PEABODY COAL COMPANY
RIVER KING STRIP MINE- PIT 2
ST. CLAIR COUNTY

R -F

HERRIN

Sec. 27
T. 1 S
R. 7 E
Index No

Mine Index

(77438—5M—5-58) 2

Peabody Coal Co., River King

No. 6 Coal

Sampled July 24, 1962 : Eadie & Gartner

Arrangements with Tom Rhoades, Prep. Mgr. for Ill. Mines of Peabody.

Accompanied by John Fuller, Draftsman

3 pits operating. Samples taken from pit being worked by wheel & 75'yd shovel. Identified as Pit # 2.

Sample # 1: 160'N, 260'E, SW corner NE¼ NE¼ sec. 27, 1S-7W , 3 pm

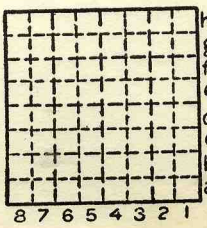
Sample # 2: 645'N, 365'E, SWcorner, NE¼ NE¼ Sec. 27, 1S-7W

Sample # 3: 40'S, 115'W NE corner SW¼ SE¼ Sec. 27, 1S-7W

By GRE Date 7-24-62

Quad. Part

County St. Clair



Sec. 27

T. 1 S. N.

R. 7 W. E.

Sampled 24 July 62
Eadie & Gartner

Arrangements with Tom Rhoades Prep. Mgr. for Ill. Mines of Peabody.
Accompanied by John Fuller, Draftsman.

3 Pits operating. Samples taken from pit being worked by Wheel & 75 yd. Shovel. Identified as Pit #2

Spl. #1 160' N, 260' E, SW Cor NE¼ NE¼ Sec 27, T1S, R7W, 3 PM

Spl. #2 645' N, 365' E. SW Cor NE¼, NE¼, Sec 27, T1S, R7W, 3 PM

Spl #3 40' S, 115' W NE Cor SW¼, SE¼, Sec 27, T1S, R7W

1961- 2,751,971

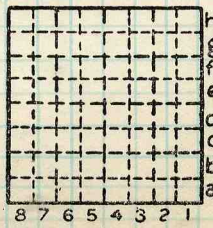
Strip

Peabody C.C. River King #6 Coal

By _____ Date _____

Quad. _____ Part _____

County St. Clair



Sec. 15
T. 1 N. S.
R. 7 E. W.
Index No. S-94

ILLINOIS GEOLOGICAL SURVEY, URBANA

Peabody Coal Co. - River King Mine

Tom Rhoades, Prep. Man. Ill. mines
John Fuller, Draftsman

All samples from Pit # 2
3 pits operating as River King, Pit # 2 is Northernmost.

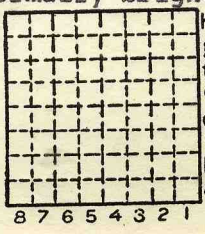
Sample # 1
Taken from area 325' south of ramp. Water level has been approx. 2½' above bottom of coal. Coal very friable, face cleaned into solid coal.
From top down
Total thickness: 6'9", No. 6 Coal

Inches	Description
0 - 2	Clarain, normally bright banded, calcite in cleats;
2 - 2 1/8	Shale
2 1/8 - 9	Clarain, vitrain bands 1/8", bright, calcite in cleavage planes, thin layers of pyrite in cleats.
9 - 9 1/8	Fusain band
9 1/8 - 11	Clarain, calcite in cleats, normally bright banded, vitrain bands to 1/8";
11 - 11 1/8	1/8" band of shale
11 1/8 - 1'2½"	Clarain as described above
1'2½" - 1'2 5/8"	Shale
1'2 5/8" - 1'10"	Clarain, calcite in cleavage planes, normally bright banded

By Eadie&Gartner Date 7-25-62

Quad. Part.

County St. Clair



Sec. 27

T. 1 N. S.

R. 7 E. W.

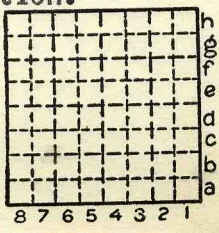
Peabody Coal Co. - River King Mine cont.

Inches	Description
* 1'10" - 1'10 3/4"	Shale
1'10 3/4" - 2' 1/4"	Clarain, medium banded, calcite in cleavage
* 2' 1/4" - 2'1"	Shale and fusain, thin banded, with layers of pyrite
2'1" - 3'1 1/4"	Clarain, normally bright banded, calcite and pyrite in cleavage planes, occasional 1/16" layer of pyrite, occasional 1/16" band of shale
* 3'1 1/4" - 3'2"	Shale
3'2" - 4'2"	Clarain, medium banded, occasional 1/16" Fusain, calcite and some pyrite in cleavage planes
* 4'2" - 4'2 1/2"	Pyrite
4'2 1/2" - 4'7"	Clarain, calcite in cleavage, normally bright banded
* 4'7" - 4'7 3/8"	Shale
4'7 3/8" - 5'4"	Clarain, calcite and pyrite in cleavage, occasional 1/16" vitrain, normally bright banded
5'4" - 5'4 1/4"	Vitrain band
5'4 1/4" - 5'9"	Clarain, normally bright banded calcite and pyrite in cleavage
5'9" - 6'9"	Clarain, calcite in cleavage, predominantly pyrite in cleavage planes, pyrite layers thin - 1/16" -, but very heavy in concentration.

By Eadie&Gartner Date 7-24-62

Quad. Part

County St. Clair



Sec. 27

T. 1 S. N.

R. 7W. E.

Peabody Coal Co. - River King Mine cont

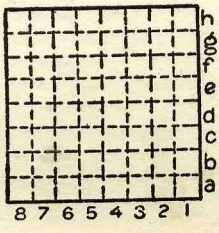
* Deleted from sample

Sample # 1 location:
260' East, 160' North, SW corner, NE¼ NE¼
sec. 27, T. 1S, R. 7W, St. Clair Co.

By Eadie&Gartner Date 7-24-62

Quad. Part

County St. Clair



Sec. 27

T. 1 N. S.

R. 7 E. W.

Peabody Coal Co.
River King Mine
29 July 62
Eadie & Gartner

Tom Rhoades, Prep. Mgr. Ill. Mines
John Fuller, Draftsman

All Samples from Pit #2

3 Pits operating at River King
Pit #2, 5 Northernmost

Sample #1
Taken from area 325' South of Ramp. Water level has been approx. 2½' above bottom of coal. Coal very friable, fractured into soil & coal

From Top Down

Total Thickness: 6'9", #6 coal.

0-2": clarain, normally dark banded, calcite in cleats; Prt

2"-2⅛" shale

2⅛"-9" clarain, vitrain bands ⅛", bright, calcite in cleavage planes, thin layers of pyrite in cleats

9"-9⅛"-⅛" fusain band

9⅛" – 11": clarain, calcite in cleats, normally bright + banded vitrain bands to ⅛";

11" – 11⅛": ⅛" band of shale

~~11¼" – 11⅜"~~

11⅛" – 1'2½" clarain as described above

~~12½" – 12⅝" shale~~

1'2½" – 1'2⅝" shale

1'2⅝" – 1'10" clarain, calcite in cleavage planes, hbb.

* 1'10" – 1'10¾" shale

1'10¾" – 2'¼" clarain, medium banded, calc. in cleavage

** 2'¼" – 2'1" sh. + fusain, thin banded, with layers of pyrite

2'1" – 3'1¼" clarain, hbb. calc. + pyrite in cl. planes, occasional 1/16" layer of pyrite

---

* deleted from sample

** " " "

occasional 1/16" band of zh.

* 3'1¼" – 3'2" zh.

3'2" – 4'2" clarain/med. banded, occasional 1/16" fusain, calc., + some pyrite in cl. plains

* 4'2" – 4'2½" pyrite

4'2½" – 4'7" clarain/calc. in clarain n.b.b.

* 4'7" – 4'7⅜": zh.

4'7⅜" – 5'4": clarain, calc. ~~in~~ + pyrite in cleavage, occasional 1/16" vitrain n.b.b.

5'4" – 5'4¼" vitrain band

5'4¼" – 5'9" clarain, n.b.b., calc. + pyrite in cleavage

5'9" – 6'9" clarain, calc. in cleavage, predominantly pyrite

* deleted from sample

in cleavage planes, pyrite layers thin - 1/16" -, but very heavy in concentration

Sample #1 Location
260' East 160' N
SW cor NE¼ NE¼
Sec 27 T1S, R7W
St Clair Co

(77438—5M—5-58) 2

Peabody Coal Co. - River King Mine

Sample # 2
500' SE of wheel

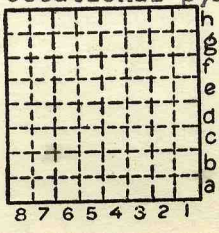
Freshly mined
Total thickness 6'5", No. 6 Coal

Inches & Feet	Description
0 - 1'9"	Clarain, medium banded, calcite in cleavage, occasional 1/16" fusain bands
* 1'9" - 1'10 ¼"	Shale, with some pyrite
1'10 ¼" - 2'4"	Clarain, some calcite in cleavage, occasional 3/16" fusain
* 2'4" - 2'4 3/4"	Laminated shale, vitrain, pyrite
2'4 3/4" - 2'8½"	Clarain, normally bright banded, calcite in cleavage
2'8½" - 2'8 7/8"	3/8" mineralized fusain
2'8 7/8" - 3'1"	Clarain, normally bright banded
3'1" - 3'1 ¼"	Shale
3'1 ¼" - 4'1"	Clarain, normally bright banded, calcite and pyrite in cleavage, occasional 1/16" pyrite band
4'1" - 4'1 ¼"	Shale & pyrite band
4'1 ¼" - 4'5"	Clarain, calcite in cleavage, normally bright banded
4'5" - 4'6 ¼"	Shale, pyrite, probably Blue band
4'6 ¼" - 6'5"	Clarain, calcite and pyrite in cleavage, occational pyrite in

By Eadie & Gartner Date 7-24-62

Quad. ..... Part. .....

County St. Clair .....



Sec. 27

T. 1 N. S.

R. 7 E. W.

Peabody Coal Co. - River King Mine cont

Feet & Inches	Description
	nodule, occasional 1/16" shale bands, occasional pyrite band up to $\frac{1}{4}$" thick.

* Deleted from sample.

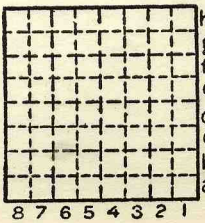
Location Sample # 2:

115'W, 40'S, NE corner, SW$\frac{1}{4}$, SE$\frac{1}{4}$,
Sec. 27, T. 1S, R. 7W, St. Clair Co.

By Eadie & Gartenz Date 7-24-62

Quad. ..... Part. .....

County St. Clair



Sec. 27

T. 1 S. N.

R. 7 W. E.

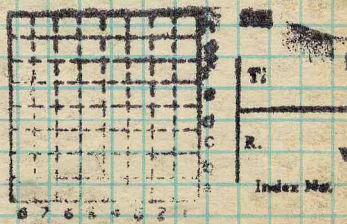
Peabody Coal Co.
River K-J mine
24 July 62
Sample #2, 500' SE of shaft
Eadie + Gartner
Freshly mined
Total thickness 6'5", #6 coal
0-1'9" clarain, med. banded, calc. in clear., occasional 1/16" fusain bands
* 1'9"-1'10¼" sh. w/ some pyrite
1'10¼"-2'4" clarain, same calc. in clear., occasional 3/16" fusain.
* 2'4"-2'4¾" laminated sh., vitrain, pyrite
2'4¾"-2'8½" clarain, n.b.b., calc. in clear.
2'8½"-2'8⅞" 3/16" mineralized fusain

* deleted from sample

2'8⅞" - 3'1" claran m bb.
3'1" - 3'1¼" sh.
3'1¼" - 4'1" claran m bb, calc. + pyrite in claw, occasional ⅛" pyrite band
4'1" - 4'1¼" sh. + pyrite band
4'1¼" - 4'5" claran, calc. in claw. m.b.b.
4'5" - 4'6¼" sh., pyrite, probably blue band.
4'6¼" - 6'5" claran, calc. + pyrite in claw, occasional pyrite module, occasional ⅛" sh. bands, occassional pyrite band up to ¼" thick.

COUNTY No.

Location Sample #2
115' W 40' S
NE Cor SW¼ SE¼
Sec 27 T1S, R7W



(77438—5M—5-58) 2

Peabody Coal Co. - River King Mine

Sample # 3
200' North of ramp, Pit # 2

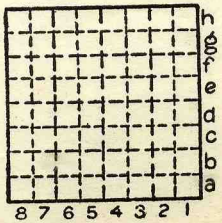
Total thickness 6'11", No. 6 Coal
Coal noticeably wet from surface moisture, bottom 3'

Inches and Feet	Description
0 - 7"	Clarain, pyrite in cleavage planes up to 1/16", some calcite in cleavage, principally vitrinite, conchoidal fracture
7 - 7 ¼"	Shale
7 ¼ - 1'10"	Vitrain, calcite and pyrite in cleavage, thin banded, occasional 1/16" fusain
* 1'10" - 1'10 3/8"	Shale and pyrite, thin banded
1'10 3/8" - 1'11½"	Principally vitrain, with fusain and pyrite layers
1'11½" - 3'2"	Clarain, medium banded, calcite and some pyrite in cleavage, occasional shale up to 1/16"
* 3'2" - 3'2 3/4"	Shale and pyrite
3'2 3/4" - 4'7½"	Clarain, calcite and pyrite in cleavage, medium banded
4'7½" - 4'7 3/4"	Shale band
4'7 3/4" - 5'2"	Clarain, medium banded, calcite in cleavage, some pyrite nodules

By Eadie & Gartner Date 7-24-62

Quad. Part

County St. Clair



Sec. 27

T. 1 N. S.

R. 7 E. W.

Peabodyn Coal Co. - River King Mine cont

Inches & Feet	Description
* 5'2" - 5'2½"	Shale
5'2½" - 6'11"	Clarain, medium banded, calcite and pyrite in cleavage, pyrite up to 1/16"; occasional pyrite nodules.

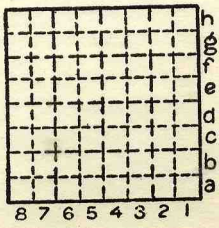
* Deleted from sample

Location Sample # 3
645' N, 365'E, SW corner, NE¼, NE¼
Sec. 27, T. 1S, R. 7W, St. Clair Co.

