

ZEIGLER COAL CO. MINE NO. 11
MINE INDEX NO. 968

Underground Mine

HERRIN

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Zeigler To Reopen Coulterville Mine

By Robert Steyer

Of the Post-Dispatch Staff

Zeigler Coal Holding Co. said Friday that it will reopen its Old Ben Mine No. 11 in Coulterville, Ill., in January.

The company, based in Fairview Heights, said it is recalling 70 employees Oct. 1 to help prepare the mine, which has been idled this year.

When full operations resume, the mine should have more than 200 workers, said Mark Cavinder, vice president and general manager of Old Ben. The mine has 10 years worth of reserves and should produce 2.5 million tons of coal annually.

The reopening of the Coulterville mine will coincide with the closing of the Spartan Mine at year's end.

That mine, in Sparta, Ill., has run out of reserves. It has about 190 employees.

"This mine had 45 years of production, which is quite an accomplishment," Cavinder said. "We regret having to close good mines, and we regret the effect it has on people who have given great service to the mining industry for many years."

The reopening of Old Ben No. 11 and the closing of the Spartan Mine had been forecast by Zeigler last year. The only surprise was Zeigler's decision to close the Spartan Mine six months earlier than it had predicted.

The Spartan Mine, which opened in 1951, is the oldest operating underground mine in Illinois, Zeigler said. It will produce 2.3 million tons of coal this year.



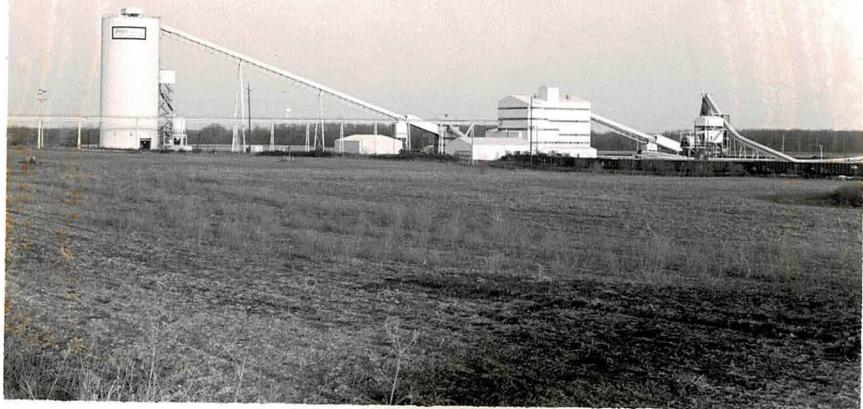
FORM 180 W



Headframe and surface bulidings of Zeigler Coal Company's Mine No. 11. Photo by John Nelson, March 1981.



FORM 180 W



Zeigler Coal Company's new central cleaning plant,
serving Mine No. 11 and the Spartan Mine.



FORM 180 W

ms-act-randolph-01.td



Overland conveyor belt carrying coal from Mine No. 11 to the central cleaning plant.

Period
Mo. Day Year Mo. Day Year

Tons

					1977			281	231
					1978			587	860
					1979			721	997
					1980			692	750
					1981			635	613
					1982			459	611
					1983			712	217
					1984		1	152	019
					1985		1	123	620
					1986			932	314
					1987		1	213	763
					1988		1	504	374
					1989		1	533	832
					1990		1	655	782
					1991		1	673	709
					1992		1	999	865
					1993			743	000
					1994		1	780	000
					1995		1	501	000
					1996			idle	
					1997		1	081	000
					1998		2	388	000

ZEIGLER COAL CO.
MINE NO. 11

SUMMARIES

No. to No.

Railroad, Wagon, Strip, Idle, Abandoned

IDENTIFICATION

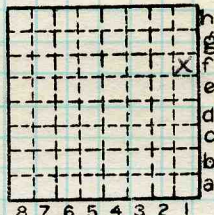
County No. _____ Coal No. _____

Coal Report No. S-22

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County Randolph

HERRIN



Sec. 26

T. 4

R. 5

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COAL MINE—PRODUCTION

ILLINOIS GEOLOGICAL SURVEY, URBANA



FORM 180 W

Morning Courier CU 4/6/79

Mining uncertainties grip town

By Evan Davis
Lindsay-Schaub News Service
Coulterville

The Christmas decorations still hang across Illinois 13 and 153, but things aren't so cheery in Coulterville these days. The Spartan Mine is down, and no one seems to know for how long.

