' W line of SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.461384 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.434448 DATE COLLECTED: 9 / 18 / 1967

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 294.8 LOG TYPE: Other Core Study

SOURCE: CARTER OIL WF-53 WELL TYPE: Coal Test

COMMENT: NO COAL-INTERVAL FILLED W/CHANEL DEPOSIT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
205.3	MODESTO	PIASA	LIMESTONE	3.5	244.7	CORE STARTS
201.8			BLACK SHALE	0.6	248.2	
201.2			GRAY SHALE	3.2	248.8	
198.0	CARBONDALE		BLACK SHALE	0.2	252.0	"#7 EQUIVALENT"
197.9	CARBONDALE		CLAYSTONE & SILTSTONE	5.9	252.1	CORE LOSS 252.7- 255.7
192.0	CARBONDALE		CORE LOSS	1.0	258.0	
191.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.1	259.0	
182.9	CARBONDALE		GRAY SHALE	0.5	267.1	
182.4	CARBONDALE	JAMESTOWN	COAL WITH SHALE	1.0	267.6	"JAMESTOWN"
181.5	CARBONDALE		CLAYSTONE	0.7	268.5	
180.8	CARBONDALE		SHALE	9.6	269.2	
171.2	CARBONDALE		SILTSTONE	4.4	278.8	
166.9	CARBONDALE		SHALE	7.9	283.1	
159.0	CARBONDALE		SILTSTONE	0.9	291.0	
158.1	CARBONDALE		SHALE	2.9	291.9	
-	CARBONDALE	HERRIN	COAL	0.0		COAL MISSING

MAPID: 18924548000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 18 QUARTERS/FOOTAGES: 25' N line, 65' W line of NE NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.394924 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.441008 DATE COLLECTED: 2 / 8 / 1968

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 368.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL WF-107 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
128.2	MODESTO	PIASA	LIMESTONE	3.8	321.8	DRILLER'S LOG 0-337
124.5			CALCAREOUS SHALE	10.0	325.5	
114.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	335.5	CORE 337-368
110.7	CARBONDALE	BANKSTON FORK	SHALE	1.5	339.3	
109.3	CARBONDALE	BANKSTON FORK	LIMESTONE	1.6	340.7	
107.7	CARBONDALE		SHALE	4.0	342.3	
103.7	CARBONDALE	CONANT	LIMESTONE	4.6	346.3	
99.1	CARBONDALE	JAMESTOWN	BLACK SHALE	2.0	350.9	
97.1	CARBONDALE	BRERETON	LIMESTONE	0.6	352.9	
96.5	CARBONDALE	ANNA	BLACK SHALE	1.0	353.5	
95.5	CARBONDALE	HERRIN	COAL	5.9	354.5	COAL ANALYZED
89.6	CARBONDALE	HERRIN	SHALE	0.9	360.4	
88.7	CARBONDALE	HERRIN	COAL	1.5	361.3	
87.2	CARBONDALE		CLAYSTONE	3.8	362.8	
83.5	CARBONDALE		LIMESTONE	1.5	366.5	

MAPID: 18901195000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 19 QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.469537 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.428021 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 2587.0 LOG TYPE: Electric Log

SOURCE: BENNETT BROS. DRLG. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
206.0	CARBONDALE	SPRINGFIELD	COAL	-	250.0	
130.0	CARBONDALE	COLCHESTER	COAL	-	326.0	
-551.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1007.0	
-2097.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2553.0	TOP OF NEW ALBANY
-2104.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2560.0	
-2131.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2587.0	BASE OF NEW ALBANY

MAPID: 18901195000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 19 QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.469537 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.428021 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 279.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
236.0	MODESTO	PIASA	LIMESTONE	6.0	220.0	
230.0	CARBONDALE		SHALE	7.0	226.0	
223.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	233.0	
219.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	237.0	
218.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	238.0	
216.0	CARBONDALE		SHALE	5.0	240.0	
211.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	5.0	245.0	
206.0	CARBONDALE	ANNA	DARK GRAY SHALE	3.0	250.0	
203.0	CARBONDALE	ENERGY	SILTY SHALE	26.0	253.0	

MAPID: 18901196000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 20 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.453543 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.433261 DATE COLLECTED: 9 / 0 / 1956

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 410.0 LOG TYPE: Electric Log

SOURCE: MULLIGAN JOHN E WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
182.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	268.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
91.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	359.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
40.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	410.0	CORRELATION UNCERTAIN

MAPID: 18901196000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 20 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.453543

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.433261

DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 287.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
200.0	MODESTO	PIASA	LIMESTONE	4.0	250.0	
196.0	MODESTO		SHALE	6.0	254.0	
190.0	CARBONDALE	DANVILLE	COAL	2.0	260.0	
188.0	CARBONDALE		SHALE	8.0	262.0	
180.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	270.0	
177.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	273.0	
176.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	274.0	
173.0	CARBONDALE	LAWSON	SHALE	10.0	277.0	
163.0	CARBONDALE	ENERGY	UNCLASSIFIED	60.0	287.0	

MAPID: 18922954000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 21 QUARTERS/FOOTAGES: 330' N line, 330' W line of NE NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.439704

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.433216

DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.0

LOGGED (FT.): 2691.0

LOG TYPE: Electric Log

SOURCE: BREHM, C. E. DRLG.&PROD.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
56.0	CARBONDALE	SPRINGFIELD	COAL	-	396.0	
-36.0	CARBONDALE	COLCHESTER	COAL	-	488.0	
-610.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1062.0	
-2204.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2656.0	TOP OF NEW ALBANY
-2211.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2663.0	
-2239.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2691.0	BASE OF NEW ALBANY

MAPID: 18901793000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 23 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.402317 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.427867 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 382.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
125.0	MODESTO	PIASA	LIMESTONE	7.0	333.0	
118.0	CARBONDALE		SHALE	12.0	340.0	
106.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	352.0	
102.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	356.0	
101.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	357.0	
98.0	CARBONDALE	LAWSON	SHALE	3.0	360.0	
95.0	CARBONDALE	CONANT	LIMESTONE & SHALE	3.0	363.0	
92.0	CARBONDALE		SHALE	5.0	366.0	
87.0	CARBONDALE	BRERETON	LIMESTONE	5.0	371.0	
82.0	CARBONDALE	ANNA	BLACK SHALE	2.0	376.0	
80.0	CARBONDALE	HERRIN	COAL	4.0	378.0	

MAPID: 18923913000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 23 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.397601 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.422361 DATE COLLECTED:

SURFACE ELEVATION (FT.): 461.0 LOGGED (FT.): 2774.0 LOG TYPE: Electric Log

SOURCE: HILL, A. G. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
56.0	CARBONDALE	SPRINGFIELD	COAL	-	405.0	
-44.0	CARBONDALE	COLCHESTER	COAL	-	505.0	
-650.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1111.0	
-2273.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2734.0	TOP OF NEW ALBANY
-2279.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2740.0	
-2313.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2774.0	BASE OF NEW ALBANY

MAPID: 18924549000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 23 QUARTERS/FOOTAGES: 45' S line, 47' W line
 QUADRANGLE: ADDIEVILLE LONGITUDE: -89.408038 GEOLOGIST: E. PRUSSEN
 CONFIDENTIAL: N LATITUDE: 38.419802 DATE COLLECTED: 9 / 6 / 1967
 SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 409.3 LOG TYPE: Other Core Study
 SOURCE: CARTER OIL WF-51 WELL TYPE: Coal Test
 COMMENT: COAL HORIZON FILLED W/ CHANNEL DEPOSITS"

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
84.6	CARBONDALE		CALCAREOUS SHALE	1.6	368.4	
83.1	CARBONDALE	JAMESTOWN	BLACK SHALE & COAL	0.2	369.9	
82.9	CARBONDALE		CALCAREOUS SHALE	2.9	370.1	
80.0	CARBONDALE	BRERETON	LIMESTONE	4.3	373.0	
75.7	CARBONDALE	ANNA	BLACK SHALE	10.2	377.3	CARBONACEOUS, FISSILE
65.6	CARBONDALE		SHALE	8.8	387.4	
56.8	CARBONDALE		SANDSTONE/SILTSTONE	13.1	396.2	
-	CARBONDALE	HERRIN	COAL	0.0		COAL MISSING

MAPID: 18924550000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 23 QUARTERS/FOOTAGES: 500' N line, 95' W line of NE NE
 QUADRANGLE: ADDIEVILLE LONGITUDE: -89.393697 GEOLOGIST: E. PRUSSEN
 CONFIDENTIAL: N LATITUDE: 38.432882 DATE COLLECTED: 5 / 4 / 1972
 SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 417.9 LOG TYPE: Multiple log types
 SOURCE: CARTER OIL 8W-590 WELL TYPE: Coal Test
 COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
97.0	MODESTO	PIASA	LIMESTONE	8.5	358.0	DRILLER'S LOG 0- 388
88.5	MODESTO		SHALE	14.5	366.5	
74.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	381.0	
69.5	CARBONDALE	BANKSTON FORK	SHALE	2.5	385.5	
67.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.9	388.0	CORE 388-418
64.1	CARBONDALE		GRAY SHALE	2.3	390.9	
61.8	CARBONDALE	CONANT	LIMESTONE	0.4	393.2	
61.4	CARBONDALE		SHALE	4.9	393.6	
56.5	CARBONDALE	BRERETON	LIMESTONE	2.5	398.5	
54.0	CARBONDALE	ANNA	BLACK SHALE	4.1	401.0	
49.9	CARBONDALE	HERRIN	COAL	6.1	405.1	COAL ANALYZED
43.8	CARBONDALE	HERRIN	CLAYSTONE	0.1	411.2	BLUE BAND
43.7	CARBONDALE	HERRIN	COAL	1.1	411.3	
42.6	CARBONDALE		UNDERCLAY	1.6	412.4	
41.0	CARBONDALE		CLAYSTONE & SILTSTONE	2.0	414.0	
39.0	CARBONDALE		SILTSTONE	1.9	416.0	

MAPID: 18924551000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 23 QUARTERS/FOOTAGES: 460' N line, 275' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.407743 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.433126 DATE COLLECTED: 5 / 28 / 1975

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 400.0 LOG TYPE: Other Core Study

SOURCE: CARTER OIL 8W-909 WELL TYPE: Coal Test

COMMENT: CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
124.0	CARBONDALE		UNCLASSIFIED	34.0	326.0	
90.0	CARBONDALE		LIMESTONE	2.1	360.0	CORE 360-400
87.9	CARBONDALE		GRAY SHALE	5.7	362.1	
82.2	CARBONDALE		BLACK SHALE	0.2	367.8	GRY-BLK, CARBONACEOUS
82.0	CARBONDALE	JAMESTOWN	COAL	0.3	368.0	
81.7	CARBONDALE		CALCAREOUS SHALE	3.7	368.3	
78.0	CARBONDALE	BRERETON	LIMESTONE	4.5	372.0	
73.5	CARBONDALE		GRAY SHALE	0.2	376.5	CALCAREOUS
73.3	CARBONDALE	ANNA	BLACK SHALE	2.3	376.7	GY-BLK, CARBONACEOUS
71.0	CARBONDALE	HERRIN	COAL	6.5	379.0	COAL ANALYZED
64.5	CARBONDALE	HERRIN	CLAYSTONE	0.1	385.5	BLUE BAND
64.4	CARBONDALE	HERRIN	COAL	1.3	385.6	
63.1	CARBONDALE		UNDERCLAY	1.6	386.9	
61.5	CARBONDALE		CLAYSTONE & SILTSTONE	4.3	388.5	
57.2	CARBONDALE		SILTSTONE	7.2	392.8	

MAPID: 18924552000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 24 QUARTERS/FOOTAGES: 76' N line, 57' E line

QUADRANGLE: HOYLETON LONGITUDE: -89.370614 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.434238 DATE COLLECTED: 11 / 9 / 1967

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 426.8 LOG TYPE: Other Core Study

SOURCE: CARTER OIL WF-71 WELL TYPE: Coal Test

COMMENT: CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
55.0	CARBONDALE	ANNA	BLACK SHALE	1.5	410.0	CORE 410-TD
53.5	CARBONDALE	HERRIN	COAL	5.6	411.5	COAL ANALYZED
47.9	CARBONDALE	HERRIN	BONE COAL	0.1	417.1	
47.8	CARBONDALE	HERRIN	COAL	1.4	417.2	
46.5	CARBONDALE		UNDERCLAY	1.1	418.5	
45.4	CARBONDALE		UNDERCLAY	3.5	419.6	W/LS NODULES
41.9	CARBONDALE		SILTSTONE	3.7	423.1	

MAPID: 18924553000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 24 QUARTERS/FOOTAGES: 32' N line, 87' E line of SE

QUADRANGLE: HOYLETON LONGITUDE: -89.37096 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.42689 DATE COLLECTED: 4 / 27 / 1972

SURFACE ELEVATION (FT.): 473.0 LOGGED (FT.): 461.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL 8W-576 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
77.5	CARBONDALE	DANVILLE	COAL	1.0	395.5	#7CORR UNCERT;DRILLERS LOG 0-404
76.5	CARBONDALE		SHALE	7.5	396.5	
69.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	404.0	CORE 404-461
66.2	CARBONDALE		GRAY SHALE	3.7	406.8	
62.5	CARBONDALE		SANDSTONE	0.8	410.5	
61.7	CARBONDALE		GRAY SHALE	11.7	411.3	CORE LOSS 412.5-413.5
50.0	CARBONDALE		LIMESTONE	2.9	423.0	
47.1	CARBONDALE		GRAY SHALE	3.5	425.9	
43.6	CARBONDALE		FOSSILIFEROUS SHALE	8.8	429.4	
34.8	CARBONDALE	JAMESTOWN	COAL	0.2	438.2	BONEY
34.6	CARBONDALE		FOSSILIFEROUS SHALE	1.2	438.4	
33.4	CARBONDALE	BRERETON	LIMESTONE	2.1	439.6	
31.3	CARBONDALE	ANNA	BLACK SHALE	4.5	441.7	
26.8	CARBONDALE	HERRIN	COAL	6.1	446.2	COAL ANALYZED
20.7	CARBONDALE	HERRIN	CLAYSTONE	0.1	452.3	BLUE BAND
20.6	CARBONDALE	HERRIN	COAL	0.9	452.4	
19.7	CARBONDALE		UNDERCLAY	1.3	453.3	
18.4	CARBONDALE		CLAYSTONE	2.4	454.6	W/LS NODULES
16.0	CARBONDALE		SILTSTONE	1.8	457.0	
14.2	CARBONDALE		SANDSTONE	2.2	458.8	

MAPID: 18901198000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 25 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.38823 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.407618 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 1137.0 LOG TYPE: Electric Log

SOURCE: ROCK ISLAND REF. CORP. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
-66.0	CARBONDALE	COLCHESTER	COAL	-	516.0	
-687.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1137.0	

MAPID: 18901198000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 25 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: ADDIEVILLE

LONGITUDE: -89.38823

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.407618

DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 424.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
77.0	MODESTO	PIASA	LIMESTONE	5.0	373.0
72.0	CARBONDALE		SHALE	20.0	378.0
52.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	5.0	398.0
47.0	CARBONDALE	LAWSON	SHALE	2.0	403.0
45.0	CARBONDALE	CONANT	LIMESTONE & SHALE	3.0	405.0
42.0	CARBONDALE		CALCAREOUS SHALE	4.0	408.0
38.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	2.0	412.0
36.0	CARBONDALE	ANNA	BLACK SHALE	2.0	414.0
34.0	CARBONDALE	ENERGY	GRAY SHALE	4.0	416.0
30.0	CARBONDALE	HERRIN	COAL	4.0	420.0

MAPID: 18924554000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 25 QUARTERS/FOOTAGES: 100' N line, 40' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.389173 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.419275 DATE COLLECTED: 11 / 28 / 1967

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 425.5 WELL TYPE: Coal Test

SOURCE: CARTER OIL WF-86

COMMENT: CORE REPORT, "VERY POOR COAL SECTION"

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
69.0	CARBONDALE		SHALE	1.0	396.0	
68.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	397.0	
65.5	CARBONDALE		GRAY SHALE	0.2	399.5	
65.3	CARBONDALE		BLACK SHALE	2.3	399.7	
63.0	CARBONDALE	CONANT	LIMESTONE	1.4	402.0	
61.6	CARBONDALE		BLACK SHALE	2.6	403.4	
59.0	CARBONDALE	BRERETON	LIMESTONE	2.8	406.0	
56.2	CARBONDALE	ANNA	BLACK SHALE	3.8	408.8	
52.4	CARBONDALE	HERRIN	COAL	1.1	412.6	
51.3	CARBONDALE	HERRIN	COAL WITH SHALE	2.4	413.7	INTERBEDS
48.9	CARBONDALE	HERRIN	COAL	3.1	416.1	
45.8	CARBONDALE	HERRIN	PYRITE	0.1	419.2	
45.7	CARBONDALE	HERRIN	COAL	0.2	419.3	
45.6	CARBONDALE		SHALE	1.2	419.4	
44.4	CARBONDALE		SHALE/COAL	0.1	420.6	CARBONACEOUS SHALE
44.3	CARBONDALE		UNDERCLAY	2.3	420.7	
42.0	CARBONDALE		SILTSTONE	2.0	423.0	
40.0	CARBONDALE		SANDSTONE	0.5	425.0	

MAPID: 18924555000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 25 QUARTERS/FOOTAGES: 89' N line, 34' E line of NW NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.37548 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.419341 DATE COLLECTED: 11 / 12 / 1974

SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 452.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL 8W-890 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
79.0	MODESTO	PIASA	LIMESTONE	6.0	389.0	
73.0	MODESTO		SHALE	5.0	395.0	
68.0	CARBONDALE		CLAYSTONE	4.0	400.0	SOFT W/ TRACE COAL (#??)
64.0	CARBONDALE		SHALE	6.0	404.0	
58.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.9	410.0	CORE 416-452
50.1	CARBONDALE		SHALE	2.0	417.9	
48.1	CARBONDALE	CONANT	LIMESTONE	1.3	419.9	
46.8	CARBONDALE		CALCAREOUS SHALE	1.5	421.2	
45.3	CARBONDALE		BLACK SHALE	0.3	422.7	
45.0	CARBONDALE	JAMESTOWN	COAL	0.1	423.0	
44.9	CARBONDALE		UNDERCLAY	0.1	423.1	
44.8	CARBONDALE		CALCAREOUS SHALE	4.2	423.2	
40.6	CARBONDALE	BRERETON	LIMESTONE	3.4	427.4	
37.2	CARBONDALE		CALCAREOUS SHALE	0.2	430.8	
37.0	CARBONDALE	ANNA	BLACK SHALE	1.3	431.0	
35.8	CARBONDALE	HERRIN	COAL	5.6	432.2	
30.1	CARBONDALE	HERRIN	CLAYSTONE	0.1	437.9	BLUE BAND
30.0	CARBONDALE	HERRIN	COAL	0.7	438.0	
29.3	CARBONDALE		UNDERCLAY	1.8	438.7	
27.5	CARBONDALE		SILTSTONE	0.7	440.5	W/ LS NODULES
26.8	CARBONDALE		SANDY SHALE	10.8	441.2	W/ SS

MAPID: 18923776000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 27 QUARTERS/FOOTAGES: 825' N line, 330' E line of SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.418661 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.410021 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 2712.0 LOG TYPE: Electric Log

SOURCE: FARM FEEDS CONST., INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-610.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1060.0	
-2226.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2676.0	TOP OF NEW ALBANY
-2233.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2683.0	
-2262.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2712.0	BASE OF NEW ALBANY

MAPID: 18901017000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 28 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.432709 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.411286 DATE COLLECTED:

SURFACE ELEVATION (FT.): 433.0 LOGGED (FT.): 2618.0 LOG TYPE: Electric Log

SOURCE: WASHINGTON NATL GAS WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
22.0	CARBONDALE	COLCHESTER	COAL	-	411.0	
-550.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	983.0	
-2150.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2583.0	TOP OF NEW ALBANY
-2155.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2588.0	
-2185.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2618.0	BASE OF NEW ALBANY

MAPID: 18901437000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 28 QUARTERS/FOOTAGES: NW NW SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.444407 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.411237 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 416.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
172.0	MODESTO	PIASA	LIMESTONE	8.0	284.0	
164.0	MODESTO		SHALE	5.0	292.0	
159.0	CARBONDALE	DANVILLE	BONE COAL	1.0	297.0	
158.0	CARBONDALE		SHALE	2.0	298.0	
156.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	300.0	
153.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	303.0	
152.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	304.0	
149.0	CARBONDALE		SHALE	5.0	307.0	
144.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	4.0	312.0	
140.0	CARBONDALE	ENERGY	SANDSTONE	100.0	316.0	

MAPID: 18924556000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 28 QUARTERS/FOOTAGES: 45' N line, 80' E line of NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.436572 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.419408 DATE COLLECTED: 11 / 31 / 1967

SURFACE ELEVATION (FT.): 444.0 LOGGED (FT.): 349.9 LOG TYPE: Other Core Study

SOURCE: CARTER OIL WF-70 WELL TYPE: Coal Test

COMMENT: CORE REPORT, NO COAL FOUND

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
145.6	CARBONDALE		SHALE	1.6	298.4	
144.0	CARBONDALE		SANDSTONE	2.3	300.0	W/ SHALE BANDS
141.7	CARBONDALE		SHALE & SILTSTONE	13.2	302.3	
128.6	CARBONDALE		SANDSTONE	5.9	315.4	
122.7	CARBONDALE		SILTSTONE/SANDSTONE	2.7	321.3	W/ SHALY COAL BANDS <1/8" THICK
120.0	CARBONDALE		SANDSTONE	6.6	324.0	
113.4	CARBONDALE		SHALE	1.1	330.6	
112.3	CARBONDALE		SANDSTONE	4.3	331.7	
108.0	CARBONDALE		SANDSTONE/SHALE	3.1	336.0	
104.9	CARBONDALE		LIMESTONE	2.4	339.1	
102.5	CARBONDALE		SANDSTONE	8.4	341.5	
-	CARBONDALE	HERRIN	COAL	0.0		COAL MISSING

MAPID: 18900392000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 30 QUARTERS/FOOTAGES: 1000' S line, 2310' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.474219 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.407954 DATE COLLECTED:

SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 407.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
190.0	MODESTO	PIASA	LIMESTONE	7.0	265.0	
183.0	MODESTO		SHALE	3.0	272.0	
180.0	CARBONDALE	DANVILLE	COAL	2.0	275.0	
178.0	CARBONDALE		SHALE	9.0	277.0	
169.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	286.0	
166.0	CARBONDALE	LAWSON	SHALE	3.0	289.0	
163.0	CARBONDALE	CONANT	LIMESTONE	4.0	292.0	
159.0	CARBONDALE		COAL	1.0	296.0	
158.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	2.0	297.0	
156.0	CARBONDALE	ANNA	BLACK SHALE	3.0	299.0	
153.0	CARBONDALE	HERRIN	COAL	5.0	302.0	

MAPID: 18900392000C **VERSION:** 3 **PROJECT:** CONTROL
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 30 **QUARTERS/FOOTAGES:** 1000' S line, 2310' W line
QUADRANGLE: ADDIEVILLE **LONGITUDE:** -89.474219 **GEOLOGIST:** HINES
CONFIDENTIAL: N **LATITUDE:** 38.407954 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 1416.0 **LOG TYPE:** Survey Sample Study
SOURCE: TEXAS COMPANY, THE **WELL TYPE:** Oil and Gas Test
COMMENT: OILWELLS LOGGED BY COAL SECT-LOGS IN GRU

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			NO RECORD	0.0	0.0	

MAPID: 18900392000C **VERSION:** 4 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 30 **QUARTERS/FOOTAGES:** 1000' S line, 2310' W line
QUADRANGLE: ADDIEVILLE **LONGITUDE:** -89.474219 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.407954 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 983.0 **LOG TYPE:** Electric Log
SOURCE: TEXAS COMPANY, THE **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
145.0	CARBONDALE	SPRINGFIELD	COAL	-	310.0	
62.0	CARBONDALE	COLCHESTER	COAL	-	393.0	
-528.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	983.0	

MAPID: 18923845000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 1S 3W **SECTION:** 34 **QUARTERS/FOOTAGES:** 330' N line, 990' W line of SW NE
QUADRANGLE: ADDIEVILLE **LONGITUDE:** -89.41395 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.400487 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 449.0 **LOGGED (FT.):** 2744.0 **LOG TYPE:** Electric Log
SOURCE: OELZE, ELMER JR. OIL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-631.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1080.0	
-2258.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2707.0	TOP OF NEW ALBANY
-2264.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2713.0	
-2295.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2744.0	BASE OF NEW ALBANY

MAPID: 18923583000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 1S 3W SECTION: 35 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.406929 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.39869 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 2772.0 LOG TYPE: Electric Log

SOURCE: EVANS, CHARLES T. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
148.0	CARBONDALE	SPRINGFIELD	COAL	-	310.0	
54.0	CARBONDALE	COLCHESTER	COAL	-	404.0	
-642.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1100.0	
-2278.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2736.0	TOP OF NEW ALBANY
-2284.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2742.0	
-2314.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2772.0	BASE OF NEW ALBANY

MAPID: 18902652000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 1 QUARTERS/FOOTAGES: 5' N line, 1029' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.493362 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.478506 DATE COLLECTED: 7 / 15 / 1967

SURFACE ELEVATION (FT.): 408.9 LOGGED (FT.): 360.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 13-OK WELL TYPE: Coal Test

COMMENT: CORE C-8501

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
282.4			COAL	2.5	126.5	
145.2	CARBONDALE	HERRIN	COAL	7.9	263.7	
65.6	CARBONDALE	HOUCHIN CREEK	COAL	4.8	343.3	

MAPID: 18902652000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 1 QUARTERS/FOOTAGES: 5' N line, 1029' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.493362

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.478506

DATE COLLECTED:

SURFACE ELEVATION (FT.): 409.0 LOGGED (FT.): 271.9

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 13-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
185.8	MODESTO	PIASA	LIMESTONE	8.2	223.2	
177.6	MODESTO		DARK GRAY SHALE	3.4	231.4	
174.2	CARBONDALE	DANVILLE	BONE COAL	0.8	234.8	
173.4	CARBONDALE		CLAYSTONE & SHALE	7.9	235.6	
165.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	243.5	UPPER BENCH
161.8	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	1.1	247.2	SHALE PARTING
160.7	CARBONDALE	BANKSTON FORK	LIMESTONE	1.3	248.3	LOWER BENCH
159.5	CARBONDALE	LAWSON	CALCAREOUS SHALE	0.4	249.5	
159.0	CARBONDALE	LAWSON	MOTTLED SHALE	5.8	250.0	
153.3	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.7	255.7	
152.6	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.3	256.4	
152.4	CARBONDALE	BRERETON	LIMESTONE	6.3	256.6	
146.1	CARBONDALE	ANNA	BLACK SHALE	1.1	262.9	
145.0	CARBONDALE	HERRIN	COAL	7.9	264.0	

MAPID: 18902653000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 2 QUARTERS/FOOTAGES: 874' N line, 92' W line of NE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.50118

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.469133

DATE COLLECTED: 9/ 11 / 1967

SURFACE ELEVATION (FT.): 441.3 LOGGED (FT.): 435.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 25-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8512

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
124.9	CARBONDALE	DANVILLE	COAL	1.1	316.4	
101.9	CARBONDALE	HERRIN	COAL	2.7	339.4	SPLIT
94.5	CARBONDALE	HERRIN	COAL	4.5	346.8	SPLIT
87.2	CARBONDALE	HERRIN	COAL	1.3	354.1	SPLIT
9.4	CARBONDALE	HOUCHIN CREEK	COAL	2.4	431.9	

MAPID: 18902653000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 2 QUARTERS/FOOTAGES: 874' N line, 92' W line of NE SE
 QUADRANGLE: OKAWVILLE LONGITUDE: -89.50118 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.469133 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 0.0 LOG TYPE: Survey Core Study
 SOURCE: TRUAX-TRAER COAL CO 25-OK WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	ENERGY	SHALE & SANDSTONE	24.0	
-	CARBONDALE	ENERGY	SHALE & SANDSTONE	99.5	
-	CARBONDALE	ENERGY	CARBONACEOUS SANDSTONE	53.8	
-	CARBONDALE	ENERGY	SILTY SHALE	60.8	

MAPID: 18902654000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 3 QUARTERS/FOOTAGES: 61' S line, 40' W line
 QUADRANGLE: OKAWVILLE LONGITUDE: -89.533102 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 38.465183 DATE COLLECTED: 6 / 20 / 1967
 SURFACE ELEVATION (FT.): 436.9 LOGGED (FT.): 346.0 LOG TYPE: Drillers Log
 SOURCE: TRUAX-TRAER COAL CO 9-OK WELL TYPE: Coal Test
 COMMENT: CORE C-8496

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
285.1			COAL	2.0	151.8

MAPID: 18902654000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 3 QUARTERS/FOOTAGES: 61' S line, 40' W line
 QUADRANGLE: OKAWVILLE LONGITUDE: -89.533102 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.465183 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 437.0 LOGGED (FT.): 0.0 LOG TYPE: Survey Core Study
 SOURCE: TRUAX-TRAER COAL CO 9-OK WELL TYPE: Coal Test
 COMMENT: POOR DESCRIPTION

MAPID: 18901072000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 4 QUARTERS/FOOTAGES: 30' S line, 620' W line of SW SW
 QUADRANGLE: OKAWVILLE LONGITUDE: -89.549656 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 38.466066 DATE COLLECTED: 10 / 0 / 1958
 SURFACE ELEVATION (FT.): 434.8 LOGGED (FT.): 314.0 LOG TYPE: Drillers Log
 SOURCE: TRUAX-TRAER COAL CO 44 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
132.3	CARBONDALE	HERRIN	COAL	6.5	302.5

MAPID: 18901277000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 4 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.541369 **GEOLOGIST:** C TREWORGY
CONFIDENTIAL: N **LATITUDE:** 38.466406 **DATE COLLECTED:** 8 / 0 / 1960
SURFACE ELEVATION (FT.): 410.0 **LOGGED (FT.):** 310.0 **LOG TYPE:** Electric Log
SOURCE: ROBBEN ROBERT H **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
100.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	310.0	THIN COAL

MAPID: 18902655000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 4 **QUARTERS/FOOTAGES:** 2640' S line, 1040' W line of SW SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.548063 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.473178 **DATE COLLECTED:** 7 / 1 / 1967
SURFACE ELEVATION (FT.): 406.7 **LOGGED (FT.):** 293.8 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 11-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8498

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
124.8	CARBONDALE	HERRIN	COAL	8.8	281.9	

MAPID: 18902656000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 4 **QUARTERS/FOOTAGES:** 176' S line, 484' E line of SW SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.539585 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.465877 **DATE COLLECTED:** 7 / 8 / 1967
SURFACE ELEVATION (FT.): 434.0 **LOGGED (FT.):** 350.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 12-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8499

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
157.0			COAL	0.9	277.0	
130.0	CARBONDALE	HERRIN	COAL	3.0	304.0	SPLIT
124.1	CARBONDALE	HERRIN	COAL	4.8	309.9	SPLIT
116.0			COAL	3.6	318.0	

MAPID: 18900820000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 5 QUARTERS/FOOTAGES: 47' S line, 37' W line of SW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.569924

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.474012

DATE COLLECTED: 1 / 30 / 1957

SURFACE ELEVATION (FT.): 403.7 LOGGED (FT.): 263.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 26

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
171.5			COAL	0.9	232.2	SEE COAL SECTION MAP 6-54-B & 6-54-C
150.6	CARBONDALE	HERRIN	COAL	8.2	253.1	SEE COAL SECTION MAP 6-54-B & 6-54-C

MAPID: 18901071000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 5 QUARTERS/FOOTAGES: 50' N line, 50' E line of NE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.551887

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.473265

DATE COLLECTED: 10 / 0 / 1958

SURFACE ELEVATION (FT.): 405.6 LOGGED (FT.): 275.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 43

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
137.0	CARBONDALE	HERRIN	COAL	5.2	268.6	

MAPID: 18901105000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 5 QUARTERS/FOOTAGES: 850' S line, 1' E line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560855

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.475988

DATE COLLECTED: 6 / 0 / 1959

SURFACE ELEVATION (FT.): 403.9 LOGGED (FT.): 264.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 53

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
181.2	CARBONDALE	DANVILLE	COAL	3.1	222.7	
148.4	CARBONDALE	HERRIN	COAL	7.3	255.5	

MAPID: 18902657000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 5 QUARTERS/FOOTAGES: 0' N line, 7' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.569958 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.479931 DATE COLLECTED: 7 / 22 / 1967

SURFACE ELEVATION (FT.): 403.5 LOGGED (FT.): 300.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 15-OK WELL TYPE: Coal Test

COMMENT: CORE C-8503

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
160.2	CARBONDALE	DANVILLE	COAL	2.3	243.3
127.6	CARBONDALE	HERRIN	COAL	8.0	275.9

MAPID: 18902657000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 5 QUARTERS/FOOTAGES: 0' N line, 7' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.569958 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.479931 DATE COLLECTED:

SURFACE ELEVATION (FT.): 404.0 LOGGED (FT.): 284.0 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 15-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN COMMENT	
166.1	MODESTO	PIASA	LIMESTONE	4.5	237.9	
161.6	MODESTO		GRAY SHALE	5.9	242.4	
155.7	CARBONDALE	DANVILLE	COAL	2.3	248.3	
153.4	CARBONDALE		CLAYSTONE	1.4	250.6	
152.0	CARBONDALE		DARK GRAY SHALE	3.2	252.0	
148.7	CARBONDALE	BANKSTON FORK	LIMESTONE	1.9	255.3	UPPER BENCH
146.8	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	0.8	257.2	SHALE PARTING
146.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	1.8	258.0	LOWER BENCH
144.2	CARBONDALE	LAWSON	GRAY SHALE	4.6	259.8	
139.7	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.9	264.3	
138.7	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.3	265.3	
138.4	CARBONDALE	BRERETON	LIMESTONE/SILTSTONE	10.2	265.6	
128.2	CARBONDALE	ANNA	MOTTLED SHALE	0.3	275.8	
128.0	CARBONDALE	HERRIN	COAL	8.0	276.0	

MAPID: 18902658000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 5 QUARTERS/FOOTAGES: 24' S line, 32' E line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560994 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.473711 DATE COLLECTED: 7 / 29 / 1967

SURFACE ELEVATION (FT.): 404.8 LOGGED (FT.): 354.7 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 16-OK WELL TYPE: Coal Test

COMMENT: CORE C-8504

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
170.9	CARBONDALE	DANVILLE	COAL	0.8	233.9	
140.9	CARBONDALE	HERRIN	COAL	8.0	263.9	
56.0	CARBONDALE	HOUCHIN CREEK	COAL	2.8	348.8	

MAPID: 18902658000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 5 QUARTERS/FOOTAGES: 24' S line, 32' E line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560994 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.473711 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 272.0 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 16-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
193.9	MODESTO	PIASA	LIMESTONE	8.5	226.1	
185.4	MODESTO		DARK GRAY SHALE	1.9	234.6	
183.5	CARBONDALE	DANVILLE	COAL	0.8	236.5	
182.7	CARBONDALE		CLAYSTONE	0.3	237.3	
182.4	CARBONDALE		GRAY SHALE	5.9	237.6	
176.5	CARBONDALE		CALCAREOUS SHALE	0.8	243.5	
175.7	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	244.3	UPPER BENCH
172.4	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	0.5	247.6	SHALE PARTING
171.9	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	2.1	248.1	LOWER BENCH
169.8	CARBONDALE	LAWSON	MOTTLED SHALE	4.9	250.2	
164.9	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	1.3	255.1	
163.5	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.5	256.5	
163.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	5.8	257.0	
157.3	CARBONDALE	ANNA	DARK GRAY SHALE	1.3	262.7	
156.0	CARBONDALE	HERRIN	COAL	8.0	264.0	

MAPID: 18901073000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 6 QUARTERS/FOOTAGES: 480' N line, 92' E line of NW SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.576206 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.472539 DATE COLLECTED: 12 / 0 / 1958

SURFACE ELEVATION (FT.): 404.6 LOGGED (FT.): 288.3 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 45 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
159.8	CARBONDALE	DANVILLE	COAL	2.0	244.8
157.8	CARBONDALE		NO RECORD	33.7	246.8
124.1	CARBONDALE	HERRIN	COAL	7.8	280.5

MAPID: 18901074000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 6 QUARTERS/FOOTAGES: 542' S line, 1066' E line of NW NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.57958 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.478232 DATE COLLECTED: 12 / 0 / 1958

SURFACE ELEVATION (FT.): 404.0 LOGGED (FT.): 280.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 46 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
161.2	CARBONDALE	DANVILLE	COAL	2.8	242.8
132.7	CARBONDALE	HERRIN	COAL	7.7	271.3

MAPID: 18902659000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 6 QUARTERS/FOOTAGES: 24' S line, 99' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.592967 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.466583 DATE COLLECTED: 7 / 18 / 1967

SURFACE ELEVATION (FT.): 407.3 LOGGED (FT.): 300.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 14-OK WELL TYPE: Coal Test

COMMENT: CORE C-8502

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
170.3	CARBONDALE	DANVILLE	COAL	3.5	237.0
139.9	CARBONDALE	HERRIN	COAL	7.5	267.4

MAPID: 18902659000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 6 QUARTERS/FOOTAGES: 24' S line, 99' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.592967

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.466583

DATE COLLECTED:

SURFACE ELEVATION (FT.): 407.0 LOGGED (FT.): 274.6

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 14-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
176.2	MODESTO	PIASA	LIMESTONE	7.6	230.8	
168.6	MODESTO		SHALE	2.5	238.4	
166.1	CARBONDALE	DANVILLE	COAL	3.5	240.9	
162.6	CARBONDALE		CLAYSTONE	0.8	244.4	
161.8	CARBONDALE		LIMESTONE W/ SHALE	3.3	245.2	
158.6	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	248.4	UPPER BENCH
155.3	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	1.0	251.7	SHALE PARTING
154.3	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	1.8	252.7	LOWER BENCH
152.6	CARBONDALE	LAWSON	MOTTLED SHALE	5.3	254.4	
147.2	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.8	259.8	
146.5	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.3	260.5	
146.2	CARBONDALE	BRERETON	LIMESTONE	4.5	260.8	
141.7	CARBONDALE	ANNA	DARK GRAY SHALE	1.8	265.3	
140.0	CARBONDALE	HERRIN	COAL	7.6	267.0	

MAPID: 18900070000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: SE SW NW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591133

GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.463343

DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 409.6 LOGGED (FT.): 278.0

LOG TYPE:

SOURCE: INTRNTLCMC P9

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
142.6	CARBONDALE	HERRIN	COAL	7.7	267.0	

MAPID: 18900070000C VERSION: 2

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: SE SW NW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591133 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.463343 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 409.6 LOGGED (FT.): 278.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG. WELL TYPE: Coal Test

COMMENT: IRREGULAR SECTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.6			UNCONSOLIDATED	107.0	0.0	
302.6	BOND		SHALE	37.0	107.0	
265.6	BOND		SANDSTONE	27.0	144.0	
238.6	BOND		SHALE	32.0	171.0	
206.6	BOND	CARTHAGE	LIMESTONE	18.0	203.0	
188.6	MODESTO		BLACK SHALE	4.0	221.0	
184.6	MODESTO		COAL	1.0	225.0	
183.6	MODESTO		UNDERCLAY	2.0	226.0	
181.6	MODESTO		BLACK SHALE	6.0	228.0	
175.6	MODESTO		LIMESTONE	2.5	234.0	
173.1	MODESTO		BLACK SHALE	1.0	236.5	
172.1	MODESTO		COAL	2.5	237.5	
169.6	MODESTO		UNDERCLAY	1.0	240.0	
168.6	MODESTO		BLACK SHALE	1.0	241.0	
167.6	MODESTO		SHALE	4.5	242.0	
163.1	MODESTO	PIASA	LIMESTONE	5.8	246.5	
157.3	MODESTO		SHALE	0.8	252.3	
156.6	MODESTO		BLACK SHALE	2.0	253.0	
154.6	MODESTO		SHALE	4.0	255.0	
150.6	CARBONDALE	DANVILLE	COAL	1.3	259.0	
149.3	CARBONDALE		BLACK SHALE	0.7	260.3	
148.7	CARBONDALE	BRERETON	LIMESTONE	5.3	260.9	
143.3	CARBONDALE	ANNA	BLACK SHALE	0.3	266.3	
143.0	CARBONDALE	HERRIN	COAL	7.7	266.6	
135.3	CARBONDALE		UNDERCLAY	2.0	274.3	
133.3	CARBONDALE		LIMESTONE	1.8	276.3	

MAPID: 18900070000C VERSION: 3

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: SE SW NW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591133 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.463343 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 409.6 LOGGED (FT.): 278.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #P-9 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
409.6			UNCONSOLIDATED	107.0	0.0
302.6	MODESTO		SHALE	4.0	107.0
298.6	MODESTO		SANDY SHALE	33.0	111.0
265.6	MODESTO		SANDSTONE	27.0	144.0
238.6	MODESTO		SHALE	10.0	171.0
228.6	MODESTO		SHALE	22.0	181.0
206.6	MODESTO		LIMESTONE	18.7	203.0
187.9	MODESTO		BLACK SHALE	3.3	221.7
184.6	MODESTO		COAL	1.5	225.0
183.1	MODESTO		UNDERCLAY	1.5	226.5
181.6	MODESTO		BLACK SHALE	6.0	228.0
175.6	MODESTO	PIASA	LIMESTONE	2.5	234.0
173.1	CARBONDALE		BLACK SHALE	1.0	236.5
172.1	CARBONDALE	DANVILLE	COAL	2.5	237.5
169.6	CARBONDALE		UNDERCLAY	1.0	240.0
168.6	CARBONDALE		BLACK SHALE	1.0	241.0
167.6	CARBONDALE		SHALE	4.5	242.0
163.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.8	246.5
157.3	CARBONDALE		SHALE	1.5	252.3
155.8	CARBONDALE		BLACK SHALE	1.3	253.8
154.6	CARBONDALE		SHALE	4.8	255.0
149.8	CARBONDALE	JAMESTOWN	COAL	0.5	259.8
149.3	CARBONDALE		BLACK SHALE	0.7	260.3
148.7	CARBONDALE	BRERETON	LIMESTONE	5.3	260.9
143.3	CARBONDALE	ANNA	BLACK SHALE	0.3	266.3
143.0	CARBONDALE	HERRIN	COAL	7.7	266.6
135.3	CARBONDALE		UNDERCLAY	2.0	274.3
133.3	CARBONDALE		LIMESTONE	1.8	276.3

MAPID: 18900781000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 7 **QUARTERS/FOOTAGES:** 166' S line, 50' W line of NE NE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.575697 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.463376 **DATE COLLECTED:** 11 / 30 / 1956
SURFACE ELEVATION (FT.): 409.5 **LOGGED (FT.):** 283.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 22 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
166.6	CARBONDALE	DANVILLE	COAL	2.0	242.9	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
135.7	CARBONDALE	HERRIN	COAL	7.8	273.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900793000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 7 **QUARTERS/FOOTAGES:** 60' S line, 28' W line of SE SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.575542 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.452107 **DATE COLLECTED:** 12 / 15 / 1956
SURFACE ELEVATION (FT.): 409.0 **LOGGED (FT.):** 355.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 23 **WELL TYPE:** Coal Test
COMMENT: CORE C-3426

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
150.9	CARBONDALE	HERRIN	COAL	4.7	258.1	
65.8	CARBONDALE	HOUCHIN CREEK	COAL	2.8	343.2	

MAPID: 18900817000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 7 **QUARTERS/FOOTAGES:** 994' S line, 446' W line of SW SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.591747 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.454735 **DATE COLLECTED:** 1 / 17 / 1957
SURFACE ELEVATION (FT.): 411.2 **LOGGED (FT.):** 327.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 24 **WELL TYPE:** Coal Test
COMMENT: CORE C-3427

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
170.4	CARBONDALE	HERRIN	COAL	1.9	240.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
93.4	CARBONDALE	HOUCHIN CREEK	COAL	2.6	317.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900818000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: 150' S line, 82' E line of NE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.570146

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.456006

DATE COLLECTED: 1 / 23 / 1957

SURFACE ELEVATION (FT.): 408.9 LOGGED (FT.): 290.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 25

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
161.5	CARBONDALE	DANVILLE	COAL	1.4	247.4	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
129.6	CARBONDALE	HERRIN	COAL	8.2	279.3	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900818000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: 150' S line, 82' E line of NE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.570146

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.456006

DATE COLLECTED:

SURFACE ELEVATION (FT.): 409.0 LOGGED (FT.): 287.2

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 25

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
174.0	MODESTO	PIASA	LIMESTONE	10.6	235.0	
163.4	MODESTO		DARK GRAY SHALE	2.3	245.6	
161.2	CARBONDALE	DANVILLE	COAL	1.4	247.8	
159.7	CARBONDALE		CLAYSTONE	2.2	249.3	
157.6	CARBONDALE		DARK GRAY SHALE	6.5	251.4	
151.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	257.9	
148.1	CARBONDALE		SHALE	11.5	260.9	
136.6	CARBONDALE	BRERETON	LIMESTONE	4.8	272.4	
131.8	CARBONDALE	ANNA	BLACK SHALE	2.5	277.2	
130.0	CARBONDALE	HERRIN	COAL	8.2	279.0	

MAPID: 18900819000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: 232' S line, 40' W line of NE SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.587311

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.456256

DATE COLLECTED: 2 / 5 / 1957

SURFACE ELEVATION (FT.): 410.5 LOGGED (FT.): 273.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 27

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
146.7	CARBONDALE	HERRIN	COAL	8.4	263.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900843000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: 260' S line, 28' W line of SE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.575553

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.452659

DATE COLLECTED: 5 / 16 / 1957

SURFACE ELEVATION (FT.): 409.0 LOGGED (FT.): 278.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 36

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
171.4	CARBONDALE	DANVILLE	COAL	2.5	237.6	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
140.1	CARBONDALE	HERRIN	COAL	7.3	268.9	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900853000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: 1101' S line, 446' W line of SW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591748

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.45503

DATE COLLECTED: 6 / 1 / 1957

SURFACE ELEVATION (FT.): 408.0 LOGGED (FT.): 246.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 38

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
200.4	CARBONDALE	DANVILLE	COAL	2.7	207.6	
170.0	CARBONDALE	HERRIN	COAL	7.0	238.0	

MAPID: 18900854000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: 839' S line, 446' W line of SW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591747

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.454307

DATE COLLECTED: 6 / 10 / 1957

SURFACE ELEVATION (FT.): 412.1 LOGGED (FT.): 251.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 39

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
199.2	CARBONDALE	DANVILLE	COAL	0.8	212.9	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
169.7	CARBONDALE	HERRIN	COAL	7.3	242.4	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900855000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: 490' S line, 1020' W line of SE SW

QUADRANGLE: OKAWVILLE

LONGITUDE: -89.58385

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.453319

DATE COLLECTED: 6 / 17 / 1957

SURFACE ELEVATION (FT.): 409.8

LOGGED (FT.): 296.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 40

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
166.9	CARBONDALE	DANVILLE	COAL	2.9	242.9
124.8	CARBONDALE	HERRIN	COAL	9.8	285.0

MAPID: 18902660000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: 750' N line, 25' W line of SW NE

QUADRANGLE: OKAWVILLE

LONGITUDE: -89.581562

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.460838

DATE COLLECTED: 4 / 12 / 1968

SURFACE ELEVATION (FT.): 409.6

LOGGED (FT.): 370.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 51-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8537

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
164.3	CARBONDALE	DANVILLE	COAL	1.7	245.3
136.6	CARBONDALE	HERRIN	COAL	8.2	273.0
44.2	CARBONDALE	HOUCHIN CREEK	COAL	2.4	365.4

MAPID: 18923562000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 7 QUARTERS/FOOTAGES: SE NE NE NW

QUADRANGLE: OKAWVILLE

LONGITUDE: -89.582438

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.465186

DATE COLLECTED: 6 / 20 / 1979

SURFACE ELEVATION (FT.):

LOGGED (FT.): 286.5

LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-3A-79

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	7.6	276.4

MAPID: 18923612000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 7 **QUARTERS/FOOTAGES:** 2610' N line, 30' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.570054 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.459393 **DATE COLLECTED:** 5 / 14 / 1980
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 290.7 **LOG TYPE:** Other Core Study
SOURCE: FREEMAN UNITED OK-1-80 **WELL TYPE:** Coal Test
COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.5	279.2	

MAPID: 18923675000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 7 **QUARTERS/FOOTAGES:** 2610' S line, 200' W line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.592613 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.459198 **DATE COLLECTED:** 6 / 3 / 1980
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 262.7 **LOG TYPE:** Other Core Study
SOURCE: FREEMAN UNITED OK-7A-80 **WELL TYPE:** Coal Test
COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.3	255.3	

MAPID: 18900748000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 8 **QUARTERS/FOOTAGES:** 152' N line, 18' E line of SE SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.560651 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.454888 **DATE COLLECTED:** 10 / 24 / 1956
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 351.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 18 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
123.7	CARBONDALE	DANVILLE	COAL	1.7	296.3	SEE COAL SECT MAPS 6-54-A,6-54-B,6-54-C
80.1	CARBONDALE	HERRIN	COAL	10.8	339.9	

MAPID: 18900760000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: 1066' S line, 60' W line of NW NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560751 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.465611 DATE COLLECTED: 11 / 13 / 1956

SURFACE ELEVATION (FT.): 403.5 LOGGED (FT.): 227.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 20 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCLASSIFIED	0.0		TD 227' - NO COAL PICKS

MAPID: 18900761000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: 1073' S line, 55' W line of NW NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560769 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.46563 DATE COLLECTED: 11 / 17 / 1956

SURFACE ELEVATION (FT.): 404.2 LOGGED (FT.): 280.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 21 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
163.4	CARBONDALE	DANVILLE	COAL	1.6	240.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900836000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: 20' S line, 30' E line of NE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.551463 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.455077 DATE COLLECTED: 4 / 18 / 1957

SURFACE ELEVATION (FT.): 434.6 LOGGED (FT.): 359.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 33 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
126.9	CARBONDALE	DANVILLE	COAL	1.2	307.7	SEE COAL SECT MAPS 6-54-A,6-54-B,6-54-C
87.1	CARBONDALE	HERRIN	COAL	9.8	347.5	SEE COAL SECT MAPS 6-54-A,6-54-B,6-54-C

MAPID: 18900839000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: 93' N line, 532' W line of SW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.567968

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.455276

DATE COLLECTED: 4 / 29 / 1957

SURFACE ELEVATION (FT.): 411.0 LOGGED (FT.): 309.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 34

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
147.5	CARBONDALE	DANVILLE	COAL	1.8	263.5	SEE COAL SECT MAPS 6-54-A,6-54-B,6-54-C
112.1	CARBONDALE	HERRIN	COAL	9.3	298.9	SEE COAL SECT MAPS 6-54-A,6-54-B,6-54-C

MAPID: 18900841000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: 15' S line, 500' W line of SW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.56799

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.451907

DATE COLLECTED: 0 / 0 / 1957

SURFACE ELEVATION (FT.): 409.0 LOGGED (FT.): 316.3

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 35

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
141.7	CARBONDALE	DANVILLE	COAL	1.4	267.3	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
103.1	CARBONDALE	HERRIN	COAL	9.4	305.9	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18902661000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: 48' N line, 33' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.570023

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.466461

DATE COLLECTED: 6 / 26 / 1967

SURFACE ELEVATION (FT.): 409.7 LOGGED (FT.): 300.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 10-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8497

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
181.7	CARBONDALE	DANVILLE	COAL	3.8	228.0	
150.4	CARBONDALE	HERRIN	COAL	7.8	259.3	

MAPID: 18902661000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: 48' N line, 33' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.570023

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.466461

DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 266.8

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 10-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
191.4	MODESTO	PIASA	LIMESTONE	8.0	218.6	
183.4	MODESTO		DARK GRAY SHALE	2.0	226.6	
181.4	CARBONDALE	DANVILLE	COAL	3.0	228.6	
178.4	CARBONDALE		CLAYSTONE	0.3	231.6	
178.1	CARBONDALE		GRAY SHALE	9.3	231.9	
168.8	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	241.2	UPPER BENCH
163.8	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	1.2	246.2	SHALE PARTING
162.6	CARBONDALE	BANKSTON FORK	LIMESTONE	1.8	247.4	LOWER BENCH
160.9	CARBONDALE	LAWSON	MOTTLED SHALE	0.3	249.1	
160.5	CARBONDALE	LAWSON	DARK GRAY SHALE	4.7	249.5	
155.9	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.7	254.1	
155.2	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.4	254.8	
154.8	CARBONDALE	ANNA	BLACK SHALE	1.7	255.2	
153.1	CARBONDALE	ENERGY	GRAY SHALE	2.1	256.9	
151.0	CARBONDALE	HERRIN	COAL	7.8	259.0	

MAPID: 18902662000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: 30' N line, 428' W line of SW NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.559351

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.462547

DATE COLLECTED: 4 / 25 / 1968

SURFACE ELEVATION (FT.): 408.0 LOGGED (FT.): 390.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 53-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8539

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
143.1	CARBONDALE	DANVILLE	COAL	2.2	264.9	
112.2	CARBONDALE	HERRIN	COAL	8.2	295.8	
26.2	CARBONDALE	HOUCHIN CREEK	COAL	2.3	381.8	

MAPID: 18923564000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 8 QUARTERS/FOOTAGES: NW SW NE SE

QUADRANGLE: OKAWVILLE

LONGITUDE: -89.555456

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.456527

DATE COLLECTED: 6 / 6 / 1979

SURFACE ELEVATION (FT.):

LOGGED (FT.): 350.6

LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED

OK-4A-79

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	10.5	338.2

MAPID: 18900071000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 9 QUARTERS/FOOTAGES: NW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.54943 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.464131 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 442.7 LOGGED (FT.): 350.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG, #P-11 WELL TYPE: Coal Test

COMMENT: ENGLER FARM

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.7			UNCONSOLIDATED	128.0	0.0	
314.7	MODESTO		SANDSTONE	10.7	128.0	
304.0	MODESTO		COAL	0.3	138.7	
303.7	MODESTO		SANDSTONE	49.0	139.0	
254.7	MODESTO		BLACK SHALE	4.0	188.0	
250.7	MODESTO		LIMESTONE	1.8	192.0	
248.9	MODESTO	CHAPEL	COAL	0.3	193.8	
248.7	MODESTO	CHAPEL	BLACK SHALE	0.5	194.0	
248.2	MODESTO	CHAPEL	COAL	0.5	194.5	
247.7	MODESTO		SANDY SHALE	16.0	195.0	
231.7	MODESTO		SHALE	20.0	211.0	
211.7	MODESTO		SHALE	20.0	231.0	
191.7	MODESTO		SHALE	32.0	251.0	
159.7	CARBONDALE		SHALE	20.0	283.0	
139.7	CARBONDALE		SANDY SHALE	8.0	303.0	
131.7	CARBONDALE		SHALE	2.0	311.0	
129.7	CARBONDALE		LIMESTONE	2.5	313.0	
127.2	CARBONDALE		SHALE	0.5	315.5	
126.7	CARBONDALE		LIMESTONE	2.0	316.0	
124.7	CARBONDALE		SHALE	1.0	318.0	
123.7	CARBONDALE		LIMESTONE	1.0	319.0	
122.7	CARBONDALE		LIMESTONE	3.0	320.0	
119.7	CARBONDALE		LIMESTONE	6.0	323.0	
113.7	CARBONDALE	ANNA	BLACK SHALE	3.5	329.0	
110.2	CARBONDALE	HERRIN	COAL	2.8	332.5	UPPER BENCH
107.4	CARBONDALE	HERRIN	SHALE	0.8	335.3	SHALE PARTING
106.5	CARBONDALE	HERRIN	COAL	4.8	336.2	MIDDLE BENCH
101.8	CARBONDALE	HERRIN	SHALE	0.9	340.9	SH PARTING
100.9	CARBONDALE	HERRIN	BONE COAL	2.0	341.8	LOWER BENCH
98.9	CARBONDALE		UNDERCLAY	3.0	343.8	
95.9	CARBONDALE		LIMESTONE	3.2	346.8	

MAPID: 18900071000C **VERSION:** 2 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.54943 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.464131 **DATE COLLECTED:** 0 / 0 / 1920
SURFACE ELEVATION (FT.): 442.7 **LOGGED (FT.):** 350.0 **LOG TYPE:**
SOURCE: INTRNTLCMC0P11 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
110.7	CARBONDALE	HERRIN	COAL	11.3	332.0	

MAPID: 18900365000C **VERSION:** 1 **PROJECT:** ISGS
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 9 **QUARTERS/FOOTAGES:** 660' S line, 660' E line of NE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.535378 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.459724 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 439.0 **LOGGED (FT.):** **LOG TYPE:** Survey Core Study
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: PICKS FROM ELOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	SANDSTONE	0.0		COAL CUT OUT BY WALSHVILLE CHANNEL
39.0	CARBONDALE	HOUCHIN CREEK	COAL	-	400.0	

MAPID: 18901078000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 9 **QUARTERS/FOOTAGES:** 35' S line, 25' W line of SE SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.5465 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.45122 **DATE COLLECTED:** 2 / 0 / 1959
SURFACE ELEVATION (FT.): 443.2 **LOGGED (FT.):** 370.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 50 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
82.7	CARBONDALE	HERRIN	COAL	8.3	360.5	SEE COAL SECT MAP 6-54- C7

MAPID: 18902663000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 9 QUARTERS/FOOTAGES: 7' S line, 3' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.55119 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.451339 DATE COLLECTED: 4 / 24 / 1967

SURFACE ELEVATION (FT.): 442.4 LOGGED (FT.): 393.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 3-OK WELL TYPE: Coal Test

COMMENT: CORE C-8490

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
116.1	CARBONDALE	DANVILLE	COAL	0.7	326.3	
73.9	CARBONDALE	HERRIN	COAL	3.3	368.5	SPLIT
68.6	CARBONDALE	HERRIN	COAL	6.5	373.8	SPLIT

MAPID: 18902663000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 9 QUARTERS/FOOTAGES: 7' S line, 3' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.55119 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.451339 DATE COLLECTED:

SURFACE ELEVATION (FT.): 442.0 LOGGED (FT.): 380.8 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 3-OK WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
126.6	MODESTO	PIASA	LIMESTONE	5.1	315.4	
121.5	MODESTO		DARK GRAY SHALE	6.3	320.5	
115.2	CARBONDALE	DANVILLE	COAL	0.7	326.8	
114.6	CARBONDALE		GRAY SHALE	8.0	327.4	
106.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	335.4	UPPER BENCH
102.6	CARBONDALE	BANKSTON FORK	DARK GRAY SHALE	0.5	339.4	SHALE PARTING
102.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	339.9	LOWER BENCH
100.1	CARBONDALE	LAWSON	DARK GRAY SHALE	5.1	341.9	
95.0	CARBONDALE	CONANT	LIMESTONE	7.8	347.0	
87.2	CARBONDALE		DARK GRAY SHALE	0.2	354.8	
87.0	CARBONDALE	BRERETON	LIMESTONE	8.5	355.0	
78.5	CARBONDALE	ANNA	BLACK SHALE	4.5	363.5	
74.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	12.8	368.0	

MAPID: 18902664000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 9 **QUARTERS/FOOTAGES:** 30' S line, 1126' W line of SE SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.542627 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.451045 **DATE COLLECTED:** 5 / 3 / 1967
SURFACE ELEVATION (FT.): 437.6 **LOGGED (FT.):** 385.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 4-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8491

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
254.6			COAL	2.3	183.0	

MAPID: 18902665000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 9 **QUARTERS/FOOTAGES:** SE SE NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.543447 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.459224 **DATE COLLECTED:** 5 / 26 / 1967
SURFACE ELEVATION (FT.): 442.1 **LOGGED (FT.):** 371.3 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 6-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8493

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
82.8	CARBONDALE	HERRIN	COAL	8.8	359.3	

MAPID: 18902666000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 9 **QUARTERS/FOOTAGES:** 48' S line, 48' W line of NE NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.546872 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.462285 **DATE COLLECTED:** 10 / 20 / 1967
SURFACE ELEVATION (FT.): 442.2 **LOGGED (FT.):** 415.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 31-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8518

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
236.5	MODESTO	CHAPEL	COAL	1.0	205.7	
111.6	CARBONDALE	HERRIN	COAL	11.4	330.6	
34.4	CARBONDALE	HOUCHIN CREEK	COAL	1.8	407.8	

MAPID: 18901069000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 10 **QUARTERS/FOOTAGES:** 95' S line, 55' W line of NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.532811 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.458038 **DATE COLLECTED:** 9 / 0 / 1958
SURFACE ELEVATION (FT.): 441.1 **LOGGED (FT.):** 410.5 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 41 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
34.6	CARBONDALE	HOUCHIN CREEK	COAL	2.9	406.5	SEE COAL SECT MAP 6-54-C7

MAPID: 18901069000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 10 **QUARTERS/FOOTAGES:** 95' S line, 55' W line of NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.532811 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.458038 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 441.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 41 **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	ENERGY	SHALE & SANDSTONE	100.0		

MAPID: 18901218000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 10 **QUARTERS/FOOTAGES:** 12' S line, 270' E line of NW SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.519868 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.453861 **DATE COLLECTED:** 0 / 0 / 1959
SURFACE ELEVATION (FT.): 446.7 **LOGGED (FT.):** 400.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 59 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
167.4			COAL	1.8	279.3	COAL-SOFT N6;SEE COAL SECT MAP 6-54-C

MAPID: 18924557000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 11 QUARTERS/FOOTAGES: 300' N line, 200' W line of NE NE NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.49837 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.463551 DATE COLLECTED: 7 / 15 / 1981

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 369.0 LOG TYPE:

SOURCE: EXXON COAL RESOURCES 8W-678 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
141.0	MODESTO	PIASA	LIMESTONE	8.0	299.0	
133.0			GRAY SHALE	12.0	307.0	
121.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	319.0	
119.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	2.7	321.0	
116.3	CARBONDALE	BANKSTON FORK	LIMESTONE	1.9	323.7	
114.4	CARBONDALE		GRAY SHALE	3.3	325.6	
111.2	CARBONDALE		LIMESTONE	0.8	328.8	
110.4	CARBONDALE		GRAY SHALE	1.1	329.6	
109.3	CARBONDALE	BRERETON	LIMESTONE	5.4	330.7	
103.9	CARBONDALE	ANNA	BLACK SHALE	1.1	336.1	
102.8	CARBONDALE	HERRIN	COAL	1.8	337.2	
101.0	CARBONDALE	HERRIN	BLACK SHALE	2.5	339.0	CARBONACEOUS, 10% COAL STREAKS
98.5	CARBONDALE	HERRIN	COAL	2.3	341.5	
96.2	CARBONDALE	HERRIN	BLACK SHALE & CLAY	1.2	343.8	W/ 10% COAL STREAKS
95.0	CARBONDALE	HERRIN	CLAYSTONE	2.1	345.0	
92.9	CARBONDALE	HERRIN	COAL	1.5	347.1	
91.4	CARBONDALE		CLAYSTONE & SILTSTONE	0.5	348.6	
91.0	CARBONDALE		SHALE	1.2	349.0	
89.8	CARBONDALE		CLAYSTONE & SILTSTONE	4.1	350.2	W/ LS NODS, CORE LOSS 350.2-350.9
85.7	CARBONDALE		GRAY SHALE	3.0	354.3	
82.7	CARBONDALE		SANDSTONE	2.7	357.3	ABUNDANT LS NODS.
80.0	CARBONDALE		SILTSTONE	1.0	360.0	
79.0	CARBONDALE		CLAYSTONE	1.1	361.0	
77.9	CARBONDALE		SANDSTONE	5.7	362.1	
72.2	CARBONDALE		SILTSTONE	1.2	367.8	W/ SS STREAKS

MAPID: 18924558000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 11 QUARTERS/FOOTAGES: SE SE SE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.49663 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.449937 DATE COLLECTED: 7 / 17 / 1981

SURFACE ELEVATION (FT.): 448.0 LOGGED (FT.): 328.9 LOG TYPE: Multiple log types

SOURCE: EXXON COAL RESOURCES 8W-679 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG, CORE REPORT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
174.0	MODESTO	PIASA	LIMESTONE	10.0	274.0	DRILLER'S LOG 0-294.7
164.0			GRAY SHALE	7.0	284.0	
157.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.8	291.0	CORE 294.3-328.85
151.2	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	1.5	296.8	
149.7	CARBONDALE		SHALE	1.6	298.3	
148.2	CARBONDALE	CONANT	LIMESTONE	0.8	299.8	
147.4	CARBONDALE		BLACK SHALE	0.7	300.6	
146.7	CARBONDALE	JAMESTOWN	COAL	0.0	301.3	
146.7	CARBONDALE	BRERETON	LIMESTONE	2.2	301.3	
144.5	CARBONDALE		DARK SHALE	0.1	303.5	
144.4	CARBONDALE	HERRIN	COAL	1.6	303.6	
142.9	CARBONDALE	HERRIN	BLACK SHALE	0.6	305.1	CARBONACEOUS, 25% COAL
142.3	CARBONDALE	HERRIN	CLAYSTONE & SILTSTONE	0.1	305.7	
142.2	CARBONDALE	HERRIN	COAL	0.2	305.8	
142.0	CARBONDALE	HERRIN	COAL	2.1	306.0	
139.9	CARBONDALE		CLAYSTONE	1.9	308.1	PLANT DEBRIS, PYRITE NODULES
138.0	CARBONDALE		SILTSTONE	18.9	310.0	OCC SID NODS > 326, OCC COAL STRKS > 328

MAPID: 18924559000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 12 QUARTERS/FOOTAGES: 85' S line, 55' E line of NE NW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.487626 GEOLOGIST: E. PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.460527 DATE COLLECTED: 1 / 19 / 1968

SURFACE ELEVATION (FT.): 448.0 LOGGED (FT.): 381.0 LOG TYPE: Multiple log types

SOURCE: CARTER OIL WF-102 WELL TYPE: Coal Test

COMMENT: CORE REPORT, DRILLER'S LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
125.8	MODESTO	PIASA	LIMESTONE	7.0	322.2	
118.8	MODESTO		SHALE	2.7	329.2	
116.1	CARBONDALE	DANVILLE	COAL	1.2	331.9	
114.9	CARBONDALE		GRAY & BLACK SHALE	2.0	333.1	GREY-BK, CARB; CORE LOSS 333.2-334.8
113.0	CARBONDALE		SILTSTONE	4.6	335.0	
108.4	CARBONDALE		LIMESTONE	1.2	339.6	
107.2	CARBONDALE		SHALE & SILTSTONE	1.7	340.8	
105.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	342.5	
102.7	CARBONDALE	BANKSTON FORK	SHALE	0.9	345.3	
101.8	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	346.2	2 THIN (<0.3') SHALE BEDS
97.1	CARBONDALE		SHALE	3.0	350.9	
94.1	CARBONDALE		LIMESTONE	2.2	353.9	
91.9	CARBONDALE		BLACK SHALE	0.2	356.1	GY-BLK, CARB SHALE & SLATY COAL
91.7	CARBONDALE	CONANT	LIMESTONE	5.2	356.3	
86.5	CARBONDALE		BLACK SHALE	2.4	361.5	BLACK, CARBONACEOUS
84.2	CARBONDALE	BRERETON	LIMESTONE	0.4	363.8	
83.8	CARBONDALE	ANNA	BLACK SHALE	4.1	364.2	
79.7	CARBONDALE	HERRIN	COAL	2.2	368.3	
77.5	CARBONDALE	HERRIN	CLAYSTONE & SHALE	0.6	370.5	TOTAL PARTINGS FROM 370.5- 372, SEE LOG
76.9	CARBONDALE	HERRIN	COAL	1.0	371.1	TOTAL COAL FROM 370.5-372, SEE LOG
76.0	CARBONDALE	HERRIN	COAL	3.1	372.0	
72.9	CARBONDALE	HERRIN	CLAYSTONE & SHALE	1.3	375.1	TOTAL PARTINGS FROM 375.06- 376.79, SEE L
71.7	CARBONDALE	HERRIN	COAL	0.5	376.3	TOTAL COAL FROM 375.06- 376.79, SEE LOG
71.2	CARBONDALE	HERRIN	COAL	3.2	376.8	
68.0	CARBONDALE		CLAYSTONE & SHALE	1.0	380.0	W/ COAL SPARS

MAPID: 18901217000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** 760' N line, 605' W line of SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.52109 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.440838 **DATE COLLECTED:** 0 / 0 / 1959
SURFACE ELEVATION (FT.): 438.7 **LOGGED (FT.):** 400.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 58 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCLASSIFIED	0.0		TD 400' - NO COAL PICKS

MAPID: 18901217000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** 760' N line, 605' W line of SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.52109 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.440838 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 439.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 58 **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	ENERGY	SHALE & SANDSTONE	100.0		

MAPID: 18900754000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 16 **QUARTERS/FOOTAGES:** 238' S line, 477' E line of NW SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.547876 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.440952 **DATE COLLECTED:** 10 / 11 / 1956
SURFACE ELEVATION (FT.): 443.2 **LOGGED (FT.):** 335.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 19 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
168.2	MODESTO	PIASA	LIMESTONE	16.3	275.0	SEE COAL SECT MAP 6-54-C
134.2	CARBONDALE	JAMESTOWN	COAL	1.5	309.0	SEE COAL SECT MAP 6-54-C
124.7	CARBONDALE	BRERETON	LIMESTONE	4.8	318.5	SEE COAL SECT MAP 6-54-C
119.3	CARBONDALE	HERRIN	COAL	6.3	323.9	SEE COAL SECT MAP 6-54-C

MAPID: 18901077000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 16 QUARTERS/FOOTAGES: 577' N line, 298' E line of SW SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.537934 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.438313 DATE COLLECTED: 2 / 0 / 1959

SURFACE ELEVATION (FT.): 442.9 LOGGED (FT.): 374.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 49 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-			UNCLASSIFIED	0.0	TD 374' - NO COAL

MAPID: 18902667000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 16 QUARTERS/FOOTAGES: 475' S line, 2626' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.541472 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.437732 DATE COLLECTED: 5 / 10 / 1967

SURFACE ELEVATION (FT.): 440.8 LOGGED (FT.): 352.3 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 5-OK WELL TYPE: Coal Test

COMMENT: CORE C-8492

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-			UNCLASSIFIED	0.0	NO COAL; CORE NORM TO 322' THEN VY SANDY

MAPID: 18902667000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 16 QUARTERS/FOOTAGES: 475' S line, 2626' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.541472 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.437732 DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 361.2 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 5-OK WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
131.0	MODESTO	PIASA	LIMESTONE	10.0	310.0
121.0	CARBONDALE	ENERGY	DARK GRAY SHALE	11.8	320.0
109.2	CARBONDALE	ENERGY	SHALE & SANDSTONE	28.3	331.8
81.0	CARBONDALE	ENERGY	SANDSTONE	1.2	360.0

MAPID: 18900014000C **VERSION:** 1 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 17 **QUARTERS/FOOTAGES:** 5250' S line, 3010' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.561775 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.451602 **DATE COLLECTED:** 0 / 0 / 1909
SURFACE ELEVATION (FT.): 422.4 **LOGGED (FT.):** 1180.0 **LOG TYPE:**
SOURCE: CENTRAL RF 1 **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
87.4	CARBONDALE	HERRIN	COAL	10.0	335.0	

MAPID: 18900738000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 17 **QUARTERS/FOOTAGES:** 105' N line, 114' E line of SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.560705 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.444063 **DATE COLLECTED:** 10 / 17 / 1956
SURFACE ELEVATION (FT.): 413.3 **LOGGED (FT.):** 332.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 17 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
146.0	CARBONDALE	DANVILLE	COAL	0.9	267.3	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
90.6	CARBONDALE	HERRIN	COAL	8.9	322.7	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18902668000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 17 **QUARTERS/FOOTAGES:** 14' S line, 710' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.553153 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.436886 **DATE COLLECTED:** 6 / 8 / 1967
SURFACE ELEVATION (FT.): 437.0 **LOGGED (FT.):** 314.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 7-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8494

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
165.1	CARBONDALE	DANVILLE	COAL	0.9	271.9	
133.6	CARBONDALE	HERRIN	COAL	8.2	303.4	

MAPID: 18902668000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 17 QUARTERS/FOOTAGES: 14' S line, 710' E line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.553153

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.436886

DATE COLLECTED:

SURFACE ELEVATION (FT.): 437.0 LOGGED (FT.): 311.2

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 7-OK

WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
177.4	MODESTO	PIASA	LIMESTONE	5.1	259.6
172.3	MODESTO		DARK GRAY SHALE	6.8	264.7
165.5	CARBONDALE	DANVILLE	COAL	0.9	271.5
164.6	CARBONDALE		CLAYSTONE	0.7	272.4
163.9	CARBONDALE		GRAY SHALE	5.3	273.1
158.6	CARBONDALE	BANKSTON FORK	LIMESTONE	7.2	278.4
151.4	CARBONDALE	LAWSON	MOTTLED SHALE	2.8	285.6
148.7	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	1.3	288.3
147.3	CARBONDALE	JAMESTOWN	BONE COAL	0.5	289.7
146.8	CARBONDALE		CALCAREOUS SHALE	7.8	290.2
139.0	CARBONDALE	BRERETON	LIMESTONE	4.5	298.0
134.5	CARBONDALE	ANNA	BLACK SHALE	0.5	302.5
134.0	CARBONDALE	HERRIN	COAL	8.2	303.0

MAPID: 18923565000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 17 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.559118

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.443393

DATE COLLECTED: 6 / 8 / 1979

SURFACE ELEVATION (FT.): LOGGED (FT.): 346.7

LOG TYPE: Survey Core Study

SOURCE: FREEMAN UNITED OK-1-79

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	11.4	332.2

MAPID: 18900072000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 18 QUARTERS/FOOTAGES: 3840' S line, 4040' E line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.583903 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.448084 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 435.4 LOGGED (FT.): 321.3 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG, #P-6 WELL TYPE: Coal Test