By Eadie & Gartner Date 7-24-62

Quad. Part

County St. Clair



Sec. 27

T. 1 S. N.

R. 7 W. E.

Peabody Coal Co
River King Mine
24 July '62
Sample #3, 200' north of ramp, pit # 2 - Eadie & Gaither

Total thickness ~~7' 0"~~ 6' 11" #6 coal
coal noticably wet from surface moisture, bottom 3'
0-7": clarain, pyrite in clear. ~~1/16~~ to 1/16" plane, some calcite in clear., principally vitrinite, conchoidal fracture,
7"-7¼ shale
7¼"-1'10" vitrain, calc. & pyrite in clear., thin banded, occasional 1/16" fusain,
* 1'10"-1'10⅜" sh. & pyrite, thin banded
1'10⅜"-1'11½" principally vitrain, with fusain and pyrite layers,

* deleted from sample

1'11½" – 3'2" clarain, medium banded, calc. + some pyrite in clear., occasional sh. up to 1/16"

* 3'2" – 3'2¾" sh. + pyrite

3'2¾" – 4'7½" clarain, calc. + pyrite in clear. med. banded

4'7½" – 4'7¾" shale band

4'7¾" – 5'2" clarain, med. banded, calc. in clear.

* 5'2" – 5'2½" some pyrite nodules sh.

5'2½" – 6'11" clarain, med. banded, calc. + pyrite in clear., pyrite up to 1/16"; occasional pyrite nodules

Location Sample #3

645' N 365' East
SW Cor NE¼ NE¼
Sec 27 T1S, R7W

* deleted from sample

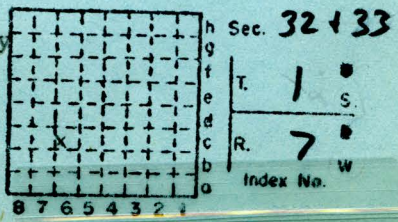
PEABODY COAL COMPANY
RIVER KING STRIP MINE- PIT 3
ST. CLAIR COUNTY

M.I. 857 S-94

Located just east of New Athens. -T2S, R7W - See MOA MAP

Tipple is 280 ft. N, 180 ft. E
of SW corner $NE\frac{1}{4}$ $SW\frac{1}{4}$, Sect. 15,
T 1S, R 7W.

Mine superintendant: Kenny Meyers
Areal Engineer: Bob Chidwood
Asst. Areal Eng.: Randy Dempsey



RIVER KING STRIP

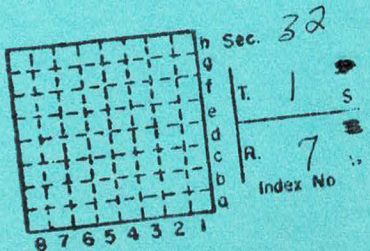
PEABODY COAL COMPANY
RIVER KING STRIP MINE- PIT 6

This mine is located partially in St. Clair and partially in Randolph County. It is filed in Randolph County.

SEE RANDOLPH COUNTY NOTES

RIVER KING PIT 3
MINE INDEX NO. 857

St. Clair County



Company No.

Farm No.

Elev.

For

Kind o:

Remark:

PEABODY 'SUSPENDS' RIVER QUEEN; BIG SURFACE MINE MARKET VICTIM

Peabody Coal Co. has suspended production at its River Queen surface mine in Illinois as of January 16, costing 135 miners their jobs. The move is the latest in a series of mine closings and Peabody again cited a soft market for high-sulfur Illinois Basin coal.

River Queen was one of the mines that supplied Cincinnati Gas & Electric's now-expired contract for 1.8 million t/y. Peabody was only about to regain 300,000 t/y of that coal and the company's inability to market River Queen coal profitably "has made this reduction necessary," said John A. Goroncy, president of Peabody's eastern division in Henderson, Kentucky.

Most of the mine's coal has gone to Louisville Gas & Electric Co. and Electric Energy, said Peabody spokesman Ryan Tew. He said the shutdown was not the result of a contract cancellation. Peabody remains hopeful River Queen will reopen eventually but company officials could not predict when, or if, that might be.

Since its opening in 1957, River Queen has produced 88-million tons of coal. The 1987 total was 1.5-million tons. The suspension leaves Peabody with only 10 mines in its eastern division, which also includes Ohio. That "is the lowest total in quite some time," observed Tew.

Peabody also has laid off 48 salaried workers at the company's mines in southern West Virginia, where layoffs total more than 400 since Christmas at four operations. Peabody spokesman Tom Clarke attributed the layoffs to poor market conditions.

Coal Week Jan 4, 1988 River King No 3.

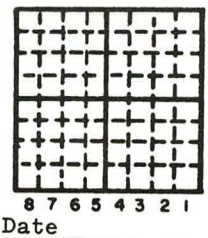
3

Location

Correlations by Date

Basis

County Co. no.



Sec.

T. N. S.

R. E. W.

Data sheet by Date

Mine originally operated by: (1)

Date 1957 Peabody Coal Company

Original name or number: River King Mine

Illinois Coal Report 1957 p. 22

LATER OPERATORS

	Date	Operator	Name or No.
2	1965	Peabody Coal Co.	"River King" Pit 3
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

*Also owners #See ownership sheet

Railroad, Wagon, Strip, Idle, Abandoned

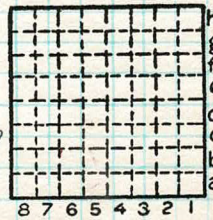
IDENTIFICATION

County No._____ Coal No. □ 6

Coal Report No. S-94

Quad.

County St. Clair



Sec. [redacted]

T. [redacted] S.

R. [redacted] W.

Index. No.

COAL MINE OPERATOR

(92753—1M—6-54) 2

MOORE'S MODERN METHODS

(Sheets) COAL PRODUCTION (Sheet 1)

Period Mo. Day Year Mo. Day Year	Tons	
Opened in 1957		
1957	552	647
1958	694	315
1959	721	711
1960	109	917
1961	751	471
1962	914	228
1963	619	075
1964	463	535
1965	688	101
1966	453	420
1967	313	353
1968	804	693
1969	629	738
1970	637	688
1971	523	898
1972	996	866
1973	296	663
1974	599	887
Includes Both Pits #3 and #6 - 1975	532	466
Pit #3 Only 1976	448	825
1977	449	735
1978	401	827
1979	76	851

SUMMARIES

No. to No.		
1957 thru 1975	70	303 672
1976 thru 1979	2	062 238

Railroad, Wagon, Strip, Idle, Abandoned

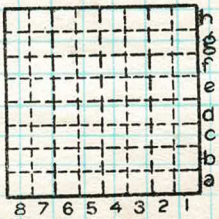
IDENTIFICATION

County No._____ Coal No. ☐

Coal Report No. S-94

Quad.

County St. Clair



Sec. 32

T. 1 N. S.

R. 7 E. W.

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COAL MINE—PRODUCTION

ILLINOIS GEOLOGICAL SURVEY, URBANA

(2732—2M—7-41)

6	Brown Brothers Excavating - No. 2	J. J. Track, Brown Brothers - No. 2	
16	Eads Coal Co.	Robertson and Associates - Eads Mine	
17-20	Freeman Coal Mining Co.	Freeman United Coal Mining Co.	Merged with United Electric C. C
48-49	United Coal Mining Co.	Freeman United Coal Mining Co.	Merged with Freeman Coal Mng. Co
40	Peabody Coal Co. - River King Strip	River King Strip Pit 3, located in 20-1S-7W, St. Clair County	
		River King Strip Pit 6, located in 9-4S-6W, Randolph County	
		(Production figures from the two pits formerly were combined; now they are reported separately. Each pit has its own tipple.)	

(Sheets) COAL PRODUCTION (Sheet)

Period Mo. Day Year	Period Mo. Day Year	Tons	
	1980	856	890
PEABODY COAL CO.	1981	1 171	294
	1982	977	800
RIVER KING STRIP	1983	851	600
	1984	640	865
PIT 3	1985	518	000
	1986	42	100
Final production	1987	none	
	1988		
	1989		
	1990		

SUMMARIES

No. to No.

Railroad, Wagon, Strip, Idle, Abandoned

IDENTIFICATION

County No.

Coal No. □ 6

Coal Report No. S-94

Quad.

County St. Clair

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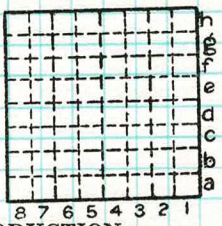
R. 7 W.

Index No.



COAL MINE—PRODUCTION

ILLINOIS GEOLOGICAL SURVEY, URBANA

(2732—2M—7-41)

PEABODY COAL COMPANY - high wall exposures
Reinertsen & Stahlman

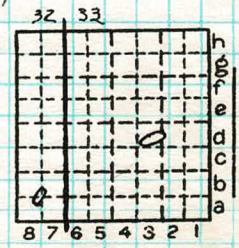
15'±	GLACIAL DRIFT - not studied
7'±	INTERVAL - partially covered. Appears to be mainly composed of medium greenish gray shale with an 18" to 2' sandstone (?) zone near the base. (Not accessible).
1'±	LIMESTONE OR CLAYSTONE - not accessible
2'±	SHALE - gray to medium dark gray with greenish cast
1'±	LIMESTONE (CUTLER) - brownish gray, very hard, argillaceous, dense
3'±	SHALE - greenish gray, appears to be fissile but is plastic when wet, in beds up to 6" thick interbedded with very argillaceous nodular limestone bands up to 1½" thick which become thicker and more abundant toward top. Very irregular top.
2'3"	LIMESTONE (BANKSTON FORK) - gray to brownish gray, dense to finely crystalline, somewhat argillaceous in part, thick bedded to massive.
3'±	SHALE - gray to dark gray with a slight greenish cast in part, containing a zone of flattened calcareous nodules up to 1" thick 5" from the top.
4'0"	SHALE - light to medium gray, rather poorly bedded in lower part; better bedded and dark gray to black toward top.
2'0"	LIMESTONE (JAMESTOWN) - brownish gray, massive, very dense and hard, somewhat argillaceous.
0'7"	SHALE - dark gray to black, fairly well bedded, somewhat slaty in part with numerous flattened oval ironstone concretions.
0'3"	COAL (JAMESTOWN) - normally bright banded with some calcite on vertical facings, fairly hard with considerable oxidation on surface.
0'2"	CLAY-SHALE - dark gray to black, soft, crumbly, weathered, with a semblance of bedding downward.
0'11"	LIMESTONE (HERRIN) - medium to dark gray, fairly hard, very fossiliferous, very silty and argillaceous. Grades downward in to:
1'8"-6'±	LIMESTONE - light to medium gray, massive to thick bedded, hard, fossiliferous. Thickness increases toward the east of the pit.

(CONCLUDED ON PAGE 2)

By DLR & JS Date 2/3/59

Quad. NEW ATHENS 15' Part SE NW

County ST. CLAIR



Sec 32&33
T. N. 1 S.
R. E. 7 W.
Index No.

PEABODY COAL COMPANY - high wall exposures - concluded.

Reinertsen & Stahlman 2/3/59. 32 & 33 - 1S - 7W
St. Clair County

6"-7'	SHALE - black to dark gray, slaty and hard in part, containing dense, hard, dark gray to black calcareous concretions up to 10" thick and 2' across. (Not too well exposed).
6'	COAL (HERRIN NO. 6) - normally bright banded
	UNDERCLAY

Peabody Coal Co., River King Mine, Pit 3, center NE¼ Sec. 7,8-3S-6W, St. Clair County, taken by WHS and RP on 8/23/68, Sample #1

Coal - normally bright banded, irregular discontinuous pyritic shale partings 1/16" to 1/6" thick, 12½" and 14" top	0-25"
Shale - medium gray, pyritic various laterally up to 1" thick (excluded)	25-25 3/4"
Coal - normally bright banded	25 3/4-39 3/4"
Coal - shaley, much fusain	39 3/4-40"
Coal - normally bright banded	40-56¼"
Shale - medium gray, blue band, (excluded)	56¼-57"
Coal - normally bright banded	57-62 3/4"
Coal - shaley, pyritic	62 3/4-63"
Coal - normally bright banded	63-78"

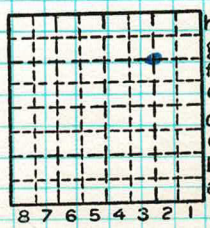
There is moderate amount pyrite and calcite on cleat faces

Sample point: loading point at 10:00 a.m.

By _____ Date 8/23/68

Quad. _____ Part _____

County ST. CLAIR



Sec. 7 8
T. 3 N. S.
R. 6 E. W.
Index No.

Peabody Coal Co., River King Mine, Pit 3, 300' W. of Sample #1, Sec. 7,8-3S-6W, St. Clair County, taken by WHS and RP on 8/22/68, Sample #2

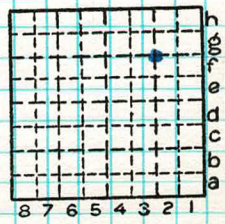
Coal - normally bright banded, a few very minor fusain particles, a minor pyritic shale band varies 0-½" thick, at 16½"	0-26½"
Shale - bony, persistant parting, excluded from sample, contains many pyritic streaks and lenses	26½-27 3/4"
Coal - normally bright banded, discontinuous, shaley and pyritic bands at 43", varies 0-½"	27 3/4-54 3/4"
Coal - bony, with thin pyritic lenses	54 3/4-55½"
Coal - normally bright banded	55½-60"
Shale - bluish gray (blue band) (ecluded)	60-60 3/4"
Coal - normally bright banded with several discontinuous pyritic lenses 1/16-1/8" thick	60 3/4-68"
Coal - bright, blocky, without conspicuous partings	68-70½"

Considerable pyrite, kaolinite, calcite on cleat surfaces

By_____ Date 8/22/68

Quad._____ Part_____

County ST. CLAIR

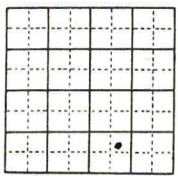


Sec. 7, 8 N.
T. 3 S.
R. 6 W.
Index No.