This Randolph County village the Perry County border, has been caught in the middle of layoffs, slowdowns and shutdowns at Southern Illinois mines this winter. The biggest blows came recently when the Zeigler Coal Co. stopped underground work at its two large mines south of town, and people are still reeling.

Encouraging news spread across town this week as the new mine, Zeigler II, reopened after a three-week shutdown for full production. But the miners don't know what's ahead.

"They just called us back today," said miner George Hannah. "Your guess is as

good as mine how long we'll be there."

A company official said "the mine is working today. . . that's all we can say." Anything more, he said, would have to come from the Chicago office. In Chicago, the company spokesman was reported out of town.

The other guessing game is when or if the old mine, the Spartan, will open again.

The Spartan is a fixture in the area, spewing forth coal and miners' wages for more than 20 years. The coal is still there, being processed from stockpiles by a small crew, but most of the miners were formally laid off last week.

The layoffs hit less than a year after the end of the general United Mine Workers strike.

It is too early to hear of severe first-hand problems at least from the miners hanging around the Dalee Gas Station and the VFW Hall Monday. The miners have been out of

work a short time compared to last year's three-month strike, and their final regular paychecks only came last week.

They didn't have time to build nest-eggs this time, because the layoffs were a surprise, but they are drawing the unemployment checks they could not get while striking.

"A good many of them can hang on for a while," said miner Drew Estes. "Where there's a will, there's a way."

As miner Ralph Burton explained it, part of that "will" is seniority. "I'll have to sit and ride it out for a year, anyway," he said. "I'd lose seven years."

Burton and the other Spartan miners are on a panel for any possible reopening and rebidding of jobs at the mine, and seniority is an important factor in who gets to work if the mine is partially operating. If Burton were to accept a job somewhere else, he would either have to quit it when

a Spartan opening occurs, or lose his Spartan seniority.

Not that there are many jobs anywhere else. A union leader said some miners have been looking around, particularly to the Peabody mine at Marissa scheduled to get into production this year. But, to put it mildly, the local mine labor market is sluggish.

"There's no mine to go to," said mine electrician Larry Heggemeier. "I don't know of any mine that is hiring right now."

Burton predicts that if the Spartan mine stays down for several months, "It's going to send a lot of us to St. Louis. There's no way 200 people can get a job anywhere close."

Of course, the 200 are not all from Coulterville, but the Zeigler layoffs, a partial layoff at Consolidation's Burning Star No. 3 mine near Sparta and the area-wide production slowdown are pinching the local economy.

"It's killing us," said Will-

iam Miles, owner of the B&L liquor store on the west edge of town. Sitting beside the highway, he is used to having miners stop by from various mines, but he says his merchandise is "a luxury" and that means it isn't bought when money is tight.

Nick Machisen, bartender at the VFW, had the same reaction. "I know it (the layoff) hurt the place out here," he said. Sitting across the bar from Machisen, miner Heggemeier noted that many miners patronized Coulterville taverns right after the layoff because they didn't have much else to do, but few are drinking on \$149 unemployment checks.

Dave Purkapple, manager of the IGA grocery store in town, said the layoffs have not affected his business too much yet because "you've got to eat," but he said they had had a demoralizing effect on the town as a whole. "Everybody is a little upset," he said. "They'd rather be working."

Zeigler II

April 3, 1980

Notes by John Nelson on visit with Steve Danner.
 Accompanied by Allen Costello, geologist with Zeigler

This mine has 6 conventional units, of which 3 are operated on the day shift and the other 3 on evening shift. The night shift is idle. Equipment at each face includes: drill, cutting machine, shooting cart (for Airdox), loading machine, and two shuttle cars. Shaft is 210 feet deep.

Purpose of visit was to collect three channel samples and to make general observations on geologic conditions.

Channel Sample 1

Face of 3rd entry from south in Unit 6
 (2nd Panel East off the Main North).

NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sect. 23, T. 4S- R. 4E
or 1236' from south line, 104' from
 east line of section.