COMMENT: 1400' W & 1200' N OF CTR LINE OF SEC

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.4			UNCONSOLIDATED	101.0	0.0
334.4	MODESTO		SANDY SHALE	22.0	101.0
312.4	MODESTO		SHALE	20.0	123.0
292.4	MODESTO		SANDSTONE	15.0	143.0
277.4	MODESTO		SHALE	6.0	158.0
271.4	MODESTO		SANDSTONE	20.0	164.0
251.4	MODESTO		SHALE	38.0	184.0
213.4	MODESTO		COAL	0.3	222.0
213.1	MODESTO		SHALE	14.5	222.3
198.6	MODESTO		BLACK SHALE	1.3	236.8
197.4	MODESTO		SHALE	11.5	238.0
185.9	MODESTO		SANDY SHALE	2.5	249.5
183.4	MODESTO		COAL	1.0	252.0
182.4	MODESTO		SHALE	2.0	253.0
180.4	MODESTO	PIASA	LIMESTONE	6.0	255.0
174.4	MODESTO		BLACK SHALE	6.0	261.0
168.4	CARBONDALE	DANVILLE	COAL	2.0	267.0
166.4	CARBONDALE		UNDERCLAY	1.0	269.0
165.4	CARBONDALE		BLACK SHALE	2.7	270.0
162.7	CARBONDALE		SHALE	3.3	272.7
159.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.4	276.0
156.0	CARBONDALE		BLACK SHALE	0.8	279.4
155.2	CARBONDALE	CONANT	LIMESTONE	2.0	280.2
153.2	CARBONDALE		BLACK SHALE	6.5	282.2
146.7	CARBONDALE	JAMESTOWN	COAL	0.2	288.7
146.6	CARBONDALE		BLACK SHALE	7.6	288.8
139.0	CARBONDALE	BRERETON	LIMESTONE	5.0	296.4
134.0	CARBONDALE	ANNA	BLACK SHALE	8.3	301.4
125.7	CARBONDALE	HERRIN	COAL	10.7	309.7
115.1	CARBONDALE		UNDERCLAY	1.0	320.3

MAPID: 18900072000C **VERSION:** 2 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 18 **QUARTERS/FOOTAGES:** 3840' S line, 4040' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.583903 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.448084 **DATE COLLECTED:** 0 / 0 / 1920
SURFACE ELEVATION (FT.): 435.4 **LOGGED (FT.):** 321.0 **LOG TYPE:**
SOURCE: INTRNTLCMC P6 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
125.4	CARBONDALE	HERRIN	COAL	10.7	310.0	

MAPID: 18900731000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 18 **QUARTERS/FOOTAGES:** 171' S line, 72' W line of SE NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.587151 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.445219 **DATE COLLECTED:** 9 / 21 / 1956
SURFACE ELEVATION (FT.): 426.1 **LOGGED (FT.):** 294.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 14 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
184.3	CARBONDALE	DANVILLE	COAL	2.5	241.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
142.3	CARBONDALE	HERRIN	COAL	9.5	283.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900739000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 18 **QUARTERS/FOOTAGES:** 45' S line, 18' E line of SW SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.575625 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.437527 **DATE COLLECTED:** 10 / 2 / 1956
SURFACE ELEVATION (FT.): 418.3 **LOGGED (FT.):** 302.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 15 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
169.7	CARBONDALE	DANVILLE	COAL	2.7	248.6	
127.0	CARBONDALE	HERRIN	COAL	9.5	291.3	

MAPID: 18900852000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 18 QUARTERS/FOOTAGES: 100' N line, 28' W line of NE NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.575538

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.451665

DATE COLLECTED: 5 / 28 / 1957

SURFACE ELEVATION (FT.): 409.5 LOGGED (FT.): 266.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 37

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
184.3	CARBONDALE	DANVILLE	COAL	2.2	225.2	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
153.2	CARBONDALE	HERRIN	COAL	7.3	256.3	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18902669000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 18 QUARTERS/FOOTAGES: 612' N line, 1384' E line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.574595

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.450247

DATE COLLECTED: 1 / 16 / 1968

SURFACE ELEVATION (FT.): 416.5 LOGGED (FT.): 330.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 44-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8531

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
192.0	CARBONDALE	DANVILLE	COAL	3.0	224.5	
147.3	CARBONDALE	HERRIN	COAL	9.7	269.2	
94.9	CARBONDALE	HOUCHIN CREEK	COAL	2.6	321.6	

MAPID: 18902669000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 18 QUARTERS/FOOTAGES: 612' N line, 1384' E line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.574595 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.450247 DATE COLLECTED:

SURFACE ELEVATION (FT.): 416.0 LOGGED (FT.): 278.7 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 44-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
190.7	MODESTO	PIASA	LIMESTONE	10.5	225.3	
180.2	MODESTO		DARK GRAY SHALE	1.1	235.8	
179.1	CARBONDALE	DANVILLE	COAL	3.0	236.9	
176.1	CARBONDALE		GRAY SHALE	5.4	239.9	
170.7	CARBONDALE		CALCAREOUS SHALE	7.2	245.3	
163.5	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	5.3	252.5	UPPER BENCH
158.3	CARBONDALE	BANKSTON FORK	DARK GRAY SHALE	1.8	257.7	SHALE PARTING
156.4	CARBONDALE	BANKSTON FORK	LIMESTONE	1.4	259.6	LOWER BENCH
155.0	CARBONDALE	LAWSON	MOTTLED SHALE	0.2	261.0	
154.9	CARBONDALE	LAWSON	GRAY SHALE	3.9	261.1	
151.0	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	1.0	265.0	
150.0	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.3	266.0	
149.7	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	0.1	266.3	
149.6	CARBONDALE	ANNA	DARK GRAY SHALE	2.6	266.4	
147.0	CARBONDALE	HERRIN	COAL	9.7	269.0	

MAPID: 18923566000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 18 QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.577079 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.445588 DATE COLLECTED: 6 / 0 / 1979

SURFACE ELEVATION (FT.): LOGGED (FT.): 425.0 LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-5-79 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	10.0	308.9	

MAPID: 18923677000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 18 QUARTERS/FOOTAGES: SE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.572615

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.439194

DATE COLLECTED: 6 / 1 / 1980

SURFACE ELEVATION (FT.): LOGGED (FT.): 300.5

LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-6A-80

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	7.4	290.6

MAPID: 18900073000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 19 QUARTERS/FOOTAGES: NE SW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.588827 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.432894 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 436.5 LOGGED (FT.): 366.0 LOG TYPE: Drillers Log

SOURCE: INTERN'L COAL & MNG, #S-1 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
436.5			SOIL	4.0	0.0	
432.5			CLAY	16.5	4.0	
416.0			CLAY & GRAVEL	24.5	20.5	
391.5	MODESTO		SHALE	7.0	45.0	
384.5	MODESTO		SANDY SHALE	10.0	52.0	
374.5	MODESTO		SHALE	18.0	62.0	
356.5	MODESTO		COAL	0.2	80.0	
356.3	MODESTO		UNDERCLAY	0.8	80.2	
355.5	MODESTO		SANDY SHALE	5.0	81.0	
350.5	MODESTO		SHALE	5.0	86.0	
345.5	MODESTO		SANDY SHALE	7.0	91.0	
338.5	MODESTO		SHALE	3.0	98.0	
335.5	MODESTO		SANDY SHALE	46.3	101.0	
289.2	MODESTO		BLACK SHALE	1.5	147.3	
287.7	MODESTO	CHAPEL	COAL	0.3	148.8	
287.5	MODESTO		CLAYSTONE & SHALE	5.0	149.0	
282.5	MODESTO		SANDY SHALE	15.0	154.0	
267.5	MODESTO		SHALE	34.0	169.0	
233.5	MODESTO		SHALE	0.7	203.0	
232.8	MODESTO		SANDY SHALE	11.3	203.7	
221.5	MODESTO		SHALE	1.5	215.0	
220.0	MODESTO		SANDSTONE	20.0	216.5	
200.0	MODESTO		SHALE	1.5	236.5	
198.5	MODESTO	PIASA	LIMESTONE	10.0	238.0	
188.5	MODESTO		BLACK SHALE	2.5	248.0	
186.0	CARBONDALE	DANVILLE	COAL	3.2	250.5	
182.8	CARBONDALE		UNDERCLAY	2.3	253.7	
180.5	CARBONDALE		SHALE	5.0	256.0	
175.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	261.0	
171.5	CARBONDALE		LIMESTONE AND BLACK SHALE	8.0	265.0	
163.5	CARBONDALE		BLACK SHALE	3.0	273.0	
160.5	CARBONDALE	ENERGY	SANDY SHALE	3.7	276.0	
156.8	CARBONDALE	HERRIN	COAL	6.2	279.7	
150.7	CARBONDALE	HERRIN	SHALE	0.1	285.8	"BLUE BAND"
150.6	CARBONDALE	HERRIN	COAL	1.6	285.9	
149.0	CARBONDALE		UNDERCLAY	0.5	287.5	
148.5	CARBONDALE		SHALE	6.5	288.0	
142.0	CARBONDALE		SHALY LIMESTONE	1.5	294.5	

140.5	CARBONDALE		LIMESTONE	1.0	296.0
139.5	CARBONDALE		CALCAREOUS SHALE	3.5	297.0
136.0	CARBONDALE		LIMESTONE	4.0	300.5
132.0	CARBONDALE		SANDSTONE/SHALE	6.5	304.5
125.5	CARBONDALE		SANDSTONE	15.0	311.0
110.5	CARBONDALE		SANDY SHALE	18.0	326.0
92.5	CARBONDALE		SHALE	12.0	344.0
80.5	CARBONDALE	EXCELLO	BLACK SHALE	6.1	356.0
74.4	CARBONDALE	HOUCHIN CREEK	COAL	2.8	362.1
71.7	CARBONDALE		UNDERCLAY	1.2	364.8

MAPID: 18900073000C **VERSION:** 2 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 19 **QUARTERS/FOOTAGES:** NE SW NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.588827 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.432894 **DATE COLLECTED:** 0 / 0 / 1920
SURFACE ELEVATION (FT.): 436.5 **LOGGED (FT.):** 366.0 **LOG TYPE:**
SOURCE: INTRNTLCMC S1 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
156.5	CARBONDALE	HERRIN	COAL	7.8	280.0	

MAPID: 18900698000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 19 **QUARTERS/FOOTAGES:** 838' N line, 412' W line of NW SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.591797 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.427817 **DATE COLLECTED:** 7 / 0 / 1956
SURFACE ELEVATION (FT.): 456.0 **LOGGED (FT.):** 294.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 7 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
198.8	CARBONDALE	DANVILLE	COAL	0.9	257.2	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
170.0	CARBONDALE	HERRIN	COAL	6.7	286.0	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900704000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 19 QUARTERS/FOOTAGES: 235' N line, 442' W line of SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.579835

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.429405

DATE COLLECTED: 8 / 4 / 1956

SURFACE ELEVATION (FT.): 434.0 LOGGED (FT.): 286.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 8

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
188.2	CARBONDALE	DANVILLE	COAL	0.8	245.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
157.3	CARBONDALE	HERRIN	COAL	7.7	276.7	COAL SEC MAP 6-54-A,-B,-C; W/COKED ZONE

MAPID: 18902670000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 19 QUARTERS/FOOTAGES: 37' S line, 298' W line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.592211

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.430235

DATE COLLECTED: 11 / 4 / 1967

SURFACE ELEVATION (FT.): 428.0 LOGGED (FT.): 355.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 34-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8521

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
192.1	CARBONDALE	DANVILLE	COAL	2.9	235.9	
159.2	CARBONDALE	HERRIN	COAL	7.7	268.8	
79.1	CARBONDALE	HOUCHIN CREEK	COAL	2.1	348.9	

MAPID: 18902670000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 19 QUARTERS/FOOTAGES: 37' S line, 298' W line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.592211

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.430235

DATE COLLECTED:

SURFACE ELEVATION (FT.): 428.0 LOGGED (FT.): 276.7

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 34-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
200.8	MODESTO	PIASA	LIMESTONE	11.2	227.2	
189.6	MODESTO		DARK GRAY SHALE	2.2	238.4	
187.4	CARBONDALE	DANVILLE	COAL	2.9	240.6	
184.5	CARBONDALE		GRAY SHALE	1.2	243.5	
183.3	CARBONDALE		CALCAREOUS SHALE	3.3	244.7	
180.0	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	0.9	248.0	UPPER BENCH
179.1	CARBONDALE	BANKSTON FORK	LIMESTONE	1.3	248.9	SHALE PARTING
177.7	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	0.4	250.3	LOWER BENCH
177.3	CARBONDALE	LAWSON	MOTTLED SHALE	4.3	250.7	
173.0	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.8	255.0	
172.2	CARBONDALE	JAMESTOWN	BONE COAL	0.4	255.8	
171.8	CARBONDALE	BRERETON	LIMESTONE/SILTSTONE	12.7	256.2	
159.2	CARBONDALE	ANNA	DARK GRAY SHALE	0.2	268.8	
159.0	CARBONDALE	HERRIN	COAL	7.7	269.0	

MAPID: 18902671000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 19 QUARTERS/FOOTAGES: 189' S line, 149' E line of SE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.569949

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.423147

DATE COLLECTED: 12 / 5 / 1967

SURFACE ELEVATION (FT.): 458.2 LOGGED (FT.): 410.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 38-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8525

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
171.9	CARBONDALE	DANVILLE	COAL	2.3	286.3	
138.1	CARBONDALE	HERRIN	COAL	7.8	320.1	
55.0	CARBONDALE	HOUCHIN CREEK	COAL	2.0	403.2	

MAPID: 18902672000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 19 QUARTERS/FOOTAGES: 192' N line, 28' W line of NW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.593192 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.437042 DATE COLLECTED: 1 / 25 / 1968

SURFACE ELEVATION (FT.): 439.9 LOGGED (FT.): 435.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 46-OK WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
187.2	CARBONDALE	DANVILLE	COAL	2.4	252.7
151.4	CARBONDALE	HERRIN	COAL	10.9	288.5
88.7	CARBONDALE	HOUCHIN CREEK	COAL	2.6	351.2
36.3			COAL	1.6	403.6

MAPID: 18923678000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 19 QUARTERS/FOOTAGES: 730' N line, 1880' E line of SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.576099 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.428013 DATE COLLECTED: 5 / 28 / 1980

SURFACE ELEVATION (FT.): LOGGED (FT.): 289.5 LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-5-80 WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	DANVILLE	COAL	2.0	253.0
-	CARBONDALE	HERRIN	COAL	8.0	279.4

MAPID: 18900074000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 20 QUARTERS/FOOTAGES: SW/c

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560083 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.42971 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 436.7 LOGGED (FT.): 339.6 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.7			UNCONSOLIDATED	12.0	0.0
424.7			SOIL	1.5	12.0
423.2			SAND/CLAY	5.0	13.5
418.2			SAND & GRAVEL	4.0	18.5
414.2	MODESTO		SANDSTONE	7.5	22.5
406.7	MODESTO		SANDY SHALE	2.0	30.0
404.7	MODESTO		SHALE	55.5	32.0
349.2	MODESTO		SANDY SHALE	83.5	87.5
265.7	MODESTO		SHALE	5.5	171.0
260.2	MODESTO		SANDY SHALE	12.5	176.5
247.7	MODESTO		SANDSTONE	14.0	189.0
233.7	MODESTO		CONGLOMERATE	3.0	203.0
230.7	MODESTO	CHAPEL	COAL	0.3	206.0
230.4	MODESTO		SHALE	39.8	206.3
190.7	MODESTO		CHERT	0.3	246.0
190.4	MODESTO		SHALE	5.0	246.3
185.4	MODESTO		CHERT	0.2	251.3
185.2	MODESTO		SHALE	6.5	251.5
178.7	MODESTO		BLACK SHALE	1.5	258.0
177.2	MODESTO		COAL	0.3	259.5
176.9	MODESTO		SHALE	16.9	259.8
160.0	MODESTO		BLACK SHALE	1.3	276.7
158.7	MODESTO		SHALE	4.3	278.0
154.4	MODESTO		CONGLOMERATE	0.7	282.3
153.7	MODESTO		SHALE	0.8	283.0
152.9	MODESTO	PIASA	LIMESTONE	9.3	283.8
143.7	MODESTO		BLACK SHALE	2.6	293.0
141.1	MODESTO		SHALE	1.7	295.6
139.4	CARBONDALE	DANVILLE	COAL	1.9	297.3
137.5	CARBONDALE		UNDERCLAY	2.0	299.2
135.5	CARBONDALE		CALCAREOUS SHALE	0.7	301.2
134.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	301.8
132.5	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	1.0	304.2
131.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	305.2
130.0	CARBONDALE		SHALE	2.0	306.7
128.0	CARBONDALE		BLACK SHALE	1.8	308.7
126.3	CARBONDALE	CONANT	LIMESTONE	0.6	310.4
125.7	CARBONDALE		BLACK SHALE	0.7	311.0
125.0	CARBONDALE	JAMESTOWN	COAL	0.3	311.7

124.8	CARBONDALE		BLACK SHALE	11.4	311.9	
113.4	CARBONDALE	ENERGY	SHALE	0.4	323.3	
112.9	CARBONDALE	ENERGY	SANDY SHALE	3.3	323.8	
109.7	CARBONDALE	HERRIN	COAL	7.0	327.0	
102.7	CARBONDALE	HERRIN	SHALE	0.1	334.0	BLUE BAND
102.6	CARBONDALE	HERRIN	COAL	1.0	334.1	
101.6	CARBONDALE		UNDERCLAY	1.6	335.1	
100.0	CARBONDALE		SHALE	2.0	336.7	
98.0	CARBONDALE		CONGLOMERATE	1.0	338.7	

MAPID: 18900074000C **VERSION:** 2 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 20 **QUARTERS/FOOTAGES:** SW/c
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.560083 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.42971 **DATE COLLECTED:** 0 / 0 / 1920
SURFACE ELEVATION (FT.): 436.7 **LOGGED (FT.):** 340.0 **LOG TYPE:**
SOURCE: INTRNTLCMC **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
109.7	CARBONDALE	HERRIN	COAL	8.1	327.0	

MAPID: 18900740000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 20 **QUARTERS/FOOTAGES:** 1048' S line, 354' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.551863 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.425026 **DATE COLLECTED:** 10 / 10 / 1956
SURFACE ELEVATION (FT.): 454.2 **LOGGED (FT.):** 331.5 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 16 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
177.2	MODESTO	PIASA	LIMESTONE	15.4	277.0	SEE COAL SECT MAP 6-54-A,6-54-C
161.8	CARBONDALE	DANVILLE	COAL	1.7	292.4	SEE COAL SECT MAP 6-54-A,6-54-C
155.2	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	299.0	SEE COAL SECT MAP 6-54-A,6-54-C
131.5	CARBONDALE	HERRIN	COAL	8.1	322.7	SEE COAL SECT MAP 6-54-A,6-54-C

MAPID: 18900740000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 20 QUARTERS/FOOTAGES: 1048' S line, 354' E line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.551863

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.425026

DATE COLLECTED:

SURFACE ELEVATION (FT.): 454.0 LOGGED (FT.): 331.1

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 16

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
191.3	MODESTO		LIMESTONE	15.4	262.7
175.9	CARBONDALE	DANVILLE	COAL	1.7	278.1
174.2	CARBONDALE		CLAYSTONE	1.6	279.8
172.6	CARBONDALE		SHALE	3.3	281.4
169.3	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	284.7
162.3	CARBONDALE	LAWSON	SHALE	14.7	291.7
147.7	CARBONDALE		SHALE	14.7	306.3
133.0	CARBONDALE	BRERETON	LIMESTONE	2.0	321.0
131.0	CARBONDALE	HERRIN	COAL	8.1	323.0

MAPID: 18902673000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 20 QUARTERS/FOOTAGES: 730' S line, 135' E line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560576

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.431741

DATE COLLECTED: 4 / 20 / 1968

SURFACE ELEVATION (FT.): 439.7 LOGGED (FT.): 420.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 52-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8538

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
115.7	CARBONDALE	HERRIN	COAL	7.7	324.0
33.2	CARBONDALE	HOUCHIN CREEK	COAL	2.3	406.5

MAPID: 18923568000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 20 QUARTERS/FOOTAGES: NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.564856

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.433525

DATE COLLECTED: 6 / 13 / 1979

SURFACE ELEVATION (FT.): LOGGED (FT.): 329.7

LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-7A-79

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	7.8	318.5

MAPID: 18900051000C **VERSION:** 1 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** 3375' S line, 4350' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.547438 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.431286 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 437.3 **LOGGED (FT.):** 340.0 **LOG TYPE:**
SOURCE: OKAW V CC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
113.3	CARBONDALE	HERRIN	COAL	6.0	324.0	

MAPID: 18900912000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.533313 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.427841 **DATE COLLECTED:** 12 / 0 / 1957
SURFACE ELEVATION (FT.): 441.0 **LOGGED (FT.):** 422.0 **LOG TYPE:** Electric Log
SOURCE: FARRAR DRILLING CO **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
63.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	378.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
19.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	422.0	

MAPID: 18902674000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** 38' S line, 815' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.534988 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.421568 **DATE COLLECTED:** 11 / 28 / 1967
SURFACE ELEVATION (FT.): 440.6 **LOGGED (FT.):** 400.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 37-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8524

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
129.8	CARBONDALE	HERRIN	COAL	5.7	310.8	
44.1	CARBONDALE	HOUCHIN CREEK	COAL	2.2	396.5	

MAPID: 18902674000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 21 QUARTERS/FOOTAGES: 38' S line, 815' E line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.534988

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.421568

DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 316.7

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 37-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
148.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.4	292.7
143.8	CARBONDALE	LAWSON	SILTY SHALE	0.6	297.2
143.3	CARBONDALE	LAWSON	CARBONACEOUS SANDSTONE	1.1	297.7
142.2	CARBONDALE	LAWSON	GRAY SHALE	2.2	298.8
139.9	CARBONDALE	BRERETON	LIMESTONE	2.1	301.1
137.9	CARBONDALE	ANNA	BLACK SHALE	7.9	303.1
130.0	CARBONDALE	HERRIN	COAL	5.7	311.0

MAPID: 18900090000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 22 QUARTERS/FOOTAGES: 2600' S line, 3625' E line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.526765

GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.428364

DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 427.7 LOGGED (FT.): 1002.0

LOG TYPE:

SOURCE: SUNFLOWER

WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
49.7	CARBONDALE	SPRINGFIELD	COAL	8.0	378.0

MAPID: 18902675000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 22 QUARTERS/FOOTAGES: 75' N line, 237' W line of SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.522269

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.428163

DATE COLLECTED: 11 / 11 / 1967

SURFACE ELEVATION (FT.): 442.6 LOGGED (FT.): 410.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 35-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8522

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
41.8	CARBONDALE	HOUCHIN CREEK	COAL	2.4	400.8

MAPID: 18902675000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 22 QUARTERS/FOOTAGES: 75' N line, 237' W line of SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.522269

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.428163

DATE COLLECTED:

SURFACE ELEVATION (FT.): 443.0 LOGGED (FT.): 0.0

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 35-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	LAWSON	SANDSTONE/SILTSTONE	100.0		

MAPID: 18902341000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 23 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.508317

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.421581

DATE COLLECTED: 11 / 0 / 1966

SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 443.0

LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO.

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
180.0	MODESTO	PIASA	UNCLASSIFIED	-	267.0	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
51.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	396.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
4.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	443.0	

MAPID: 18901047000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 24 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.485567

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.421042

DATE COLLECTED: 9 / 0 / 1958

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 444.0

LOG TYPE: Electric Log

SOURCE: BREHM, C. E. DRLG.&PROD.

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
225.0	MODESTO	PIASA	UNCLASSIFIED	-	226.0	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
64.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	387.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
7.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	444.0	

MAPID: 18901047000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 24 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.485567 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.421042 DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 366.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
223.0	MODESTO	PIASA	LIMESTONE	7.0	228.0
216.0	CARBONDALE		SHALE	6.0	235.0
210.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	241.0
208.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	243.0
207.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	244.0
205.0	CARBONDALE	LAWSON	GRAY SHALE	20.0	246.0
185.0	CARBONDALE	ENERGY	SANDSTONE	80.0	266.0

MAPID: 18902676000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 26 QUARTERS/FOOTAGES: 212' S line, 102' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.513842 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.406664 DATE COLLECTED: 10 / 25 / 1967

SURFACE ELEVATION (FT.): 448.7 LOGGED (FT.): 405.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAEER COAL CO 32-OK WELL TYPE: Coal Test

COMMENT: CORE C-8519

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
156.2	CARBONDALE	DANVILLE	COAL	0.8	292.5
132.4	CARBONDALE	HERRIN	COAL	10.8	316.3
48.2	CARBONDALE	HOUCHIN CREEK	COAL	2.2	400.5

MAPID: 18902676000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 26 QUARTERS/FOOTAGES: 212' S line, 102' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.513842 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.406664 DATE COLLECTED:

SURFACE ELEVATION (FT.): 449.0 LOGGED (FT.): 326.8 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 32-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
171.0	MODESTO	PIASA	LIMESTONE	12.7	278.0	
158.3	MODESTO		DARK GRAY SHALE	1.8	290.7	
156.5	CARBONDALE	DANVILLE	COAL	0.8	292.5	
155.7	CARBONDALE		CLAYSTONE	4.2	293.3	
151.5	CARBONDALE		GRAY SHALE	2.5	297.5	
149.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	300.0	UPPER BENCH
146.0	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	1.5	303.0	SHALE PARTING
144.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.1	304.5	LOWER BENCH
142.4	CARBONDALE	LAWSON	SHALE	1.8	306.6	
140.6	CARBONDALE		SHALE	1.8	308.4	
138.8	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	5.7	310.2	
133.1	CARBONDALE	ANNA	BLACK SHALE	1.8	315.9	
131.4	CARBONDALE	ENERGY	SHALE	3.7	317.6	
127.6	CARBONDALE	ENERGY	GRAY SHALE	11.2	321.4	
133.0	CARBONDALE	HERRIN	COAL	10.8	316.0	

MAPID: 18902677000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 26 QUARTERS/FOOTAGES: 578' N line, 153' E line of NW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.510071 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.411766 DATE COLLECTED: 11 / 16 / 1967

SURFACE ELEVATION (FT.): 449.6 LOGGED (FT.): 405.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 33-OK WELL TYPE: Coal Test

COMMENT: CORE C-8520

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
158.8	CARBONDALE	DANVILLE	COAL	1.3	290.8	
143.3	CARBONDALE	JAMESTOWN	COAL	14.6	306.3	1 SPLIT W/ COAL
128.7	CARBONDALE	HERRIN	COAL	6.0	320.9	
50.1	CARBONDALE	HOUCHIN CREEK	COAL	2.4	399.5	

MAPID: 18900110000C **VERSION:** 1 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 28 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.549504 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.419298 **DATE COLLECTED:** 0 / 0 / 1938
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 1084.0 **LOG TYPE:**
SOURCE: FR VIC PAT **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
143.0	CARBONDALE	HERRIN	COAL	0.8	307.0	

MAPID: 18900391401M **VERSION:** 1 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 28 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.547192 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.419205 **DATE COLLECTED:** 0 / 0 / 1937
SURFACE ELEVATION (FT.): 458.3 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: ISGS MINE NOTES: BIERMAN & ARROWSMITH **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
143.3	CARBONDALE	HERRIN	COAL	8.3	315.0	

MAPID: 18900729000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 29 **QUARTERS/FOOTAGES:** 41' N line, 44' W line of SE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.559965 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.414901 **DATE COLLECTED:** 8 / 30 / 1956
SURFACE ELEVATION (FT.): 460.2 **LOGGED (FT.):** 342.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 11 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
127.0	CARBONDALE	HERRIN	COAL	7.3	333.2	SEE COAL COAL SECT MAP 6-54-A,6-54-C

MAPID: 18900783000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 29 QUARTERS/FOOTAGES: 37' S line, 240' W line of SW SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.559377 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.407754 DATE COLLECTED: 0 / 0 / 1957

SURFACE ELEVATION (FT.): 455.2 LOGGED (FT.): 332.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO. 32 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
163.8	CARBONDALE	DANVILLE	COAL	0.9	291.4	SEE COAL COAL SECT MAP 6-54-A,6-54-C
131.3	CARBONDALE	HERRIN	COAL	7.3	323.9	SEE COAL COAL SECT MAP 6-54-A,6-54-C

MAPID: 18900825000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 29 QUARTERS/FOOTAGES: 18' N line, 712' W line of NE NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.562217 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.422373 DATE COLLECTED: 3 / 5 / 1957

SURFACE ELEVATION (FT.): 407.8 LOGGED (FT.): 341.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 29 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
178.1			COAL	1.7	229.7	
162.6	CARBONDALE	DANVILLE	COAL	3.4	245.2	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
116.6	CARBONDALE	HERRIN	COAL	9.2	291.2	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
71.7	CARBONDALE	SPRINGFIELD	COAL	3.0	336.1	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18902678000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 29 QUARTERS/FOOTAGES: 12' S line, 50' W line of SW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.569415 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.407972 DATE COLLECTED: 10 / 8 / 1967

SURFACE ELEVATION (FT.): 467.9 LOGGED (FT.): 410.8 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 29-OK WELL TYPE: Coal Test

COMMENT: CORE C-8516

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
182.0	CARBONDALE	DANVILLE	COAL	1.4	285.9	
148.1	CARBONDALE	HERRIN	COAL	8.3	319.8	
63.1	CARBONDALE	HOUCHIN CREEK	COAL	2.6	404.8	

MAPID: 18900075000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 30 QUARTERS/FOOTAGES: SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.587339 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.412258 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 471.9 LOGGED (FT.): 342.6 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #P-1 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
471.9			UNCONSOLIDATED	21.5	0.0	
450.4	MODESTO		SANDSTONE	0.5	21.5	
449.9	MODESTO		SHALE	20.0	22.0	
429.9	MODESTO		BLACK SHALE	10.0	42.0	
419.9	MODESTO		SANDY SHALE	15.5	52.0	
404.4	MODESTO		SANDSTONE	1.5	67.5	
402.9	MODESTO		SHALE	38.0	69.0	
364.9	MODESTO		SANDSTONE	7.0	107.0	
357.9	MODESTO		SHALE	36.8	114.0	
321.1	MODESTO		BLACK SHALE	1.8	150.8	
319.2	MODESTO	CHAPEL	COAL	0.4	152.7	
318.8	MODESTO		SHALE	0.5	153.1	
318.3	MODESTO		CALCAREOUS SHALE	0.3	153.6	
318.0	MODESTO		SHALE	6.0	153.9	
312.0	MODESTO		SANDY SHALE	5.0	159.9	
307.0	MODESTO		SHALE	4.6	164.9	
302.4	MODESTO		SANDSTONE	29.5	169.5	W/ SH STREAK
272.9	MODESTO		SHALE	19.0	199.0	
253.9	MODESTO		SHALE	29.0	218.0	
224.9	MODESTO		SANDY SHALE	6.0	247.0	
218.9	MODESTO		SHALE	10.0	253.0	
208.9	MODESTO		SHALE	1.0	263.0	
207.9	MODESTO		SHALE	23.0	264.0	
184.9	MODESTO		SHALE	1.0	287.0	
183.9	MODESTO	PIASA	LIMESTONE	11.0	288.0	
172.9	MODESTO		BLACK SHALE	2.3	299.0	
170.6	CARBONDALE	DANVILLE	COAL	0.3	301.3	
170.2	CARBONDALE		UNDERCLAY	1.3	301.7	
168.9	CARBONDALE		SHALE	3.0	303.0	
165.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	306.0	
162.9	CARBONDALE	BANKSTON FORK	SHALE	0.5	309.0	
162.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	309.5	
159.9	CARBONDALE		SHALE	7.0	312.0	
152.9	CARBONDALE		UNDERCLAY	1.0	319.0	
151.9	CARBONDALE	ENERGY	SHALE	9.3	320.0	
142.6	CARBONDALE	ENERGY	SANDY SHALE	0.8	329.3	
141.9	CARBONDALE	ENERGY	SHALE	2.5	330.0	
139.4	CARBONDALE	HERRIN	COAL	2.0	332.5	
137.4	CARBONDALE	HERRIN	UNDERCLAY	1.7	334.5	SHALE PARTING

135.7 CARBONDALE HERRIN COAL 3.0 336.2
 132.7 CARBONDALE CALCAREOUS SHALE 3.7 339.2

MAPID: 18900075000C VERSION: 2 PROJECT: CIRC 71
 COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 30 QUARTERS/FOOTAGES: SW
 QUADRANGLE: OKAWVILLE LONGITUDE: -89.587339 GEOLOGIST: J.N. PAYNE
 CONFIDENTIAL: N LATITUDE: 38.412258 DATE COLLECTED: 0 / 0 / 1920
 SURFACE ELEVATION (FT.): 471.9 LOGGED (FT.): 343.0 LOG TYPE:
 SOURCE: INTRNTLCMC00P1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
138.9	CARBONDALE	HERRIN	COAL	6.7	333.0	

MAPID: 18900688000C VERSION: 1 PROJECT: EIA-DOE
 COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 30 QUARTERS/FOOTAGES: 50' S line, 20' E line of SW NE
 QUADRANGLE: OKAWVILLE LONGITUDE: -89.575511 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 38.415632 DATE COLLECTED: 6 / 0 / 1956
 SURFACE ELEVATION (FT.): 470.8 LOGGED (FT.): 332.0 LOG TYPE: Other Core Study
 SOURCE: TRUAX-TRAER COAL CO 1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
331.6	MODESTO	CHAPEL	COAL	1.3	139.2	
184.8	CARBONDALE	DANVILLE	COAL	2.8	286.0	
151.2	CARBONDALE	HERRIN	COAL	7.1	319.6	

MAPID: 18900695000C VERSION: 1 PROJECT: IDMM-GWQX
 COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 30 QUARTERS/FOOTAGES: 485' S line, 416' E line of NE NE
 QUADRANGLE: OKAWVILLE LONGITUDE: -89.570904 GEOLOGIST: C TREWORYG
 CONFIDENTIAL: N LATITUDE: 38.420311 DATE COLLECTED: 7 / 0 / 1956
 SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 469.0 LOG TYPE: Electric Log
 SOURCE: SMITH SHERMAN WELL TYPE: Producer-Oil
 COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
183.0	MODESTO	PIASA	UNCLASSIFIED	-	285.0	
136.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	332.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
54.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	414.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
-1.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	469.0	

MAPID: 18902679000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 30 QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591743 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.420622 DATE COLLECTED: 9 / 23 / 1967

SURFACE ELEVATION (FT.): 453.8 LOGGED (FT.): 405.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 27-OK WELL TYPE: Coal Test

COMMENT: CORE C-8514

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
181.6	CARBONDALE	DANVILLE	COAL	3.0	272.2	
151.7	CARBONDALE	HERRIN	COAL	8.2	302.1	
66.6	CARBONDALE	HOUCHIN CREEK	COAL	2.8	387.2	

MAPID: 18902679000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 30 QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591743 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.420622 DATE COLLECTED:

SURFACE ELEVATION (FT.): 454.0 LOGGED (FT.): 310.2 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 27-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
197.9	MODESTO	PIASA	LIMESTONE	10.7	256.1	
187.2	MODESTO		DARK GRAY SHALE	2.8	266.8	
184.4	CARBONDALE	DANVILLE	BONE COAL	3.0	269.6	
181.4	CARBONDALE		CLAYSTONE	3.5	272.6	
177.9	CARBONDALE		CALCAREOUS SHALE	2.5	276.1	
175.4	CARBONDALE	BANKSTON FORK	LIMESTONE	5.2	278.6	UPPER BENCH
170.3	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	1.8	283.7	SHALE PARTING
168.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.4	285.5	LOWER BENCH
167.1	CARBONDALE	LAWSON	DARK GRAY SHALE	2.0	286.9	
165.1	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.8	288.9	
164.2	CARBONDALE	JAMESTOWN	BONE COAL	0.3	289.8	
163.9	CARBONDALE		LIMESTONE W/ SHALE	1.3	290.1	
162.6	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	0.4	291.4	
162.2	CARBONDALE	ANNA	DARK GRAY SHALE	5.8	291.8	
156.4	CARBONDALE	ENERGY	MOTTLED SHALE	0.2	297.6	
156.2	CARBONDALE	ENERGY	GRAY SHALE	4.3	297.8	
152.0	CARBONDALE	HERRIN	COAL	8.2	302.0	

MAPID: 1890268000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 30 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.585864 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.411293 **DATE COLLECTED:** 9 / 27 / 1967
SURFACE ELEVATION (FT.): 471.3 **LOGGED (FT.):** 423.5 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 28-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8515

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
172.3	CARBONDALE	DANVILLE	COAL	3.1	299.0	
138.4	CARBONDALE	HERRIN	COAL	7.9	332.9	
52.2	CARBONDALE	HOUCHIN CREEK	COAL	2.9	419.1	

MAPID: 18900689000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 31 **QUARTERS/FOOTAGES:** 560' S line, 1153' E line of NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.585475 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.402527 **DATE COLLECTED:** 6 / 0 / 1956
SURFACE ELEVATION (FT.): 459.8 **LOGGED (FT.):** 321.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 2 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
146.1	CARBONDALE	HERRIN	COAL	6.9	313.7	SEE COAL SECT MAP 6-54-A,6-54-C

MAPID: 18900689000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 31 **QUARTERS/FOOTAGES:** 560' S line, 1153' E line of NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.585475 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.402527 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 460.0 **LOGGED (FT.):** 321.1 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 2 **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
179.3	MODESTO		BLACK SHALE	0.8	280.7	
178.5	CARBONDALE	DANVILLE	COAL	0.3	281.5	
178.2	CARBONDALE		CLAYSTONE	1.8	281.8	
176.3	CARBONDALE		SILTY SHALE	3.5	283.7	
172.8	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	287.2	
165.8	CARBONDALE	LAWSON	GRAY SHALE	1.3	294.2	
164.5	CARBONDALE	CONANT	LIMESTONE	2.4	295.5	
162.1	CARBONDALE		DARK GRAY SHALE	10.3	297.9	
151.8	CARBONDALE	BRERETON	LIMESTONE	5.4	308.2	
146.4	CARBONDALE	ANNA	BLACK SHALE	0.4	313.6	
146.0	CARBONDALE	HERRIN	COAL	7.1	314.0	

MAPID: 18900692000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 31 QUARTERS/FOOTAGES: 293' S line, 543' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591302 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.394301 DATE COLLECTED: 6 / 28 / 1956

SURFACE ELEVATION (FT.): 453.4 LOGGED (FT.): 282.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 3 WELL TYPE: Coal Test

COMMENT: CORE C-3423

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
185.3	CARBONDALE	HERRIN	COAL	7.2	268.1	SEE COAL SEC MAP 6-54-A.-C; W/COKED ZONE

MAPID: 18901098000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 31 QUARTERS/FOOTAGES: 278' S line, 543' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.591299 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.39426 DATE COLLECTED: 6 / 0 / 1959

SURFACE ELEVATION (FT.): 453.4 LOGGED (FT.): 275.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 54 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
185.3	CARBONDALE	HERRIN	COAL	7.0	268.1	

MAPID: 18900076000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 32 QUARTERS/FOOTAGES: NW/c

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560279 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.400307 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 468.1 LOGGED (FT.): 332.0 LOG TYPE: Drillers Log

SOURCE: INTERN'L COAL & MNG., #P-4 WELL TYPE: Coal Test

COMMENT: MARTIN OBERMAN FARM

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
468.1			UNCONSOLIDATED	18.5	0.0
449.6	MODESTO		SANDSTONE	10.5	18.5
439.1	MODESTO		SANDY SHALE	122.0	29.0
317.1	MODESTO		SANDSTONE	20.0	151.0
297.1	MODESTO		SHALE	3.0	171.0
294.1	MODESTO		SANDSTONE	4.0	174.0
290.1	MODESTO		SANDY SHALE	15.0	178.0
275.1	MODESTO		SHALE	53.0	193.0
222.1	MODESTO		SANDY SHALE	18.0	246.0
204.1	MODESTO		CALCAREOUS SHALE	2.0	264.0
202.1	MODESTO		SHALE	8.0	266.0
194.1	MODESTO	PIASA	LIMESTONE	11.0	274.0
183.1	MODESTO		SHALE	2.0	285.0
181.1	CARBONDALE	DANVILLE	COAL	1.5	287.0
179.6	CARBONDALE		UNDERCLAY	2.0	288.5
177.6	CARBONDALE		SHALE	5.5	290.5
172.1	CARBONDALE	BANKSTON FORK	LIMESTONE	1.3	296.0
170.8	CARBONDALE	BANKSTON FORK	SHALE	0.7	297.3
170.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	298.0
168.1	CARBONDALE		SHALE	5.0	300.0
163.1	CARBONDALE	JAMESTOWN	BONE COAL	0.2	305.0
162.9	CARBONDALE		SHALE	11.3	305.2
151.6	CARBONDALE	BRERETON	LIMESTONE	4.7	316.5
146.9	CARBONDALE		SHALE	0.3	321.2
146.6	CARBONDALE	HERRIN	COAL	8.0	321.5
138.6	CARBONDALE		UNDERCLAY	2.5	329.5

MAPID: 18900076000C **VERSION:** 2 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW/c
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.560279 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.400307 **DATE COLLECTED:** 0 / 0 / 1920
SURFACE ELEVATION (FT.): 468.1 **LOGGED (FT.):** 332.0 **LOG TYPE:**
SOURCE: INTRNTLCMC00P4 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
147.1	CARBONDALE	HERRIN	COAL	8.0	321.0	

MAPID: 18901144000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 32 **QUARTERS/FOOTAGES:** 170' S line, 10' W line of SE NE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.555575 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.400633 **DATE COLLECTED:** 8 / 0 / 1959
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 332.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 56 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
164.2	CARBONDALE	DANVILLE	COAL	1.6	290.8	
131.7	CARBONDALE	HERRIN	COAL	7.8	323.3	

MAPID: 18902681000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 4W **SECTION:** 32 **QUARTERS/FOOTAGES:** 375' S line, 44' W line of NE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.560115 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.40134 **DATE COLLECTED:** 10 / 11 / 1967
SURFACE ELEVATION (FT.): 446.4 **LOGGED (FT.):** 396.6 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 30-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8517

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
174.4	CARBONDALE	DANVILLE	COAL	1.5	272.0	
141.9	CARBONDALE	HERRIN	COAL	8.0	304.5	
55.9	CARBONDALE	HOUCHIN CREEK	COAL	2.9	390.5	

MAPID: 18902681000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 32 QUARTERS/FOOTAGES: 375' S line, 44' W line of NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.560115

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.40134

DATE COLLECTED:

SURFACE ELEVATION (FT.): 446.0 LOGGED (FT.): 313.0

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAEER COAL CO 30-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
184.5	MODESTO	PIASA	LIMESTONE	10.2	261.5	
174.4	MODESTO		GRAY SHALE	1.5	271.6	
172.9	CARBONDALE	DANVILLE	COAL	1.5	273.1	
171.4	CARBONDALE		CLAYSTONE	0.5	274.6	
170.9	CARBONDALE	GALUM	CALCAREOUS SHALE	0.5	275.1	
170.4	CARBONDALE		GRAY SHALE	1.5	275.6	
168.9	CARBONDALE		CALCAREOUS SHALE	2.4	277.1	
166.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.1	279.6	UPPER BENCH
164.4	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.5	281.6	SHALE PARTING
162.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	283.1	LOWER BENCH
158.9	CARBONDALE	LAWSON	CLAYSTONE	3.8	287.1	
155.1	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	1.6	290.9	
153.5	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.4	292.5	
153.1	CARBONDALE	BRERETON	LIMESTONE/SILTSTONE	11.9	292.9	
141.2	CARBONDALE	ANNA	BLACK SHALE	0.3	304.8	
141.0	CARBONDALE	HERRIN	COAL	8.0	305.0	

MAPID: 18900077000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 33 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.54986

GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.39537

DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 447.5 LOGGED (FT.): 323.0

LOG TYPE:

SOURCE: INTRNTLCMC P2

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
134.5	CARBONDALE	HERRIN	COAL	8.0	313.0	

MAPID: 18900077000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 33 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.54986 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.39537 DATE COLLECTED:

SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 321.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
177.0	MODESTO	PIASA	LIMESTONE	9.0	270.0
168.0	MODESTO		SHALE	2.5	279.0
165.5	CARBONDALE	DANVILLE	COAL	0.8	281.5
164.7	CARBONDALE		SHALE	7.8	282.3
156.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	290.1
154.9	CARBONDALE	BANKSTON FORK	SHALE	2.0	292.1
152.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	294.1
150.4	CARBONDALE	LAWSON	SHALE	5.0	296.6
145.4	CARBONDALE	JAMESTOWN	BLACK SHALE	0.5	301.6
144.9	CARBONDALE		DARK GRAY SHALE	9.0	302.1
135.9	CARBONDALE	BRERETON	LIMESTONE	2.3	311.1
134.0	CARBONDALE	HERRIN	COAL	8.0	313.0

MAPID: 18900077000C VERSION: 3

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 33 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.54986 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.39537 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 447.5 LOGGED (FT.): 323.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COKE & MNG., #P-2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.5			UNCONSOLIDATED	27.0	0.0
420.5	MODESTO		SANDSTONE	1.0	27.0
419.5	MODESTO		SHALE	18.0	28.0
401.5	MODESTO		SHALE	5.0	46.0
396.5	MODESTO		SHALE	20.0	51.0
376.5	MODESTO		SANDY SHALE	27.0	71.0
349.5	MODESTO		SHALE	2.0	98.0
347.5	MODESTO		SANDY SHALE	5.0	100.0
342.5	MODESTO		SANDSTONE	57.0	105.0
285.5	MODESTO		BLACK SHALE	10.0	162.0
275.5	MODESTO		SHALE	20.0	172.0
255.5	MODESTO		SHALE	24.0	192.0
231.5	MODESTO		SHALE	24.0	216.0
207.5	MODESTO		BLACK SHALE	0.5	240.0
207.0	MODESTO		SHALE	5.5	240.5
201.5	MODESTO		BLACK SHALE	1.0	246.0
200.5	MODESTO		SHALE	12.0	247.0
188.5	MODESTO		SHALE	11.0	259.0
177.5	MODESTO	PIASA	LIMESTONE	9.0	270.0
168.5	MODESTO		SHALE	0.5	279.0
168.0	MODESTO		BLACK SHALE	2.0	279.5
166.0	CARBONDALE	DANVILLE	COAL	0.7	281.5
165.3	CARBONDALE		SHALE	2.0	282.2
163.3	CARBONDALE		BLACK SHALE	0.8	284.2
162.5	CARBONDALE		SHALE	5.0	285.0
157.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	290.0
155.5	CARBONDALE	BANKSTON FORK	SHALE	2.0	292.0
153.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	294.0
151.0	CARBONDALE		BLACK SHALE	2.5	296.5
148.5	CARBONDALE		SHALE	2.5	299.0
146.0	CARBONDALE	JAMESTOWN	COAL	0.5	301.5
145.5	CARBONDALE		SHALE	9.0	302.0
136.5	CARBONDALE	BRERETON	LIMESTONE	2.3	311.0
134.2	CARBONDALE	HERRIN	COAL	8.0	313.3
126.2	CARBONDALE		UNDERCLAY	1.8	321.3

MAPID: 18902020000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 4W SECTION: 35 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.506213 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.39235 DATE COLLECTED: 0 / 0 / 1951

SURFACE ELEVATION (FT.): LOGGED (FT.): 394.0 LOG TYPE: Electric Log

SOURCE: KINMAN OTHO BOHBRINK WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	394.0	THIN COAL

MAPID: 18901096000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 1 QUARTERS/FOOTAGES: 434' S line, 2' W line of SW SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.602702 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.467646 DATE COLLECTED: 6 / 5 / 1959

SURFACE ELEVATION (FT.): 402.2 LOGGED (FT.): 265.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 51 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
175.9	CARBONDALE	DANVILLE	COAL	2.1	226.3	
145.3	CARBONDALE	HERRIN	COAL	7.7	256.9	

MAPID: 18901096000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 1 QUARTERS/FOOTAGES: 434' S line, 2' W line of SW SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.602702 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.467646 DATE COLLECTED:

SURFACE ELEVATION (FT.): 402.0 LOGGED (FT.): 264.7 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 51 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
185.9	MODESTO	PIASA	LIMESTONE	8.4	216.1	
177.5	MODESTO		DARK GRAY SHALE	1.9	224.5	
175.6	CARBONDALE	DANVILLE	COAL	2.1	226.4	
173.5	CARBONDALE		CLAYSTONE	3.6	228.5	
169.9	CARBONDALE		DARK GRAY SHALE	3.8	232.1	
166.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	235.8	
160.9	CARBONDALE	LAWSON	GRAY SHALE	4.3	241.1	
156.6	CARBONDALE	BRERETON	LIMESTONE	10.4	245.4	
146.2	CARBONDALE	ANNA	BLACK SHALE	1.2	255.8	
145.0	CARBONDALE	HERRIN	COAL	7.7	257.0	

MAPID: 18901104000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 1 **QUARTERS/FOOTAGES:** 75' S line, 200' W line of SE NE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.597349 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.473964 **DATE COLLECTED:** 6 / 0 / 1959
SURFACE ELEVATION (FT.): 401.3 **LOGGED (FT.):** 267.9 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 52 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
176.3	CARBONDALE	DANVILLE	COAL	1.3	225.0	
175.1	CARBONDALE		NO RECORD	34.3	226.2	
140.8	CARBONDALE	HERRIN	COAL	7.4	260.5	

MAPID: 18923569000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 1 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.606255 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.469136 **DATE COLLECTED:** 6 / 19 / 1979
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 295.0 **LOG TYPE:** Other Core Study
SOURCE: FREEMAN UNITED OK-2-79 **WELL TYPE:** Coal Test
COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	8.1	281.1	

MAPID: 18900697000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 6 **QUARTERS/FOOTAGES:** 313' S line, 400' E line of SE NE
QUADRANGLE: VENEDY **LONGITUDE:** -89.687857 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.473971 **DATE COLLECTED:** 7 / 0 / 1956
SURFACE ELEVATION (FT.): 431.9 **LOGGED (FT.):** 257.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 6 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
211.7	CARBONDALE	DANVILLE	COAL	0.9	220.2	SEE COAL SECT MAP 6-54-A,6-54-C
184.3	CARBONDALE	HERRIN	COAL	7.4	247.6	SEE COAL SECT MAP 6-54-A,6-54-C

MAPID: 18900826000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 11 QUARTERS/FOOTAGES: 1110' S line, 575' W line of SW SE

QUADRANGLE: OKAWVILLE

LONGITUDE: -89.619459

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.454577

DATE COLLECTED: 3 / 13 / 1957

SURFACE ELEVATION (FT.): 406.1

LOGGED (FT.): 275.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 30

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
171.8	CARBONDALE	DANVILLE	COAL	1.9	234.3	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
141.3	CARBONDALE	HERRIN	COAL	7.8	264.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900826000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 11 QUARTERS/FOOTAGES: 1110' S line, 575' W line of SW SE

QUADRANGLE: OKAWVILLE

LONGITUDE: -89.619459

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.454577

DATE COLLECTED:

SURFACE ELEVATION (FT.): 406.0

LOGGED (FT.): 272.8

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 30

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
181.0	MODESTO	PIASA	LIMESTONE	9.8	225.0	
171.2	CARBONDALE	DANVILLE	BONE COAL	1.9	234.8	
169.2	CARBONDALE		CLAYSTONE	1.8	236.8	
167.5	CARBONDALE	BANKSTON FORK	LIMESTONE	10.5	238.5	UPPER BENCH
157.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	4.2	249.0	SHALE PARTING
152.8	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	253.2	LOWER BENCH
151.8	CARBONDALE		LIMESTONE W/ SHALE	7.7	254.2	
144.2	CARBONDALE	BRERETON	LIMESTONE	2.9	261.8	
141.2	CARBONDALE	ANNA	BLACK SHALE	0.5	264.8	
141.0	CARBONDALE	HERRIN	COAL	7.8	265.0	

MAPID: 18901075000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 11 QUARTERS/FOOTAGES: 615' S line, 100' E line of SW NW

QUADRANGLE: VENEDY

LONGITUDE: -89.626607

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.460557

DATE COLLECTED: 1 / 0 / 1959

SURFACE ELEVATION (FT.): 401.3

LOGGED (FT.): 273.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 47

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
165.8	CARBONDALE	DANVILLE	COAL	1.3	235.5	
137.0	CARBONDALE	HERRIN	COAL	7.4	264.3	

MAPID: 18902682000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 12 QUARTERS/FOOTAGES: 1385' S line, 2290' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.604037 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.45553 DATE COLLECTED: 9 / 7 / 1967

SURFACE ELEVATION (FT.): 403.1 LOGGED (FT.): 362.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 24-OK WELL TYPE: Coal Test

COMMENT: CORE C-8511

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
184.3	CARBONDALE	DANVILLE	COAL	1.2	218.8	
148.1	CARBONDALE	HERRIN	COAL	9.2	255.0	
77.5	CARBONDALE	HOUCHIN CREEK	COAL	2.1	325.6	

MAPID: 18902682000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 12 QUARTERS/FOOTAGES: 1385' S line, 2290' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.604037 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.45553 DATE COLLECTED:

SURFACE ELEVATION (FT.): 403.0 LOGGED (FT.): 264.2 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 24-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
197.5	MODESTO	PIASA	LIMESTONE	11.1	205.5	
186.4	MODESTO		GRAY SHALE	2.1	216.6	
184.3	CARBONDALE	DANVILLE	COAL	1.2	218.7	
183.1	CARBONDALE		GRAY SHALE	8.2	219.9	
174.9	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	228.1	UPPER BENCH
169.6	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	0.9	233.4	SHALE PARTING
168.7	CARBONDALE	BANKSTON FORK	LIMESTONE	1.6	234.3	LOWER BENCH
167.1	CARBONDALE	LAWSON	MOTTLED SHALE	0.9	235.9	
166.2	CARBONDALE	LAWSON	GRAY SHALE	4.8	236.8	
161.4	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.7	241.6	
160.7	CARBONDALE	JAMESTOWN	BONE COAL	0.5	242.3	
160.2	CARBONDALE	BRERETON	LIMESTONE/SILTSTONE	9.7	242.8	
150.6	CARBONDALE	ANNA	BLACK SHALE	2.6	252.4	
148.0	CARBONDALE	HERRIN	COAL	9.2	255.0	

MAPID: 18900078000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 13 QUARTERS/FOOTAGES: NE SE SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.603825 GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.439918 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 434.6 LOGGED (FT.): 280.0 LOG TYPE:

SOURCE: INTRNTLCMC00S2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
168.6	CARBONDALE	HERRIN	COAL	8.4	266.0	

MAPID: 18900078000C VERSION: 2

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 13 QUARTERS/FOOTAGES: NE SE SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.603825 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.439918 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 434.6 LOGGED (FT.): 280.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG. WELL TYPE: Coal Test

COMMENT: LOCATION IMPRECISE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
434.6			UNCONSOLIDATED	45.0	0.0	
389.6	MODESTO		SHALE	156.5	45.0	
233.1	MODESTO		COAL	0.3	201.5	
232.8	MODESTO		SHALE	13.3	201.8	
219.6	MODESTO		UNCLASSIFIED	23.0	215.0	
196.6	MODESTO		BLACK SHALE	2.0	238.0	
194.6	CARBONDALE	DANVILLE	COAL	1.0	240.0	UNCERTAIN CORRELATION
193.6	CARBONDALE		UNDERCLAY	2.0	241.0	
191.6	CARBONDALE		DARK SHALE	8.0	243.0	
183.6	CARBONDALE		LIMESTONE	4.0	251.0	
179.6	CARBONDALE		DARK SHALE	5.0	255.0	
174.6	CARBONDALE	ANNA	BLACK SHALE	6.3	260.0	
168.3	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	8.4	266.3	
159.9	CARBONDALE		UNDERCLAY	0.5	274.7	
159.4	CARBONDALE		GRAY SHALE	2.3	275.2	
157.1	CARBONDALE		LIMESTONE	2.5	277.5	

MAPID: 18900078000C VERSION: 3

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 13 QUARTERS/FOOTAGES: NE SE SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.603825 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.439918 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 434.6 LOGGED (FT.): 280.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #S-2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
434.6			SOIL	18.0	0.0	
416.6			SANDY CLAY	10.0	18.0	
406.6			GRAVEL	2.0	28.0	
404.6			SAND	6.0	30.0	
398.6			SAND & GRAVEL	9.0	36.0	
389.6	MODESTO		SANDY SHALE	11.0	45.0	
378.6	MODESTO		SHALE	8.0	56.0	
370.6	MODESTO		SHALE	19.5	64.0	
351.1	MODESTO		SANDY SHALE	18.5	83.5	
332.6	MODESTO		SHALE	3.0	102.0	
329.6	MODESTO		SANDY SHALE	16.0	105.0	
313.6	MODESTO		SHALE	19.0	121.0	
294.6	MODESTO		SANDY SHALE	25.5	140.0	
269.1	MODESTO		SHALE	36.0	165.5	
233.1	MODESTO		COAL	0.3	201.5	
232.8	MODESTO		SHALE	8.3	201.8	
224.6	MODESTO		SANDY SHALE	5.0	210.0	
219.6	MODESTO	PIASA	LIMESTONE W/ SHALE	14.0	215.0	
205.6	MODESTO		CALCAREOUS SHALE	9.0	229.0	
196.6	MODESTO		BLACK SHALE	2.0	238.0	
194.6	CARBONDALE	DANVILLE	COAL	1.0	240.0	
193.6	CARBONDALE		UNDERCLAY	2.0	241.0	
191.6	CARBONDALE		SHALE	8.0	243.0	
183.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	251.0	
179.6	CARBONDALE		SHALE	5.0	255.0	
174.6	CARBONDALE	ANNA	BLACK SHALE	6.3	260.0	
168.3	CARBONDALE	HERRIN	COAL	7.0	266.3	
161.3	CARBONDALE	HERRIN	SHALE	0.1	273.3	BLUE BAND
161.3	CARBONDALE	HERRIN	COAL	1.3	273.3	
159.9	CARBONDALE		UNDERCLAY	0.5	274.7	
159.4	CARBONDALE		SHALE	2.3	275.2	
157.1	CARBONDALE		LIMESTONE	2.5	277.5	

MAPID: 18900732000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 13 QUARTERS/FOOTAGES: 67' S line, 27' E line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.602764 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.44464 DATE COLLECTED: 9 / 14 / 1956

SURFACE ELEVATION (FT.): 409.4 LOGGED (FT.): 251.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 13 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
196.2	CARBONDALE	DANVILLE	COAL	2.4	213.2	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
166.8	CARBONDALE	HERRIN	COAL	7.7	242.6	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900824000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 13 QUARTERS/FOOTAGES: 50' N line, 7' W line of NE NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.597978 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.451574 DATE COLLECTED: 2 / 21 / 1957

SURFACE ELEVATION (FT.): 409.8 LOGGED (FT.): 256.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 28 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
187.2	CARBONDALE	DANVILLE	COAL	0.7	222.6	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
163.5	CARBONDALE	HERRIN	COAL	8.8	246.3	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18923613000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 13 QUARTERS/FOOTAGES: NE SE NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.603853 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.447174 DATE COLLECTED: 5 / 16 / 1980

SURFACE ELEVATION (FT.): LOGGED (FT.): 285.0 LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-2-80 WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	DANVILLE	COAL	2.3	231.7	
-	CARBONDALE	HERRIN	COAL	11.6	272.6	

MAPID: 18900705000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 14 QUARTERS/FOOTAGES: 952' N line, 104' E line of SE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.612362 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.438165 DATE COLLECTED: 8 / 10 / 1956

SURFACE ELEVATION (FT.): 410.6 LOGGED (FT.): 250.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 9 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
198.4	CARBONDALE	DANVILLE	COAL	1.3	212.2	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
169.6	CARBONDALE	HERRIN	COAL	7.8	241.0	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18900706000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 14 QUARTERS/FOOTAGES: 41' S line, 38' W line of SE SW

QUADRANGLE: VENEDY LONGITUDE: -89.625839 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.436973 DATE COLLECTED: 8 / 17 / 1956

SURFACE ELEVATION (FT.): 426.3 LOGGED (FT.): 275.5 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 10 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
195.0	CARBONDALE	DANVILLE	COAL	0.9	231.3	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
160.1	CARBONDALE	HERRIN	COAL	8.6	266.2	COAL SEC MAP 6-54-A,-B,-C; W/COKED ZONE

MAPID: 18900730000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 14 QUARTERS/FOOTAGES: 77' N line, 100' E line of SE NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.621764 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.447614 DATE COLLECTED: 9 / 8 / 1956

SURFACE ELEVATION (FT.): 406.3 LOGGED (FT.): 280.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 12 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
170.3	CARBONDALE	DANVILLE	COAL	2.4	236.0	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C
136.5	CARBONDALE	HERRIN	COAL	8.7	269.8	SEE COAL SECT MAP 6-54-A,6-54-B,6-54-C

MAPID: 18901076000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 14 **QUARTERS/FOOTAGES:** 300' S line, 410' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.613436 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.437963 **DATE COLLECTED:** 1 / 0 / 1959
SURFACE ELEVATION (FT.): 409.7 **LOGGED (FT.):** 267.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 48 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
180.1	CARBONDALE	DANVILLE	COAL	2.7	229.6
151.9	CARBONDALE	HERRIN	COAL	7.7	257.8

MAPID: 18902683000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 14 **QUARTERS/FOOTAGES:** 30' N line, 60' E line of NE NE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.612288 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.451613 **DATE COLLECTED:** 8 / 31 / 1967
SURFACE ELEVATION (FT.): 404.6 **LOGGED (FT.):** 352.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 23-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8510

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
158.8	CARBONDALE	DANVILLE	COAL	1.1	245.8
122.3	CARBONDALE	HERRIN	COAL	11.3	282.3
58.1	CARBONDALE	HOUCHIN CREEK	COAL	3.3	346.5

MAPID: 18902687000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 14 **QUARTERS/FOOTAGES:** 1993' S line, 38' W line of NW NW
QUADRANGLE: VENEDY **LONGITUDE:** -89.630651 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.448157 **DATE COLLECTED:** 8 / 26 / 1967
SURFACE ELEVATION (FT.): 396.8 **LOGGED (FT.):** 330.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 21-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8508

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
187.8	CARBONDALE	DANVILLE	COAL	1.0	209.0
142.6	CARBONDALE	HERRIN	COAL	10.5	254.2
88.5	CARBONDALE	HOUCHIN CREEK	COAL	3.3	308.3

MAPID: 18902708000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 14 QUARTERS/FOOTAGES: 390' S line, 385' E line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.622743

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.445256

DATE COLLECTED: 6 / 12 / 1967

SURFACE ELEVATION (FT.): 409.0 LOGGED (FT.): 300.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 8-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8495

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
172.3	CARBONDALE	DANVILLE	COAL	1.3	236.7
144.3	CARBONDALE	HERRIN	COAL	7.7	264.7

MAPID: 18901472000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 16 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: VENEDY LONGITUDE: -89.666445

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.439052

DATE COLLECTED:

SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 212.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
239.0	MODESTO	PIASA	LIMESTONE	6.0	161.0
233.0	MODESTO		COAL	4.0	167.0
229.0	CARBONDALE	DANVILLE	COAL	1.0	171.0
228.0	CARBONDALE		COAL	7.0	172.0
221.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	179.0
219.0	CARBONDALE	BANKSTON FORK	COAL	1.0	181.0
218.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	3.0	182.0
215.0	CARBONDALE	LAWSON	SHALE	6.0	185.0
209.0	CARBONDALE		CALCAREOUS SHALE	9.0	191.0
200.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	2.0	200.0
198.0	CARBONDALE	ANNA	BLACK SHALE	2.0	202.0
196.0	CARBONDALE	HERRIN	COAL	8.0	204.0

MAPID: 18900080000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 20 QUARTERS/FOOTAGES: 325' S line, 500' E line of SE

QUADRANGLE: VENEDY LONGITUDE: -89.669207 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.422691 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 410.2 LOGGED (FT.): 234.9 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #P-12 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.2			HARD PAN	18.0	0.0
392.2			SAND	62.0	18.0
330.2	MODESTO		SANDY SHALE	28.0	80.0
302.2	MODESTO		SHALE	31.0	108.0
271.2	MODESTO		SHALE	22.0	139.0
249.2	MODESTO		SHALE	26.0	161.0
223.2	MODESTO	PIASA	LIMESTONE	6.8	187.0
216.4	MODESTO		BLACK SHALE	3.0	193.8
213.4	CARBONDALE		SHALE	5.5	196.8
207.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	202.3
205.1	CARBONDALE	BANKSTON FORK	SHALE	1.7	205.1
203.4	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	206.8
201.9	CARBONDALE		BLACK SHALE	2.5	208.3
199.4	CARBONDALE		LIMESTONE	1.0	210.8
198.4	CARBONDALE		SHALE	9.0	211.8
189.4	CARBONDALE		BLACK SHALE	1.0	220.8
188.4	CARBONDALE	BRERETON	LIMESTONE	3.9	221.8
184.5	CARBONDALE	HERRIN	COAL	7.3	225.7
177.3	CARBONDALE		UNDERCLAY	2.0	232.9

MAPID: 18900080000C VERSION: 2

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 20 QUARTERS/FOOTAGES: 325' S line, 500' E line of SE

QUADRANGLE: VENEDY LONGITUDE: -89.669207 GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.422691 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 410.2 LOGGED (FT.): 235.0 LOG TYPE:

SOURCE: INTRNTLCMC0P12 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
184.2	CARBONDALE	HERRIN	COAL	7.3	226.0

MAPID: 18900914000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 20 QUARTERS/FOOTAGES: 430' N line, 330' E line of SE NE

QUADRANGLE: VENEDY LONGITUDE: -89.668684

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.431418

DATE COLLECTED:

SURFACE ELEVATION (FT.): 398.0

LOGGED (FT.): 234.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
222.0	MODESTO	PIASA	LIMESTONE	6.0	176.0
216.0	MODESTO		SHALE	6.0	182.0
210.0	CARBONDALE	DANVILLE	BONE COAL	1.0	188.0
209.0	CARBONDALE		SHALE	6.0	189.0
203.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	195.0
199.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	199.0
196.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	202.0
193.0	CARBONDALE	LAWSON	SHALE	7.0	205.0
186.0	CARBONDALE	CONANT	LIMESTONE	3.0	212.0
183.0	CARBONDALE		SHALE	3.0	215.0
180.0	CARBONDALE	BRERETON	LIMESTONE	3.0	218.0
177.0	CARBONDALE	ANNA	BLACK SHALE	4.0	221.0
173.0	CARBONDALE	HERRIN	COAL	9.0	225.0

MAPID: 18902684000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 21 QUARTERS/FOOTAGES: 385' N line, 335' E line

QUADRANGLE: VENEDY LONGITUDE: -89.650058

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.435323

DATE COLLECTED: 8 / 29 / 1967

SURFACE ELEVATION (FT.): 398.2

LOGGED (FT.): 329.8

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 22-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8509

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
186.2	CARBONDALE	DANVILLE	COAL	1.1	212.0
151.9	CARBONDALE	HERRIN	COAL	8.5	246.3
74.6	CARBONDALE	HOUCHIN CREEK	COAL	3.4	323.6

MAPID: 18902684000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 21 QUARTERS/FOOTAGES: 385' N line, 335' E line

QUADRANGLE: VENEDY LONGITUDE: -89.650058 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.435323 DATE COLLECTED:

SURFACE ELEVATION (FT.): 398.0 LOGGED (FT.): 254.5 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 22-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
199.2	MODESTO	PIASA	LIMESTONE	7.5	198.8	
191.7	MODESTO		DARK GRAY SHALE	5.5	206.3	
186.2	CARBONDALE	DANVILLE	COAL	1.1	211.8	
185.2	CARBONDALE		GRAY SHALE	7.9	212.8	
177.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	220.8	UPPER BENCH
174.2	CARBONDALE	BANKSTON FORK	GRAY SHALE	2.0	223.8	SHALE PARTING
172.2	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	225.8	LOWER BENCH
170.7	CARBONDALE	LAWSON	GRAY SHALE	10.7	227.3	
160.1	CARBONDALE	CONANT	LIMESTONE W/ SHALE	2.3	237.9	
157.8	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	2.3	240.2	
155.5	CARBONDALE	ANNA	BLACK SHALE	3.5	242.5	
152.0	CARBONDALE	HERRIN	COAL	8.5	246.0	

MAPID: 18902685000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 21 QUARTERS/FOOTAGES: SW SW NE SE

QUADRANGLE: VENEDY LONGITUDE: -89.652766 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.425971 DATE COLLECTED: 3 / 1 / 1968

SURFACE ELEVATION (FT.): 408.7 LOGGED (FT.): 230.4 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 49-OK WELL TYPE: Coal Test

COMMENT: CORE C-8535

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
188.4	CARBONDALE	HERRIN	COAL	9.2	220.3	

MAPID: 18900040000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 22 QUARTERS/FOOTAGES: 850' S line, 800' E line

QUADRANGLE: VENEDY LONGITUDE: -89.633229 GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.424541 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 414.5 LOGGED (FT.): 990.0 LOG TYPE:

SOURCE: WIESE 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
177.5	CARBONDALE	HERRIN	COAL	7.0	237.0	

MAPID: 18900040000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 22 QUARTERS/FOOTAGES: 850' S line, 800' E line

QUADRANGLE: VENEDY LONGITUDE: -89.633229 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.424541 DATE COLLECTED:

SURFACE ELEVATION (FT.): 414.0 LOGGED (FT.): 244.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
216.0	MODESTO	PIASA	LIMESTONE	10.0	198.0
206.0	CARBONDALE		SHALE	10.0	208.0
196.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	218.0
191.0	CARBONDALE		SHALE	3.0	223.0
188.0	CARBONDALE	BRERETON	LIMESTONE	2.0	226.0
186.0	CARBONDALE	ANNA	BLACK SHALE	9.0	228.0
177.0	CARBONDALE	HERRIN	COAL	7.0	237.0

MAPID: 18902686000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 22 QUARTERS/FOOTAGES: 619' S line, 913' W line of NE

QUADRANGLE: VENEDY LONGITUDE: -89.636449 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.431099 DATE COLLECTED: 3 / 5 / 1968

SURFACE ELEVATION (FT.): 408.1 LOGGED (FT.): 241.7 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 50-OK WELL TYPE: Coal Test

COMMENT: CORE C-8536

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
176.8	CARBONDALE	HERRIN	COAL	8.0	231.3

MAPID: 18900079000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 23 QUARTERS/FOOTAGES: NE/c NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.616616 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.433402 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 434.2 LOGGED (FT.): 255.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #P-8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.2			UNCONSOLIDATED	84.0	0.0
350.2	MODESTO		SHALE	8.0	84.0
342.2	MODESTO		SANDSTONE	21.5	92.0
320.7	MODESTO		SHALE	29.5	113.5
291.2	MODESTO		SHALE	32.0	143.0
259.2	MODESTO		SHALE	8.0	175.0
251.2	MODESTO		SHALE	9.0	183.0
242.2	MODESTO		SHALE	6.0	192.0
236.2	MODESTO		SHALE	2.0	198.0
234.2	MODESTO		SHALE	3.0	200.0
231.2	MODESTO	PIASA	LIMESTONE	6.0	203.0
225.2	MODESTO		SHALE	1.0	209.0
224.2	MODESTO		SHALE	1.0	210.0
223.2	MODESTO		SHALE	1.5	211.0
221.7	CARBONDALE	DANVILLE	COAL	1.5	212.5
220.2	CARBONDALE		UNDERCLAY	1.0	214.0
219.2	CARBONDALE		SHALE	3.0	215.0
216.2	CARBONDALE		SHALE	3.0	218.0
213.2	CARBONDALE		SHALE	1.0	221.0
212.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	222.0
209.2	CARBONDALE	BANKSTON FORK	SHALE	1.5	225.0
207.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	226.5
205.7	CARBONDALE		SHALE	7.5	228.5
198.2	CARBONDALE	BRERETON	LIMESTONE	8.0	236.0
190.2	CARBONDALE	ANNA	BLACK SHALE	1.2	244.0
189.0	CARBONDALE	HERRIN	COAL	8.0	245.2
181.0	CARBONDALE		UNDERCLAY	0.8	253.2
180.2	CARBONDALE		LIMESTONE	1.0	254.0

MAPID: 18900079000C VERSION: 2

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 23 QUARTERS/FOOTAGES: NE/c NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.616616 GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.433402 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 434.2 LOGGED (FT.): 255.0 LOG TYPE:

SOURCE: INTRNTLCMC00P8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
189.2	CARBONDALE	HERRIN	COAL	8.0	245.0	

MAPID: 18902688000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 23 QUARTERS/FOOTAGES: 63' S line, 789' E line of SW SW

QUADRANGLE: VENEDY LONGITUDE: -89.62853 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.422437 DATE COLLECTED: 12 / 22 / 1967

SURFACE ELEVATION (FT.): 435.2 LOGGED (FT.): 300.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 41-OK WELL TYPE: Coal Test

COMMENT: CORE C-8528

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
216.5	CARBONDALE	DANVILLE	COAL	1.3	218.7	
181.7	CARBONDALE	HERRIN	COAL	7.3	253.5	

MAPID: 18902688000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 23 QUARTERS/FOOTAGES: 63' S line, 789' E line of SW SW

QUADRANGLE: VENEDY

LONGITUDE: -89.62853

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.422437

DATE COLLECTED:

SURFACE ELEVATION (FT.): 435.0

LOGGED (FT.): 261.3

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 41-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
228.1	MODESTO	PIASA	LIMESTONE	8.2	206.9	
219.9	MODESTO		SHALE	6.0	215.1	
213.9	CARBONDALE	DANVILLE	COAL	1.3	221.1	
212.6	CARBONDALE		CLAYSTONE	3.2	222.4	
209.4	CARBONDALE		MOTTLED SHALE	3.7	225.6	
205.8	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	3.3	229.2	UPPER BENCH
202.5	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	0.8	232.5	SHALE PARTING
201.7	CARBONDALE	BANKSTON FORK	LIMESTONE	1.4	233.3	LOWER BENCH
200.3	CARBONDALE	LAWSON	MOTTLED SHALE	0.1	234.7	
200.2	CARBONDALE	LAWSON	GRAY SHALE	1.6	234.8	
198.6	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	1.3	236.4	
197.2	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.3	237.8	
197.0	CARBONDALE		CALCAREOUS SHALE	8.3	238.0	
188.7	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	7.5	246.3	
181.2	CARBONDALE	ANNA	BLACK SHALE	0.2	253.8	
181.0	CARBONDALE	HERRIN	COAL	7.3	254.0	

MAPID: 18923554000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 23 QUARTERS/FOOTAGES: NW NW NW NE

QUADRANGLE: OKAWVILLE

LONGITUDE: -89.620724

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 38.436517

DATE COLLECTED: 5 / 29 / 1979

SURFACE ELEVATION (FT.):

LOGGED (FT.): 272.8

LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-12-79

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	8.4	260.8	

MAPID: 18901288000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 24 QUARTERS/FOOTAGES: 330' S line, 430' W line of SE NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.596427 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.430855 DATE COLLECTED: 11 / 0 / 1960

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 401.0 LOG TYPE: Electric Log

SOURCE: COLLINS BROTHERS OIL CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
205.0	MODESTO	PIASA	UNCLASSIFIED	-	247.0	
172.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	280.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG
95.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	357.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
51.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	401.0	

MAPID: 18902689000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 24 QUARTERS/FOOTAGES: 95' N line, 33' W line of SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.602483 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.429633 DATE COLLECTED: 11 / 20 / 1967

SURFACE ELEVATION (FT.): 454.1 LOGGED (FT.): 380.1 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 36-OK WELL TYPE: Coal Test