ILLINOIS GEOLOGICAL SURVEY, URBANA

	Thickness	Top	Bottom
October 31, Pit 3, Section at extreme S. end.			
Thickest overburden in the mine, 1850' S., 800' E. of center Section 26, 2 S. – 7 W.			
Surface - Clay, silty, orange brown, noncalcareous, firm, abundant white granules and small pebbles—few large pebbles.	20'±		
TOP OF BENCH			
Shale - Dark gray, smooth, well laminated, rusty weathering, abundant rounded elongate or oval, hard dark gray noncalcareous (siderite?) nodules. Badly weathered near top. Grades into.	8-9'		
Shale - Dark gray, medium to coarse grained, very calcareous, nodular layer of very dark gray fine grained limestone about 0.3' thick about 0.4' from the bottom.	1.5'		
Coal - Somewhat bony, bright banded, pyritic with many bands of fusain.	0.3'		
Underclay - Mottled grayish green, yellowish and orange, very soft and sticky. Grades downward into.	2.0'		
Shale - Dark gray, mottled with rusty, soft, weak, crumbly on fractures and bedding surface, frequent small gypsum			

COMPANY Peabody Coal Co.
FARM River King Strip Pit #3 NO.
DATE ~~DRILLED~~ Oct. 31, 1974 COUNTY NO.
AUTHORITY John Nelson, H. F. Krausse
ELEVATION
LOCATION About 1850' S, 800' E of center, Sect. 26 2S-7W
COUNTY St. Clair



	Thickness	Top	Bottom
needles and rocks, grades into next unit.	2.0'		
Shale - Medium blue gray, weathers, light blue gray, moderately blue gray, moderately laminated, rather soft and weak. Some calcareous small nodules, especially frequent toward bottom.	5.0'		
Limestone - Light to medium gray with green tint, fine grained, very argillaceous, somewhat domomitic, rather weak, limestone appears to be slightly micaceous.	0.6'		
Shale - Medium to dark grayish green, mottled, poorly laminated, non-calcareous.	3.5'		
Shale - Black, fairly well laminated, smooth, finely carbonaceous, fairly soft and clayey.	1.0'		
Shale - Olive-green, mottled, weak, clayey, mottled and brownish towards the bottom, grading down into next unit.	2.5'		
Shale - Variegated, light green, purplish and orange brown toward bottom. Very soft and weak, crumbly, sharp bottom contact.	6.0'		
Limestone - Brownish pink, very fine grained, thick bed at top and bottom, thin bedded in middle, fine laminated appearance (as fine banded). Slabby, broken.	I 1.6'		
Clay - Green, slight yellow tint, sticky.	IIa 4.0'		
Green Clay as above mixed with chunks and boulders of limestone (blasting).	IIb 4.0'		
Piasa Limestone - Light gray with buff tint, irregular texture, coarsely	III		

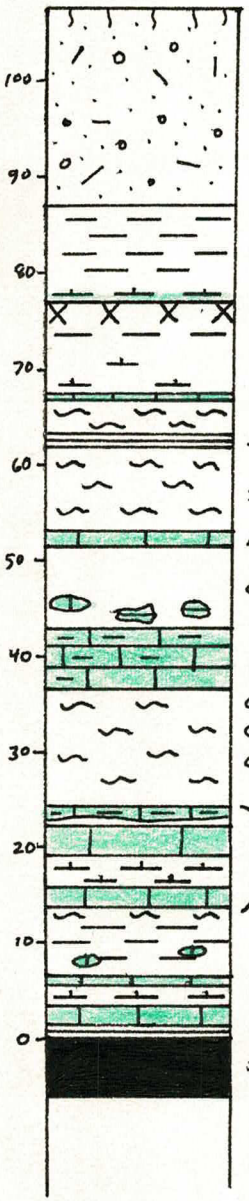
	Thickness	Top	Bottom
fossiliferous at top, very fine grained at bottom, some greenish clay fillings, bottom hard, dense and massive, top shaly.	Ø6.0'		
(see diagram on Variations of Piasa interval.)			
Claystone - Variegated, fairly firm, noncalcareous, bright bluish green with some purple irrigation and yellow staining. Grades fairly sharply into.	IV 2.0'		
Claystone - Usually ochre mottled with grayish and greenish.	Va 2.5'		
Claystone - Medium greenish, variegated redish purple dollar greenish gray. toward bottom. Grades into.	Vb 3.0'		
Shale - Dark gray, greenish, mottled, poorly laminated, weak, grades downward into.	Vc 2.0'		

	Thickness	Top	Bottom
Claystone - Medium greenish gray, mottled, calcareous, grades into next unit.	Vd 1.0'		
Bankston Fork - Irregular and gradational limestone, medium gray with faint greenish tints, much greenish claystone filling, very argillaceous, very fine-grained, few fossil fragments. Bottom contact, fairly sharp, irregular, weak limestone and clayey nodular and lenticular.	1 VI ±1.5'		
Claystone - Like this one, immediately above the limestone, varies in thickness to fit lower surface of limestone and also contains little nodules of limestone.	0.5'		
Limestone (Bankston) - Light gray, weathering cream or buff, mottled with fine greenish claystone fillings, extremely fine-grained, very hard and massive, one horizontal claystone parting 0.3' from bottom limestone below this is lenticular. Contact sharp and slightly irregular.	3.0'		
Shale - Medium gray, faintly mottled, very calcareous with numerous lines and bands of light to medium gray, faintly mottled, argillaceous limestone, fairly irregular, lower contact 0.8' above lower contact a 0.2' limestone.	3.0'		
Limestone - Medium gray, fine-grained, some crystalline zones and few fossil fragments, slightly argillaceous in some places, bottom contacts slightly irregular.	2.0'		
Shale - Medium greenish gray and dark gray, mottled, soft and weak with			

	Thickness	Top	Bottom
scattered nodules and lenses as limestone just above.	0.7'		
Shale - Very dark gray to black, fairly well laminated, fairly firm, slightly calcareous, contains scattered horizontally flat hardhead concretions, very dark gray, fine grained limestone.	6.6'		
Conant Limestone - Dark gray, very fine grained with fine white fossil debris, scattered brachiopod fragments, hard, dense and massive, single bed and partly lenticular.	0.6'		
Limestone and Shale - Zone interbedded, very calcareous shale and argillaceous limestone, very dark gray to black, grades into lower unit.	2.3'		
Limestone (Brereton) - Dark gray, fine grained with fine white fossil debris, massive, hard, dense, lower contact, irregular.	2.2'		
"Clod" Limestone - Similar to above, but very shaly, becoming more shaly downward. Grading into.	0.3'		
Anna Shale - Black, slaty, variable, in thickness also clod. Also Brereton Limestone.	1.0"		
Herrin (No. 6) - Normally bright banded, pyrite abundant as lenses, thin layers and cleat fillings, also calcite on cleat fillings, several flat coal balls in top half foot. Blue band varies in thickness 1.4' from exposed bottom and consists of dark gray brown, mottled clayey shale observed to split.	6.2'		

	Thickness	Top	Bottom
The limestone sequence above the coal changes considerably, here as to the north. The Anna Shale is nonexistent north of the measured section (extreme SE cor. of pit) and Brereton Limestone rests directly on coal or is separated from coal by only a couple inches "clod." The coal dips slightly about 100' north of the section—and massive Brereton Limestone is almost 10' thick. This is here overlain by 3-4' of laminated limestone and calcareous shale, a lenticular 1.0'± Conant, and 4-5' black shale below the B. F.			
The Bankston Fork sequence is horizontal and shows little lateral change in this unit.			
As previously mentioned, this pit shows very well the lenticular nature of the Piasa Limestone. This was not noted the previous day farther north in the mine—partly because there the Piasa is the topmost bedrock unit.			

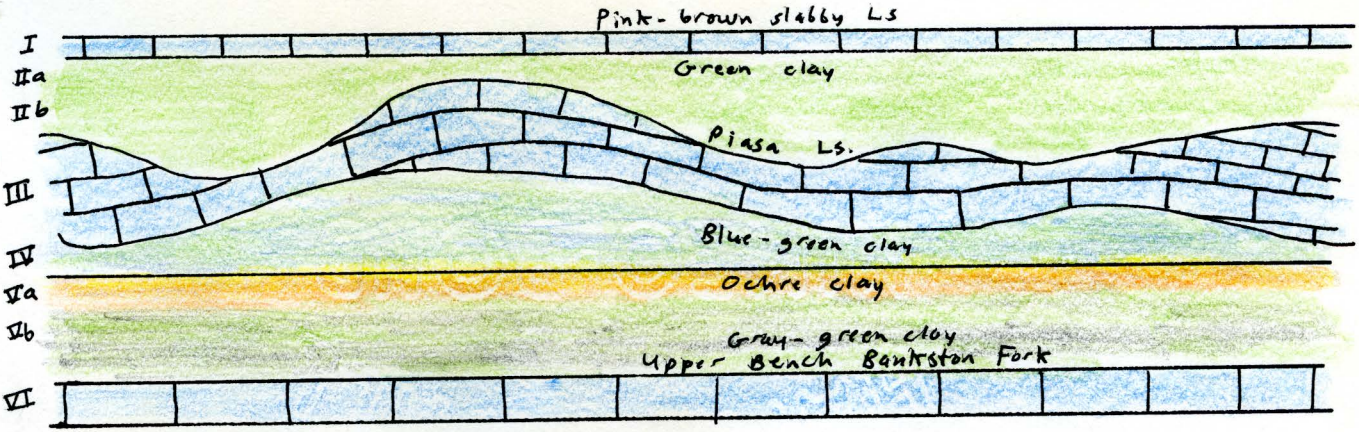
MEASURED SECTION OF HIGHWALL



Peabody Coal Co. River King Strip Pit 3
Extreme south end Oct. 31, 1974
Approx. 1850' S, 800' E of center Sect. 26
2S - 7W St. Clair County

General view of highwall at south end of pit where section was measured; John Nelson standing slightly above the Piasa Limestone. Note thickness variations in this unit.

Photo by Krausse, Oct. 31, 1974.

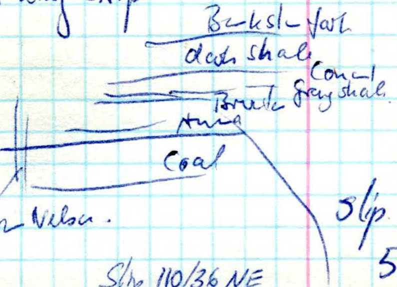


Variations in the Piasa interval
Southern part of highwall in Peabody
River King Pit 3.

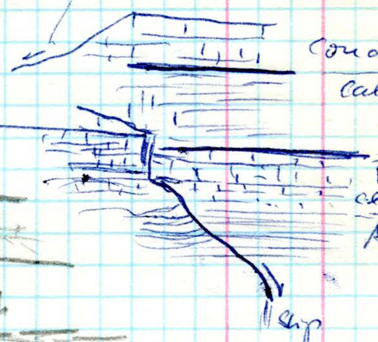
Following are sketches made by H.-F. Krausse.

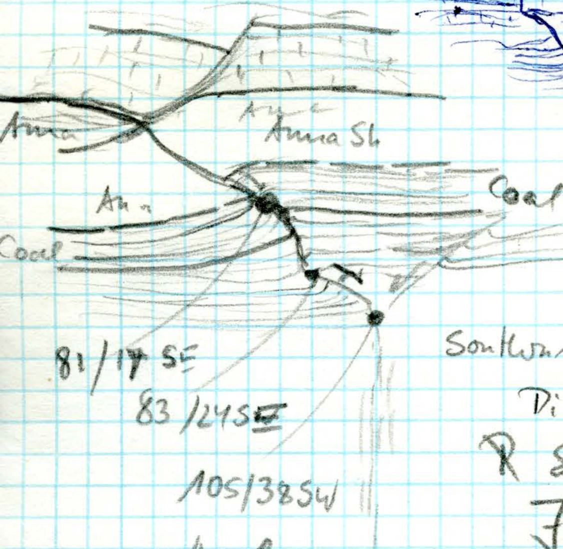
Pit No3 of River King Strip — 30. October 1974

Foto of Sitrah



31. Oct.





81/17 SE

83/24 SE

105/38 SW

"Clay vein" claydyke.

Southernmost part of Pit 3 River King

R Section data with J Nelson.

2 Fotos of

← Bankston Fork

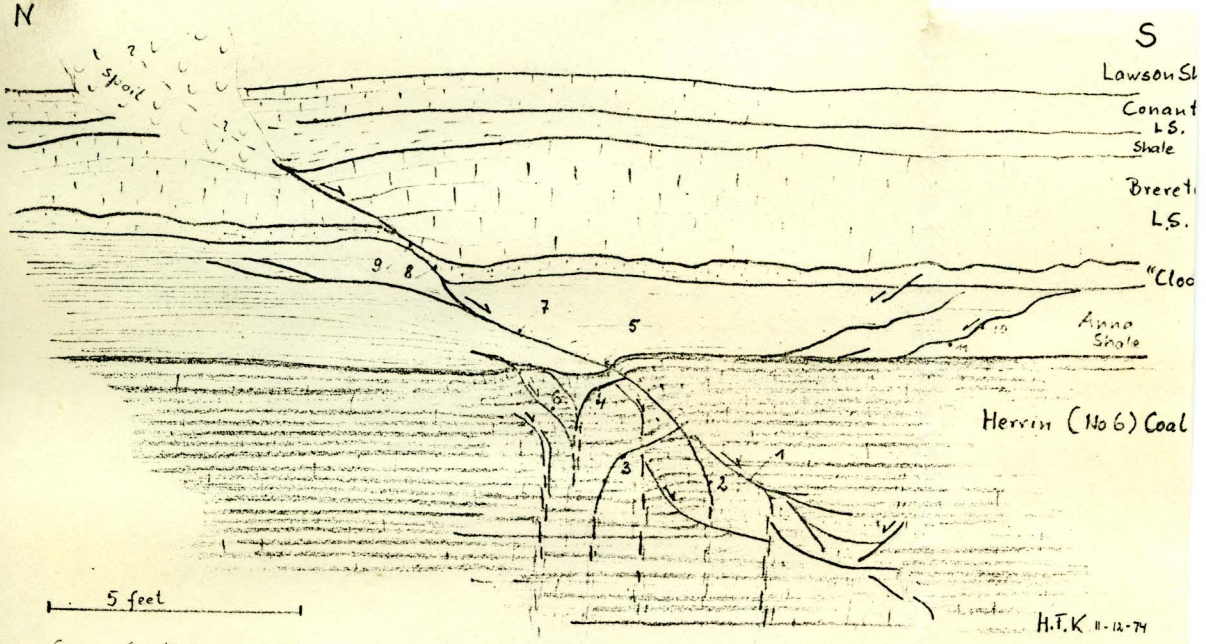
Conant — partly limestone

no Jamestown

Brereton

no Anna

Coal Herrin



Scale for thickness not very exact.

River King Strip mine, Pit 3
500 feet N from S-end of pit
Randolph County, 2S - 7W
1850' S; 800' E of center Sec. 26

H.-F. Krausse
1974 (?)