- Roof- Shale (Anna), black, hard, fissile, smooth, well-jointed 055-060°, local lenses of pyrite and streaks of coal near base, much pyrite on basal contact, calcite on a few joint surfaces.
- 1.14' Coal, N.B.B., hard, blocky, contains calcite on cleat, few thin discontinuous layers of pyrite near base.
- 0.01' Pyrite, fairly continuous band
- 0.45' Coal, sim. to above; no pyrite visible.
- 0.01' Pyrite, discontinuous
- 0.61' Coal, sim. to above.
- 0.01' Fusain, soft layer
- 0.37' Coal, sim. to above.
- 0.10' Durain or shaley coal, lenticular, with thin streaks of vitrain, inclined laminae of pyrite. Whole unit is lenticular, varies in thickness.

- 0.54' Coal, sim. to above.
- 0.09' Fusain, moderately hard, pyritic, contains irregular streaks of vitrain, whole unit lenticular.
- 0.70' Coal, sim. to above, with a little pyrite.
- 0.03' Fusain, moderately hard, pyritic.
- 0.30' Coal, sim. to above.
- 0.01' Pyrite, discontinuous.
- 0.17' Coal, sim. to above, with a little pyrite.
- 0.02' Shale, black, carbonaceous, interlaminated with pyrite.
- 0.28' Coal, sim. to above.
- 0.01' Pyrite, discontinuous, with thin streaks of dark gray shale.
- 0.59' Coal, sim. to above.
- 0.01' Pyrite, lenticular.
- 0.40' Coal, with thin discontinuous laminae of dark gray shale.
- 0.12' Shale (Blue Band); dark gray, hard, poorly bedded, contains finely disseminated carbonaceous material. EXCLUDED FROM SAMPLE.
- The Blue Band is continuous throughout the mine.
- 0.17' Coal, sim. to above.
- 0.01' Pyrite, discontinuous.
- 1.00' Coal, with abundant calcite on cleats and with thin discontinuous laminae of pyrite throughout.
- 0.20' Coal, N.B.B., with disturbed laminations, abundant laminae of dark pyrite throughout. Contact to floor appears irregular.
- Claystone, dark gray to olive-gray, fairly hard, slickensided, carbonaceous.

Total thickness of seam 7.35 feet.

At the northernmost face of the 2nd Panel East limestone lies directly on the coal. Its lower surface is irregular. Roof bolts are anchored into the

limestone as a general rule throughout the mine—only mechanical bolts have been tried. The shortest bolts in use are 48", where limestone forms the immediate roof.

The Anna Shale is not everywhere jointed; in places it is quite smooth. Where it is jointed the fractures persistently trend ENE and are spaced 1 to 3 per foot.

At the face of the 4th entry from the north is a set of slips trending northeastward and dipping both to southeast and to northwest. The immediate roof is Energy Shale, which the miners call "white top". It is a dark gray, massive to faintly laminated mudstone with abundant pyrite and quite a few marcasite "dollars" up to 3" in diameter. The shale falls out readily along the slips. The slips die out in the upper part of the coal seam amid heavily mineralized "goat beards" with abundant calcite and pyrite but no clay. Mr. Costello says no clay dikes have been encountered either here or in the Spartan Mine.

The slips continue through the pillar and appear in the next intersection to the southwest. Here they form a "coffin cover" below which about three feet of gray shale fell out.

Well-jointed Anna Shale is seen at the face of the 5th Entry. A small lens about 0.5' thick of pyritic, fossiliferous "bastard limestone" is seen at the face. The gray shale forms a lens of limited extent. Near the contact of gray shale and black shale the black shale contains many slips and closely spaced joints, so it is more unstable than usual.

One intersection outby the face where the channel sample was taken is a lenticular mass of "bastard limestone" at least 10 feet in diameter and more than a foot thick, forming the immediate roof. The limestone is very hard, dark gray and highly fossiliferous; it contains numerous coaly streaks.

On the southern two faces the black shale

contains 3-4 joints per foot and has slabbed quite a bit. A lot of shale comes down when the coal is shot. Several pockets of marcasite "dollars" are seen in the base of the shale. The miners avidly collect the because rockhounds pay good money for them. The marcasite "dollars" are quite a famous occurrence here and at the Spartan Mine, but are rarely found anywhere else in Illinois.