COMMENT: CORE C-8523

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
191.4	CARBONDALE	DANVILLE	COAL	1.0	262.7	
162.6	CARBONDALE	HERRIN	COAL	8.1	291.5	
75.8	CARBONDALE	HOUCHIN CREEK	COAL	1.7	378.3	

MAPID: 18902689000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 24 QUARTERS/FOOTAGES: 95' N line, 33' W line of SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.602483

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.429633

DATE COLLECTED:

SURFACE ELEVATION (FT.): 454.0 LOGGED (FT.): 300.7

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 36-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
202.8	MODESTO	PIASA	LIMESTONE	9.4	251.2	
193.4	MODESTO		GRAY SHALE	2.6	260.6	
190.8	CARBONDALE	DANVILLE	COAL	1.0	263.2	
189.8	CARBONDALE		GRAY SHALE	7.3	264.2	
182.5	CARBONDALE	BANKSTON FORK	LIMESTONE	0.5	271.5	UPPER BENCH
182.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	1.7	272.0	LOWER BENCH
180.3	CARBONDALE	LAWSON	GRAY SHALE	4.2	273.7	
176.2	CARBONDALE	LAWSON	DARK GRAY SHALE	3.3	277.8	
172.9	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.4	281.1	
172.5	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.3	281.5	
172.3	CARBONDALE		DARK GRAY SHALE	1.4	281.7	
170.8	CARBONDALE	BRERETON	LIMESTONE	0.4	283.2	
170.4	CARBONDALE	ANNA	BLACK SHALE	8.4	283.6	
162.0	CARBONDALE	HERRIN	COAL	8.7	292.0	

MAPID: 18923542000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 24 QUARTERS/FOOTAGES: SW SW NW SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.601998

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.426704

DATE COLLECTED: 5 / 23 / 1979

SURFACE ELEVATION (FT.): LOGGED (FT.): 308.6

LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-8-79

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.0	297.2	

MAPID: 18900693000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 25 QUARTERS/FOOTAGES: 68' N line, 33' W line of NW NE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.597785

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.415165

DATE COLLECTED: 7 / 9 / 1956

SURFACE ELEVATION (FT.): 452.8 LOGGED (FT.): 310.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 4

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
341.2	MODESTO	CHAPEL	COAL	1.3	111.6	SEE COAL SECT MAP 6-54-A,6-54-C
153.6	CARBONDALE	HERRIN	COAL	7.8	299.2	SEE COAL SECT MAP 6-54-A,6-54-C

MAPID: 18900693000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 25 QUARTERS/FOOTAGES: 68' N line, 33' W line of NW NE SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.597785

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.415165

DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 306.8

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 4

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
205.0	MODESTO	PIASA	LIMESTONE	11.5	248.0	
193.5	MODESTO		SILTY SHALE	9.0	259.5	
184.5	CARBONDALE	DANVILLE	COAL	0.4	268.5	
184.1	CARBONDALE		CLAYSTONE	0.6	268.9	
183.5	CARBONDALE		SILTY SHALE	5.5	269.5	
178.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	275.0	
172.0	CARBONDALE	LAWSON	SILTY SHALE	13.7	281.0	
158.3	CARBONDALE		SILTY SHALE	13.7	294.7	
144.7	CARBONDALE	BRERETON	LIMESTONE	3.5	308.3	
141.2	CARBONDALE	ANNA	BLACK SHALE	1.0	311.8	
154.0	CARBONDALE	HERRIN	COAL	7.8	299.0	

MAPID: 18900696000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 25 QUARTERS/FOOTAGES: 70' N line, 46' W line of NW SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.611656

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.414995

DATE COLLECTED: 7 / 0 / 1956

SURFACE ELEVATION (FT.): 444.6 LOGGED (FT.): 289.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 5

WELL TYPE: Coal Test

COMMENT: CORE C-3425

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
351.9	MODESTO	CHAPEL	COAL	1.2	92.7	SEE COAL SECT MAP 6-54-A,6-54-C
200.9	CARBONDALE	DANVILLE	COAL	0.7	243.7	SEE COAL SECT MAP 6-54-A,6-54-C
164.7	CARBONDALE	HERRIN	COAL	7.8	279.9	SEE COAL SECT MAP 6-54-A,6-54-C

MAPID: 18900831000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 25 QUARTERS/FOOTAGES: 8' N line, 30' E line of NE NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.602659

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.422565

DATE COLLECTED: 3 / 22 / 1957

SURFACE ELEVATION (FT.): 457.2 LOGGED (FT.): 295.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 31

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
352.2	MODESTO	CHAPEL	COAL	1.0	105.0	SEE COAL SECT MAP 6-54-A,6-54-C
204.3	CARBONDALE	DANVILLE	COAL	0.6	252.9	SEE COAL SECT MAP 6-54-A,6-54-C
171.7	CARBONDALE	HERRIN	COAL	8.2	285.5	SEE COAL SECT MAP 6-54-A,6-54-C

MAPID: 18900515000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 26 QUARTERS/FOOTAGES: SW NW NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.619962

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.419625

DATE COLLECTED: 6 / 0 / 1955

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 382.0

LOG TYPE: Electric Log

SOURCE: MULLIGAN JOHN E

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
225.0	MODESTO	PIASA	UNCLASSIFIED	-	207.0	
182.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	250.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG
95.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	337.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
50.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	382.0	

MAPID: 18900515000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 26 QUARTERS/FOOTAGES: SW NW NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.619962 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.419625 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 258.0 LOG TYPE:

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
222.0	MODESTO	PIASA	LIMESTONE	6.0	210.0
216.0	MODESTO		SHALE	4.0	216.0
212.0	CARBONDALE	DANVILLE	BONE COAL	1.0	220.0
211.0	CARBONDALE		SHALE	6.0	221.0
205.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	227.0
203.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	229.0
202.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	230.0
199.0	CARBONDALE	LAWSON	SHALE	4.0	233.0
195.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	9.0	237.0
186.0	CARBONDALE	ANNA	BLACK SHALE	4.0	246.0
182.0	CARBONDALE	HERRIN	COAL	8.0	250.0

MAPID: 18923555000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 26 QUARTERS/FOOTAGES: NE SW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.62339 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.413158 DATE COLLECTED: 5 / 29 / 1979

SURFACE ELEVATION (FT.): LOGGED (FT.): 274.0 LOG TYPE: Other Core Study

SOURCE: FREEMAN UNITED OK-11A-79 WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	7.5	262.1

MAPID: 18923614000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 26 QUARTERS/FOOTAGES: 230' N line, 50' E line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.612063 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.421833 DATE COLLECTED: 5 / 19 / 1980

SURFACE ELEVATION (FT.): LOGGED (FT.): 262.0 LOG TYPE: Survey Core Study

SOURCE: FREEMAN UNITED OK-3-80 WELL TYPE: Coal Test

COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	DANVILLE	COAL	2.5	226.0
-	CARBONDALE	HERRIN	COAL	7.9	250.6

MAPID: 18923679000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 26 **QUARTERS/FOOTAGES:** 1570' S line, 2600' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.620911 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.412042 **DATE COLLECTED:** 6 / 10 / 1980
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 238.0 **LOG TYPE:** Other Core Study
SOURCE: FREEMAN UNITED OK-8-80 **WELL TYPE:** Coal Test
COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.7	229.7	

MAPID: 18901801000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 27 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of SE
QUADRANGLE: VENEDY **LONGITUDE:** -89.638339 **GEOLOGIST:** C TREWORY
CONFIDENTIAL: N **LATITUDE:** 38.413861 **DATE COLLECTED:** 9 / 0 / 1961
SURFACE ELEVATION (FT.): 413.0 **LOGGED (FT.):** 333.0 **LOG TYPE:** Electric Log
SOURCE: PURE OIL CO., THE **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
252.0	MODESTO	PIASA	UNCLASSIFIED	-	161.0	
209.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	204.0	
183.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	230.0	
123.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	290.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
80.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	333.0	

MAPID: 18902690000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 27 **QUARTERS/FOOTAGES:** 76' S line, 1923' W line of SE NE
QUADRANGLE: VENEDY **LONGITUDE:** -89.632745 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.415052 **DATE COLLECTED:** 12 / 15 / 1967
SURFACE ELEVATION (FT.): 431.3 **LOGGED (FT.):** 315.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO 40-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8527

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
208.6	CARBONDALE	HERRIN	COAL	8.0	222.7	
122.0	CARBONDALE	HOUCHIN CREEK	COAL	2.4	309.3	

MAPID: 1890269000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 27 QUARTERS/FOOTAGES: 76' S line, 1923' W line of SE NE

QUADRANGLE: VENEDY LONGITUDE: -89.632745

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.415052

DATE COLLECTED:

SURFACE ELEVATION (FT.): 431.0

LOGGED (FT.): 231.0

LOG TYPE: Survey Core Study

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
241.2	CARBONDALE		GRAY SHALE	12.0	189.8
229.2	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	2.8	201.8
226.3	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.0	204.7
224.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	206.7
222.2	CARBONDALE	LAWSON	GRAY SHALE	7.7	208.8
214.5	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	216.5
212.5	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.2	218.5
212.3	CARBONDALE	BRERETON		1.4	218.7
210.9	CARBONDALE	ANNA	BLACK SHALE	2.9	220.1
208.0	CARBONDALE	HERRIN	COAL	8.0	223.0

MAPID: 18902691000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 27 QUARTERS/FOOTAGES: 63' S line, 190' E line of SW NW

QUADRANGLE: VENEDY LONGITUDE: -89.644731

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.414864

DATE COLLECTED: 2 / 20 / 1968

SURFACE ELEVATION (FT.): 407.8

LOGGED (FT.): 300.0

LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAEER COAL CO 47-OK

WELL TYPE: Coal Test

COMMENT: CORE C-8533

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
234.8	CARBONDALE	DANVILLE	COAL	2.6	173.0
206.0	CARBONDALE	HERRIN	COAL	7.6	201.8
119.6	CARBONDALE	HOUCHIN CREEK	COAL	2.7	288.2

MAPID: 18902692000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 28 QUARTERS/FOOTAGES: 2' S line, 1' W line of SW NE

QUADRANGLE: VENEDY LONGITUDE: -89.657949 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.41459 DATE COLLECTED: 2 / 27 / 1968

SURFACE ELEVATION (FT.): 403.0 LOGGED (FT.): 310.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAEER COAL CO 48-OK WELL TYPE: Coal Test

COMMENT: CORE C-8534

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
218.2	CARBONDALE	DANVILLE	COAL	2.6	184.8	
187.3	CARBONDALE	HERRIN	COAL	7.8	215.7	
101.9	CARBONDALE	HOUCHIN CREEK	COAL	2.8	301.1	

MAPID: 18900662000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 30 QUARTERS/FOOTAGES: 900' S line, 300' E line of SE

QUADRANGLE: VENEDY LONGITUDE: -89.686934 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.409688 DATE COLLECTED: 4 / 0 / 1956

SURFACE ELEVATION (FT.): 414.0 LOGGED (FT.): 289.0 LOG TYPE: Electric Log

SOURCE: STRICKLAND, FRANK L. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
244.0	MODESTO	PIASA	UNCLASSIFIED	-	170.0	
198.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	216.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
122.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	292.0	
125.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	289.0	

MAPID: 18900081000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 31 QUARTERS/FOOTAGES: NE SE SE

QUADRANGLE: VENEDY LONGITUDE: -89.686869 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.395384 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 424.2 LOGGED (FT.): 234.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #10 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
424.2			UNCLASSIFIED	30.0	0.0	CASING
394.2	MODESTO		BLACK SHALE	14.0	30.0	
380.2	MODESTO	CHAPEL	COAL	0.7	44.0	
379.5	MODESTO		SHALE	3.0	44.7	
376.5	MODESTO		SANDSTONE	2.6	47.7	
373.9	MODESTO		SANDY SHALE	4.0	50.3	
369.9	MODESTO		SHALE	93.8	54.3	
276.2	MODESTO		LIMESTONE	0.2	148.0	
276.0	MODESTO		SHALE	3.0	148.2	
273.0	MODESTO		LIMESTONE	0.3	151.2	
272.7	MODESTO		SHALE	3.0	151.5	
269.7	MODESTO		LIMESTONE	0.2	154.5	
269.5	MODESTO		SHALE	6.3	154.7	
263.2	MODESTO		SANDSTONE	1.3	161.0	
261.9	MODESTO		SHALE	15.0	162.3	
246.9	MODESTO	PIASA	LIMESTONE	9.0	177.3	
237.9	MODESTO		SHALE	4.0	186.3	
233.9	MODESTO		SHALE	6.0	190.3	
227.9	MODESTO		BLACK SHALE	3.0	196.3	
224.9	CARBONDALE	DANVILLE	COAL	2.3	199.3	
222.7	CARBONDALE		BLACK SHALE	0.6	201.5	
222.1	CARBONDALE		UNDERCLAY	1.0	202.1	
221.1	CARBONDALE		SHALE	2.0	203.1	
219.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	205.1	
216.4	CARBONDALE	BANKSTON FORK	SHALE	1.0	207.8	
215.4	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	208.8	
213.9	CARBONDALE		BLACK SHALE	8.0	210.3	
205.9	CARBONDALE	CONANT	LIMESTONE	2.7	218.3	
203.2	CARBONDALE		BLACK SHALE	1.0	221.0	
202.2	CARBONDALE	BRERETON	LIMESTONE	2.8	222.0	
199.4	CARBONDALE	BRERETON	SHALE	0.7	224.8	
198.8	CARBONDALE	HERRIN	COAL	7.6	225.4	
191.2	CARBONDALE		UNDERCLAY	1.0	233.0	

MAPID: 18900081000C **VERSION:** 2 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 31 **QUARTERS/FOOTAGES:** NE SE SE
QUADRANGLE: VENEDY **LONGITUDE:** -89.686869 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.395384 **DATE COLLECTED:** 0 / 0 / 1920
SURFACE ELEVATION (FT.): 424.2 **LOGGED (FT.):** 234.0 **LOG TYPE:**
SOURCE: INTRNTLCMC0P10 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
199.2	CARBONDALE	HERRIN	COAL	7.6	225.0	

MAPID: 18902693000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 32 **QUARTERS/FOOTAGES:** 303' S line, 33' W line of SW NE
QUADRANGLE: VENEDY **LONGITUDE:** -89.676323 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.400803 **DATE COLLECTED:** 12 / 29 / 1967
SURFACE ELEVATION (FT.): 414.0 **LOGGED (FT.):** 330.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 42-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8529

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
387.3			COAL	1.5	26.7	
196.9	CARBONDALE	HERRIN	COAL	7.5	217.1	
116.0	CARBONDALE	HOUCHIN CREEK	COAL	2.3	298.0	

MAPID: 18902694000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 32 **QUARTERS/FOOTAGES:** 70' S line, 60' E line of SE SE
QUADRANGLE: VENEDY **LONGITUDE:** -89.667285 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.392935 **DATE COLLECTED:** 1 / 9 / 1968
SURFACE ELEVATION (FT.): 434.9 **LOGGED (FT.):** 343.6 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 43-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8530

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
210.6	CARBONDALE	DANVILLE	COAL	1.0	224.3	
181.4	CARBONDALE	HERRIN	COAL	7.9	253.5	
96.6	CARBONDALE	HOUCHIN CREEK	COAL	3.4	338.3	

MAPID: 18900177000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 33 QUARTERS/FOOTAGES: 1425' S line, 1000' W line

QUADRANGLE: VENEDY LONGITUDE: -89.663572 GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.396676 DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 1026.0 LOG TYPE:

SOURCE: MORRIS WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
189.0	CARBONDALE	HERRIN	COAL	-	246.0	

MAPID: 18902695000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 33 QUARTERS/FOOTAGES: 176' S line, 176' E line of NW

QUADRANGLE: VENEDY LONGITUDE: -89.658511 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 38.400504 DATE COLLECTED: 12 / 9 / 1967

SURFACE ELEVATION (FT.): 422.9 LOGGED (FT.): 335.0 LOG TYPE: Other Core Study

SOURCE: TRUAX-TRAER COAL CO 39-OK WELL TYPE: Coal Test

COMMENT: CORE C-8526

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
370.2			COAL	1.5	52.7	
179.2	CARBONDALE	HERRIN	COAL	7.5	243.7	
93.7	CARBONDALE	HOUCHIN CREEK	COAL	3.3	329.2	

MAPID: 18902695000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 33 QUARTERS/FOOTAGES: 176' S line, 176' E line of NW

QUADRANGLE: VENEDY LONGITUDE: -89.658511

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.400504

DATE COLLECTED:

SURFACE ELEVATION (FT.): 423.0 LOGGED (FT.): 251.5

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 39-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
222.8	MODESTO	PIASA	LIMESTONE	6.5	200.2	
216.3	MODESTO		SHALE	9.8	206.7	
206.6	CARBONDALE	DANVILLE	CLAYSTONE	0.4	216.4	
206.2	CARBONDALE		CLAYSTONE	0.4	216.8	
205.7	CARBONDALE		GRAY SHALE	1.6	217.3	
204.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	218.8	UPPER BENCH
201.7	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	3.0	221.3	SHALE PARTING
198.7	CARBONDALE	BANKSTON FORK	LIMESTONE	1.9	224.3	LOWER BENCH
196.7	CARBONDALE	LAWSON	CALCAREOUS SHALE	0.5	226.3	
196.2	CARBONDALE	LAWSON	MOTTLED SHALE	4.8	226.8	
191.4	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.8	231.6	
190.7	CARBONDALE	BRERETON	LIMESTONE/SILTSTONE	10.5	232.3	
180.2	CARBONDALE	ANNA	DARK GRAY SHALE	1.2	242.8	
179.0	CARBONDALE	HERRIN	COAL	7.5	244.0	

MAPID: 18900015000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 34 QUARTERS/FOOTAGES: NW NW SW

QUADRANGLE: VENEDY LONGITUDE: -89.647552

GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.399132

DATE COLLECTED:

SURFACE ELEVATION (FT.): 443.6 LOGGED (FT.): 275.0

LOG TYPE:

SOURCE: VENEDY CC

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
187.6	CARBONDALE	HERRIN	COAL	8.0	256.0	

MAPID: 18900082000C VERSION: 1

PROJECT: CIRC 71

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 34 QUARTERS/FOOTAGES: 2475' S line, 210' E line

QUADRANGLE: VENEDY LONGITUDE: -89.631036 GEOLOGIST: J.N. PAYNE

CONFIDENTIAL: N LATITUDE: 38.399751 DATE COLLECTED: 0 / 0 / 1936

SURFACE ELEVATION (FT.): 403.9 LOGGED (FT.): 1068.0 LOG TYPE:

SOURCE: YOCH 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
200.9	CARBONDALE	HERRIN	COAL	7.0	203.0	

MAPID: 18900083000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 1S 5W SECTION: 34 QUARTERS/FOOTAGES: NE/c SE

QUADRANGLE: VENEDY LONGITUDE: -89.634893 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.396525 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 403.1 LOGGED (FT.): 210.0 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #7 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.1			UNCONSOLIDATED	65.0	0.0	
338.1	MODESTO		SANDSTONE	3.0	65.0	
335.1	MODESTO		SHALE	66.0	68.0	
269.1	MODESTO		SANDSTONE	5.0	134.0	
264.1	MODESTO		SHALE	19.5	139.0	
244.6	MODESTO	PIASA	LIMESTONE	7.0	158.5	
237.6	MODESTO		SHALE	1.5	165.5	
236.1	MODESTO		BLACK SHALE	0.3	167.0	
235.8	CARBONDALE	DANVILLE	COAL	0.8	167.3	
235.1	CARBONDALE		UNDERCLAY	1.0	168.0	
234.1	CARBONDALE		SHALE	1.0	169.0	
233.1	CARBONDALE		BLACK SHALE	2.0	170.0	
231.1	CARBONDALE		SHALE	3.3	172.0	
227.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	175.3	
225.1	CARBONDALE	BANKSTON FORK	SHALE	1.0	178.0	
224.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	179.0	
222.1	CARBONDALE		SHALE	2.0	181.0	
220.1	CARBONDALE		BLACK SHALE	6.0	183.0	
214.1	CARBONDALE	CONANT	LIMESTONE	1.0	189.0	
213.1	CARBONDALE		BLACK SHALE	4.0	190.0	
209.1	CARBONDALE	BRERETON	LIMESTONE	5.5	194.0	
203.6	CARBONDALE	HERRIN	COAL	7.7	199.5	
195.9	CARBONDALE		UNDERCLAY	2.8	207.2	

MAPID: 18900083000C **VERSION:** 2 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 34 **QUARTERS/FOOTAGES:** NE/c SE
QUADRANGLE: VENEDY **LONGITUDE:** -89.634893 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.396525 **DATE COLLECTED:** 0 / 0 / 1920
SURFACE ELEVATION (FT.): 403.1 **LOGGED (FT.):** 210.0 **LOG TYPE:**
SOURCE: INTRNTLCMC00P7 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
203.1	CARBONDALE	HERRIN	COAL	7.7	200.0	

MAPID: 18902386000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 34 **QUARTERS/FOOTAGES:** 386' S line, 354' E line of SW
QUADRANGLE: VENEDY **LONGITUDE:** -89.640729 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.393881 **DATE COLLECTED:** 5 / 0 / 1968
SURFACE ELEVATION (FT.): 433.0 **LOGGED (FT.):** 9999.9 **LOG TYPE:** Electric Log
SOURCE: DESCH O G **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18902696000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 34 **QUARTERS/FOOTAGES:** 2520' N line, 1356' W line
QUADRANGLE: VENEDY **LONGITUDE:** -89.643951 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.400423 **DATE COLLECTED:** 1 / 24 / 1968
SURFACE ELEVATION (FT.): 403.7 **LOGGED (FT.):** 285.0 **LOG TYPE:** Other Core Study
SOURCE: TRUAX-TRAER COAL CO 45-OK **WELL TYPE:** Coal Test
COMMENT: CORE C-8532

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
207.5	CARBONDALE	HERRIN	COAL	7.1	196.2	
123.0	CARBONDALE	HOUCHIN CREEK	COAL	2.8	280.7	

MAPID: 18902696000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 34 **QUARTERS/FOOTAGES:** 2520' N line, 1356' W line
QUADRANGLE: VENEDY **LONGITUDE:** -89.643951 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.400423 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 404.0 **LOGGED (FT.):** 203.1 **LOG TYPE:** Survey Core Study
SOURCE: TRUAX-TRAER COAL CO 45-OK **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
255.3	MODESTO	PIASA	LIMESTONE	8.2	148.7	
247.1	CARBONDALE		GRAY SHALE	11.8	156.9	
235.3	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	3.6	168.7	UPPER BENCH
231.8	CARBONDALE	BANKSTON FORK	LIMESTONE	0.8	172.2	LOWER BENCH
231.0	CARBONDALE	LAWSON	GRAY SHALE	4.7	173.0	
226.4	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	16.1	177.6	
210.2	CARBONDALE	ANNA	BLACK SHALE	2.2	193.8	
208.0	CARBONDALE	HERRIN	COAL	7.1	196.0	

MAPID: 18923544000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 35 **QUARTERS/FOOTAGES:** NW SE NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.624503 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.403072 **DATE COLLECTED:** 5 / 25 / 1979
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 251.5 **LOG TYPE:** Other Core Study
SOURCE: FREEMAN UNITED OK-9-79 **WELL TYPE:** Coal Test
COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	DANVILLE	COAL	1.5	210.0	
-	CARBONDALE	HERRIN	COAL	8.2	239.3	

MAPID: 18923615000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 35 **QUARTERS/FOOTAGES:** 674' S line, 150' E line
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.612225 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.395139 **DATE COLLECTED:** 5 / 20 / 1980
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 251.6 **LOG TYPE:** Other Core Study
SOURCE: FREEMAN UNITED 251.55 **WELL TYPE:** Coal Test
COMMENT: DRILLERS LOG INC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	DANVILLE	COAL	1.0	215.0	
-	CARBONDALE	HERRIN	COAL	7.9	242.8	

MAPID: 18900084000C **VERSION:** 1 **PROJECT:** CIRC 71
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 36 **QUARTERS/FOOTAGES:** NE/c SE NE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.595572 **GEOLOGIST:** J.N. PAYNE
CONFIDENTIAL: N **LATITUDE:** 38.402608 **DATE COLLECTED:** 0 / 0 / 1920
SURFACE ELEVATION (FT.): 451.2 **LOGGED (FT.):** 292.0 **LOG TYPE:**
SOURCE: INTRNTLCMC00P5 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
170.2	CARBONDALE	HERRIN	COAL	7.2	281.0	

MAPID: 18900687000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 36 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.601335 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.401631 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 448.0 **LOGGED (FT.):** 295.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
202.0	MODESTO	PIASA	LIMESTONE	7.0	246.0	
195.0	MODESTO		SHALE	4.0	253.0	
191.0	CARBONDALE	DANVILLE	BONE COAL	1.0	257.0	
190.0	CARBONDALE		SHALE	5.0	258.0	
185.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	263.0	
183.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	265.0	
182.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	266.0	
179.0	CARBONDALE		SHALE	4.0	269.0	
175.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	7.0	273.0	
168.0	CARBONDALE	ANNA	DARK GRAY SHALE	5.0	280.0	
163.0	CARBONDALE	HERRIN	COAL	10.0	285.0	

MAPID: 18923545000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: WASHINGTON **TWP/RNG:** 1S 5W **SECTION:** 36 **QUARTERS/FOOTAGES:** SE SE NE NW
QUADRANGLE: OKAWVILLE **LONGITUDE:** -89.603083 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 38.404804 **DATE COLLECTED:** 5 / 23 / 1979
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 303.3 **LOG TYPE:** Drillers Log
SOURCE: FREEMAN UNITED OK-10-79 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	7.3	293.0	

MAPID: 18900455000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 1 QUARTERS/FOOTAGES: NE NW NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.160478 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.386693 DATE COLLECTED:

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 1558.0 LOG TYPE: Electric Log

SOURCE: RUWALDT, E. J. DRILLING WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-120.0	CARBONDALE	SPRINGFIELD	COAL	-	645.0
-230.0	CARBONDALE	COLCHESTER	COAL	-	755.0
-1033.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1558.0

MAPID: 18900455000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 1 QUARTERS/FOOTAGES: NE NW NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.160478 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.386693 DATE COLLECTED:

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 642.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-50.0	MODESTO	PIASA	LIMESTONE	5.0	575.0
-55.0	MODESTO		SHALE	5.0	580.0
-60.0	CARBONDALE	DANVILLE	BONE COAL	2.0	585.0
-62.0	CARBONDALE		SHALE	2.0	587.0
-64.0	CARBONDALE	GALUM	LIMESTONE & SHALE	7.0	589.0
-71.0	CARBONDALE	ALLENBY	BONE COAL	1.0	596.0
-72.0	CARBONDALE		SHALE	5.0	597.0
-77.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	602.0
-79.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	604.0
-80.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	605.0
-86.0	CARBONDALE		SHALE	8.0	611.0
-94.0	CARBONDALE	BRERETON	LIMESTONE	12.0	619.0
-106.0	CARBONDALE	ANNA	BLACK SHALE	3.0	631.0
-109.0	CARBONDALE	HERRIN	COAL	8.0	634.0

MAPID: 18901823000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 2 QUARTERS/FOOTAGES: 435' S line, 1085' E line of NE SW
 QUADRANGLE: IRVINGTON LONGITUDE: -89.176922 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.379063 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 0.0 LOG TYPE: Electric Log
 SOURCE: WELL TYPE: Oil and Gas Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-	CARBONDALE	LAWSON	SILTY SHALE	70.0	
-	CARBONDALE	BRERETON	LIMESTONE	5.0	
-	CARBONDALE	ANNA	SHALE	8.0	
-	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	9.0	

MAPID: 18902286000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 2 QUARTERS/FOOTAGES: 330' N line, 430' W line of NE NE
 QUADRANGLE: IRVINGTON LONGITUDE: -89.167019 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.386856 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 537.0 LOGGED (FT.): 1456.0 LOG TYPE: Electric Log
 SOURCE: M T & R DRLG. CO. WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-88.0	CARBONDALE	SPRINGFIELD	COAL	- 625.0	
-185.0	CARBONDALE	COLCHESTER	COAL	- 722.0	
-919.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	- 1456.0	

MAPID: 18900488000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 3 QUARTERS/FOOTAGES: SE NE NE
 QUADRANGLE: IRVINGTON LONGITUDE: -89.183465 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.38569 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 554.0 LOGGED (FT.): 1481.0 LOG TYPE: Electric Log
 SOURCE: HOPKINS, DALE WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-181.0	CARBONDALE	COLCHESTER	COAL	- 735.0	
-927.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	- 1481.0	

MAPID: 18900488000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 3 QUARTERS/FOOTAGES: SE NE NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.183465

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.38569

DATE COLLECTED:

SURFACE ELEVATION (FT.): 554.0 LOGGED (FT.): 0.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-	CARBONDALE	LAWSON	SILTY SHALE	7.0	

MAPID: 18901477000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 3 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW NE

QUADRANGLE: IRVINGTON LONGITUDE: -89.190441

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.38591

DATE COLLECTED: 12 / 0 / 1954

SURFACE ELEVATION (FT.): 544.0 LOGGED (FT.): 9999.9

LOG TYPE: Electric Log

SOURCE: RUTHERFORD, HOMER

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	WALSHVILLE CHANNEL - NO COAL PRESENT

MAPID: 18901128000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 4 QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.213676

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.384819

DATE COLLECTED:

SURFACE ELEVATION (FT.): 556.0 LOGGED (FT.): 1502.0

LOG TYPE: Electric Log

SOURCE: STRICKLAND, FRANK L.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-106.0	CARBONDALE	SPRINGFIELD	COAL	- 662.0	
-220.0	CARBONDALE	COLCHESTER	COAL	- 776.0	
-946.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	- 1502.0	

MAPID: 18901128000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 4 QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: IRVINGTON LONGITUDE: -89.213676

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.384819

DATE COLLECTED:

SURFACE ELEVATION (FT.): 556.0 LOGGED (FT.): 654.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-34.0	MODESTO	PIASA	LIMESTONE	8.0	590.0	
-42.0	CARBONDALE		SHALE	5.0	598.0	
-47.0	CARBONDALE	GALUM	LIMESTONE & SHALE	7.0	603.0	
-54.0	CARBONDALE		SHALE	12.0	610.0	
-66.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	622.0	
-69.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	625.0	
-70.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	626.0	
-76.0	CARBONDALE		SHALE	8.0	632.0	
-84.0	CARBONDALE	BRERETON	LIMESTONE	6.0	640.0	
-90.0	CARBONDALE	ANNA	BLACK SHALE	2.0	646.0	
-92.0	CARBONDALE	HERRIN	COAL	6.0	648.0	

MAPID: 18900669000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 8 QUARTERS/FOOTAGES: NW SE SE

QUADRANGLE: ASHLEY LONGITUDE: -89.222521

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.363315

DATE COLLECTED:

SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 3227.0

LOG TYPE: Electric Log

SOURCE: KENNARD OIL CO INC

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-889.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1454.0	
-2593.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3158.0	TOP OF NEW ALBANY
-2596.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3161.0	
-2662.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3227.0	BASE OF NEW ALBANY

MAPID: 18900669000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 8 QUARTERS/FOOTAGES: NW SE SE

QUADRANGLE: ASHLEY LONGITUDE: -89.222521

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.363315

DATE COLLECTED:

SURFACE ELEVATION (FT.): 565.0

LOGGED (FT.): 638.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-2.0	MODESTO	PIASA	LIMESTONE	5.0	567.0
-7.0	MODESTO		SHALE	3.0	572.0
-10.0	CARBONDALE	DANVILLE	BONE COAL	1.0	575.0
-11.0	CARBONDALE		SHALE	2.0	576.0
-13.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	10.0	578.0
-23.0	CARBONDALE	LAWSON	SANDSTONE	50.0	588.0

MAPID: 18901478000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 10 QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: ASHLEY LONGITUDE: -89.190393

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.36447

DATE COLLECTED:

SURFACE ELEVATION (FT.): 591.0

LOGGED (FT.): 658.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
61.0	MODESTO	PIASA	LIMESTONE	4.0	530.0
57.0	MODESTO		SHALE	2.0	534.0
55.0	CARBONDALE	DANVILLE	BONE COAL	2.0	536.0
53.0	CARBONDALE		SHALE	2.0	538.0
51.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	8.0	540.0
43.0	CARBONDALE	LAWSON	SANDSTONE/SILTSTONE	20.0	548.0
23.0	CARBONDALE	ENERGY	SANDSTONE/SILTSTONE	70.0	568.0

MAPID: 18901877000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 10 QUARTERS/FOOTAGES: 630' N line, 150' E line of NW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.187605

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.372659

DATE COLLECTED:

SURFACE ELEVATION (FT.): 553.0

LOGGED (FT.): 1484.0

LOG TYPE: Electric Log

SOURCE: WEISS ALBERT

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-931.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1484.0

MAPID: 18901894000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 11 QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: ASHLEY LONGITUDE: -89.176575 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.364286 DATE COLLECTED:

SURFACE ELEVATION (FT.): 566.0 LOGGED (FT.): 531.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
81.0	MODESTO	PIASA	LIMESTONE & SHALE	3.0	485.0
78.0	MODESTO		SHALE	3.0	488.0
75.0	CARBONDALE	DANVILLE	BONE COAL	1.0	491.0
74.0	CARBONDALE		SHALE	4.0	492.0
70.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	10.0	496.0
60.0	CARBONDALE		SHALE	2.0	506.0
58.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	5.0	508.0
53.0	CARBONDALE	ANNA	BLACK SHALE	1.0	513.0
52.0	CARBONDALE	ENERGY	GRAY SHALE	12.0	514.0
40.0	CARBONDALE	HERRIN	SANDSTONE	5.0	526.0

MAPID: 18902040000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 11 QUARTERS/FOOTAGES: 330' N line, 380' E line of NW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.169783 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.373228 DATE COLLECTED:

SURFACE ELEVATION (FT.): 499.0 LOGGED (FT.): 1402.0 LOG TYPE: Electric Log

SOURCE: BRYANT, PHILLIP WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-66.0	CARBONDALE	SPRINGFIELD	COAL	-	565.0
-163.0	CARBONDALE	COLCHESTER	COAL	-	662.0
-903.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1402.0

MAPID: 18900724000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 12 QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: ASHLEY LONGITUDE: -89.158154 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.363816 DATE COLLECTED: 7 / 0 / 1956

SURFACE ELEVATION (FT.): 527.0 LOGGED (FT.): 745.0 LOG TYPE: Electric Log

SOURCE: ESTATE OF N.A. BALDRIDGE WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
291.0	BOND	CARTHAGE	UNCLASSIFIED	-	236.0
-38.0	MODESTO	PIASA	UNCLASSIFIED	-	565.0
-103.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	630.0
-116.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	5.0	643.0
-167.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	694.0
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0	
-218.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	745.0

MAPID: 18900724000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 12 QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: ASHLEY LONGITUDE: -89.158154 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.363816 DATE COLLECTED:

SURFACE ELEVATION (FT.): 527.0 LOGGED (FT.): 635.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-40.0	MODESTO	PIASA	SANDSTONE	6.0	567.0
-46.0	MODESTO		SHALE	2.0	573.0
-48.0	CARBONDALE	DANVILLE	BONE COAL	2.0	575.0
-50.0	CARBONDALE		SHALE	4.0	577.0
-54.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	581.0
-59.0	CARBONDALE	LAWSON	SANDSTONE	25.0	586.0
-84.0	CARBONDALE		SHALE	10.0	611.0
-94.0	CARBONDALE	BRERETON	LIMESTONE	3.0	621.0
-97.0	CARBONDALE	ANNA	SHALE	7.0	624.0
-103.0	CARBONDALE	HERRIN	BLACK SHALE	5.0	630.0

MAPID: 18900724000C **VERSION:** 3 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 12 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: ASHLEY **LONGITUDE:** -89.158154 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.363816 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 527.0 **LOGGED (FT.):** 1606.0 **LOG TYPE:** Electric Log
SOURCE: BALDRIDGE, N. A. DRLG. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-119.0	CARBONDALE	SPRINGFIELD	COAL	-	646.0
-215.0	CARBONDALE	COLCHESTER	COAL	-	742.0
-1079.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1606.0

MAPID: 18902015000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 14 **QUARTERS/FOOTAGES:** 330' N line, 330' W line
QUADRANGLE: ASHLEY **LONGITUDE:** -89.181151 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.358896 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 571.0 **LOGGED (FT.):** 1463.0 **LOG TYPE:** Electric Log
SOURCE: ESTATE OF N.A. BALDRIDGE **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-892.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1463.0

MAPID: 18900527000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of NW NW
QUADRANGLE: ASHLEY **LONGITUDE:** -89.197212 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.359105 **DATE COLLECTED:** 7 / 0 / 1955
SURFACE ELEVATION (FT.): 586.0 **LOGGED (FT.):** 9999.9 **LOG TYPE:** Electric Log
SOURCE: MAZZARINO, M. **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
409.0	BOND	CARTHAGE	UNCLASSIFIED	-	177.0
116.0	MODESTO	PIASA	UNCLASSIFIED	-	470.0
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0	WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	0.0	WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0	WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	COLCHESTER	UNCLASSIFIED	0.0	WALSHVILLE CHANNEL - NO COAL

MAPID: 18901483000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 15 QUARTERS/FOOTAGES: NW NE NW

QUADRANGLE: ASHLEY LONGITUDE: -89.194908

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.359074

DATE COLLECTED:

SURFACE ELEVATION (FT.): 586.0 LOGGED (FT.): 560.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
131.0	MODESTO	PIASA	SANDSTONE	5.0	455.0	
126.0	CARBONDALE	LAWSON	SHALE & SANDSTONE	100.0	460.0	

MAPID: 18901486000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.197323

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.353655

DATE COLLECTED:

SURFACE ELEVATION (FT.): 579.0 LOGGED (FT.): 3228.0

LOG TYPE: Electric Log

SOURCE: DORAN THOMAS S

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-156.0	CARBONDALE	COLCHESTER	COAL	-	735.0	
-861.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1440.0	
-2577.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3156.0	TOP OF NEW ALBANY
-2581.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3160.0	
-2649.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3228.0	BASE OF NEW ALBANY

MAPID: 18900482000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 16 QUARTERS/FOOTAGES: 990' S line, 330' W line of NE

QUADRANGLE: ASHLEY LONGITUDE: -89.208747

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.355705

DATE COLLECTED:

SURFACE ELEVATION (FT.): 569.0 LOGGED (FT.): 1436.0

LOG TYPE: Electric Log

SOURCE: PITCHFORD LESTER

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-867.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1436.0	

MAPID: 18901862000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 19 **QUARTERS/FOOTAGES:** 660' S line, 330' W line of NE SE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.241341 **GEOLOGIST:** C TREWORY
CONFIDENTIAL: N **LATITUDE:** 38.337106 **DATE COLLECTED:** 6 / 0 / 1962
SURFACE ELEVATION (FT.): 562.0 **LOGGED (FT.):** 580.0 **LOG TYPE:** Electric Log
SOURCE: NAT'L. ASSOC. PETRO. CO. **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	DANVILLE	UNCLASSIFIED	0.0		
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
22.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	540.0	
-18.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	580.0	

MAPID: 18901862000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 19 **QUARTERS/FOOTAGES:** 660' S line, 330' W line of NE SE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.241341 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.337106 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 562.0 **LOGGED (FT.):** 462.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
192.0	MODESTO	PIASA	LIMESTONE & SHALE	2.0	370.0	
190.0	CARBONDALE	LAWSON	SHALE & SANDSTONE	90.0	372.0	

MAPID: 18923797000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 19 **QUARTERS/FOOTAGES:** 330' S line, 330' E line of NW SE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.243654 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.336192 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 453.0 **LOGGED (FT.):** 3066.0 **LOG TYPE:** Electric Log
SOURCE: IND ENERGY PRODUCERS **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-17.0	CARBONDALE	SPRINGFIELD	COAL	-	470.0	
-117.0	CARBONDALE	COLCHESTER	COAL	-	570.0	
-823.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1276.0	
-2551.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3004.0	TOP OF NEW ALBANY
-2554.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3007.0	
-2613.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3066.0	BASE OF NEW ALBANY

MAPID: 18923818000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 19 QUARTERS/FOOTAGES: 330' S line, 660' W line of SE NW

QUADRANGLE: ASHLEY LONGITUDE: -89.249986 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.339872 DATE COLLECTED:

SURFACE ELEVATION (FT.): 572.0 LOGGED (FT.): 3090.0 LOG TYPE: Electric Log

SOURCE: IND ENERGY PRODUCERS WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-733.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1305.0	
-2455.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3027.0	TOP OF NEW ALBANY
-2458.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3030.0	
-2518.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3090.0	BASE OF NEW ALBANY

MAPID: 18901977000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 20 QUARTERS/FOOTAGES: 660' S line, 330' E line of NW SW

QUADRANGLE: ASHLEY LONGITUDE: -89.234163 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.33704 DATE COLLECTED:

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 3013.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
58.0	CARBONDALE	SPRINGFIELD	COAL	-	500.0	
-37.0	CARBONDALE	COLCHESTER	COAL	-	595.0	
-756.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1314.0	
-2453.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3011.0	TOP OF NEW ALBANY
-2455.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3013.0	

MAPID: 18901977000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 20 QUARTERS/FOOTAGES: 660' S line, 330' E line of NW SW

QUADRANGLE: ASHLEY LONGITUDE: -89.234163 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.33704 DATE COLLECTED:

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 482.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
173.0	MODESTO	PIASA	LIMESTONE	7.0	385.0	
166.0	CARBONDALE	LAWSON	SHALE & SANDSTONE	90.0	392.0	

MAPID: 18923858000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 20 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of SW SW
QUADRANGLE: ASHLEY **LONGITUDE:** -89.23642 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.334351 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 550.0 **LOGGED (FT.):** 3080.0 **LOG TYPE:** Electric Log
SOURCE: KEY DRILLING CO., INC. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-42.0	CARBONDALE	COLCHESTER	COAL	-	592.0	
-738.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1288.0	
-2466.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3016.0	TOP OF NEW ALBANY
-2471.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3021.0	
-2530.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3080.0	BASE OF NEW ALBANY

MAPID: 18924067000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 20 **QUARTERS/FOOTAGES:** 660' N line, 330' W line of NE SW
QUADRANGLE: ASHLEY **LONGITUDE:** -89.231849 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.336994 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 562.0 **LOGGED (FT.):** 3064.0 **LOG TYPE:** Electric Log
SOURCE: KEY DRILLING CO., INC. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-752.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1314.0	
-2454.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3016.0	TOP OF NEW ALBANY
-2458.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3020.0	
-2502.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3064.0	BASE OF NEW ALBANY

MAPID: 18924079000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 20 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of SW NE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.227304 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.341469 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 561.0 **LOGGED (FT.):** 3074.0 **LOG TYPE:** Electric Log
SOURCE: A & B, INC. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-772.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1333.0	
-2467.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3028.0	TOP OF NEW ALBANY
-2469.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3030.0	
-2513.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3074.0	BASE OF NEW ALBANY

MAPID: 18924235000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 20 QUARTERS/FOOTAGES: 330' S line, 330' W line of NE

QUADRANGLE: ASHLEY LONGITUDE: -89.227293 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.339644 DATE COLLECTED:

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 3071.0 LOG TYPE: Electric Log

SOURCE: A & B, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-765.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1325.0	
-2464.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3024.0	TOP OF NEW ALBANY
-2466.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3026.0	
-2511.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3071.0	BASE OF NEW ALBANY

MAPID: 18902413000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 21 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.208948 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.339268 DATE COLLECTED: 8 / 0 / 1968

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: GALLAGHER, VICTOR R. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.0	BOND	CARTHAGE	UNCLASSIFIED	-	115.0	
-	CARBONDALE	DANVILLE	UNCLASSIFIED	0.0		
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	COLCHESTER	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL

MAPID: 18902413000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 21 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.208948 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.339268 DATE COLLECTED:

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 512.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
150.0	MODESTO	PIASA	LIMESTONE & SHALE	2.0	410.0	
148.0	CARBONDALE	LAWSON	SHALE & SANDSTONE	100.0	412.0	

MAPID: 18902413000C **VERSION:** 3 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 21 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.208948 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.339268 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 560.0 **LOGGED (FT.):** 1360.0 **LOG TYPE:** Electric Log
SOURCE: GALLAGHER, VICTOR R. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-800.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1360.0	

MAPID: 18900856000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 22 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.183751 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.337068 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 556.0 **LOGGED (FT.):** 473.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
158.0	MODESTO	PIASA	LIMESTONE	5.0	398.0	
153.0	CARBONDALE	LAWSON	SILTY SHALE	70.0	403.0	

MAPID: 18901953000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 23 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of NW NW
QUADRANGLE: ASHLEY **LONGITUDE:** -89.18155 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.342484 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 547.0 **LOGGED (FT.):** 1459.0 **LOG TYPE:** Electric Log
SOURCE: ROPER & SUEY OIL CO **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-912.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1459.0	

MAPID: 18902492000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 25 QUARTERS/FOOTAGES: NW SW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.162916 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.325966 DATE COLLECTED:

SURFACE ELEVATION (FT.): 559.0 LOGGED (FT.): 502.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
159.0	MODESTO	PIASA	LIMESTONE & SHALE	2.0	400.0
157.0	CARBONDALE	LAWSON	SHALE & SANDSTONE	100.0	402.0

MAPID: 18902516000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 25 QUARTERS/FOOTAGES: 990' S line, 990' W line of NW

QUADRANGLE: ASHLEY LONGITUDE: -89.160593 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.325812 DATE COLLECTED:

SURFACE ELEVATION (FT.): 559.0 LOGGED (FT.): 1525.0 LOG TYPE: Electric Log

SOURCE: PHOENIX PROD. CO., INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-271.0	CARBONDALE	COLCHESTER	COAL	-	830.0
-966.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1525.0

MAPID: 18923044000C VERSION: 1

PROJECT: BLM

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 25 QUARTERS/FOOTAGES: 112' N line, 110' W line of NE

QUADRANGLE: ASHLEY LONGITUDE: -89.154465 GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 38.329756 DATE COLLECTED: 9 / 25 / 1974

SURFACE ELEVATION (FT.): 545.0 LOGGED (FT.): 20.0 LOG TYPE: Drillers Log

SOURCE: CLARENCE KOHNEN, DRILLER WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
545.0			UNCONSOLIDATED	12.0	0.0
533.0			SANDSTONE	6.0	12.0
527.0			COAL	2.0	18.0

MAPID: 18900877000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 26 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: ASHLEY LONGITUDE: -89.181607 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.31706 DATE COLLECTED:

SURFACE ELEVATION (FT.): 556.0 LOGGED (FT.): 450.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
144.0	MODESTO	PIASA	LIMESTONE	3.0	412.0
141.0	MODESTO		SHALE	2.0	415.0
139.0	CARBONDALE	DANVILLE	BONE COAL	1.0	417.0
138.0	CARBONDALE	GALUM	LIMESTONE & SHALE	6.0	418.0
132.0	CARBONDALE	ALLENBY	BONE COAL	1.0	424.0
131.0	CARBONDALE		SHALE	8.0	425.0
123.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	433.0
118.0	CARBONDALE		SHALE	5.0	438.0
113.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	2.0	443.0
111.0	CARBONDALE	ANNA	SHALE	2.0	445.0
109.0	CARBONDALE	HERRIN	BONE COAL	3.0	447.0

MAPID: 18902460000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 26 QUARTERS/FOOTAGES: 990' S line, 330' E line of NE

QUADRANGLE: ASHLEY LONGITUDE: -89.165218 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.325994 DATE COLLECTED:

SURFACE ELEVATION (FT.): 547.0 LOGGED (FT.): 1435.0 LOG TYPE: Electric Log

SOURCE: RUSSELL DRLG. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-888.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1435.0

MAPID: 18900054000C VERSION: 1

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 27 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: ASHLEY LONGITUDE: -89.190747 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.322609 DATE COLLECTED: 0 / 0 / 1887

SURFACE ELEVATION (FT.): 543.5 LOGGED (FT.): 502.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Mine Shaft

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
543.5			UNKNOWN	123.0	0.0	
420.5			LIMESTONE	9.0	123.0	UNCERTAIN CORRELATION
411.5			UNCLASSIFIED	16.0	132.0	
395.5			COAL	0.8	148.0	
394.7			CONGLOMERATE	4.4	148.8	
390.2			UNDERCLAY	1.4	153.3	
388.8			SANDSTONE	46.4	154.7	
342.4			SHALE	5.0	201.1	
337.4			BLACK SHALE	4.0	206.1	
333.4			LIMESTONE	1.0	210.1	
332.4			SHALE	2.4	211.1	
330.0			UNDERCLAY	4.4	213.5	
325.6			CONGLOMERATE	3.4	217.9	
322.2			SHALE	24.4	221.3	
297.7			UNCLASSIFIED	3.0	245.8	
294.7			SHALE	62.4	248.8	
232.3			BLACK SHALE	2.4	311.2	UNCERTAIN CORRELATION
229.9			LIMESTONE	1.0	313.6	
228.9			COAL	1.0	314.6	UNCERTAIN CORRELATION
227.9			UNDERCLAY	3.0	315.6	
224.9			SHALE	5.4	318.6	
219.5			SANDSTONE	22.0	324.0	
197.5			UNCLASSIFIED	83.0	346.0	
114.5			LIMESTONE	0.4	429.0	
114.1			UNDERCLAY	1.5	429.4	
112.6			SANDSTONE	3.4	430.9	
109.2			LIMESTONE	1.4	434.3	
107.8			BLACK SHALE	1.4	435.7	
106.4			SHALE	5.0	437.1	
101.4			BLACK SHALE	6.0	442.1	
95.4			LIMESTONE	3.4	448.1	
92.0	CARBONDALE		SHALE	6.0	451.5	
86.0	CARBONDALE		LIMESTONE	14.0	457.5	
72.0	CARBONDALE	ANNA	BLACK SHALE	2.0	471.5	
70.0	CARBONDALE	HERRIN	BONE COAL	4.4	473.5	
65.6	CARBONDALE	ENERGY	SHALE	6.0	477.9	
59.6	CARBONDALE	HERRIN	COAL	0.7	483.9	
58.9	CARBONDALE	ENERGY	SHALE	4.0	484.6	
54.9	CARBONDALE	HERRIN	COAL	0.3	488.6	

54.6	CARBONDALE	ENERGY	SHALE	3.4	488.9
51.2	CARBONDALE	HERRIN	COAL	5.0	492.3
46.2	CARBONDALE		UNKNOWN	4.7	497.3

MAPID: 18900054000C **VERSION:** 2 **PROJECT:** BLM
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 27 **QUARTERS/FOOTAGES:** NW NW SE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.190747 **GEOLOGIST:** BARGH,M
CONFIDENTIAL: N **LATITUDE:** 38.322609 **DATE COLLECTED:** 0 / 0 / 1887
SURFACE ELEVATION (FT.): 544.0 **LOGGED (FT.):** 502.0 **LOG TYPE:** Drillers Log
SOURCE: KROODMAN, AUTHORITY **WELL TYPE:** Coal Test
COMMENT: "COAL SHAFT"

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
544.0			UNKNOWN	123.0	0.0
421.0			ROCK	25.0	123.0
396.0			COAL	0.8	148.0
395.2			ROCK	165.8	148.8
229.4			COAL	1.0	314.6
228.4			ROCK	132.5	315.6
95.9			LIMESTONE	3.4	448.1
92.5			SHALE	6.0	451.5
86.5			LIMESTONE	14.0	457.5
72.5			BLACK SHALE	2.0	471.5
70.5			COAL	4.4	473.5
66.1			ROCK	6.0	477.9
60.1			COAL	0.7	483.9
59.4			ROCK	4.0	484.6
55.4			COAL	0.3	488.6
55.1			SHALE	3.4	488.9
51.7	CARBONDALE	HERRIN	COAL	5.0	492.3
46.7	CARBONDALE		ROCK	4.7	497.3

MAPID: 18900054000C VERSION: 3

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 27 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: ASHLEY LONGITUDE: -89.190747 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.322609 DATE COLLECTED: 0 / 0 / 1887

SURFACE ELEVATION (FT.): 543.5 LOGGED (FT.): 497.3 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: KROODMAN AS AUTH.; ASHLEY AS TOWN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
543.5			UNCLASSIFIED	123.0	0.0	
420.5	BOND	CARTHAGE	LIMESTONE	9.0	123.0	
411.5	MODESTO		SHALE	4.0	132.0	
407.5	MODESTO		SHALE	12.0	136.0	
395.5	MODESTO	WOMAC	COAL	0.8	148.0	
394.7	MODESTO		CONGLOMERATE	4.4	148.8	
390.2	MODESTO		UNDERCLAY	1.4	153.3	
388.8	MODESTO		SANDSTONE	46.4	154.7	
342.4	MODESTO		SHALE	5.0	201.1	
337.4	MODESTO		BLACK SHALE	4.0	206.1	
333.4	MODESTO		LIMESTONE	1.0	210.1	
332.4	MODESTO		SHALE	2.4	211.1	
330.0	MODESTO		UNDERCLAY	4.4	213.5	
325.6	MODESTO		CONGLOMERATE	3.4	217.9	
322.2	MODESTO		SANDY SHALE	21.0	221.3	
301.2	MODESTO		SHALE	3.4	242.3	
297.7	MODESTO		SHALE	3.0	245.8	
294.7	MODESTO		SANDY SHALE	41.0	248.8	
253.7	MODESTO		SHALE	21.4	289.8	
232.3	MODESTO		BLACK SHALE	2.4	311.2	
229.9	MODESTO		LIMESTONE	1.0	313.6	
228.9	MODESTO	CHAPEL	COAL	1.0	314.6	
227.9	MODESTO		UNDERCLAY	3.0	315.6	
224.9	MODESTO		SHALE	5.4	318.6	
219.5	MODESTO		SANDSTONE	22.0	324.0	
197.5	MODESTO		SHALE	83.0	346.0	
114.5	MODESTO		LIMESTONE	0.4	429.0	
114.1	MODESTO		UNDERCLAY	1.4	429.4	
112.7	MODESTO		SANDSTONE	3.4	430.8	
109.2	MODESTO	PIASA	LIMESTONE	1.4	434.3	
107.8	MODESTO		BLACK SHALE	1.4	435.7	
106.4	CARBONDALE		SHALE	5.0	437.1	
101.4	CARBONDALE		BLACK SHALE	6.0	442.1	
95.4	CARBONDALE		LIMESTONE	2.0	448.1	
93.4	CARBONDALE		LIMESTONE	1.4	450.1	
92.0	CARBONDALE		SHALE	6.0	451.5	
86.0	CARBONDALE	BRERETON	LIMESTONE	14.0	457.5	
72.0	CARBONDALE	ANNA	BLACK SHALE	2.0	471.5	
70.0	CARBONDALE	HERRIN	COAL	4.4	473.5	UPPER BENCH

65.6	CARBONDALE	HERRIN	SHALE	6.0	477.9	
59.6	CARBONDALE	HERRIN	COAL	0.7	483.9	
58.9	CARBONDALE	HERRIN	SHALE	4.0	484.6	SH/SOAPST
54.9	CARBONDALE	HERRIN	COAL	0.3	488.6	
54.6	CARBONDALE	HERRIN	SHALE	3.4	488.9	SH/SOAPST
51.2	CARBONDALE	HERRIN	COAL	5.0	492.3	LOWER BENCH

MAPID: 18900424900M **VERSION:** 1 **PROJECT:** BLM
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 27 **QUARTERS/FOOTAGES:** 2340' S line, 3000' W line
QUADRANGLE: ASHLEY **LONGITUDE:** -89.190631 **GEOLOGIST:** BARGH,M
CONFIDENTIAL: N **LATITUDE:** 38.322728 **DATE COLLECTED:** 0 / 0 / 1935
SURFACE ELEVATION (FT.): 540.0 **LOGGED (FT.):** 494.5 **LOG TYPE:** Measured section
SOURCE: QUADE REPT-ASHLEY C C **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
540.0			UNKNOWN	434.0	0.0	
-			LIMESTONE	14.0		
-			UNKNOWN	38.6		
-			SHALE	3.4		
-			COAL	4.5		
-			UNDERCLAY	-		

MAPID: 18900449000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 27 **QUARTERS/FOOTAGES:** 330' S line, 990' E line of NW SE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.190786 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.320804 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 544.0 **LOGGED (FT.):** 1355.0 **LOG TYPE:** Electric Log
SOURCE: RUSSELL J W ETAL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
41.0	CARBONDALE	SPRINGFIELD	COAL	-	503.0	
-52.0	CARBONDALE	COLCHESTER	COAL	-	596.0	
-811.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1355.0	

MAPID: 18901488000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 30 QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: ASHLEY LONGITUDE: -89.238899 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.323421 DATE COLLECTED:

SURFACE ELEVATION (FT.): 566.0 LOGGED (FT.): 474.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
138.0	MODESTO	PIASA	CALCAREOUS SHALE	2.0	428.0	
136.0	CARBONDALE	LAWSON	SILTY SHALE	40.0	430.0	
96.0	CARBONDALE	HERRIN	BONE COAL	4.0	470.0	

MAPID: 18923860000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 30 QUARTERS/FOOTAGES: 330' S line, 660' E line of NW

QUADRANGLE: ASHLEY LONGITUDE: -89.249845 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.32516 DATE COLLECTED:

SURFACE ELEVATION (FT.): 553.0 LOGGED (FT.): 3106.0 LOG TYPE: Electric Log

SOURCE: SHAKESPEARE OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
56.0	CARBONDALE	SPRINGFIELD	COAL	-	497.0	
-39.0	CARBONDALE	COLCHESTER	COAL	-	592.0	
-733.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1286.0	
-2491.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3044.0	TOP OF NEW ALBANY
-2495.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3048.0	
-2553.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3106.0	BASE OF NEW ALBANY

MAPID: 18923921000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 30 QUARTERS/FOOTAGES: 330' N line, 903' E line of NW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.255556 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.330658 DATE COLLECTED:

SURFACE ELEVATION (FT.): 546.0 LOGGED (FT.): 3074.0 LOG TYPE: Electric Log

SOURCE: NELMS BROS. OIL PROP. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
66.0	CARBONDALE	SPRINGFIELD	COAL	-	480.0	
-35.0	CARBONDALE	COLCHESTER	COAL	-	581.0	
-738.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1284.0	
-2467.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3013.0	TOP OF NEW ALBANY
-2470.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3016.0	
-2528.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3074.0	BASE OF NEW ALBANY

MAPID: 18900883000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 31 QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: ASHLEY LONGITUDE: -89.241899 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.307068 DATE COLLECTED:

SURFACE ELEVATION (FT.): 562.0 LOGGED (FT.): 454.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
167.0	MODESTO	PIASA	CALCAREOUS SHALE	2.0	395.0	
165.0	CARBONDALE		SHALE	17.0	397.0	
148.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	414.0	
142.0	CARBONDALE	LAWSON	SHALE	8.0	420.0	
134.0	CARBONDALE	CONANT	LIMESTONE	2.0	428.0	
132.0	CARBONDALE		SHALE	2.0	430.0	
130.0	CARBONDALE	BRERETON	LIMESTONE	8.0	432.0	
122.0	CARBONDALE	ANNA	BLACK SHALE	5.0	440.0	
117.0	CARBONDALE	HERRIN	COAL	9.0	445.0	

MAPID: 18923922000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 31 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE NE

QUADRANGLE: ASHLEY LONGITUDE: -89.241798 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.310684 DATE COLLECTED:

SURFACE ELEVATION (FT.): 569.0 LOGGED (FT.): 3067.0 LOG TYPE: Electric Log

SOURCE: SHAKESPEARE OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
127.0	CARBONDALE	SPRINGFIELD	COAL	-	442.0	
17.0	CARBONDALE	COLCHESTER	COAL	-	552.0	
-707.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1276.0	
-2439.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3008.0	TOP OF NEW ALBANY
-2443.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3012.0	
-2498.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3067.0	BASE OF NEW ALBANY

MAPID: 18924303000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 31 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE

QUADRANGLE: ASHLEY LONGITUDE: -89.23894 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.316111 DATE COLLECTED:

SURFACE ELEVATION (FT.): 556.0 LOGGED (FT.): 3072.0 LOG TYPE: Electric Log

SOURCE: HUX OIL CORPORATION WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
1.0	CARBONDALE	COLCHESTER	COAL	-	555.0	
-718.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1274.0	
-2454.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3010.0	TOP OF NEW ALBANY
-2458.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3014.0	
-2516.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3072.0	BASE OF NEW ALBANY

MAPID: 18901489000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 32 QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: ASHLEY LONGITUDE: -89.220734 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.308487 DATE COLLECTED:

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 442.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
160.0	MODESTO	PIASA	LIMESTONE	7.0	390.0	
153.0	CARBONDALE		SHALE	2.0	397.0	
151.0	CARBONDALE	GALUM	LIMESTONE & SHALE	4.0	399.0	
147.0	CARBONDALE		SHALE	7.0	403.0	
140.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	410.0	
135.0	CARBONDALE	LAWSON	SHALE	5.0	415.0	
130.0	CARBONDALE	BRERETON	LIMESTONE	12.0	420.0	
118.0	CARBONDALE	ANNA	BLACK SHALE	3.0	432.0	
115.0	CARBONDALE	HERRIN	COAL	7.0	435.0	

MAPID: 18923949000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 32 QUARTERS/FOOTAGES: 660' S line, 330' W line of NW

QUADRANGLE: ASHLEY LONGITUDE: -89.236861 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.311639 DATE COLLECTED:

SURFACE ELEVATION (FT.): 581.0 LOGGED (FT.): 3096.0 LOG TYPE: Electric Log

SOURCE: C. G. DAVIS PRODUCTION COMPANY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
97.0	CARBONDALE	SPRINGFIELD	COAL	-	484.0	
-3.0	CARBONDALE	COLCHESTER	COAL	-	584.0	
-709.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1290.0	
-2455.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3036.0	TOP OF NEW ALBANY
-2459.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3040.0	
-2515.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3096.0	BASE OF NEW ALBANY

MAPID: 18901490000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 33 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: ASHLEY LONGITUDE: -89.213804 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.310231 DATE COLLECTED:

SURFACE ELEVATION (FT.): 524.0 LOGGED (FT.): 427.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
146.0	MODESTO	PIASA	LIMESTONE	4.0	378.0	
142.0	CARBONDALE		SHALE	2.0	382.0	
140.0	CARBONDALE	GALUM	LIMESTONE & SHALE	4.0	384.0	
136.0	CARBONDALE		SHALE	8.0	388.0	
128.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	396.0	
125.0	CARBONDALE	LAWSON	SHALE	5.0	399.0	
120.0	CARBONDALE	BRERETON	LIMESTONE	10.0	404.0	
110.0	CARBONDALE	ANNA	BLACK SHALE	3.0	414.0	
107.0	CARBONDALE	HERRIN	COAL	10.0	417.0	

MAPID: 18901491000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 33 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.216102 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.310251 DATE COLLECTED:

SURFACE ELEVATION (FT.): 533.0 LOGGED (FT.): 3023.0 LOG TYPE: Electric Log

SOURCE: OHIO OIL CO., THE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
98.0	CARBONDALE	SPRINGFIELD	COAL	-	435.0	
-13.0	CARBONDALE	COLCHESTER	COAL	-	546.0	
-717.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1250.0	
-2427.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2960.0	TOP OF NEW ALBANY
-2429.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2962.0	
-2490.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3023.0	BASE OF NEW ALBANY

MAPID: 18901493000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 34 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: ASHLEY LONGITUDE: -89.183875 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.309819 DATE COLLECTED: 10 / 0 / 1954

SURFACE ELEVATION (FT.): 556.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: LESTER JOHN L WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18901493000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 34 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: ASHLEY LONGITUDE: -89.183875 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.309819 DATE COLLECTED:

SURFACE ELEVATION (FT.): 556.0 LOGGED (FT.): 440.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
161.0	MODESTO	PIASA	LIMESTONE	5.0	395.0	
156.0	CARBONDALE	DANVILLE	BONE COAL	4.0	400.0	
152.0	CARBONDALE		SHALE	8.0	404.0	
144.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	412.0	
140.0	CARBONDALE	LAWSON	SHALE	5.0	416.0	
135.0	CARBONDALE	BRERETON	LIMESTONE	7.0	421.0	
128.0	CARBONDALE	ANNA	BLACK SHALE	2.0	428.0	
126.0	CARBONDALE	HERRIN	COAL	10.0	430.0	

MAPID: 18902297000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE

QUADRANGLE: ASHLEY LONGITUDE: -89.185038 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.310753 DATE COLLECTED:

SURFACE ELEVATION (FT.): 554.0 LOGGED (FT.): 3139.0 LOG TYPE: Electric Log

SOURCE: TEXACO, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
94.0	CARBONDALE	SPRINGFIELD	COAL	-	460.0	
-4.0	CARBONDALE	COLCHESTER	COAL	-	558.0	
-800.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1354.0	
-2530.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3084.0	TOP OF NEW ALBANY
-2532.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3086.0	
-2585.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3139.0	BASE OF NEW ALBANY

MAPID: 18902596000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 34 QUARTERS/FOOTAGES: 1' S line, 3300' E line

QUADRANGLE: ASHLEY LONGITUDE: -89.194114 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.301855 DATE COLLECTED: 7 / 23 / 1967

SURFACE ELEVATION (FT.): 536.0 LOGGED (FT.): 472.3 LOG TYPE: Survey Core Study

SOURCE: ATLANTIC RICHFIELD 4 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
83.5	CARBONDALE	BRERETON	LIMESTONE	7.9	452.5	
75.6	CARBONDALE	ANNA	BLACK SHALE	3.6	460.4	
72.0	CARBONDALE	HERRIN	COAL	8.3	464.0	

MAPID: 18901130000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 1W SECTION: 35 QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: ASHLEY LONGITUDE: -89.170053 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.302169 DATE COLLECTED:

SURFACE ELEVATION (FT.): 555.0 LOGGED (FT.): 0.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	LAWSON	SILTY SHALE	60.0		

MAPID: 18901792000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 1W **SECTION:** 35 **QUARTERS/FOOTAGES:** 990' S line, 330' E line of NW
QUADRANGLE: ASHLEY **LONGITUDE:** -89.174635 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.311439 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 560.0 **LOGGED (FT.):** 3160.0 **LOG TYPE:** Electric Log
SOURCE: CARTER JAMES E **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-805.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1365.0	
-2544.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3104.0	TOP OF NEW ALBANY
-2548.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3108.0	
-2600.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3160.0	BASE OF NEW ALBANY

MAPID: 18901150000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 2W **SECTION:** 5 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.338851 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.382218 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 486.0 **LOGGED (FT.):** 2962.0 **LOG TYPE:** Electric Log
SOURCE: TEXAS COMPANY, THE **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-104.0	CARBONDALE	COLCHESTER	COAL	-	590.0	
-759.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1245.0	
-2437.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2923.0	TOP OF NEW ALBANY
-2440.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2926.0	
-2476.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2962.0	BASE OF NEW ALBANY

MAPID: 18901150000C **VERSION:** 2 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 2S 2W **SECTION:** 5 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of SE
QUADRANGLE: HOYLETON **LONGITUDE:** -89.338851 **GEOLOGIST:** C TREWORGY
CONFIDENTIAL: N **LATITUDE:** 38.382218 **DATE COLLECTED:** 8 / 0 / 1953
SURFACE ELEVATION (FT.): 486.0 **LOGGED (FT.):** 9999.9 **LOG TYPE:** Electric Log
SOURCE: TEXAS COMPANY, THE **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL

MAPID: 18923954000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 2W **SECTION:** 6 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of NE NW
QUADRANGLE: HOYLETON **LONGITUDE:** -89.364287 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.387709 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 470.0 **LOGGED (FT.):** 2922.0 **LOG TYPE:** Electric Log
SOURCE: COLLINS BROTHERS OIL CO. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-742.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1212.0	
-2416.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2886.0	TOP OF NEW ALBANY
-2420.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2890.0	
-2452.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2922.0	BASE OF NEW ALBANY

MAPID: 18901151000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 2S 2W **SECTION:** 7 **QUARTERS/FOOTAGES:** 990' N line, 330' E line
QUADRANGLE: BEAUCOUP **LONGITUDE:** -89.350677 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.372525 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 503.0 **LOGGED (FT.):** 502.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
133.0	MODESTO	PIASA	LIMESTONE	12.0	370.0	
121.0	CARBONDALE		SHALE	14.0	382.0	
107.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	396.0	
101.0	CARBONDALE	LAWSON	SANDSTONE	100.0	402.0	

MAPID: 18902924000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 2W **SECTION:** 7 **QUARTERS/FOOTAGES:** 990' S line, 660' W line of SW
QUADRANGLE: BEAUCOUP **LONGITUDE:** -89.36876 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.364455 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 482.0 **LOGGED (FT.):** 2938.0 **LOG TYPE:** Electric Log
SOURCE: WHITE, CARL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
7.0	CARBONDALE	SPRINGFIELD	COAL	-	475.0	
-66.0	CARBONDALE	COLCHESTER	COAL	-	548.0	
-720.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1202.0	
-2416.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2898.0	TOP OF NEW ALBANY
-2420.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2902.0	
-2456.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2938.0	BASE OF NEW ALBANY

MAPID: 18901085000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 8 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.343847 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.36555 DATE COLLECTED:

SURFACE ELEVATION (FT.): 531.0 LOGGED (FT.): 3016.0 LOG TYPE: Electric Log

SOURCE: COLLINS BROTHERS OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-79.0	CARBONDALE	COLCHESTER	COAL	-	610.0	
-745.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1276.0	
-2446.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2977.0	TOP OF NEW ALBANY
-2449.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2980.0	
-2485.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3016.0	BASE OF NEW ALBANY

MAPID: 18901085000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 8 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.343847 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.36555 DATE COLLECTED:

SURFACE ELEVATION (FT.): 531.0 LOGGED (FT.): 493.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
158.0	MODESTO	PIASA	LIMESTONE	9.0	373.0	
149.0	CARBONDALE		SHALE	7.0	382.0	
142.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	389.0	
138.0	CARBONDALE	LAWSON	SANDSTONE	100.0	393.0	

MAPID: 18901152000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 9 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.313026 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.368939 DATE COLLECTED:

SURFACE ELEVATION (FT.): 561.0 LOGGED (FT.): 3026.0 LOG TYPE: Electric Log

SOURCE: COLLINS BROTHERS OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-32.0	CARBONDALE	COLCHESTER	COAL	-	593.0	
-726.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1287.0	
-2425.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2986.0	TOP OF NEW ALBANY
-2427.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2988.0	
-2465.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3026.0	BASE OF NEW ALBANY

MAPID: 18901152000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 9 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.313026

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.368939

DATE COLLECTED:

SURFACE ELEVATION (FT.): 561.0 LOGGED (FT.): 480.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
201.0	MODESTO	PIASA	LIMESTONE & SHALE	10.0	360.0	
191.0	CARBONDALE		SHALE	4.0	370.0	
187.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	6.0	374.0	
181.0	CARBONDALE	LAWSON	SANDSTONE	100.0	380.0	

MAPID: 18901503000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 10 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.308542

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.367137

DATE COLLECTED:

SURFACE ELEVATION (FT.): 574.0 LOGGED (FT.): 3052.0

LOG TYPE: Electric Log

SOURCE: OBERING ERNEST A

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	COAL	0.0		COAL ABSENT - WALSHVILLE CHANNEL
-16.0	CARBONDALE	COLCHESTER	COAL	-	590.0	
-726.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1300.0	
-2436.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3010.0	TOP OF NEW ALBANY
-2439.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3013.0	
-2478.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3052.0	BASE OF NEW ALBANY

MAPID: 18901510000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 10 QUARTERS/FOOTAGES: NW SW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.301529

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.370858

DATE COLLECTED:

SURFACE ELEVATION (FT.): 541.0 LOGGED (FT.): 434.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
211.0	MODESTO	PIASA	LIMESTONE	4.0	330.0	
207.0	CARBONDALE	LAWSON	SANDSTONE	100.0	334.0	

MAPID: 18923683000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 11 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.29252 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.367175 DATE COLLECTED:

SURFACE ELEVATION (FT.): 549.0 LOGGED (FT.): 3059.0 LOG TYPE: Electric Log

SOURCE: CHRISTIE & STEWART DRLG. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-779.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1328.0	
-2468.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3017.0	TOP OF NEW ALBANY
-2468.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3017.0	
-2510.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3059.0	BASE OF NEW ALBANY

MAPID: 18900445000C VERSION: 1

PROJECT: D JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 14 QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.290493 GEOLOGIST: D. JOHNSON

CONFIDENTIAL: N LATITUDE: 38.357785 DATE COLLECTED: 11 / 0 / 1945

SURFACE ELEVATION (FT.): 437.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: RYAN OIL CO., ETAL WELL TYPE: Coal Test

COMMENT:

MAPID: 18900445000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 14 QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.290493 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.357785 DATE COLLECTED:

SURFACE ELEVATION (FT.): 552.0 LOGGED (FT.): 460.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
147.0	MODESTO	PIASA	LIMESTONE	5.0	405.0	
142.0	CARBONDALE		SHALE	4.0	410.0	
138.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	2.0	414.0	
136.0	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.0	416.0	
134.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	6.0	418.0	
128.0	CARBONDALE		SHALE	34.0	424.0	
94.0	CARBONDALE	HERRIN	BONE COAL	2.0	458.0	

MAPID: 18900445000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 14 QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.290493 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.357785 DATE COLLECTED:

SURFACE ELEVATION (FT.): 552.0 LOGGED (FT.): 1372.0 LOG TYPE: Electric Log

SOURCE: RYAN OIL CO., ETAL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-106.0	CARBONDALE	COLCHESTER	COAL	-	658.0	
-820.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1372.0	

MAPID: 18901154000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 15 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.301953 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.359708 DATE COLLECTED:

SURFACE ELEVATION (FT.): 559.0 LOGGED (FT.): 3082.0 LOG TYPE: Electric Log

SOURCE: COLUMBUS EXPLORATION WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-46.0	CARBONDALE	COLCHESTER	COAL	-	605.0	
-784.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1343.0	
-2480.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3039.0	TOP OF NEW ALBANY
-2485.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3044.0	
-2523.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3082.0	BASE OF NEW ALBANY

MAPID: 18901154000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 15 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.301953 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.359708 DATE COLLECTED:

SURFACE ELEVATION (FT.): 559.0 LOGGED (FT.): 430.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
166.0	MODESTO	PIASA	LIMESTONE	7.0	393.0	
159.0	CARBONDALE		SHALE	5.0	400.0	
154.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	8.0	405.0	
146.0	CARBONDALE		SHALE	10.0	413.0	
136.0	CARBONDALE	BRERETON	LIMESTONE	4.0	423.0	
132.0	CARBONDALE	ANNA	BLACK SHALE	1.0	427.0	
131.0	CARBONDALE	HERRIN	COAL	2.0	428.0	

MAPID: 18901155000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 18 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.359163 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.36065 DATE COLLECTED: 6 / 0 / 1953

SURFACE ELEVATION (FT.): 513.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: FILE LOST WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL

MAPID: 18901155000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 18 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.359163 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.36065 DATE COLLECTED:

SURFACE ELEVATION (FT.): 513.0 LOGGED (FT.): 457.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
153.0	MODESTO	PIASA	LIMESTONE	7.0	360.0	
146.0	CARBONDALE	LAWSON	SANDSTONE/SILTSTONE	90.0	367.0	

MAPID: 18900444000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 21 QUARTERS/FOOTAGES: NW NE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.316391 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.345132 DATE COLLECTED:

SURFACE ELEVATION (FT.): 575.0 LOGGED (FT.): 1376.0 LOG TYPE: Electric Log

SOURCE: CARTER OIL COMPANY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-115.0	CARBONDALE	COLCHESTER	COAL	-	690.0	
-801.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1376.0	

MAPID: 18900444000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 21 QUARTERS/FOOTAGES: NW NE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.316391

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.345132

DATE COLLECTED:

SURFACE ELEVATION (FT.): 575.0

LOGGED (FT.): 480.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
191.0	MODESTO	PIASA	LIMESTONE	6.0	384.0
185.0	CARBONDALE	LAWSON	SILTY SHALE	90.0	390.0

MAPID: 18901156000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 22 QUARTERS/FOOTAGES: SE NE SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.295844

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.335551

DATE COLLECTED:

SURFACE ELEVATION (FT.): 530.0

LOGGED (FT.): 1344.0

LOG TYPE: Electric Log

SOURCE: KROHN, WM. H.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
6.0	CARBONDALE	SPRINGFIELD	COAL	-	524.0
-76.0	CARBONDALE	COLCHESTER	COAL	-	606.0
-814.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1344.0

MAPID: 18901156000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 22 QUARTERS/FOOTAGES: SE NE SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.295844

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.335551

DATE COLLECTED:

SURFACE ELEVATION (FT.): 530.0

LOGGED (FT.): 515.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
114.0	MODESTO	PIASA	LIMESTONE	7.0	416.0
107.0	CARBONDALE		SHALE	5.0	423.0
102.0	CARBONDALE	GALUM	LIMESTONE	5.0	428.0
97.0	CARBONDALE		SHALE	4.0	433.0
93.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	437.0
88.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	442.0
86.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	444.0
83.0	CARBONDALE	LAWSON	SILTY SHALE	60.0	447.0
23.0	CARBONDALE	HERRIN	COAL	3.5	507.0
20.0	CARBONDALE	HERRIN	SHALE	1.5	510.0
18.0	CARBONDALE	HERRIN	COAL	4.0	512.0

MAPID: 18923579000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 24 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.27475

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.337842

DATE COLLECTED:

SURFACE ELEVATION (FT.): 523.0

LOGGED (FT.): 1336.0

LOG TYPE: Electric Log

SOURCE: RAM OIL COMPANY

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
8.0	CARBONDALE	SPRINGFIELD	COAL	-	515.0
-104.0	CARBONDALE	COLCHESTER	COAL	-	627.0
-813.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1336.0

MAPID: 18902013000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 25 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.265609

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.325074

DATE COLLECTED:

SURFACE ELEVATION (FT.): 543.0

LOGGED (FT.): 461.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
137.0	MODESTO	PIASA	LIMESTONE	4.0	406.0
133.0	MODESTO		SHALE	4.0	410.0
129.0	CARBONDALE	DANVILLE	BONE COAL	1.0	414.0
128.0	CARBONDALE		SHALE	10.0	415.0
118.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	425.0
117.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	426.0
116.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	427.0
110.0	CARBONDALE	LAWSON	SHALE	6.0	433.0
104.0	CARBONDALE	CONANT	LIMESTONE	2.0	439.0
102.0	CARBONDALE		SHALE	2.0	441.0
100.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	9.0	443.0
91.0	CARBONDALE	ANNA	BLACK SHALE	4.0	452.0
86.0	CARBONDALE	HERRIN	COAL	4.0	457.0

MAPID: 18901157000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 26 QUARTERS/FOOTAGES: SE SE SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.286662

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.31762

DATE COLLECTED:

SURFACE ELEVATION (FT.): 526.0

LOGGED (FT.): 1258.0

LOG TYPE: Electric Log

SOURCE: INLAND OIL CO

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
86.0	CARBONDALE	SPRINGFIELD	COAL	-	440.0
-71.0	CARBONDALE	COLCHESTER	COAL	-	597.0
-732.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1258.0

MAPID: 18901157000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 26 QUARTERS/FOOTAGES: SE SE SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.286662

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.31762

DATE COLLECTED:

SURFACE ELEVATION (FT.): 526.0 LOGGED (FT.): 433.5

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
152.0	MODESTO	PIASA	LIMESTONE	6.0	374.0
146.0	MODESTO		SHALE	2.0	380.0
144.0	CARBONDALE	DANVILLE	BONE COAL	2.0	382.0
142.0	CARBONDALE		SHALE	8.0	384.0
134.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	392.0
132.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	394.0
131.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	395.0
127.0	CARBONDALE	LAWSON	SHALE	6.0	399.0
121.0	CARBONDALE	CONANT	LIMESTONE	3.0	405.0
118.0	CARBONDALE		SHALE	2.0	408.0
116.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	14.0	410.0
102.0	CARBONDALE	ANNA	BLACK SHALE	4.0	424.0
98.0	CARBONDALE	HERRIN	COAL	5.5	428.0

MAPID: 18923176000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 26 QUARTERS/FOOTAGES: 2100' S line, 1850' W line of SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.288298

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.322487

DATE COLLECTED: 12 / 0 / 1974

SURFACE ELEVATION (FT.): 518.0 LOGGED (FT.): 608.0

LOG TYPE: Electric Log

SOURCE: ST. CHARLES DRILLING CO.