Slip with structures similar to "clay dykes", but passing through Brereton Limestone

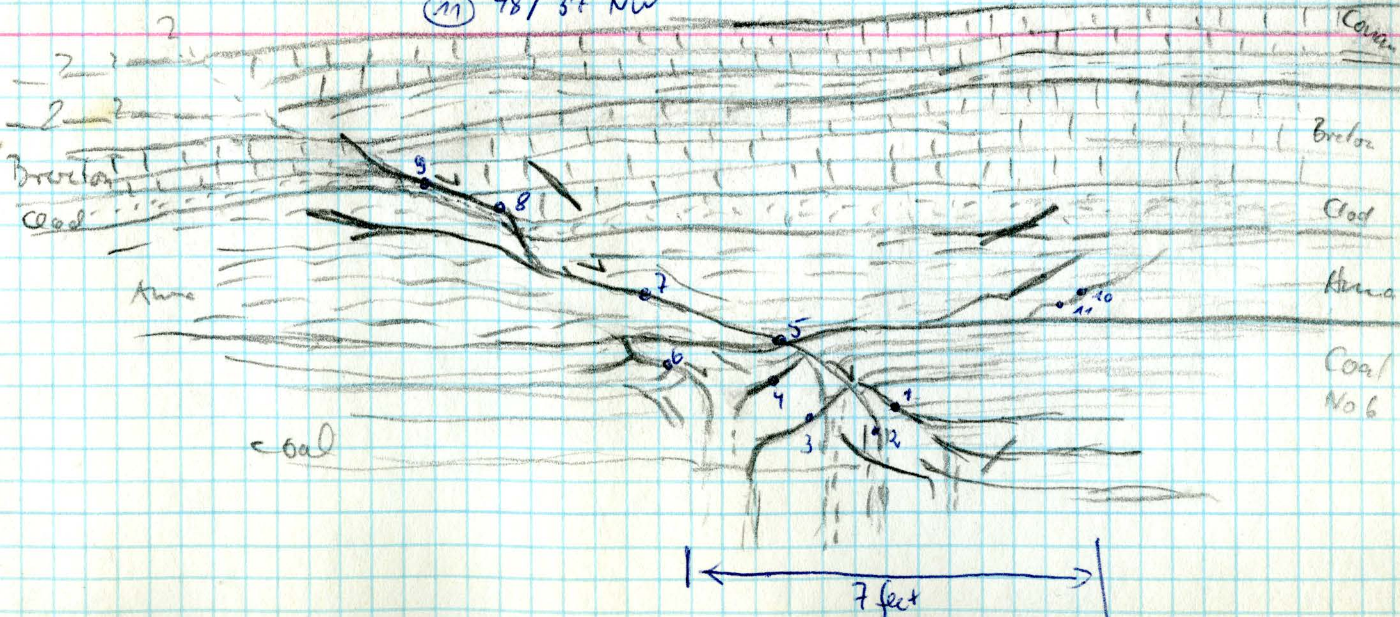
Measurements:

(1)	44/35 SE	(6)	29/45 SE
(2)	28/86 SE	(7)	45/20 SE
(3)	26/43 NW	(8)	28/40 SE
(4)	21/55 NW	(9)	25/48 SE
(5)	± 40/14 SE	(10)	45/50 NW
		(11)	48/37 NW

Renwick strip

Pit 3 500 feet from the South end location of Southland Mas John.

1. 44/35 SE
2. 28/86 SE
3. 26/43 ~~SE~~ NW
4. 21/55 NW
5. ± 40/14 SE
6. 29 / ~~4~~5 SE
7. 45/20 SE
8. 28/40 SE
9. ~~25~~/48 SE
10. 45/80 NW
11. 48/37 NW

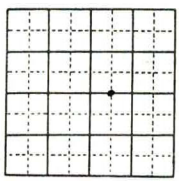


ILLINOIS GEOLOGICAL SURVEY, URBANA

	Thickness	Top	Bottom
Measured Section "A" at inside of bend in highwall			
Drift - Yellow to brown, fairly constant thickness.	12'		
Jumbled dark gray mud and boulders (may not be in place).	~8'		
Limestone (Piasa) - Light to medium gray, weak; yellowish to brown, mostly very fine grained with many fossil fragments, hard and dense, few thin clay partings; unit here is weathered and broken.	~9'		
Claystone - Blue-green, mottled with black and purple, contains hard nodules of limestone. Often appears brecciated limestone nodules, also contains claystone fillings, not calcareous, the claystone, pebbles are calcareous, very weak material.	±2'		
Claystone - Variegated, ocher, purple, red, greenish, bluish, very weak, noncalcareous, contains rare limestone, nodules red hematite (generally ocher at top and more greenish toward the bottom. Grades into next unit.	≈12'	variable thickness	
Limestone (Bankston Fork upper portion) - Light medium gray, with greenish mottling, impure, argillaceous, fine grained, shaly.	1.6'	(somewhat variable)	
Shale - Light to medium grayish green, mottled, calcareous, weak, clayey, variable in thickness.	0.5'		

COMPANY Peabody Coal Co.
FARM River King Strip Pit 3
DATE ~~DRILLED~~ Oct. 30-31, 1974
AUTHORITY John Nelson & H. F. Krausse
ELEVATION
LOCATION About 660' E. of center Sect. 26, 2S-7W
COUNTY St. Clair

NO.
COUNTY NO.



	Thickness	Top	Bottom
Limestone - Light gray, buff, weathering, very fine grained, hard, pure, massive.	2.7'		
Shale - Mottled, medium gray, green, very calcareous, many lenses and thin layer of limestone, light medium gray, fine-grained, lower part with small lenses of limestone.	2.7'		
Limestone - Medium gray, weathering, light, very fine-grained, pure (except 0.5 feet from top) shaly with crystals and massive.	2.5'		
Shale - Black, very carbonaceous, smooth, weak, and clayey in upper portion, becoming fine and calcareous in lower portion, pyrite in the lower part, fossils Encrina and shells.	7.5'		
Limestone (Conant?) - Dark gray, fine grained with fossil fragmental productí , brachiopods hard, dense, and massive, brown calcite cavity filling. Further south horizon becomes slightly lenticular. Contacts sharp.	0.5'		
Jamestown - Horizon (no coal), shale black, very calcareous, grading downward into black argillaceous limestone, very fossiliferous, including productid brachiopods. Grades into next unit.	1.3'		
Limestone (Brereton) - Dark gray, fine, grained, abundant fossil debris, massive, hard and dense; lower contact. Sharp and undulatory.	2.8'		
Anna Shale - Black, slaty, brittle, very smooth with vertical joints. Contains several large hardhead concretions with slip surfaces (calcareous). Sharp lower contact to coal (Herrin No. 6).	2.0'		

COUNTY

	Thickness	Top	Bottom
(Coal description by Fred Krausse)			
#6 COAL - (Covered with rust and not well suited to description.)	6.58+		
Coal - Normally bright banded with thin pyrite bands, and much pyrite and calcite on cleats.	2.20'		
Clay - Dark gray, pyritic.	0.06'		
Coal - Normally bright banded, less pyritic.	1.40'		
Pyritic layer with dark gray to black clay.	0.05'		
Coal - Normally bright banded, pyrite and calcite on cleats.	1.40'		
"Blue Band" - Dark gray clay.	0.07'		
Coal - Normally bright banded. (Not yet to bottom)	1.40'		

ILLINOIS GEOLOGICAL SURVEY, URBANA

	Thickness	Top	Bottom
October 31. Same location.			
Section "B" only 100' north of yesterdays is quite different.			
Section from bottom of Bankston Fork upward is not described in detail, no major differences noted. No trace of #7 Coal. Bottom of Bankston Fork thin layer of.			
Shale - Black, mottled with light green near top, very carbonaceous, soft, slightly calcareous.	0.3'		
Shale - Medium gray, brown, dark gray, mottled, very calcareous, finer than above.	0.2'		
Shale - Very dark gray to black, well laminated, smooth, finely carbonaceous, slightly calcareous, especially at bottom, numerous flat round nodules very dark gray to black, fine grained limestone. Maximum size about 0.5' in the upper half of unit up to 2 feet across near base, mostly bounded by small slips. No such concretions were observed in the section 100' south of here. Grades into. Shale contains very fine visible fossils but numerous very tiny remnants of fossils partly pyritic. Grades into.	6.6'		
Limestone (Conant?) - Fine grained, impure, argillaceous, contains			

COMPANY

FARM NO.

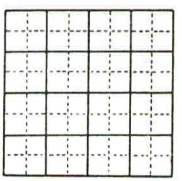
DATE DRILLED COUNTY NO.

AUTHORITY

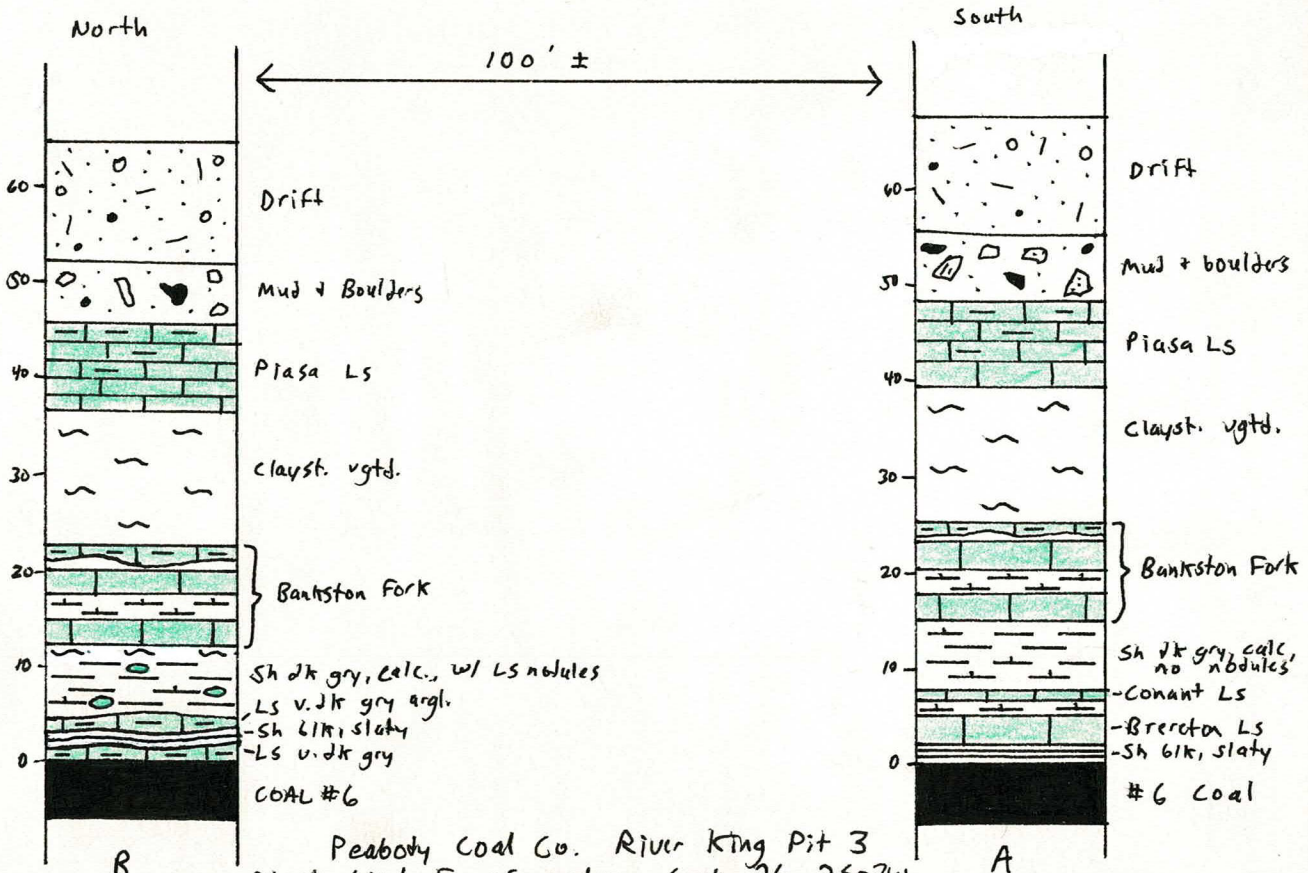
ELEVATION

LOCATION

COUNTY



	Thickness	Top	Bottom
abundant very fine white fossil debris and is poorly laminated, coarser fossil fragments and brachiopods shells near base. Color very dark gray but mottled, medium dark gray brown near base, like Conant frequently appears to be variable in thickness. Bottom contact sharp, fairly irregular.	0.9'		
Shale - Black, slaty, very smooth, contains abundant pyrite, bottom contact, quite irregular. Prominent vertical joints.	±1.6'		
Limestone - Very dark gray, fine grained, Brereton Limestone. with abundant white fossil debris, very argillaceous, very lentifular and variable in softness or hardness at the bottom more "clod" type and softer, some lenses very hard and sharp—breaking (no Anna Shale?).	±1.0'		
Coal - Herrin (No. 6), bottom "burried."	4.5'	plus	
Main joints in unit above Brereton Limestone Section "B"			
kln 62/81/SE 66/86/SE } spacy 1 kl 66/85/SE foot			
161/83/SW 158/87/NE 150/83/SW 152/84/SW			
6 joints for 2.5 ft.			



Peabody Coal Co. River King Pit 3
About 660' E. of center Sect. 26, 2S-7W
St. Clair County

	Thickness	Top	Bottom

Cleats in coal (SLN)

061/87/SE	144/87/SW
056/90	150/90
053/85/NW	156/85/SW
071/90	168/90
156/87/SW	173/86/SW
146/90	176/86/SW
116/85/NE	066/83/SE
98/85/NE	

20 cleats per foot for ~60° cleats
14 cleats per foot for ~150° cleats

About 200' south of the first measured section there are (in order upward from coal) 3' black slate, less than 1' medium gray limestone, 9-10' dark gray shale with concretions, Bankston Fork.