At a set of overcasts just north of the bottom the Anna Shale appears to be 6 to 7 feet thick and it contains scattered concretions near the base. Local thin pods of soft gray shale are present. The gray shale seems to grade upward into a fossiliferous shale or "bastard limestone" below the Anna Shale. In places the gray shale is interfingering with the uppermost layers of the coal, especially around the margins of the pods of gray shale.

Channel Sample 2

In 1st Panel West off the Main North.
1112' from north line, 2020' from
east line, Section 26, T. 4S- R. 5E.

- Roof- Shale (Anna); black, hard, platy, smooth, poorly bedded at base; contains streaks and nodules of phosphate at base; a few marcasite "dollars"; no joints. Sharp contact:
- 0.70' Coal, N.B.B., hard, with streaks of pyrite, calcite and pyrite on cleats, very thin fracture-fillings of calcite.
 - 0.01' Pyrite, discontinuous.
 - 0.54' Coal, sim. to above.
 - 0.02' Durain, discontinuous band, with local lenses of pyrite.
 - 0.46' Coal, sim. to above but contains less calcite.

- 0.03' Durain, fairly continuous band.
- 0.44' Coal, sim. to above, with pyrite-filled "goat beard"
- 0.06' Durain, with discontinuous laminae of pyrite.
- 0.50' Coal, sim. to above (no "goat beard")
- 0.02' Fusain, soft and friable.
- 0.59' Coal, sim. to above.
- 0.01' Pyrite, fairly continuous band.
- 0.34' Coal, sim. to above.
- 0.03' Shale, dark gray, hard, no bedding, contains streaks and lenses of pyrite. Contacts slightly irregular.
- 0.78' Coal, sim. to above, with small lenses of pyrite and some finely disseminated pyrite.
- 0.01' Pyrite, discontinuous.
- 0.41' Coal, sim. to above with a few thin shaly laminae; less pyrite than above.
- 0.02' Shale and pyrite; intermixed uniformly, medium gray and hard, discontinuous layer.
- 0.43' Coal, sim. to above, with shaly streaks.
- 0.10' Shale (Blue Band); medium gray, moderately hard, poorly bedded, contains a trace of pyrite. EXCLUDED FROM SAMPLE
- 0.85' Coal, sim. to above with numerous discontinuous streaks of pyrite.
- 0.02' Pyrite, continuous band.
- 0.85' Coal, sim. to above, with a few calcareous (?) streaks and less pyrite and calcite on cleats
- Claystone, medium gray, soft, slickensided, smooth.
- Total thickness of seam 7.22'.

At most of the faces in this section the coal separates very cleanly from the base of the Anna Shale, whose lower surface is free from joints and smooth as a billiard table. In a few places the Anna Shale has a few widely spaced joints and an occasional concretion. The roof here is much better than in Unit 6 (previous sample).

In the face south of where we sampled there is a layer of phosphatic laminae above the base of the Anna Shale, and above the laminae the shale is heavily burrowed and full of more irregular phosphatic nodules. This shale breaks in irregular fashion. Suspect that the shale may be thin, with base of limestone just above the burrowed zone.

At the mouth of the 2nd Panel East off the Main South the roof has been cut down for overcasts. There is gray shale up to 5 feet thick in places and containing thin "riders" of coal and large compactional slips. The contact to the Anna Shale appears to be gradational, with an intermediate zone of dark very coaly shale full of vitrain streaks and stringers. Locally also a fossiliferous shale or very argillaceous "bastard limestone". Farther up the Anna Shale is more typical black shale with calcite-lined joints and thin phosphatic nodules. The top of the cut is at the base of the limestone.

Channel Sample 3

Face of the 2nd entry from the south in the 2nd Panel East off the Main South. 680' from south line, 1544' from west line, Sect. 25, T. 4S- R. 5W.

- Roof- Shale (Anna); black, hard, fissile, smooth, some ENE-trending joints present; thin laminae of vitrain near base, a few phosphatic nodules and streaks and some disseminated pyrite.
- 0.22' Coal, N.B.B., hard, pyrite on cleats, a few thin laminae of pyrite. This coal is mostly vitrain and has widely-spaced cleats.
- 0.02' Pyrite, fairly continuous.
- 0.18' Coal, sim. to above with more calcite on cleats.
- 0.01' pyrite, continuous.