WELL TYPE: Water Well

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
164.0	MODESTO	PIASA	UNCLASSIFIED	-	354.0
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0	WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	WALSHVILLE CHANNEL - NO COAL
-16.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	534.0
-58.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	576.0
-90.0	SPOON	DAVIS	UNCLASSIFIED	-	608.0 CORRELATION & LITHOLOGY UNCERTAIN

MAPID: 18900492000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 27 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.302815 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.322996 DATE COLLECTED: 5 / 0 / 1955

SURFACE ELEVATION (FT.): 545.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: INLAND OIL CO WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL

MAPID: 18900492000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 27 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.302815 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.322996 DATE COLLECTED:

SURFACE ELEVATION (FT.): 545.0 LOGGED (FT.): 421.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
189.0	MODESTO	PIASA	LIMESTONE	7.0	356.0	
182.0	MODESTO		SHALE	6.0	363.0	
176.0	CARBONDALE	DANVILLE	BONE COAL	2.0	369.0	
174.0	CARBONDALE	LAWSON	SHALE & SANDSTONE	50.0	371.0	

MAPID: 18900570000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 28 QUARTERS/FOOTAGES: SE NE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.314194 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.328636 DATE COLLECTED:

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 438.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
230.0	MODESTO	PIASA	LIMESTONE	9.0	328.0	
221.0	MODESTO		DARK GRAY SHALE	7.0	337.0	
214.0	CARBONDALE		SHALE	8.0	344.0	
206.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	352.0	
200.0	CARBONDALE	LAWSON	SILTY SHALE	37.0	358.0	
163.0	CARBONDALE		SHALE	37.0	395.0	
126.0	CARBONDALE	BRERETON	LIMESTONE	3.0	432.0	
123.0	CARBONDALE	ANNA	BLACK SHALE	1.0	435.0	
122.0	CARBONDALE	HERRIN	COAL	2.0	436.0	

MAPID: 18901166000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 28 QUARTERS/FOOTAGES: 990' S line, 330' W line of NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.32112 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.326877 DATE COLLECTED:

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 1317.0 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
2.0	CARBONDALE	SPRINGFIELD	COAL	-	556.0	
-68.0	CARBONDALE	COLCHESTER	COAL	-	626.0	
-759.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1317.0	

MAPID: 18901159000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 29 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.332917 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.317934 DATE COLLECTED: 2 / 0 / 1953

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 600.0 LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
108.0	MODESTO	PIASA	UNCLASSIFIED	-	386.0	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-46.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	540.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
-88.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	582.0	
-106.0	SPOON	DAVIS	UNCLASSIFIED	-	600.0	POSSIBLE THICK COAL @ 65'

MAPID: 18901159000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 29 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.332917 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.317934 DATE COLLECTED:

SURFACE ELEVATION (FT.): 541.0 LOGGED (FT.): 480.5 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
156.0	MODESTO	PIASA	LIMESTONE	8.5	385.0	
147.5	MODESTO		DARK GRAY SHALE	7.0	393.5	
140.5	CARBONDALE	LAWSON	SILTY SHALE	80.0	400.5	

MAPID: 18901086000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 30 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.362285 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.33089 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 2956.0 LOG TYPE: Electric Log

SOURCE: REDWINE, NASH ETAL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
70.0	CARBONDALE	SPRINGFIELD	COAL	-	424.0	
-45.0	CARBONDALE	COLCHESTER	COAL	-	539.0	
-738.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1232.0	
-2429.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2923.0	TOP OF NEW ALBANY
-2432.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2926.0	
-2462.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2956.0	BASE OF NEW ALBANY

MAPID: 18901086000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 30 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.362285 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.33089 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 414.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
139.0	MODESTO	PIASA	LIMESTONE	10.0	355.0	
129.0	MODESTO		SHALE	4.0	365.0	
125.0	CARBONDALE	GALUM	LIMESTONE & SHALE	6.0	369.0	
119.0	CARBONDALE		SHALE	9.0	375.0	
110.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	3.0	384.0	
107.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	387.0	
105.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	389.0	
101.0	CARBONDALE	LAWSON	SHALE	6.0	393.0	
95.0	CARBONDALE	CONANT	LIMESTONE	1.0	399.0	
94.0	CARBONDALE		SHALE	1.0	400.0	
93.0	CARBONDALE	BRERETON	LIMESTONE	3.0	401.0	
90.0	CARBONDALE	ANNA	BLACK SHALE	4.0	404.0	
86.0	CARBONDALE	HERRIN	COAL	6.0	408.0	

MAPID: 18923685000C VERSION: 1

PROJECT: NCRDS88

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 30 QUARTERS/FOOTAGES: 2330' S line, 1640' W line

QUADRANGLE: BEAUCOUP LONGITUDE: -89.365632 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 38.323595 DATE COLLECTED: 11 / 17 / 1980

SURFACE ELEVATION (FT.): 532.0 LOGGED (FT.): 469.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. WI80-30-10 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS AND RESIST LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
532.0			UNCONSOLIDATED	10.0	0.0	
522.0	BOND		UNCLASSIFIED	71.0	10.0	
451.0	BOND	CARTHAGE	LIMESTONE	5.0	81.0	
446.0	MODESTO	NEW HAVEN	BLACK SHALE	4.5	86.0	
441.5	MODESTO		UNCLASSIFIED	8.5	90.5	
433.0	MODESTO		COAL	2.0	99.0	
431.0	MODESTO		UNCLASSIFIED	35.0	101.0	
396.0	MODESTO	CHAPEL	BLACK SHALE	2.5	136.0	
393.5	MODESTO		UNCLASSIFIED	96.5	138.5	
297.0	MODESTO		BLACK SHALE	3.5	235.0	
293.5	MODESTO	LAKE CREEK	COAL	0.5	238.5	UNCERTAIN CORRELATION
293.0	MODESTO		UNCLASSIFIED	145.5	239.0	
147.5	MODESTO		BLACK SHALE	2.5	384.5	
145.0	MODESTO		UNCLASSIFIED	7.0	387.0	
138.0	MODESTO	PIASA	LIMESTONE	5.8	394.0	
132.2	MODESTO		UNCLASSIFIED	24.2	399.8	
108.0	CARBONDALE	BANKSTON FORK	LIMESTONE	9.7	424.0	
98.3	CARBONDALE		UNCLASSIFIED	2.3	433.7	
96.0	CARBONDALE	BRERETON	LIMESTONE	13.2	436.0	
82.8	CARBONDALE	ANNA	BLACK SHALE	4.8	449.2	
78.0	CARBONDALE	HERRIN	COAL	6.0	454.0	
72.0	CARBONDALE	HERRIN	SHALE	2.0	460.0	
70.0	CARBONDALE	HERRIN	COAL	1.8	462.0	
68.2	CARBONDALE		UNCLASSIFIED	5.2	463.8	

MAPID: 18901158000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 32 QUARTERS/FOOTAGES: 330' N line, 330' E line of SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.342532 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.308654 DATE COLLECTED:

SURFACE ELEVATION (FT.): 519.0 LOGGED (FT.): 1271.0 LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-51.0	CARBONDALE	COLCHESTER	COAL	-	570.0	
-752.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1271.0	

MAPID: 18901515000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 32 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.333141

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.310491

DATE COLLECTED:

SURFACE ELEVATION (FT.): 530.0

LOGGED (FT.): 442.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
204.0	MODESTO	PIASA	LIMESTONE	9.0	326.0
195.0	MODESTO		SHALE	5.0	335.0
190.0	CARBONDALE	DANVILLE	BONE COAL	3.0	340.0
187.0	CARBONDALE		SHALE	4.0	343.0
183.0	CARBONDALE	GALUM	LIMESTONE	3.0	347.0
180.0	CARBONDALE		SHALE	2.0	350.0
178.0	CARBONDALE	BANKSTON FORK	LIMESTONE	10.0	352.0
168.0	CARBONDALE	LAWSON	SILTY SHALE	80.0	362.0

MAPID: 18901516000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 33 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.32385

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.308578

DATE COLLECTED:

SURFACE ELEVATION (FT.): 531.0

LOGGED (FT.): 386.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
247.0	MODESTO	PIASA	LIMESTONE	6.0	284.0
241.0	MODESTO		SHALE	2.0	290.0
239.0	CARBONDALE	DANVILLE	BONE COAL	2.0	292.0
237.0	CARBONDALE		SHALE	6.0	294.0
231.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	300.0
227.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	304.0
226.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	305.0
223.0	CARBONDALE		SHALE	1.0	308.0
222.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	6.0	309.0
216.0	CARBONDALE	ANNA	BLACK SHALE	3.0	315.0
213.0	CARBONDALE	ENERGY	SILTY SHALE	65.0	318.0
148.0	CARBONDALE	HERRIN	COAL	3.0	383.0

MAPID: 18923075000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 33 QUARTERS/FOOTAGES: 330' N line, 420' W line of SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.321212 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.308574 DATE COLLECTED:

SURFACE ELEVATION (FT.): 541.0 LOGGED (FT.): 2978.0 LOG TYPE: Electric Log

SOURCE: SHELL OIL COMPANY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-691.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1232.0	
-2403.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2944.0	TOP OF NEW ALBANY
-2406.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2947.0	
-2437.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2978.0	BASE OF NEW ALBANY

MAPID: 18901539000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 34 QUARTERS/FOOTAGES: 330' S line, 330' W line of NE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.298243 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.313933 DATE COLLECTED:

SURFACE ELEVATION (FT.): 516.0 LOGGED (FT.): 1231.0 LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
97.0	CARBONDALE	SPRINGFIELD	COAL	-	419.0	
-64.0	CARBONDALE	COLCHESTER	COAL	-	580.0	
-715.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1231.0	

MAPID: 18901546000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 35 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.286728

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.308529

DATE COLLECTED:

SURFACE ELEVATION (FT.): 516.0

LOGGED (FT.): 425.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
151.0	MODESTO	PIASA	LIMESTONE	8.0	365.0	
143.0	MODESTO		SHALE	3.0	373.0	
140.0	CARBONDALE	DANVILLE	BONE COAL	2.0	376.0	
138.0	CARBONDALE		SHALE	9.0	378.0	
129.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	387.0	
127.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	389.0	
125.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	391.0	
121.0	CARBONDALE		SHALE	7.0	395.0	
114.0	CARBONDALE	BRERETON	LIMESTONE	10.0	402.0	
104.0	CARBONDALE	ANNA	BLACK SHALE	3.0	412.0	
101.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	10.0	415.0	

MAPID: 18901547000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 36 QUARTERS/FOOTAGES: NW SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.270479

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.312241

DATE COLLECTED:

SURFACE ELEVATION (FT.): 530.0

LOGGED (FT.): 3082.0

LOG TYPE: Electric Log

SOURCE: COLLINS BROTHERS OIL CO.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
95.0	CARBONDALE	SPRINGFIELD	COAL	-	435.0	
-25.0	CARBONDALE	COLCHESTER	COAL	-	555.0	
-750.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1280.0	
-2505.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3035.0	TOP OF NEW ALBANY
-2508.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3038.0	
-2552.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3082.0	BASE OF NEW ALBANY

MAPID: 18901547000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 36 QUARTERS/FOOTAGES: NW SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.270479 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.312241 DATE COLLECTED:

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 430.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
160.0	MODESTO	PIASA	LIMESTONE	6.0	370.0
154.0	MODESTO		SHALE	5.0	376.0
149.0	CARBONDALE	DANVILLE	BONE COAL	2.0	381.0
147.0	CARBONDALE		SHALE	12.0	383.0
135.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	395.0
130.0	CARBONDALE	LAWSON	SHALE	4.0	400.0
126.0	CARBONDALE	CONANT	LIMESTONE	3.0	404.0
123.0	CARBONDALE		SHALE	3.0	407.0
120.0	CARBONDALE	BRERETON	LIMESTONE	10.0	410.0
110.0	CARBONDALE	ANNA	BLACK SHALE	3.0	420.0
107.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	7.0	423.0

MAPID: 18902595000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 2W SECTION: 36 QUARTERS/FOOTAGES: 1320' N line, 0' W line

QUADRANGLE: BEAUCOUP LONGITUDE: -89.276296 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.313183 DATE COLLECTED:

SURFACE ELEVATION (FT.): 524.0 LOGGED (FT.): 327.2 LOG TYPE: Survey Core Study

SOURCE: ATLANTIC RICHFIELD 3 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
214.8	CARBONDALE	BRERETON	LIMESTONE	6.0	309.2
208.8	CARBONDALE	ANNA	BLACK SHALE	2.8	315.2
206.0	CARBONDALE	HERRIN	COAL	9.2	318.0

MAPID: 18902021000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 1 QUARTERS/FOOTAGES: 380' N line, 330' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.381879 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.382453 DATE COLLECTED: 5 / 0 / 1964

SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 462.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
6.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	462.0	THIN COAL

MAPID: 18902021000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 1 QUARTERS/FOOTAGES: 380' N line, 330' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.381879 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.382453 DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 443.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
96.0	MODESTO	PIASA	LIMESTONE	11.0	372.0	
85.0	MODESTO		SHALE	2.0	383.0	
83.0	CARBONDALE	DANVILLE	BONE COAL	5.0	385.0	
78.0	CARBONDALE		SHALE	8.0	390.0	
70.0	CARBONDALE	GALUM	LIMESTONE	2.0	398.0	
68.0	CARBONDALE		SHALE	5.0	400.0	
63.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	405.0	
60.0	CARBONDALE	BANKSTON FORK	SHALE	4.0	408.0	
56.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	412.0	
53.0	CARBONDALE	LAWSON	SHALE	7.0	415.0	
46.0	CARBONDALE		SHALE	7.0	422.0	
39.0	CARBONDALE	BRERETON	LIMESTONE	6.0	429.0	
33.0	CARBONDALE	ANNA	BLACK SHALE	3.0	435.0	
30.0	CARBONDALE	HERRIN	COAL	5.0	438.0	

MAPID: 18902021000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 1 QUARTERS/FOOTAGES: 380' N line, 330' E line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.381879 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.382453 DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 2888.0 LOG TYPE: Electric Log

SOURCE: NATIONAL ASSOC. PETROLEUM CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
5.0	CARBONDALE	SPRINGFIELD	COAL	-	463.0	
-96.0	CARBONDALE	COLCHESTER	COAL	-	564.0	
-728.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1196.0	
-2380.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2848.0	TOP OF NEW ALBANY
-2386.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2854.0	
-2420.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2888.0	BASE OF NEW ALBANY

MAPID: 18923877000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 3 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.412068 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.378764 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 2791.0 LOG TYPE: Electric Log

SOURCE: NELMS BROS. OIL PROP. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-669.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1114.0	
-2312.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2757.0	TOP OF NEW ALBANY
-2317.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2762.0	
-2346.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2791.0	BASE OF NEW ALBANY

MAPID: 18924403000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 3 QUARTERS/FOOTAGES: 330' N line, 330' W line of NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.416422

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.38952

DATE COLLECTED:

SURFACE ELEVATION (FT.): 447.0

LOGGED (FT.): 460.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
187.0	MODESTO	PIASA	LIMESTONE	22.0	260.0
165.0	CARBONDALE		SHALE	20.0	282.0
145.0	CARBONDALE	LAWSON	SANDSTONE	37.0	302.0
108.0	CARBONDALE	LAWSON	SANDSTONE	90.0	339.0
18.0	CARBONDALE	LAWSON	SHALE	10.0	429.0
8.0	CARBONDALE		SHALE	10.0	439.0
-2.0	CARBONDALE	BRERETON	LIMESTONE	4.0	449.0
-6.0	CARBONDALE	ANNA	BLACK SHALE	2.0	453.0
-8.0	CARBONDALE	HERRIN	COAL	5.0	455.0

MAPID: 18924403000C VERSION: 3

PROJECT: CONTROL

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 3 QUARTERS/FOOTAGES: 330' N line, 330' W line of NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.416422

GEOLOGIST: HINES

CONFIDENTIAL: N LATITUDE: 38.38952

DATE COLLECTED:

SURFACE ELEVATION (FT.):

LOGGED (FT.): 2646.0

LOG TYPE: Survey Sample Study

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: OILWELLS LOGGED BY COAL SECT-LOGS IN GRU

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			NO RECORD	0.0	0.0

MAPID: 18901160000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 5 QUARTERS/FOOTAGES: NW NW SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.462202 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.382513 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 2593.0 LOG TYPE: Electric Log

SOURCE: SLAGTER PRODUCING CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
123.0	CARBONDALE	SPRINGFIELD	COAL	-	340.0	
-17.0	CARBONDALE	COLCHESTER	COAL	-	480.0	
-542.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1005.0	
-2106.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2569.0	TOP OF NEW ALBANY
-2112.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2575.0	
-2130.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2593.0	BASE OF NEW ALBANY

MAPID: 18901160000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 5 QUARTERS/FOOTAGES: NW NW SW

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.462202 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.382513 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 335.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
175.0	MODESTO	PIASA	LIMESTONE	9.0	288.0	
163.0	CARBONDALE	DANVILLE	BLACK SHALE	1.0	300.0	
135.0	CARBONDALE	HERRIN	COAL	7.0	328.0	

MAPID: 18900703000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 6 QUARTERS/FOOTAGES: 330' N line, 330' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.476078 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.389813 DATE COLLECTED: 7 / 0 / 1956

SURFACE ELEVATION (FT.): LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: MYERS DEWEY E WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18900703000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 6 QUARTERS/FOOTAGES: 330' N line, 330' W line

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.476078 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.389813 DATE COLLECTED:

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 295.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
217.0	MODESTO	PIASA	LIMESTONE	9.0	248.0
208.0	MODESTO		SHALE	3.0	257.0
205.0	CARBONDALE	DANVILLE	BLACK SHALE	2.0	260.0
203.0	CARBONDALE		SHALE	5.0	262.0
198.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	267.0
195.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	270.0
194.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	271.0
191.0	CARBONDALE		SHALE	6.0	274.0
185.0	CARBONDALE	BRERETON	LIMESTONE	5.0	280.0
180.0	CARBONDALE	ANNA	BLACK SHALE	3.0	285.0
177.0	CARBONDALE	HERRIN	COAL	7.0	288.0

MAPID: 18902022000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 8 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.453046 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.369777 DATE COLLECTED:

SURFACE ELEVATION (FT.): 492.0 LOGGED (FT.): 370.5 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
170.0	MODESTO		SHALE	7.0	322.0
163.0	CARBONDALE	DANVILLE	COAL	5.0	329.0
158.0	CARBONDALE		SHALE	8.0	334.0
150.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	342.0
148.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	344.0
147.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	345.0
145.0	CARBONDALE		SHALE	5.0	347.0
140.0	CARBONDALE	BRERETON	LIMESTONE	6.0	352.0
134.0	CARBONDALE	ANNA	BLACK SHALE	4.0	358.0
130.0	CARBONDALE	HERRIN	COAL	8.5	362.0

MAPID: 18923183000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 8 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW

QUADRANGLE: NASHVILLE LONGITUDE: -89.462104 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.368032 DATE COLLECTED:

SURFACE ELEVATION (FT.): 542.0 LOGGED (FT.): 2665.0 LOG TYPE: Electric Log

SOURCE: TOTAL LEONARD, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
142.0	CARBONDALE	SPRINGFIELD	COAL	-	400.0	
34.0	CARBONDALE	COLCHESTER	COAL	-	508.0	
-544.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1086.0	
-2101.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2643.0	TOP OF NEW ALBANY
-2103.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2645.0	
-2123.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2665.0	BASE OF NEW ALBANY

MAPID: 18900386000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 11 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.402937 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.36974 DATE COLLECTED:

SURFACE ELEVATION (FT.): 461.0 LOGGED (FT.): 1147.0 LOG TYPE: Electric Log

SOURCE: MCBRIDE, W. C., INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
43.0	CARBONDALE	SPRINGFIELD	COAL	-	418.0	
-102.0	CARBONDALE	COLCHESTER	COAL	-	563.0	
-686.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1147.0	

MAPID: 18900386000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 11 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.402937

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.36974

DATE COLLECTED:

SURFACE ELEVATION (FT.): 461.0

LOGGED (FT.): 411.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
111.0	MODESTO	PIASA	LIMESTONE	11.0	350.0
100.0	MODESTO		SHALE	5.0	361.0
95.0	CARBONDALE	DANVILLE	COAL	5.0	366.0
90.0	CARBONDALE		SHALE	10.0	371.0
80.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	381.0
75.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	386.0
73.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	388.0
70.0	CARBONDALE	LAWSON	SHALE	2.0	391.0
68.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	9.0	393.0
59.0	CARBONDALE	ANNA	BLACK SHALE	3.0	402.0
55.0	CARBONDALE	HERRIN	COAL	5.0	406.0

MAPID: 18900053000C VERSION: 1

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 13 QUARTERS/FOOTAGES: NE SW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.37704 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.349434 DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 413.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATED COAL CO. WELL TYPE: Mine Shaft

COMMENT: LOCATION IMPRECISE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
508.0			UNCONSOLIDATED	38.0	0.0	
470.0	BOND		SHALE	4.0	38.0	
466.0	BOND	CARTHAGE	LIMESTONE	6.0	42.0	
460.0	MODESTO		BLACK SHALE	4.0	48.0	
456.0	MODESTO		COAL	2.0	52.0	
454.0	MODESTO		UNCLASSIFIED	6.0	54.0	
448.0	MODESTO		SANDSTONE	55.0	60.0	
393.0	MODESTO		LIMESTONE	0.3	115.0	
392.7	MODESTO		SHALE	13.7	115.3	
379.0	MODESTO		LIMESTONE	2.0	129.0	
377.0	MODESTO		SHALE	1.0	131.0	
376.0	MODESTO		UNDERCLAY	4.0	132.0	
372.0	MODESTO		UNCLASSIFIED	8.0	136.0	
364.0	MODESTO		SANDSTONE	47.0	144.0	
317.0	MODESTO		SHALE	20.0	191.0	
297.0	MODESTO		BLACK SHALE	6.0	211.0	
291.0	MODESTO	CHAPEL	COAL	1.0	217.0	
290.0	MODESTO		UNDERCLAY	5.0	218.0	
285.0	MODESTO		CONGLOMERATE	63.0	223.0	
222.0	MODESTO		SHALE	42.0	286.0	
180.0	MODESTO		UNDERCLAY	1.0	328.0	
179.0	MODESTO		SHALE	3.0	329.0	
176.0	MODESTO		UNDERCLAY	4.0	332.0	
172.0	MODESTO		CONGLOMERATE	5.0	336.0	
167.0	MODESTO		UNDERCLAY	1.0	341.0	
166.0	MODESTO		LIMESTONE	15.0	342.0	
151.0	MODESTO		BLACK SHALE	3.0	357.0	
148.0	CARBONDALE		SHALE	17.0	360.0	UNCERTAIN CORRELATION
131.0	CARBONDALE		LIMESTONE	1.0	377.0	
130.0	CARBONDALE		SHALE	3.0	378.0	
127.0	CARBONDALE		LIMESTONE	4.0	381.0	
123.0	CARBONDALE		SHALE	2.0	385.0	
121.0	CARBONDALE		SHALE	7.0	387.0	
114.0	CARBONDALE	BRERETON	LIMESTONE	8.0	394.0	
106.0	CARBONDALE	ANNA	BLACK SHALE	2.0	402.0	
104.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	5.7	404.0	
98.3	CARBONDALE		UNDERCLAY	3.3	409.7	

MAPID: 18900053000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 13 QUARTERS/FOOTAGES: NE SW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.37704 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.349434 DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 430.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
150.0	MODESTO	PIASA	LIMESTONE	15.8	358.0
134.2	CARBONDALE	DANVILLE	BLACK SHALE	3.7	373.8
130.5	CARBONDALE		SHALE & SANDSTONE	21.0	377.5
109.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	398.5
105.3	CARBONDALE	BANKSTON FORK	SHALE	2.5	402.7
102.8	CARBONDALE	BANKSTON FORK	LIMESTONE	0.8	405.2
102.0	CARBONDALE	LAWSON	GRAY SHALE	7.5	406.0
94.5	CARBONDALE	CONANT	LIMESTONE	4.5	413.5
90.0	CARBONDALE	BRERETON	LIMESTONE	3.5	418.0
86.5	CARBONDALE	ANNA	BLACK SHALE	2.7	421.5
84.0	CARBONDALE	HERRIN	COAL	6.0	424.0

MAPID: 18900053000C VERSION: 3

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 13 QUARTERS/FOOTAGES: NE SW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.37704 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.349434 DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 430.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATED COAL CO. WELL TYPE: Coal Test

COMMENT: APPEARS TO HAVE SIMILAR LOC. AS #99953

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
508.0			CLAY	15.0	0.0
493.0			SAND	18.0	15.0
475.0			CLAY	7.0	33.0
468.0			CLAY	8.0	40.0
460.0	BOND		SHALE	4.5	48.0
455.5	BOND	CARTHAGE	LIMESTONE	6.5	52.5
449.0	MODESTO		BLACK SHALE	4.0	59.0
445.0	MODESTO		COAL	2.0	63.0
443.0	MODESTO		SHALE	6.0	65.0
437.0	MODESTO		SANDSTONE	8.0	71.0
429.0	MODESTO		SANDY SHALE	47.0	79.0
382.0	MODESTO		LIMESTONE	0.3	126.0
381.7	MODESTO		SHALE	14.0	126.3
367.7	MODESTO		CONGLOMERATE	2.0	140.3
365.7	MODESTO		BLACK SHALE	1.5	142.3
364.2	MODESTO		UNDERCLAY	4.0	143.8
360.2	MODESTO		SHALE	8.0	147.8
352.2	MODESTO		SANDY SHALE	25.0	155.8
327.2	MODESTO		SANDSTONE	22.0	180.8
305.2	MODESTO		SHALE	26.0	202.8
279.2	MODESTO	CHAPEL	COAL	1.2	228.8
278.0	MODESTO		UNDERCLAY	1.7	230.0
276.3	MODESTO		CONGLOMERATE	4.5	231.7
271.8	MODESTO		SANDY SHALE	63.0	236.2
208.8	MODESTO		SHALE	39.0	299.2
169.8	MODESTO		SHALE	3.5	338.2
166.3	MODESTO		BLACK SHALE	0.5	341.7
165.8	MODESTO		UNDERCLAY	1.7	342.2
164.2	MODESTO		SHALE	3.0	343.8
161.2	MODESTO		UNDERCLAY	4.5	346.8
156.7	MODESTO		SANDSTONE/LIMESTONE	5.0	351.3
151.7	MODESTO		UNDERCLAY	1.5	356.3
150.2	MODESTO	PIASA	LIMESTONE	15.8	357.8
134.3	MODESTO		BLACK SHALE	3.7	373.7
130.7	CARBONDALE		CALCAREOUS SHALE	3.0	377.3
127.7	CARBONDALE		SANDY SHALE	5.0	380.3
122.7	CARBONDALE		SANDSTONE	9.0	385.3
113.7	CARBONDALE		UNDERCLAY	1.5	394.3
112.2	CARBONDALE		SHALE	2.0	395.8

110.2	CARBONDALE		SHALE	0.5	397.8
109.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	398.3
105.5	CARBONDALE	BANKSTON FORK	SHALE	2.5	402.5
103.0	CARBONDALE	BANKSTON FORK	FOSSILIFEROUS LIMESTONE	0.8	405.0
102.2	CARBONDALE		SHALE	7.5	405.8
94.7	CARBONDALE	BRERETON	LIMESTONE	4.5	413.3
90.2	CARBONDALE	BRERETON	LIMESTONE	3.5	417.8
86.7	CARBONDALE	ANNA	BLACK SHALE	2.7	421.3
84.0	CARBONDALE	HERRIN	COAL	6.0	424.0

MAPID: 18901162000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 13 QUARTERS/FOOTAGES: 330' N line, 330' W line of NE NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.384216 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.360593 DATE COLLECTED:

SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 1169.0 LOG TYPE: Electric Log

SOURCE: SPADE DRILLING CO WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-703.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1169.0

MAPID: 18901553000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 13 QUARTERS/FOOTAGES:

QUADRANGLE: NASHVILLE

LONGITUDE: -89.38058

GEOLOGIST: S.SROKA

CONFIDENTIAL: N

LATITUDE: 38.354096

DATE COLLECTED:

SURFACE ELEVATION (FT.):

LOGGED (FT.): 230.0

LOG TYPE: Drillers Log

SOURCE: MR. HUEGELI (AUTHORITY)

WELL TYPE: Coal Test

COMMENT: NO ELEV. OR QTRS. GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			SOIL	11.0	0.0	
-	BOND		SHALE	4.0	11.0	
-	BOND		SANDY LIMESTONE	3.0	15.0	
-	BOND		SANDSTONE/SHALE	62.0	18.0	
-	BOND	CARTHAGE	LIMESTONE	7.0	80.0	
-	MODESTO		BLACK SHALE	3.5	87.0	W/ COAL STREAKS
-	MODESTO		SANDSTONE	13.0	90.5	
-	MODESTO		CLAYSTONE & SHALE	15.5	103.5	
-	MODESTO	MACOUPIN	FOSSILIFEROUS LIMESTONE	1.0	119.0	
-	MODESTO		FOSSILIFEROUS SHALE	9.0	120.0	
-	MODESTO	WOMAC	COAL	1.2	129.0	
-	MODESTO		SANDSTONE/SHALE	70.0	130.2	
-	MODESTO		SANDY LIMESTONE	7.0	200.2	
-	MODESTO	CHAPEL	COAL	0.8	207.2	
-	MODESTO		SHALE	22.0	208.0	

MAPID: 18999953000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 13 QUARTERS/FOOTAGES: NE SW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.37704 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.349434 DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 412.7 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATE COAL, NASHVILLE SHAFT WELL TYPE: Coal Test

COMMENT: APPEARS TO HAVE SIMILAR LOC. AS #00053

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
508.0			UNCONSOLIDATED	38.0	0.0	
470.0	BOND		SHALE	4.0	38.0	
466.0	BOND	CARTHAGE	LIMESTONE	6.0	42.0	
460.0	MODESTO		BLACK SHALE	4.0	48.0	
456.0	MODESTO	NEW HAVEN	COAL	2.0	52.0	
454.0	MODESTO		SHALE	6.0	54.0	
448.0	MODESTO		SANDSTONE	55.0	60.0	
393.0	MODESTO		LIMESTONE	0.3	115.0	
392.7	MODESTO		SHALE	13.7	115.3	
379.0	MODESTO		LIMESTONE & CONGLOMERATE	2.0	129.0	
377.0	MODESTO		SHALE	1.0	131.0	
376.0	MODESTO		UNDERCLAY	4.0	132.0	
372.0	MODESTO		SHALE	8.0	136.0	
364.0	MODESTO		SANDSTONE	47.0	144.0	
317.0	MODESTO		SHALE	26.0	191.0	
291.0	MODESTO	CHAPEL	COAL	1.0	217.0	
290.0	MODESTO		UNDERCLAY	1.0	218.0	
289.0	MODESTO		CONGLOMERATE	4.0	219.0	
285.0	MODESTO		SANDY SHALE	63.0	223.0	
222.0	MODESTO		SHALE	42.0	286.0	
180.0	MODESTO		UNDERCLAY	1.0	328.0	
179.0	MODESTO		SHALE	3.0	329.0	
176.0	MODESTO		UNDERCLAY	4.0	332.0	
172.0	MODESTO		CONGLOMERATE	5.0	336.0	
167.0	MODESTO		UNDERCLAY	1.0	341.0	
166.0	MODESTO	PIASA	LIMESTONE	15.0	342.0	
151.0	MODESTO		BLACK SHALE	3.0	357.0	
148.0	CARBONDALE		SHALE	3.0	360.0	
145.0	CARBONDALE		SHALE	14.0	363.0	
131.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	377.0	
130.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	378.0	
127.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	381.0	
123.0	CARBONDALE		SHALE & SANDSTONE	2.0	385.0	
121.0	CARBONDALE		SHALE	7.0	387.0	
114.0	CARBONDALE	BRERETON	LIMESTONE	8.0	394.0	
106.0	CARBONDALE		SHALE	2.0	402.0	"SLATE"
104.0	CARBONDALE	HERRIN	COAL	5.7	404.0	
98.3	CARBONDALE	HERRIN	BONE COAL	1.7	409.7	

96.7 CARBONDALE HERRIN COAL 1.3 411.3
 95.3 CARBONDALE UNDERCLAY 0.0 412.7

MAPID: 18901161000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 2S 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** NW NW SW
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.407322 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.353027 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 493.0 **LOGGED (FT.):** 2785.0 **LOG TYPE:** Electric Log
SOURCE: HUMBLE OIL & REF. CO. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
109.0	CARBONDALE	SPRINGFIELD	COAL	-	384.0	
24.0	CARBONDALE	COLCHESTER	COAL	-	469.0	
-628.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1121.0	
-2260.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2753.0	TOP OF NEW ALBANY
-2263.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2756.0	
-2292.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2785.0	BASE OF NEW ALBANY

MAPID: 18901161000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 2S 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** NW NW SW
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.407322 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.353027 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 493.0 **LOGGED (FT.):** 340.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
193.0	MODESTO	PIASA	LIMESTONE	6.0	300.0	
187.0	MODESTO		SHALE	4.0	306.0	
183.0	CARBONDALE	DANVILLE	BONE COAL	4.0	310.0	
179.0	CARBONDALE		SHALE	8.0	314.0	
171.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	322.0	
167.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	326.0	
166.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	327.0	
164.0	CARBONDALE		SHALE	2.0	329.0	
162.0	CARBONDALE	BRERETON	LIMESTONE	5.0	331.0	
157.0	CARBONDALE	ANNA	BLACK SHALE	2.0	336.0	
155.0	CARBONDALE	HERRIN	COAL	2.0	338.0	

MAPID: 18900599000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 330' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.425846 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.347571 DATE COLLECTED: 1 / 0 / 1956

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: WILLHITE J N WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
239.0	MODESTO	PIASA	UNCLASSIFIED	-	254.0	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	COLCHESTER	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL

MAPID: 18900599000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 330' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.425846 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.347571 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 300.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
238.0	MODESTO	PIASA	LIMESTONE	9.5	255.0	
228.5	CARBONDALE	DANVILLE	BONE COAL	1.0	264.5	
227.5	CARBONDALE		SHALE	17.0	265.5	
210.5	CARBONDALE	BANKSTON FORK	LIMESTONE	6.5	282.5	
204.0	CARBONDALE		SHALE	1.0	289.0	
203.0	CARBONDALE	BRERETON	LIMESTONE	6.0	290.0	
197.0	CARBONDALE	ANNA	BLACK SHALE	3.0	296.0	
194.0	CARBONDALE	HERRIN	BONE COAL	1.0	299.0	

MAPID: 1892435000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 15 QUARTERS/FOOTAGES: 331' N line, 331' E line of NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.409735 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.360356 DATE COLLECTED:

SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 2819.0 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
55.0	CARBONDALE	SPRINGFIELD	COAL	-	416.0	
-70.0	CARBONDALE	COLCHESTER	COAL	-	541.0	
-662.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1133.0	
-2314.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2785.0	TOP OF NEW ALBANY
-2317.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2788.0	
-2348.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2819.0	BASE OF NEW ALBANY

MAPID: 18902927000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 17 QUARTERS/FOOTAGES: 330' N line, 330' E line of SE NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.455259 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.357103 DATE COLLECTED:

SURFACE ELEVATION (FT.): 536.0 LOGGED (FT.): 2704.0 LOG TYPE: Electric Log

SOURCE: BREHM, C. E. DRLG.&PROD. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
103.0	CARBONDALE	SPRINGFIELD	COAL	-	433.0	
-11.0	CARBONDALE	COLCHESTER	COAL	-	547.0	
-574.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1110.0	
-2144.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2680.0	TOP OF NEW ALBANY
-2147.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2683.0	
-2168.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2704.0	BASE OF NEW ALBANY

MAPID: 18902062000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 18 QUARTERS/FOOTAGES: 20' S line, 10' E line

QUADRANGLE: NASHVILLE LONGITUDE: -89.46296 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.347785 DATE COLLECTED:

SURFACE ELEVATION (FT.): 535.0 LOGGED (FT.): 350.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
237.0	MODESTO	PIASA	LIMESTONE	12.0	298.0	
225.0	MODESTO		SHALE	3.0	310.0	
222.0	CARBONDALE	DANVILLE	CARBONACEOUS SHALE	4.0	313.0	
218.0	CARBONDALE		SHALE	2.0	317.0	
216.0	CARBONDALE	GALUM	LIMESTONE	1.5	319.0	
214.5	CARBONDALE		SHALE	2.5	320.5	
212.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	323.0	
209.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	326.0	
207.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	328.0	
205.0	CARBONDALE		SHALE	2.0	330.0	
203.0	CARBONDALE	BRERETON	LIMESTONE	4.0	332.0	
199.0	CARBONDALE	ANNA	BLACK SHALE	4.0	336.0	
195.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	10.0	340.0	

MAPID: 18902869000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 19 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.468955 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.341076 DATE COLLECTED:

SURFACE ELEVATION (FT.): 532.0 LOGGED (FT.): 2552.0 LOG TYPE: Electric Log

SOURCE: FULK, PERRY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
212.0	CARBONDALE	SPRINGFIELD	COAL	-	320.0	
132.0	CARBONDALE	COLCHESTER	COAL	-	400.0	
-501.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1033.0	
-2002.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2534.0	TOP OF NEW ALBANY
-2005.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2537.0	
-2020.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2552.0	BASE OF NEW ALBANY

MAPID: 18902947000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 19 QUARTERS/FOOTAGES: 330' N line, 330' E line of SW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.469164 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.335463 DATE COLLECTED: 2 / 0 / 1974

SURFACE ELEVATION (FT.): 517.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: FULK, PERRY WELL TYPE:

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
270.0	MODESTO	PIASA	UNCLASSIFIED	-	247.0	
234.0			UNCLASSIFIED	-	283.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		

MAPID: 18902852000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 20 QUARTERS/FOOTAGES: 660' N line, 660' W line of SW NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.460822 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.342064 DATE COLLECTED:

SURFACE ELEVATION (FT.): 536.0 LOGGED (FT.): 2562.0 LOG TYPE: Electric Log

SOURCE: FULK, PERRY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
198.0	CARBONDALE	SPRINGFIELD	COAL	-	338.0	
61.0	CARBONDALE	COLCHESTER	COAL	-	475.0	
-492.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1028.0	
-2003.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2539.0	TOP OF NEW ALBANY
-2005.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2541.0	
-2026.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2562.0	BASE OF NEW ALBANY

MAPID: 18900328000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 21 QUARTERS/FOOTAGES: 350' S line, 330' W line of NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.443891 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.340785 DATE COLLECTED: 9 / 0 / 1942

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: LACEY A M WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
276.0	MODESTO	PIASA	UNCLASSIFIED	-	239.0	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
-	CARBONDALE	COLCHESTER	UNCLASSIFIED	0.0		

MAPID: 18900328000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 21 QUARTERS/FOOTAGES: 350' S line, 330' W line of NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.443891

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.340785

DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0

LOGGED (FT.): 407.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
227.0	MODESTO	PIASA	LIMESTONE	14.0	288.0
213.0	MODESTO		SHALE	2.0	302.0
211.0	CARBONDALE	DANVILLE	COAL	3.0	304.0
208.0	CARBONDALE	LAWSON	SANDSTONE	100.0	307.0

MAPID: 18901163000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 22 QUARTERS/FOOTAGES: 330' S line, 330' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.425833

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.332876

DATE COLLECTED:

SURFACE ELEVATION (FT.): 535.0

LOGGED (FT.): 1139.0

LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-604.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1139.0

MAPID: 18901163000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 22 QUARTERS/FOOTAGES: 330' S line, 330' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.425833

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.332876

DATE COLLECTED:

SURFACE ELEVATION (FT.): 535.0

LOGGED (FT.): 341.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
231.0	MODESTO	PIASA	LIMESTONE	10.0	304.0
221.0	MODESTO		SHALE	2.0	314.0
219.0	CARBONDALE	DANVILLE	BONE COAL	1.0	316.0
218.0	CARBONDALE		SHALE	13.0	317.0
205.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	7.0	330.0
198.0	CARBONDALE		SHALE	1.0	337.0
197.0	CARBONDALE	BRERETON	LIMESTONE	1.0	338.0
196.0	CARBONDALE	ANNA	BLACK SHALE	1.0	339.0
195.0	CARBONDALE	HERRIN	BONE COAL	1.0	340.0

MAPID: 18923686000C VERSION: 1

PROJECT: NCRDS88

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 22 QUARTERS/FOOTAGES: 45' S line, 810' E line

QUADRANGLE: NASHVILLE LONGITUDE: -89.411509 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 38.332159 DATE COLLECTED: 11 / 11 / 1980

SURFACE ELEVATION (FT.): 528.0 LOGGED (FT.): 423.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. WI-80-22-1 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
528.0			UNCONSOLIDATED	15.0	0.0	
513.0	BOND		UNCLASSIFIED	9.0	15.0	
504.0	BOND	CARTHAGE	LIMESTONE	5.0	24.0	
499.0	MODESTO		GRAY SHALE	2.0	29.0	
497.0	MODESTO	NEW HAVEN	BLACK SHALE	3.0	31.0	
494.0	MODESTO		UNCLASSIFIED	13.0	34.0	
481.0	MODESTO		COAL	3.0	47.0	
478.0	MODESTO		UNCLASSIFIED	30.0	50.0	
448.0	MODESTO	CHAPEL	COAL	5.0	80.0	
443.0	MODESTO		UNCLASSIFIED	90.0	85.0	
353.0	MODESTO	LAKE CREEK	COAL	1.0	175.0	UNCERTAIN CORRELATION
352.0	MODESTO		UNCLASSIFIED	129.0	176.0	
223.0	MODESTO		BLACK SHALE	2.0	305.0	
221.0	MODESTO		UNCLASSIFIED	14.0	307.0	
207.0	MODESTO	PIASA	LIMESTONE	8.0	321.0	
199.0	MODESTO		BLACK SHALE	1.0	329.0	
198.0	CARBONDALE	DANVILLE	COAL	0.0	330.0	
198.0	CARBONDALE		UNCLASSIFIED	12.0	330.0	
186.0	CARBONDALE	BANKSTON FORK	LIMESTONE	10.0	342.0	
176.0	CARBONDALE		UNCLASSIFIED	3.0	352.0	
173.0	CARBONDALE	BRERETON	LIMESTONE	3.0	355.0	
170.0	CARBONDALE		SHALE	1.2	358.0	
168.8	CARBONDALE	HERRIN	COAL	6.3	359.2	
162.5	CARBONDALE		UNCLASSIFIED	57.5	365.5	

MAPID: 18902298000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 25 QUARTERS/FOOTAGES: 360' N line, 330' E line of SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.372536 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.323633 DATE COLLECTED:

SURFACE ELEVATION (FT.): 523.0 LOGGED (FT.): 2941.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
68.0	CARBONDALE	SPRINGFIELD	COAL	-	455.0	
-49.0	CARBONDALE	COLCHESTER	COAL	-	572.0	
-713.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1236.0	
-2385.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2908.0	TOP OF NEW ALBANY
-2389.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2912.0	
-2418.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2941.0	BASE OF NEW ALBANY

MAPID: 18902298000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 25 QUARTERS/FOOTAGES: 360' N line, 330' E line of SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.372536 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.323633 DATE COLLECTED:

SURFACE ELEVATION (FT.): 523.0 LOGGED (FT.): 440.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
143.0	MODESTO	PIASA	LIMESTONE	5.0	380.0	
138.0	MODESTO		SHALE	3.0	385.0	
135.0	CARBONDALE	DANVILLE	BONE COAL	4.0	388.0	
131.0	CARBONDALE		SHALE	32.0	392.0	
99.0	CARBONDALE	BRERETON	LIMESTONE	2.0	424.0	
97.0	CARBONDALE	ANNA	SHALE	8.0	426.0	
89.0	CARBONDALE	HERRIN	COAL	6.0	434.0	

MAPID: 18902894000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 25 QUARTERS/FOOTAGES: 330' S line, 660' E line of NE NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.383054 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.329373 DATE COLLECTED: 7 / 0 / 1973

SURFACE ELEVATION (FT.): 546.0 LOGGED (FT.): 535.0 LOG TYPE: Electric Log

SOURCE: MIDWEST OIL PRODUCERS WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
195.0	MODESTO	PIASA	UNCLASSIFIED	-	351.0	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
11.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	535.0	

MAPID: 18923687000C VERSION: 1

PROJECT: NCRDS88

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 26 QUARTERS/FOOTAGES: 2690' S line, 2673' E line

QUADRANGLE: NASHVILLE LONGITUDE: -89.399495 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 38.324731 DATE COLLECTED: 11 / 13 / 1980

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 412.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. WI-80-26-9 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS AND RESIST LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
515.0			UNCONSOLIDATED	29.0	0.0	
486.0	BOND	CARTHAGE	LIMESTONE	6.0	29.0	
480.0	MODESTO	NEW HAVEN	BLACK SHALE	4.5	35.0	
475.5	MODESTO		UNCLASSIFIED	45.5	39.5	
430.0	MODESTO	CHAPEL	BLACK SHALE	3.0	85.0	
427.0	MODESTO		UNCLASSIFIED	98.0	88.0	
329.0	MODESTO	LAKE CREEK	COAL	1.0	186.0	UNCERTAIN CORRELATION
328.0	MODESTO		UNCLASSIFIED	133.0	187.0	
195.0	MODESTO		BLACK SHALE	4.0	320.0	
191.0	MODESTO		UNCLASSIFIED	3.0	324.0	
188.0	MODESTO	PIASA	LIMESTONE	9.0	327.0	
179.0	MODESTO		UNCLASSIFIED	10.0	336.0	
169.0	CARBONDALE	DANVILLE	COAL	0.0	346.0	
169.0	CARBONDALE		UNCLASSIFIED	30.0	346.0	
139.0	CARBONDALE	HERRIN	COAL	0.0	376.0	
139.0	CARBONDALE		UNCLASSIFIED	28.0	376.0	
111.0	CARBONDALE	SPRINGFIELD	COAL	8.0	404.0	

MAPID: 18923688000C VERSION: 1

PROJECT: NCRDS88

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 27 QUARTERS/FOOTAGES: 28' S line, 750' E line

QUADRANGLE: NASHVILLE LONGITUDE: -89.41137 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 38.317358 DATE COLLECTED: 11 / 12 / 1980

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 381.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. WI-80-27-2 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
508.0			UNCONSOLIDATED	35.0	0.0	
473.0	MODESTO		UNCLASSIFIED	27.0	35.0	
446.0	MODESTO		LIMESTONE	4.5	62.0	
441.5	MODESTO		UNCLASSIFIED	102.5	66.5	
339.0	MODESTO	LAKE CREEK	COAL	1.0	169.0	UNCERTAIN CORRELATION
338.0	MODESTO		UNCLASSIFIED	128.0	170.0	
210.0	MODESTO		BLACK SHALE & CLAY	2.0	298.0	
208.0	MODESTO		UNCLASSIFIED	9.0	300.0	
199.0	MODESTO	PIASA	LIMESTONE	6.0	309.0	
193.0	CARBONDALE		UNCLASSIFIED	34.0	315.0	
159.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	349.0	
156.0	CARBONDALE		UNCLASSIFIED	2.0	352.0	
154.0	CARBONDALE	BRERETON	LIMESTONE	7.0	354.0	
147.0	CARBONDALE	ANNA	BLACK SHALE	0.8	361.0	
146.2	CARBONDALE	HERRIN	COAL	6.5	361.8	
139.7	CARBONDALE		UNCLASSIFIED	12.7	368.3	

MAPID: 18902698000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 29 QUARTERS/FOOTAGES: 360' N line, 1288' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.459023

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.33144

DATE COLLECTED:

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 340.8

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 18-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
253.0	MODESTO	PIASA	LIMESTONE	3.5	277.0	
249.5	MODESTO		SHALE	6.3	280.5	
243.2	CARBONDALE	DANVILLE	COAL	1.3	286.8	
241.8	CARBONDALE		CLAYSTONE	0.2	288.2	
241.7	CARBONDALE		GRAY SHALE	7.9	288.3	
233.8	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	7.9	296.2	UPPER BENCH
225.9	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	1.3	304.1	SHALE PARTING
224.7	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	2.7	305.3	LOWER BENCH
222.0	CARBONDALE	ENERGY	GRAY SHALE	0.4	308.0	
221.6	CARBONDALE	ENERGY	SANDSTONE	4.9	308.4	
216.6	CARBONDALE	ENERGY	SHALE & SANDSTONE	13.9	313.4	
202.7	CARBONDALE	ENERGY	SILTY SHALE	2.0	327.3	
200.7	CARBONDALE	ENERGY	DARK GRAY SHALE	1.0	329.3	
197.0	CARBONDALE	HERRIN	COAL	7.8	333.0	

MAPID: 18924389000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 29 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.451296

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.324105

DATE COLLECTED:

SURFACE ELEVATION (FT.): 532.0 LOGGED (FT.): 2728.0

LOG TYPE: Electric Log

SOURCE: PODOLSKY, BERNARD

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
221.0	CARBONDALE	SPRINGFIELD	COAL	-	311.0	
-575.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1107.0	
-2174.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2706.0	TOP OF NEW ALBANY
-2176.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2708.0	
-2196.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2728.0	BASE OF NEW ALBANY

MAPID: 1890270000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 30 QUARTERS/FOOTAGES: 1320' S line, 48' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.47716 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.32189 DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.0 LOGGED (FT.): 344.8 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 20-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
218.0	MODESTO	PIASA	LIMESTONE	9.6	289.0	
208.4	MODESTO		SHALE	3.2	298.6	
205.2	CARBONDALE	DANVILLE	COAL	1.5	301.8	
203.7	CARBONDALE		CALCAREOUS SHALE	0.8	303.3	
202.9	CARBONDALE	GALUM	LIMESTONE/UNDERCLAY	1.0	304.1	
201.9	CARBONDALE		LIMESTONE W/ SHALE	9.0	305.1	
192.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	314.1	UPPER BENCH
189.2	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.2	317.8	SHALE PARTING
187.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	320.0	LOWER BENCH
184.8	CARBONDALE	LAWSON	DARK GRAY SHALE	0.9	322.2	
183.8	CARBONDALE	LAWSON	SILTY SHALE	3.7	323.2	
180.2	CARBONDALE	LAWSON	SILTY SHALE	5.0	326.8	
175.2	CARBONDALE	BRERETON	LIMESTONE AND SANDSTONE	5.1	331.8	
170.1	CARBONDALE	ANNA	DARK GRAY SHALE	1.1	336.9	
169.0	CARBONDALE	HERRIN	COAL	6.8	338.0	

MAPID: 18902864000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 30 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.469313 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.33167 DATE COLLECTED:

SURFACE ELEVATION (FT.): 526.0 LOGGED (FT.): 2627.0 LOG TYPE: Electric Log

SOURCE: AMOCO PROD. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
206.0	CARBONDALE	SPRINGFIELD	COAL	-	320.0	
101.0	CARBONDALE	COLCHESTER	COAL	-	425.0	
-542.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1068.0	
-2083.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2609.0	TOP OF NEW ALBANY
-2085.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2611.0	
-2101.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2627.0	BASE OF NEW ALBANY

MAPID: 18902873000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 32 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.453998 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.307657 DATE COLLECTED:

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 2748.0 LOG TYPE: Electric Log

SOURCE: SHERMAN, ERNEST WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-578.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1100.0	
-2208.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2730.0	TOP OF NEW ALBANY
-2210.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2732.0	
-2226.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2748.0	BASE OF NEW ALBANY

MAPID: 18901016000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 33 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.435499 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.303736 DATE COLLECTED:

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 2720.0 LOG TYPE: Electric Log

SOURCE: NATIONAL ASSOCIATED PETROLEUM CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-31.0	CARBONDALE	COLCHESTER	COAL	-	534.0	
-569.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1072.0	
-2193.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2696.0	TOP OF NEW ALBANY
-2196.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2699.0	
-2217.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2720.0	BASE OF NEW ALBANY

MAPID: 18901564000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 33 QUARTERS/FOOTAGES: 990' S line, 330' E line of SW NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.43296 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.312851 DATE COLLECTED: 7 / 0 / 1951

SURFACE ELEVATION (FT.): LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: EVERHART J WILLIAM WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL

MAPID: 18923689000C VERSION: 1

PROJECT: NCRDS88

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 34 QUARTERS/FOOTAGES: 1857' S line, 2575' E line

QUADRANGLE: NASHVILLE LONGITUDE: -89.417773 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 38.307858 DATE COLLECTED: 11 / 13 / 1980

SURFACE ELEVATION (FT.): 510.0 LOGGED (FT.): 407.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. WI-80-34-3 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS, AND RESIST LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
510.0			UNCONSOLIDATED	25.0	0.0	
485.0	MODESTO		UNCLASSIFIED	63.0	25.0	
422.0	MODESTO	LAKE CREEK	COAL	1.0	88.0	UNCERTAIN CORRELATION
421.0	MODESTO		UNCLASSIFIED	115.0	89.0	
306.0	MODESTO		BLACK SHALE	2.0	204.0	
304.0	MODESTO		UNCLASSIFIED	11.0	206.0	
293.0	MODESTO	PIASA	LIMESTONE	9.0	217.0	
284.0	MODESTO		UNCLASSIFIED	8.0	226.0	
276.0	CARBONDALE	DANVILLE	COAL	0.0	234.0	
276.0	CARBONDALE		UNCLASSIFIED	30.0	234.0	
246.0	CARBONDALE	HERRIN	COAL	0.0	264.0	
246.0	CARBONDALE		UNCLASSIFIED	28.0	264.0	
218.0	CARBONDALE	SPRINGFIELD	COAL	0.0	292.0	
218.0	CARBONDALE		UNCLASSIFIED	95.0	292.0	
123.0	CARBONDALE	EXCELLO	BLACK SHALE	4.0	387.0	
119.0	CARBONDALE	HOUCHIN CREEK	COAL	2.0	391.0	
117.0	CARBONDALE		UNCLASSIFIED	14.0	393.0	

MAPID: 18923690000C VERSION: 1

PROJECT: NCRDS88

COUNTY: WASHINGTON TWP/RNG: 2S 3W SECTION: 35 QUARTERS/FOOTAGES: 1165' N line, 2650' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.399457 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 38.314088 DATE COLLECTED: 11 / 13 / 1980

SURFACE ELEVATION (FT.): 505.0 LOGGED (FT.): 473.0 LOG TYPE: Drillers Log

SOURCE: MOBIL OIL CORP. WI80-35-11 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS, AND RESIST LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
505.0			UNCONSOLIDATED	27.0	0.0	
478.0	BOND	CARTHAGE	LIMESTONE	4.0	27.0	
474.0	MODESTO	NEW HAVEN	BLACK SHALE	4.0	31.0	
470.0	MODESTO		UNCLASSIFIED	98.0	35.0	
372.0	MODESTO	LAKE CREEK	COAL	1.0	133.0	UNCERTAIN CORRELATION
371.0	MODESTO		UNCLASSIFIED	134.5	134.0	
236.5	MODESTO	PIASA	LIMESTONE	10.5	268.5	
226.0	CARBONDALE		UNCLASSIFIED	10.0	279.0	
216.0	CARBONDALE	DANVILLE	COAL	0.0	289.0	
216.0	CARBONDALE		UNCLASSIFIED	30.0	289.0	
186.0	CARBONDALE	HERRIN	COAL	0.0	319.0	
186.0	CARBONDALE		UNCLASSIFIED	28.0	319.0	
158.0	CARBONDALE	SPRINGFIELD	COAL	0.0	347.0	
158.0	CARBONDALE		UNCLASSIFIED	102.0	347.0	
56.0	CARBONDALE	EXCELLO	BLACK SHALE	4.0	449.0	
52.0	CARBONDALE	HOUCHIN CREEK	COAL	20.0	453.0	

MAPID: 18900977000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 1 QUARTERS/FOOTAGES: NE NW SE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.482853

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.382824

DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 294.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
218.0	MODESTO	PIASA	LIMESTONE	5.0	250.0
213.0	MODESTO		SHALE	2.0	255.0
211.0	CARBONDALE	DANVILLE	BONE COAL	1.0	257.0
210.0	CARBONDALE		BLACK SHALE	1.0	258.0
209.0	CARBONDALE		SHALE	7.0	259.0
202.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	266.0
199.0	CARBONDALE	LAWSON	SHALE	5.0	269.0
194.0	CARBONDALE	CONANT	LIMESTONE & SHALE	4.0	274.0
190.0	CARBONDALE		SHALE	5.0	278.0
185.0	CARBONDALE	BRERETON	LIMESTONE	3.0	283.0
182.0	CARBONDALE	ANNA	BLACK SHALE	2.0	286.0
180.0	CARBONDALE	HERRIN	COAL	6.0	288.0

MAPID: 18902054000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 2 QUARTERS/FOOTAGES: 50' S line, 30' E line of NE

QUADRANGLE: ADDIEVILLE LONGITUDE: -89.495252

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.384231

DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 316.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
223.0	MODESTO	PIASA	LIMESTONE	10.0	272.0
213.0	CARBONDALE		SHALE	10.0	282.0
203.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	292.0
201.0	CARBONDALE	LAWSON	SHALE	3.0	294.0
198.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.0	297.0
193.0	CARBONDALE	JAMESTOWN	DARK GRAY SHALE	2.0	302.0
191.0	CARBONDALE	BRERETON	LIMESTONE	4.0	304.0
187.0	CARBONDALE	ANNA	BLACK SHALE	1.0	308.0
186.0	CARBONDALE	HERRIN	COAL	7.0	309.0

MAPID: 18902288000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 10 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW

QUADRANGLE: OKAWVILLE LONGITUDE: -89.523919 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.376686 DATE COLLECTED: 4 / 0 / 1965

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 370.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
115.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	370.0	THIN COAL

MAPID: 18902701000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 11 QUARTERS/FOOTAGES: 300' S line, 445' E line of SW SW

QUADRANGLE: OAKDALE LONGITUDE: -89.510247 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.363674 DATE COLLECTED:

SURFACE ELEVATION (FT.): 474.0 LOGGED (FT.): 303.7 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 55-OK WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
215.1	MODESTO	PIASA	LIMESTONE	11.1	258.9	
204.0	CARBONDALE		GRAY SHALE	8.4	270.0	
195.6	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	3.2	278.4	UPPER BENCH
192.4	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	1.2	281.6	SHALE PARTING
191.2	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	3.1	282.8	LOWER BENCH
188.1	CARBONDALE	LAWSON	DARK GRAY SHALE	3.5	285.9	
184.6	CARBONDALE		CALCAREOUS SHALE	2.3	289.4	
182.3	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	1.3	291.7	
181.0	CARBONDALE	ANNA	BLACK SHALE	3.0	293.0	
178.0	CARBONDALE	HERRIN	COAL	7.7	296.0	

MAPID: 18900086000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 16 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: OAKDALE LONGITUDE: -89.549613 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.357297 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 440.1 LOGGED (FT.): 248.3 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #13 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.1			UNCONSOLIDATED	19.0	0.0	
421.1	MODESTO		SANDSTONE	87.0	19.0	
334.1	MODESTO		SHALE	41.0	106.0	
293.1	MODESTO		SHALE	50.0	147.0	
243.1	MODESTO	PIASA	LIMESTONE	8.0	197.0	
235.1	MODESTO		BLACK SHALE	3.0	205.0	
232.1	CARBONDALE		SHALE	6.0	208.0	
226.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	214.0	
223.3	CARBONDALE		SHALE	6.7	216.8	
216.6	CARBONDALE		BLACK SHALE	7.3	223.5	
209.3	CARBONDALE	BRERETON	LIMESTONE	7.0	230.8	
202.3	CARBONDALE	HERRIN	COAL	6.8	237.8	
195.5	CARBONDALE		UNDERCLAY	3.8	244.6	

MAPID: 18901168000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 17 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE NW

QUADRANGLE: OAKDALE LONGITUDE: -89.563564 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.357718 DATE COLLECTED: 11 / 0 / 1951

SURFACE ELEVATION (FT.): 462.0 LOGGED (FT.): 381.0 LOG TYPE: Electric Log

SOURCE: COLUMBUS EXPLORATION WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
257.0	MODESTO	PIASA	UNCLASSIFIED	-	205.0	
216.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	246.0	
200.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	262.0	THIN OR ABSENT
142.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	320.0	
81.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	381.0	

MAPID: 18902703000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 17 QUARTERS/FOOTAGES: 477' S line, 21' E line of NW SE SE

QUADRANGLE: OAKDALE

LONGITUDE: -89.553235

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.352381

DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.0

LOGGED (FT.): 234.7

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 1-OK

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
260.4	MODESTO	PIASA	LIMESTONE	11.8	190.6	
248.6	MODESTO		DARK GRAY SHALE	2.8	202.4	
245.7	CARBONDALE	DANVILLE	COAL	1.5	205.3	
244.2	CARBONDALE		CLAYSTONE	0.8	206.8	
243.4	CARBONDALE		DARK GRAY SHALE	0.9	207.6	
242.5	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	208.5	
235.5	CARBONDALE	LAWSON	DARK GRAY SHALE	4.9	215.5	
230.6	CARBONDALE	CONANT	LIMESTONE	0.3	220.4	
230.2	CARBONDALE		DARK GRAY SHALE	0.3	220.8	
229.9	CARBONDALE	BRERETON	LIMESTONE	3.3	221.1	
226.6	CARBONDALE	ANNA	BLACK SHALE	3.6	224.4	
223.0	CARBONDALE	HERRIN	COAL	6.7	228.0	

MAPID: 18900742000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 18 QUARTERS/FOOTAGES: 330' N line, 330' E line of SW

QUADRANGLE: OAKDALE

LONGITUDE: -89.58244

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N

LATITUDE: 38.356253

DATE COLLECTED: 10 / 0 / 1956

SURFACE ELEVATION (FT.): 445.0

LOGGED (FT.): 391.0

LOG TYPE: Electric Log

SOURCE: MCINTYRE, PAUL J.

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
233.0	MODESTO	PIASA	UNCLASSIFIED	-	212.0	
187.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	258.0	
163.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	282.0	THIN OR ABSENT
115.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	330.0	
54.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	391.0	

MAPID: 18900087000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 19 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE NW

QUADRANGLE: OAKDALE LONGITUDE: -89.587293 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.3427 DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 253.7 LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #14 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0			UNCONSOLIDATED	9.0	0.0
436.0	MODESTO		SANDSTONE	59.0	9.0
377.0	MODESTO		SHALE	4.0	68.0
373.0	MODESTO		SANDSTONE	40.0	72.0
333.0	MODESTO		SHALE	34.0	112.0
299.0	MODESTO		SHALE	20.0	146.0
279.0	MODESTO		SHALE	5.0	166.0
274.0	MODESTO		SHALE	7.0	171.0
267.0	MODESTO		SHALE	1.0	178.0
266.0	MODESTO		SHALE	6.0	179.0
260.0	MODESTO		SHALE	1.0	185.0
259.0	MODESTO		SHALE	10.0	186.0
249.0	MODESTO		CLAYSTONE & SILTSTONE	5.0	196.0
244.0	MODESTO	PIASA	LIMESTONE	7.0	201.0
237.0	MODESTO		SHALE	1.0	208.0
236.0	MODESTO		SHALE	7.0	209.0
229.0	CARBONDALE	DANVILLE	COAL	2.3	216.0
226.7	CARBONDALE		UNDERCLAY	0.8	218.3
226.0	CARBONDALE		SHALE	6.0	219.0
220.0	CARBONDALE		SHALE	1.5	225.0
218.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	226.5
215.5	CARBONDALE	BANKSTON FORK	SHALE	1.0	229.5
214.5	CARBONDALE	BANKSTON FORK	SHALE	2.0	230.5
212.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	232.5
210.5	CARBONDALE		SHALE	4.5	234.5
206.0	CARBONDALE	BRERETON	LIMESTONE	2.0	239.0
204.0	CARBONDALE	ANNA	BLACK SHALE	3.9	241.0
200.1	CARBONDALE	HERRIN	COAL	7.8	244.9
192.3	CARBONDALE		UNDERCLAY	1.0	252.7

MAPID: 18900087000C VERSION: 2

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 19 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE NW

QUADRANGLE: OAKDALE

LONGITUDE: -89.587293

GEOLOGIST: WEIBEL

CONFIDENTIAL: N

LATITUDE: 38.3427

DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 461.0

LOGGED (FT.): 253.7

LOG TYPE: Drillers Log

SOURCE: INTERNATIONAL COAL & MNG.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
461.0			UNCONSOLIDATED	9.0	0.0	
452.0	BOND		SANDSTONE	59.0	9.0	
393.0	BOND		SHALE	4.0	68.0	
389.0	BOND		SANDSTONE	40.0	72.0	
349.0	BOND		SHALE	84.0	112.0	
265.0	BOND		UNCLASSIFIED	5.0	196.0	
260.0	BOND	CARTHAGE	LIMESTONE	7.0	201.0	UNCERTAIN CORRELATION
253.0	MODESTO		SHALE	1.0	208.0	
252.0	MODESTO		DARK SHALE	7.0	209.0	
245.0	MODESTO		COAL	2.3	216.0	
242.7			UNDERCLAY	0.8	218.3	
242.0			SHALE	6.0	219.0	
236.0			DARK SHALE	1.5	225.0	
234.5	MODESTO	PIASA	LIMESTONE	3.0	226.5	UNCERTAIN CORRELATION
231.5			SHALE	1.0	229.5	
230.5	CARBONDALE		DARK SHALE	2.0	230.5	
228.5	CARBONDALE		LIMESTONE	2.0	232.5	
226.5	CARBONDALE		DARK SHALE	4.5	234.5	
222.0	CARBONDALE	BRERETON	LIMESTONE	2.0	239.0	
220.0	CARBONDALE	ANNA	BLACK SHALE	3.9	241.0	
216.1	CARBONDALE	HERRIN	COAL	7.8	244.9	
208.3	CARBONDALE		UNDERCLAY	1.0	252.7	
207.3			UNCLASSIFIED	0.0	253.7	

MAPID: 18902063000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 22 QUARTERS/FOOTAGES: 25' S line, 600' E line

QUADRANGLE: OAKDALE LONGITUDE: -89.516019

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.333975

DATE COLLECTED:

SURFACE ELEVATION (FT.): 460.0

LOGGED (FT.): 253.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
258.0	MODESTO	PIASA	LIMESTONE	8.0	202.0
250.0	CARBONDALE		SHALE	17.0	210.0
233.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	227.0
231.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	229.0
229.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	231.0
227.0	CARBONDALE	LAWSON	SHALE	7.0	233.0
220.0	CARBONDALE	CONANT	LIMESTONE	1.0	240.0
219.0	CARBONDALE		SHALE	2.0	241.0
217.0	CARBONDALE	BRERETON	LIMESTONE	2.0	243.0
215.0	CARBONDALE	ANNA	BLACK SHALE	1.0	245.0
214.0	CARBONDALE	HERRIN	COAL	7.0	246.0

MAPID: 18923944000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 22 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: OAKDALE LONGITUDE: -89.521795

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.342229

DATE COLLECTED: 1 / 2 / 1984

SURFACE ELEVATION (FT.): 455.0

LOGGED (FT.): 1360.0

LOG TYPE: Electric Log

SOURCE: MONTEDORO OIL CO

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
235.0	MODESTO	PIASA	UNCLASSIFIED	-	220.0
192.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	263.0
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	THIN OR ABSENT
57.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	398.0

MAPID: 18902065000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 23 QUARTERS/FOOTAGES: 20' N line, 200' E line

QUADRANGLE: NASHVILLE LONGITUDE: -89.49597 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.347938 DATE COLLECTED:

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 274.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
260.0	MODESTO	PIASA	LIMESTONE	8.0	220.0
252.0	CARBONDALE		SHALE	20.0	228.0
232.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	248.0
230.0	CARBONDALE	LAWSON	SHALE	3.0	250.0
227.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	4.0	253.0
223.0	CARBONDALE		SHALE	4.0	257.0
219.0	CARBONDALE	BRERETON	LIMESTONE	4.0	261.0
215.0	CARBONDALE	ANNA	BLACK SHALE	2.0	265.0
213.0	CARBONDALE	HERRIN	COAL	7.0	267.0

MAPID: 18902067000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 24 QUARTERS/FOOTAGES: 25' S line, 30' W line of NW SW

QUADRANGLE: NASHVILLE LONGITUDE: -89.495396 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.337046 DATE COLLECTED: 5 / 0 / 1956

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 270.0 LOG TYPE: Electric Log

SOURCE: SUN PRODUCTION COMPANY WELL TYPE: Structure Test

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
215.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	270.0

MAPID: 18902067000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 24 QUARTERS/FOOTAGES: 25' S line, 30' W line of NW SW

QUADRANGLE: NASHVILLE LONGITUDE: -89.495396

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.337046

DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0

LOGGED (FT.): 280.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
253.0	MODESTO	PIASA	LIMESTONE	10.0	232.0
243.0	CARBONDALE		SHALE	14.0	242.0
229.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	4.0	256.0
225.0	CARBONDALE	LAWSON	SHALE	2.0	260.0
223.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	2.0	262.0
221.0	CARBONDALE		SHALE	4.0	264.0
217.0	CARBONDALE	BRERETON	LIMESTONE	3.0	268.0
214.0	CARBONDALE	ANNA	BLACK SHALE	1.0	271.0
213.0	CARBONDALE	HERRIN	COAL	8.0	272.0

MAPID: 18900991000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 25 QUARTERS/FOOTAGES: 63' N line, 36' E line of NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.477255

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.332539

DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0

LOGGED (FT.): 314.5

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
233.1	MODESTO	PIASA	LIMESTONE	10.0	260.9
223.1	MODESTO		DARK GRAY SHALE	3.5	270.9
219.7	CARBONDALE	DANVILLE	COAL	0.7	274.3
218.9	CARBONDALE		GRAY SHALE	7.9	275.1
211.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	283.0
208.2	CARBONDALE	LAWSON	GRAY SHALE	7.2	285.8
201.0	CARBONDALE	CONANT	LIMESTONE	1.5	293.0
199.5	CARBONDALE		DARK GRAY SHALE	0.2	294.5
199.3	CARBONDALE	BRERETON	LIMESTONE	11.3	294.7
188.0	CARBONDALE	ANNA	BLACK SHALE	1.0	306.0
187.0	CARBONDALE	HERRIN	COAL	7.5	307.0

MAPID: 18901169000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 26 QUARTERS/FOOTAGES: NE SE NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.496816 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.328847 DATE COLLECTED:

SURFACE ELEVATION (FT.): 492.0 LOGGED (FT.): 302.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
240.0	MODESTO	PIASA	LIMESTONE	10.0	252.0
230.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	262.0
226.0	CARBONDALE	BRERETON	LIMESTONE	2.0	266.0
224.0	CARBONDALE	ANNA	SHALE	4.0	268.0
196.0	CARBONDALE	HERRIN	COAL	6.0	296.0

MAPID: 18902068000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 28 QUARTERS/FOOTAGES: 20' S line, 1220' E line

QUADRANGLE: OAKDALE LONGITUDE: -89.536895 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.319973 DATE COLLECTED:

SURFACE ELEVATION (FT.): 472.0 LOGGED (FT.): 258.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
267.0	MODESTO	PIASA	LIMESTONE	9.0	205.0
258.0	CARBONDALE		SHALE	16.0	214.0
242.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	7.0	230.0
235.0	CARBONDALE	LAWSON	SHALE	5.0	237.0
230.0	CARBONDALE	CONANT	LIMESTONE	2.0	242.0
228.0	CARBONDALE		SHALE	1.0	244.0
227.0	CARBONDALE	BRERETON	LIMESTONE	2.0	245.0
225.0	CARBONDALE	ANNA	BLACK SHALE	3.0	247.0
222.0	CARBONDALE	HERRIN	COAL	8.0	250.0

MAPID: 18900789000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 4W SECTION: 32 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW NW

QUADRANGLE: OAKDALE LONGITUDE: -89.566161 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.317906 DATE COLLECTED: 11 / 0 / 1956

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	NOT DETECTABLE ON LOG

MAPID: 18900085000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 1 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.596668

GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.39089

DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 350.9

LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG., #P-3

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	100.0	0.0	
350.0	MODESTO		SANDY SHALE	50.0	100.0	
300.0	MODESTO		SHALE	44.0	150.0	
256.0	MODESTO		SANDY SHALE	13.0	194.0	
243.0	MODESTO		SHALE	4.0	207.0	
239.0	MODESTO		CLAYSTONE & SILTSTONE	12.0	211.0	
227.0	MODESTO		SHALE	3.0	223.0	
224.0	MODESTO	PIASA	LIMESTONE	10.0	226.0	
214.0	MODESTO		SHALE	1.0	236.0	
213.0	CARBONDALE	DANVILLE	COAL	0.2	237.0	
212.8	CARBONDALE	DANVILLE	SHALE	1.8	237.2	
211.0	CARBONDALE	DANVILLE	COAL	0.3	239.0	
210.7	CARBONDALE		SHALE	2.7	239.3	
208.0	CARBONDALE		CALCAREOUS SHALE	8.0	242.0	
200.0	CARBONDALE		LIMESTONE	2.0	250.0	
198.0	CARBONDALE		BLACK SHALE	18.0	252.0	W/ FOSSIL SHELLS
180.0	CARBONDALE	HERRIN	COAL	3.0	270.0	
177.0	CARBONDALE		UNDERCLAY	6.0	273.0	
171.0	CARBONDALE		LIMESTONE	8.0	279.0	
163.0	CARBONDALE		SHALE	4.0	287.0	
159.0	CARBONDALE		SANDY SHALE	11.0	291.0	
148.0	CARBONDALE		SANDSTONE	14.0	302.0	
134.0	CARBONDALE		SANDY SHALE	10.0	316.0	
124.0	CARBONDALE		SHALE	3.0	326.0	
121.0	CARBONDALE		SHALE	11.0	329.0	
110.0	CARBONDALE		LIMESTONE	0.5	340.0	
109.5	CARBONDALE	EXCELLO	BLACK SHALE	1.1	340.5	
108.4	CARBONDALE	HOUCHIN CREEK	BONE COAL	0.8	341.6	
107.7	CARBONDALE	HOUCHIN CREEK	SHALE	0.6	342.3	
107.1	CARBONDALE	HOUCHIN CREEK	COAL	1.5	342.9	
105.6	CARBONDALE		UNDERCLAY	1.5	344.4	
104.1	CARBONDALE		SHALE	3.0	345.9	
101.1	CARBONDALE		SANDSTONE	2.0	348.9	

MAPID: 18900085000C VERSION: 2

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 1 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.596668

GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.39089

DATE COLLECTED: 0 / 0 / 1920

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 350.9

LOG TYPE: Drillers Log

SOURCE: INTER'L COAL & MNG.