Stratigraphic Changes

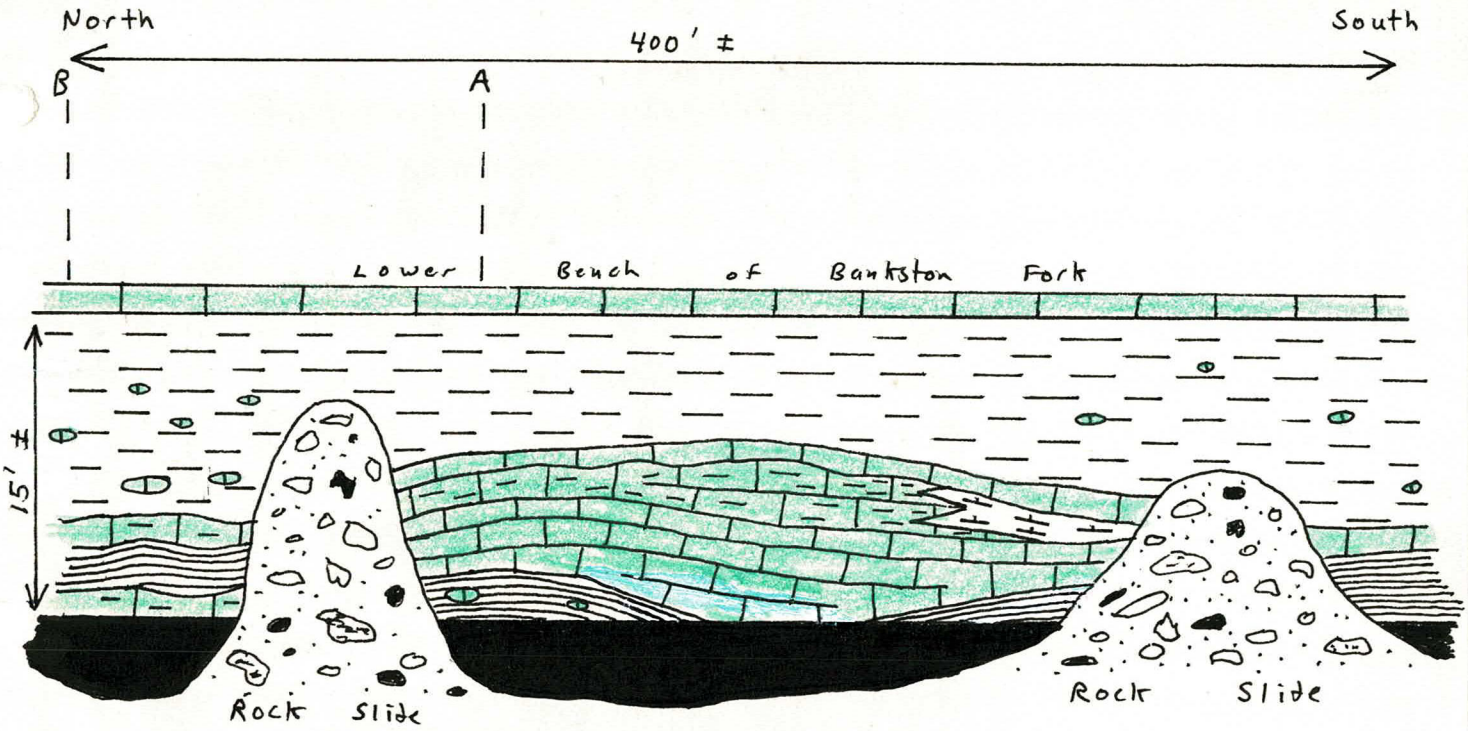
Anna Shale pinches out within 100' to south. Conant Limestone gets thicker, slightly more bedrock exposed to south including 2-3 feet of thin-bedded, slabby and crystalline pinkish to brown limestone above the gray Piasa unit described above. A 0.1' black, carbonaceous layer about 2' above the Bankston Fork. Top - apparently not continuous. No trace of #7 Coal at this locality. It is 3' thick in Pit #6, about 10 miles south.

Cleats and Joints at Section "A"

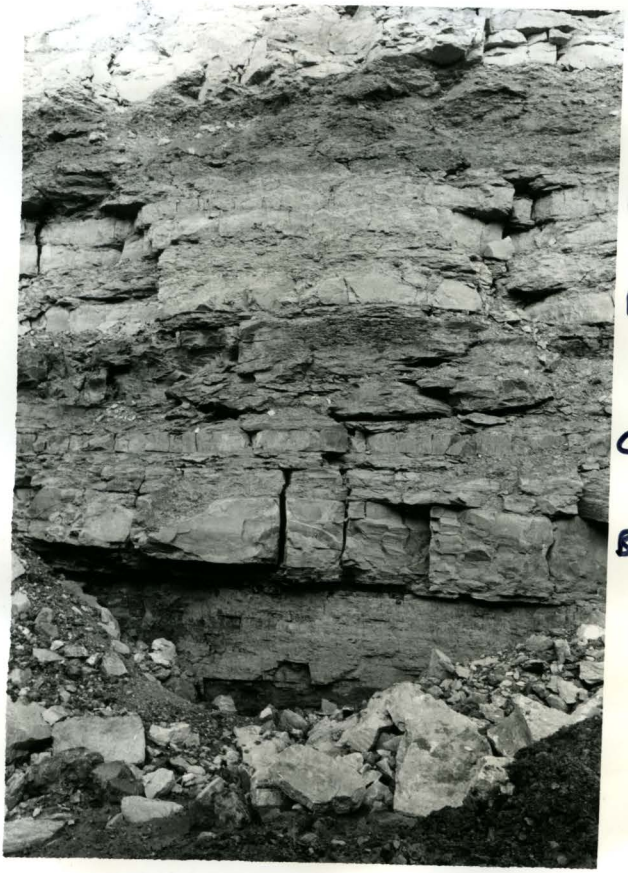
1st Limestone above coal (Brereton)

	Thickness	Top	Bottom
090/88 N. 088/90 015/90 110/83 NE 3 ~015° in 4 1/2 ft. 3 ~100 in 6 ft.			
Joints in black shale (Anna)			
130/90 125/84 NE 129/85/NE 126/90 133/82/SW 126/83/SW 4 per foot. 123/83/NE			
Also in shale			
056/83/NW 057/90° 054/81/NW 053/89/SE 049/86/NW 047/87/SE 055/78/NW 8 joints in 2.4 ft.			
Others in black shale			
106/76/NE 178/80/W 110/86°/NE 004/72°/W 102/79°/NE 008/79/W 128/84/NE 3 in 1.5 ft. (2 per foot)			
Just above coal			
055/90 calcite coating 051/90 " " 057/90 " " 6 in 1.5 ft. 061/86/SE " " 4 per foot			

	Thickness	Top	Bottom
128/83/NE 136/80/NE 138/79/NE 134/82/NE — 10 in 1.5 ft.			
90/77/N 108/82/NE 104/83/NE 111/80/NE 109/85/NE — 9 per 2 ft.			
Just above coal there is 0.4 inches of shale where the 50-60° direction is more frequent than above. In the next 0.3 ft. the 100° direction is more frequent, substituting for the 50-60° direction. Then above this the 50° direction is preferred.			



Lateral Variations of Sequence above Coal
Sections A, B, and to south



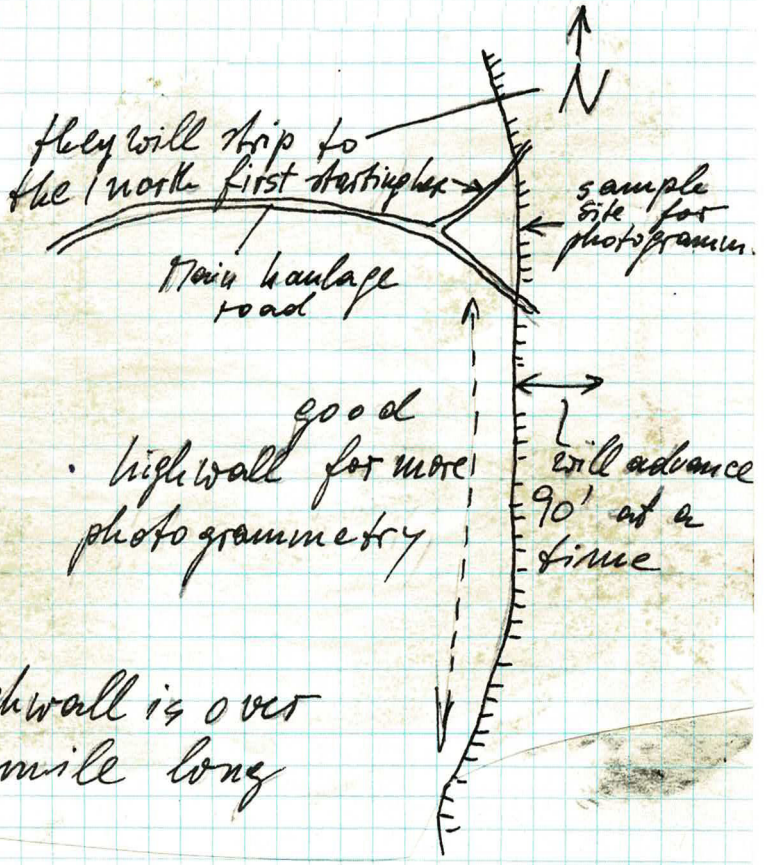
View of highwall at Measured Section "A". Coal partly buried by rubble. BR- Brereton Limestone, C- Conant Limestone, BF- Bankston Fork Limestone.

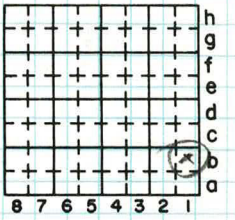
Another view of highwall near Measured Section "B". Two light-colored limestone layers (BF) are Bankston Fork.

ILLINOIS GEOLOGICAL SURVEY, URBANA

River King Strip Mine

Pit 3, about center of highwall





By H. Damberger Date 5/29/75

Paul Brandow, U. I. Surveying

Quadrangle New Athens (#246)

County St. Clair Sec. 23 T 2S R 7W

1000'N of SL, 400'W of EL

River King Strip, Pit 3 near New Athens, St. Clair County
T. 2S., R. 7 W., Sec. 23, Part: NW, NE, SE, SE, or
~1000'N of SL, 400'W of EL

Photogrammetry of Highwall, Roof Study

Descriptions of highwall just N or road into and out of Pit 3, about in middle of Pit 3 (see areal photo)

State coordinate of corners of aluminum frames in stereopair photos as computed by Paul Brandow after triangulation are:

Described by H. H. Damberger, 5/29/75

Description of Highwall on N side of outcrop, to the N of road out of strip pit:

Feet above top of coal From To	Thickness (feet)	Lithology: Strat. Unit
11.1-13.0	1.9	Limestone, fine grained, medium gray: Bankston Fork
10.4-11.1	.7	Shale, dark gray, weathers to medium gray, with many irregular limestone nodules about 0.2-0.5' in diameter.

LAWSON

Feet above top of coal From To	Thickness (feet)	Lithology: Strat. Unit
4.5-10.4	5.9	Shale, dark gray, with irregular joints, zone of concretions about 2/3 down from top, about 1.5-2' maximum diameter, but often only 0.3-0.6'. Near base irregular limestone nodules are fairly common. LAWSON
3.3-4.5	1.2	Limestone, medium to dark gray, fine grained, shaly, breaks rather irregularly. CONANT
2.8-3.3	0.5	Shale, dark gray to black, finely laminated, flaky JAMESTOWN
2.3-2.8	0.5	Shale, dark gray, much harder than above, finely laminated JAMESTOWN?
1.9-2.3	0.4	Shale, dark gray to black, weathers easily and crumbles. (BRERETON &) CLOD? equiv.
0.8-1.9	1.1	Shale, dark gray, hard, looks "cameloid" in places. ANNA
0.3-0.8	0.5	Shale, dark to medium gray, weathers easily to fairly soft layer. ANNA

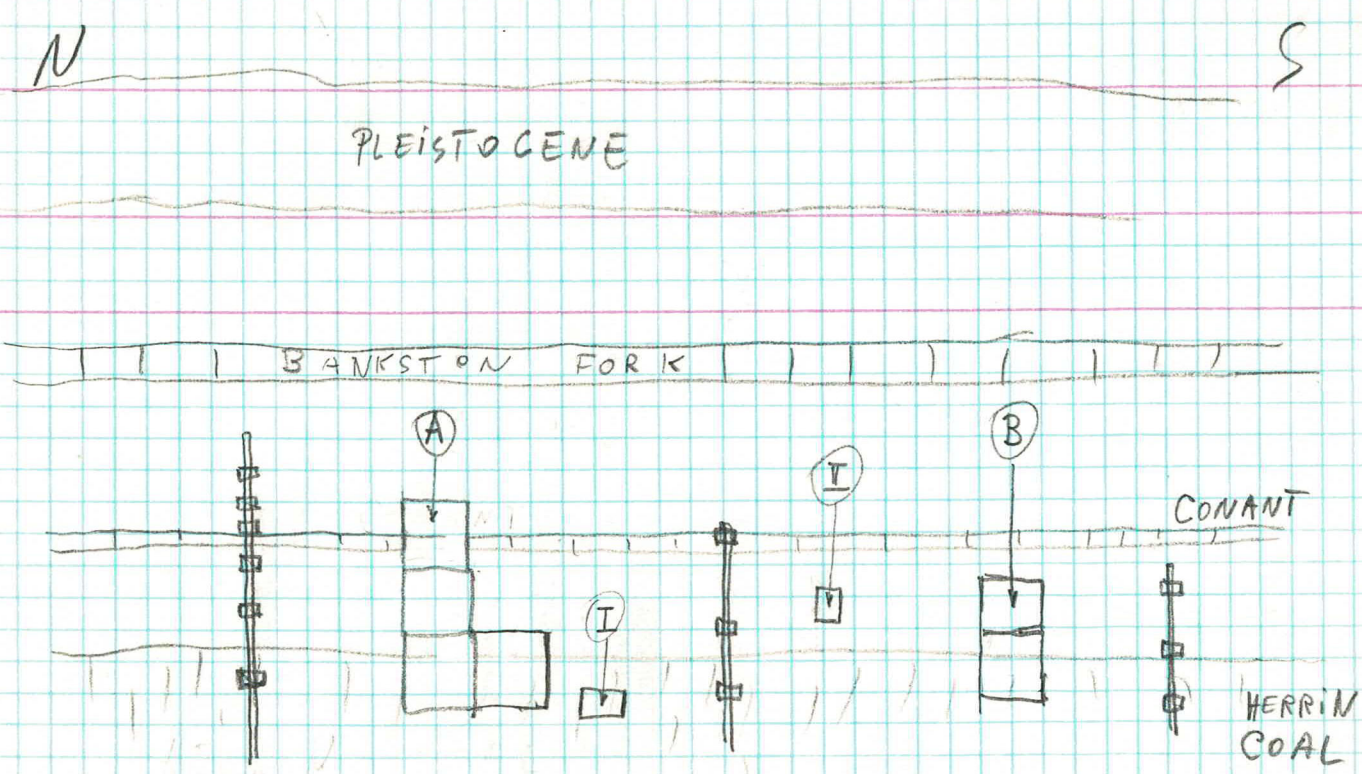
Feet above top of coal From	To	Thickness (feet)	Lithology: Strat. Unit
0	-0.3	0.3	Shale, dark gray to black, fissile. ANNA
		+2.2	Coal

Description of Highwall on S side of outcrop, directly adjacent and to the N of the road out of the strip pit (not in photos of stereopairs)