- 0.42' Coal, as above, with much calcite and intermittent streaks of pyrite.
- 0.01' Pyrite, continuous.
- 0.38' Coal, N.B.B., with less vitrain than above, more the usual proportion of dull & bright bands and closely-spaced cleats.
- 0.05' Fusain, soft, a continuous band of varying thickness.
- 0.11' Coal, sim. to above.
- 0.03' Durain and pyrite; continuous band with isolated lenses of pyrite.
- 0.47' Coal, sim. to above, with less calcite.
- 0.02' Durain, continuous band with isolated pyrite lenses.
- 0.40' Coal, sim. to above with some pyrite on cleats
- 0.08' Durain and fusain, with streaks of pyrite, Quite continuous across face; this band appears to be widespread throughout the mine.
- 0.46' Coal, sim. to above.
- 0.03' Durain, continuous.
- 0.21' Coal, sim. to above.
- 0.02' Pyrite, continuous but varies in thickness, locally interlaminated with coal.
- 0.81' Coal, sim. to above, with occasional streaks of pyrite and a pyritized "goat beard"
- 0.04' Durain, continuous, with a few lenses of pyrite.
- 1.44' Coal, sim. to above with lenses and laminae of pyrite; also pyrite on cleat surfaces and in "goat beards". Occasional streaks of durain
Calcite on cleats.
- 0.12' Shale (Blue Band); medium gray, moderately hard, heavily pyritic. EXCLUDED FROM SAMPLE.
- 1.20' Coal, sim. to above, with much calcite on bedding surfaces and on cleats. A few thin laminae of pyrite. Irregular contact to floor:
Claystone, medium gray, soft, slickensided, very smooth; carbonaceous debris present; finely disseminated pyrite.
- Total thickness of seam 6.73'

North of the face sampled is an area of gray shale roof again with large slips. In another area nearby nodular limestone lies directly on the coal.

Walked part of the intake-air and return-air escape-ways south of the bottom, to get a general idea of variability in the roof. See field map for locations

4.) An open vertical fracture trending east-west across the full width of the entry in the limestone roof. The fracture in places is 2 to 3 inches wide and is filled with angular pieces of limestone. No slickensides or offset are apparent. There is not the slightest trace of disturbance in the coal immediately below the fracture - it involves only the limestone.

The fracture was not observed in the next two entries to the west, in spite of excellent exposure.

I have never seen a fracture quite like this. It is not a joint; other joints in the limestone trend ENE and are not open. I have never seen a fault that ended so abruptly at the top of the coal. I must assume this fracture developed after mining, but how I cannot say. There are no indications that the roof is taking weight and that the limestone is about to fall. The fracture does not look like anything that could have been made artificially, say with the cutting machine or as a result of shooting the coal.

About 20 feet south of the fracture is a lens of Energy Shale about 20 feet in diameter and not more than 2 feet thick. On the north it is directly overlapped by limestone and on the south by Anna Shale, with limestone above. The upper contact of the gray shale is abrupt.

5.) A larger area of gray shale; soft with numerous large slips; bad top. On the north the gray shale is overlain by Anna Shale with an intermediate zone of calcareous fossiliferous dark gray shale ("bastard limestone"). Southward where the gray shale is 5 feet thick it is seen to grade upward into black shale.

On the west rib about 0.7' below the top of the seam is a small pyritic coal ball. Midway in the seam is a lens of fusain about 3.0' X 0.5'; the coal above the lens has many thin laminae of fusain.

On the western boundary of the lens of gray shale a 1-foot-thick layer of hard, concretionary "bastard limestone" separates Anna and Energy Shales. The gray shale is seen to interfinger with the coal along the margins of the lens. This shows that the gray shale probably was deposited contemporaneously with the last layers of peat.

Within a small area considerable variability of roof can be seen; gray shale, black, shale, and limestone. The black shale varies from hard and fissile to soft and flaky, and it may be jointed or not jointed. The "clod" layer at the base of the limestone varies in thickness and competence. As in most mines the "clod" generally falls from between the roof bolts. It may also weaken the bond of the limestone to the Anna Shale where the latter is present.

6.) A large roof fall covering an entire intersection and more; cleaned and re-bolted. Fallen rock includes 2-3 feet of Anna Shale and the lower 2-3 feet of the limestone. The limestone that has fallen is very shaly with nodular bedding. Beds range in thickness from 0.5 to 0.7 feet, and separate along the dark shaly partings. The top of the fall is a bedding plane in the limestone. Above this the limestone probably is more massive.