WELL TYPE: Coal Test

COMMENT: THICKNESSES & CORRELATIONS QUESTIONABLE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	100.0	0.0	
350.0	BOND		SHALE	111.0	100.0	
239.0	BOND		UNCLASSIFIED	12.0	211.0	
227.0	BOND		SHALE	3.0	223.0	
224.0	BOND	CARTHAGE	LIMESTONE	10.0	226.0	UNCERTAIN CORRELATION
214.0	MODESTO		DARK SHALE	1.0	236.0	
213.0	MODESTO		COAL	0.2	237.0	
212.8	MODESTO		DARK SHALE	1.8	237.2	
211.0	MODESTO		COAL	0.3	239.0	
210.7	CARBONDALE		SHALE	10.7	239.3	
200.0	CARBONDALE	BRERETON	LIMESTONE	2.0	250.0	
198.0	CARBONDALE	ANNA	BLACK SHALE	18.0	252.0	
180.0	CARBONDALE	HERRIN	COAL	3.0	270.0	
177.0	CARBONDALE		UNDERCLAY	6.0	273.0	
171.0	CARBONDALE		LIMESTONE	8.0	279.0	
163.0	CARBONDALE		SHALE	4.0	287.0	
159.0	CARBONDALE		SANDSTONE	11.0	291.0	
148.0	CARBONDALE		SHALE	27.0	302.0	
121.0	CARBONDALE		DARK SHALE	11.0	329.0	
110.0	CARBONDALE	OAK GROVE	LIMESTONE	0.5	340.0	
109.5	CARBONDALE	MECCA QUARRY	BLACK SHALE	1.1	340.5	
108.4	CARBONDALE	COLCHESTER	BONE COAL	0.8	341.6	
107.7	SPOON		DARK SHALE	0.6	342.3	
107.1	SPOON		COAL	1.5	342.9	
105.6	SPOON		UNDERCLAY	1.5	344.4	
104.1	SPOON		SHALE	3.0	345.9	
101.1	SPOON		SANDSTONE	2.0	348.9	

MAPID: 18902808000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 1 QUARTERS/FOOTAGES: 1980' N line, 0' W line

QUADRANGLE: OKAWVILLE LONGITUDE: -89.6116 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.387823 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 242.4 LOG TYPE: Survey Core Study

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
246.8	MODESTO	PIASA	LIMESTONE	8.7	193.2
238.1	CARBONDALE		GRAY SHALE	9.8	201.9
228.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	211.7
226.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.0	213.7
225.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	214.7
223.0	CARBONDALE	LAWSON	GRAY SHALE	3.7	217.0
219.3	CARBONDALE	BRERETON	LIMESTONE	12.0	220.7
207.3	CARBONDALE	ANNA	BLACK SHALE	2.3	232.7
205.0	CARBONDALE	HERRIN	COAL	7.4	235.0

MAPID: 18900577000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 2 QUARTERS/FOOTAGES: 330' S line, 300' E line of NW SE

QUADRANGLE: OKAWVILLE LONGITUDE: -89.617223 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.383994 DATE COLLECTED: 11 / 0 / 1955

SURFACE ELEVATION (FT.): 415.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: NASH & REDWINE WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	NOT DETECTABLE ON LOG

MAPID: 18923005000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 8 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE NE

QUADRANGLE: VENEDY LONGITUDE: -89.668292 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.376526 DATE COLLECTED: 12 / 0 / 1974

SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 416.0 LOG TYPE: Electric Log

SOURCE: SUPERIOR OIL COMPANY WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
229.0	MODESTO	PIASA	UNCLASSIFIED	-	226.0
181.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	274.0
161.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	294.0
107.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	348.0
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0	
39.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	416.0

MAPID: 18900791000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 14 QUARTERS/FOOTAGES: NE NE NE

QUADRANGLE: OAKDALE LONGITUDE: -89.61266 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.363881 DATE COLLECTED:

SURFACE ELEVATION (FT.): 421.0 LOGGED (FT.): 252.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
221.0	MODESTO	PIASA	LIMESTONE	7.0	200.0
214.0	MODESTO		SHALE	5.0	207.0
209.0	CARBONDALE	DANVILLE	BONE COAL	1.0	212.0
208.0	CARBONDALE		SHALE	7.0	213.0
201.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	3.0	220.0
198.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	223.0
197.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	3.0	224.0
194.0	CARBONDALE	LAWSON	SHALE	6.0	227.0
188.0	CARBONDALE	CONANT	LIMESTONE	3.0	233.0
185.0	CARBONDALE		SHALE	5.0	236.0
180.0	CARBONDALE	BRERETON	LIMESTONE	3.0	241.0
177.0	CARBONDALE	ANNA	BLACK SHALE	2.0	244.0
176.0	CARBONDALE	HERRIN	COAL	7.0	245.0

MAPID: 1890229000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 15 QUARTERS/FOOTAGES: 660' N line, 660' E line of SW

QUADRANGLE: ST. LIBORY LONGITUDE: -89.641727 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.355922 DATE COLLECTED:

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 274.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
240.0	MODESTO	PIASA	LIMESTONE	6.0	220.0	
234.0	MODESTO		SHALE	8.0	226.0	
226.0	CARBONDALE	DANVILLE	BONE COAL	1.0	234.0	
225.0	CARBONDALE		SHALE	7.0	235.0	
218.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	4.0	242.0	
214.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	246.0	
211.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	2.0	249.0	
209.0	CARBONDALE	LAWSON	SHALE	5.0	251.0	
204.0	CARBONDALE	CONANT	LIMESTONE	5.0	256.0	
199.0	CARBONDALE	BRERETON	LIMESTONE	4.0	261.0	
195.0	CARBONDALE	ANNA	BLACK SHALE	2.0	265.0	
193.0	CARBONDALE	HERRIN	COAL	7.0	267.0	

MAPID: 18901607000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 16 QUARTERS/FOOTAGES: 330' S line, 990' E line

QUADRANGLE: ST. LIBORY LONGITUDE: -89.652215 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.351276 DATE COLLECTED: 9 / 0 / 1953

SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 291.0 LOG TYPE: Electric Log

SOURCE: OHIO OIL CO., THE WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
276.0	MODESTO	PIASA	UNCLASSIFIED	-	171.0	
234.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	213.0	
202.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	245.0	POSSIBLE COAL HORIZON
156.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	291.0	

MAPID: 18901174000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 24 QUARTERS/FOOTAGES: 660' S line, 330' W line of SE

QUADRANGLE: OAKDALE LONGITUDE: -89.601238 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.337498 DATE COLLECTED: 5 / 0 / 1952

SURFACE ELEVATION (FT.): 448.0 LOGGED (FT.): 351.0 LOG TYPE: Electric Log

SOURCE: MURPHY WILLIAM R WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
271.0	MODESTO	PIASA	UNCLASSIFIED	-	177.0	
227.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	221.0	
193.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	255.0	POSSIBLE COAL HORIZON
155.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	293.0	
97.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	351.0	

MAPID: 18901174000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 24 QUARTERS/FOOTAGES: 660' S line, 330' W line of SE

QUADRANGLE: OAKDALE LONGITUDE: -89.601238 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.337498 DATE COLLECTED:

SURFACE ELEVATION (FT.): 446.0 LOGGED (FT.): 229.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
268.0	MODESTO	PIASA	LIMESTONE	9.0	178.0	
259.0	MODESTO		SHALE	2.0	187.0	
257.0	CARBONDALE	DANVILLE	BONE COAL	2.0	189.0	
255.0	CARBONDALE		BLACK SHALE	1.0	191.0	
254.0	CARBONDALE		SHALE	7.0	192.0	
247.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	199.0	
245.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	201.0	
243.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	203.0	
241.0	CARBONDALE	LAWSON	SHALE	7.0	205.0	
234.0	CARBONDALE	CONANT	LIMESTONE	2.0	212.0	
232.0	CARBONDALE	BRERETON	LIMESTONE	3.0	214.0	
229.0	CARBONDALE	ANNA	SHALE	3.0	217.0	
224.0	CARBONDALE	HERRIN	COAL	7.0	222.0	

MAPID: 18900016000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 30 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: ST. LIBORY LONGITUDE: -89.702655

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.321006

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 228.5

LOG TYPE: Survey Core Study

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
219.0	CARBONDALE	HERRIN	COAL	7.5	221.0	

MAPID: 18900018000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 2S 5W SECTION: 34 QUARTERS/FOOTAGES: 350' S line, 1205' W line

QUADRANGLE: ST. LIBORY LONGITUDE: -89.644353

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.307083

DATE COLLECTED:

SURFACE ELEVATION (FT.): 499.0

LOGGED (FT.): 270.6

LOG TYPE: Survey Core Study

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
235.0	CARBONDALE	HERRIN	COAL	6.6	264.0	

MAPID: 18901286000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 2 QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.181467

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.300672

DATE COLLECTED:

SURFACE ELEVATION (FT.): 533.0

LOGGED (FT.): 1361.0

LOG TYPE: Electric Log

SOURCE: REEVES, E.C. ESTATE OF

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
80.0	CARBONDALE	SPRINGFIELD	COAL	-	453.0	
-18.0	CARBONDALE	COLCHESTER	COAL	-	551.0	
-828.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1361.0	

MAPID: 18901286000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 2 QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.181467 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.300672 DATE COLLECTED:

SURFACE ELEVATION (FT.): 533.0 LOGGED (FT.): 439.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
144.0	MODESTO	PIASA	LIMESTONE	4.0	389.0
140.0	CARBONDALE		SHALE	4.0	393.0
136.0	CARBONDALE	GALUM	LIMESTONE & SHALE	4.0	397.0
132.0	CARBONDALE		SHALE	10.0	401.0
122.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	411.0
118.0	CARBONDALE	LAWSON	SHALE	6.0	415.0
112.0	CARBONDALE	CONANT	LIMESTONE	4.0	421.0
108.0	CARBONDALE		SHALE	2.0	425.0
106.0	CARBONDALE	BRERETON	LIMESTONE	4.0	427.0
102.0	CARBONDALE	ANNA	SHALE	3.0	431.0
99.0	CARBONDALE	HERRIN	COAL	5.0	434.0

MAPID: 18900025000C VERSION: 1

PROJECT: BLM

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 3 QUARTERS/FOOTAGES: SE SE SW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.197094 GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 38.295206 DATE COLLECTED: 0 / 0 / 1923

SURFACE ELEVATION (FT.): 537.0 LOGGED (FT.): 800.0 LOG TYPE: Drillers Log

SOURCE: GEORGE S. CLARK ET AL. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
537.0			UNCONSOLIDATED	70.0	0.0
467.0			ROCK	380.0	70.0
87.0			LIMESTONE	12.0	450.0
75.0			SHALE	4.0	462.0
71.0			LIMESTONE	14.0	466.0
57.0	CARBONDALE	HERRIN	COAL	9.0	480.0
48.0			ROCK	311.0	489.0

MAPID: 18901611000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 4 QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.218104 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.301118 DATE COLLECTED: 11 / 0 / 1953

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: SELF, EDDIE M. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18901611000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 4 QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.218104 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.301118 DATE COLLECTED:

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 451.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
153.0	MODESTO	PIASA	LIMESTONE	5.0	407.0	
148.0	CARBONDALE		SHALE	5.0	412.0	
143.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	417.0	
139.0	CARBONDALE	LAWSON	SHALE	5.0	421.0	
134.0	CARBONDALE	CONANT	LIMESTONE	6.0	426.0	
128.0	CARBONDALE		CALCAREOUS SHALE	6.0	432.0	
122.0	CARBONDALE	BRERETON	LIMESTONE	3.0	438.0	
119.0	CARBONDALE	ANNA	SHALE	3.0	441.0	
116.0	CARBONDALE	HERRIN	COAL	7.0	444.0	

MAPID: 18901611000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 4 QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.218104 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.301118 DATE COLLECTED:

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 1277.0 LOG TYPE: Electric Log

SOURCE: SELF, EDDIE M. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
95.0	CARBONDALE	SPRINGFIELD	COAL	-	465.0	
5.0	CARBONDALE	COLCHESTER	COAL	-	555.0	
-717.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1277.0	

MAPID: 18901106000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 5 QUARTERS/FOOTAGES: 300' N line, 350' E line of NW

QUADRANGLE: ASHLEY

LONGITUDE: -89.230122

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.301558

DATE COLLECTED:

SURFACE ELEVATION (FT.): 588.0

LOGGED (FT.): 480.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
157.0	MODESTO	PIASA	LIMESTONE & SHALE	7.0	431.0
150.0	CARBONDALE	DANVILLE	BLACK SHALE	3.0	438.0
147.0	CARBONDALE	GALUM	NODULAR LIMESTONE	9.0	441.0
138.0	CARBONDALE		SHALE	4.0	450.0
134.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	454.0
130.0	CARBONDALE	LAWSON	SHALE	5.0	458.0
125.0	CARBONDALE	CONANT	LIMESTONE	2.0	463.0
123.0	CARBONDALE		SHALE	2.0	465.0
121.0	CARBONDALE	BRERETON	LIMESTONE	3.0	467.0
118.0	CARBONDALE	ANNA	SHALE	3.0	470.0
115.0	CARBONDALE	HERRIN	COAL	7.0	473.0

MAPID: 18900442000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 6 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SW

QUADRANGLE: BEAUCOUP

LONGITUDE: -89.252006

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N

LATITUDE: 38.289076

DATE COLLECTED:

SURFACE ELEVATION (FT.): 535.0

LOGGED (FT.): 1218.0

LOG TYPE: Electric Log

SOURCE: TAYLOR, BEN J., ETAL

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
120.0	CARBONDALE	SPRINGFIELD	COAL	-	415.0
37.0	CARBONDALE	COLCHESTER	COAL	-	498.0
-683.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1218.0

MAPID: 18900928000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 6 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: ASHLEY LONGITUDE: -89.24935 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.301458 DATE COLLECTED:

SURFACE ELEVATION (FT.): 548.0 LOGGED (FT.): 444.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
163.0	MODESTO	PIASA	LIMESTONE	4.0	385.0	
159.0	MODESTO		SHALE	7.0	389.0	
152.0	CARBONDALE	DANVILLE	BONE COAL	2.0	396.0	
150.0	CARBONDALE		SHALE	5.0	398.0	
145.0	CARBONDALE	GALUM	LIMESTONE	7.0	403.0	
138.0	CARBONDALE		SHALE	5.0	410.0	
133.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	415.0	
131.0	CARBONDALE	LAWSON	SHALE	3.0	417.0	
128.0	CARBONDALE		LIMESTONE W/ SHALE	5.0	420.0	
123.0	CARBONDALE	BRERETON	LIMESTONE	6.0	425.0	
117.0	CARBONDALE	ANNA	SHALE	4.0	431.0	
113.0	CARBONDALE	HERRIN	COAL	9.0	435.0	

MAPID: 18901003000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 7 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: ASHLEY LONGITUDE: -89.249748 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.281686 DATE COLLECTED:

SURFACE ELEVATION (FT.): 543.0 LOGGED (FT.): 380.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
215.0	MODESTO	PIASA	LIMESTONE & SHALE	6.0	328.0	
209.0	CARBONDALE	DANVILLE	BLACK SHALE	2.0	334.0	
207.0	CARBONDALE		SHALE	4.0	336.0	
203.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	340.0	
198.0	CARBONDALE	LAWSON	SHALE	6.0	345.0	
192.0	CARBONDALE	CONANT	LIMESTONE	3.0	351.0	
189.0	CARBONDALE		SHALE	10.0	354.0	
179.0	CARBONDALE	BRERETON	LIMESTONE	5.0	364.0	
174.0	CARBONDALE	ANNA	SHALE	4.0	369.0	
170.0	CARBONDALE	HERRIN	COAL	7.0	373.0	

MAPID: 18924166000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 7 **QUARTERS/FOOTAGES:** 330' N line, 660' W line of NW
QUADRANGLE: BEAUCOUP **LONGITUDE:** -89.255529 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.287231 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 538.0 **LOGGED (FT.):** 3028.0 **LOG TYPE:** Electric Log
SOURCE: SHAKESPEARE OIL CO. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-673.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1211.0	
-2439.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2977.0	TOP OF NEW ALBANY
-2443.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2981.0	
-2490.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3028.0	BASE OF NEW ALBANY

MAPID: 18900554000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of NE SE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.223614 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.277882 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 544.0 **LOGGED (FT.):** 1202.0 **LOG TYPE:** Electric Log
SOURCE: MAZZARINO, M. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
136.0	CARBONDALE	SPRINGFIELD	COAL	-	408.0	
46.0	CARBONDALE	COLCHESTER	COAL	-	498.0	
-658.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1202.0	

MAPID: 18902597000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** 200' N line, 0' E line of NW SW
QUADRANGLE: ASHLEY **LONGITUDE:** -89.234476 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.280224 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 550.0 **LOGGED (FT.):** 384.1 **LOG TYPE:** Survey Core Study
SOURCE: ATLANTIC RICHFIELD 5 **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
185.5	CARBONDALE		LIMESTONE/UNDERCLAY	8.0	364.5	
177.5	CARBONDALE	BRERETON	LIMESTONE	2.9	372.5	
174.6	CARBONDALE	ANNA	BLACK SHALE	2.6	375.4	
172.0	CARBONDALE	HERRIN	COAL	6.1	378.0	

MAPID: 189243C0008F VERSION: 1

PROJECT: BLM

COUNTY: WASHINGTON

TWP/RNG: 3S 1W

SECTION: 8

QUARTERS/FOOTAGES: SW NE SW NW

QUADRANGLE: ASHLEY

LONGITUDE: -89.236238

GEOLOGIST: BARGH,M

CONFIDENTIAL: N

LATITUDE: 38.283111

DATE COLLECTED: 0 / 0 / 1931

SURFACE ELEVATION (FT.): 540.0

LOGGED (FT.): 9.8

LOG TYPE: Measured section

SOURCE: FLD NOTES-EKBLAW

WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
540.0			UNCONSOLIDATED	4.0	0.0	
-			ROCK	1.7		
-			COAL	0.8		
-			ROCK	3.4		

MAPID: 18900628000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON

TWP/RNG: 3S 1W

SECTION: 9

QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: ASHLEY

LONGITUDE: -89.207024

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N

LATITUDE: 38.281168

DATE COLLECTED:

SURFACE ELEVATION (FT.): 528.0

LOGGED (FT.): 1276.0

LOG TYPE: Electric Log

SOURCE: KROHN, WM. H.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
98.0	CARBONDALE	SPRINGFIELD	COAL	-	430.0	
-2.0	CARBONDALE	COLCHESTER	COAL	-	530.0	
-748.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1276.0	

MAPID: 18900628000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 9 QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.207024

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.281168

DATE COLLECTED:

SURFACE ELEVATION (FT.): 528.0

LOGGED (FT.): 424.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
159.0	MODESTO	PIASA	LIMESTONE & SHALE	4.0	369.0
155.0	MODESTO		SHALE	7.0	373.0
148.0	CARBONDALE	DANVILLE	BONE COAL	3.0	380.0
145.0	CARBONDALE		SHALE	6.0	383.0
139.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	389.0
135.0	CARBONDALE	LAWSON	SHALE	8.0	393.0
127.0	CARBONDALE	CONANT	LIMESTONE	3.0	401.0
124.0	CARBONDALE	BRERETON	LIMESTONE	10.0	404.0
114.0	CARBONDALE	ANNA	SHALE	4.0	414.0
111.0	CARBONDALE	HERRIN	COAL	7.0	417.0

MAPID: 18900202000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 11 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: ASHLEY LONGITUDE: -89.165704

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.272539

DATE COLLECTED:

SURFACE ELEVATION (FT.): 533.0

LOGGED (FT.): 377.0

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
165.0	CARBONDALE	BRERETON	LIMESTONE	4.0	368.0
161.0	CARBONDALE	HERRIN	COAL	5.0	372.0

MAPID: 18923814000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 11 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW

QUADRANGLE: ASHLEY LONGITUDE: -89.174857 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.285819 DATE COLLECTED:

SURFACE ELEVATION (FT.): 539.0 LOGGED (FT.): 3194.0 LOG TYPE: Electric Log

SOURCE: ASHLAND EXPLORATION, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
128.0	CARBONDALE	SPRINGFIELD	COAL	-	411.0	
15.0	CARBONDALE	COLCHESTER	COAL	-	524.0	
-848.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1387.0	
-2609.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3148.0	TOP OF NEW ALBANY
-2611.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3150.0	
-2655.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3194.0	BASE OF NEW ALBANY

MAPID: 18901107000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 2970' E line

QUADRANGLE: ASHLEY LONGITUDE: -89.193808 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.25854 DATE COLLECTED: 1 / 0 / 1955

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 519.0 LOG TYPE: Electric Log

SOURCE: ALCH DRILLING CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
174.0	MODESTO	PIASA	UNCLASSIFIED	-	348.0	
130.0			UNCLASSIFIED	-	392.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
42.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	480.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
3.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	519.0	

MAPID: 18901107000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 2970' E line

QUADRANGLE: ASHLEY LONGITUDE: -89.193808

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.25854

DATE COLLECTED:

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 400.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
172.0	MODESTO	PIASA	LIMESTONE	6.0	350.0	
166.0	CARBONDALE		SHALE	8.0	356.0	
158.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	364.0	
154.0	CARBONDALE	LAWSON	SHALE	8.0	368.0	
146.0	CARBONDALE	BRERETON	LIMESTONE	6.0	376.0	
140.0	CARBONDALE	ANNA	BLACK SHALE	2.0	382.0	
138.0	CARBONDALE	ENERGY	GRAY SHALE	9.0	384.0	
129.0	CARBONDALE	HERRIN	COAL	7.0	393.0	

MAPID: 18901107000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 2970' E line

QUADRANGLE: ASHLEY LONGITUDE: -89.193808

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.25854

DATE COLLECTED:

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 3098.0

LOG TYPE: Electric Log

SOURCE: ALCH DRILLING CO.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
97.0	CARBONDALE	SPRINGFIELD	COAL	-	425.0	
4.0	CARBONDALE	COLCHESTER	COAL	-	518.0	
-767.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1289.0	
-2528.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3050.0	TOP OF NEW ALBANY
-2528.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3050.0	
-2576.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3098.0	BASE OF NEW ALBANY

MAPID: 18901863000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 16 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.219238 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.266685 DATE COLLECTED:

SURFACE ELEVATION (FT.): 543.0 LOGGED (FT.): 1251.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
138.0	CARBONDALE	SPRINGFIELD	COAL	-	405.0
23.0	CARBONDALE	COLCHESTER	COAL	-	520.0
-708.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1251.0

MAPID: 18901863000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 16 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.219238 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.266685 DATE COLLECTED:

SURFACE ELEVATION (FT.): 543.0 LOGGED (FT.): 410.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
183.0	MODESTO	PIASA	LIMESTONE	2.0	360.0
181.0	CARBONDALE		SHALE	2.0	362.0
179.0	CARBONDALE	GALUM	LIMESTONE & SHALE	4.0	364.0
175.0	CARBONDALE		SHALE	7.0	368.0
168.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	375.0
164.0	CARBONDALE	LAWSON	SHALE	8.0	379.0
156.0	CARBONDALE	CONANT	LIMESTONE	2.0	387.0
154.0	CARBONDALE		SHALE	7.0	389.0
147.0	CARBONDALE	BRERETON	LIMESTONE	6.0	396.0
141.0	CARBONDALE	ANNA	SHALE	3.0	402.0
140.0	CARBONDALE	HERRIN	COAL	7.0	403.0

MAPID: 189243C0009F **VERSION:** 1 **PROJECT:** BLM
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** NE NE SW SE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.206728 **GEOLOGIST:** BARGH,M
CONFIDENTIAL: N **LATITUDE:** 38.261102 **DATE COLLECTED:** 0 / 0 / 1931
SURFACE ELEVATION (FT.): 460.0 **LOGGED (FT.):** 24.2 **LOG TYPE:** Measured section
SOURCE: FLD NOTES-EKBLAW **WELL TYPE:** Outcrop
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0			UNCONSOLIDATED	10.0	0.0	
-			ROCK	0.6		
-			COAL	0.3		
-			ROCK	0.8		
-			COAL	0.5		
-			ROCK	12.0		

MAPID: 18900297000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 17 **QUARTERS/FOOTAGES:** 300' S line, 1035' W line
QUADRANGLE: ASHLEY **LONGITUDE:** -89.236133 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.259381 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 554.0 **LOGGED (FT.):** 1204.0 **LOG TYPE:** Electric Log
SOURCE: RUWALDT, E. J. DRILLING **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
178.0	CARBONDALE	SPRINGFIELD	COAL	-	376.0	
76.0	CARBONDALE	COLCHESTER	COAL	-	478.0	
-650.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1204.0	

MAPID: 18900530000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 17 **QUARTERS/FOOTAGES:** 990' N line, 330' W line of NE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.228734 **GEOLOGIST:** C TREWORYG
CONFIDENTIAL: N **LATITUDE:** 38.270598 **DATE COLLECTED:** 8 / 0 / 1955
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 9999.9 **LOG TYPE:** Electric Log
SOURCE: WOOFER, J. E. DRILLING **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18900607000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 17 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.226213 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.270504 DATE COLLECTED: 11 / 0 / 1955

SURFACE ELEVATION (FT.): 577.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: WOOFER, J. E. DRILLING WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18901616000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 17 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: ASHLEY LONGITUDE: -89.229088 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.259407 DATE COLLECTED:

SURFACE ELEVATION (FT.): 540.0 LOGGED (FT.): 400.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
181.0	MODESTO	PIASA	LIMESTONE	2.0	359.0	
179.0	MODESTO		SHALE	2.0	361.0	
177.0	CARBONDALE	DANVILLE	BONE COAL	2.0	363.0	
175.0	CARBONDALE		BLACK SHALE	2.0	365.0	
173.0	CARBONDALE		SHALE	7.0	367.0	
166.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	374.0	
160.0	CARBONDALE	LAWSON	SHALE	9.0	380.0	
151.0	CARBONDALE	BRERETON	LIMESTONE	6.0	389.0	
145.0	CARBONDALE	HERRIN	COAL	5.0	395.0	

MAPID: 18900542000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 18 QUARTERS/FOOTAGES: 330' N line, 330' E line of SE NE

QUADRANGLE: ASHLEY LONGITUDE: -89.240752 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.268792 DATE COLLECTED:

SURFACE ELEVATION (FT.): 542.0 LOGGED (FT.): 1186.0 LOG TYPE: Electric Log

SOURCE: ROBISON, H. F. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
147.0	CARBONDALE	SPRINGFIELD	COAL	-	395.0	
62.0	CARBONDALE	COLCHESTER	COAL	-	480.0	
-644.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1186.0	

MAPID: 18900602000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 18 QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.25238 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.263103 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 325.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
235.0	MODESTO	PIASA	LIMESTONE	3.0	285.0
232.0	CARBONDALE		SHALE	6.0	288.0
226.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	294.0
224.0	CARBONDALE	LAWSON	SHALE	4.0	296.0
220.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.0	300.0
214.0	CARBONDALE		SHALE	5.0	306.0
209.0	CARBONDALE	BRERETON	LIMESTONE	6.0	311.0
203.0	CARBONDALE	ANNA	SHALE	3.0	317.0
200.0	CARBONDALE	HERRIN	COAL	5.0	320.0

MAPID: 18900887000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 19 QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.245675 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.25212 DATE COLLECTED:

SURFACE ELEVATION (FT.): 537.0 LOGGED (FT.): 330.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
251.0	CARBONDALE		SHALE	10.0	286.0
241.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	296.0
237.0	CARBONDALE	LAWSON	SHALE	8.0	300.0
229.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	7.0	308.0
222.0	CARBONDALE		SHALE	2.0	315.0
220.0	CARBONDALE	BRERETON	LIMESTONE	5.0	317.0
215.0	CARBONDALE	ANNA	SHALE	3.0	322.0
212.0	CARBONDALE	HERRIN	COAL	5.0	325.0

MAPID: 18901629000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 19 QUARTERS/FOOTAGES: 330' N line, 330' E line of SE NE

QUADRANGLE: ASHLEY LONGITUDE: -89.241016 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.253992 DATE COLLECTED:

SURFACE ELEVATION (FT.): 531.0 LOGGED (FT.): 1166.0 LOG TYPE: Electric Log

SOURCE: DORAN THOMAS S WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
181.0	CARBONDALE	SPRINGFIELD	COAL	-	350.0
79.0	CARBONDALE	COLCHESTER	COAL	-	452.0
-635.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1166.0

MAPID: 18901638000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 20 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: TAMAROA LONGITUDE: -89.23884 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.246627 DATE COLLECTED:

SURFACE ELEVATION (FT.): 527.0 LOGGED (FT.): 327.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
251.0	MODESTO	PIASA	LIMESTONE	3.0	276.0
248.0	MODESTO		SHALE	2.0	279.0
246.0	CARBONDALE	DANVILLE	BONE COAL	2.0	281.0
244.0	CARBONDALE		SHALE	7.0	283.0
237.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	290.0
233.0	CARBONDALE	LAWSON	SHALE	10.0	294.0
223.0	CARBONDALE	CONANT	LIMESTONE	2.0	304.0
221.0	CARBONDALE		LIMESTONE W/ SHALE	5.0	306.0
216.0	CARBONDALE	BRERETON	LIMESTONE	6.0	311.0
210.0	CARBONDALE	ANNA	BLACK SHALE	3.0	317.0
207.0	CARBONDALE	HERRIN	COAL	7.0	320.0

MAPID: 18901639000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 20 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NW NW

QUADRANGLE: ASHLEY LONGITUDE: -89.238621 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.255812 DATE COLLECTED:

SURFACE ELEVATION (FT.): 545.0 LOGGED (FT.): 2980.0 LOG TYPE: Electric Log

SOURCE: LESTER JOHN L WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
185.0	CARBONDALE	SPRINGFIELD	COAL	-	360.0	
83.0	CARBONDALE	COLCHESTER	COAL	-	462.0	
-640.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1185.0	
-2389.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2934.0	TOP OF NEW ALBANY
-2389.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2934.0	
-2435.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2980.0	BASE OF NEW ALBANY

MAPID: 18901931000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 21 QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.207545 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.251444 DATE COLLECTED:

SURFACE ELEVATION (FT.): 529.0 LOGGED (FT.): 1241.0 LOG TYPE: Electric Log

SOURCE: HOFFMAN, GEORGE A. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
171.0	CARBONDALE	SPRINGFIELD	COAL	-	358.0	
58.0	CARBONDALE	COLCHESTER	COAL	-	471.0	
-712.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1241.0	

MAPID: 18901931000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 21 QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: ASHLEY LONGITUDE: -89.207545 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.251444 DATE COLLECTED:

SURFACE ELEVATION (FT.): 529.0 LOGGED (FT.): 325.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
209.0	CARBONDALE	HERRIN	COAL	5.0	320.0	

MAPID: 18901109000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 23 QUARTERS/FOOTAGES: NE NE NE

QUADRANGLE: ASHLEY LONGITUDE: -89.165963 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.256002 DATE COLLECTED: 7 / 0 / 1953

SURFACE ELEVATION (FT.): 518.0 LOGGED (FT.): 513.0 LOG TYPE: Electric Log

SOURCE: OHIO OIL CO., THE WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
198.0	MODESTO	PIASA	UNCLASSIFIED	-	320.0	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
48.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	470.0	
5.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	513.0	

MAPID: 18901109000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 23 QUARTERS/FOOTAGES: NE NE NE

QUADRANGLE: ASHLEY LONGITUDE: -89.165963 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.256002 DATE COLLECTED:

SURFACE ELEVATION (FT.): 518.0 LOGGED (FT.): 394.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
198.0	MODESTO	PIASA	LIMESTONE	3.0	320.0	
195.0	MODESTO		SHALE	1.0	323.0	
194.0	CARBONDALE	DANVILLE	BONE COAL	2.0	324.0	
192.0	CARBONDALE	LAWSON	SHALE	13.0	326.0	
179.0	CARBONDALE	CONANT	LIMESTONE	2.0	339.0	
177.0	CARBONDALE		SHALE	3.0	341.0	
174.0	CARBONDALE	BRERETON	LIMESTONE	5.0	344.0	
169.0	CARBONDALE	ANNA	SHALE	5.0	349.0	
164.0	CARBONDALE	ENERGY	GRAY SHALE	40.0	354.0	

MAPID: 18924321000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 23 **QUARTERS/FOOTAGES:** 660' S line, 330' E line of SW SE
QUADRANGLE: TAMAROA **LONGITUDE:** -89.170587 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.244208 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 520.0 **LOGGED (FT.):** 3171.0 **LOG TYPE:** Electric Log
SOURCE: GOULD, WILBURN J. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-814.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1334.0	
-2599.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3119.0	TOP OF NEW ALBANY
-2599.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3119.0	
-2651.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3171.0	BASE OF NEW ALBANY

MAPID: 18902023000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 24 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: ASHLEY **LONGITUDE:** -89.148017 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.255792 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 523.0 **LOGGED (FT.):** 369.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
215.0	MODESTO	PIASA	LIMESTONE	1.0	308.0	
214.0	CARBONDALE	ENERGY	GRAY SHALE	60.0	309.0	

MAPID: 18924311000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 1W **SECTION:** 25 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of SE NE
QUADRANGLE: TAMAROA **LONGITUDE:** -89.148293 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.237453 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 513.0 **LOGGED (FT.):** 1742.0 **LOG TYPE:** Electric Log
SOURCE: WOOD ENERGY, INC. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-1229.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1742.0	

MAPID: 18902594000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' W line of NW

QUADRANGLE: TAMAROA LONGITUDE: -89.199779

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.237452

DATE COLLECTED:

SURFACE ELEVATION (FT.): 475.0

LOGGED (FT.): 240.8

LOG TYPE: Survey Core Study

SOURCE: ATLANTIC RICHFIELD 1

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
257.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	217.4	
253.6	CARBONDALE	LAWSON	CALCAREOUS SHALE	6.4	221.4	
247.2	CARBONDALE		CALCAREOUS SHALE	0.3	227.8	
246.9	CARBONDALE	BRERETON	LIMESTONE	4.3	228.1	
242.6	CARBONDALE	ANNA	BLACK SHALE	2.6	232.4	
240.0	CARBONDALE	HERRIN	COAL	5.8	235.0	

MAPID: 18923041000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 27 QUARTERS/FOOTAGES: 330' S line, 600' W line of SE SW

QUADRANGLE: TAMAROA LONGITUDE: -89.195765

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.229134

DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.0

LOGGED (FT.): 2927.0

LOG TYPE: Electric Log

SOURCE: JUNIPER PETROLEUM CORP.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
207.0	CARBONDALE	SPRINGFIELD	COAL	-	261.0	
94.0	CARBONDALE	COLCHESTER	COAL	-	374.0	
-659.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1127.0	
-2413.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2881.0	TOP OF NEW ALBANY
-2413.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2881.0	
-2459.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2927.0	BASE OF NEW ALBANY

MAPID: 18900185000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 28 QUARTERS/FOOTAGES: 307' N line, 399' W line of SE

QUADRANGLE: TAMAROA LONGITUDE: -89.210486 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.235014 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 2960.0 LOG TYPE: Electric Log

SOURCE: PUGH, JOHN DRLG. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
192.0	CARBONDALE	SPRINGFIELD	COAL	-	328.0	
102.0	CARBONDALE	COLCHESTER	COAL	-	418.0	
-672.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1192.0	
-2390.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2910.0	TOP OF NEW ALBANY
-2390.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2910.0	
-2440.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2960.0	BASE OF NEW ALBANY

MAPID: 18900185000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 28 QUARTERS/FOOTAGES: 307' N line, 399' W line of SE

QUADRANGLE: TAMAROA LONGITUDE: -89.210486 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.235014 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 300.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
260.0	MODESTO	PIASA	LIMESTONE	5.0	260.0	
255.0	CARBONDALE		SHALE	5.0	265.0	
250.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	270.0	
242.0	CARBONDALE		SHALE	5.0	278.0	
237.0	CARBONDALE	BRERETON	LIMESTONE	7.0	283.0	
230.0	CARBONDALE	ANNA	SHALE	5.0	290.0	
225.0	CARBONDALE	HERRIN	COAL	5.0	295.0	

MAPID: 18900439000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 29 QUARTERS/FOOTAGES: NW SE NE

QUADRANGLE: TAMAROA LONGITUDE: -89.224972 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.239075 DATE COLLECTED: 6 / 0 / 1946

SURFACE ELEVATION (FT.): 539.0 LOGGED (FT.): 436.0 LOG TYPE: Electric Log

SOURCE: FRYER & SIMPSON DRLG WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
267.0	MODESTO	PIASA	UNCLASSIFIED	-	272.0	
225.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	314.0	
201.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	338.0	THIN OR ABSENT
139.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	400.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
103.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	436.0	

MAPID: 18900439000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 29 QUARTERS/FOOTAGES: NW SE NE

QUADRANGLE: TAMAROA LONGITUDE: -89.224972 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.239075 DATE COLLECTED:

SURFACE ELEVATION (FT.): 543.0 LOGGED (FT.): 320.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
269.0	MODESTO	PIASA	LIMESTONE	5.0	274.0	
264.0	CARBONDALE		SHALE	7.0	279.0	
257.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	286.0	
253.0	CARBONDALE	LAWSON	SHALE	10.0	290.0	
243.0	CARBONDALE	CONANT	LIMESTONE	2.0	300.0	
241.0	CARBONDALE		CALCAREOUS SHALE	6.0	302.0	
235.0	CARBONDALE	BRERETON	LIMESTONE	4.0	308.0	
231.0	CARBONDALE	ANNA	SHALE	3.0	312.0	
228.0	CARBONDALE	HERRIN	COAL	5.0	315.0	

MAPID: 18901031000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 31 QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.257632

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.226142

DATE COLLECTED:

SURFACE ELEVATION (FT.): 525.0

LOGGED (FT.): 318.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
260.0	MODESTO	PIASA	LIMESTONE	6.0	265.0
254.0	MODESTO		SHALE	1.0	271.0
253.0	CARBONDALE	DANVILLE	BONE COAL	2.0	272.0
251.0	CARBONDALE		SHALE	7.0	274.0
244.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	281.0
239.0	CARBONDALE	LAWSON	SHALE	7.0	286.0
232.0	CARBONDALE	CONANT	LIMESTONE	3.0	293.0
229.0	CARBONDALE		SHALE	3.0	296.0
226.0	CARBONDALE	BRERETON	LIMESTONE	2.0	299.0
224.0	CARBONDALE	ANNA	SHALE	9.0	301.0
215.0	CARBONDALE	HERRIN	COAL	8.0	310.0

MAPID: 18901058000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 31 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.257643

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.226123

DATE COLLECTED:

SURFACE ELEVATION (FT.): 525.0

LOGGED (FT.): 1213.0

LOG TYPE: Electric Log

SOURCE: WILLS DONALD L

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
187.0	CARBONDALE	SPRINGFIELD	COAL	-	338.0
93.0	CARBONDALE	COLCHESTER	COAL	-	432.0
-688.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1213.0

MAPID: 18901058000C VERSION: 2

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 31 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.257643 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.226123 DATE COLLECTED: 10 / 0 / 1958

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 434.0 LOG TYPE: Electric Log

SOURCE: WILLS DONALD L WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
264.0	MODESTO	PIASA	UNCLASSIFIED	-	261.0
215.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	310.0
196.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	329.0
130.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	395.0
91.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	434.0

MAPID: 18901648000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 32 QUARTERS/FOOTAGES: NE NW NW

QUADRANGLE: TAMAROA LONGITUDE: -89.236647 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.228145 DATE COLLECTED:

SURFACE ELEVATION (FT.): 541.0 LOGGED (FT.): 1212.0 LOG TYPE: Electric Log

SOURCE: SUPERIOR OIL COMPANY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
182.0	CARBONDALE	SPRINGFIELD	COAL	-	359.0
96.0	CARBONDALE	COLCHESTER	COAL	-	445.0
-671.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1212.0

MAPID: 18901648000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 32 QUARTERS/FOOTAGES: NE NW NW

QUADRANGLE: TAMAROA LONGITUDE: -89.236647 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.228145 DATE COLLECTED:

SURFACE ELEVATION (FT.): 538.0 LOGGED (FT.): 336.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
257.0	MODESTO	PIASA	LIMESTONE	7.0	281.0
250.0	CARBONDALE		SHALE	8.0	288.0
242.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	296.0
237.0	CARBONDALE	LAWSON	SHALE	9.0	301.0
228.0	CARBONDALE	CONANT	LIMESTONE	5.0	310.0
223.0	CARBONDALE		CALCAREOUS SHALE	5.0	315.0
218.0	CARBONDALE	BRERETON	LIMESTONE	6.0	320.0
212.0	CARBONDALE	ANNA	BLACK SHALE	4.0	326.0
208.0	CARBONDALE	HERRIN	COAL	6.0	330.0

MAPID: 18900303000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 33 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: TAMAROA LONGITUDE: -89.220543 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.216826 DATE COLLECTED:

SURFACE ELEVATION (FT.): 532.0 LOGGED (FT.): 287.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
294.0	MODESTO	PIASA	LIMESTONE	4.0	238.0
290.0	CARBONDALE		SHALE	8.0	242.0
282.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	250.0
280.0	CARBONDALE	LAWSON	SHALE	6.0	252.0
274.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	10.0	258.0
264.0	CARBONDALE		SHALE	4.0	268.0
260.0	CARBONDALE	BRERETON	LIMESTONE	8.0	272.0
252.0	CARBONDALE	ANNA	BLACK SHALE	2.0	280.0
250.0	CARBONDALE	HERRIN	COAL	5.0	282.0

MAPID: 18901112000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 33 QUARTERS/FOOTAGES: 330' S line, 350' E line of NE NW

QUADRANGLE: TAMAROA LONGITUDE: -89.213386 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.225889 DATE COLLECTED:

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 2952.0 LOG TYPE: Electric Log

SOURCE: BALDRIDGE OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
109.0	CARBONDALE	COLCHESTER	COAL	-	416.0	
-641.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1166.0	
-2377.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2902.0	TOP OF NEW ALBANY
-2377.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2902.0	
-2427.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2952.0	BASE OF NEW ALBANY

MAPID: 18901111000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 34 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: TAMAROA LONGITUDE: -89.187312 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.22526 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 1152.0 LOG TYPE: Electric Log

SOURCE: SELF, EDDIE M. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
157.0	CARBONDALE	SPRINGFIELD	COAL	-	306.0	
72.0	CARBONDALE	COLCHESTER	COAL	-	391.0	
-689.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1152.0	

MAPID: 18901111000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 1W SECTION: 34 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: TAMAROA LONGITUDE: -89.187312 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.22526 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 276.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
229.0	MODESTO	PIASA	LIMESTONE	4.0	234.0
225.0	CARBONDALE		SHALE	6.0	238.0
219.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	244.0
217.0	CARBONDALE	LAWSON	SHALE	7.0	246.0
210.0	CARBONDALE	CONANT	LIMESTONE	6.0	253.0
204.0	CARBONDALE		SHALE	3.0	259.0
201.0	CARBONDALE	BRERETON	LIMESTONE	6.0	262.0
195.0	CARBONDALE	ANNA	BLACK SHALE	2.0	268.0
193.0	CARBONDALE	HERRIN	COAL	6.0	270.0

MAPID: 18900304000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 1 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.266107 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.288528 DATE COLLECTED:

SURFACE ELEVATION (FT.): 533.0 LOGGED (FT.): 1206.0 LOG TYPE: Electric Log

SOURCE: FALCON SEABOARD DRLG WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
123.0	CARBONDALE	SPRINGFIELD	COAL	-	410.0
48.0	CARBONDALE	COLCHESTER	COAL	-	485.0
-673.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1206.0

MAPID: 1890236000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 1 QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.261371

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.288458

DATE COLLECTED:

SURFACE ELEVATION (FT.): 540.0

LOGGED (FT.): 391.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
208.0	MODESTO	PIASA	LIMESTONE	5.0	332.0
203.0	MODESTO		SHALE	4.0	337.0
199.0	CARBONDALE	DANVILLE	BONE COAL	1.0	341.0
198.0	CARBONDALE		SHALE	8.0	342.0
190.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	350.0
184.0	CARBONDALE	LAWSON	SHALE	7.0	356.0
177.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	363.0
175.0	CARBONDALE		CALCAREOUS SHALE	9.0	365.0
166.0	CARBONDALE	BRERETON	LIMESTONE	7.0	374.0
159.0	CARBONDALE	ANNA	BLACK SHALE	3.0	381.0
156.0	CARBONDALE	HERRIN	COAL	7.0	384.0

MAPID: 18900568000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 2 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.282228

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.29947

DATE COLLECTED:

SURFACE ELEVATION (FT.): 509.0

LOGGED (FT.): 1231.0

LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
91.0	CARBONDALE	SPRINGFIELD	COAL	-	418.0
-31.0	CARBONDALE	COLCHESTER	COAL	-	540.0
-722.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1231.0

MAPID: 18900610000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 2 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.277685

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.295856

DATE COLLECTED:

SURFACE ELEVATION (FT.): 513.0

LOGGED (FT.): 418.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
160.0	MODESTO	PIASA	LIMESTONE	10.0	353.0	
150.0	CARBONDALE		SHALE	13.0	363.0	
137.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	376.0	
131.0	CARBONDALE	LAWSON	SHALE	6.0	382.0	
125.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	388.0	
123.0	CARBONDALE		SHALE	7.0	390.0	
116.0	CARBONDALE	BRERETON	LIMESTONE	7.0	397.0	
109.0	CARBONDALE	ANNA	BLACK SHALE	6.0	404.0	
103.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	8.0	410.0	

MAPID: 18901654000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 3 QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.307853

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.297633

DATE COLLECTED: 10 / 0 / 1952

SURFACE ELEVATION (FT.): 549.0

LOGGED (FT.): 9999.9

LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18901654000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 3 QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.307853

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.297633

DATE COLLECTED:

SURFACE ELEVATION (FT.): 549.0

LOGGED (FT.): 470.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
173.0	MODESTO	PIASA	LIMESTONE	9.0	376.0
164.0	MODESTO		SHALE	3.0	385.0
161.0	CARBONDALE	DANVILLE	BONE COAL	2.0	388.0
159.0	CARBONDALE		SHALE	5.0	390.0
154.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	395.0
149.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	400.0
147.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	402.0
145.0	CARBONDALE	LAWSON	SILTY SHALE	43.0	404.0
102.0	CARBONDALE	CONANT	LIMESTONE & SHALE	4.0	447.0
98.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	451.0
96.0	CARBONDALE	BRERETON	LIMESTONE	8.0	453.0
88.0	CARBONDALE	ANNA	BLACK SHALE	3.0	461.0
85.0	CARBONDALE	HERRIN	COAL	6.0	464.0

MAPID: 18900536000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 4 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.324457

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.294032

DATE COLLECTED:

SURFACE ELEVATION (FT.): 514.0

LOGGED (FT.): 1213.0

LOG TYPE: Electric Log

SOURCE: OBERING ERNEST A

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
44.0	CARBONDALE	COLCHESTER	COAL	-	470.0
-699.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1213.0

MAPID: 18900536000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 4 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.324457

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.294032

DATE COLLECTED:

SURFACE ELEVATION (FT.): 514.0

LOGGED (FT.): 431.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
271.0	MODESTO	PIASA	LIMESTONE	7.0	243.0
264.0	MODESTO		SHALE	4.0	250.0
260.0	CARBONDALE	DANVILLE	BONE COAL	2.0	254.0
258.0	CARBONDALE	ANNA	SHALE	5.0	256.0
253.0	CARBONDALE	ENERGY	SILTY SHALE	80.0	261.0
173.0	CARBONDALE	ENERGY	SHALE & SANDSTONE	86.0	341.0
87.0	CARBONDALE	HOUCHIN CREEK	COAL	4.0	427.0

MAPID: 18900160000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 6 QUARTERS/FOOTAGES: 150' S line, 150' E line of NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.361653

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.295455

DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.0

LOGGED (FT.): 404.0

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
156.0	MODESTO	PIASA	LIMESTONE	6.0	354.0
150.0	CARBONDALE	DANVILLE	COAL	2.0	360.0
148.0	CARBONDALE	LAWSON	SILTY SHALE	38.0	362.0
110.0	CARBONDALE	HERRIN	COAL	4.0	400.0

MAPID: 18923739000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 6 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.359974

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.294108

DATE COLLECTED:

SURFACE ELEVATION (FT.): 514.0

LOGGED (FT.): 1194.0

LOG TYPE: Electric Log

SOURCE: SHERMAN, ERNEST

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-680.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1194.0

MAPID: 18901114000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 7 QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.357327

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.286872

DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.0

LOGGED (FT.): 532.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
213.0	MODESTO	PIASA	LIMESTONE	8.0	297.0	
205.0	CARBONDALE		SHALE	9.0	305.0	
196.0	CARBONDALE	GALUM	LIMESTONE	4.0	314.0	
192.0	CARBONDALE		SHALE	5.0	318.0	
187.0	CARBONDALE	BANKSTON FORK	LIMESTONE	9.0	323.0	
178.0	CARBONDALE	LAWSON	DARK GRAY SHALE	5.0	332.0	
173.0	CARBONDALE	LAWSON	SILTY SHALE	65.0	337.0	
108.0	CARBONDALE	LAWSON	CARBONACEOUS SANDSTONE	30.0	402.0	

MAPID: 18923730000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 7 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.367467

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.281401

DATE COLLECTED:

SURFACE ELEVATION (FT.): 501.0

LOGGED (FT.): 2883.0

LOG TYPE: Electric Log

SOURCE: SHERMAN, ERNEST

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-642.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1143.0	
-2354.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2855.0	TOP OF NEW ALBANY
-2356.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2857.0	
-2382.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2883.0	BASE OF NEW ALBANY

MAPID: 18901115000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 8 QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.338594

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.286922

DATE COLLECTED:

SURFACE ELEVATION (FT.): 504.0

LOGGED (FT.): 1185.0

LOG TYPE: Electric Log

SOURCE: HORTON, LEO V., ETAL

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
39.0	CARBONDALE	COLCHESTER	COAL	-	465.0	
-681.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1185.0	

MAPID: 18901115000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 8 QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.338594

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.286922

DATE COLLECTED:

SURFACE ELEVATION (FT.): 504.0

LOGGED (FT.): 434.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
244.0	MODESTO	PIASA	LIMESTONE AND SANDSTONE	4.0	260.0
240.0	CARBONDALE	LAWSON	SANDSTONE	25.0	264.0
215.0	CARBONDALE	LAWSON	SILTY SHALE	10.0	289.0
205.0	CARBONDALE	LAWSON	CARBONACEOUS SANDSTONE	10.0	299.0
195.0	CARBONDALE	LAWSON	SANDSTONE	40.0	309.0

MAPID: 18900393000C VERSION: 1

PROJECT: CONTROL

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 9 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.32935

GEOLOGIST: HINES

CONFIDENTIAL: N LATITUDE: 38.281315

DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 1379.0

LOG TYPE: Survey Sample Study

SOURCE: IDEAL DRLG. CO., INC.

WELL TYPE: Oil and Gas Test

COMMENT: OILWELLS LOGGED BY COAL SECT-LOGS IN GRU

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			NO RECORD	0.0	0.0

MAPID: 18900858000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 9 QUARTERS/FOOTAGES: 330' N line, 350' E line of NW SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.329417

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.279493

DATE COLLECTED:

SURFACE ELEVATION (FT.): 513.0 LOGGED (FT.): 322.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
288.0	MODESTO	PIASA	LIMESTONE	4.5	225.0
283.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	229.5
279.0	CARBONDALE	BANKSTON FORK	SHALE	3.5	234.0
275.5	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	2.0	237.5
273.5	CARBONDALE	LAWSON	SANDSTONE/SILTSTONE	69.0	239.5
204.5	CARBONDALE	BRERETON	CALCAREOUS SHALE	10.5	308.5
194.0	CARBONDALE	ANNA	SHALE	1.0	319.0
193.0	CARBONDALE	HERRIN	BONE COAL	2.0	320.0

MAPID: 18901656000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 9 QUARTERS/FOOTAGES: 330' N line, 330' W line of NE SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.327036 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.279478 DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 2906.0 LOG TYPE: Electric Log

SOURCE: OBERING ERNEST A WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
165.0	CARBONDALE	SPRINGFIELD	COAL	-	350.0	
62.0	CARBONDALE	COLCHESTER	COAL	-	453.0	
-656.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1171.0	
-2363.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2878.0	TOP OF NEW ALBANY
-2365.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2880.0	
-2391.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2906.0	BASE OF NEW ALBANY

MAPID: 18902599000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 10 QUARTERS/FOOTAGES: 0' S line, 1320' W line

QUADRANGLE: BEAUCOUP LONGITUDE: -89.309363 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.272982 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 319.5 LOG TYPE: Survey Core Study

SOURCE: ATLANTIC RICHFIELD 2 WELL TYPE: Coal Test

COMMENT: ORIGINAL LOG MISSING AS OF 6/2012

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
216.6	CARBONDALE		SHALE	7.0	283.4	
209.6	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	8.0	290.4	
201.6	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	8.8	298.4	
192.7	CARBONDALE	ANNA	BLACK SHALE	1.8	307.3	
191.0	CARBONDALE	HERRIN	COAL	10.5	309.0	

MAPID: 18924352000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 10 QUARTERS/FOOTAGES: 395' N line, 265' E line of SW SW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.310336 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.275559 DATE COLLECTED:

SURFACE ELEVATION (FT.): 479.0 LOGGED (FT.): 2879.0 LOG TYPE: Electric Log

SOURCE: FARRAR OIL CO., INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
130.0	CARBONDALE	SPRINGFIELD	COAL	-	349.0	
24.0	CARBONDALE	COLCHESTER	COAL	-	455.0	
-641.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1120.0	
-2370.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2849.0	TOP OF NEW ALBANY
-2372.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2851.0	
-2400.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2879.0	BASE OF NEW ALBANY

MAPID: 18901116000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 11 QUARTERS/FOOTAGES: SW SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.280344 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.281155 DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.0 LOGGED (FT.): 359.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
211.0	MODESTO	PIASA	LIMESTONE	6.0	296.0	
205.0	MODESTO		SHALE	3.0	302.0	
202.0	CARBONDALE	DANVILLE	BONE COAL	1.0	305.0	
201.0	CARBONDALE		SHALE	8.0	306.0	
193.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	314.0	
190.5	CARBONDALE	BANKSTON FORK	SHALE	0.5	316.5	
190.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	317.0	
186.0	CARBONDALE	LAWSON	SHALE	7.0	321.0	
179.0	CARBONDALE	JAMESTOWN	COAL	2.0	328.0	
177.0	CARBONDALE		CALCAREOUS SHALE	10.0	330.0	
167.0	CARBONDALE	BRERETON	LIMESTONE	8.0	340.0	
159.0	CARBONDALE	ANNA	BLACK SHALE	2.0	348.0	
157.0	CARBONDALE	HERRIN	COAL	9.0	350.0	

MAPID: 18901657000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 12 QUARTERS/FOOTAGES: NW SW SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.266227

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.275498

DATE COLLECTED:

SURFACE ELEVATION (FT.): 525.0

LOGGED (FT.): 331.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
251.0	MODESTO	PIASA	LIMESTONE	4.5	274.0
246.5	MODESTO		SHALE	6.0	278.5
240.5	CARBONDALE	DANVILLE	BONE COAL	0.5	284.5
240.0	CARBONDALE		SHALE	5.0	285.0
235.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	290.0
232.5	CARBONDALE	BANKSTON FORK	SHALE	0.5	292.5
232.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	293.0
227.0	CARBONDALE	LAWSON	SHALE	7.0	298.0
220.0	CARBONDALE	JAMESTOWN	COAL	2.0	305.0
218.0	CARBONDALE		CALCAREOUS SHALE	9.0	307.0
209.0	CARBONDALE	BRERETON	LIMESTONE	8.0	316.0
201.0	CARBONDALE	ANNA	BLACK SHALE	1.0	324.0
201.0	CARBONDALE	HERRIN	COAL	7.0	324.0

MAPID: 18901658000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 12 QUARTERS/FOOTAGES: 330' N line, 330' E line

QUADRANGLE: BEAUCOUP LONGITUDE: -89.259003

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.2866

DATE COLLECTED:

SURFACE ELEVATION (FT.): 546.0

LOGGED (FT.): 1223.0

LOG TYPE: Electric Log

SOURCE: SCHUMACHER, L & TAYLOR B

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
142.0	CARBONDALE	SPRINGFIELD	COAL	-	404.0
58.0	CARBONDALE	COLCHESTER	COAL	-	488.0
-677.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1223.0

MAPID: 18900916000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 13 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.268771

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.266307

DATE COLLECTED:

SURFACE ELEVATION (FT.): 517.0

LOGGED (FT.): 300.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
273.0	MODESTO	PIASA	LIMESTONE	9.0	244.0	
264.0	CARBONDALE		SHALE	9.0	253.0	
255.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.8	262.0	
253.2	CARBONDALE	BANKSTON FORK	SHALE	1.8	263.8	
251.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	265.5	
249.0	CARBONDALE	LAWSON	SHALE	8.0	268.0	
241.0	CARBONDALE	CONANT	LIMESTONE	3.0	276.0	
238.0	CARBONDALE		SHALE	3.0	279.0	
235.0	CARBONDALE	BRERETON	LIMESTONE	8.0	282.0	
227.0	CARBONDALE	ANNA	BLACK SHALE	3.0	290.0	
224.0	CARBONDALE	HERRIN	COAL	7.0	293.0	

MAPID: 18901659000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 13 QUARTERS/FOOTAGES: 330' N line, 330' E line of SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.25918

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.26822

DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0

LOGGED (FT.): 2926.0

LOG TYPE: Electric Log

SOURCE: DORAN THOMAS S

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
175.0	CARBONDALE	SPRINGFIELD	COAL	-	322.0	
88.0	CARBONDALE	COLCHESTER	COAL	-	409.0	
-619.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1116.0	
-2383.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2880.0	TOP OF NEW ALBANY
-2386.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2883.0	
-2429.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2926.0	BASE OF NEW ALBANY

MAPID: 18900443000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 14 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.287585 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.266486 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 1160.0 LOG TYPE: Electric Log

SOURCE: HINKLE J FRANK WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
193.0	CARBONDALE	SPRINGFIELD	COAL	-	302.0	
101.0	CARBONDALE	COLCHESTER	COAL	-	394.0	
-665.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1160.0	

MAPID: 18900443000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 14 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.287585 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.266486 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 286.5 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
265.0	MODESTO	PIASA	LIMESTONE	10.0	230.0	
255.0	CARBONDALE		SHALE	8.0	240.0	
247.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	248.0	
240.0	CARBONDALE	LAWSON	SHALE	7.0	255.0	
233.0	CARBONDALE	CONANT	LIMESTONE & SHALE	4.0	262.0	
229.0	CARBONDALE		SHALE	4.0	266.0	
225.0	CARBONDALE	BRERETON	LIMESTONE	8.0	270.0	
217.0	CARBONDALE	ANNA	BLACK SHALE	2.0	278.0	
215.0	CARBONDALE	HERRIN	COAL	6.5	280.0	

MAPID: 18900685000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 15 QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.29921 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.262998 DATE COLLECTED: 6 / 0 / 1956

SURFACE ELEVATION (FT.): 488.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: ZICOS, GEORGE WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18900685000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 15 QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.29921 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.262998 DATE COLLECTED:

SURFACE ELEVATION (FT.): 488.0 LOGGED (FT.): 288.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
256.0	MODESTO	PIASA	LIMESTONE	5.0	232.0	
251.0	MODESTO		SHALE	4.0	237.0	
247.0	CARBONDALE	DANVILLE	BONE COAL	1.0	241.0	
246.0	CARBONDALE		SHALE	6.0	242.0	
240.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	248.0	
238.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	250.0	
236.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	252.0	
232.0	CARBONDALE	LAWSON	SHALE	9.0	256.0	
223.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	265.0	
222.0	CARBONDALE		SHALE	2.0	266.0	
220.0	CARBONDALE	BRERETON	LIMESTONE	8.0	268.0	
212.0	CARBONDALE	ANNA	BLACK SHALE	2.0	276.0	
210.0	CARBONDALE	HERRIN	COAL	10.0	278.0	

MAPID: 18901663000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 15 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.31288 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.268397 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 2904.0 LOG TYPE: Electric Log

SOURCE: OBERING ERNEST A WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
177.0	CARBONDALE	SPRINGFIELD	COAL	-	323.0	
80.0	CARBONDALE	COLCHESTER	COAL	-	420.0	
-650.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1150.0	
-2374.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2874.0	TOP OF NEW ALBANY
-2376.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2876.0	
-2404.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2904.0	BASE OF NEW ALBANY

MAPID: 18900905000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 17 QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.340799 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.262696 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 1153.0 LOG TYPE: Electric Log

SOURCE: HOPKINS, DALE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
170.0	CARBONDALE	SPRINGFIELD	COAL	-	330.0
78.0	CARBONDALE	COLCHESTER	COAL	-	422.0
-653.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1153.0

MAPID: 18900905000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 17 QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.340799 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.262696 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 306.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
310.0	MODESTO	PIASA	CALCAREOUS SANDSTONE	5.0	190.0
305.0	CARBONDALE	LAWSON	SILTY SHALE	70.0	195.0
235.0	CARBONDALE	ENERGY	SILTY SHALE	40.0	265.0
195.0	CARBONDALE	HERRIN	BONE COAL	1.0	305.0

MAPID: 18900571000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 18 QUARTERS/FOOTAGES: NE SW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.357269 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.268347 DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 1146.0 LOG TYPE: Electric Log

SOURCE: INLAND OIL CO WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
79.0	CARBONDALE	COLCHESTER	COAL	-	404.0
-663.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1146.0

MAPID: 18900571000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 18 QUARTERS/FOOTAGES: NE SW NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.357269 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.268347 DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 325.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
265.0	MODESTO	PIASA	LIMESTONE	7.0	218.0
258.0	CARBONDALE	LAWSON	SHALE & SANDSTONE	100.0	225.0

MAPID: 18900306000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 20 QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.333983 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.249835 DATE COLLECTED:

SURFACE ELEVATION (FT.): 491.0 LOGGED (FT.): 1128.0 LOG TYPE: Electric Log

SOURCE: BROUK, JAMES A. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
201.0	CARBONDALE	SPRINGFIELD	COAL	-	290.0
109.0	CARBONDALE	COLCHESTER	COAL	-	382.0
-637.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1128.0

MAPID: 18900306000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 20 QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.333983 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.249835 DATE COLLECTED:

SURFACE ELEVATION (FT.): 491.0 LOGGED (FT.): 266.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
281.0	MODESTO	PIASA	LIMESTONE	6.0	210.0
275.0	CARBONDALE		SHALE	12.0	216.0
263.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	228.0
259.0	CARBONDALE	LAWSON	SHALE	4.0	232.0
255.0	CARBONDALE	CONANT	LIMESTONE	4.0	236.0
251.0	CARBONDALE		SHALE	10.0	240.0
241.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	10.0	250.0
231.0	CARBONDALE	ANNA	BLACK SHALE	2.0	260.0
229.0	CARBONDALE	HERRIN	COAL	4.0	262.0

MAPID: 18900436000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 21 QUARTERS/FOOTAGES: NW NE SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.317749

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.250004

DATE COLLECTED:

SURFACE ELEVATION (FT.): 479.0

LOGGED (FT.): 250.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
291.0	MODESTO	PIASA	LIMESTONE	6.0	188.0	
285.0	MODESTO		SHALE	5.0	194.0	
280.0	CARBONDALE	DANVILLE	BONE COAL	1.0	199.0	
279.0	CARBONDALE		SHALE	5.0	200.0	
274.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	205.0	
271.5	CARBONDALE	BANKSTON FORK	SHALE	0.5	207.5	
271.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	208.0	
267.0	CARBONDALE	LAWSON	SHALE	4.0	212.0	
263.0	CARBONDALE	CONANT	LIMESTONE	4.0	216.0	
259.0	CARBONDALE		SHALE	6.0	220.0	
253.0	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	17.0	226.0	
236.0	CARBONDALE	ANNA	BLACK SHALE	1.0	243.0	
234.0	CARBONDALE	HERRIN	COAL	5.0	245.0	

MAPID: 18923857000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 21 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.324687

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.25176

DATE COLLECTED:

SURFACE ELEVATION (FT.): 499.0

LOGGED (FT.): 2850.0

LOG TYPE: Electric Log

SOURCE: SHOSHONE OIL CO.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-609.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1108.0	
-2321.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2820.0	TOP OF NEW ALBANY
-2321.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2820.0	
-2351.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2850.0	BASE OF NEW ALBANY

MAPID: 18901117000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 22 QUARTERS/FOOTAGES: NE SW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.310765 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.253753 DATE COLLECTED:

SURFACE ELEVATION (FT.): 454.0 LOGGED (FT.): 2812.0 LOG TYPE: Electric Log

SOURCE: OBERING ERNEST A WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
219.0	CARBONDALE	SPRINGFIELD	COAL	-	235.0	
126.0	CARBONDALE	COLCHESTER	COAL	-	328.0	
-622.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1076.0	
-2331.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2785.0	TOP OF NEW ALBANY
-2331.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2785.0	
-2358.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2812.0	BASE OF NEW ALBANY

MAPID: 18901117000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 22 QUARTERS/FOOTAGES: NE SW NW

QUADRANGLE: BEAUCOUP LONGITUDE: -89.310765 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.253753 DATE COLLECTED:

SURFACE ELEVATION (FT.): 454.0 LOGGED (FT.): 213.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
300.0	MODESTO	PIASA	LIMESTONE	7.0	154.0	
293.0	MODESTO		SHALE	1.0	161.0	
292.0	CARBONDALE	DANVILLE	BONE COAL	1.0	162.0	
291.0	CARBONDALE		SHALE	6.0	163.0	
285.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	169.0	
283.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	171.0	
280.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	174.0	
277.0	CARBONDALE	LAWSON	SHALE	6.0	177.0	
271.0	CARBONDALE	CONANT	LIMESTONE	2.0	183.0	
269.0	CARBONDALE		CALCAREOUS SHALE	13.0	185.0	
256.0	CARBONDALE	BRERETON	LIMESTONE	6.0	198.0	
250.0	CARBONDALE	ANNA	BLACK SHALE	2.0	204.0	
248.0	CARBONDALE	HERRIN	COAL	7.0	206.0	

MAPID: 18900603000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 23 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: TODDS MILL LONGITUDE: -89.294649

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.244427

DATE COLLECTED:

SURFACE ELEVATION (FT.): 481.0

LOGGED (FT.): 230.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
306.0	MODESTO	PIASA	LIMESTONE	5.0	175.0
301.0	CARBONDALE		SHALE	10.0	180.0
291.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	190.0
284.0	CARBONDALE	LAWSON	SHALE	6.0	197.0
278.0	CARBONDALE	CONANT	LIMESTONE	2.0	203.0
276.0	CARBONDALE		LIMESTONE W/ SHALE	11.0	205.0
265.0	CARBONDALE	BRERETON	LIMESTONE	6.0	216.0
259.0	CARBONDALE	ANNA	BLACK SHALE	2.0	222.0
257.0	CARBONDALE	HERRIN	COAL	6.0	224.0

MAPID: 18902598000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 24 QUARTERS/FOOTAGES: 0' S line, 0' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.258523

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.243239

DATE COLLECTED:

SURFACE ELEVATION (FT.): 465.0

LOGGED (FT.): 246.5

LOG TYPE: Survey Core Study

SOURCE: ATLANTIC RICHFIELD 6

WELL TYPE: Coal Test

COMMENT: ORIGINAL LOG MISSING AS OF 6/2012

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
227.5	CARBONDALE	ANNA	BLACK SHALE	2.5	237.5
225.0	CARBONDALE	HERRIN	COAL	6.5	240.0

MAPID: 18900735000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 25 QUARTERS/FOOTAGES: NE SW NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.273844 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.238982 DATE COLLECTED: 10 / 0 / 1956

SURFACE ELEVATION (FT.): 507.0 LOGGED (FT.): 422.0 LOG TYPE: Electric Log

SOURCE: TIPPS, SAM WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
252.0	MODESTO	PIASA	UNCLASSIFIED	-	255.0	
203.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	304.0	
187.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	320.0	POSSIBLE COAL HORIZON
121.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	386.0	
85.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	422.0	

MAPID: 18900735000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 25 QUARTERS/FOOTAGES: NE SW NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.273844 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.238982 DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.0 LOGGED (FT.): 312.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
252.0	MODESTO	PIASA	LIMESTONE	7.0	255.0	
245.0	CARBONDALE		SHALE	8.0	262.0	
237.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	270.0	
232.0	CARBONDALE	LAWSON	SHALE	10.0	275.0	
222.0	CARBONDALE		LIMESTONE W/ SHALE	13.0	285.0	
209.0	CARBONDALE	BRERETON	LIMESTONE	5.0	298.0	
204.0	CARBONDALE	ANNA	BLACK SHALE	2.0	303.0	
202.0	CARBONDALE	HERRIN	COAL	7.0	305.0	

MAPID: 18900735000C **VERSION:** 3 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 2W **SECTION:** 25 **QUARTERS/FOOTAGES:** NE SW NW
QUADRANGLE: TODDS MILL **LONGITUDE:** -89.273844 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.238982 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 507.0 **LOGGED (FT.):** 1179.0 **LOG TYPE:** Electric Log
SOURCE: TIPPS, SAM **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
177.0	CARBONDALE	SPRINGFIELD	COAL	-	330.0
84.0	CARBONDALE	COLCHESTER	COAL	-	423.0
-672.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1179.0