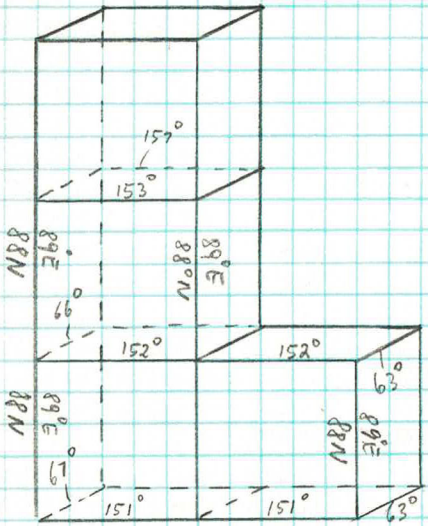
Feet above top of coal From	To	Thickness (feet)	Lithology: Strat. Unit
13.2	-15.2	2.0	Limestone, fine grained, medium gray, with thin, prominent shaly parting at 0.8' from top. BANKSTON FORK
12.4	-13.2	0.8	Shale, dark gray, but weathers quickly to light gray (mottled), with irregular limestone nodules. LAWSON
12.1	-12.4	0.3	Shale, dark gray, limy near top, mostly small irregularly shaped limestone nodules. LAWSON

Feet above top of coal From To	Thickness (feet)	Lithology: Strat. Unit
5.9-12.1	6.2	Shale, dark gray to black, fossiliferous especially in lower 1/3 (many shell fragments of bivalves), bedding not too well developed, rather massive and blocky. LAWSON
5.7-5.9	0.2	Shale, dark to medium gray, with irregular limestone nodules, rather flaky.
5.2-5.7	0.5	Limestone, dark gray, fine grained, fossiliferous, hard forms sharp edges, typical limestone fractures. CONANT
4.8-5.2	0.4	Shale, dark gray, flaky, probably limy. JAMESTOWN
4.1-4.8	0.7	Limestone, argillaceous, medium dark gray. BRERETON
4.0-4.1	0.1	Shale, shale parting in limestone, dark gray.
2.5-4.0	1.5	Limestone, dark to medium gray, fine grained, fossiliferous, typical limestone appearance. BRERETON

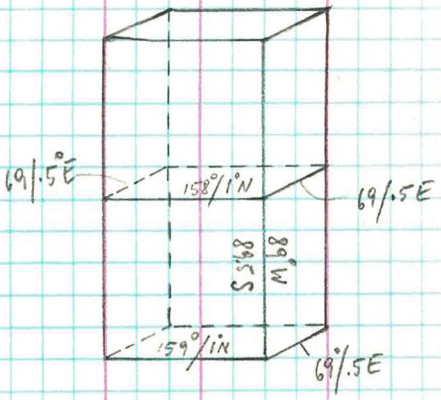
Feet above top of coal From	To	Thickness (feet)	Lithology: Strat. Unit
2.3	2.5	0.2	Shale, dark to medium gray, rather flaky, fossiliferous, "hash" of shell fragments, CLOD (?)
0	2.3	2.3	Shale, dark gray to black, more fissile in lower 0.5 feet; some minor slips therein, which don't seem to affect the limestone above, however. ANNA
		+2'	Coal



Set up for highwall photogrammetry on 5/29/75



(A)



(B)

Test plane I
in photo

176/60W
178/59W
179/58W
176/60W
177/60W

Test plane II
in photo

161/71 W
160/69 W
164/68 W
163/68 W
161/69 W

Peabody River King Strip Pit #3
(near New Athens) July 18, 1978
Notes by John Nelson
and Faith Fiene, with
Steve Stocks, Peabody

Channel Sample for "Round Robin"
#4 incline - we are about 100'
north of the base of it.

Location 2950' and on west of center section 25, T. 2 S, R. 7 W., St. Clair County.

The channel sample collected is missing the top 8".

0.80'	Coal, normally bright banded, blocky, abundant calcite on cleat, trace of pyrite near base.
0.02'	Pyrite, with some carbonaceous shale; discontinuous parting.
1.62	
0.93'	Coal, normally bright banded, blocky; abundant cleat calcite and trace of pyrite.
2.55	
0.05'	Shale; medium to dark gray, poorly bedded, carbonaceous, contains thin lenses of pyrite; excluded from sample (sample #1).
2.6	
0.49'	Coal, normally bright banded, abundant calcite, discontinuous fusain lense 0.10 feet from top; abundant pyrite on cleat near of unit.
3.09	
0.01'	Pyrite, with carbonaceous shale.
3.1	
0.65'	Coal, normally bright banded; numerous thin fusain partings, less blocky than above. Calcite on cleats and abundant pyrite on cleats near top of unit.
3.75	

0.05'	Shale band (sample #2) excluded; dark gray, poorly bedded, highly carbonaceous; contains thin pyrite lenses which vary in thickness.
3.8	
1.04'	Coal, normally bright banded, moderately blocky, abundant calcite and pyritic with minor kaolinite on cleat.
4.89	
0.07'	Shale band, excluded (sample #3), dark gray, poorly bedded, highly carbonaceous, contains abundant thick lenses of pyrite.
4.91	
0.40'	Coal, normally bright banded, moderately blocky, abundant calcite and traces of kaolinite on cleat.
5.31	
0.05'±	Shale band (sample #4) excluded; probable Blue Band; medium dark gray, poorly bedded, hard, carbonaceous; abundant bands and lenses of pyrite, varies considerably in thickness.
5.36	
1.80	Coal, normally bright banded, very blocky; contains a few thin fusain or shale partings, calcite and kaolinite on cleat; rare pyrite—only in lenses;
7.16	
Bottom	(underclay) claystone gray to dark gray, mottled, moderately soft, carbonaceous, with coalified plant debris (sample #5).

Additional sample of cleat calcite picked from face (sample #6).

Cleat measurements taken in lower half of seam for best exposure:

face cleat 159^{o}, 159^{o}, 153^{o}, 154^{o}
153^{o}, 156^{o}, 159^{o}

butt cleat 068^{o}, 061^{o}, 059^{o}, 059^{o}
well developed in place 062^{o}, 067^{o}

coal has been shot so is not all in place

Estimated section of highwall near sample location

20'± surface removed by dragline

7' ± shale and claystone, poorly visible

5' limestone (Piasa) light gray to buff, thick bedded to massive, said to range from 5-15' thick

10' claystone, greenish to yellowish brown, thin dark streak about 2' above base may represent Danville (No. 7) Coal.

2' limestone, upper bench of Bankston Fork; light gray, brown very fine grained, hard, massive

3' shale, light gray, calcareous, contains numerous small limestone nodules.

2' limestone, lower bench of Bankston Fork, similar to upper bench; sharp contact

9' shale, Lawson Shale; Dark gray, moderately hard, poorly bedded, finely silty, contains occasional limestone concretions.

0.9' limestone (Conant?) medium dark gray, fine grained with coarse fossil debris hard and massive, contains productid brachiopod

1.1 shale, medium dark gray hard and poorly bedded, calcareous, contains abundant fossil debris, small crinoid and shell fragments; grades into limestone.

Note that Brereton Limestone varies in thickness from about 2' to 7' in pit. In places up to 1.5' of Anna Shale is present. There seems to be an argillaceous, fossiliferous "bastard limestone" in places in the lower part of the Anna. The gray Energy Shale was not noted in this pit.

No clay dikes, coal balls or other unusual features noted in the coal.

Poor exposures of highwall. To north, amoung of bedrock decreases and much of highwall consists of river sand. The Kaskaskia River is just north of the present pit.

According to a company man Peabody plans to divert the Kaskaskia River in order to mine coal under its present bed.

Drilling shows thatplenty of coal is present but the overburden is nearly all soft river silt, up to 70 feet thick. It is sure to present special problems in mining.

In the present pit the main difficulties are in shooting the hard limestones, especially the Piasa and the Brereton; and in drilling shot holes through soft sand. Such drill holes require continuous casing from surface.

John C. Moore Corporation, Rochester, N.Y. 14604

FORM 180 W

PEABODY COAL COMPANY RIVER KING STRIP PIT 3

October 5, 1978

Notes by John Nelson on visit with H.-F. Krausse and C.-D. Reuther.

Three channel samples of the Herrin (No. 6) Coal were collected for zinc analysis by Jim Cobb. The samples were taken along a freshly exposed rib of coal very near the loading shovel. The coal had been shot and so was very loose; it could be sampled with hand picks. The three samples were taken within 15 feet of each other:

Sample A- Coal contains a small slip mineralized with calcite and pyrite.

Sample B- Coal contains a large slip and a small slip, both mineralized with calcite and pyrite and having mineralized "goat beards".

Sample C- no slips in the coal; no mineralization except on cleat surfaces.

Measured Section of coal seam in area where samples were taken:

	0.93'	Coal, N.B.B., blocky, calcite and a trace of pyrite on cleats.
.94	0.01'	Fusain
1.67	0.73'	Coal, as above
1.69	0.02'	Fusain
2.26	0.57'	Coal, as above.
2.31	0.05'	Shale, dark gray, carbonaceous, with fusain partings and some pyrite. Excluded from all channel samples; sampled separately as "Band 1".
2.96	0.65'	Coal, as above.
2.98	0.02'	Fusain, locally pyritic.
3.38	0.40'	Coal, N.B.B., with abundant streaks of pyrite, and cleat facings of pyrite.
3.43	0.05'	Fusain, with thin vitrain streaks. Pyritzed at Sample A; excluded from Sample A and bagged separately. Included in Channels B and C.

3.75 0.32' Coal, as above.
3.81 0.06' Shale (Blue Band), dark gray, hard, carbonaceous poorly bedded, locally contains small pyrite lenses. Excluded from all three channel samples and bagged separately as "Band 3".
4.61 0.80' Coal, N.B.B., with considerable pyrite on cleats.
4.63 0.02' Shale, dark gray, carbonaceous, pyritic, varies in thickness.
5.75 1.12' Coal, N.B.B., with white calcite, no pyrite.
Underclay.

Total coal thickness sampled 5.75'. Some coal missing from top of seam.

The sample location is approx. 500' south of the NW corner of Section 25, T. 2S-R. 7W, St. Clair County.

The pit runs roughly north-south and is advancing eastward. The sample location is the southernmost place examined. The north end of the pit is a little over half a mile north of the sample location.

Opposite the sample location the highwall is slumped but the strata are partially visible. The following is an estimated section:

Surface
0-3' Sand, with gravel lenses and bands, orange-brown, no water seepage noted. Sharp contact:
8' Loess, olive-brown, uniform, competent. Sharp contact.
8' Till, gray to brown with orange mottling.
15' Covered interval.
2' Limestone (Bankston Fork), light gray-brown, massive single bed.
4-5' Shale, light gray, soft, nodular bedded.
2' Limestone (Bankston Fork), as above.
6-8' Shale, dark gray, hard, poorly bedded,
1' Limestone (Conant), dark gray, hard. massive but lenticular.

3' Shale, dark gray, calcareous, hard, interbedded with limestone; dark gray, fine to coarse-grained, and very fossiliferous.
2-4' Limestone (Brereton), medium-dark gray, fine-grained, hard. massive, dense.
0-1' Shale (Anna), black, hard, fissile.
Herrin (No. 6) Coal.

Northward the thickness of overburden decreases. At the north end of the pit no bedrock above the Bankston Fork Limestone is present and the drift is thinner. In the north half of the pit the highwall is quite well exposed and is directly accessible in many places.

Along most of the highwall the Brereton Limestone lies directly on the Herrin Coal, but one large pod and several smaller pods of Anna Shale are seen.

The maximum thickness measured of Anna Shale is 4.5'; it may be even thicker locally. Its lithology is very typical; a black, hard, smooth, fissile shale, with large spheroidal pyritic concretions near the base and an occasional imperfect marcasite "dollar". Well-developed jointing trends ENE. The shale shows some tendancy to soften on exposure to the weather.

The Brereton Limestone has a maximum thickness of about 6 feet but more commonly ranges from less than a foot to about 4 feet thick. As immediate roof it is commonly 3-4 feet thick. Where it overlies Anna Shale it is slightly thinner; 2-3 feet, and quite massive.

Near the north end of the highwall the Brereton locally thins to less than a foot and becomes very argillaceous. Where the unit is more than a foot thick it is generally hard and massive, though the lower layers may have a somewhat nodular appearance. The basal "clod" is only a few inches thick at the most.

Above the Brereton Limestone is an alternating sequence of shale and limestone representing the Jamestown Coal and Conant Limestone Members. No coal was observed in the interval. The thickness of the

interval varies from about 3 to more than 6 feet. It is thickest where the underlying units are thin, and vice-versa.

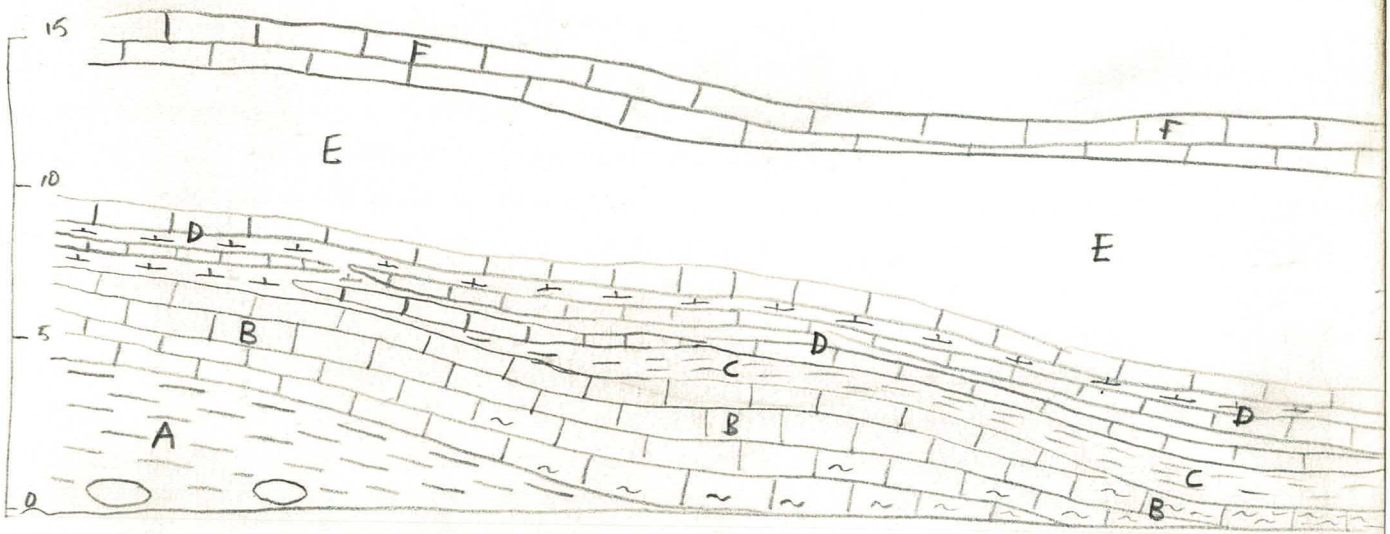
The lowest part of the Jamestown-Conant sequence is a dark gray, soft, poorly bedded calcareous shale containing abundant Lingula. The thickness varies up to about two feet. Above this are alternating beds of limestone and hard, calcareous shale. The limestone beds are very fossiliferous and vary from very fine-grained to coarse. Some are finely laminated and contain bands or nodules of brown to black chert. In one place a series of irregular rounded masses of brownish chert and limestone, with a brecciated appearance, occur beneath a thin laminated fossil band. The masses, 0.5-1.0' in diameter, may be some form of load structure. See notes by H.-F. K.