MAPID: 18900342000C **VERSION:** 1 **PROJECT:** CONTROL
COUNTY: WASHINGTON **TWP/RNG:** 3S 2W **SECTION:** 26 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of NW
QUADRANGLE: TODDS MILL **LONGITUDE:** -89.287698 **GEOLOGIST:** HINES
CONFIDENTIAL: N **LATITUDE:** 38.242642 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 1668.0 **LOG TYPE:** Survey Sample Study
SOURCE: TEXAS COMPANY, THE **WELL TYPE:** Oil and Gas Test
COMMENT: OILWELLS LOGGED BY COAL SECT-LOGS IN GRU

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			NO RECORD	0.0	0.0

MAPID: 18900511000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 3S 2W **SECTION:** 26 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: TODDS MILL **LONGITUDE:** -89.287882 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.231627 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 500.0 **LOGGED (FT.):** 264.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
295.0	MODESTO	PIASA	LIMESTONE	9.0	205.0
286.0	CARBONDALE		SHALE	11.0	214.0
275.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	225.0
270.0	CARBONDALE	LAWSON	SHALE	7.0	230.0
263.0	CARBONDALE		LIMESTONE W/ SHALE	14.0	237.0
249.0	CARBONDALE	BRERETON	LIMESTONE	5.0	251.0
244.0	CARBONDALE	ANNA	BLACK SHALE	2.0	256.0
242.0	CARBONDALE	HERRIN	COAL	6.0	258.0

MAPID: 18900532000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 27 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SW

QUADRANGLE: TODDS MILL LONGITUDE: -89.30809 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.229423 DATE COLLECTED:

SURFACE ELEVATION (FT.): 482.0 LOGGED (FT.): 1089.0 LOG TYPE: Electric Log

SOURCE: MAZZARINO, M. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
256.0	CARBONDALE	SPRINGFIELD	COAL	-	226.0	
166.0	CARBONDALE	COLCHESTER	COAL	-	316.0	
-607.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1089.0	

MAPID: 18900532000C VERSION: 2

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 27 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SW

QUADRANGLE: TODDS MILL LONGITUDE: -89.30809 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.229423 DATE COLLECTED: 7 / 0 / 1955

SURFACE ELEVATION (FT.): 482.0 LOGGED (FT.): 317.0 LOG TYPE: Electric Log

SOURCE: MAZZARINO, M. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
331.0	MODESTO	PIASA	UNCLASSIFIED	-	151.0	
274.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	208.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG
202.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	280.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
165.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	317.0	

MAPID: 18900637000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 27 QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.29708 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.235238 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 197.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
318.0	MODESTO	PIASA	LIMESTONE	11.0	135.0
307.0	CARBONDALE		SHALE	8.0	146.0
299.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	7.0	154.0
292.0	CARBONDALE	LAWSON	SHALE	9.0	161.0
283.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	170.0
282.0	CARBONDALE		LIMESTONE W/ SHALE	13.0	171.0
269.0	CARBONDALE	BRERETON	LIMESTONE	5.0	184.0
264.0	CARBONDALE	ANNA	BLACK SHALE	1.0	189.0
263.0	CARBONDALE	HERRIN	COAL	7.0	190.0

MAPID: 18901674000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 28 QUARTERS/FOOTAGES: 1370' N line, 35' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.314292 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.239814 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 232.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
352.0	MODESTO	PIASA	LIMESTONE	11.0	168.0
341.0	CARBONDALE		SHALE	10.0	179.0
331.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	189.0
323.0	CARBONDALE	LAWSON	SHALE	6.0	197.0
317.0	CARBONDALE	CONANT	LIMESTONE	4.0	203.0
313.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	207.0
311.0	CARBONDALE		SHALE	9.0	209.0
302.0	CARBONDALE	BRERETON	LIMESTONE	6.0	218.0
296.0	CARBONDALE	ANNA	BLACK SHALE	2.0	224.0
294.0	CARBONDALE	HERRIN	COAL	6.0	226.0

MAPID: 18900881000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 29 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.345487 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.236926 DATE COLLECTED:

SURFACE ELEVATION (FT.): 467.0 LOGGED (FT.): 1151.0 LOG TYPE: Electric Log

SOURCE: FARRAR DRILLING CO WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-684.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1151.0	

MAPID: 18900888000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 29 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.334076 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.22953 DATE COLLECTED: 8 / 0 / 1957

SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 389.0 LOG TYPE: Electric Log

SOURCE: LOBREE & LOBREE LISZ WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
260.0	MODESTO	PIASA	UNCLASSIFIED	-	211.0	
203.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	268.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
125.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	346.0	
82.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	389.0	

MAPID: 18900888000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 29 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.334076 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.22953 DATE COLLECTED:

SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 275.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
258.0	MODESTO	PIASA	LIMESTONE	9.0	213.0
249.0	MODESTO		SHALE	3.0	222.0
246.0	CARBONDALE	DANVILLE	BLACK SHALE	3.0	225.0
243.0	CARBONDALE		SHALE	3.0	228.0
240.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	231.0
237.0	CARBONDALE	BANKSTON FORK	SHALE	1.0	234.0
236.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	235.0
232.0	CARBONDALE	LAWSON	SHALE	7.0	239.0
225.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	8.0	246.0
217.0	CARBONDALE		SHALE	8.0	254.0
209.0	CARBONDALE	BRERETON	LIMESTONE	6.0	262.0
203.0	CARBONDALE	ANNA	BLACK SHALE	2.0	268.0
202.0	CARBONDALE	HERRIN	COAL	6.0	269.0

MAPID: 18901675000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 30 QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: TODDS MILL LONGITUDE: -89.357307 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.242573 DATE COLLECTED: 6 / 0 / 1953

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 411.0 LOG TYPE: Electric Log

SOURCE: HORTON, LEO V., ETAL WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
230.0	MODESTO	PIASA	UNCLASSIFIED	-	215.0
177.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	268.0
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	
85.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	360.0
34.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	411.0

MAPID: 18901675000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 30 QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: TODDS MILL LONGITUDE: -89.357307 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.242573 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 275.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
230.0	MODESTO	PIASA	LIMESTONE	6.0	215.0	
224.0	MODESTO		SHALE	4.0	221.0	
220.0	CARBONDALE	DANVILLE	BLACK SHALE	2.0	225.0	
218.0	CARBONDALE		SHALE	7.0	227.0	
211.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	234.0	
209.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	236.0	
207.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	238.0	
203.0	CARBONDALE	LAWSON	SHALE	7.0	242.0	
196.0	CARBONDALE	CONANT	LIMESTONE	2.0	249.0	
194.0	CARBONDALE		LIMESTONE W/ SHALE	10.0	251.0	
184.0	CARBONDALE	BRERETON	LIMESTONE	7.0	261.0	
177.0	CARBONDALE	ANNA	BLACK SHALE	2.0	268.0	
176.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	6.0	269.0	

MAPID: 18901675000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 30 QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: TODDS MILL LONGITUDE: -89.357307 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.242573 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 1115.0 LOG TYPE: Electric Log

SOURCE: HORTON, LEO V., ETAL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
162.0	CARBONDALE	SPRINGFIELD	COAL	-	283.0	
35.0	CARBONDALE	COLCHESTER	COAL	-	410.0	
-670.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1115.0	

MAPID: 18901118000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 32 QUARTERS/FOOTAGES: NE SW SW

QUADRANGLE: TODDS MILL LONGITUDE: -89.348222 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.216792 DATE COLLECTED:

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 242.0 LOG TYPE: Survey Core Study

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
301.0	MODESTO	PIASA	LIMESTONE	10.0	179.0	
291.0	CARBONDALE		SHALE	8.0	189.0	
283.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	197.0	
281.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	199.0	
278.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	202.0	
276.0	CARBONDALE	LAWSON	SHALE	8.0	204.0	
268.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	8.0	212.0	
260.0	CARBONDALE		SHALE	5.0	220.0	
255.0	CARBONDALE	BRERETON	LIMESTONE	6.0	225.0	
249.0	CARBONDALE	ANNA	SHALE	4.0	231.0	
245.0	CARBONDALE	HERRIN	COAL	7.0	235.0	

MAPID: 18901079000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 33 QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.331751 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.225783 DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 259.7 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 7509 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
270.0	MODESTO	PIASA	LIMESTONE	11.9	198.0	
258.1	CARBONDALE		SHALE	0.8	209.9	
257.3	CARBONDALE		MOTTLED SHALE	5.4	210.7	
251.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	216.1	UPPER BENCH
249.7	CARBONDALE	BANKSTON FORK	CLAYSTONE	1.4	218.3	SHALE PARTING
248.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	219.8	LOWER BENCH
244.2	CARBONDALE	LAWSON	SHALE	5.5	223.8	
238.7	CARBONDALE	CONANT	LIMESTONE W/ SHALE	12.0	229.3	
226.7	CARBONDALE		SILTY SHALE	7.0	241.3	
219.7	CARBONDALE	BRERETON	NODULAR LIMESTONE	4.3	248.3	
216.0	CARBONDALE	HERRIN	COAL	7.7	252.0	

MAPID: 18923835000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 33 QUARTERS/FOOTAGES: 330' N line, 330' E line of SW

QUADRANGLE: TODDS MILL LONGITUDE: -89.324688 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.220185 DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 2795.0 LOG TYPE: Electric Log

SOURCE: SHAKESPEARE OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-624.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1075.0	
-2319.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2770.0	TOP OF NEW ALBANY
-2319.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2770.0	
-2344.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2795.0	BASE OF NEW ALBANY

MAPID: 18901060000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 34 QUARTERS/FOOTAGES: 0' N line, 0' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.313507 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.228364 DATE COLLECTED: 12 / 0 / 1958

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 192.3 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 7617 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
310.2	MODESTO	PIASA	LIMESTONE	8.5	129.8	
301.7	MODESTO		MOTTLED SHALE	2.8	138.3	
299.0	CARBONDALE	DANVILLE	BONE COAL	0.3	141.0	
298.7	CARBONDALE		CLAYSTONE & SHALE	1.0	141.3	
297.7	CARBONDALE	GALUM	NODULAR LIMESTONE	0.3	142.3	
297.4	CARBONDALE		CLAYSTONE	4.3	142.6	
293.2	CARBONDALE		MOTTLED SHALE	4.0	146.8	
289.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.4	150.8	UPPER BENCH
283.7	CARBONDALE	BANKSTON FORK	CLAYSTONE & SHALE	6.8	156.3	SHALE PARTING
277.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	163.0	LOWER BENCH
276.0	CARBONDALE	LAWSON	SHALE	2.0	164.0	
274.0	CARBONDALE	CONANT	CALCAREOUS SHALE	1.3	166.0	
272.7	CARBONDALE	JAMESTOWN	BONE COAL	0.1	167.3	
272.6	CARBONDALE		SILTY SHALE	14.9	167.4	
257.7	CARBONDALE	BRERETON	LIMESTONE	1.8	182.3	
255.9	CARBONDALE	ANNA	BLACK SHALE	0.4	184.1	
255.5	CARBONDALE	HERRIN	COAL	7.8	184.5	

MAPID: 18901677000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 34 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE

QUADRANGLE: TODDS MILL LONGITUDE: -89.297197 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.222406 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 2803.0 LOG TYPE: Electric Log

SOURCE: SELF, EDDIE M. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
238.0	CARBONDALE	SPRINGFIELD	COAL	-	220.0	
148.0	CARBONDALE	COLCHESTER	COAL	-	310.0	
-599.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1057.0	
-2317.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2775.0	TOP OF NEW ALBANY
-2317.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2775.0	
-2345.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2803.0	BASE OF NEW ALBANY

MAPID: 18901062000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 35 QUARTERS/FOOTAGES: 660' N line, 660' W line of NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.29375 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.227035 DATE COLLECTED: 12 / 0 / 1958

SURFACE ELEVATION (FT.): 488.0 LOGGED (FT.): 261.1 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 7579 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
284.3	MODESTO	PIASA	LIMESTONE	7.8	203.7	
276.5	CARBONDALE		MOTTLED SHALE	7.1	211.5	
269.5	CARBONDALE	BANKSTON FORK	LIMESTONE	8.4	218.5	
261.1	CARBONDALE	LAWSON	SHALE & SILTSTONE	8.5	226.9	
252.6	CARBONDALE	CONANT	CALCAREOUS SHALE	5.1	235.4	
247.8	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.3	240.2	
247.5	CARBONDALE		SHALE & SILTSTONE	5.8	240.5	
241.8	CARBONDALE	BRERETON	LIMESTONE	3.8	246.2	
238.0	CARBONDALE	ANNA	BLACK SHALE	3.3	250.0	
234.7	CARBONDALE	HERRIN	COAL	7.8	253.3	

MAPID: 18900580000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 36 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.269274 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.227903 DATE COLLECTED:

SURFACE ELEVATION (FT.): 512.0 LOGGED (FT.): 1178.0 LOG TYPE: Electric Log

SOURCE: NIAGARA OIL CORP WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
167.0	CARBONDALE	SPRINGFIELD	COAL	-	345.0
74.0	CARBONDALE	COLCHESTER	COAL	-	438.0
-666.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1178.0

MAPID: 18900580000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 2W SECTION: 36 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.269274 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.227903 DATE COLLECTED:

SURFACE ELEVATION (FT.): 512.0 LOGGED (FT.): 327.5 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
241.0	MODESTO	PIASA	LIMESTONE	9.0	271.0
232.0	CARBONDALE		SHALE	10.0	280.0
222.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	290.0
217.0	CARBONDALE	LAWSON	SHALE	5.0	295.0
212.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	10.0	300.0
202.0	CARBONDALE		SHALE	3.0	310.0
199.0	CARBONDALE	BRERETON	LIMESTONE	5.0	313.0
194.0	CARBONDALE	ANNA	BLACK SHALE	3.0	318.0
191.0	CARBONDALE	HERRIN	COAL	6.5	321.0

MAPID: 18901120000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 1 QUARTERS/FOOTAGES: NE SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.372572 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.297847 DATE COLLECTED:

SURFACE ELEVATION (FT.): 512.0 LOGGED (FT.): 1221.0 LOG TYPE: Electric Log

SOURCE: INLAND OIL CO WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
83.0	CARBONDALE	SPRINGFIELD	COAL	-	429.0
-15.0	CARBONDALE	COLCHESTER	COAL	-	527.0
-709.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1221.0

MAPID: 18901120000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 1 QUARTERS/FOOTAGES: NE SE NE

QUADRANGLE: BEAUCOUP LONGITUDE: -89.372572

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.297847

DATE COLLECTED:

SURFACE ELEVATION (FT.): 512.0

LOGGED (FT.): 420.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
158.0	MODESTO	PIASA	LIMESTONE	8.0	354.0
150.0	MODESTO		SHALE	6.0	362.0
144.0	CARBONDALE	DANVILLE	COAL	1.0	368.0
143.0	CARBONDALE		SHALE	6.0	369.0
137.0	CARBONDALE	GALUM	LIMESTONE	3.0	375.0
134.0	CARBONDALE		SHALE	3.0	378.0
131.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	381.0
129.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	383.0
126.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	386.0
122.0	CARBONDALE	LAWSON	SHALE	6.0	390.0
116.0	CARBONDALE	CONANT	LIMESTONE	2.0	396.0
114.0	CARBONDALE		SHALE	6.0	398.0
108.0	CARBONDALE	BRERETON	LIMESTONE	2.0	404.0
106.0	CARBONDALE	ANNA	SILTY SHALE	8.0	406.0
98.0	CARBONDALE	HERRIN	COAL	6.0	414.0

MAPID: 18923691000C VERSION: 1

PROJECT: NCRDS88

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 2 QUARTERS/FOOTAGES: 25' N line, 2020' E line

QUADRANGLE: NASHVILLE LONGITUDE: -89.396678

GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 38.302554

DATE COLLECTED: 11 / 14 / 1980

SURFACE ELEVATION (FT.): 506.0 LOGGED (FT.): 421.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. WI-80-2-14

WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
506.0			UNCONSOLIDATED	46.0	0.0	
460.0	MODESTO		UNCLASSIFIED	141.0	46.0	
319.0	MODESTO	LAKE CREEK	COAL	1.0	187.0	UNCERTAIN CORRELATION
318.0	MODESTO		UNCLASSIFIED	137.0	188.0	
181.0	MODESTO	PIASA	LIMESTONE	6.5	325.0	
174.5	CARBONDALE		UNCLASSIFIED	28.0	331.5	
146.5	CARBONDALE		LIMESTONE W/ SHALE	11.0	359.5	
135.5	CARBONDALE		UNCLASSIFIED	3.5	370.5	
132.0	CARBONDALE		LIMESTONE W/ SHALE	15.0	374.0	
117.0	CARBONDALE	ANNA	BLACK SHALE	2.3	389.0	
114.7	CARBONDALE	HERRIN	COAL	6.3	391.3	
108.4	CARBONDALE	HERRIN	SHALE	1.3	397.6	
107.1	CARBONDALE	HERRIN	COAL	1.1	398.9	
106.0	CARBONDALE		UNCLASSIFIED	21.0	400.0	

MAPID: 18901121000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 3 QUARTERS/FOOTAGES: NW SW NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.424714

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.298084

DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 1090.0

LOG TYPE: Electric Log

SOURCE: MAGNOLIA PETROLEUM

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-575.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1090.0	

MAPID: 18901121000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 3 QUARTERS/FOOTAGES: NW SW NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.424714

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.298084

DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0

LOGGED (FT.): 0.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	ENERGY	UNCLASSIFIED	100.0		

MAPID: 18902901000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 3 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.416353

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.299897

DATE COLLECTED:

SURFACE ELEVATION (FT.): 506.0

LOGGED (FT.): 2776.0

LOG TYPE: Electric Log

SOURCE: BELDEN, W. L.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-2246.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	- 2752.0		TOP OF NEW ALBANY
-2248.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	- 2754.0		
-2270.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	- 2776.0		BASE OF NEW ALBANY

MAPID: 18900649000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 4 QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.436211

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.301892

DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.0

LOGGED (FT.): 0.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	ENERGY	UNCLASSIFIED	100.0		

MAPID: 18901122000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 5 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of SE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.444534 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.294603 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 512.0 **LOGGED (FT.):** 1101.0 **LOG TYPE:** Electric Log
SOURCE: GEORGE & WRATHER OIL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
62.0	CARBONDALE	COLCHESTER	COAL	-	450.0
-589.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1101.0

MAPID: 18923194000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 6 **QUARTERS/FOOTAGES:** 660' N line, 900' W line of NE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.466642 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.301577 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 524.0 **LOGGED (FT.):** 1098.0 **LOG TYPE:** Electric Log
SOURCE: DONNEWALD, JAMES H. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
232.0	CARBONDALE	SPRINGFIELD	COAL	-	292.0
44.0	CARBONDALE	COLCHESTER	COAL	-	480.0
-574.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1098.0

MAPID: 18901123000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 10 **QUARTERS/FOOTAGES:** 330' S line, 330' E line of NE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.409216 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.281373 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 501.0 **LOGGED (FT.):** 1111.0 **LOG TYPE:** Electric Log
SOURCE: KROHN, WM. H. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
199.0	CARBONDALE	SPRINGFIELD	COAL	-	302.0
29.0	CARBONDALE	COLCHESTER	COAL	-	472.0
-610.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1111.0

MAPID: 18901123000C VERSION: 2

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE

QUADRANGLE: NASHVILLE LONGITUDE: -89.409216 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.281373 DATE COLLECTED: 5 / 0 / 1952

SURFACE ELEVATION (FT.): 501.0 LOGGED (FT.): 305.0 LOG TYPE: Electric Log

SOURCE: KROHN, WM. H. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
196.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	305.0	THIN COAL

MAPID: 18923692000C VERSION: 1

PROJECT: NCRDS88

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 12 QUARTERS/FOOTAGES: 2604' S line, 2295' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.381534 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 38.28021 DATE COLLECTED: 11 / 14 / 1980

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 293.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. WI80-12-5C WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
480.0			UNCONSOLIDATED	24.0	0.0	
456.0	MODESTO		UNCLASSIFIED	33.5	24.0	
422.5	MODESTO		LIMESTONE	3.3	57.5	
419.2	MODESTO		UNCLASSIFIED	150.3	60.8	
269.0	MODESTO		BLACK SHALE	3.0	211.0	
266.0	MODESTO		UNCLASSIFIED	11.0	214.0	
255.0	MODESTO	PIASA	LIMESTONE	8.0	225.0	
247.0	CARBONDALE		UNCLASSIFIED	18.0	233.0	
229.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	251.0	
225.0	CARBONDALE		UNCLASSIFIED	17.0	255.0	
208.0	CARBONDALE	BRERETON	LIMESTONE	6.0	272.0	
202.0	CARBONDALE	ANNA	BLACK SHALE	2.0	278.0	
200.0	CARBONDALE	HERRIN	COAL	5.0	280.0	
195.0	CARBONDALE		UNCLASSIFIED	8.0	285.0	

MAPID: 18923728000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of NW SE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.377116 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.279419 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 505.0 **LOGGED (FT.):** 2863.0 **LOG TYPE:** Electric Log
SOURCE: OELZE, ELMER JR. OIL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
205.0	CARBONDALE	SPRINGFIELD	COAL	-	300.0	
-633.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1138.0	
-2328.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2833.0	TOP OF NEW ALBANY
-2331.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2836.0	
-2358.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2863.0	BASE OF NEW ALBANY

MAPID: 18900308000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 13 **QUARTERS/FOOTAGES:** 592' N line, 670' E line of SE NW
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.382756 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.267724 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 464.0 **LOGGED (FT.):** 164.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
309.0	MODESTO	PIASA	LIMESTONE	9.0	155.0	
300.0	CARBONDALE	ENERGY	UNCLASSIFIED	100.0	164.0	

MAPID: 18900276000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** 990' N line, 954' E line of SW
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.401753 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.263019 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 493.0 **LOGGED (FT.):** 1034.0 **LOG TYPE:** Electric Log
SOURCE: HUBBARD & SHELL OIL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-541.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1034.0	

MAPID: 18900376000C **VERSION:** 1 **PROJECT:** IDMM-GWQX
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of SE SE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.392791 **GEOLOGIST:** C TREWOROY
CONFIDENTIAL: N **LATITUDE:** 38.259372 **DATE COLLECTED:** 4 / 0 / 1943
SURFACE ELEVATION (FT.): 510.0 **LOGGED (FT.):** 391.0 **LOG TYPE:** Electric Log
SOURCE: MAGNOLIA PETROLEUM **WELL TYPE:** Producer-Oil
COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
286.0	MODESTO	PIASA	UNCLASSIFIED	-	224.0
220.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	290.0
119.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	391.0

MAPID: 18900860000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** NE SW NE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.395046 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.26844 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 479.0 **LOGGED (FT.):** 157.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
349.0	MODESTO	PIASA	LIMESTONE	7.0	130.0
342.0	MODESTO		SILTY SHALE	18.0	137.0
324.0	CARBONDALE	DANVILLE	COAL	2.0	155.0
322.0	CARBONDALE	ENERGY	UNCLASSIFIED	100.0	157.0

MAPID: 18924375000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 15 **QUARTERS/FOOTAGES:** 710' S line, 330' W line of SE SE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.410825 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.260472 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 513.0 **LOGGED (FT.):** 2724.0 **LOG TYPE:** Electric Log
SOURCE: OELZE, ELMER JR. OIL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-523.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1036.0
-2186.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2699.0 TOP OF NEW ALBANY
-2189.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2702.0
-2211.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2724.0 BASE OF NEW ALBANY

MAPID: 18902423000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 21 **QUARTERS/FOOTAGES:** 990' N line, 330' E line of NE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.426999 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.255906 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 534.0 **LOGGED (FT.):** 1111.0 **LOG TYPE:** Electric Log
SOURCE: SHELL OIL COMPANY **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
189.0	CARBONDALE	SPRINGFIELD	COAL	-	345.0
106.0	CARBONDALE	COLCHESTER	COAL	-	428.0
-577.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1111.0

MAPID: 18900169000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 22 **QUARTERS/FOOTAGES:** 330' N line, 990' W line of NE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.413154 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.257617 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 536.0 **LOGGED (FT.):** 281.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
366.0	MODESTO	PIASA	LIMESTONE	11.0	170.0
355.0	CARBONDALE	ENERGY	SHALE & SANDSTONE	100.0	181.0

MAPID: 18924411000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: WASHINGTON **TWP/RNG:** 3S 3W **SECTION:** 22 **QUARTERS/FOOTAGES:** 330' N line, 660' E line of SE NE
QUADRANGLE: NASHVILLE **LONGITUDE:** -89.409681 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.253956 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 542.0 **LOGGED (FT.):** 1066.0 **LOG TYPE:** Electric Log
SOURCE: OELZE, ELMER JR. OIL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-524.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1066.0

MAPID: 18901706000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 23 QUARTERS/FOOTAGES: 330' N line, 360' W line

QUADRANGLE: NASHVILLE LONGITUDE: -89.406134 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.257573 DATE COLLECTED:

SURFACE ELEVATION (FT.): 526.0 LOGGED (FT.): 172.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
360.0	MODESTO	PIASA	LIMESTONE	6.0	166.0	
354.0	CARBONDALE	ENERGY	UNCLASSIFIED	100.0	172.0	

MAPID: 18924328000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 23 QUARTERS/FOOTAGES: 370' S line, 330' E line of NW SW

QUADRANGLE: WINKLE LONGITUDE: -89.404 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.248571 DATE COLLECTED:

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 2750.0 LOG TYPE: Electric Log

SOURCE: OELZE, ELMER JR. OIL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-530.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1052.0	
-2202.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2724.0	TOP OF NEW ALBANY
-2203.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2725.0	
-2228.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2750.0	BASE OF NEW ALBANY

MAPID: 18900257000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 25 QUARTERS/FOOTAGES: 990' S line, 330' W line

QUADRANGLE: WINKLE LONGITUDE: -89.388076 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.231934 DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.0 LOGGED (FT.): 1088.0 LOG TYPE: Electric Log

SOURCE: TAYLOR DRLG. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
186.0	CARBONDALE	SPRINGFIELD	COAL	-	321.0	
102.0	CARBONDALE	COLCHESTER	COAL	-	405.0	
-581.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1088.0	

MAPID: 18900257000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 25 QUARTERS/FOOTAGES: 990' S line, 330' W line

QUADRANGLE: WINKLE LONGITUDE: -89.388076 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.231934 DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.0 LOGGED (FT.): 250.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
319.0	MODESTO	PIASA	LIMESTONE	10.0	188.0
309.0	MODESTO		SHALE	8.0	198.0
301.0	CARBONDALE	DANVILLE	COAL	2.0	206.0
299.0	CARBONDALE		SHALE	1.0	208.0
298.0	CARBONDALE	GALUM	LIMESTONE	3.0	209.0
295.0	CARBONDALE		SHALE	8.0	212.0
287.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	220.0
283.0	CARBONDALE		SHALE	10.0	224.0
273.0	CARBONDALE	BRERETON	LIMESTONE	7.0	234.0
266.0	CARBONDALE	ANNA	BLACK SHALE	3.0	241.0
263.0	CARBONDALE	HERRIN	COAL	6.0	244.0

MAPID: 18900355000C VERSION: 1

PROJECT: CONTROL

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 26 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW NW

QUADRANGLE: WINKLE LONGITUDE: -89.40618 GEOLOGIST: HINES

CONFIDENTIAL: N LATITUDE: 38.241182 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 1289.0 LOG TYPE: Survey Sample Study

SOURCE: MAGNOLIA PETROLEUM WELL TYPE: Oil and Gas Test

COMMENT: OILWELLS LOGGED BY COAL SECT-LOGS IN GRU

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			NO RECORD	0.0	0.0

MAPID: 18901059000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 26 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW SE

QUADRANGLE: WINKLE LONGITUDE: -89.394944 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.233793 DATE COLLECTED: 8 / 0 / 1958

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 368.0 LOG TYPE: Electric Log

SOURCE: EASTERN PETROLEUM CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
318.0	MODESTO	PIASA	UNCLASSIFIED	-	190.0	
264.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	244.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG
185.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	323.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
140.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	368.0	

MAPID: 18901066000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 26 QUARTERS/FOOTAGES: NE SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.399472 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.231997 DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.0 LOGGED (FT.): 250.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
323.0	MODESTO	PIASA	LIMESTONE	6.0	187.0	
317.0	MODESTO		SHALE	3.0	193.0	
314.0	CARBONDALE	DANVILLE	BONE COAL	2.0	196.0	
312.0	CARBONDALE		SHALE	4.0	198.0	
308.0	CARBONDALE	GALUM	LIMESTONE	2.0	202.0	
306.0	CARBONDALE		SHALE	3.0	204.0	
303.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	207.0	
301.0	CARBONDALE	BANKSTON FORK	SHALE	5.0	209.0	
296.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	214.0	
294.0	CARBONDALE	LAWSON	SHALE	17.0	216.0	
277.0	CARBONDALE	CONANT	LIMESTONE	2.0	233.0	
275.0	CARBONDALE		SHALE	2.0	235.0	
273.0	CARBONDALE	BRERETON	LIMESTONE	4.0	237.0	
269.0	CARBONDALE	ANNA	BLACK SHALE	4.0	241.0	
265.0	CARBONDALE	HERRIN	COAL	5.0	245.0	

MAPID: 18900654000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 27 QUARTERS/FOOTAGES: 330' S line, 330' W line

QUADRANGLE: WINKLE LONGITUDE: -89.425118 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.230443 DATE COLLECTED: 5 / 0 / 1956

SURFACE ELEVATION (FT.): 489.0 LOGGED (FT.): 366.0 LOG TYPE: Electric Log

SOURCE: TEXACO, INC. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
319.0	MODESTO	PIASA	UNCLASSIFIED	-	170.0
258.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	231.0
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	
163.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	326.0
123.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	366.0

MAPID: 18900654000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 27 QUARTERS/FOOTAGES: 330' S line, 330' W line

QUADRANGLE: WINKLE LONGITUDE: -89.425118 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.230443 DATE COLLECTED:

SURFACE ELEVATION (FT.): 489.0 LOGGED (FT.): 241.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
317.0	MODESTO	PIASA	LIMESTONE	5.0	172.0
312.0	CARBONDALE		SHALE	5.0	177.0
307.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	182.0
305.0	CARBONDALE	BANKSTON FORK	SHALE	4.0	184.0
301.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	188.0
299.0	CARBONDALE	ENERGY	SHALE & SANDSTONE	42.0	190.0
255.0	CARBONDALE	HERRIN	COAL	7.0	234.0

MAPID: 18900654000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 27 QUARTERS/FOOTAGES: 330' S line, 330' W line

QUADRANGLE: WINKLE LONGITUDE: -89.425118 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.230443 DATE COLLECTED:

SURFACE ELEVATION (FT.): 489.0 LOGGED (FT.): 2760.0 LOG TYPE: Electric Log

SOURCE: TEXAS COMPANY, THE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
239.0	CARBONDALE	SPRINGFIELD	COAL	-	250.0	
124.0	CARBONDALE	COLCHESTER	COAL	-	365.0	
-587.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1076.0	
-2250.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2739.0	TOP OF NEW ALBANY
-2252.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2741.0	
-2271.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2760.0	BASE OF NEW ALBANY

MAPID: 18924182000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 30 QUARTERS/FOOTAGES: 330' S line, 405' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.473622 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.235213 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 2740.0 LOG TYPE: Electric Log

SOURCE: BEAVER OIL CO., INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
209.0	CARBONDALE	SPRINGFIELD	COAL	-	286.0	
100.0	CARBONDALE	COLCHESTER	COAL	-	395.0	
-599.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1094.0	
-2228.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2723.0	TOP OF NEW ALBANY
-2230.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2725.0	
-2245.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2740.0	BASE OF NEW ALBANY

MAPID: 18901124000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON

TWP/RNG: 3S 3W

SECTION: 32

QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: WINKLE

LONGITUDE: -89.452835

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N

LATITUDE: 38.223801

DATE COLLECTED: 10 / 0 / 1952

SURFACE ELEVATION (FT.): 497.0

LOGGED (FT.): 367.0

LOG TYPE: Electric Log

SOURCE: TEXACO, INC.

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
292.0	MODESTO	PIASA	UNCLASSIFIED	-	205.0	
237.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	260.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		THIN OR ABSENT
130.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	367.0	

MAPID: 18901124000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON

TWP/RNG: 3S 3W

SECTION: 32

QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: WINKLE

LONGITUDE: -89.452835

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.223801

DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0

LOGGED (FT.): 268.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
292.0	MODESTO	PIASA	LIMESTONE	7.0	205.0	
285.0	CARBONDALE		SHALE	9.0	212.0	
276.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	221.0	
273.0	CARBONDALE	BANKSTON FORK	SHALE	4.0	224.0	
269.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	228.0	
267.0	CARBONDALE	LAWSON	SHALE	4.0	230.0	
263.0	CARBONDALE	CONANT	LIMESTONE	3.0	234.0	
260.0	CARBONDALE		SHALE	6.0	237.0	
254.0	CARBONDALE	BRERETON	LIMESTONE	4.0	243.0	
250.0	CARBONDALE	ANNA	BLACK SHALE	3.0	247.0	
247.0	CARBONDALE	ENERGY	GRAY SHALE	10.0	250.0	
237.0	CARBONDALE	HERRIN	COAL	8.0	260.0	

MAPID: 18901124000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: WASHINGTON

TWP/RNG: 3S 3W

SECTION: 32

QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: WINKLE

LONGITUDE: -89.452835

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N

LATITUDE: 38.223801

DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0

LOGGED (FT.): 2781.0

LOG TYPE: Electric Log

SOURCE: TEXAS COMPANY, THE

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
217.0	CARBONDALE	SPRINGFIELD	COAL	-	280.0	
74.0	CARBONDALE	COLCHESTER	COAL	-	423.0	
-605.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1102.0	
-2268.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2765.0	TOP OF NEW ALBANY
-2273.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2770.0	
-2284.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2781.0	BASE OF NEW ALBANY

MAPID: 18900870000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON

TWP/RNG: 3S 3W

SECTION: 34

QUARTERS/FOOTAGES: 2310' N line, 330' W line

QUADRANGLE: WINKLE

LONGITUDE: -89.425077

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.223154

DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0

LOGGED (FT.): 250.0

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
332.0	MODESTO	PIASA	LIMESTONE	7.0	188.0	
325.0	CARBONDALE	ENERGY	UNCLASSIFIED	48.0	195.0	
277.0	CARBONDALE	HERRIN	COAL	7.0	243.0	

MAPID: 18900555000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: WASHINGTON

TWP/RNG: 3S 3W

SECTION: 35

QUARTERS/FOOTAGES: 330' N line, 330' W line of SW SE

QUADRANGLE: WINKLE

LONGITUDE: -89.397341

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N

LATITUDE: 38.217352

DATE COLLECTED:

SURFACE ELEVATION (FT.): 521.0

LOGGED (FT.): 1095.0

LOG TYPE: Electric Log

SOURCE: MAZZARINO, M.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
234.0	CARBONDALE	SPRINGFIELD	COAL	-	287.0	
133.0	CARBONDALE	COLCHESTER	COAL	-	388.0	
-574.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1095.0	

MAPID: 18900600000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 35 QUARTERS/FOOTAGES: NE NW SE

QUADRANGLE: WINKLE LONGITUDE: -89.395012 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.220999 DATE COLLECTED:

SURFACE ELEVATION (FT.): 518.0 LOGGED (FT.): 249.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
315.0	MODESTO	PIASA	LIMESTONE	2.0	203.0
313.0	MODESTO		SHALE	2.0	205.0
311.0	CARBONDALE	DANVILLE	BONE COAL	3.0	207.0
308.0	CARBONDALE		SHALE	4.0	210.0
304.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	214.0
298.0	CARBONDALE	LAWSON	SHALE	7.0	220.0
291.0	CARBONDALE	CONANT	LIMESTONE & SHALE	4.0	227.0
287.0	CARBONDALE	JAMESTOWN	BONE COAL	2.0	231.0
285.0	CARBONDALE		SHALE	2.0	233.0
283.0	CARBONDALE	BRERETON	LIMESTONE	4.0	235.0
279.0	CARBONDALE	ANNA	BLACK SHALE	5.0	239.0
274.0	CARBONDALE	HERRIN	COAL	5.0	244.0

MAPID: 18900630000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 3W SECTION: 36 QUARTERS/FOOTAGES: 990' S line, 330' W line

QUADRANGLE: WINKLE LONGITUDE: -89.388162 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.217299 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 250.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
312.0	MODESTO	PIASA	LIMESTONE	10.0	188.0
302.0	MODESTO		SHALE	4.0	198.0
298.0	CARBONDALE	DANVILLE	BONE COAL	3.0	202.0
295.0	CARBONDALE		SHALE	3.0	205.0
292.0	CARBONDALE	GALUM	LIMESTONE	3.0	208.0
289.0	CARBONDALE		SHALE	4.0	211.0
285.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	215.0
282.5	CARBONDALE	BANKSTON FORK	SHALE	2.5	217.5
280.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	220.0
277.0	CARBONDALE	LAWSON	SHALE	6.0	223.0
271.0	CARBONDALE		CALCAREOUS SHALE	6.0	229.0
265.0	CARBONDALE	BRERETON	LIMESTONE	6.0	235.0
259.0	CARBONDALE	ANNA	BLACK SHALE	3.0	241.0
256.0	CARBONDALE	HERRIN	COAL	6.0	244.0

MAPID: 18923733000C VERSION: 1

PROJECT: CGT-MISC

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 1 QUARTERS/FOOTAGES: 990' S line, 990' W line of SW NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.492642 GEOLOGIST: C.TREWORY

CONFIDENTIAL: N LATITUDE: 38.299572 DATE COLLECTED: 12 / 9 / 1981

SURFACE ELEVATION (FT.): 509.0 LOGGED (FT.): 358.0 LOG TYPE: Gamma Ray Density

SOURCE: ANR PRODUCTION CO. GLADYS HARRE NO.1-1 WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
509.0			UNCLASSIFIED	216.0	0.0	NO COALS OR BLACK SHALES
293.0			COAL	2.0	216.0	POSSIBLE COAL
291.0			SHALE	9.0	218.0	
282.0			BLACK SHALE	3.0	227.0	
279.0			SHALE	7.0	230.0	
272.0			LIMESTONE	13.0	237.0	
259.0			BLACK SHALE	3.0	250.0	
256.0	CARBONDALE		UNCLASSIFIED	24.0	253.0	
232.0	CARBONDALE	ANNA	BLACK SHALE	5.5	277.0	
226.5	CARBONDALE	HERRIN	COAL	7.5	282.5	
219.0	CARBONDALE		UNDERCLAY	8.0	290.0	
211.0	CARBONDALE		LIMESTONE	3.0	298.0	
208.0	CARBONDALE		BLACK SHALE	4.0	301.0	
204.0	CARBONDALE	SPRINGFIELD	COAL	0.0	305.0	
204.0			SHALE	50.0	305.0	
154.0			BLACK SHALE	3.0	355.0	NO COAL, BLACK SH OR LS BELOW

MAPID: 18901131000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 2 QUARTERS/FOOTAGES: 330' N line, 330' W line

QUADRANGLE: OAKDALE LONGITUDE: -89.513739 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.303792 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 293.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
251.0	MODESTO	PIASA	LIMESTONE	11.0	244.0	
240.0	MODESTO		SHALE	5.0	255.0	
235.0	CARBONDALE		SHALE	6.0	260.0	
229.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	266.0	
227.0	CARBONDALE	LAWSON	SHALE	5.0	268.0	
222.0	CARBONDALE	CONANT	LIMESTONE	2.0	273.0	
220.0	CARBONDALE		SHALE	4.0	275.0	
216.0	CARBONDALE	BRERETON	LIMESTONE	3.0	279.0	
213.0	CARBONDALE	ANNA	BLACK SHALE	4.0	282.0	
209.0	CARBONDALE	HERRIN	COAL	7.0	286.0	

MAPID: 18902707000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 3 QUARTERS/FOOTAGES: 42' N line, 790' E line of SE SE

QUADRANGLE: OAKDALE LONGITUDE: -89.517689

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.293902

DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 272.5

LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 26-OK

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
270.8	MODESTO	PIASA	LIMESTONE	11.5	223.2	
259.3	MODESTO		GRAY SHALE	1.0	234.7	
258.3	CARBONDALE		DARK GRAY SHALE	0.5	235.7	
257.8	CARBONDALE		GRAY SHALE	3.3	236.2	
254.5	CARBONDALE		GRAY SHALE	5.5	239.5	
249.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	2.3	245.0	LOWER BENCH
246.7	CARBONDALE	LAWSON	GRAY SHALE	1.5	247.3	
245.2	CARBONDALE	BRERETON	LIMESTONE	5.7	248.8	
239.5	CARBONDALE	ANNA	DARK GRAY SHALE	7.0	254.5	
232.5	CARBONDALE	ENERGY	GRAY SHALE	5.5	261.5	
227.0	CARBONDALE	HERRIN	COAL	5.5	267.0	

MAPID: 18901091000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 4 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: OAKDALE LONGITUDE: -89.541659

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.297424

DATE COLLECTED:

SURFACE ELEVATION (FT.): 511.0 LOGGED (FT.): 301.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
258.0	MODESTO	PIASA	LIMESTONE	10.0	253.0	
248.0	MODESTO		SHALE	3.0	263.0	
245.0	CARBONDALE	DANVILLE	BONE COAL	2.0	266.0	
243.0	CARBONDALE		SHALE	10.0	268.0	
233.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	278.0	
231.0	CARBONDALE	LAWSON	SHALE	6.0	280.0	
225.0	CARBONDALE	CONANT	LIMESTONE	2.0	286.0	
223.0	CARBONDALE		SHALE	4.0	288.0	
219.0	CARBONDALE	BRERETON	LIMESTONE	2.0	292.0	
217.0	CARBONDALE	ANNA	BLACK SHALE	3.0	294.0	
214.0	CARBONDALE	HERRIN	COAL	4.0	297.0	

MAPID: 18902931000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 5 QUARTERS/FOOTAGES: 660' S line, 330' E line of NE

QUADRANGLE: OAKDALE LONGITUDE: -89.55319 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.300437 DATE COLLECTED: 10 / 0 / 1973

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: ANSCHUTZ CORPORATION WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18901133000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 8 QUARTERS/FOOTAGES: SE SE SW

QUADRANGLE: OAKDALE LONGITUDE: -89.563026 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.278136 DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 272.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
288.0	MODESTO	PIASA	LIMESTONE	8.0	220.0	
280.0	MODESTO		SHALE	4.0	228.0	
276.0	CARBONDALE	DANVILLE	BONE COAL	6.0	232.0	
270.0	CARBONDALE		SHALE	4.0	238.0	
266.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	242.0	
264.0	CARBONDALE	BANKSTON FORK	SHALE	2.0	244.0	
262.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	246.0	
259.0	CARBONDALE	LAWSON	SHALE	4.0	249.0	
255.0	CARBONDALE	CONANT	LIMESTONE & SHALE	3.0	253.0	
252.0	CARBONDALE		SHALE	5.0	256.0	
247.0	CARBONDALE	BRERETON	LIMESTONE	3.0	261.0	
244.0	CARBONDALE	ANNA	BLACK SHALE	2.0	264.0	
242.0	CARBONDALE	HERRIN	COAL	6.0	266.0	

MAPID: 18901135000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 9 QUARTERS/FOOTAGES: NW SE SW

QUADRANGLE: OAKDALE LONGITUDE: -89.546713

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.27945

DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 276.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
287.0	MODESTO	PIASA	LIMESTONE	8.0	228.0
279.0	MODESTO		SHALE	3.0	236.0
276.0	CARBONDALE	DANVILLE	BONE COAL	2.0	239.0
274.0	CARBONDALE		SHALE	10.0	241.0
264.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	251.0
262.0	CARBONDALE	LAWSON	SHALE	5.0	253.0
257.0	CARBONDALE	CONANT	LIMESTONE	3.0	258.0
254.0	CARBONDALE		SHALE	3.0	261.0
251.0	CARBONDALE	BRERETON	LIMESTONE	3.0	264.0
248.0	CARBONDALE	ANNA	BLACK SHALE	3.0	267.0
245.0	CARBONDALE	HERRIN	COAL	6.0	270.0

MAPID: 18900949000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 10 QUARTERS/FOOTAGES: 48' N line, 30' W line of SW

QUADRANGLE: OAKDALE LONGITUDE: -89.533753

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.28356

DATE COLLECTED:

SURFACE ELEVATION (FT.): 532.0 LOGGED (FT.): 258.4

LOG TYPE: Survey Core Study

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
324.7	MODESTO	PIASA	LIMESTONE	7.7	207.3
317.1	CARBONDALE		GRAY SHALE	16.0	214.9
301.1	CARBONDALE	GALUM	LIMESTONE	2.6	230.9
298.5	CARBONDALE		GRAY SHALE	3.0	233.5
295.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.2	236.5
294.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	0.3	237.7
293.9	CARBONDALE	BANKSTON FORK	LIMESTONE	1.8	238.1
292.1	CARBONDALE	LAWSON	SILTY SHALE	0.8	239.9
291.3	CARBONDALE	LAWSON	GRAY SHALE	7.8	240.7
283.5	CARBONDALE	BRERETON	LIMESTONE	3.5	248.5
280.0	CARBONDALE	HERRIN	COAL	6.4	252.0

MAPID: 18901720000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 12 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: NASHVILLE LONGITUDE: -89.486183

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.275696

DATE COLLECTED:

SURFACE ELEVATION (FT.): 524.0

LOGGED (FT.): 291.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
291.0	MODESTO	PIASA	LIMESTONE	8.0	233.0
283.0	MODESTO		SHALE	3.0	241.0
280.0	CARBONDALE	DANVILLE	BONE COAL	5.0	244.0
275.0	CARBONDALE		SHALE	8.0	249.0
267.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	257.0
265.0	CARBONDALE	BANKSTON FORK	SHALE	3.0	259.0
262.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	262.0
259.0	CARBONDALE	LAWSON	SHALE	6.0	265.0
253.0	CARBONDALE	CONANT	LIMESTONE	2.0	271.0
251.0	CARBONDALE		SHALE	2.0	273.0
249.0	CARBONDALE	BRERETON	LIMESTONE	5.0	275.0
244.0	CARBONDALE	ANNA	BLACK SHALE	4.0	280.0
240.0	CARBONDALE	HERRIN	COAL	7.0	284.0

MAPID: 18901137000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 13 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE NW

QUADRANGLE: NASHVILLE LONGITUDE: -89.490817

GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.270363

DATE COLLECTED: 6 / 0 / 1949

SURFACE ELEVATION (FT.): 530.0

LOGGED (FT.): 408.0

LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO.

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
296.0	MODESTO	PIASA	UNCLASSIFIED	-	234.0
242.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	288.0
151.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	379.0
122.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	408.0

MAPID: 18900027000C VERSION: 1

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 14 QUARTERS/FOOTAGES: 1725' S line, 3650' E line

QUADRANGLE: OAKDALE LONGITUDE: -89.509373 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.265747 DATE COLLECTED: 0 / 0 / 1909

SURFACE ELEVATION (FT.): 485.4 LOGGED (FT.): 800.0 LOG TYPE: Drillers Log

SOURCE: SHOUP OIL CO. WELL TYPE: Unsuccessful or Unknown Results

COMMENT: LOG IS DIFFICULT TO CORRELATE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
485.4			UNCONSOLIDATED	20.0	0.0	
465.4			SHALE	35.0	20.0	
430.4			SANDSTONE	40.0	55.0	
390.4			SHALE	127.0	95.0	
263.4			COAL	6.0	222.0	
257.4			SHALE	72.0	228.0	
185.4	CARBONDALE	HERRIN	COAL	3.0	300.0	UNCERTAIN CORRELATION
182.4			SHALE	62.0	303.0	
120.4			SANDSTONE	15.0	365.0	
105.4			SHALE	100.0	380.0	
5.4			SANDSTONE	120.0	480.0	
-114.6			SHALE	43.0	600.0	
-157.6			SANDSTONE	157.0	643.0	

MAPID: 18900027000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 14 QUARTERS/FOOTAGES: 1725' S line, 3650' E line

QUADRANGLE: OAKDALE LONGITUDE: -89.509373 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.265747 DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 228.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
263.0	CARBONDALE	HERRIN	COAL	6.0	222.0	

MAPID: 18902941000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 16 QUARTERS/FOOTAGES: 460' S line, 330' E line of SW SE

QUADRANGLE: OAKDALE LONGITUDE: -89.540011 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.263164 DATE COLLECTED: 11 / 0 / 1973

SURFACE ELEVATION (FT.): 564.0 LOGGED (FT.): 420.0 LOG TYPE: Electric Log

SOURCE: ANSCHUTZ CORPORATION WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
321.0	MODESTO	PIASA	UNCLASSIFIED	-	243.0	
274.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	290.0	
255.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	309.0	THIN OR ABSENT
184.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	380.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
144.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	420.0	

MAPID: 18900930000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 17 QUARTERS/FOOTAGES: 330' N line, 330' E line of SW NW

QUADRANGLE: OAKDALE LONGITUDE: -89.567742 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.272811 DATE COLLECTED: 1 / 0 / 1958

SURFACE ELEVATION (FT.): 501.0 LOGGED (FT.): 289.0 LOG TYPE: Electric Log

SOURCE: CARTER JAMES E WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
212.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	289.0	THIN COAL

MAPID: 18990053000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 17 QUARTERS/FOOTAGES: SE NW SW

QUADRANGLE: OAKDALE LONGITUDE: -89.567824 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.267295 DATE COLLECTED: 6 / 9 / 1975

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 290.6 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16256C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
515.0	PLEISTOCENE		UNCONSOLIDATED	16.5	0.0	
498.5	MODESTO		SILTSTONE	6.5	16.5	
492.0	MODESTO	TRIVOLI	SANDSTONE	87.0	23.0	
405.0	MODESTO		GRAY SHALE	30.4	110.0	
374.6	MODESTO		SANDSTONE	4.6	140.4	
370.0	MODESTO		SILTSTONE	55.0	145.0	
315.0	MODESTO		GRAY SHALE	17.0	200.0	
298.0	MODESTO		SANDSTONE	5.4	217.0	
292.6	MODESTO	PIASA	LIMESTONE	6.1	222.4	
286.5	MODESTO		DARK SHALE	8.5	228.5	
278.0	CARBONDALE	DANVILLE	COAL	2.0	237.0	
276.0	CARBONDALE		GRAY SHALE	5.2	239.0	
270.8	CARBONDALE		SANDSTONE	1.8	244.2	
269.0	CARBONDALE		GRAY SHALE	6.4	246.0	
262.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	252.4	
259.8	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.8	255.2	
258.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	257.0	
255.2	CARBONDALE		GRAY SHALE	2.2	259.8	
253.0	CARBONDALE		DARK SHALE	2.4	262.0	
250.6	CARBONDALE	CONANT	LIMESTONE	2.1	264.4	
248.5	CARBONDALE	CONANT	DARK SHALE	1.6	266.5	
246.9	CARBONDALE	CONANT	LIMESTONE	0.6	268.1	
246.3	CARBONDALE		DARK SHALE	2.0	268.7	
244.2	CARBONDALE	BRERETON	LIMESTONE	4.9	270.8	
239.3	CARBONDALE	ANNA	DARK SHALE	0.5	275.7	CALCAREOUS
238.8	CARBONDALE	ANNA	BLACK SHALE	0.1	276.2	
238.8	CARBONDALE	HERRIN	COAL	7.4	276.2	
231.4	CARBONDALE		UNDERCLAY	2.6	283.6	
228.8	CARBONDALE		GRAY SHALE	0.9	286.2	
227.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.8	287.1	
227.1	CARBONDALE		SHALE	1.4	287.9	LIMESTONE NODULE
225.8	CARBONDALE		GRAY SHALE	1.4	289.2	LAMINATED CALCAREOUS

MAPID: 18990046000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 19 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: OAKDALE LONGITUDE: -89.580828 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.25648 DATE COLLECTED: 5 / 8 / 1974

SURFACE ELEVATION (FT.): 499.2 LOGGED (FT.): 242.5 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15850C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
499.2	PLEISTOCENE		UNCONSOLIDATED	21.4	0.0
477.8	MODESTO		SANDSTONE	13.6	21.4
464.2	MODESTO		SANDY SHALE	55.0	35.0
409.2	MODESTO		GRAY SHALE	86.0	90.0
323.2	MODESTO	PIASA	LIMESTONE	8.4	176.0
314.8	MODESTO		DARK SHALE	3.6	184.4
311.2	CARBONDALE	DANVILLE	COAL	3.2	188.0
308.0	CARBONDALE		GRAY SHALE	9.2	191.2
298.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	200.4
296.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.6	202.9
291.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	207.5
289.3	CARBONDALE	LAWSON	GRAY SHALE	5.3	209.9
284.0	CARBONDALE	CONANT	LIMESTONE	1.0	215.2
283.0	CARBONDALE		DARK SHALE	7.4	216.2
275.6	CARBONDALE	BRERETON	LIMESTONE	3.6	223.6
272.0	CARBONDALE	ANNA	GRAY SHALE	0.1	227.2
271.8	CARBONDALE	HERRIN	COAL	6.5	227.4
265.3	CARBONDALE		UNDERCLAY	2.3	233.9
263.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	6.3	236.2

MAPID: 18901035000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 20 QUARTERS/FOOTAGES: 430' N line, 330' E line of SW SE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.55865 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.250255 DATE COLLECTED: 8 / 0 / 1958

SURFACE ELEVATION (FT.): 518.0 LOGGED (FT.): 299.0 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
382.0	MODESTO	PIASA	UNCLASSIFIED	-	136.0
330.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	188.0
312.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	206.0
248.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	270.0
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0	
219.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	299.0

POSSIBLE COAL
HORIZON

MAPID: 18901733000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 20 QUARTERS/FOOTAGES: NE SW SE

QUADRANGLE: OAKDALE LONGITUDE: -89.558653 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.250531 DATE COLLECTED:

SURFACE ELEVATION (FT.): 516.0 LOGGED (FT.): 200.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
370.0	MODESTO	PIASA	LIMESTONE	9.0	146.0
361.0	MODESTO		SHALE	3.0	155.0
358.0	CARBONDALE		CALCAREOUS SHALE	9.0	158.0
349.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	167.0
346.0	CARBONDALE	BANKSTON FORK	SHALE	4.0	170.0
342.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	174.0
340.0	CARBONDALE	LAWSON	SHALE	6.0	176.0
334.0	CARBONDALE	CONANT	LIMESTONE	2.0	182.0
332.0	CARBONDALE		SHALE	4.0	184.0
328.0	CARBONDALE	BRERETON	LIMESTONE	4.0	188.0
324.0	CARBONDALE	ANNA	BLACK SHALE	2.0	192.0
322.0	CARBONDALE	HERRIN	COAL	6.0	194.0

MAPID: 18990088000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 20 QUARTERS/FOOTAGES: 34' S line, 313' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.553971 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.247767 DATE COLLECTED: 4 / 1 / 1957

SURFACE ELEVATION (FT.): 545.1 LOGGED (FT.): 248.0 LOG TYPE: Drillers Log

SOURCE: NORTHERN ILLINOIS COAL CORP. 2759 WELL TYPE: Coal Test

COMMENT: BOX #75; CORE FLOAT AND SINK DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
545.1	PLEISTOCENE		UNCONSOLIDATED	14.1	0.0
531.0			ROCK	226.9	14.1
304.1	CARBONDALE	HERRIN	COAL	5.2	241.0
298.9	CARBONDALE	HERRIN	ROCK	0.1	246.2 BLUE BAND
298.8	CARBONDALE	HERRIN	COAL	0.9	246.3
297.9	CARBONDALE		ROCK	0.7	247.2

MAPID: 1890034000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 21 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.54705 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.248366 DATE COLLECTED:

SURFACE ELEVATION (FT.): 538.0 LOGGED (FT.): 219.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.0	MODESTO	PIASA	LIMESTONE	10.0	169.0	
359.0	CARBONDALE		SHALE	2.0	179.0	
357.0	CARBONDALE	GALUM	LIMESTONE	4.0	181.0	
353.0	CARBONDALE		SHALE	5.0	185.0	
348.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	190.0	
344.0	CARBONDALE	LAWSON	SHALE	3.0	194.0	
341.0	CARBONDALE	CONANT	LIMESTONE	2.0	197.0	
339.0	CARBONDALE		SHALE	5.0	199.0	
334.0	CARBONDALE	BRERETON	LIMESTONE	3.0	204.0	
331.0	CARBONDALE	ANNA	SHALE	6.0	207.0	
325.0	CARBONDALE	HERRIN	COAL	6.0	213.0	

MAPID: 18990042000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 28 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.544739 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.241057 DATE COLLECTED: 4 / 22 / 1975

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 226.9 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15971C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
530.0	PLEISTOCENE		UNCONSOLIDATED	19.8	0.0	
510.2	MODESTO	TRIVOLI	SANDSTONE	58.5	19.8	
451.7	MODESTO		GRAY SHALE	85.8	78.3	
365.9	MODESTO	PIASA	LIMESTONE	6.7	164.1	
359.2			DARK SHALE	23.4	170.8	
335.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	194.2	
332.5	CARBONDALE		DARK SHALE	3.2	197.5	
329.3	CARBONDALE	CONANT	LIMESTONE	2.8	200.7	
326.5	CARBONDALE		DARK SHALE	3.6	203.5	
322.9	CARBONDALE	BRERETON	LIMESTONE	7.0	207.1	
315.9	CARBONDALE	ANNA	DARK SHALE	1.4	214.1	
314.5	CARBONDALE	HERRIN	COAL	6.4	215.5	
308.1	CARBONDALE		UNDERCLAY	5.0	221.9	LIMESTONE BAND

MAPID: 18990089000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 28 QUARTERS/FOOTAGES: 570' S line, 700' W line of SE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.541143 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.234421 DATE COLLECTED: 4 / 2 / 1957

SURFACE ELEVATION (FT.): 551.4 LOGGED (FT.): 221.4 LOG TYPE: Drillers Log

SOURCE: NORTHERN ILLINOIS COAL CORP. 2760 WELL TYPE: Coal Test

COMMENT: BOX #75; CORE FLOAT AND SINK DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
551.4	PLEISTOCENE		UNCONSOLIDATED	16.8	0.0
534.6			ROCK	196.3	16.8
338.3	CARBONDALE		ROCK	6.2	213.1
332.1	CARBONDALE		ROCK	2.0	219.3

MAPID: 18900875000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 29 QUARTERS/FOOTAGES: 660' S line, 330' W line of NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.570262 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.24264 DATE COLLECTED:

SURFACE ELEVATION (FT.): 517.0 LOGGED (FT.): 211.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
366.0	MODESTO	PIASA	LIMESTONE	11.0	151.0
355.0	CARBONDALE		SHALE	3.0	162.0
352.0	CARBONDALE	GALUM	LIMESTONE	5.0	165.0
347.0	CARBONDALE		SHALE	7.0	170.0
340.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	177.0
338.0	CARBONDALE	BANKSTON FORK	SHALE	5.0	179.0
333.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	184.0
331.0	CARBONDALE	LAWSON	SHALE	5.0	186.0
326.0	CARBONDALE	CONANT	LIMESTONE	4.0	191.0
322.0	CARBONDALE		SHALE	2.0	195.0
320.0	CARBONDALE	BRERETON	LIMESTONE	5.0	197.0
315.0	CARBONDALE	ANNA	BLACK SHALE	2.0	202.0
313.0	CARBONDALE	HERRIN	COAL	7.0	204.0

MAPID: 18901010000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 30 QUARTERS/FOOTAGES: 330' S line, 814' E line of NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.585002 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.241879 DATE COLLECTED: 6 / 0 / 1958

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 310.0 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
345.0	MODESTO	PIASA	UNCLASSIFIED	-	150.0	
294.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	201.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		THIN OR ABSENT
214.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	281.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
185.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	310.0	

MAPID: 18901010000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 30 QUARTERS/FOOTAGES: 330' S line, 814' E line of NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.585002 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.241879 DATE COLLECTED:

SURFACE ELEVATION (FT.): 496.0 LOGGED (FT.): 208.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
346.0	MODESTO	PIASA	LIMESTONE	11.0	150.0	
335.0	CARBONDALE		SHALE	2.0	161.0	
333.0	CARBONDALE	GALUM	LIMESTONE	5.0	163.0	
328.0	CARBONDALE		SHALE	5.0	168.0	
323.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	9.0	173.0	
314.0	CARBONDALE	LAWSON	SHALE	5.0	182.0	
309.0	CARBONDALE	CONANT	LIMESTONE	3.0	187.0	
306.0	CARBONDALE		SHALE	3.0	190.0	
303.0	CARBONDALE	BRERETON	LIMESTONE	6.0	193.0	
297.0	CARBONDALE	ANNA	BLACK SHALE	2.0	199.0	
295.0	CARBONDALE	HERRIN	COAL	7.0	201.0	

MAPID: 18990055000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 30 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.59157 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.234649 DATE COLLECTED: 8 / 21 / 1996

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 206.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17038C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
470.0	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	
457.0	MODESTO		SANDSTONE	20.0	13.0	
437.0	MODESTO		GRAY SHALE	8.0	33.0	
429.0	MODESTO		SANDSTONE	5.0	41.0	
424.0	MODESTO		SANDY SHALE	62.0	46.0	
362.0	MODESTO		SANDSTONE	3.0	108.0	
359.0	MODESTO		SANDY SHALE	10.0	111.0	
349.0	MODESTO		SANDSTONE	5.0	121.0	
344.0	MODESTO		SANDY SHALE	10.0	126.0	
334.0	MODESTO	PIASA	LIMESTONE	9.0	136.0	
325.0	CARBONDALE	DANVILLE	COAL	1.5	145.0	
323.5	CARBONDALE		UNDERCLAY	3.5	146.5	
320.0	CARBONDALE		SANDY SHALE	3.0	150.0	
317.0	CARBONDALE		SANDSTONE	4.0	153.0	
313.0	CARBONDALE		SANDY SHALE	5.0	157.0	
308.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	162.0	
306.0	CARBONDALE	BANKSTON FORK	SHALE	4.7	164.0	CALCAREOUS
301.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.1	168.7	
299.2	CARBONDALE		DARK SHALE	4.3	170.8	
295.0	CARBONDALE	CONANT	LIMESTONE	1.6	175.0	
293.4	CARBONDALE		SHALE	9.4	176.6	
284.0	CARBONDALE	BRERETON	LIMESTONE	3.8	186.0	
280.2	CARBONDALE		BLACK SHALE	0.2	189.8	
280.0	CARBONDALE	HERRIN	COAL	6.3	190.0	
273.8	CARBONDALE		UNDERCLAY	2.4	196.2	
271.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.9	198.6	
266.5	CARBONDALE		CLAYSTONE	2.6	203.5	

MAPID: 18990056000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 30 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.583505 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.240044 DATE COLLECTED: 8 / 20 / 1996

SURFACE ELEVATION (FT.): 497.1 LOGGED (FT.): 218.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17037C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
497.1	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
463.1	MODESTO		SHALE	92.0	34.0
371.1	MODESTO		SANDSTONE	3.0	126.0
368.1	MODESTO		SHALE	5.0	129.0
363.1	MODESTO		SANDSTONE	9.0	134.0
354.1	MODESTO		SHALE	5.0	143.0
349.1	MODESTO	PIASA	LIMESTONE	10.0	148.0
339.1	MODESTO		GRAY SHALE	2.0	158.0
337.1	MODESTO		DARK SHALE	1.0	160.0
336.1	CARBONDALE		SHALE	5.0	161.0
331.1	CARBONDALE		SANDSTONE	2.0	166.0
329.1	CARBONDALE		GRAY SHALE	3.0	168.0
326.1	CARBONDALE	BANKSTON FORK	LIMESTONE	10.3	171.0
315.8	CARBONDALE		SHALE	11.5	181.3
304.4	CARBONDALE	BRERETON	LIMESTONE	4.7	192.7
299.7	CARBONDALE	ANNA	BLACK SHALE	0.7	197.4
299.0	CARBONDALE	HERRIN	COAL	6.6	198.1
292.4	CARBONDALE		UNDERCLAY	4.9	204.7
287.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.9	209.6
284.6	CARBONDALE		SHALE	5.5	212.5

MAPID: 18901141000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 31 QUARTERS/FOOTAGES: 330' N line, 1402' W line

QUADRANGLE: COULTERVILLE

LONGITUDE: -89.588005

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.232799

DATE COLLECTED:

SURFACE ELEVATION (FT.): 505.0

LOGGED (FT.): 208.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
353.0	MODESTO	PIASA	LIMESTONE	11.0	152.0
342.0	CARBONDALE		SHALE	2.0	163.0
340.0	CARBONDALE	GALUM	LIMESTONE	4.0	165.0
336.0	CARBONDALE		SHALE	6.0	169.0
330.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	175.0
327.0	CARBONDALE	BANKSTON FORK	SHALE	4.0	178.0
323.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	182.0
320.0	CARBONDALE		SHALE	9.0	185.0
311.0	CARBONDALE	BRERETON	LIMESTONE	6.0	194.0
305.0	CARBONDALE	ANNA	BLACK SHALE	2.0	200.0
303.0	CARBONDALE	HERRIN	COAL	6.0	202.0

MAPID: 18990057000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 31 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.580879 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.227299 DATE COLLECTED: 8 / 20 / 1996

SURFACE ELEVATION (FT.): 511.5 LOGGED (FT.): 240.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17036C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
511.5	PLEISTOCENE		UNCONSOLIDATED	49.0	0.0	
462.5	MODESTO	TRIVOLI	SANDSTONE	36.0	49.0	
426.5	MODESTO		COAL	0.5	85.0	WITH BLACK SHALES
426.0	MODESTO		UNDERCLAY	1.5	85.5	
424.5	MODESTO		GRAY SHALE	71.0	87.0	
353.5	MODESTO		SANDSTONE	2.0	158.0	
351.5	MODESTO		GRAY SHALE	12.0	160.0	
339.5	MODESTO	PIASA	LIMESTONE	9.0	172.0	
330.5	MODESTO		GRAY SHALE	2.0	181.0	
328.5	CARBONDALE	DANVILLE	COAL	1.5	183.0	
327.0	CARBONDALE		BLACK SHALE	0.5	184.5	
326.5	CARBONDALE		UNDERCLAY	3.0	185.0	
323.5	CARBONDALE		GRAY SHALE	4.0	188.0	
319.5	CARBONDALE		SANDSTONE	2.0	192.0	
317.5	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	194.0	
311.5	CARBONDALE	BANKSTON FORK	SHALES	2.5	200.0	
309.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	202.5	
306.3	CARBONDALE		DARK SHALE	4.4	205.2	
302.0	CARBONDALE	CONANT	LIMESTONE	1.5	209.5	
300.5	CARBONDALE		DARK SHALE	6.5	211.0	
294.0	CARBONDALE	BRERETON	LIMESTONE	5.7	217.5	
288.3	CARBONDALE	ANNA	DARK SHALE	0.4	223.2	
287.9	CARBONDALE	HERRIN	COAL	6.8	223.6	
281.1	CARBONDALE		UNDERCLAY	2.5	230.4	
278.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.8	232.9	
275.9	CARBONDALE		SHALES	4.4	235.6	

MAPID: 18900180000C VERSION: 1

PROJECT: CIRC 164

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 32 QUARTERS/FOOTAGES: 330' N line, 1650' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.55866 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.232343 DATE COLLECTED: 0 / 0 / 1941

SURFACE ELEVATION (FT.): 472.0 LOGGED (FT.): 1557.0 LOG TYPE:

SOURCE: REWARD OC, NOLTING J 1 WELL TYPE: Oil and Gas Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
339.0	BOND	CARTHAGE	LIMESTONE	-	133.0
-36.0	CARBONDALE	HERRIN	COAL	-	508.0

MAPID: 18900180000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 32 QUARTERS/FOOTAGES: 330' N line, 1650' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.55866 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.232343 DATE COLLECTED:

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 211.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
366.0	MODESTO	PIASA	LIMESTONE	7.0	156.0
359.0	CARBONDALE		SHALE	5.0	163.0
354.0	CARBONDALE	GALUM	LIMESTONE W/ SHALE	7.0	168.0
347.0	CARBONDALE		SHALE	3.0	175.0
344.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	178.0
341.0	CARBONDALE	BANKSTON FORK	SHALE	5.0	181.0
336.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	186.0
334.0	CARBONDALE	LAWSON	SHALE	4.0	188.0
330.0	CARBONDALE	JAMESTOWN	BLACK SHALE	2.0	192.0
328.0	CARBONDALE		SHALE	3.0	194.0
325.0	CARBONDALE	BRERETON	LIMESTONE	6.0	197.0
319.0	CARBONDALE	ANNA	BLACK SHALE	1.0	203.0
318.0	CARBONDALE	HERRIN	COAL	7.0	204.0

MAPID: 18901142000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 33 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.551832 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.228548 DATE COLLECTED: 3 / 0 / 1953

SURFACE ELEVATION (FT.): 537.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18990052000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 4W SECTION: 33 QUARTERS/FOOTAGES: NE SE NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.544874 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.228388 DATE COLLECTED: 8 / 21 / 1975

SURFACE ELEVATION (FT.): 514.1 LOGGED (FT.): 225.7 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16272C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
514.1	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0	
474.1	MODESTO		GRAY SHALE	5.8	40.0	
468.3	MODESTO		SILTSTONE	5.2	45.8	
463.1	MODESTO		GRAY SHALE	96.0	51.0	
367.1	MODESTO		SANDSTONE	2.0	147.0	
365.1	MODESTO		DARK SHALE	1.4	149.0	
363.7	MODESTO		GRAY SHALE	5.6	150.4	
358.1	MODESTO		LIMESTONE	1.8	156.0	
356.3	MODESTO		GRAY SHALE	4.2	157.8	
352.1	MODESTO	PIASA	LIMESTONE	6.8	162.0	
345.3	MODESTO		DARK SHALE	4.2	168.8	
341.1	CARBONDALE		GRAY SHALE	3.4	173.0	
337.7	CARBONDALE		DARK SHALE	5.6	176.4	CALCAREOUS
332.1	CARBONDALE	ANVIL ROCK	SILTSTONE	11.0	182.0	GRAY
321.1	CARBONDALE	ANVIL ROCK	GRAY SHALE	3.2	193.0	
317.9	CARBONDALE	ANVIL ROCK	SILTSTONE	7.2	196.2	GRAY
310.7	CARBONDALE	ANVIL ROCK	SILTSTONE	6.1	203.4	GRAY LIMESTONE NODULE
304.6	CARBONDALE	BRERETON	LIMESTONE	1.0	209.5	
303.6	CARBONDALE	ANNA	DARK SHALE	0.3	210.5	CALCAREOUS
303.4	CARBONDALE	ANNA	LIMESTONE	0.3	210.7	
303.1	CARBONDALE	ANNA	DARK SHALE	0.5	211.0	
302.6	CARBONDALE	HERRIN	COAL	7.5	211.5	
295.1	CARBONDALE		UNDERCLAY	2.6	219.0	
292.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.0	221.6	SHALE BAND

MAPID: 18900666000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 4 QUARTERS/FOOTAGES: SE SW SW

QUADRANGLE: ST. LIBORY LONGITUDE: -89.662787

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.293418

DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 235.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
268.0	MODESTO	PIASA	LIMESTONE	9.0	188.0
259.0	CARBONDALE		SHALE	8.0	197.0
251.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	205.0
247.0	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.0	209.0
244.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	212.0
242.0	CARBONDALE		GRAY SHALE	10.0	214.0
232.0	CARBONDALE	BRERETON	LIMESTONE	2.0	224.0
230.0	CARBONDALE	ANNA	BLACK SHALE	1.0	226.0
228.0	CARBONDALE	HERRIN	COAL	7.0	228.0

MAPID: 18990038000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 7 QUARTERS/FOOTAGES: NW NW SW

QUADRANGLE: ST. LIBORY LONGITUDE: -89.702446

GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.284026

DATE COLLECTED: 10 / 2 / 1973

SURFACE ELEVATION (FT.): 442.6 LOGGED (FT.): 179.9

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15819C

WELL TYPE: Coal Test

COMMENT: PERMIT #61 ST. LIBORY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.6	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
409.6	MODESTO		GRAY SHALE	90.1	33.0
319.5	MODESTO	PIASA	LIMESTONE	8.5	123.1
311.0	MODESTO		DARK SHALE	3.5	131.6
307.5	CARBONDALE		GRAY SHALE	4.0	135.1
303.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	139.1
298.5	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.0	144.1
295.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.9	147.1
293.6	CARBONDALE		GRAY SHALE	2.0	149.0
291.6	CARBONDALE		DARK SHALE	7.4	151.0
284.2	CARBONDALE	BRERETON	LIMESTONE	3.4	158.4
280.8	CARBONDALE	ANNA	BLACK SHALE	0.3	161.8
280.4	CARBONDALE	HERRIN	COAL	7.2	162.2
273.3	CARBONDALE		UNDERCLAY	1.9	169.3
271.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	8.7	171.2

MAPID: 18902742000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 9 QUARTERS/FOOTAGES: 75' S, 150' E, SE/c SW SE

QUADRANGLE: ST. LIBORY LONGITUDE: -89.652946 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.277941 DATE COLLECTED: 12 / 21 / 1971

SURFACE ELEVATION (FT.): 449.9 LOGGED (FT.): 199.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12545C WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
449.9	PLEISTOCENE		CLAY	49.0	0.0	
400.9	MODESTO		SANDSTONE	3.2	49.0	BROWN
397.7	MODESTO		GRAY SHALE	2.2	52.2	
395.5	MODESTO		SANDSTONE	4.4	54.4	GRAY
391.1	MODESTO		SHALE	1.6	58.8	
389.5	MODESTO		LIMESTONE	3.0	60.4	BLACK
386.5	MODESTO		DARK SHALE	2.6	63.4	
383.9	MODESTO		GRAY SHALE	62.9	66.0	
321.0	MODESTO		SANDSTONE	1.3	128.9	GRAY
319.7	MODESTO		SHALE	19.1	130.2	
300.6	MODESTO	PIASA	LIMESTONE	7.7	149.3	
292.9	MODESTO		DARK SHALE	2.0	157.0	
290.9	CARBONDALE		GRAY SHALE	4.0	159.0	
286.9	CARBONDALE		SHALE	3.8	163.0	
283.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.2	166.8	
279.9	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.0	170.0	
275.9	CARBONDALE	BANKSTON FORK	LIMESTONE	1.3	174.0	
274.6	CARBONDALE		DARK SHALE	1.0	175.3	
273.6	CARBONDALE		CARBONACEOUS SHALE	6.4	176.3	
267.2	CARBONDALE	CONANT	CARBONACEOUS LIMESTONE	0.8	182.7	DARK GRAY
266.4	CARBONDALE		DARK GRAY SHALE	0.8	183.5	
265.6	CARBONDALE		BLACK SHALE & COAL	0.4	184.3	
265.2	CARBONDALE		DARK GRAY SHALE	1.4	184.7	
263.8	CARBONDALE		CLAYSTONE	1.0	186.1	
262.8	CARBONDALE	BRERETON	LIMESTONE	2.6	187.1	
260.2	CARBONDALE	ANNA	BLACK SHALE	1.4	189.7	
258.8	CARBONDALE	HERRIN	COAL	6.4	191.1	
252.4	CARBONDALE		UNDERCLAY & LIMESTONE	1.5	197.5	

MAPID: 18923131000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 10 QUARTERS/FOOTAGES:

QUADRANGLE: ST. LIBORY LONGITUDE: -89.638684

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.284866

DATE COLLECTED: 9 / 17 / 1973

SURFACE ELEVATION (FT.): 468.4 LOGGED (FT.): 223.8

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15816C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
468.4	PLEISTOCENE		GLACIAL DRIFT	55.0	0.0	
413.4	MODESTO		GRAY SHALE	110.2	55.0	
303.2	MODESTO	PIASA	LIMESTONE	8.0	165.2	
295.1	MODESTO		GRAY SHALE	0.8	173.3	
294.4	MODESTO		DARK SHALE	3.0	174.0	
291.4	CARBONDALE		GRAY SHALE	6.2	177.0	
285.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	183.2	
283.2	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	4.0	185.2	
279.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	189.2	
276.4	CARBONDALE		DARK SHALE	4.2	192.0	
272.2	CARBONDALE		CALCAREOUS SHALE	3.2	196.2	
269.0	CARBONDALE	CONANT	LIMESTONE	1.5	199.4	GRAY
267.5	CARBONDALE		GRAY SHALE	2.5	200.9	
265.0	CARBONDALE	BRERETON	ARGILLACEOUS LIMESTONE	1.8	203.4	GRAY
263.2	CARBONDALE	BRERETON	LIMESTONE	0.9	205.2	DARK GRAY
262.3	CARBONDALE	ANNA	DARK GRAY SHALE	1.6	206.1	
260.7	CARBONDALE	HERRIN	COAL	6.3	207.7	
254.4	CARBONDALE		UNDERCLAY	1.2	214.0	GRAY
253.2	CARBONDALE	HIGGINSVILLE	ARGILLACEOUS LIMESTONE	3.2	215.2	
250.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.4	218.4	GRAY

MAPID: 18902380000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 11 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW NW

QUADRANGLE: ST. LIBORY LONGITUDE: -89.626222

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.289292

DATE COLLECTED: 12 / 0 / 1967

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 295.0

LOG TYPE: Electric Log

SOURCE: BRADLEY PRODUCING CO.

WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
200.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	295.0	THIN COAL

MAPID: 18990051000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 13 QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: OAKDALE LONGITUDE: -89.603344 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.271078 DATE COLLECTED: 9 / 20 / 1976

SURFACE ELEVATION (FT.): 449.1 LOGGED (FT.): 230.9 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16567C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
449.1	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0	
404.1	MODESTO		SILTSTONE	18.0	45.0	
386.1	MODESTO		LIMESTONE	2.4	63.0	
383.7	MODESTO		MUDSTONE	0.8	65.4	
382.9	MODESTO		LIMESTONE	3.1	66.2	
379.8	MODESTO		MUDSTONE	5.1	69.3	
374.7	MODESTO		GRAY SHALE	50.6	74.4	
324.1	MODESTO		GRAY SHALE	20.4	125.0	LIMESTONE NODULES
303.7	MODESTO		SILTSTONE	4.0	145.4	
299.7	MODESTO		GRAY SHALE	14.0	149.4	
285.7	MODESTO		LIMESTONE	3.6	163.4	
282.1	MODESTO		GRAY SHALE	2.0	167.0	
280.1	MODESTO	PIASA	LIMESTONE	10.2	169.0	
269.9	MODESTO		DARK SHALE	4.8	179.2	
265.1	CARBONDALE		GRAY SHALE	2.4	184.0	
262.7	CARBONDALE	BANKSTON FORK	LIMESTONE	1.2	186.4	
261.5	CARBONDALE	BANKSTON FORK	GRAY SHALE	6.4	187.6	
255.1	CARBONDALE	BANKSTON FORK	LIMESTONE	10.4	194.0	
244.7	CARBONDALE		DARK SHALE	5.0	204.4	
239.7	CARBONDALE		DARK SHALE	2.5	209.4	CALCAREOUS
237.2	CARBONDALE	CONANT	LIMESTONE	0.9	211.9	
236.3	CARBONDALE	CONANT	DARK SHALE	1.8	212.8	CALCAREOUS
234.5	CARBONDALE	CONANT	LIMESTONE	0.4	214.6	
234.1	CARBONDALE		DARK SHALE	0.6	215.0	CALCAREOUS
233.5	CARBONDALE	BRERETON	LIMESTONE	3.3	215.6	
230.2	CARBONDALE	ANNA	DARK SHALE	1.6	218.9	
228.6	CARBONDALE	HERRIN	COAL	6.8	220.5	
221.8	CARBONDALE		UNDERCLAY	1.8	227.3	
220.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.9	229.0	

MAPID: 18900030000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 14 QUARTERS/FOOTAGES: NE SE SE

QUADRANGLE: OAKDALE LONGITUDE: -89.612444 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.265608 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.2 LOGGED (FT.): 221.9 LOG TYPE: Drillers Log

SOURCE: M.W. BORDERS ET AL WELL TYPE: Coal Test

COMMENT: SULLIVAN MACH. CO.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.2			UNCLASSIFIED	215.0	0.0	
230.2	CARBONDALE	HERRIN	COAL	6.9	215.0	

MAPID: 18990010000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 14 QUARTERS/FOOTAGES:

QUADRANGLE: OAKDALE LONGITUDE: -89.62917 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.267131 DATE COLLECTED: 9 / 25 / 1973

SURFACE ELEVATION (FT.): 464.7 LOGGED (FT.): 212.7 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15818C WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.7			UNCLASSIFIED	32.0	0.0	
432.7	MODESTO		GRAY SHALE	112.6	32.0	
320.1	MODESTO	PIASA	LIMESTONE	11.0	144.6	
309.1	MODESTO		SHALE	9.0	155.6	
300.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	164.6	BANKSTON FORK LS UPPER
294.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	170.1	
292.2	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.8	172.5	
288.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	176.3	BANKSTON FORK LS LOWER
286.2	CARBONDALE	LAWSON	DARK SHALE	8.1	178.5	
278.1	CARBONDALE	CONANT	LIMESTONE	0.4	186.6	
277.7	CARBONDALE		DARK SHALE	3.2	187.0	
274.5	CARBONDALE	BRERETON	LIMESTONE	2.8	190.2	
271.7	CARBONDALE	ANNA	SILTSTONE	1.3	193.0	
270.4	CARBONDALE	HERRIN	COAL	7.1	194.3	
263.3	CARBONDALE		UNDERCLAY	2.5	201.4	
260.8	CARBONDALE		SHALE	8.8	203.9	

MAPID: 18990020000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 14 QUARTERS/FOOTAGES:

QUADRANGLE: OAKDALE LONGITUDE: -89.618368

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.262911

DATE COLLECTED: 7 / 26 / 1976

SURFACE ELEVATION (FT.): 463.9 LOGGED (FT.): 209.3

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16554C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
463.9			CLAY	38.0	0.0	
425.9			CLAY	85.0	38.0	
340.9	MODESTO		SANDSTONE	1.4	123.0	
339.5	MODESTO		DARK SHALE	2.6	124.4	
336.9	MODESTO		GRAY SHALE	16.9	127.0	
320.0	MODESTO	PIASA	LIMESTONE	12.5	143.9	
307.5	MODESTO		GRAY SHALE	12.0	156.4	
295.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	168.4	BANKSTON FORK LS UPPER
291.7	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.4	172.2	
287.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	176.6	BANKSTON FORK LS LOWER
285.0	CARBONDALE	LAWSON	DARK SHALE	2.5	178.9	
282.5	CARBONDALE	LAWSON	DARK SHALE	0.4	181.4	
282.1	CARBONDALE	LAWSON	SHALE	0.3	181.8	
281.9	CARBONDALE	LAWSON	DARK SHALE	4.1	182.0	
277.8	CARBONDALE	CONANT	LIMESTONE	2.2	186.1	
275.6	CARBONDALE		CALCAREOUS SHALE	1.9	188.3	
273.6	CARBONDALE		LIMESTONE	0.7	190.3	
272.9	CARBONDALE		CALCAREOUS SHALE	2.1	191.0	
270.8	CARBONDALE	BRERETON	LIMESTONE	3.6	193.1	
267.2	CARBONDALE	ANNA	GRAY SHALE	0.3	196.7	
267.0	CARBONDALE	ANNA	DARK SHALE	0.1	196.9	
266.9	CARBONDALE	HERRIN	COAL	6.7	197.0	
260.1	CARBONDALE		SHALE	1.4	203.8	
258.7	CARBONDALE		UNDERCLAY	1.4	205.2	
257.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.2	206.5	
256.2	CARBONDALE	HIGGINSVILLE	SHALE	0.1	207.7	
256.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.7	207.8	
255.4	CARBONDALE		SHALE	0.8	208.5	

MAPID: 18990034000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 15 QUARTERS/FOOTAGES:

QUADRANGLE: ST. LIBORY LONGITUDE: -89.638645

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.270256

DATE COLLECTED: 4 / 2 / 1990

SURFACE ELEVATION (FT.): 456.4 LOGGED (FT.): 218.4

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16879C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
456.4	PLEISTOCENE		CLAY	42.1	0.0	BROWN
414.3	PLEISTOCENE		CLAY	39.8	42.1	GRAY
374.5	MODESTO		GRAY SHALE	48.2	81.9	
326.3	MODESTO		CALCAREOUS SANDSTONE	1.2	130.1	GRAY
325.1	MODESTO		SANDSTONE	2.4	131.3	GRAY
322.7	MODESTO		BLACK SHALE	1.3	133.7	
321.4	MODESTO		GRAY SHALE	6.6	135.0	
314.8	MODESTO		SANDY SHALE	2.3	141.6	
312.5	MODESTO		CALCAREOUS SHALE	1.7	143.9	
310.8	MODESTO		GRAY SHALE	2.9	145.6	
307.9	MODESTO	PIASA	LIMESTONE	0.5	148.5	WHITE
307.4	MODESTO	PIASA	LIMESTONE	9.2	149.0	GRAY
298.2			SHALE	0.6	158.2	GREEN-GRAY
297.6			SHALE	0.7	158.8	FISSILE
296.9			GRAY SHALE	1.5	159.5	LOST CORE
295.4			GRAY SHALE	0.5	161.0	
294.9			SHALE	0.8	161.5	FISSILE
294.1			GRAY SHALE	4.1	162.3	
290.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	166.4	LIGHT TAN
287.5	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.1	168.9	
283.4	CARBONDALE	BANKSTON FORK	ARGILLACEOUS LIMESTONE	1.6	173.0	
281.8	CARBONDALE		MUDSTONE	1.2	174.6	OLIVE
280.6	CARBONDALE		BLACK SHALE	0.5	175.8	LOST CORE
280.1	CARBONDALE		DARK SHALE	6.8	176.3	
273.3	CARBONDALE		CLAYSTONE & LIMESTONE	1.6	183.1	
271.7	CARBONDALE		DARK GRAY SHALE	1.1	184.7	
270.6	CARBONDALE	CONANT	LIMESTONE	0.2	185.8	BLACK
270.4	CARBONDALE		BLACK SHALE & LIMESTONE	0.0	186.0	
270.4	CARBONDALE		DARK GRAY SHALE	0.7	186.0	
269.7	CARBONDALE		BLACK SHALE	1.3	186.7	
268.4	CARBONDALE		CLAYSTONE & LIMESTONE	1.9	188.0	
266.5	CARBONDALE		CLAYSTONE & LIMESTONE	0.7	189.9	DARK
265.8	CARBONDALE	BRERETON	LIMESTONE	0.5	190.6	DARK GRAY
265.3	CARBONDALE	BRERETON	CLAYSTONE & LIMESTONE	1.1	191.1	

264.2	CARBONDALE	BRERETON	LIMESTONE	0.7	192.2	DARK GRAY
263.5	CARBONDALE		BLACK SHALE	0.2	192.9	
263.3	CARBONDALE	HERRIN	COAL	5.4	193.1	
257.9	CARBONDALE	HERRIN	GRAY SHALE	0.1	198.5	
257.9	CARBONDALE	HERRIN	COAL	1.2	198.5	
256.6	CARBONDALE		UNDERCLAY	1.1	199.8	
255.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.0	200.9	
253.5	CARBONDALE	HIGGINSVILLE	SHALE	0.1	202.9	
253.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.6	203.0	GRAY
252.8	CARBONDALE		MUDSTONE	7.6	203.6	GRAY
245.2	CARBONDALE		LIMESTONE	1.3	211.2	
243.9	CARBONDALE		GRAY SHALE	5.9	212.5	

MAPID: 18900432000C **VERSION:** 1 **PROJECT:** NCRDS90
COUNTY: WASHINGTON **TWP/RNG:** 3S 5W **SECTION:** 17 **QUARTERS/FOOTAGES:** 660' S line, 660' E line
QUADRANGLE: ST. LIBORY **LONGITUDE:** -89.668514 **GEOLOGIST:** S.SROKA
CONFIDENTIAL: N **LATITUDE:** 38.264993 **DATE COLLECTED:** 0 / 0 / 1918
SURFACE ELEVATION (FT.): 417.7 **LOGGED (FT.):** 126.6 **LOG TYPE:** Drillers Log
SOURCE: ALUMINUM ORE CO., #12 **WELL TYPE:** Coal Test
COMMENT: SECTION 17 (A-1)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.7			CLAY	61.0	0.0	CLAY & MUD
356.7	MODESTO		BLACK SHALE	12.5	61.0	
344.2	MODESTO		CALCAREOUS CLAYSTONE	7.5	73.5	
336.7	MODESTO		SANDSTONE	0.5	81.0	
336.2	MODESTO		CLAYSTONE & LIMESTONE	2.0	81.5	BLUE LIMES CLYST
334.2	MODESTO		CALCAREOUS SHALE	4.5	83.5	
329.7	MODESTO		LIMESTONE	1.0	88.0	
328.7	MODESTO		CALCAREOUS SHALE	2.8	89.0	
325.9	MODESTO		SANDSTONE	2.6	91.8	
323.4	MODESTO		BONE COAL	0.5	94.3	
322.9	MODESTO		UNDERCLAY	3.2	94.8	
319.7	MODESTO	PIASA	LIMESTONE	6.5	98.0	
313.2	MODESTO	PIASA	CALCAREOUS SHALE	5.9	104.5	
307.3	MODESTO	PIASA	LIMESTONE	1.3	110.4	
306.0	MODESTO	PIASA	CALCAREOUS CLAYSTONE	1.0	111.7	
305.0	MODESTO	PIASA	LIMESTONE	5.2	112.7	
299.9	MODESTO	PIASA	CALCAREOUS SHALE	1.7	117.8	
298.2	MODESTO	PIASA	LIMESTONE	4.0	119.5	
294.2	MODESTO		SHALE	0.5	123.5	
293.7	CARBONDALE	DANVILLE	COAL	0.9	124.0	
292.8	CARBONDALE		UNDERCLAY	1.7	124.9	

MAPID: 18900430000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 18 QUARTERS/FOOTAGES: 1600' N line, 50' E line

QUADRANGLE: ST. LIBORY LONGITUDE: -89.684969 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.273335 DATE COLLECTED: 3 / 0 / 1918

SURFACE ELEVATION (FT.): 432.6 LOGGED (FT.): 162.0 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #9 WELL TYPE: Coal Test

COMMENT: SECTION 18 (F-1)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
432.6			SOIL	16.0	0.0	
416.6	MODESTO		SANDY SHALE	5.0	16.0	
411.6	MODESTO		SHALE	49.8	21.0	"SANDY SH & GRAY SLATE"
361.8	MODESTO		SHALE	10.7	70.8	"SLATES"
351.1	MODESTO		BONE COAL	0.3	81.5	
350.8	MODESTO		SANDSTONE	1.0	81.8	
349.8	MODESTO		BONE COAL	0.1	82.8	
349.7	MODESTO		CLAYSTONE & SILTSTONE	1.0	82.9	
348.7	MODESTO		CALCAREOUS SHALE	7.0	83.9	
341.7	MODESTO		BLACK SHALE	1.2	90.9	
340.5	MODESTO		SANDSTONE	3.3	92.1	
337.2	MODESTO		COAL W/ BLACK SHALE	1.5	95.4	
335.7	MODESTO		CLAYSTONE & SHALE	2.3	96.9	BLUE CLYST AND SANDY SH
333.3	MODESTO		CLAYSTONE & SHALE	3.8	99.3	LIMEY CLYST & SHALES
329.5	MODESTO	PIASA	LIMESTONE	2.4	103.1	
327.1	MODESTO	PIASA	CALCAREOUS CLAYSTONE	0.2	105.5	
326.9	MODESTO	PIASA	LIMESTONE	2.2	105.7	
324.8	MODESTO	PIASA	UNCLASSIFIED	4.2	107.8	
320.6	MODESTO	PIASA	LIMESTONE	11.2	112.0	
309.4	MODESTO		CALCAREOUS SHALE	0.3	123.2	
309.1	CARBONDALE	DANVILLE	BONE COAL	1.0	123.5	
308.1	CARBONDALE		CALCAREOUS SHALE	3.8	124.5	
304.3	CARBONDALE	BANKSTON FORK	LIMESTONE	6.1	128.3	
298.3	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	0.4	134.3	
297.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	134.8	
295.4	CARBONDALE		CALCAREOUS SHALE	0.8	137.2	
294.7	CARBONDALE	BRERETON	LIMESTONE	2.9	137.9	
291.8	CARBONDALE		BLACK SHALE	9.2	140.8	
282.6	CARBONDALE	BRERETON	LIMESTONE	3.3	150.0	
279.3	CARBONDALE	HERRIN	COAL	8.2	153.3	
271.1	CARBONDALE		UNDERCLAY	0.5	161.5	

MAPID: 18900431000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 18 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: ST. LIBORY LONGITUDE: -89.685841 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.263878 DATE COLLECTED: 3 / 0 / 1918

SURFACE ELEVATION (FT.): 424.7 LOGGED (FT.): 116.3 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #11 WELL TYPE: Coal Test

COMMENT: SECTION 18 (A-1)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
424.7			SOIL	20.0	0.0	
404.7	MODESTO		SHALE	40.0	20.0	CLAYEY & SANDY
364.7	MODESTO		LIMESTONE W/ SHALE	9.0	60.0	LIMEY SH
355.7	MODESTO		LIMESTONE	0.7	69.0	
355.0	MODESTO		SANDSTONE & BLACK SHALE	0.3	69.7	
354.7	MODESTO		CLAYSTONE & SILTSTONE	11.0	70.0	W/ LS PEBBLES
343.7	MODESTO		CLAYSTONE & SILTSTONE	2.2	81.0	
341.5	MODESTO		SANDSTONE	2.7	83.2	
338.9	MODESTO		COAL	0.2	85.8	
338.7	MODESTO		CALCAREOUS CLAYSTONE	6.4	86.0	
332.3	MODESTO	PIASA	LIMESTONE	3.6	92.4	
328.7	MODESTO	PIASA	LIMESTONE W/ SHALE	3.6	96.0	LIMEY SHALES
325.1	MODESTO	PIASA	LIMESTONE	12.9	99.6	
312.2	MODESTO		BLACK SHALE	1.0	112.5	
311.2	CARBONDALE	DANVILLE	COAL	2.5	113.5	
308.7	CARBONDALE		UNDERCLAY	0.3	116.0	

MAPID: 18900431000C VERSION: 2

PROJECT: NCRDS87

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 18 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: ST. LIBORY LONGITUDE: -89.685841 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.263878 DATE COLLECTED: 3 / 0 / 1918

SURFACE ELEVATION (FT.): 424.7 LOGGED (FT.): 116.3 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.7			UNCONSOLIDATED	20.0	0.0
404.7	CARBONDALE		SHALE	40.0	20.0
364.7	CARBONDALE		UNCLASSIFIED	23.2	60.0
341.5	CARBONDALE		SANDSTONE	2.7	83.2
338.9	CARBONDALE		COAL	0.2	85.8
338.7	CARBONDALE		UNCLASSIFIED	26.5	86.0
312.2	CARBONDALE	ANNA	BLACK SHALE	1.0	112.5
311.2	CARBONDALE	HERRIN	COAL	2.5	113.5
308.7	CARBONDALE		UNDERCLAY	0.3	116.0

MAPID: 18990039000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 18 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: ST. LIBORY LONGITUDE: -89.695384 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.26945 DATE COLLECTED: 11 / 23 / 1971

SURFACE ELEVATION (FT.): 435.1 LOGGED (FT.): 155.5 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12542C WELL TYPE: Coal Test

COMMENT: PERMIT #61 ST. LIBORY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.1	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
400.1	MODESTO		GRAY SHALE	52.0	35.0
348.1	MODESTO		SANDSTONE	2.3	87.0
345.8	MODESTO		GRAY SHALE	17.9	89.3
327.9	MODESTO	PIASA	LIMESTONE	10.4	107.2
317.5	MODESTO		DARK SHALE	2.6	117.6
315.0	CARBONDALE		GRAY SHALE	5.0	120.1
310.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.6	125.1
306.4	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.1	128.7
302.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	132.8
300.0	CARBONDALE		DARK SHALE	12.0	135.1
288.0	CARBONDALE	ANNA	BLACK SHALE	0.8	147.1
287.2	CARBONDALE	HERRIN	COAL	6.7	147.9
280.6	CARBONDALE		UNDERCLAY	1.0	154.5

WITH
LIMESTONE

MAPID: 18990040000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 18 QUARTERS/FOOTAGES: NW SE NE

QUADRANGLE: ST. LIBORY LONGITUDE: -89.688327 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.273131 DATE COLLECTED: 8 / 17 / 1971

SURFACE ELEVATION (FT.): 432.6 LOGGED (FT.): 159.8 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12532C WELL TYPE: Coal Test

COMMENT: PERMIT #61 ST. LIBORY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
432.6	PLEISTOCENE		UNCONSOLIDATED	68.1	0.0	
364.5	MODESTO		GRAY SHALE	41.0	68.1	
323.5	MODESTO	PIASA	LIMESTONE	11.2	109.1	
312.3			GRAY SHALE	9.1	120.3	
303.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.1	129.4	
300.1	CARBONDALE	BANKSTON FORK	SHALE	4.3	132.5	
295.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	136.8	
293.6	CARBONDALE		DARK SHALE	7.9	139.0	WITH LIMESTONE
285.7	CARBONDALE		SHALE	3.0	146.9	
282.7	CARBONDALE	ANNA	BLACK SHALE	2.8	149.9	
279.9	CARBONDALE	HERRIN	COAL	6.8	152.7	
273.2	CARBONDALE		UNDERCLAY	0.6	159.4	

MAPID: 18900433000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 19 QUARTERS/FOOTAGES: 2350' N line, 1600' W line

QUADRANGLE: ST. LIBORY LONGITUDE: -89.698041 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.256517 DATE COLLECTED: 3 / 0 / 1918

SURFACE ELEVATION (FT.): 451.3 LOGGED (FT.): 144.4 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #13 WELL TYPE: Coal Test

COMMENT: SECTION 19 (E6)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
451.3			CLAY & SHALE	31.3	0.0	SANDY; MODESTO IN PART
420.0	MODESTO		BLACK SHALE	30.0	31.3	
390.0	MODESTO		CALCAREOUS SHALE	14.0	61.3	
376.0	MODESTO		LIMESTONE	2.5	75.3	
373.5	MODESTO		SANDSTONE	5.0	77.8	
368.5	MODESTO		COAL	1.9	82.8	
366.5	MODESTO		CALCAREOUS SHALE	3.4	84.8	
363.1	MODESTO		ROCK	0.5	88.2	LOG HAS RED PAINT ROCK
362.6	MODESTO	PIASA	LIMESTONE	3.5	88.7	
359.1	MODESTO	PIASA	CALCAREOUS SHALE	4.0	92.2	
355.1	MODESTO	PIASA	LIMESTONE	10.0	96.2	
345.1	MODESTO		CALCAREOUS SHALE	3.5	106.2	
341.6	CARBONDALE	DANVILLE	CLAYSTONE & SILTSTONE	1.3	109.7	LOG HAS BONY CLAY
340.4	CARBONDALE		UNDERCLAY	2.3	110.9	
338.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.2	113.2	
333.0	CARBONDALE		CALCAREOUS SHALE	4.5	118.3	
328.5	CARBONDALE	BRERETON	LIMESTONE	3.2	122.8	
325.3	CARBONDALE	ANNA	BLACK SHALE	9.5	126.0	
315.8	CARBONDALE	HERRIN	COAL	8.1	135.5	
307.7	CARBONDALE		UNDERCLAY	0.8	143.6	

MAPID: 18923314000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 19 QUARTERS/FOOTAGES: 325' N, 50' W, NW/c SW SE

QUADRANGLE: ST. LIBORY LONGITUDE: -89.694063

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.251184

DATE COLLECTED: 8 / 8 / 1976

SURFACE ELEVATION (FT.): 471.6 LOGGED (FT.): 190.6

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16425C

WELL TYPE: Coal Test

COMMENT: PERMIT #48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
471.6	PLEISTOCENE		CLAY	38.9	0.0	
432.7	MODESTO		SANDSTONE	1.0	38.9	BROWN
431.7	MODESTO		SHALE	3.2	39.9	
428.5	MODESTO		GRAY SHALE	74.7	43.1	
353.8	MODESTO		SANDSTONE	3.1	117.8	GRAY
350.7	MODESTO		GRAY SHALE	16.8	120.9	
333.9	MODESTO	PIASA	LIMESTONE	10.0	137.7	
323.9			CALCAREOUS SHALE	19.9	147.7	
304.0			DARK SHALE	5.9	167.6	
298.1	CARBONDALE	BRERETON	LIMESTONE	1.4	173.5	
296.7	CARBONDALE	ANNA	BLACK SHALE	3.1	174.9	
293.6	CARBONDALE	HERRIN	COAL	4.9	178.0	
288.7	CARBONDALE	HERRIN	GRAY SHALE	0.1	182.9	
288.6	CARBONDALE	HERRIN	COAL	1.3	183.0	
287.3	CARBONDALE		UNDERCLAY	0.7	184.3	
286.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.6	185.0	

MAPID: 18990031000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 19 QUARTERS/FOOTAGES:

QUADRANGLE: ST. LIBORY LONGITUDE: -89.694209

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.255715

DATE COLLECTED: 1 / 30 / 1984

SURFACE ELEVATION (FT.): 442.6 LOGGED (FT.): 155.6

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16779C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.6	PLEISTOCENE		SANDY CLAY	28.0	0.0	BROWN
414.6	PLEISTOCENE		CLAY	15.4	28.0	GRAY
399.2	MODESTO		SANDY SHALE	35.2	43.4	
364.0	MODESTO		SANDSTONE	1.5	78.6	GRAY
362.5	MODESTO		SANDY SHALE	7.3	80.1	
355.2	MODESTO	PIASA	LIMESTONE	2.6	87.4	GRAY
352.6	MODESTO	PIASA	GRAY SHALE	2.7	90.0	
349.9	MODESTO	PIASA	LIMESTONE	8.3	92.7	GRAY
341.6	MODESTO		GRAY SHALE	8.8	101.0	
332.8	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	109.8	
328.6	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	4.6	114.0	
324.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.1	118.6	
320.9	CARBONDALE		DARK SHALE	9.2	121.7	
311.7	CARBONDALE	BRERETON	LIMESTONE	2.7	130.9	DARK
309.0	CARBONDALE	ANNA	BLACK SHALE	1.6	133.6	
307.4	CARBONDALE	HERRIN	COAL	6.4	135.2	
301.0	CARBONDALE		UNDERCLAY	1.5	141.6	
299.5	CARBONDALE		SHALE	5.4	143.1	
294.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	6.4	148.5	
287.7	CARBONDALE		GREEN SHALE	0.7	154.9	

MAPID: 18902724000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 20 QUARTERS/FOOTAGES: 100' N, 100' W, NW/c SW SW

QUADRANGLE: ST. LIBORY LONGITUDE: -89.684498 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.252393 DATE COLLECTED: 9 / 2 / 1971

SURFACE ELEVATION (FT.): 431.6 LOGGED (FT.): 145.4 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12671C WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.6	PLEISTOCENE		CLAY	63.9	0.0
367.7	MODESTO		SANDSTONE	1.3	63.9
366.4	MODESTO		GRAY SHALE	9.2	65.2
357.2	MODESTO		SANDSTONE	4.9	74.4
352.3	MODESTO		DARK SHALE	1.7	79.3
350.6	MODESTO		GRAY SHALE	4.8	81.0
345.8	MODESTO		SANDSTONE	5.9	85.8
339.9	MODESTO		GRAY SHALE	5.6	91.7
334.3	MODESTO	PIASA	LIMESTONE	9.2	97.3
325.1	MODESTO		DARK SHALE	2.5	106.5
322.6	CARBONDALE	DANVILLE	COAL	1.2	109.0
321.4	CARBONDALE		GRAY SHALE	2.8	110.2
318.6	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	113.0
315.6	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.9	116.0
311.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.6	119.9
309.1	CARBONDALE		DARK SHALE	7.8	122.5
301.3	CARBONDALE	CONANT	LIMESTONE	1.5	130.3
299.8	CARBONDALE	CONANT	SHALE	0.5	131.8
299.3	CARBONDALE	CONANT	LIMESTONE	0.8	132.3
298.5	CARBONDALE		SHALE	3.3	133.1
295.2	CARBONDALE	BRERETON	LIMESTONE	1.7	136.4
293.5	CARBONDALE	HERRIN	COAL	2.0	138.1
291.5	CARBONDALE	HERRIN	SHALE	0.0	140.1
291.4	CARBONDALE	HERRIN	COAL	2.9	140.2
288.6	CARBONDALE	HERRIN	SHALE	0.0	143.0
288.5	CARBONDALE	HERRIN	COAL	1.3	143.1
287.2	CARBONDALE		UNDERCLAY	1.0	144.4

MAPID: 18902875000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 20 QUARTERS/FOOTAGES: 330' N line, 330' E line of SE SW

QUADRANGLE: ST. LIBORY LONGITUDE: -89.676755 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.251232 DATE COLLECTED: 5 / 0 / 1973

SURFACE ELEVATION (FT.): 457.0 LOGGED (FT.): 280.0 LOG TYPE: Electric Log

SOURCE: CREST OIL CO., INC. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
341.0	MODESTO	PIASA	UNCLASSIFIED	-	116.0	
300.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	157.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		THIN OR ABSENT
226.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	231.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
177.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	280.0	

MAPID: 18900429000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 21 QUARTERS/FOOTAGES: 2900' S line, 1500' W line

QUADRANGLE: ST. LIBORY LONGITUDE: -89.661016 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.256495 DATE COLLECTED: 3 / 0 / 1918

SURFACE ELEVATION (FT.): 452.3 LOGGED (FT.): 193.0 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #7 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.3			SAND/CLAY	68.8	0.0	SOIL, CLAY, SANDY SH
383.5	MODESTO		BLACK SHALE & LIMESTONE	40.3	68.8	
343.2	MODESTO		CALCAREOUS SHALE	7.0	109.1	
336.2	MODESTO		SANDSTONE	5.6	116.1	
330.6	MODESTO		BLACK SHALE & COAL	0.7	121.7	
330.0	MODESTO		SHALE	3.8	122.3	
326.2	MODESTO	PIASA	LIMESTONE	7.5	126.1	
318.7	MODESTO	PIASA	CALCAREOUS SHALE	1.4	133.6	
317.3	MODESTO	PIASA	LIMESTONE	1.0	135.0	
316.3	MODESTO	PIASA	CALCAREOUS SHALE	1.5	136.0	LOG HAS "LIME SH-RED PAINT ROCK"
314.8	MODESTO	PIASA	SHALE	0.7	137.5	
314.1	MODESTO	PIASA	ROCK	0.2	138.2	
314.0	MODESTO	PIASA	CALCAREOUS SHALE	3.7	138.3	
310.3	MODESTO	PIASA	LIMESTONE	10.0	142.0	
300.3	CARBONDALE	DANVILLE	BONE COAL	2.5	152.0	
297.8	CARBONDALE		BLACK SHALE	4.5	154.5	
293.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	159.0	
290.5	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	4.0	161.8	
286.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	165.8	
283.9	CARBONDALE		BLACK SHALE	6.0	168.4	
277.9	CARBONDALE		CALCAREOUS SHALE	1.2	174.4	
276.7	CARBONDALE		BLACK SHALE	1.3	175.6	
275.5	CARBONDALE	CONANT	LIMESTONE	0.7	176.8	
274.8	CARBONDALE		BLACK SHALE	2.1	177.5	
272.7	CARBONDALE	BRERETON	LIMESTONE	4.3	179.6	
268.4	CARBONDALE	ANNA	BLACK SHALE	1.1	183.9	
267.3	CARBONDALE	HERRIN	COAL	6.5	185.0	
260.8	CARBONDALE		UNDERCLAY	1.5	191.5	

MAPID: 18900765000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 21 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE

QUADRANGLE: ST. LIBORY LONGITUDE: -89.649112 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.256682 DATE COLLECTED: 11 / 0 / 1956

SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 300.0 LOG TYPE: Electric Log

SOURCE: MONTGOMERY BILL WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
312.0	MODESTO	PIASA	UNCLASSIFIED	-	147.0	
257.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	202.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG
206.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	253.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
159.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	300.0	

MAPID: 18990012000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 22 QUARTERS/FOOTAGES:

QUADRANGLE: ST. LIBORY LONGITUDE: -89.639398 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.248503 DATE COLLECTED: 12 / 12 / 1975

SURFACE ELEVATION (FT.): 442.6 LOGGED (FT.): 170.6 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15998C WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.6			UNCLASSIFIED	48.6	0.0	
394.0	MODESTO		GRAY SHALE	45.7	48.6	
348.3	MODESTO	GIMLET	SANDSTONE	4.7	94.3	
343.6	MODESTO		GRAY SHALE	15.2	99.0	
328.4	MODESTO	PIASA	LIMESTONE	8.7	114.2	
319.7	MODESTO		GRAY SHALE	20.5	122.9	
299.2	CARBONDALE	LAWSON	DARK SHALE	11.8	143.4	
287.4	CARBONDALE		LIMESTONE	0.0	155.2	
287.4	CARBONDALE		SHALE	0.0	155.2	
287.4	CARBONDALE	BRERETON	LIMESTONE	4.4	155.2	
283.0	CARBONDALE		SILTSTONE	0.0	159.6	
283.0	CARBONDALE	HERRIN	COAL	5.1	159.6	
277.9	CARBONDALE	HERRIN	GRAY SHALE	0.2	164.7	
277.7	CARBONDALE	HERRIN	COAL	1.2	164.9	
276.5	CARBONDALE		UNDERCLAY	1.5	166.1	
275.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.0	167.6	

MAPID: 18990033000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 22 QUARTERS/FOOTAGES:

QUADRANGLE: ST. LIBORY LONGITUDE: -89.638845

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.255605

DATE COLLECTED: 4 / 10 / 1972

SURFACE ELEVATION (FT.): 456.2

LOGGED (FT.): 191.3

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12959C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
456.2	PLEISTOCENE		CLAY	46.7	0.0	
409.5	PLEISTOCENE		CLAY	10.9	46.7	
398.6	MODESTO		GRAY SHALE	58.0	57.6	
340.6	MODESTO		SANDSTONE	3.8	115.6	
336.8	MODESTO		DARK SHALE	2.3	119.4	
334.5	MODESTO		GRAY SHALE	1.6	121.7	
332.9	MODESTO		SANDSTONE	1.0	123.3	
331.9	MODESTO		SHALE	0.5	124.3	
331.4	MODESTO		LIMESTONE	1.1	124.8	
330.3	MODESTO		SOFT SHALE	1.0	125.9	
329.3	MODESTO		SHALE	6.8	126.9	
322.5	MODESTO	PIASA	LIMESTONE	10.3	133.7	
312.2			GRAY SHALE	2.9	144.0	
309.3			SANDSTONE	6.6	146.9	
302.7			GRAY SHALE	5.1	153.5	
297.6	CARBONDALE	BANKSTON FORK	LIMESTONE	3.1	158.6	
294.5	CARBONDALE	BANKSTON FORK	SHALE	3.7	161.7	
290.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	165.4	
288.3	CARBONDALE		DARK SHALE	6.6	167.9	
281.7	CARBONDALE		SHALE	0.5	174.5	
281.2	CARBONDALE		GRAY SHALE	2.0	175.0	FISSILE
279.2	CARBONDALE	CONANT	LIMESTONE	0.6	177.0	
278.6	CARBONDALE		CALCAREOUS SHALE	0.8	177.6	
277.8	CARBONDALE		CALCAREOUS SHALE	1.5	178.4	WITH LIMESTONE FISSILE
276.3	CARBONDALE	BRERETON	LIMESTONE	1.3	179.9	GRAY
275.0	CARBONDALE	ANNA	BLACK SHALE	2.4	181.2	
272.6	CARBONDALE	HERRIN	COAL	4.9	183.6	
267.7	CARBONDALE	HERRIN	SHALE	0.0	188.5	
267.7	CARBONDALE	HERRIN	COAL	1.9	188.5	
265.7	CARBONDALE		UNDERCLAY	0.8	190.5	

MAPID: 18900764000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 23 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE NW

QUADRANGLE: OAKDALE LONGITUDE: -89.623878 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.256359 DATE COLLECTED: 11 / 0 / 1956

SURFACE ELEVATION (FT.): 444.0 LOGGED (FT.): 279.0 LOG TYPE: Electric Log

SOURCE: MONTGOMERY BILL WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
300.0	MODESTO	PIASA	UNCLASSIFIED	-	144.0
244.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	200.0
165.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	279.0

MAPID: 18990015000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 23 QUARTERS/FOOTAGES:

QUADRANGLE: OAKDALE LONGITUDE: -89.611434

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.262724

DATE COLLECTED: 1 / 16 / 1976

SURFACE ELEVATION (FT.): 473.3 LOGGED (FT.): 253.0

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16290C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
473.3			CLAY	22.0	0.0	
451.3			CLAY	8.0	22.0	
443.3	MODESTO	TRIVOLI	SANDSTONE	45.0	30.0	
398.3	MODESTO		GRAY SHALE	103.0	75.0	
295.3	MODESTO	PIASA	LIMESTONE	4.0	178.0	
291.3	MODESTO		GRAY SHALE	4.8	182.0	
286.5	MODESTO	PIASA	LIMESTONE	8.2	186.8	
278.3	MODESTO		GRAY SHALE	17.4	195.0	
260.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	212.4	BANKSTON FORK LS UPPER
257.1	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.2	216.2	
252.9	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	220.4	BANKSTON FORK LS LOWER
251.9	CARBONDALE	BANKSTON FORK	LIMESTONE	0.9	221.4	BANKSTON FORK LS LOWER
251.0	CARBONDALE	LAWSON	CALCAREOUS SHALE	0.3	222.3	
250.7	CARBONDALE	LAWSON	DARK SHALE	6.4	222.6	
244.3	CARBONDALE	CONANT	LIMESTONE	0.9	229.0	
243.5	CARBONDALE		DARK SHALE	6.4	229.8	
237.0	CARBONDALE	BRERETON	LIMESTONE	1.7	236.3	
235.4	CARBONDALE	ANNA	SILTSTONE	0.8	237.9	
234.6	CARBONDALE	HERRIN	COAL	6.9	238.7	
227.7	CARBONDALE		UNDERCLAY	1.3	245.6	
226.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.9	246.9	
225.5	CARBONDALE		SHALE	1.2	247.8	
224.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.0	248.9	
223.4	CARBONDALE		SHALE	1.1	249.9	
222.3	CARBONDALE		SANDSTONE	0.4	251.0	
221.8	CARBONDALE		LIMESTONE	1.5	251.5	

MAPID: 18990022000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 23 QUARTERS/FOOTAGES:

QUADRANGLE: OAKDALE LONGITUDE: -89.620416

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.248359

DATE COLLECTED: 10 / 27 / 1976

SURFACE ELEVATION (FT.): 489.1 LOGGED (FT.): 231.1

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16575C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
489.1			UNCONSOLIDATED	25.0	0.0	
464.1			SAND	2.0	25.0	
462.1			UNCONSOLIDATED	10.0	27.0	
452.1	MODESTO		SANDSTONE	19.0	37.0	MAY BE SAND OR SANDSTONE
433.1	MODESTO		SANDSTONE	1.8	56.0	
431.3	MODESTO		GRAY SHALE	4.2	57.8	
427.1	MODESTO		SANDSTONE	0.6	62.0	
426.5	MODESTO		GRAY SHALE	79.2	62.6	
347.3	MODESTO		LIMESTONE	2.8	141.8	
344.5	MODESTO		DARK SHALE	1.4	144.6	
343.1	MODESTO		GRAY SHALE	17.6	146.0	
325.5	MODESTO	PIASA	LIMESTONE	13.8	163.6	
311.7	MODESTO		DARK SHALE	0.6	177.4	
311.1	MODESTO		GRAY SHALE	13.2	178.0	
297.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	191.2	BANKSTON FORK LS UPPER
295.1	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.6	194.0	
293.5	CARBONDALE	BANKSTON FORK	LIMESTONE	0.9	195.6	
292.6	CARBONDALE	BANKSTON FORK	GRAY SHALE	2.2	196.5	
290.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	198.7	BANKSTON FORK LS LOWER
287.9	CARBONDALE	LAWSON	DARK SHALE	6.3	201.2	
281.6	CARBONDALE	CONANT	LIMESTONE	0.7	207.5	
280.9	CARBONDALE		DARK SHALE	2.9	208.2	
278.0	CARBONDALE		LIMESTONE	0.0	211.1	
278.0	CARBONDALE		DARK SHALE	5.2	211.1	
272.7	CARBONDALE	BRERETON	LIMESTONE	0.1	216.4	
272.6	CARBONDALE	ANNA	DARK SHALE	0.2	216.5	
272.4	CARBONDALE	HERRIN	COAL	6.8	216.7	
265.6	CARBONDALE		UNDERCLAY	1.1	223.5	
264.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.8	224.6	
259.8	CARBONDALE		GRAY SHALE	1.3	229.3	
258.5	CARBONDALE		LIMESTONE	0.5	230.6	

MAPID: 18990047000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 23 QUARTERS/FOOTAGES: NW SE SW

QUADRANGLE: OAKDALE LONGITUDE: -89.623907 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.250829 DATE COLLECTED: 7 / 12 / 1995

SURFACE ELEVATION (FT.): 481.9 LOGGED (FT.): 230.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17030C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
481.9	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0	
443.9	MODESTO		SANDSTONE	9.0	38.0	
434.9	MODESTO		LIMESTONE	2.0	47.0	
432.9	MODESTO		COAL	2.0	49.0	
430.9	MODESTO		GRAY SHALE	1.0	51.0	
429.9	MODESTO		LIMESTONE	1.0	52.0	
428.9	MODESTO		COAL	1.0	53.0	
427.9	MODESTO		GRAY SHALE	68.0	54.0	
359.9	MODESTO		SANDSTONE	1.0	122.0	
358.9	MODESTO		DARK SHALE	11.0	123.0	
347.9	MODESTO		SANDSTONE	1.0	134.0	CALCAREOUS
346.9	MODESTO		SHALE	4.0	135.0	
342.9	MODESTO		SANDSTONE	8.0	139.0	
334.9	MODESTO		GRAY SHALE	20.0	147.0	
314.9	MODESTO	PIASA	LIMESTONE	10.0	167.0	
304.9			GRAY SHALE	13.0	177.0	
291.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	190.0	
289.2	CARBONDALE	BANKSTON FORK	SHALE	5.0	192.7	
284.2	CARBONDALE	BANKSTON FORK	LIMESTONE	1.8	197.7	
282.4	CARBONDALE		GRAY SHALE	6.9	199.5	
275.5	CARBONDALE	CONANT	LIMESTONE	0.9	206.4	
274.7	CARBONDALE		SHALE	5.9	207.2	
268.8	CARBONDALE	BRERETON	LIMESTONE	2.7	213.1	
266.1	CARBONDALE	ANNA	BLACK SHALE	0.8	215.8	
265.3	CARBONDALE	HERRIN	COAL	6.8	216.6	
258.5	CARBONDALE		UNDERCLAY	1.9	223.4	
256.7	CARBONDALE		SHALE	4.8	225.2	

MAPID: 18901147000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 24 QUARTERS/FOOTAGES: 330' N line, 330' W line

QUADRANGLE: OAKDALE LONGITUDE: -89.61011 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.261986 DATE COLLECTED: 8 / 0 / 1949

SURFACE ELEVATION (FT.): 477.0 LOGGED (FT.): 372.0 LOG TYPE: Electric Log

SOURCE: EWART LOWELL G WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
289.0	MODESTO	PIASA	UNCLASSIFIED	-	188.0	
232.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	245.0	
213.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	264.0	THIN OR ABSENT
149.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	328.0	
-	CARBONDALE	SURVANT	UNCLASSIFIED	0.0		
105.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	372.0	

MAPID: 18990007000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 24 QUARTERS/FOOTAGES:

QUADRANGLE: OAKDALE LONGITUDE: -89.610632 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.255577 DATE COLLECTED: 2 / 28 / 1973

SURFACE ELEVATION (FT.): 463.5 LOGGED (FT.): 230.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15587C WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
463.5			UNCLASSIFIED	37.0	0.0	
426.5			CLAY	30.5	37.0	
396.0	MODESTO		GRAY SHALE	76.5	67.5	
319.5	MODESTO	GIMLET	SANDSTONE	2.5	144.0	
317.0	MODESTO		GRAY SHALE	23.1	146.5	
293.9	MODESTO	PIASA	LIMESTONE	9.4	169.6	
284.5	MODESTO		GRAY SHALE	14.0	179.0	
270.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	193.0	BANKSTON FORK LS UPPER
267.0	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.7	196.5	
263.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	200.2	BANKSTON FORK LS LOWER
260.9	CARBONDALE	LAWSON	DARK SHALE	6.4	202.6	
254.5	CARBONDALE	CONANT	LIMESTONE	3.3	209.0	
251.2	CARBONDALE		DARK SHALE	2.7	212.3	
248.5	CARBONDALE	BRERETON	LIMESTONE	2.7	215.0	
245.8	CARBONDALE	ANNA	DARK SHALE	2.2	217.7	
243.6	CARBONDALE	HERRIN	COAL	6.7	219.9	
236.9	CARBONDALE		UNDERCLAY	1.5	226.6	
235.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.9	228.1	

MAPID: 18990001000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.610698

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.236531

DATE COLLECTED: 3 / 27 / 1957

SURFACE ELEVATION (FT.): 499.5 LOGGED (FT.): 233.8

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 2757C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
499.5			CLAY	15.2	0.0	
484.3			SAND	6.2	15.2	
478.1			CLAY	8.3	21.4	
469.8	MODESTO	TRIVOLI	SANDSTONE	34.6	29.7	
435.2	MODESTO		GRAY SHALE	77.7	64.3	
357.5	MODESTO		GRAY SHALE	3.0	142.0	
354.5	MODESTO		SANDY SHALE	5.5	145.0	
349.1	MODESTO		GRAY SHALE	27.4	150.4	
321.7	MODESTO	PIASA	LIMESTONE	12.1	177.8	
309.6	MODESTO		GRAY SHALE	10.2	189.9	
299.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	200.2	BANKSTON FORK UPPER
297.1	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.4	202.4	
292.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	206.7	BANKSTON FORK LS LOWER
290.1	CARBONDALE	LAWSON	SHALE	5.6	209.4	
284.5	CARBONDALE	CONANT	LIMESTONE	1.3	215.0	
283.2	CARBONDALE		GRAY SHALE	2.2	216.3	
281.0	CARBONDALE		FOSSILIFEROUS SHALE	0.7	218.5	
280.3	CARBONDALE		SHALE	4.3	219.2	
276.0	CARBONDALE	BRERETON	LIMESTONE	3.3	223.5	
272.8	CARBONDALE	ANNA	FOSSILIFEROUS SHALE	0.4	226.7	
272.4	CARBONDALE	HERRIN	COAL	6.3	227.1	
266.1	CARBONDALE		UNDERCLAY	0.4	233.4	

MAPID: 18990054000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 25 QUARTERS/FOOTAGES: NW NE SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.605295 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.240026 DATE COLLECTED: 8 / 22 / 1996

SURFACE ELEVATION (FT.): 470.3 LOGGED (FT.): 176.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17039C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
470.3	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0	
443.3	MODESTO		LIMESTONE	5.0	27.0	
438.3	MODESTO		SHALE	82.0	32.0	
356.3	MODESTO		SANDSTONE	6.0	114.0	
350.3	MODESTO		SHALE	26.0	120.0	
324.3	MODESTO	PIASA	LIMESTONE	9.0	146.0	
315.3	MODESTO		BLACK SHALE	1.0	155.0	
314.3	CARBONDALE		GRAY SHALE	10.0	156.0	
304.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	166.0	
302.3	CARBONDALE	BANKSTON FORK	SHALE	5.0	168.0	CALCAREOUS
297.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	173.0	
294.8	CARBONDALE		SHALE	0.5	175.5	CALCAREOUS

MAPID: 18990063000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 25 QUARTERS/FOOTAGES: 975' S line, 375' W line of SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.609682 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.236424 DATE COLLECTED: 3 / 27 / 1957

SURFACE ELEVATION (FT.): 499.5 LOGGED (FT.): 233.8 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 2757C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
499.5	PLEISTOCENE		UNCONSOLIDATED	29.7	0.0
469.8	MODESTO		SANDSTONE	34.6	29.7
435.2	MODESTO		SANDSTONE	113.5	64.3
321.7	MODESTO	PIASA	LIMESTONE	12.1	177.8
309.6			GRAY SHALE	10.2	189.9
299.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	200.2
297.1	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.4	202.4
292.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	206.7
290.1	CARBONDALE		SHALE	5.6	209.4
284.5	CARBONDALE	CONANT	LIMESTONE	1.3	215.0
283.2	CARBONDALE		GRAY SHALE	7.2	216.3
276.0	CARBONDALE	BRERETON	LIMESTONE	3.3	223.5
272.8	CARBONDALE	ANNA	SHALE	0.4	226.7
272.4	CARBONDALE	HERRIN	COAL	6.3	227.1
266.1	CARBONDALE		UNDERCLAY	0.4	233.4

MAPID: 18990002000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 26 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE

LONGITUDE: -89.61828

GEOLOGIST: C TREWORGY

CONFIDENTIAL: N

LATITUDE: 38.247928

DATE COLLECTED: 1 / 30 / 1970

SURFACE ELEVATION (FT.): 485.9

LOGGED (FT.): 232.8

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 9093C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
485.9			SANDY CLAY	53.0	0.0	
432.9	MODESTO		GRAY SHALE	118.5	53.0	
314.4	MODESTO	PIASA	LIMESTONE	8.6	171.5	
305.8	MODESTO		GRAY SHALE	15.5	180.1	
290.3	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	195.6	BANKSTON FORK LS UPPER
289.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.2	196.6	
288.1	CARBONDALE	BANKSTON FORK	LIMESTONE	1.3	197.8	BANKSTON FORK LS UPPER
286.8	CARBONDALE	BANKSTON FORK	GRAY SHALE	5.3	199.1	
281.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.6	204.4	BANKSTON FORK LOWER
279.9	CARBONDALE	LAWSON	DARK GRAY SHALE	6.7	206.0	
273.2	CARBONDALE	CONANT	LIMESTONE	1.4	212.7	
271.8	CARBONDALE		DARK SHALE	1.1	214.1	
270.7	CARBONDALE	CONANT	LIMESTONE	0.4	215.2	
270.3	CARBONDALE		FOSSILIFEROUS SHALE	1.4	215.6	
268.9	CARBONDALE		SILTSTONE	3.4	217.0	
265.5	CARBONDALE	BRERETON	LIMESTONE	3.1	220.4	
262.4	CARBONDALE		SILTSTONE	0.0	223.5	
262.4	CARBONDALE	HERRIN	COAL	1.9	223.5	
260.5	CARBONDALE	HERRIN	PYRITE	0.0	225.4	
260.5	CARBONDALE	HERRIN	COAL	0.4	225.4	
260.1	CARBONDALE	HERRIN	PYRITE	0.0	225.8	
260.0	CARBONDALE	HERRIN	COAL	1.4	225.9	
258.6	CARBONDALE	HERRIN	RASH	0.0	227.3	
258.6	CARBONDALE	HERRIN	COAL	1.6	227.3	
257.0	CARBONDALE	HERRIN	SHALE	0.1	228.9	
256.9	CARBONDALE	HERRIN	COAL	1.3	229.0	
255.6	CARBONDALE		UNDERCLAY	1.2	230.3	
254.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.4	231.4	

MAPID: 18990016000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 26 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.611299

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.240721

DATE COLLECTED: 2 / 13 / 1976

SURFACE ELEVATION (FT.): 499.1 LOGGED (FT.): 248.0

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16292C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
499.1			CLAY	12.0	0.0	
487.1	MODESTO	TRIVOLI	SANDSTONE	39.0	12.0	
448.1	MODESTO	TRIVOLI	CLAYSTONE	4.0	51.0	
444.1	MODESTO	TRIVOLI	SANDSTONE	15.0	55.0	
429.1	MODESTO	TRIVOLI	GRAY SHALE	15.0	70.0	
414.1	MODESTO	TRIVOLI	GRAY SHALE	15.3	85.0	
398.8	MODESTO		GRAY SHALE	54.7	100.3	
344.1	MODESTO	GIMLET	SANDSTONE	4.0	155.0	
340.1	MODESTO		GRAY SHALE	11.0	159.0	
329.1	MODESTO		LIMESTONE	2.4	170.0	
326.7	MODESTO		GRAY SHALE	11.6	172.4	
315.1	MODESTO	PIASA	LIMESTONE	12.5	184.0	
302.6	MODESTO		GRAY SHALE	11.0	196.5	
291.6	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	207.5	BANKSTON FORK LS UPPER
287.9	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.6	211.2	
284.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	214.8	BANKSTON FORK LS LOWER
281.5	CARBONDALE	LAWSON	GRAY SHALE	1.4	217.6	
280.1	CARBONDALE	LAWSON	DARK SHALE	4.7	219.0	
275.4	CARBONDALE	CONANT	LIMESTONE	1.0	223.7	
274.4	CARBONDALE		DARK SHALE	3.4	224.7	
271.0	CARBONDALE	BRERETON	LIMESTONE	4.3	228.1	
266.6	CARBONDALE	ANNA	SILTSTONE	2.1	232.5	
264.5	CARBONDALE	HERRIN	COAL	6.7	234.6	
257.8	CARBONDALE		UNDERCLAY	1.4	241.3	
256.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.0	242.7	
254.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.4	244.6	

MAPID: 18990017000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 26 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.619828

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.237425

DATE COLLECTED: 5 / 10 / 1976

SURFACE ELEVATION (FT.): 482.2 LOGGED (FT.): 205.7

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16415C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
482.2			UNCLASSIFIED	51.4	0.0	
430.8	MODESTO		GRAY SHALE	37.4	51.4	
393.4	MODESTO		GRAY SHALE	14.9	88.8	
378.5	MODESTO		CALCAREOUS SHALE	44.1	103.7	
334.4	MODESTO	PIASA	LIMESTONE	10.0	147.8	
324.4	MODESTO		CALCAREOUS SHALE	11.6	157.8	
312.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	169.4	BANKSTON FORK LS UPPER
310.8	CARBONDALE		CALCAREOUS SHALE	7.6	171.4	
303.2	CARBONDALE		LIMESTONE	0.0	179.0	
303.2	CARBONDALE	LAWSON	DARK SHALE	12.7	179.0	
290.5	CARBONDALE	CONANT	LIMESTONE	0.0	191.7	
290.5	CARBONDALE		SHALE	0.0	191.7	
290.5	CARBONDALE	BRERETON	LIMESTONE	4.2	191.7	
286.3	CARBONDALE	ANNA	SILTSTONE	0.0	195.9	
286.3	CARBONDALE	HERRIN	COAL	5.2	195.9	
281.1	CARBONDALE	HERRIN	GRAY SHALE	0.1	201.1	
281.0	CARBONDALE	HERRIN	COAL	1.2	201.2	
279.8	CARBONDALE		UNDERCLAY	1.3	202.4	
278.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.0	203.7	

MAPID: 18990018000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 26 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.628508

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.237313

DATE COLLECTED: 7 / 26 / 1976

SURFACE ELEVATION (FT.): 462.0 LOGGED (FT.): 145.6

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16422C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
462.0			UNCLASSIFIED	30.0	0.0	
432.0	MODESTO		GRAY SHALE	61.0	30.0	
371.0	MODESTO	PIASA	LIMESTONE	8.0	91.0	
363.0	MODESTO		GRAY SHALE	11.1	99.0	
351.9	CARBONDALE	BANKSTON FORK	LIMESTONE	1.7	110.1	BANKSTON FORK LS UPPER
350.2	CARBONDALE		GRAY SHALE	9.7	111.8	
340.5	CARBONDALE	BANKSTON FORK	LIMESTONE	0.0	121.5	BANKSTON FORK LS LOWER
340.5	CARBONDALE	LAWSON	DARK SHALE	9.1	121.5	
331.4	CARBONDALE	CONANT	LIMESTONE	0.0	130.6	
331.4	CARBONDALE		SHALE	0.0	130.6	
331.4	CARBONDALE	BRERETON	LIMESTONE	1.6	130.6	
329.8	CARBONDALE	ANNA	DARK SILTSTONE	2.0	132.2	
327.8	CARBONDALE	HERRIN	COAL	5.3	134.2	
322.5	CARBONDALE	HERRIN	GRAY SHALE	0.1	139.5	
322.4	CARBONDALE	HERRIN	COAL	1.1	139.6	
321.4	CARBONDALE		UNDERCLAY	1.1	140.6	
320.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.9	141.7	

MAPID: 18990048000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 26 QUARTERS/FOOTAGES: SE NE SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.621618 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.238243 DATE COLLECTED: 6 / 20 / 1995

SURFACE ELEVATION (FT.): 481.3 LOGGED (FT.): 210.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17024C WELL TYPE: Coal Test

COMMENT: PERMIT # 48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
481.3	PLEISTOCENE		UNCONSOLIDATED	54.0	0.0	
427.3	MODESTO		GRAY SHALE	18.0	54.0	
409.3	MODESTO		SANDSTONE	1.0	72.0	
408.3	MODESTO		GRAY SHALE	57.0	73.0	
351.3	MODESTO		SANDSTONE	4.0	130.0	
347.3	MODESTO		GRAY SHALE	14.0	134.0	
333.3	MODESTO	PIASA	LIMESTONE	10.0	148.0	
323.3	MODESTO		GRAY SHALE	2.0	158.0	
321.3	MODESTO		BLACK SHALE	1.0	160.0	
320.3	CARBONDALE		GRAY SHALE	4.0	161.0	
316.3	CARBONDALE		SANDSTONE	2.0	165.0	
314.3	CARBONDALE		GRAY SHALE	2.0	167.0	
312.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	169.0	
309.3	CARBONDALE	BANKSTON FORK	SHALE	3.9	172.0	
305.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	175.9	
302.9	CARBONDALE		DARK SHALE	6.8	178.4	
296.1	CARBONDALE	CONANT	LIMESTONE	1.8	185.2	
294.3	CARBONDALE		DARK SHALE	2.2	187.0	
292.1	CARBONDALE	JAMESTOWN	SHALE	0.8	189.2	WITH COAL AND LIMESTONE
291.4	CARBONDALE		DARK SHALE	2.8	189.9	
288.6	CARBONDALE	BRERETON	LIMESTONE	2.2	192.7	
286.5	CARBONDALE	ANNA	DARK SHALE	0.7	194.8	
285.8	CARBONDALE	HERRIN	COAL	6.7	195.5	
279.1	CARBONDALE		UNDERCLAY	1.5	202.2	
277.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	6.4	203.7	

MAPID: 18990049000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 26 QUARTERS/FOOTAGES: SE NE NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.62156 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.245376 DATE COLLECTED: 4 / 13 / 1995

SURFACE ELEVATION (FT.): 485.6 LOGGED (FT.): 231.5 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17016C WELL TYPE: Coal Test

COMMENT: PERMIT # 48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
485.6	PLEISTOCENE		UNCONSOLIDATED	62.0	0.0	
423.6	MODESTO		SANDY SHALE	6.0	62.0	
417.6	MODESTO		GRAY SHALE	45.0	68.0	
372.6	MODESTO		DARK SHALE	16.0	113.0	
356.6	MODESTO		GRAY SHALE	7.0	129.0	
349.6	MODESTO		SANDY SHALE	5.0	136.0	
344.6	MODESTO		SANDSTONE	2.0	141.0	CALCAREOUS
342.6	MODESTO		BLACK SHALE	2.0	143.0	
340.6	MODESTO		SHALE	21.0	145.0	
319.6	MODESTO	PIASA	LIMESTONE	9.0	166.0	
310.6	MODESTO		GRAY SHALE	10.0	175.0	
300.6	CARBONDALE		DARK SHALE	3.0	185.0	
297.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	188.0	
295.6	CARBONDALE	BANKSTON FORK	SHALE	5.0	190.0	GREEN-GRAY CALCAREOUS
290.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	195.0	
288.6	CARBONDALE		DARK SHALE	8.0	197.0	CALCAREOUS
280.6	CARBONDALE	CONANT	LIMESTONE	1.5	205.0	
279.1	CARBONDALE	BRERETON	LIMESTONE	2.3	206.5	
276.8	CARBONDALE	BRERETON	LIMESTONE	2.9	208.8	
274.0	CARBONDALE	ANNA	BLACK SHALE	2.3	211.6	
271.7	CARBONDALE	HERRIN	COAL	6.5	213.9	
265.2	CARBONDALE		UNDERCLAY	1.8	220.4	
263.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	6.2	222.1	
257.3	CARBONDALE		CLAYSTONE	2.5	228.3	
254.8	CARBONDALE		LIMESTONE	0.8	230.8	

MAPID: 18900031000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 27 QUARTERS/FOOTAGES: SW NW

QUADRANGLE: TILDEN LONGITUDE: -89.645933 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.242996 DATE COLLECTED: 0 / 0 / 1915

SURFACE ELEVATION (FT.): 466.2 LOGGED (FT.): 187.3 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #3 WELL TYPE: Coal Test

COMMENT: MONHOLLAND LAND

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
466.2			UNCONSOLIDATED	24.0	0.0	
442.2	MODESTO		SHALE	73.0	24.0	
369.2	MODESTO		COAL	0.2	97.0	
369.0	MODESTO		SHALE	26.8	97.2	
342.2	MODESTO		CALCAREOUS SHALE	3.0	124.0	
339.2	MODESTO		SHALE	3.0	127.0	
336.2	MODESTO	PIASA	LIMESTONE	9.3	130.0	
326.9	MODESTO		SHALE	3.7	139.3	
323.2	MODESTO		SANDSTONE	4.7	143.0	
318.5	MODESTO		SANDY SHALE	3.0	147.7	
315.5	CARBONDALE	DANVILLE	COAL	0.2	150.7	
315.4	CARBONDALE		SHALE	2.2	150.8	
313.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	153.0	
309.2	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	6.0	157.0	
303.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	163.0	
300.2	CARBONDALE		CALCAREOUS SHALE	2.0	166.0	
298.2	CARBONDALE		SHALE	1.0	168.0	
297.2	CARBONDALE		BLACK SHALE	3.2	169.0	
294.0	CARBONDALE	CONANT	LIMESTONE	1.5	172.2	
292.5	CARBONDALE		SHALE	3.0	173.7	
289.5	CARBONDALE	BRERETON	LIMESTONE	1.3	176.7	
288.2	CARBONDALE		SHALE	0.5	178.0	
287.7	CARBONDALE	HERRIN	COAL	7.1	178.5	
280.6	CARBONDALE		UNDERCLAY	1.7	185.6	

MAPID: 18902769000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 27 QUARTERS/FOOTAGES: 50' S, 50' W, SW/c NE SW

QUADRANGLE: TILDEN

LONGITUDE: -89.643483

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.237591

DATE COLLECTED: 3 / 31 / 1972

SURFACE ELEVATION (FT.): 500.4

LOGGED (FT.): 211.3

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12957C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.4	PLEISTOCENE		GLACIAL DRIFT	27.0	0.0
473.4	MODESTO		SANDSTONE	13.9	27.0
459.5	MODESTO		GRAY SHALE	1.2	40.9
458.3	MODESTO		SANDSTONE	7.0	42.1
451.3	MODESTO		GRAY SHALE	1.0	49.1
450.3	MODESTO		SANDSTONE	2.2	50.1
448.1	MODESTO		GRAY SHALE	76.9	52.3
371.2	MODESTO		SANDSTONE	1.7	129.2
369.5	MODESTO		GRAY SHALE	4.8	130.9
364.7	MODESTO		SANDSTONE	2.6	135.7
362.1	MODESTO		GRAY SHALE	4.9	138.3
357.2	MODESTO		SANDSTONE	1.5	143.2
355.7	MODESTO		SHALE	16.2	144.7
339.5	MODESTO	PIASA	LIMESTONE	4.7	160.9
334.8	MODESTO		GRAY SHALE	1.4	165.6
333.4	CARBONDALE		SANDSTONE	6.1	167.0
327.3	CARBONDALE		GRAY SHALE	3.7	173.1
323.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.9	176.8
320.7	CARBONDALE		SHALE	4.9	179.7
315.8	CARBONDALE	CONANT	LIMESTONE	2.4	184.6
313.4	CARBONDALE		DARK SHALE	8.3	187.0
305.1	CARBONDALE	BRERETON	LIMESTONE	3.9	195.3
301.2	CARBONDALE	ANNA	SHALE	3.1	199.2
298.2	CARBONDALE	ANNA	BLACK SHALE	1.1	202.2
297.1	CARBONDALE	HERRIN	COAL	6.5	203.3
290.6	CARBONDALE		UNDERCLAY	0.6	209.8
290.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.9	210.4

MAPID: 18990008000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: TILDEN LONGITUDE: -89.629427

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.248167

DATE COLLECTED: 3 / 12 / 1973

SURFACE ELEVATION (FT.): 464.7 LOGGED (FT.): 207.0

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15590C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.7			UNCLASSIFIED	37.0	0.0	
427.7			CLAY	27.0	37.0	
400.7	MODESTO		GRAY SHALE	54.8	64.0	
345.9	MODESTO	GIMLET	SANDSTONE	3.0	118.8	
342.9	MODESTO		GRAY SHALE	20.7	121.8	
322.2	MODESTO	PIASA	LIMESTONE	7.9	142.5	
314.3	MODESTO		GRAY SHALE	2.1	150.4	
312.2	CARBONDALE		SANDSTONE	2.0	152.5	
310.2	CARBONDALE		GRAY SHALE	9.0	154.5	
301.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	163.5	BANKSTON FORK LS UPPER
298.2	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.0	166.5	
294.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	170.5	BANKSTON FORK LS LOWER
291.5	CARBONDALE	LAWSON	DARK SHALE	5.8	173.2	
285.7	CARBONDALE	CONANT	LIMESTONE	3.0	179.0	
282.7	CARBONDALE		DARK SHALE	4.0	182.0	
278.7	CARBONDALE	BRERETON	LIMESTONE	5.1	186.0	
273.6	CARBONDALE	HERRIN	COAL	6.4	191.1	
267.2	CARBONDALE		UNDERCLAY	1.6	197.5	
265.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.1	199.1	
264.6	CARBONDALE		UNDERCLAY	4.4	200.1	
260.2	CARBONDALE		LIMESTONE	2.5	204.5	

MAPID: 18990011000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: TILDEN

LONGITUDE: -89.634

GEOLOGIST: C TREWORY

CONFIDENTIAL: N

LATITUDE: 38.237367

DATE COLLECTED: 12 / 5 / 1975

SURFACE ELEVATION (FT.): 446.8

LOGGED (FT.): 141.2

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15997C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
446.8			UNCLASSIFIED	46.7	0.0	
400.1	MODESTO		GRAY SHALE	32.0	46.7	
368.1	MODESTO	PIASA	LIMESTONE	7.7	78.7	
360.4	MODESTO		GRAY SHALE	27.7	86.4	
332.7	CARBONDALE	BANKSTON FORK	LIMESTONE	0.3	114.1	BANKSTON FORK LS UPPER
332.4	CARBONDALE	LAWSON	DARK SHALE	6.5	114.4	
325.9	CARBONDALE	BRERETON	LIMESTONE	5.0	120.9	
320.9	CARBONDALE	ANNA	DARK SHALE	0.2	125.9	
320.7	CARBONDALE	HERRIN	COAL	5.0	126.1	
315.7	CARBONDALE	HERRIN	GRAY SHALE	0.1	131.1	
315.6	CARBONDALE	HERRIN	COAL	1.2	131.2	
314.4	CARBONDALE		UNDERCLAY	1.2	132.4	
313.2	CARBONDALE		LIMESTONE	7.6	133.6	

MAPID: 18900032000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 29 QUARTERS/FOOTAGES: 2200' N line, 250' E line

QUADRANGLE: TILDEN LONGITUDE: -89.667271 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.242428 DATE COLLECTED: 0 / 0 / 1915

SURFACE ELEVATION (FT.): 445.8 LOGGED (FT.): 153.3 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #5 WELL TYPE: Coal Test

COMMENT: RALPH PAUL FARM

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.8			UNCONSOLIDATED	33.0	0.0	
412.8	MODESTO		SHALE	30.0	33.0	
382.8	MODESTO		BONE COAL	0.2	63.0	
382.6	MODESTO		SHALE	10.0	63.2	
372.6	MODESTO		SANDSTONE	1.8	73.2	
370.8	MODESTO		CALCAREOUS SHALE	6.0	75.0	
364.8	MODESTO		SHALE	20.0	81.0	
344.8	MODESTO	PIASA	LIMESTONE	10.0	101.0	
334.8	MODESTO	PIASA	SANDY SHALE	2.0	111.0	
332.8	MODESTO	PIASA	LIMESTONE	2.0	113.0	
330.8	MODESTO		SHALE	1.0	115.0	
329.8	CARBONDALE	DANVILLE	COAL	0.3	116.0	
329.5	CARBONDALE		CALCAREOUS SHALE	5.8	116.3	
323.8	CARBONDALE		BLACK SHALE	8.4	122.0	
315.4	CARBONDALE		LIMESTONE	3.0	130.4	
312.4	CARBONDALE		CALCAREOUS SHALE	10.3	133.4	
302.0	CARBONDALE		BLACK SHALE	0.3	143.8	
301.8	CARBONDALE	HERRIN	COAL	6.7	144.0	
295.1	CARBONDALE		UNDERCLAY	2.7	150.7	

MAPID: 18900033000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 29 QUARTERS/FOOTAGES: 2830' N line, 1200' W line

QUADRANGLE: TILDEN LONGITUDE: -89.680821 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.24069 DATE COLLECTED: 0 / 0 / 1915

SURFACE ELEVATION (FT.): 437.5 LOGGED (FT.): 331.0 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #1 WELL TYPE: Coal Test

COMMENT: TILISTA LAND

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.5			SOIL	35.0	0.0
402.5	MODESTO		SHALE	27.0	35.0
375.5	MODESTO		SANDSTONE	4.8	62.0
370.7	MODESTO		SANDY SHALE	2.0	66.8
368.7	MODESTO		SHALE	4.3	68.8
364.5	MODESTO	PIASA	LIMESTONE	13.0	73.0
351.5	MODESTO		SHALE	10.0	86.0
341.5	MODESTO		SANDY SHALE	3.0	96.0
338.5	MODESTO		SANDSTONE	5.0	99.0
333.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	104.0
330.2	CARBONDALE		SANDY SHALE	5.3	107.3
325.0	CARBONDALE		LIMESTONE	2.5	112.5
322.5	CARBONDALE		SHALE	11.0	115.0
311.5	CARBONDALE	ANNA	BLACK SHALE	3.3	126.0
308.2	CARBONDALE	HERRIN	COAL	2.8	129.3
305.5	CARBONDALE		SHALE	8.0	132.0
297.5	CARBONDALE		LIMESTONE	10.5	140.0
287.0	CARBONDALE		CALCAREOUS SHALE	3.5	150.5
283.5	CARBONDALE		SHALE	6.0	154.0
277.5	CARBONDALE		SANDY SHALE	6.0	160.0
271.5	CARBONDALE		SANDSTONE	8.0	166.0
263.5	CARBONDALE		SANDY SHALE	12.8	174.0
250.7	CARBONDALE		SHALE	15.3	186.8
235.5	CARBONDALE		CALCAREOUS SHALE	1.0	202.0
234.5	CARBONDALE	EXCELLO	BLACK SHALE	3.0	203.0
231.5	CARBONDALE	EXCELLO	LIMESTONE	0.7	206.0
230.8	CARBONDALE	EXCELLO	BLACK SHALE	2.0	206.7
228.8	CARBONDALE		SHALE	46.8	208.7
182.0	CARBONDALE		LIMESTONE	1.3	255.5
180.7	CARBONDALE		SHALE	5.3	256.8
175.5	CARBONDALE		SHALE	13.2	262.0
162.3	CARBONDALE		LIMESTONE	1.1	275.2
161.2	CARBONDALE		CALCAREOUS SHALE	0.7	276.3
160.6	CARBONDALE	MECCA QUARRY	BLACK SHALE	2.3	276.9
158.3	CARBONDALE	COLCHESTER	BONE COAL	1.5	279.2
156.8	SPOON		BLACK SHALE	1.2	280.7
155.6	SPOON		LIMESTONE	1.0	281.9
154.6	SPOON		CALCAREOUS SHALE	1.1	282.9
153.6	SPOON		SHALE	4.7	283.9

148.9	SPOON		BLACK SHALE	1.6	288.6
147.3	SPOON	DEKOVEN	COAL	1.0	290.2
146.3	SPOON		SHALE	1.1	291.2
145.2	SPOON		COAL	1.3	292.3
144.0	SPOON		UNDERCLAY	1.3	293.5
142.7	SPOON		SHALE	6.7	294.8
136.0	SPOON		SANDY SHALE	15.0	301.5
121.0	SPOON		SANDSTONE	0.5	316.5
120.5	SPOON		SANDY SHALE	14.0	317.0

W/ SULPHUR BAND
(.04')