Where the Anna Shale and Brereton are thick the Jamestown-Conant sequence is thinner (about 3 feet) and comprised mainly of limestone, with not much shale.

No pods or lenses of gray Energy Shale, such as are common in River King Underground, were observed. The sequence here is much more like that in the Baldwin Mine than that in River King Underground. I would judge that roof conditions for underground mining would be fairly stable here. Some problems might occur where the Anna Shale is thick or where the Brereton Limestone, forming the immediate roof, is thin and argillaceous.

See sketch (over) for a generalized cross-section of the highwall at Pit 3.

Generalized Sketch of Highwall Units.
River King Strip Pit #3



Herrin (No. 6) Coal.

A - Anna Shale
B - Brereton Limestone
C - Dark shale with Lingula
D - Dark limestone and hard shale (conant)
E - Lawson Shale
F - Bankston Fork Limestone

John C. Moore Corporation, Rochester, N.Y. 14604
MOORE'S MODERN METHODS
FORM 180 W

Peabody Coal Company - River King Surface Mine, Pit 3 - east of New Athens, St. Clair County. Notes by John Nelson on visit with Steve Danner, accompanied by Ted Thomas, Mine Superintendent, September 1, 1983.

Pit runs north-south and is located approximately NW¼ Section 25, T. 2S, R. 7W, extending north into Section 24. This pit has only a few months of mining left, after which Peabody will move to north side of Kaskaskia River (between old and new channel) in NW¼, Section 24. Expect to have mostly river sand as overburden there.

Here stripping with Marion 8200 dragline with 325-foot boom and 75-yard bucket. Top 4 feet of soil moved with scrapers. Shot holes are drilled vertically. A Marion shovel loads the coal into haulage trucks. First they drill and blast the coal. Drills are twin augers mounted on a farm tractor.

The highwall is fairly clean but there is no place where it may be safely climbed to measure a section. The strata appear quite uniform although individual beds change in thickness and character along the wall. The section is much the same as I remember it from previous visits. The following is an estimated section:

Surficial materials, removed by scarpers.

10-15' Shales, greenish to brownish, appear soft and poorly laminated. A dark zone, possibly a thin coal, appears locally about midway in the interval.

5-8' Piasa Limestone, light gray, shattered by blasting. Appears to be thinly bedded and possibly shaly.

10' Soft shales and/or claystones, dark greenish to olive-gray. A blocky coal, Danville or Allenby, occurs intermittently about 3 feet above the base. This coal reaches a maximum thickness of about 1 foot but is absent along much of the face.

8' Bankston Fork Limestone, consists of two 2-foot benches of medium gray, dense fine-grained limestone separated by 3 feet of dark greenish-gray poorly laminated shale.

6-8' Lawson Shale, dark gray, calcareous, hard, well bedded, contains oval limestone concretions to about 1 foot in diameter.

2½-3' Conant Limestone, dark gray, fine-grained, dense; grades laterally and vertically to dark gray and black very hard calcareous shale. Jamestown Coal not observed but its horizon probably represented by soft black shales near base of interval.

1-5' Brereton Limestone, dark gray, fine-grained, dense, generally massive single bed. In places upper portion is very shaly and fossiliferous.

See additional notes by Steve Danner.

The coal is largely vitrain with subordinate attrital laminae and fusain. It contains a large quantity of mineral and clastic impurities. All of the cleat surfaces are coated with white calcite; many have pyrite facings as well. Fist-size lenses of pyrite, and occasional coal balls with woody structure visible in brownish limestone, are present in a zone 12 to 18 inches below the top of the seam. Smaller nodules and "goat beard" type fractures filled with pyrite are common throughout the seam. Numerous partings of gray, brown, and black shale are found throughout, most appear to be discontinuous; these along with fusain lenses and partings commonly are pyritized. The "blue band" is 1½ to 2 feet above the base of the coal and composed of firm dark gray shale containing much carbonaceous debris and, on one piece examined, the impression of a large Stigmarian root.

Did not observe any clastic dikes or other structural discontinuities, other than small "slips" in the coal, but only a short length of coal face was available for examination.

Superintendent Ted Thomas told us no significant irregularities or changes in thickness have been encountered in this mine during his time here.

The primary cleat consistently trends N 65-67° E and the secondary set is much less consistent at N 20-45° W.

John C. Moore Corporation, Rochester, N.Y. 14604
MOORE'S MODERN METHODS
FORM 180 W

River King - Pit 3 - Sept. 1, 1983

Loading shovel

Coal ball in upper part of Herrin seam

Lower part of coal seam, showing "blue band" and calcite facings on cleat

Hundreds lose jobs as two state coal mines close

1/6/84

Evansville Courier, p. A-5

SPRINGFIELD (AP) — About 630 jobs will be lost with the recent closing of two Southern Illinois coal mining operations.

In Jefferson County, David Beerbower, the manager of Freeman United Coal Co. No. 3 mine at Waltonville, says the facility will not reopen.

The mine was shut down in December after 33 years of operation. Local residents hoped it might open again this year, but Beerbower said that most of the marketable coal reserve is depleted.

The facility employed 800 workers at its peak. About 500 were employed there before it closed. Freeman United is filling up mine shafts at the site and is sealing off entrances to the face.

Also, Peabody Coal Co. has discontinued operations of the dragline at its River King Pit No. 3 mine near New Athens.

The Dec. 30 shutdown meant the layoff of about 45 employees at the River King surface complex. It also eventually will mean the layoff of the remaining 85 workers, who will stay on the company's payroll until reclamation at the site is finished.

Illinois mines produced 4.9 million tons of coal during November, with the most coming from Perry County in the southern portion of the state.

Brad Ewilsizer, director of Mines and Minerals, said in a recent news release that Perry County mines produced almost 1.2 million tons. Second was Franklin County, with 531,121 tons, and third was Williamson County, with 330,282 tons.

According to the November coal production report, 47 mines in 22 counties reported a total of 14,128 employees on the payroll.

Peabody Coal Co. - River King Strip Mine - Pit 3. New Athens, St. Clair County, Illinois. Notes by John Nelson, with Bob Bauer and Heinz Damberger, and M. E. Hopkins and Mark Sumner from Peabody. August 7, 1985.

Peabody proposes to attempt underground gasification of coal north of the present strip mine and wants us to provide geologic data on the overburden strata in the highwall. They are particularly concerned with distribution of fractures which might affect the gasification attempt. Final strip mining scheduled for this October.

The pit trends approximately northeast and the highwall faces northwest. Southwest of the second incline there is only a few feet of shale above the coal. This is overlain by spoils, or by river silts and clays.

Fracture data recorded by Damberger and Bauer.

Measured Section 1

15'	Spoils
2'	Shale (Anna); black, fissile, very thinly laminated, smooth, pyritic; small pectenoid pelcypods.
0.37'	Coal, bright banded, 2/3 to 3/4 vitrain; blocky, abundant pyrite and calcite.
0.01'(0.38)	Pyrite, hard, with laminae of coal.
0.80'(1.18)	Coal, similar to above.
0.01'(1.19)	Fusain, soft, discontinuous.
0.15'(1.34)	Coal, similar to above.
0.01-0.04' (1.36)	Shale, very dark gray, carbonaceous, with fusain and pyrite lenses.
0.81'(2.17)	Coal, similar to above.
0.01'(2.18)	Shale, dark gray, discontinuous.
0.13'(2.31)	Coal, subbright-banded with few thin laminae of vitrain.
0.05'(2.36)	Fusain, soft, lenticular.

1.10' (3.46)	Coal, bright-banded, about ½ vitrain, ½ durain and clairain; thinly laminated; many partings of fusain; much pyrite and calcite.
0.07' (3.53)	Shale, black, soft, thinly laminated, very coaly.
0.87' (4.40)	Coal, similar to above but with fewer fusain partings, little pyrite, much calcite.
0.07' (4.47)	Shale, black, hard, well laminated, with streaks of vitrain. Numerous pyrite lenses.
1.02' (5.59)	Coal, bright banded, thinly laminated, Fusain partings common, pyrite and calcite common.
0.25' (5.84)	Coal, similar to above, but thick lenses of pyritic fusain occur in several places along the face.
1.65' (7.19)	Coal, mostly bright-banded, more dull bands in upper 0.25 feet; much pyrite and calcite.
7.19'	Total Coal
	Underclay, olive gray, soft.

Measured Section 2

15'	Spoils
2-3'	Shale, very dark gray to black, poorly laminated, calcareous, very small shell fragments, partly pyritized. Appears to be lateral facies of Anna.
0.52'	Coal, bright banded, 3/4 vitrain, blocky, much pyrite and calcite.

0.01'(0.53)	Pyrite, hard, continuous
0.55'(1.08)	Coal, similar to above
0.01'(1.09)	Fusain, soft, local ?
0.42(1.51)	Coal, bright banded, about ½ vitrain, ½ dull, more thinly laminated and less blocky than above. Much calcite, little pyrite.
0.03'(1.54)	Shale, medium-dark gray, soft, pyritic.
0.95'(2.49)	Coal, similar to above, thicker banding. Several pyrite-filled "goat beards"
0.01'(2.50)	Shale, dark gray, soft
1.33'(3.83)	Coal, similar to above - "goat beards" at top
0.02'(3.85)	Shale, dark gray, soft, very carbonaceous; locally thickens to 0.10 feet; many pyrite lenses.
1.12'(4.97)	Coal, thinly laminated, much calcite, occasional small pyrite lenses.
0.05'(5.02)	Shale, dark gray to black, hard, well laminated, carbonaceous, many pyrite lenses.
0.30'(5.32)	Coal, similar to above.
0.08'(5.40)	Shale, dark brown to black, moderately firm, well laminated, occasional pyrite lenses.
0.37'(5.77)	Coal, similar to above, fractured, very pyritic.
0.02'(5.79)	Pyrite, with laminae of black shale; lenticular.
1.80'(7.59)	Coal, bright banded, hard, somewhat blocky, moderate amount of calcite, much pyrite in upper 0.5 feet.
7.59'	Total thickness of coal
	Underclay, olive gray, soft.

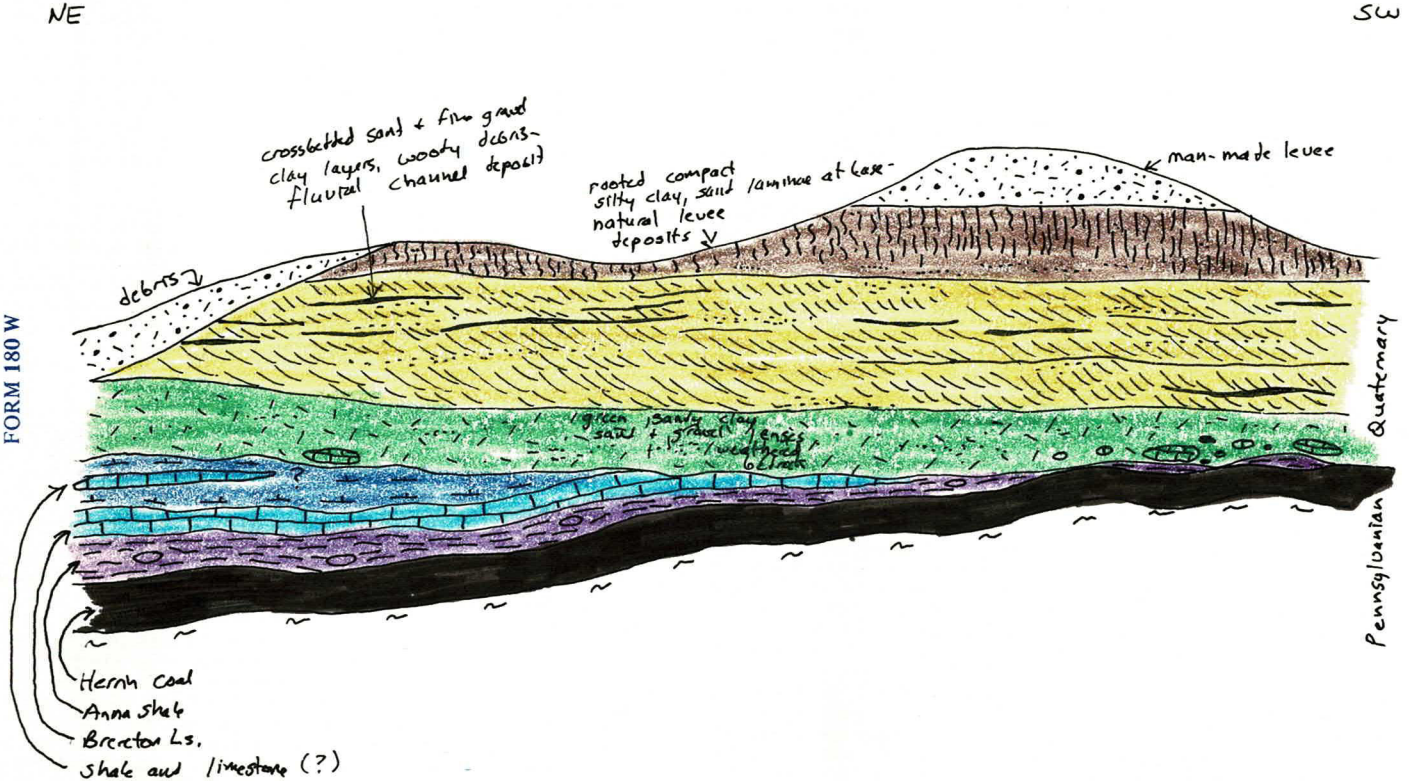
Near the middle of the pit is a nice exposure of Quaternary river deposits - mainly light gray to buff well-sorted sand with tabular foreset beds dipping southwest; some layers contain abundant fine gravel both cross-bedded and parallel-laminated; local concentrations of wood fragments; also discontinuous layers of stiff, plastic dark, gray-brown clay, locally up to half a foot thick; upper and lower contacts of clay layers very sharp, and no sand in the clay layers. Sand is 15 to 20 feet thick and overlies a residual greenish to reddish clay with boulders of bedrock. Sand is sharply overlain by probable levee deposits at least 10 feet thick (largely inaccessible and disturbed by mining) light bray-brown highly silty to sandy clay very extensively rooted. In places the roots penetrate entire unit; elsewhere the lower few feet of the levee clays are not rooted and contain discontinuous laminae of fine sand.