MAPID: 18902866000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: WASHINGTON **TWP/RNG:** 3S 5W **SECTION:** 29 **QUARTERS/FOOTAGES:** 2640' N line, 1320' W line
QUADRANGLE: TILDEN **LONGITUDE:** -89.680395 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.241216 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 143.2 **LOG TYPE:** Survey Core Study
SOURCE: AMOCO PRODUCTION CO. Kolweier 1 **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
357.7	MODESTO	PIASA	LIMESTONE	12.3	82.3	
345.4	CARBONDALE		GRAY SHALE	7.1	94.6	
338.3	CARBONDALE		SANDSTONE	2.0	101.7	
336.3	CARBONDALE		GRAY SHALE	3.5	103.7	
332.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	107.2	UPPER BENCH
329.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.5	110.7	SHALE PARTING
324.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	115.2	LOWER BENCH
322.3	CARBONDALE	LAWSON	GRAY SHALE	8.2	117.7	
314.2	CARBONDALE	CONANT	CALCAREOUS SHALE	1.5	125.8	
312.7	CARBONDALE		CALCAREOUS SHALE	1.3	127.3	
311.5	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	0.5	128.5	
311.0	CARBONDALE	ANNA	BLACK SHALE	1.7	129.0	
309.3	CARBONDALE	ENERGY	CALCAREOUS SHALE	3.8	130.7	
305.5	CARBONDALE	ENERGY	CLAYSTONE	2.5	134.5	
303.0	CARBONDALE	HERRIN	COAL	6.2	137.0	

MAPID: 18923306000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 29 QUARTERS/FOOTAGES: 500' S, 100' W, SW/c NW SE

QUADRANGLE: TILDEN LONGITUDE: -89.675381 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.239026 DATE COLLECTED: 3 / 29 / 1976

SURFACE ELEVATION (FT.): 455.1 LOGGED (FT.): 169.6 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16143C WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.1	PLEISTOCENE		UNCONSOLIDATED	80.5	0.0	
374.6	MODESTO		GRAY SHALE	4.9	80.5	
369.7	MODESTO		SANDSTONE	1.9	85.4	
367.8	MODESTO		DARK SHALE	1.6	87.3	
366.2	MODESTO		GRAY SHALE	3.6	88.9	
362.6	MODESTO		CLAYSTONE	0.6	92.5	YELLOW
362.0	MODESTO		GRAY SHALE	0.4	93.1	
361.6	MODESTO		LIMESTONE	3.1	93.5	
358.5	MODESTO		CALCAREOUS SHALE	3.0	96.6	
355.5	MODESTO		LIMESTONE	0.2	99.6	
355.3	MODESTO		GRAY SHALE	2.1	99.8	
353.2	MODESTO		DARK SHALE	2.0	101.9	
351.3	MODESTO		GRAY SHALE	0.8	103.8	
350.5	MODESTO	PIASA	LIMESTONE	9.3	104.6	
341.2	MODESTO		DARK SHALE	2.7	113.9	
338.5	MODESTO		SHALE WITH LIMESTONE	1.0	116.6	
337.5	MODESTO		DARK SHALE	1.0	117.6	
336.5	MODESTO		SANDY SHALE	1.3	118.6	
335.2	MODESTO		SANDSTONE	1.3	119.9	
333.9	MODESTO		SANDY SHALE	2.5	121.2	
331.4	CARBONDALE	DANVILLE	COAL	0.4	123.7	
331.0	CARBONDALE		GRAY SHALE	2.7	124.1	
328.4	CARBONDALE		CALCAREOUS SHALE	2.1	126.7	
326.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	128.8	
323.7	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	4.8	131.4	
318.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.6	136.2	
316.3	CARBONDALE		GRAY SHALE	8.2	138.8	
308.2	CARBONDALE	BRERETON	LIMESTONE	1.1	146.9	
307.1	CARBONDALE	ANNA	DARK SHALE	4.3	148.0	
302.9	CARBONDALE	HERRIN	COAL	6.7	152.2	
296.2	CARBONDALE		UNDERCLAY	1.0	158.9	
295.2	CARBONDALE		SHALE WITH LIMESTONE	2.7	159.9	
292.5	CARBONDALE	HIGGINSVILLE	SHALY LIMESTONE	1.4	162.6	BLUE
291.1	CARBONDALE	HIGGINSVILLE	CALCAREOUS SHALE	4.0	164.0	
287.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.4	168.0	
285.7	CARBONDALE		CALCAREOUS SHALE	0.2	169.4	

MAPID: 18923379000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 29 QUARTERS/FOOTAGES: 550' N, 75' W, NW/c NW SE

QUADRANGLE: TILDEN LONGITUDE: -89.67546 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.239746 DATE COLLECTED: 3 / 29 / 1976

SURFACE ELEVATION (FT.): 457.3 LOGGED (FT.): 172.9 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16142C WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.3	PLEISTOCENE		SOIL	80.0	0.0	
377.3	MODESTO		GRAY SHALE	0.4	80.0	
376.9	MODESTO		COAL	0.1	80.4	
376.8	MODESTO		GRAY SHALE	7.5	80.5	
369.3	MODESTO		SANDSTONE	2.5	88.0	GRAY
366.9	MODESTO		DARK SHALE	1.6	90.4	
365.3	MODESTO		GRAY SHALE	2.9	92.0	
362.4	MODESTO		SANDSTONE	3.6	94.9	GRAY
358.8	MODESTO		CALCAREOUS SANDSTONE	2.3	98.5	
356.5	MODESTO		SHALE	1.2	100.8	
355.3	MODESTO		UNCLASSIFIED	3.2	102.0	LOST CORE
352.1	MODESTO		SHALE	1.2	105.2	
350.9	MODESTO		UNCLASSIFIED	0.3	106.4	LOST CORE
350.6	MODESTO	PIASA	LIMESTONE	11.5	106.7	
339.1	MODESTO		SANDSTONE	0.9	118.2	GRAY
338.2	MODESTO		GRAY SHALE	1.7	119.1	
336.5	MODESTO		SANDY SHALE	6.4	120.8	
330.1	CARBONDALE	DANVILLE	COAL	0.4	127.2	
329.7	CARBONDALE		GRAY SHALE	3.0	127.6	
326.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	130.6	LIGHT
324.2	CARBONDALE	BANKSTON FORK	SHALE WITH LIMESTONE	4.6	133.1	
319.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.6	137.7	LIGHT
317.0	CARBONDALE		GRAY SHALE	3.5	140.3	
313.5	CARBONDALE		DARK GRAY SHALE	4.5	143.8	
309.0	CARBONDALE	BRERETON	LIMESTONE	3.4	148.3	DARK
305.6	CARBONDALE	ANNA	DARK SHALE	2.1	151.7	
303.5	CARBONDALE	ANNA	LIMESTONE	0.5	153.8	DARK
303.0	CARBONDALE	ANNA	DARK SHALE	0.7	154.3	
302.3	CARBONDALE	HERRIN	COAL	7.3	155.0	
295.0	CARBONDALE		UNDERCLAY	2.0	162.3	
293.0	CARBONDALE		SHALE WITH LIMESTONE	7.8	164.3	
285.2	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.8	172.1	

MAPID: 18923381000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 29 QUARTERS/FOOTAGES: 600' N, 300' W, NW/c NW SE

QUADRANGLE: TILDEN

LONGITUDE: -89.6745

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.254142

DATE COLLECTED: 3 / 4 / 1976

SURFACE ELEVATION (FT.): 458.6

LOGGED (FT.): 174.3

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16405C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
458.6	PLEISTOCENE		CLAY	41.7	0.0	
416.9	PLEISTOCENE		CLAY	14.7	41.7	GRAY
402.2	MODESTO		GRAY SHALE	2.4	56.4	
399.8	MODESTO		CALCAREOUS SHALE	10.0	58.8	
389.8	MODESTO		LIMESTONE	0.2	68.8	
389.6	MODESTO		DARK SHALE & LIMESTONE	11.3	69.0	
378.3	MODESTO		SANDSTONE	1.7	80.3	GRAY
376.6	MODESTO		GRAY SHALE	6.8	82.0	
369.8	MODESTO		SANDY SHALE	3.5	88.8	
366.3	MODESTO		SANDSTONE	1.5	92.3	GRAY
364.8	MODESTO		DARK SHALE	2.0	93.8	
362.8	MODESTO		GRAY SHALE	2.4	95.8	
360.4	MODESTO		LIMESTONE	0.2	98.2	
360.2	MODESTO		GRAY SHALE	1.0	98.4	
359.2	MODESTO		LIMESTONE	0.9	99.4	
358.3	MODESTO		SANDY SHALE	5.7	100.3	
352.6	MODESTO		GRAY SHALE	5.5	106.0	
347.1	MODESTO	PIASA	LIMESTONE	11.6	111.5	
335.5	MODESTO		GRAY SHALE	4.4	123.1	
331.1	MODESTO		SANDY SHALE	1.6	127.5	
329.5	MODESTO		GRAY SHALE	1.3	129.1	
328.2	CARBONDALE	DANVILLE	COAL	0.2	130.4	
328.0	CARBONDALE		CALCAREOUS SHALE	4.9	130.6	
323.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.2	135.5	
319.9	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.7	138.7	
318.2	CARBONDALE	BANKSTON FORK	LIMESTONE	0.2	140.4	
318.0	CARBONDALE		GRAY SHALE	3.5	140.6	LS LAMINATED
314.5	CARBONDALE	CONANT	LIMESTONE	2.5	144.1	
312.0	CARBONDALE		DARK SHALE	9.0	146.6	
303.0	CARBONDALE	BRERETON	LIMESTONE	1.2	155.6	
301.8	CARBONDALE	ANNA	BLACK SHALE	3.8	156.8	
298.0	CARBONDALE	HERRIN	COAL	7.1	160.6	
290.9	CARBONDALE		UNDERCLAY	0.6	167.7	
290.3	CARBONDALE		CALCAREOUS SHALE	6.0	168.3	

MAPID: 18923457000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 29 QUARTERS/FOOTAGES: 600' N, 600' E, NE/c NW SE

QUADRANGLE: TILDEN

LONGITUDE: -89.67317

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.239614

DATE COLLECTED: 4 / 3 / 1978

SURFACE ELEVATION (FT.): 455.5

LOGGED (FT.): 164.6

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16662C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.5	PLEISTOCENE		CLAY	19.6	0.0	
435.9	PLEISTOCENE		GRAVEL	1.9	19.6	
434.0	PLEISTOCENE		CLAY	9.0	21.5	
425.0	MODESTO		GRAY SHALE	44.0	30.5	
381.0	MODESTO		DARK SHALE	1.5	74.5	
379.5	MODESTO		SHALY SANDSTONE	1.6	76.0	
377.9	MODESTO		GRAY SHALE	6.5	77.6	
371.4	MODESTO		SHALY SANDSTONE	3.9	84.1	
367.5	MODESTO		DARK SHALE	2.9	88.0	
364.6	MODESTO		GRAY SHALE	2.5	90.9	
362.1	MODESTO		SANDSTONE	1.0	93.4	
361.1	MODESTO		SANDY SHALE	5.0	94.4	WITH LIMESTONE NODULES
356.1	MODESTO		GRAY SHALE	4.6	99.4	
351.5	MODESTO	PIASA	LIMESTONE	11.3	104.0	
340.2	MODESTO		GRAY SHALE	1.5	115.3	
338.7	MODESTO		SANDSTONE	3.7	116.8	
335.0	MODESTO		SANDY SHALE	0.7	120.5	
334.3	MODESTO		SANDSTONE	0.9	121.2	
333.4	MODESTO		SANDY SHALE	1.7	122.1	
331.7	MODESTO		DARK GRAY SHALE	1.1	123.8	
330.6	CARBONDALE	DANVILLE	COAL	0.4	124.9	
330.2	CARBONDALE		GRAY SHALE	4.8	125.3	
325.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	130.1	
322.4	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	5.0	133.1	
317.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	138.1	
315.1	CARBONDALE		DARK SHALE & LIMESTONE	4.8	140.4	
310.3	CARBONDALE	CONANT	LIMESTONE	0.3	145.2	
310.0	CARBONDALE		DARK SHALE	4.6	145.5	
305.4	CARBONDALE	BRERETON	LIMESTONE	0.9	150.1	
304.6	CARBONDALE	ANNA	DARK SHALE	1.2	150.9	
303.4	CARBONDALE	ANNA	BLACK SHALE	2.7	152.1	
300.7	CARBONDALE	HERRIN	COAL	6.9	154.8	
293.8	CARBONDALE		UNDERCLAY	0.6	161.7	
293.2	CARBONDALE		GRAY SHALE	2.3	162.3	

MAPID: 18923577000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 29 QUARTERS/FOOTAGES: 150' N, 100' W, NW/c SE SW

QUADRANGLE: TILDEN LONGITUDE: -89.680053

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.237219

DATE COLLECTED: 4 / 25 / 1979

SURFACE ELEVATION (FT.): 450.1 LOGGED (FT.): 172.5

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16632C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.1	PLEISTOCENE		CLAY	24.6	0.0	BROWN
425.5	MODESTO		SHALE	8.9	24.6	BROWN
416.6	MODESTO		GRAY SHALE	57.4	33.5	
359.2	MODESTO		LIMESTONE	2.7	90.9	
356.5	MODESTO		GRAY SHALE	0.4	93.6	
356.1	MODESTO		DARK SHALE	0.9	94.0	
355.2	MODESTO		GRAY SHALE	3.1	94.9	
352.1	MODESTO		SANDY LIMESTONE	7.0	98.0	
345.1	MODESTO		DARK SHALE	3.0	105.0	
342.1	MODESTO		GRAY SHALE	1.0	108.0	
341.1	MODESTO	PIASA	LIMESTONE	11.0	109.0	
330.1	MODESTO		GRAY SHALE	1.2	120.0	
328.9	CARBONDALE		SANDSTONE	5.0	121.2	
323.9	CARBONDALE		GRAY SHALE	2.2	126.2	
321.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	128.4	
317.0	CARBONDALE		GRAY SHALE	3.6	133.1	
313.4	CARBONDALE	CONANT	LIMESTONE	1.1	136.7	
312.3	CARBONDALE		DARK SHALE	14.9	137.8	
297.4	CARBONDALE	BRERETON	LIMESTONE	4.6	152.7	
292.8	CARBONDALE	HERRIN	COAL	6.2	157.3	
286.6	CARBONDALE		UNDERCLAY	1.0	163.5	
285.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.8	164.5	
281.8	CARBONDALE	HIGGINSVILLE	GRAY SHALE	1.0	168.3	
280.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.2	169.3	

MAPID: 18990030000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 29 QUARTERS/FOOTAGES:

QUADRANGLE: TILDEN LONGITUDE: -89.675708

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.241264

DATE COLLECTED: 3 / 28 / 1976

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 168.5

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16410

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
451.0	PLEISTOCENE		UNCONSOLIDATED	81.0	0.0	
370.0	MODESTO		GRAY SHALE	1.3	81.0	
368.7	MODESTO		SANDSTONE	1.4	82.3	LIGHT GRAY
367.3	MODESTO		SHALE WITH LIMESTONE	4.8	83.7	
362.5	MODESTO		GRAY SHALE	12.5	88.5	
350.0	MODESTO	PIASA	LIMESTONE	9.1	101.0	WHITE-GRAY
340.9	MODESTO		UNCLASSIFIED	0.1	110.1	CORE LOSS
340.8	MODESTO		CARBONACEOUS SHALE	1.1	110.2	
339.6	MODESTO		MUDSTONE	4.5	111.4	LIGHT GRAY
335.1	MODESTO		SANDSTONE	0.4	115.9	
334.8	MODESTO		SANDSTONE	2.1	116.2	
332.7	CARBONDALE	DANVILLE	BLACK SHALE & COAL	0.9	118.3	
331.8	CARBONDALE		CLAYSTONE	4.6	119.2	GREEN-GRAY
327.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	123.8	LIGHT GRAY
323.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	127.6	
319.4	CARBONDALE	BANKSTON FORK	LIMESTONE	1.9	131.6	LIGHT GRAY
317.5	CARBONDALE		BLACK SHALE & COAL	4.4	133.5	
313.1	CARBONDALE		GRAY SHALE	0.6	137.9	
312.5	CARBONDALE	CONANT	LIMESTONE	1.0	138.5	DARK GRAY
311.5	CARBONDALE		CALCAREOUS SHALE	1.8	139.5	
309.7	CARBONDALE		SANDY SHALE	2.1	141.3	
307.7	CARBONDALE	BRERETON	LIMESTONE	8.3	143.3	GRAY
299.4	CARBONDALE	ANNA	DARK GRAY SHALE	0.6	151.6	
298.8	CARBONDALE	HERRIN	COAL	5.3	152.2	
293.5	CARBONDALE	HERRIN	SHALE	0.1	157.5	
293.4	CARBONDALE	HERRIN	COAL	1.5	157.6	
291.9	CARBONDALE		UNDERCLAY	0.8	159.1	LIGHT GRAY
291.2	CARBONDALE		CLAYSTONE & LIMESTONE	7.6	159.8	LIGHT GRAY
283.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.1	167.4	LIGHT GRAY

MAPID: 18900034000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON

TWP/RNG: 3S 5W

SECTION: 30

QUARTERS/FOOTAGES: NW NE NW

QUADRANGLE: TILDEN

LONGITUDE: -89.697754

GEOLOGIST: S.SROKA

CONFIDENTIAL: N

LATITUDE: 38.247523

DATE COLLECTED: 0 / 0 / 1915

SURFACE ELEVATION (FT.): 494.2

LOGGED (FT.): 197.3

LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #4

WELL TYPE: Coal Test

COMMENT: LEHMAN ESTATE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
494.2			UNCONSOLIDATED	29.0	0.0	
465.2	MODESTO		SANDSTONE	10.0	29.0	
455.2	MODESTO		SANDSTONE	3.0	39.0	
452.2	MODESTO		SHALE	85.0	42.0	
367.2	MODESTO		COAL	0.3	127.0	
366.9	MODESTO		SHALE	4.8	127.3	
362.2	MODESTO		SANDSTONE	2.0	132.0	
360.2	MODESTO		CALCAREOUS SHALE	15.0	134.0	
345.2	MODESTO	PIASA	LIMESTONE	9.7	149.0	
335.5	MODESTO		BLACK SHALE	2.0	158.7	
333.5	CARBONDALE	DANVILLE	BONE COAL	0.4	160.7	
333.1	CARBONDALE		SHALE	6.9	161.1	
326.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	168.0	
321.2	CARBONDALE		BLACK SHALE	6.7	173.0	
314.5	CARBONDALE	CONANT	LIMESTONE	1.0	179.7	
313.5	CARBONDALE		CALCAREOUS SHALE	5.3	180.7	
308.3	CARBONDALE	BRERETON	LIMESTONE	1.2	185.9	
307.1	CARBONDALE	ANNA	SHALE	1.2	187.1	SLATE
305.9	CARBONDALE	HERRIN	COAL	6.6	188.3	
299.4	CARBONDALE		UNDERCLAY	2.4	194.8	

MAPID: 18900035000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 30 QUARTERS/FOOTAGES: SE NE NE

QUADRANGLE: TILDEN LONGITUDE: -89.686123 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.245775 DATE COLLECTED: 0 / 0 / 1915

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 159.0 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #6 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	6.0	0.0
444.0	MODESTO		SANDSTONE	10.0	6.0
434.0	MODESTO		SHALE	65.0	16.0
369.0	MODESTO		SANDY SHALE	16.0	81.0
353.0	MODESTO		CALCAREOUS SHALE	10.0	97.0
343.0	CARBONDALE	DANVILLE	COAL	0.3	107.0
342.7	CARBONDALE	ANVIL ROCK	SANDSTONE	8.8	107.3
334.0	CARBONDALE		CALCAREOUS SHALE	12.0	116.0
322.0	CARBONDALE		SHALE	17.0	128.0
305.0	CARBONDALE		CALCAREOUS SHALE	4.0	145.0
301.0	CARBONDALE	HERRIN	COAL	6.5	149.0
294.5	CARBONDALE		UNDERCLAY	3.5	155.5

MAPID: 18901296000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 30 QUARTERS/FOOTAGES: NW SE SW

QUADRANGLE: TILDEN LONGITUDE: -89.697686 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.236745 DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 196.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
362.0	MODESTO	PIASA	LIMESTONE	10.0	153.0
352.0	CARBONDALE	LAWSON	SHALE	10.0	163.0
342.0	CARBONDALE	CONANT	LIMESTONE	3.0	173.0
339.0	CARBONDALE		GRAY SHALE	7.0	176.0
332.0	CARBONDALE	BRERETON	LIMESTONE	2.0	183.0
330.0	CARBONDALE	ANNA	SHALE	4.0	185.0
326.0	CARBONDALE	HERRIN	COAL	7.0	189.0

MAPID: 1892335000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 30 QUARTERS/FOOTAGES: 350' N, 100' W, NW/c SW NW

QUADRANGLE: TILDEN

LONGITUDE: -89.703173

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.243842

DATE COLLECTED: 8 / 17 / 1976

SURFACE ELEVATION (FT.): 490.8

LOGGED (FT.): 193.8

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16426C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
490.8	PLEISTOCENE		CLAY	26.2	0.0	
464.6	MODESTO		SANDY SHALE	8.2	26.2	
456.4	MODESTO		SANDSTONE	10.7	34.4	GRAY
445.7	MODESTO		CALCAREOUS SHALE	94.9	45.1	
350.8	MODESTO	PIASA	LIMESTONE	10.1	140.0	
340.7			GRAY SHALE	20.7	150.1	
320.0			DARK SHALE	2.4	170.8	
317.6	CARBONDALE	BANKSTON FORK	LIMESTONE	1.4	173.2	
316.2	CARBONDALE		DARK SHALE	4.7	174.6	
311.5	CARBONDALE	BRERETON	LIMESTONE	2.9	179.3	
308.6	CARBONDALE	HERRIN	COAL	4.8	182.2	
303.8	CARBONDALE	HERRIN	GRAY SHALE	0.2	187.0	
303.6	CARBONDALE	HERRIN	COAL	1.3	187.2	
302.3	CARBONDALE		UNDERCLAY	1.8	188.5	
300.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.5	190.3	

MAPID: 18990036000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 30 QUARTERS/FOOTAGES:

QUADRANGLE: TILDEN

LONGITUDE: -89.69425

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.241237

DATE COLLECTED: 10 / 29 / 1975

SURFACE ELEVATION (FT.): 492.5

LOGGED (FT.): 202.4

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15989C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
492.5	PLEISTOCENE		CLAY	58.7	0.0	BROWN
433.8	MODESTO		CALCAREOUS SHALE	67.7	58.7	
366.1	MODESTO		SANDSTONE	8.6	126.4	GRAY
357.5	MODESTO		GRAY SHALE	6.6	135.0	
350.9	MODESTO		LIMESTONE	1.6	141.6	
349.3	MODESTO		GRAY SHALE	5.5	143.2	
343.8	MODESTO	PIASA	LIMESTONE	11.6	148.7	
332.2	MODESTO		DARK SHALE	1.5	160.3	
330.7	CARBONDALE		CALCAREOUS SHALE	21.3	161.8	
309.4	CARBONDALE		LIMESTONE	1.7	183.1	
307.7	CARBONDALE		SHALE WITH LIMESTONE	2.0	184.8	
305.7	CARBONDALE	BRERETON	LIMESTONE	3.0	186.8	
302.7	CARBONDALE	ANNA	BLACK SHALE	2.0	189.8	
300.7	CARBONDALE	HERRIN	COAL	5.1	191.8	
295.6	CARBONDALE	HERRIN	GRAY SHALE	0.1	196.9	
295.6	CARBONDALE	HERRIN	COAL	1.4	196.9	
294.2	CARBONDALE		UNDERCLAY	2.5	198.3	
291.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.6	200.8	

MAPID: 18900036000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 31 QUARTERS/FOOTAGES: 300' S line, 250' E line

QUADRANGLE: TILDEN LONGITUDE: -89.685795 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.220242 DATE COLLECTED: 0 / 0 / 1924

SURFACE ELEVATION (FT.): 472.4 LOGGED (FT.): 590.0 LOG TYPE: Survey Core Study

SOURCE: FRANK ELWOOD, #2 WELL TYPE: Diamond Drill

COMMENT: DIAMOND DRILL CORE #29

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
472.4	MODESTO		SHALE	72.0	0.0	
400.4	MODESTO		CALCAREOUS SHALE	8.0	72.0	BRACHS
392.4	MODESTO		CLAYSTONE	2.0	80.0	
390.4	MODESTO		SHALE	5.0	82.0	
385.4	MODESTO		CALCAREOUS SHALE	1.0	87.0	
384.4	MODESTO		SHALE	2.0	88.0	
382.4	MODESTO		SHALY LIMESTONE	2.5	90.0	
379.9	MODESTO		CALCAREOUS SHALE	1.0	92.5	
378.9	MODESTO		CLAYSTONE & SILTSTONE	4.5	93.5	
374.4	MODESTO		FOSSILIFEROUS LIMESTONE	4.0	98.0	CRINOID STEMS
370.4	MODESTO		SHALE	0.5	102.0	
369.9	MODESTO	PIASA	LIMESTONE	5.5	102.5	SNAILS, FUSULINA
364.4	MODESTO		CLAYSTONE & SILTSTONE	1.0	108.0	
363.4	MODESTO		FOSSILIFEROUS LIMESTONE	2.0	109.0	
361.4	MODESTO		SHALE	1.0	111.0	
360.4	MODESTO		SHALE	7.0	112.0	
353.4	CARBONDALE	DANVILLE	COAL	1.0	119.0	
352.4	CARBONDALE		CARBONACEOUS CLAYSTONE	6.0	120.0	
346.4	CARBONDALE		UNDERCLAY	5.5	126.0	LIMEY AT BASE
340.9	CARBONDALE		FOSSILIFEROUS LIMESTONE	1.0	131.5	BRACHIOPODS
339.9	CARBONDALE		LIMESTONE	2.0	132.5	COALY INCLUSIONS
337.9	CARBONDALE		FOSSILIFEROUS LIMESTONE	1.5	134.5	FUSULINIDS
336.4	CARBONDALE		CORE LOSS	4.0	136.0	
332.4	CARBONDALE	BRERETON	LIMESTONE	2.0	140.0	FUSULINIDS
330.4	CARBONDALE	ANNA	FOSSILIFEROUS SHALE	5.3	142.0	
325.1	CARBONDALE	ANNA	SLATY SHALE	0.5	147.3	
324.6	CARBONDALE	HERRIN	COAL	5.8	147.8	
318.9	CARBONDALE		CLAYSTONE & SILTSTONE	0.5	153.5	W/LS CONCRETIONS
318.4	CARBONDALE		LIMESTONE	11.0	154.0	WEATHERS BUFF
307.4	CARBONDALE		CALCAREOUS SHALE	7.0	165.0	FENESTELLID BRYOZOA, CRINOID STEMS
300.4	CARBONDALE		SHALE	44.0	172.0	
256.4	CARBONDALE		BLACK SHALE	6.0	216.0	
250.4	CARBONDALE		SHALE	35.0	222.0	
215.4	CARBONDALE		CALCAREOUS SHALE	0.5	257.0	FOSSILIF.
214.9	CARBONDALE		ARGILACEOUS SHALE	3.5	257.5	W/ CONCRETIONS

211.4	CARBONDALE		SHALE	0.8	261.0	
210.6	CARBONDALE		SHALE	0.3	261.8	
210.4	CARBONDALE		FOSSILIFEROUS SHALE	10.0	262.0	
200.4	CARBONDALE		BLACK SHALE	2.0	272.0	
198.4	CARBONDALE		FOSSILIFEROUS LIMESTONE	0.5	274.0	
197.9	CARBONDALE		FOSSILIFEROUS SHALE	11.5	274.5	DARKER DOWNWARDS
186.4	CARBONDALE	MECCA QUARRY	BLACK SHALE	4.0	286.0	
182.4	CARBONDALE	COLCHESTER	COAL	1.3	290.0	
181.1	SPOON		SHALE	1.3	291.3	LIMEY IN PART
179.9	SPOON		UNDERCLAY	10.8	292.5	
169.1	SPOON	DEKOVEN	COAL	3.5	303.3	W/ SH BANDS
165.6	SPOON		UNDERCLAY	2.0	306.8	
163.6	SPOON		CORE LOSS	22.5	308.8	
141.1	SPOON		SHALE	30.0	331.3	
111.1	SPOON		CALCAREOUS SANDSTONE	1.0	361.3	
110.1	SPOON		SHALE	25.0	362.3	
85.1	SPOON		CONGLOMERATE	8.0	387.3	LS, CHERT PEBBLES IN DRK MATRIX
77.1	SPOON		SHALE	4.0	395.3	
73.1			SANDY SHALE	6.0	399.3	W/ SS
67.1			CALCAREOUS SHALE	4.0	405.3	PLANT FRAGS
63.1			DARK SHALE	3.0	409.3	
60.1			SILTSTONE	1.5	412.3	X-BDD, W/ PLANT FRAGS
58.6			SHALE	6.5	413.8	
52.1			CORE LOSS	27.0	420.3	
25.1			SANDSTONE	5.0	447.3	W/ SH STREAKS
20.1			SANDY SHALE	1.0	452.3	
19.1			SANDSTONE	10.0	453.3	SOME SH STREAKS
9.1			SANDY SHALE	2.0	463.3	DARK CARB. STREAKS
7.1			SANDSTONE	26.0	465.3	SHALEY IN PARTS
-18.9			SILTSTONE	4.0	491.3	INTERBDD W/ SS
-22.9			SANDSTONE	28.8	495.3	W/ SH
-51.6			SANDSTONE	6.0	524.0	X-BDD
-57.6			SHALE	37.0	530.0	W/ SS LAMINAE
-94.6	MISSISSIPPIAN		LIMESTONE	8.0	567.0	BRACHS IN SOME BEDS
-102.6	MISSISSIPPIAN		SHALE	1.0	575.0	
-103.6	MISSISSIPPIAN		LIMESTONE	4.0	576.0	W/ NUMEROUS CRINOID STEMS
-107.6	MISSISSIPPIAN		CALCAREOUS SHALE	10.0	580.0	ABUNDANT BRACHS, BRYOZOANS, ETC.

MAPID: 18901299000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 31 QUARTERS/FOOTAGES: SW NE NW

QUADRANGLE: TILDEN LONGITUDE: -89.697653

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.231309

DATE COLLECTED:

SURFACE ELEVATION (FT.): 517.0

LOGGED (FT.): 191.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
377.0	MODESTO	PIASA	LIMESTONE	11.0	140.0
366.0	CARBONDALE		SHALE	2.0	151.0
364.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	11.0	153.0
353.0	CARBONDALE	LAWSON	SHALE	5.0	164.0
348.0	CARBONDALE	CONANT	LIMESTONE	2.0	169.0
346.0	CARBONDALE		SHALE	8.0	171.0
338.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	3.0	179.0
335.0	CARBONDALE	ANNA	BLACK SHALE	2.0	182.0
333.0	CARBONDALE	HERRIN	COAL	7.0	184.0

MAPID: 18923159000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 31 QUARTERS/FOOTAGES: 50' N, 75' E, NE/c

QUADRANGLE: TILDEN LONGITUDE: -89.685262

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.226565

DATE COLLECTED: 9 / 5 / 1975

SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 167.0

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16277C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
466.0	PLEISTOCENE		CLAY	40.0	0.0	
426.0	MODESTO		GRAY SHALE	49.0	40.0	
377.0	MODESTO		SANDSTONE	1.4	89.0	GRAY
375.6	MODESTO		GRAY SHALE	7.0	90.4	
368.6	MODESTO	PIASA	LIMESTONE	1.6	97.4	
367.0	MODESTO	PIASA	GRAY SHALE	4.4	99.0	
362.6	MODESTO	PIASA	LIMESTONE	11.4	103.4	
351.2	MODESTO		DARK SHALE	1.6	114.8	
349.6	MODESTO		GRAY SHALE	4.0	116.4	
345.6	CARBONDALE		LIMESTONE	0.6	120.4	
345.0	CARBONDALE		GRAY SHALE	7.4	121.0	
337.6	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	2.8	128.4	
334.8	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.8	131.2	
332.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	134.0	
330.0	CARBONDALE		DARK SHALE	6.0	136.0	
324.0	CARBONDALE	CONANT	LIMESTONE	1.2	142.0	
322.9	CARBONDALE		DARK SHALE	1.6	143.1	
321.3	CARBONDALE	BRERETON	LIMESTONE	0.6	144.7	
320.6	CARBONDALE	BRERETON	CALCAREOUS SHALE	1.4	145.4	WITH LIMESTONE STREAKS
319.2	CARBONDALE	BRERETON	LIMESTONE	7.6	146.8	
311.6	CARBONDALE		CALCAREOUS SHALE	0.9	154.4	
310.7	CARBONDALE	HERRIN	COAL	6.3	155.3	
304.4	CARBONDALE		UNDERCLAY	5.4	161.6	
299.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.1	166.9	

MAPID: 18900037000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON

TWP/RNG: 3S 5W

SECTION: 32

QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: TILDEN

LONGITUDE: -89.683784

GEOLOGIST: S.SROKA

CONFIDENTIAL: N

LATITUDE: 38.222147

DATE COLLECTED: 10 / 0 / 1924

SURFACE ELEVATION (FT.): 467.9

LOGGED (FT.): 362.0

LOG TYPE: Survey Sample Study

SOURCE: FRANK ELWOOD, HOLE #1

WELL TYPE: Diamond Drill

COMMENT: DESCR. OF CORE #28

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
467.9			UNCLASSIFIED	30.0	0.0	
437.9	MODESTO		SHALE	40.0	30.0	SOME SHELLS
397.9	MODESTO		SHALE	6.0	70.0	W/ A FEW CALC. NODS
391.9	MODESTO		SANDY SHALE	2.0	76.0	W/ ABUNDANT SHELLS
389.9	MODESTO		SANDSTONE	0.7	78.0	
389.2	MODESTO		SHALE	1.3	78.7	
387.9	MODESTO		SHALE	2.0	80.0	W/ WHITE DOLOMITIC FOSSILS
385.9	MODESTO		SANDSTONE	2.0	82.0	
383.9	MODESTO		SHALE	6.0	84.0	W/ BKSH & COAL
377.9	MODESTO		CALCAREOUS SHALE	10.0	90.0	W/ LS BEDS
367.9	MODESTO	PIASA	LIMESTONE	7.0	100.0	
360.9	MODESTO		SHALE	20.0	107.0	
340.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	127.0	
336.9	CARBONDALE		FOSSILIFEROUS SHALE	4.0	131.0	
332.9	CARBONDALE		FOSSILIFEROUS SHALE	11.5	135.0	DARK GRAY-BLACK, W/ LS
321.4	CARBONDALE	BRERETON	FOSSILIFEROUS LIMESTONE	2.5	146.5	
318.9	CARBONDALE	HERRIN	COAL	6.5	149.0	W/ BLUE BAND
312.4	CARBONDALE		SHALE	9.5	155.5	
302.9	CARBONDALE		LIMESTONE	10.0	165.0	
292.9	CARBONDALE		SHALE	4.0	175.0	
288.9	CARBONDALE		SANDY SHALE	20.0	179.0	
268.9	CARBONDALE		SANDSTONE	1.0	199.0	
267.9	CARBONDALE		SANDY SHALE	31.0	200.0	
236.9	CARBONDALE		FOSSILIFEROUS LIMESTONE	1.0	231.0	
235.9	CARBONDALE	EXCELLO	BLACK SHALE	6.0	232.0	
229.9	CARBONDALE		SHALE	31.5	238.0	
198.4	CARBONDALE		SHALE	4.0	269.5	
194.4	CARBONDALE		SANDY SHALE	3.5	273.5	
190.9	CARBONDALE		SHALE	17.0	277.0	
173.9	CARBONDALE		LIMESTONE	1.0	294.0	
172.9	CARBONDALE	MECCA QUARRY	BLACK SHALE	3.0	295.0	
169.9	CARBONDALE	COLCHESTER	COAL	1.5	298.0	
168.4	SPOON		UNDERCLAY	5.0	299.5	CALC. IN MIDDLE, W/ LS BANDS
163.4	SPOON	DEKOVEN	COAL	6.0	304.5	UNCERTAIN CORRELATION
157.4	SPOON		UNDERCLAY/SHALE	14.5	310.5	UC TO SNDY SH TO DRK SH W/CARBON. PLANTS
142.9	SPOON	DAVIS	COAL	2.0	325.0	UNCERTAIN CORRELATION
140.9	SPOON		CLAYSTONE & SILTSTONE	8.0	327.0	

132.9	SPOON	SANDY SHALE	5.0	335.0	GRADES INTO SS
127.9	SPOON	SANDSTONE	9.0	340.0	
118.9	SPOON	COAL	2.0	349.0	
116.9	SPOON	SANDSTONE	11.0	351.0	

MAPID: 18902801000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: WASHINGTON **TWP/RNG:** 3S 5W **SECTION:** 32 **QUARTERS/FOOTAGES:** 50' S, 550' E, SE/c SW NE
QUADRANGLE: TILDEN **LONGITUDE:** -89.672989 **GEOLOGIST:** NORTH
CONFIDENTIAL: N **LATITUDE:** 38.226868 **DATE COLLECTED:** 3 / 7 / 1972
SURFACE ELEVATION (FT.): 464.8 **LOGGED (FT.):** 150.8 **LOG TYPE:** Drillers Log
SOURCE: PEABODY COAL CO. 12744C **WELL TYPE:** Coal Test
COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.8	PLEISTOCENE		UNCONSOLIDATED	105.6	0.0	
359.2	CARBONDALE		SHALE	14.9	105.6	
344.3	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	120.5	
343.3	CARBONDALE	BANKSTON FORK	SHALE	5.2	121.5	
338.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.6	126.7	
335.5	CARBONDALE		DARK SHALE	9.6	129.3	
325.9	CARBONDALE		CALCAREOUS SHALE	0.1	138.9	
325.8	CARBONDALE		CALCAREOUS BLACK SHALES	2.0	139.0	
323.8	CARBONDALE		SHALE	0.7	141.0	
323.1	CARBONDALE	ANNA	BLACK SHALE & COAL	1.3	141.7	
321.8	CARBONDALE	HERRIN	COAL	5.5	143.0	
316.3	CARBONDALE	HERRIN	CLAYSTONE	0.1	148.5	BLUE
316.2	CARBONDALE	HERRIN	COAL	1.7	148.6	
314.6	CARBONDALE		UNDERCLAY	0.6	150.2	

MAPID: 18900038000C VERSION: 1

PROJECT: NCRDS90

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 33 QUARTERS/FOOTAGES: 850' N line, 230' W line

QUADRANGLE: TILDEN LONGITUDE: -89.66564 GEOLOGIST: S.SROKA

CONFIDENTIAL: N LATITUDE: 38.231711 DATE COLLECTED: 0 / 0 / 1915

SURFACE ELEVATION (FT.): 468.9 LOGGED (FT.): 156.6 LOG TYPE: Drillers Log

SOURCE: ALUMINUM ORE CO., #2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
468.9			UNCONSOLIDATED	29.0	0.0	
439.9	MODESTO		SHALE	40.0	29.0	
399.9	MODESTO		COAL	0.3	69.0	
399.6	MODESTO		SHALE	20.7	69.3	
378.9	MODESTO		SANDSTONE	4.3	90.0	
374.6	MODESTO		SHALE	3.0	94.3	
371.6	MODESTO		CALCAREOUS SHALE	3.0	97.3	
368.6	MODESTO	PIASA	LIMESTONE	11.0	100.3	
357.6	MODESTO		SHALE	7.8	111.3	
349.9	CARBONDALE		SHALE	10.0	119.0	
339.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	129.0	
336.9	CARBONDALE		SHALE	6.0	132.0	
330.9	CARBONDALE		LIMESTONE	1.2	138.0	
329.7	CARBONDALE		CALCAREOUS SHALE	3.8	139.2	
325.9	CARBONDALE		SHALE	5.2	143.0	SLATE
320.7	CARBONDALE		SANDY SHALE	0.2	148.2	"SANDY SLATE COAL PARTING"
320.6	CARBONDALE	HERRIN	COAL	6.6	148.3	
314.0	CARBONDALE		UNDERCLAY	1.7	154.9	

MAPID: 18900038000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 33 QUARTERS/FOOTAGES: 850' N line, 230' W line

QUADRANGLE: TILDEN LONGITUDE: -89.66564 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.231711 DATE COLLECTED:

SURFACE ELEVATION (FT.): 469.0 LOGGED (FT.): 154.6 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.0	MODESTO	PIASA	LIMESTONE	11.0	100.0	
358.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	111.0	
355.0	CARBONDALE		DARK GRAY SHALE	6.0	114.0	
349.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	5.0	120.0	
344.0	CARBONDALE	ANNA	BLACK SHALE	5.2	125.0	
338.8	CARBONDALE	ENERGY	CARBONACEOUS SHALE	0.2	130.2	
321.0	CARBONDALE	HERRIN	COAL	6.6	148.0	

MAPID: 18900838000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 33 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NW

QUADRANGLE: TILDEN LONGITUDE: -89.663027 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.227648 DATE COLLECTED: 4 / 0 / 1957

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 9999.9 LOG TYPE: Electric Log

SOURCE: COLLINS BROTHERS OIL CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		NOT DETECTABLE ON LOG

MAPID: 18990066000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 33 QUARTERS/FOOTAGES: 25' N line, 925' E line of SW

QUADRANGLE: TILDEN LONGITUDE: -89.660554 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.226663 DATE COLLECTED: 3 / 6 / 1970

SURFACE ELEVATION (FT.): 487.5 LOGGED (FT.): 187.6 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 9098C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
487.5	PLEISTOCENE		UNCONSOLIDATED	53.0	0.0	
434.5	MODESTO		GRAY SHALE	79.3	53.0	WITH SANDSTONE
355.2	MODESTO	PIASA	LIMESTONE	9.4	132.3	
345.8			GRAY SHALE	18.2	141.7	
327.6	CARBONDALE	BANKSTON FORK	LIMESTONE	3.1	159.9	
324.5	CARBONDALE	BANKSTON FORK	GRAY SHALE	7.1	163.0	
317.4	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	170.1	
315.9	CARBONDALE		SHALE	1.6	171.6	
314.3	CARBONDALE	CONANT	LIMESTONE	0.6	173.2	
313.7	CARBONDALE		DARK SHALE	1.3	173.8	
312.4	CARBONDALE	BRERETON	LIMESTONE	2.7	175.1	
309.7	CARBONDALE	ANNA	BLACK SHALE	1.3	177.8	
308.4	CARBONDALE	HERRIN	COAL	6.5	179.1	
301.9	CARBONDALE		UNDERCLAY	2.0	185.6	

MAPID: 18902827000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 34 QUARTERS/FOOTAGES: 50' N, 50' W, NW/c NE SW

QUADRANGLE: TILDEN LONGITUDE: -89.643454 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.226542 DATE COLLECTED: 3 / 29 / 1972

SURFACE ELEVATION (FT.): 490.4 LOGGED (FT.): 190.8 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12956C WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.4	PLEISTOCENE		GLACIAL DRIFT	27.0	0.0
463.4	MODESTO		SANDSTONE	1.0	27.0
462.4			GRAY SHALE	80.4	28.0
382.0			SANDSTONE	2.0	108.4
380.0			GRAY SHALE	10.2	110.4
369.8			SANDSTONE	3.5	120.6
366.3			GRAY SHALE	3.9	124.1
362.4			SANDSTONE	4.4	128.0
358.0			GRAY SHALE	1.5	132.4
356.5	MODESTO	PIASA	LIMESTONE	11.8	133.9
344.7	MODESTO		GRAY SHALE	2.6	145.7
342.1	CARBONDALE	DANVILLE	COAL	0.8	148.3
341.3	CARBONDALE		GRAY SHALE	5.9	149.1
335.4	CARBONDALE		SHALE	2.4	155.0
333.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.2	157.4
329.8	CARBONDALE	BANKSTON FORK	SHALE	3.4	160.6
326.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.9	164.0
323.5	CARBONDALE		DARK SHALE	4.7	166.9
318.8	CARBONDALE		SHALE	3.1	171.6
315.7	CARBONDALE	CONANT	LIMESTONE	1.6	174.7
314.1	CARBONDALE		CALCAREOUS SHALE	3.4	176.3
310.7	CARBONDALE	BRERETON	LIMESTONE	4.2	179.7
306.5	CARBONDALE	HERRIN	COAL	5.1	183.9
301.4	CARBONDALE	HERRIN	SHALE	0.1	189.0
301.3	CARBONDALE	HERRIN	COAL	1.1	189.1
300.2	CARBONDALE		UNDERCLAY	0.6	190.2

MAPID: 18960064000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 34 QUARTERS/FOOTAGES: 125' N line, 1' E line of NE

QUADRANGLE: TILDEN LONGITUDE: -89.629912 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.233482 DATE COLLECTED: 8 / 24 / 1976

SURFACE ELEVATION (FT.): 469.3 LOGGED (FT.): 182.8 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16563C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
469.3	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0	
424.3	MODESTO		GRAY SHALE	70.8	45.0	
353.5	MODESTO		LIMESTONE	2.2	115.8	
351.3	MODESTO		GRAY SHALE	4.7	118.0	
346.6	MODESTO	PIASA	LIMESTONE	5.7	122.7	
340.9	MODESTO		DARK SHALE	2.6	128.4	
338.3	CARBONDALE		GRAY SHALE	2.0	131.0	
336.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	133.0	
331.6	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.1	137.7	
327.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	141.8	
323.3	CARBONDALE		GRAY SHALE	3.9	146.0	LIMESTONE NODULE
319.4	CARBONDALE	CONANT	LIMESTONE	2.4	149.9	
317.0	CARBONDALE		DARK SHALE	8.5	152.3	
308.5	CARBONDALE	BRERETON	LIMESTONE	0.8	160.8	
307.7	CARBONDALE	BRERETON	DARK SHALE	1.9	161.6	
305.8	CARBONDALE	BRERETON	LIMESTONE	1.2	163.5	
304.6	CARBONDALE	BRERETON	GRAY SHALE	0.2	164.7	
304.4	CARBONDALE	ANNA	BLACK SHALE	2.3	164.9	
302.2	CARBONDALE	HERRIN	COAL	6.8	167.1	
295.4	CARBONDALE		UNDERCLAY	1.5	173.9	
293.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.8	175.4	
292.2	CARBONDALE	HIGGINSVILLE	GRAY SHALE	1.0	177.1	LIMESTONE NODULE
291.2	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.7	178.1	
290.5	CARBONDALE		SHALE	4.1	178.8	GRAY-GREEN LIMESTONE NODULE

MAPID: 18990005000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 34 QUARTERS/FOOTAGES:

QUADRANGLE: TILDEN LONGITUDE: -89.643269

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.219856

DATE COLLECTED: 4 / 12 / 1972

SURFACE ELEVATION (FT.): 477.2 LOGGED (FT.): 179.6

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12960C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
477.2			CLAY	13.7	0.0	
463.5	MODESTO		SANDSTONE	1.0	13.7	
462.5	MODESTO		GRAY SHALE	78.9	14.7	
383.6	MODESTO		SANDSTONE	1.8	93.6	
381.8	MODESTO		SHALE	5.4	95.4	
376.4	MODESTO	GIMLET	SANDSTONE	5.3	100.8	
371.1	MODESTO		GRAY SHALE	10.5	106.1	
360.6	MODESTO	GIMLET	SANDSTONE	2.7	116.6	
357.9	MODESTO		SHALE	5.2	119.3	
352.7	MODESTO	PIASA	LIMESTONE	9.4	124.5	
343.3	MODESTO		DARK SHALE	2.8	133.9	
340.5	CARBONDALE	DANVILLE	COAL	1.0	136.7	
339.5	CARBONDALE		GRAY SHALE	9.3	137.7	
330.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	147.0	BANKSTON FORK UPPER
327.9	CARBONDALE	BANKSTON FORK	SHALE	4.5	149.3	
323.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	153.8	BANKSTON FORK LOWER
320.4	CARBONDALE	LAWSON	SHALE	7.1	156.8	
313.3	CARBONDALE	BRERETON	LIMESTONE	2.7	163.9	
310.6	CARBONDALE	ANNA	SHALE	4.5	166.6	
306.2	CARBONDALE	ANNA	SILTSTONE	1.2	171.0	
305.0	CARBONDALE	HERRIN	COAL	6.4	172.2	
298.6	CARBONDALE		UNDERCLAY	1.0	178.6	

MAPID: 18990009000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 34 QUARTERS/FOOTAGES:

QUADRANGLE: TILDEN LONGITUDE: -89.635793

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.226758

DATE COLLECTED: 9 / 20 / 1973

SURFACE ELEVATION (FT.): 435.5 LOGGED (FT.): 165.7

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15817C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
435.5			UNCLASSIFIED	12.0	0.0	
423.5	MODESTO		GRAY SHALE	87.6	12.0	
335.9	MODESTO	PIASA	LIMESTONE	11.1	99.6	
324.8	MODESTO		GRAY SHALE	8.4	110.7	
316.4	MODESTO		DARK SHALE	1.5	119.1	
314.9	MODESTO		GRAY SHALE	3.5	120.6	
311.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	124.1	BANKSTON FORK LS UPPER
308.4	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.5	127.1	
303.9	CARBONDALE	BANKSTON FORK	DARK SHALE	0.8	131.6	
303.1	CARBONDALE	BANKSTON FORK	LIMESTONE	1.9	132.4	BANKSTON FORK LS LOWER
301.3	CARBONDALE	LAWSON	DARK SHALE	8.8	134.2	
292.5	CARBONDALE	CONANT	LIMESTONE	0.8	143.0	
291.7	CARBONDALE		SHALE	1.2	143.8	
290.5	CARBONDALE	BRERETON	LIMESTONE	0.0	145.0	
290.5	CARBONDALE	ANNA	SILTSTONE	1.0	145.0	
289.5	CARBONDALE	HERRIN	COAL	6.9	146.0	
282.6	CARBONDALE		UNDERCLAY	2.4	152.9	
280.2	CARBONDALE		SHALE	10.4	155.3	

MAPID: 18990021000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 34 QUARTERS/FOOTAGES:

QUADRANGLE: TILDEN LONGITUDE: -89.629558

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.233416

DATE COLLECTED: 8 / 24 / 1976

SURFACE ELEVATION (FT.): 469.3 LOGGED (FT.): 182.8

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16563C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
469.3			CLAY	35.0	0.0	
434.3			CLAY	10.0	35.0	
424.3	MODESTO		GRAY SHALE	70.8	45.0	
353.5	MODESTO	PIASA	LIMESTONE	2.2	115.8	
351.3	MODESTO	PIASA	GRAY SHALE	4.7	118.0	
346.6	MODESTO	PIASA	LIMESTONE	5.7	122.7	
340.9	MODESTO		DARK SHALE	2.6	128.4	
338.3	MODESTO		GRAY SHALE	2.0	131.0	
336.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	133.0	BANKSTON FORK LS UPPER
331.6	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.1	137.7	
327.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	141.8	BANKSTON FORK LS LOWER
323.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.9	146.0	
319.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	149.9	BANKSTON FORK LS LOWER
317.0	CARBONDALE	LAWSON	DARK SHALE	1.1	152.3	
315.9	CARBONDALE	LAWSON	DARK SHALE	7.4	153.4	
308.5	CARBONDALE	CONANT	LIMESTONE	0.8	160.8	
307.7	CARBONDALE		DARK SHALE	1.9	161.6	
305.8	CARBONDALE	BRERETON	LIMESTONE	1.2	163.5	
304.6	CARBONDALE	ANNA	GRAY SHALE	0.2	164.7	
304.4	CARBONDALE	ANNA	SILTSTONE	2.3	164.9	
302.2	CARBONDALE	HERRIN	COAL	6.8	167.1	
295.4	CARBONDALE		UNDERCLAY	1.5	173.9	
293.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.8	175.4	
292.2	CARBONDALE	HIGGINSVILLE	GRAY SHALE	1.0	177.1	
291.2	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.7	178.1	
290.5	CARBONDALE		GREEN SHALE	1.7	178.8	
288.8	CARBONDALE		GRAY SHALE	1.8	180.5	
287.0	CARBONDALE		GREEN SHALE	0.6	182.3	

MAPID: 18990037000C VERSION: 1

PROJECT: LUMP

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 34 QUARTERS/FOOTAGES:

QUADRANGLE: TILDEN LONGITUDE: -89.639044

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.226652

DATE COLLECTED: 11 / 25 / 1975

SURFACE ELEVATION (FT.): 487.4 LOGGED (FT.): 193.1

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15996C

WELL TYPE: Coal Test

COMMENT: PERMIT 48; MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
487.4	PLEISTOCENE		CLAY	22.0	0.0	
465.4	MODESTO		SANDSTONE	4.9	22.0	BROWN
460.5	MODESTO		SANDSTONE	1.9	26.9	GRAY
458.6	MODESTO		CALCAREOUS SHALE	108.8	28.8	
349.8	MODESTO	PIASA	LIMESTONE	10.1	137.6	
339.7	CARBONDALE		CALCAREOUS SHALE	15.8	147.7	
323.9	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	163.5	
317.6	CARBONDALE		DARK SHALE	9.5	169.8	
308.1	CARBONDALE	BRERETON	LIMESTONE	1.5	179.3	
306.6	CARBONDALE	ANNA	DARK GRAY SHALE	3.0	180.8	
303.6	CARBONDALE	HERRIN	COAL	5.3	183.8	
298.3	CARBONDALE	HERRIN	GRAY SHALE	0.1	189.1	
298.2	CARBONDALE	HERRIN	COAL	0.4	189.2	
297.9	CARBONDALE	HERRIN	GRAY SHALE	0.2	189.5	
297.7	CARBONDALE	HERRIN	COAL	1.1	189.7	
296.7	CARBONDALE		UNDERCLAY	2.0	190.7	
294.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.4	192.7	

MAPID: 18990062000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 34 QUARTERS/FOOTAGES: 350' S line, 50' W line of SE SW

QUADRANGLE: TILDEN LONGITUDE: -89.643421 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.22038 DATE COLLECTED: 4 / 12 / 1975

SURFACE ELEVATION (FT.): 477.2 LOGGED (FT.): 179.6 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12960C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.2	PLEISTOCENE		UNCONSOLIDATED	13.7	0.0
463.5	MODESTO		SANDSTONE	1.0	13.7
462.5	MODESTO		GRAY SHALE	78.9	14.7
383.6	MODESTO		SANDSTONE	1.8	93.6
381.8	MODESTO		SHALE	5.4	95.4
376.4	MODESTO		SANDSTONE	5.3	100.8
371.1	MODESTO		GRAY SHALE	10.5	106.1
360.6	MODESTO		SANDSTONE	2.7	116.6
357.9	MODESTO		SHALE	5.2	119.3
352.7	MODESTO	PIASA	LIMESTONE	9.4	124.5
343.3	MODESTO		SHALE	2.8	133.9
340.5	CARBONDALE	DANVILLE	COAL	1.0	136.7
339.5	CARBONDALE		GRAY SHALE	9.3	137.7
330.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	147.0
327.9	CARBONDALE	BANKSTON FORK	SHALE	4.5	149.3
323.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	153.8
320.4	CARBONDALE		SHALE	7.1	156.8
313.3	CARBONDALE	BRERETON	LIMESTONE	2.7	163.9
310.6	CARBONDALE	ANNA	SHALE	4.5	166.6
306.2	CARBONDALE	ANNA	BLACK SHALE	1.2	171.0
305.0	CARBONDALE	HERRIN	COAL	6.4	172.2
298.6	CARBONDALE		UNDERCLAY	1.0	178.6

MAPID: 18990065000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 34 QUARTERS/FOOTAGES: 1000' N line, 1275' E line of NW

QUADRANGLE: TILDEN LONGITUDE: -89.643533 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.231186 DATE COLLECTED: 11 / 25 / 1975

SURFACE ELEVATION (FT.): 487.4 LOGGED (FT.): 193.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15996C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
487.4	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
465.4	MODESTO		SANDSTONE	6.8	22.0	
458.6	MODESTO		GRAY SHALE	108.8	28.8	WITH LIMESTONE BAND
349.8	MODESTO	PIASA	LIMESTONE	10.1	137.6	
339.7			GRAY SHALE	15.8	147.7	WITH LIMESTONE BAND
323.9	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	163.5	
317.6	CARBONDALE		SHALE	10.0	169.8	
307.6	CARBONDALE	BRERETON	LIMESTONE	0.8	179.8	
306.8	CARBONDALE		SHALE	1.9	180.6	
304.9	CARBONDALE		MUDSTONE	1.4	182.5	
303.5	CARBONDALE	HERRIN	COAL	5.1	183.9	
298.4	CARBONDALE	HERRIN	GRAY SHALE	0.1	189.0	
298.3	CARBONDALE	HERRIN	COAL	0.4	189.1	
298.0	CARBONDALE	HERRIN	GRAY SHALE	0.2	189.4	
297.8	CARBONDALE	HERRIN	COAL	1.1	189.6	
296.8	CARBONDALE		UNDERCLAY	1.7	190.6	
295.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.7	192.3	

MAPID: 18990003000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 35 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.611065

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.220237

DATE COLLECTED: 5 / 31 / 1972

SURFACE ELEVATION (FT.): 500.0

LOGGED (FT.): 172.7

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12857C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.0			CLAY	45.8	0.0	
454.2	MODESTO		GRAY SHALE	71.2	45.8	
383.0	MODESTO	PIASA	LIMESTONE	8.6	117.0	
374.4	MODESTO		DARK SHALE	3.3	125.6	
371.1	CARBONDALE	DANVILLE	COAL	1.5	128.9	
369.6	CARBONDALE		GRAY SHALE	7.4	130.4	
362.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.1	137.8	BANKSTON FORK UPPER
359.1	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.2	140.9	
354.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	145.1	BANKSTON FORK LOWER
352.1	CARBONDALE	LAWSON	DARK SHALE	6.3	147.9	
345.8	CARBONDALE	CONANT	LIMESTONE	0.7	154.2	
345.1	CARBONDALE		DARK SHALE	7.2	154.9	
337.9	CARBONDALE	BRERETON	LIMESTONE	3.5	162.1	
334.4	CARBONDALE	ANNA	SILTSTONE	0.0	165.6	
334.4	CARBONDALE	HERRIN	COAL	6.1	165.6	
328.3	CARBONDALE		UNDERCLAY	1.0	171.7	

MAPID: 18990004000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 35 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.625364

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.226516

DATE COLLECTED: 3 / 25 / 1972

SURFACE ELEVATION (FT.): 499.6 LOGGED (FT.): 199.8

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12955C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
499.6			CLAY	19.9	0.0	
479.7	MODESTO	TRIVOLI	SANDSTONE	13.9	19.9	
465.8	MODESTO		GRAY SHALE	77.8	33.8	
388.0	MODESTO		SANDSTONE	1.4	111.6	
386.6	MODESTO		SHALE	12.0	113.0	
374.6	MODESTO	GIMLET	SANDSTONE	21.2	125.0	
353.4	MODESTO		GRAY SHALE	1.8	146.2	
351.6	MODESTO	PIASA	LIMESTONE	6.1	148.0	
345.5	MODESTO		GRAY SHALE	2.2	154.1	
343.3	CARBONDALE	DANVILLE	COAL	0.8	156.3	
342.5	CARBONDALE		GRAY SHALE	7.4	157.1	
335.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.6	164.5	BANKSTON FORK UPPER
331.5	CARBONDALE	BANKSTON FORK	SHALE	4.8	168.1	
326.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	172.9	BANKSTON FORK LOWER
324.3	CARBONDALE	LAWSON	DARK SHALE	5.9	175.3	
318.4	CARBONDALE	CONANT	LIMESTONE	1.5	181.2	
316.9	CARBONDALE		CALCAREOUS SHALE	5.1	182.7	
311.8	CARBONDALE	BRERETON	LIMESTONE	0.5	187.8	
311.3	CARBONDALE	BRERETON	LIMESTONE	3.3	188.3	
308.0	CARBONDALE	ANNA	SILTSTONE	1.0	191.6	
307.0	CARBONDALE	HERRIN	COAL	5.3	192.6	
301.7	CARBONDALE	HERRIN	SHALE	0.1	197.9	
301.6	CARBONDALE	HERRIN	COAL	1.0	198.0	
300.6	CARBONDALE		UNDERCLAY	0.8	199.0	

MAPID: 18990019000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 35 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.619585

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.232522

DATE COLLECTED: 10 / 27 / 1976

SURFACE ELEVATION (FT.): 455.2 LOGGED (FT.): 167.4

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16437C

WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.2			UNCLASSIFIED	21.1	0.0	
434.1	MODESTO		GRAY SHALE	32.2	21.1	
401.9	MODESTO		GRAY SHALE	43.4	53.3	
358.5	MODESTO	GIMLET	SANDSTONE	4.2	96.7	
354.3	MODESTO		GRAY SHALE	5.1	100.9	
349.2	MODESTO	PIASA	LIMESTONE	8.1	106.0	
341.1	MODESTO		DARK SHALE	1.9	114.1	
339.2	MODESTO		GRAY SHALE	12.8	116.0	
326.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.4	128.8	BANKSTON FORK LS LOWER
323.0	CARBONDALE	LAWSON	GRAY SHALE	6.3	132.2	
316.7	CARBONDALE	LAWSON	DARK SHALE	3.5	138.5	
313.2	CARBONDALE	LAWSON	GRAY SHALE	2.3	142.0	
310.9	CARBONDALE	CONANT	LIMESTONE	1.0	144.3	
309.9	CARBONDALE		DARK SHALE	3.6	145.3	
306.3	CARBONDALE	BRERETON	LIMESTONE	6.0	148.9	
300.3	CARBONDALE	ANNA	DARK SILTSTONE	0.7	154.9	
299.6	CARBONDALE	HERRIN	COAL	5.2	155.6	
294.4	CARBONDALE	HERRIN	GRAY SHALE	0.1	160.8	
294.3	CARBONDALE	HERRIN	COAL	1.0	160.9	
293.3	CARBONDALE		UNDERCLAY	1.4	161.9	
291.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.1	163.3	

MAPID: 18990050000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 35 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.624018 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.227476 DATE COLLECTED: 2 / 3 / 1995

SURFACE ELEVATION (FT.): 493.8 LOGGED (FT.): 223.4 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17008C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
493.8	PLEISTOCENE		UNCONSOLIDATED	43.0	0.0	
450.8	MODESTO		COAL	0.5	43.0	
450.3	MODESTO		UNDERCLAY	1.5	43.5	
448.8	MODESTO		LIMESTONE	1.0	45.0	
447.8	MODESTO		SANDSTONE	1.0	46.0	
446.8	MODESTO		GRAY SHALE	83.0	47.0	
363.8	MODESTO		SILTSTONE	3.0	130.0	GREEN-GRAY
360.8	MODESTO		GRAY SHALE	4.0	133.0	
356.8	MODESTO		SILTSTONE	3.0	137.0	GREEN-GRAY
353.8	MODESTO		SANDSTONE	6.0	140.0	
347.8	MODESTO		LIMESTONE	1.0	146.0	
346.8	MODESTO		SHALE	4.0	147.0	CALCAREOUS
342.8	MODESTO		LIMESTONE	2.0	151.0	
340.8	MODESTO		SHALE	1.0	153.0	RED
339.8	MODESTO		SHALE	7.0	154.0	GREEN-GRAY
332.8	MODESTO	PIASA	LIMESTONE	11.0	161.0	
321.8	MODESTO		DARK SHALE	1.0	172.0	
320.8	CARBONDALE		GRAY SHALE	7.0	173.0	
313.8	CARBONDALE		SHALE	2.5	180.0	CALCAREOUS
311.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	182.5	
308.5	CARBONDALE		SHALE	3.7	185.3	CALCAREOUS
304.8	CARBONDALE		DARK SHALE	2.0	189.0	CALCAREOUS
302.8	CARBONDALE	CONANT	LIMESTONE	2.5	191.0	
300.3	CARBONDALE		BLACK SHALE	7.6	193.5	CALCAREOUS-FOSSILS
292.7	CARBONDALE	BRERETON	LIMESTONE	1.6	201.1	BLACK-ARGILLACEOUS
291.1	CARBONDALE	BRERETON	DARK SHALE	1.3	202.7	
289.8	CARBONDALE	BRERETON	LIMESTONE	0.5	204.0	FRACTURED
289.3	CARBONDALE	ANNA	BLACK SHALE	1.5	204.5	
287.8	CARBONDALE	HERRIN	COAL	6.6	206.0	
281.2	CARBONDALE		UNDERCLAY	0.9	212.6	
280.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	10.0	213.5	

MAPID: 18990061000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 35 QUARTERS/FOOTAGES: 25' N line, 75' E line of SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.620768 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.226488 DATE COLLECTED: 3 / 25 / 1972

SURFACE ELEVATION (FT.): 499.6 LOGGED (FT.): 199.8 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12955C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
499.6	PLEISTOCENE		UNCONSOLIDATED	19.9	0.0	
479.7	MODESTO		SANDSTONE	13.9	19.9	
465.8	MODESTO		GRAY SHALE	77.8	33.8	
388.0	MODESTO		SANDSTONE	1.4	111.6	
386.6	MODESTO		SHALE	12.0	113.0	
374.6	MODESTO		SANDSTONE	21.2	125.0	
353.4	MODESTO		GRAY SHALE	1.8	146.2	
351.6	MODESTO	PIASA	LIMESTONE	6.1	148.0	
345.5	MODESTO		GRAY SHALE	2.2	154.1	
343.3	CARBONDALE	DANVILLE	COAL	0.8	156.3	
342.5	CARBONDALE		GRAY SHALE	7.4	157.1	
335.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.6	164.5	
331.5	CARBONDALE	BANKSTON FORK	SHALE	4.8	168.1	
326.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	172.9	
324.3	CARBONDALE		DARK SHALE	5.9	175.3	
318.4	CARBONDALE	CONANT	LIMESTONE	1.5	181.2	
316.9	CARBONDALE		SHALE	5.1	182.7	CALCAREOUS
311.8	CARBONDALE	BRERETON	LIMESTONE	3.8	187.8	
308.0	CARBONDALE	ANNA	BLACK SHALE	1.0	191.6	
307.0	CARBONDALE	HERRIN	COAL	5.3	192.6	
301.7	CARBONDALE	HERRIN	SHALE	0.1	197.9	
301.6	CARBONDALE	HERRIN	COAL	1.0	198.0	
300.6	CARBONDALE		UNDERCLAY	0.8	199.0	

MAPID: 18900675000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 36 QUARTERS/FOOTAGES: NW NE SE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.596315 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.225598 DATE COLLECTED:

SURFACE ELEVATION (FT.): 523.0 LOGGED (FT.): 199.0 LOG TYPE: Electric Log

SOURCE: COMMENT: GOOD DESCRIPTION WELL TYPE: Oil and Gas Test

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
371.0	MODESTO	PIASA	LIMESTONE	10.0	152.0	
361.0	CARBONDALE		SHALE	9.0	162.0	
352.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	171.0	
349.0	CARBONDALE	BANKSTON FORK	SHALE	7.0	174.0	
342.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	181.0	
339.0	CARBONDALE		SHALE	5.0	184.0	
334.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	5.0	189.0	
329.0	CARBONDALE	ANNA	BLACK SHALE	1.0	194.0	
330.0	CARBONDALE	HERRIN	COAL	6.0	193.0	

MAPID: 18990006000C VERSION: 1

PROJECT: NCRDS92

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.61008 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.226618 DATE COLLECTED: 2 / 23 / 1973

SURFACE ELEVATION (FT.): 506.1 LOGGED (FT.): 193.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15586C WELL TYPE: Coal Test

COMMENT: FROM PERMIT 48, REVISION 4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
506.1			UNCLASSIFIED	51.0	0.0	
455.1	MODESTO		CLAY	30.0	51.0	
425.1	MODESTO		GRAY SHALE	52.3	81.0	
372.8	MODESTO	PIASA	LIMESTONE	8.3	133.3	
364.5	MODESTO		GRAY SHALE	17.0	141.6	
347.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	158.6	BANKSTON FORK UPPER
343.5	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.4	162.6	
339.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	167.0	BANKSTON FORK LOWER
337.1	CARBONDALE	LAWSON	DARK SHALE	7.0	169.0	
330.1	CARBONDALE	CONANT	LIMESTONE	1.7	176.0	
328.4	CARBONDALE		DARK SHALE	2.1	177.7	
326.3	CARBONDALE	BRERETON	LIMESTONE	1.7	179.8	
324.6	CARBONDALE	ANNA	DARK SHALE	1.7	181.5	
322.9	CARBONDALE	HERRIN	COAL	6.9	183.2	
316.0	CARBONDALE		UNDERCLAY	1.2	190.1	
314.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.7	191.3	

MAPID: 18990058000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 36 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.603164 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.225603 DATE COLLECTED: 8 / 19 / 1996

SURFACE ELEVATION (FT.): 507.6 LOGGED (FT.): 214.1 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 17035C WELL TYPE: Coal Test

COMMENT: PERMIT #48 MARISSA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
507.6	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0	
473.6	MODESTO		SANDSTONE	30.0	34.0	
443.6	MODESTO		COAL	0.5	64.0	
443.1	MODESTO		LIMESTONE	0.5	64.5	
442.6	MODESTO		GRAY SHALE	62.0	65.0	
380.6	MODESTO		SANDSTONE	3.0	127.0	
377.6	MODESTO		SHALE	19.0	130.0	
358.6	MODESTO	PIASA	LIMESTONE	9.0	149.0	
349.6	MODESTO		GRAY SHALE	2.0	158.0	
347.6	MODESTO		DARK SHALE	1.5	160.0	
346.1	CARBONDALE	DANVILLE	COAL	1.5	161.5	
344.6	CARBONDALE		GRAY SHALE	4.0	163.0	
340.6	CARBONDALE		SANDSTONE	3.0	167.0	CALCAREOUS
337.6	CARBONDALE		GRAY SHALE	3.5	170.0	
334.1	CARBONDALE	BANKSTON FORK	LIMESTONE	0.5	173.5	
333.6	CARBONDALE	BANKSTON FORK	SHALE	3.2	174.0	
330.4	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	177.2	
323.4	CARBONDALE		DARK SHALE	13.5	184.2	
309.9	CARBONDALE	BRERETON	LIMESTONE	3.8	197.7	
306.1	CARBONDALE	ANNA	BLACK SHALE	0.2	201.5	
305.9	CARBONDALE	HERRIN	COAL	6.4	201.7	
299.5	CARBONDALE		UNDERCLAY	3.4	208.1	
296.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.6	211.5	

MAPID: 18990060000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 5W SECTION: 36 QUARTERS/FOOTAGES: 50' S line, 300' W line of NW

QUADRANGLE: COULTERVILLE

LONGITUDE: -89.610088

GEOLOGIST: D NORTH

CONFIDENTIAL: N

LATITUDE: 38.226648

DATE COLLECTED: 2 / 23 / 1973

SURFACE ELEVATION (FT.): 506.1

LOGGED (FT.): 193.0

LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 15586C

WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
506.1	PLEISTOCENE		UNCONSOLIDATED	81.0	0.0
425.1	MODESTO		GRAY SHALE	52.3	81.0
372.8	MODESTO	PIASA	LIMESTONE	8.3	133.3
364.5			GRAY SHALE	17.0	141.6
347.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	158.6
343.5	CARBONDALE	BANKSTON FORK	SHALE	4.4	162.6
339.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	167.0
337.1	CARBONDALE		DARK SHALE	7.0	169.0
330.1	CARBONDALE	CONANT	LIMESTONE	1.7	176.0
328.4	CARBONDALE		DARK SHALE	2.1	177.7
326.3	CARBONDALE	BRERETON	LIMESTONE	1.7	179.8
324.6	CARBONDALE	ANNA	DARK SHALE	1.7	181.5
322.9	CARBONDALE	HERRIN	COAL	6.9	183.2
316.0	CARBONDALE		UNDERCLAY	1.2	190.1
314.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.7	191.3

MAPID: 18990041000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 3S 6W SECTION: 13 QUARTERS/FOOTAGES: SE NE NE

QUADRANGLE: ST. LIBORY LONGITUDE: -89.704799 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.275055 DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.1 LOGGED (FT.): 139.3 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 12531C WELL TYPE: Coal Test

COMMENT: PERMIT #

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
422.1	PLEISTOCENE		UNCONSOLIDATED	38.8	0.0	
383.3	MODESTO		GRAY SHALE	31.6	38.8	
351.7	MODESTO		SANDSTONE	3.5	70.4	
348.2	MODESTO		SHALE	7.1	73.9	
341.1	MODESTO		LIMESTONE	1.8	81.0	
339.3	MODESTO		SHALE	1.7	82.8	
337.6	MODESTO		LIMESTONE	0.7	84.5	
336.9	MODESTO		SHALE	3.4	85.2	
333.5	MODESTO	PIASA	LIMESTONE	10.5	88.6	
323.0	MODESTO		DARK SHALE	3.7	99.1	
319.3	CARBONDALE		GRAY SHALE	3.5	102.8	
315.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	106.3	
312.3	CARBONDALE	BANKSTON FORK	SHALE	3.7	109.8	
308.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.4	113.5	
306.2	CARBONDALE		SHALE	5.5	115.9	
300.7	CARBONDALE	CONANT	LIMESTONE	1.6	121.4	
299.1	CARBONDALE		SHALE	6.0	123.0	WITH LIMESTONE STREAKS
293.1	CARBONDALE	BRERETON	LIMESTONE	3.2	129.0	
289.9	CARBONDALE	HERRIN	COAL	6.0	132.2	
284.0	CARBONDALE		UNDERCLAY	1.2	138.1	

MAPID: 18990059000C VERSION: 1

PROJECT: LUMP97

COUNTY: WASHINGTON TWP/RNG: 4S 5W SECTION: 2 QUARTERS/FOOTAGES: 50' S, 50' W, SW/c NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.629095 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.212949 DATE COLLECTED: 2 / 6 / 1975

SURFACE ELEVATION (FT.): 547.3 LOGGED (FT.): 209.5 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16107C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
547.3	PLEISTOCENE		UNCONSOLIDATED	16.2	0.0	
531.1	MODESTO		SANDSTONE	28.4	16.2	
502.7	MODESTO		SHALE	107.3	44.6	
395.4	MODESTO	PIASA	LIMESTONE	8.9	151.9	
386.5	MODESTO		DARK SHALE	1.8	160.8	
384.7	CARBONDALE	DANVILLE	COAL	2.1	162.6	
382.6	CARBONDALE		GRAY SHALE	6.2	164.7	
376.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	170.9	
373.4	CARBONDALE	BANKSTON FORK	GRAY SHALE	4.6	173.9	
368.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	178.5	
365.8	CARBONDALE		DARK SHALE	3.9	181.5	
361.9	CARBONDALE	CONANT	LIMESTONE	0.9	185.4	
361.0	CARBONDALE	CONANT	DARK SHALE	1.6	186.3	
359.4	CARBONDALE	CONANT	LIMESTONE	1.4	187.9	
358.0	CARBONDALE		DARK SHALE	2.5	189.3	WITH LIMESTONE STREAKS
355.5	CARBONDALE	BRERETON	LIMESTONE	3.1	191.8	
352.4	CARBONDALE	ANNA	BLACK SHALE	1.8	194.9	
350.6	CARBONDALE	HERRIN	COAL	6.4	196.7	
344.2	CARBONDALE		UNDERCLAY	1.8	203.1	
342.4	CARBONDALE		SHALE	4.6	204.9	WITH LIMESTONE