In the northeastern part of the pit, near the drill and dragline, the coal face is alongside the spoil banks and partly covered. The coal bed has been uncovered for loading and the overburden is exposed on the southeast wall of the pit. Here the overburden includes, from base upward, 4-5 feet of Anna Shale, about 3 feet of dark gray dense Brereton Limestone, then about 15 feet of badly slumped materials. Basal river sand is very gravelly, and full of water; it is darker gray than the clean crossbedded sands described above, which have been stripped back to produce a bench. Probably additional bedrock above Brereton Limestone in places, but it is not exposed for study.

The top of the coal bed undulates and generally drops in elevation toward the northeast.

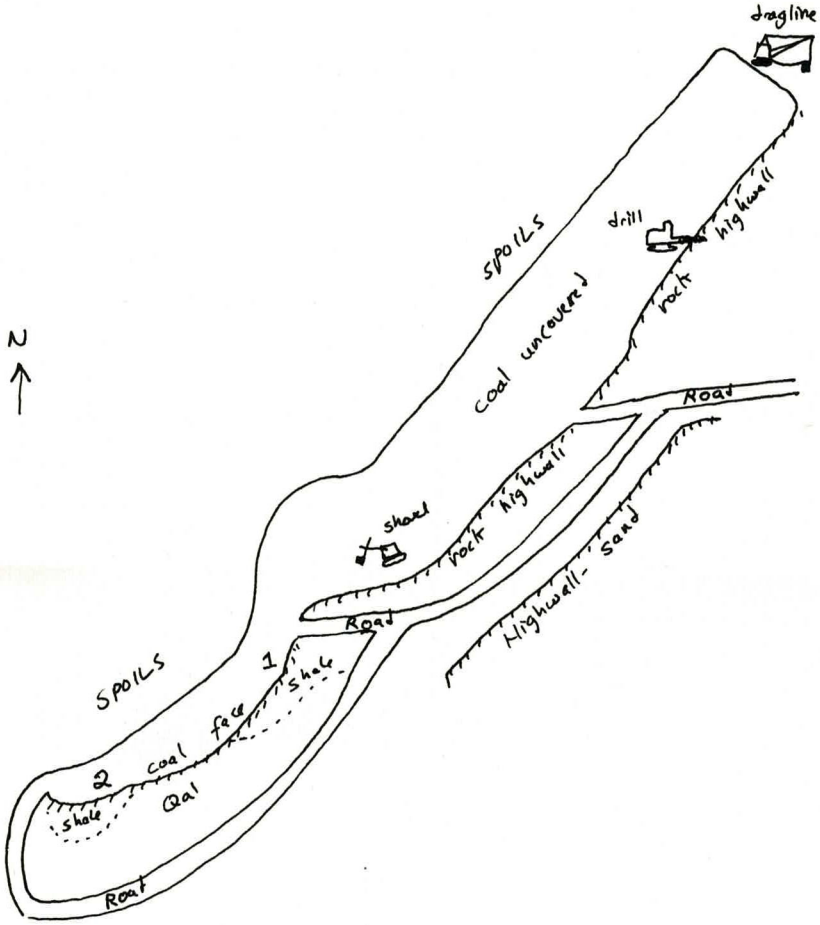
A little of the coal has been ripped out exposing the upper few inches of the seam. No consistent cleat direction is apparent although several fractures were noted trending N. 70-75°E., parallel with the main joints in the Anna Shale. The fractures are thickly lined with pyrite.

Basal Quaternary deposit in places is dark greenish-gray silty to sandy clay with lenses of gravel, poorly laminated and full of water. It is prone to slumping on the highwall. Contact to overlying crossbedded sand is sharp.



SKETCH MAP OF PIT

8/7/85



Dragline, River King Mine, Pit 3.

See also 8 slides in CS slide collection; under coal mines

John C. Moore Corporation, Rochester, N.Y. 14604
MOORE'S MODERN METHODS
FORM 180 W

Overburden drill, Pit 3. Shot holes are drilled horizontally about 90 feet into the face, just above the coal bed.

John C. Moore Corporation, Rochester, N.Y. 14604
MOORE'S MODERN METHODS
FORM 180 W

Measuring fractures on the coal face. Heinz is the one giving orders.

View of part of the highwall. At the top, man-disturbed soil, logs, etc.; then a layer of light-colored cross-bedded fluvial sand, with discontinuous layers of dark clay. Below the sand is sticky greenish-gray clay containing lenses of sand and gravel, and boulders of bedrock.

Peabody Coal Co.
St. Clair Co.

River King UG #1
8/5/80

Guide: Carl

Mapping Area: 2nd Sub-Mains West off Main North

Peabody C.C. River King Ug No1
9/9/80

Block sample site #1: SE corner of 2nd & 1st intersection east of switch of 2nd & 9th mains West off main North. Sampling conditions good; good breeze in this intake entry

Roof: Ls: (Brereton) – med to med drk gray; very hard, dense; microcrystalline; no fossils evident; sharp, gently rolling contact at base.

0.03' Shale: brn-gray; relatively hard, very finely laminated; sharp contact above & below; gently undulating; grades laterally into brnish clay (weathered) in one direction, grades into very hard brn chert in other direction; variable thickness

Benches II & IX

0.01' Shale: black, hard, bonecy, carbonaceous, very finely laminated, vitrain laminae; calcite laminae; variable thickness mod sharp contact.

IX

0.75' Coal: D.B.C. (disturbed); numer fus. bands up to 0.02', also lenses; bands intermittently continuous; more cont near bottom of unit gen very poor cleat devel; vitrain bands disturbed & discont; upto .015' thick; Percentages: ~50% fus, 20% vit, 30% attrito (dull)

XI & X

Top of unit contains a cherty layer of very variable thickness, upto 0.3' thick; chert is drk gray & med brn mottled w/ some white patches; very hard, microxtln; no inclusions evident

0.25' Coal: DBC (disturbed) similar to above, %'s ~ same, poor cleat developmnt no mineral partings

IX

0.25' Coal: DBC (disturbed) vitrain more cont. than above; vitrain ~40%, ~30% fusain & 30% attrital (dull). Base contains .03' honey parting w/ vitr stringers, hard; continuous

VIII

0.20' Coal: Dull, very brn, intermit vit. buds, max .03', avr .02', disturbed & discont; occas. fus. leas; ~65% attrit, 25% vit, 15% fus; cleat devel. improving;

VI

0.30' Coal: ~~Interbed~~ SBB, hard, no distinct partings, ~50% attrital, 40% vit, 10 fus, improved cleat; some calc on cleat; no pyr; vitr upto .01' thick & cont., occas fus laminae;

V

0.55' Coal: NBB; black, hard, grn thin bndg; vitr upto .02' thick; mod cleat develop; little fusain; much vitrain; dull coal too thin for luster ~~seq~~ judgment; calc fract; ~~very~~ little pyr, finely dissem & xtln.

IV

0.2' Coal: NBB, hard, generally thin banded, much vitr, ~55%, attrital ~15%, ~30% fus.
III vit max .01+, ave +.01; basal fus .015' thick d cont.; attrital mod dull, & thin buds. good cleat

0.15'
III Coal: NBB, banding gen thin; less vit ~40% 45% attrital, 15% fus; contact at top is a .01 fus band, continuous; good cleat

0.2 Coal: NBB; variable banding; vitr typ .01'; grades into bney coal near base; vit buds cont in upper part. vit 40%, attr 55, fus 5; cleat good, some cak on cleat, no apprnt pyr.

Floor ~~D~~ claystone: mod gray, w gyn cast; soft, friable, rather smooth, vitr stringers near top. > 3' thick

Block sample site #3: Location: North part of Zubmains West, see map.
Overall Thickness: 6.35'

Roof: Shale: (Encugg) med to drk grog; mod hard; finely lamin; contains lt. grg streaks & dots; very smooth; weathers to a yellow sulfurish color & becomes clayey; deteriorates rapidly when exposed to moisture; horizond inclined slksds; numerous slips, large small; unstable after exposure to humidity, mod sharp but irregular contact w/ coal

0.3' Coal: DNBC; black, & gray; very hard; appears as granules & short bands of disturbed bright coal in a matrix of fusain & pyritized shale; contains isolated patches of SBB; pyr is finely xtaline or microxln, occasional lens of fus. near base; uneven gradation into DBC. No cleat devel!

(disturbed)
1.03' Coal: DBC & SBB: black, hard; very poor to no cleat development; contains several calc filled fract. in lower ½; thickest vitr bnds ~ .01; w/ exception of vitr, banding is gen laminar. ~25% vit, 15% fus, 60% attrital

(cont)

contains several diffuse patches of pyr.
Banding varies from distinct to obscure.
Luster of attrital is mid lusterous to dull.
A few intermit bands of fus up to 0.01' thick

0.36 Coal: ~~SBB~~ SBB, black, mod hard, mod cleat develop, some calc on cleat and in vert fracs; ~20% vitr in bands ~.01' thick; 60-75% attrital w/ bands up to .03-.04' thick. Fus in small thin lens; very little pyr. evident; sharp contact at base

0.03' Shale: lt to med gray; mod soft, friable; finely laminar; smooth; continuous w/ rel uniform thickness; contains a few thin lenses & stringers of pyr; sharp, reg contact at base

0.41' Coal: SBB to WBB, black; vit bnds up to 0.01' thick, ~30%, fus bands ~ 0.01' thick & also thin lenses; attrital bnds variable thickness; mod cleat devel, som calc on cleat & in vert frac.

.04 Shale: H. Brnsh Gray hvy Pytzel, hard, Py finely dis Varble th. to .06, Bedding indistinct Sharp wherever contact w/ coal, Continuous

Cont

0.68 Coal: NBB, Black, hard Num. lns & Buds fusain lns to .03", buds to .02", intermitt. cont., 15-20% Fus, vit buds up to .015 gen. thin banded 25-30% vit; Alt coal mid lust to mod dull, very thn Bnded, mod cleat devel, some Calcite on cleat & vert fract.

0.04 Shale: drk brnsh Gray, mod Soft, smooth, Stringers of Py, Very finely lam, cont. but variable thickness, mod sharp contact w/coal

0.18 coal: SBB, Vit. thin banded, <20%, Alt. thin banded = 75%, some small fusain lenses and ~~thn bands~~ patches, some calcite on cleat & vert frac

0.03 Fusain: Soft, Sooty, variable Thick, intermitt cont. in vrvs

0.87 Coal: SBB, vit <.005" thick, <20%, Alt. v thin Bnded = 70%, occ thin lns fusain also, fine buds, several lam Shale lams near mid of unit, mod cleat develop w/calc on cleat, some fine dissm. Py. & some nods

(cont'd)

0.06 Shale: med-drk Gray, mod-hard, Coal stringers, fine lam, Silty, Continuous Vari thickness,

0.33 Coal: SBB Sim to Above, much calc. on cleat & Fractures, long thick Lenses of fus near Base, Lenses to .09'

0.18 Shale: med gr-Brn to dark gr., mod-very hard, stringers coal, Brn Shale Heavily pyrized locally, Gr Shale is Carb, Gen smooth, Brn Sh weathers to Sulphurish color, Contains strings & nodules of Py., varielle Thick & uneven contact.

1.58 Coal: SBB, Sim to ABove, stringers of Py, fus in Thin Ins & bands, v.it bands Sparse, Thin to .015', Gen. much thinner, Att. Coal varielle ~~Bands~~ bands, mid-lust to mod-dull. Sulfate traces at mid Seam, occ strings of pyrzd H brn Sh.

Floor Claystone: med to drk Gray, Soft, v. Slickensided, Gen smooth w/ finely diss. py near top, No Carb evident, fine v.it strings. Sharp contact w/coal

Block sample site # 5: NE corner of 2nd pillar North of ~~track~~ track (2nd S main West) in X cut #14; see map. Sampling conditions good.

Overall Thickness: 6.35'

Roof: shale: ~~(Anna)~~ dark gray to black, hard, fine grained, ~~smooth~~; numerous slips, slickensides, & concretions; very finely lamin w/ some phosphatic streaks; sharp even contact w/ coal often marked by lamina of pyrite

0.67' Coal: WBB, black, mod hard; well developed cleat; much calc on cleats & in fracs; contains a fist sized patch of fnly xtln pyr'd goatsbeard vein filling of pyr; wit ~ 20 to 25%, upto 0.01' thick, ave ~ 2mm; attrital/ mid luster w/ bands upto 0.04' thick, ~ 70-75%. Some fus in thin lens & bands. Attrital has silky texture

< 0.01' Pyr: gold, hard discontinuous

0.65' Coal: WBB, similar to above; little if any pyrite; much calc; more fus in lens up to 0.04' thick.

< 0.01 to 0.03' Fus & shale: hard mineralized fus and brn-gray shale in an intermitt

continuous band. Fus thickens to lenses 0.03 thick; contains stringers of bright coal & vitrain.

0.15 Coal: NBB; S.T.A. to

0.02'-0.03' Fusain; heavily pyr'd in part; vitr. stringers & pyr nod; thickness quite variable, up to 0.07'.

0.60 Coal:

0.25' Coal; NBB, similar to above

0.02' Bone coal: continuous

1.00' Coal: SBB; vitr sparsely banded, < .01' thick; mostly attrital, midlustrous to dull, ~70% Some Fus w/interwd thin Buds, some Bony Buds to .04' Coal becomes bony towards Bottom of unit much calcite on cleats & Fracture, little pyr on cleat & small fract.

0.02'-.04' Fusain; fairly continuous, mod hard, vari thick stringers of coal & pyr.

0.18' Coal; SBB, S.T.A.

(cont)

0.02' Fusain: pyrite stringers + nods, vari-thick fairly continuous

0.60' Coal: DBC + SBB, lower-half S.B.T, upper half - more fus + Att., much Calcite, few pyr stringers, good cleat.

0.03' fusain: heavily pyrized in part. pyr stringers + lenses, Continuous

0.96' Coal: DBC, S.T. upper half & Above, Bony areas primarily in lower half, num. pyritic lam, much calc, mod cleat, few thn Brdel for vit buds to .01'

0.04' Fusain: hard, mineralized, pyritic - disso lenses, Brt Coal stringers

0.24' Coal: SBB much calc, thn-mod Banding, ≈ 20% vit, Grades into .... →

(cont.)

0.12' Shale (Blue Band): lt-med Gray, heavily pyr in parts, mod. Hard, very fine lamin. fine grained, variable thickness, mean contact.

1.55 Coal; DBC rather Bony, poor-mod clean, much Calc, some pyr, lenses & streaks of pyr & fus, gen. thin Banded, 1 cm fusain lense on upper contact (.07' thick, .105' long) possibly mineralized, uniform Bonyness throughout, laminar Banding

Floor Claystone; lt-med Gray, slightly mottled, Smooth, Slickensided, mod. Sft, some Carb debris, platy.