According to Mr. Costello the Brereton Limestone is present over the entire mine, and he does not know of any place where its entire thickness has failed.

According to drill holes in the area the Brereton Limestone is overlain by about 30 feet of interbedded shale (largely calcareous) and limestone; including the Conant Limestone, the Bankston Fork Limestone in 2 or more benches, and the Piasa or "Cutler" Limestone which is commonly 10 feet thick. The Danville (No. 7) Coal occurs between the Bankston and Piasa Limestones and is generally 1 to 2 feet thick. All in all, these limestones and shales make a main roof that is stronger than that found over the Herrin Coal in most of Illinois.

"Bastard limestone" occurring at the base of the Anna Shale is quite widespread in this mine and is especially common near the margins of Energy Shale pods or overlapping those pods. Similar occurrences have been seen in most other mines on the Sparta Shelf.



FORM 180 W

Ziegler Coal Co. - Mine No. 11, Randolph County.
John Nelson, March 18, 1988.

Have encountered a disturbed area, described as open fractures or cavities in mine roof, from which water is flowing. Located in Main East entries near junction with 2nd Main North. Approximate surface coordinates of belt intersection is 900 ft. north, 1300 ft. east of center of Section 30, T.4S., R.4W., Perry County (hoisting shaft of mine is in Randolph County).

Accompanied underground by Ray Columbo and K. R. Stegall.

According to Ray, no faults with significant displacement of coal have been encountered here, or in the Spartan Mine. He said that a disturbed zone or fractured zone, trending northwest, was met in a now-sealed portion of No. 11 Mine about 1/2 mile north-northwest of hoisting shaft. Also he reported that open fissures, with no mineralization, were found at one place in the Spartan Mine.

The area of interest today is near the crest of a small dome in the coal, as indicated by elevation surveys on the base of the coal. Said to be no oil wells or water-injection wells within 1/2 mile of the site.

1.) South haulage entry just inby crosscut 133 (10,524 ft. from bottom). A thrust fault is present. It strikes approximately N.5°E, dips 25° east and the east side is upthrown. On the north side of the entry there is a single fault which penetrates the entire coal seam to the underclay, and also the roof strata. The vertical separation at the top of the coal is 1.0 ft. The coal is

Zeigler Coal Mine #11 -2-

Nelson

crushed, and the strata sharply folded along the fault, locally overturned in a sharp kink fold. There is about 1 foot of black shale above the coal, then gray, fine grained nodular-bedded limestone. Where the fault cuts the limestone, there are open fissures all lined with calcite crystals.

On the south side of the entry two faults were seen, 4 to 5 feet apart, with similar dip. The eastern one is the larger and the strike was measured on this one.

2.) Same fault in next heading to south - surveyed footage 10,520 where fault intersects roof line. The strike is N.12°W., the dip 26° on the north rib, 23° on the south rib. Vertical offset on north rib about 0.8 ft. at top of coal, 1.0 ft. at the "blue band". The fault is difficult to trace in the coal, due to limestone dust. The main plane dips as indicated, but the fault branches in places with part going parallel to the bedding and part cutting at a steep angle.

Again where the fault cuts the limestone, there are open voids with calcite crystals, and white mineral effluorescence indicating water seepage. A grooved and striated surface was observed in the roof above the main fault plane. The striae trend N.55-60°E. and the plane dips gently northeast.

Just east of the thrust fault is a vertical open fracture, lined with calcite crystals, in the limestone roof. The fracture trends about N.55E. and is slightly sinuous. It is not a single fracture but a series of "en echelon" cracks. Width is up to 1/4 inch.



FORM 180 W

Zeigler Coal Mine No. 11

-3-

Nelson

3.) Next entry to south.

The thrust fault has made a sharp turn, and cuts diagonally across the intersection on a bearing of $N.50^{\circ}W$. The displacement is only a few inches and the dip is estimated at $20-30^{\circ}$ northeast. Most of the details are hidden by rock dust.

East of the thrust fault are a number of open fractures in the limestone, much as at Loc. 2. Those in the crosscut trend about $N.45^{\circ}E$. and display an en echelon pattern.

4.) About 20 feet east of the thrust fault in the middle intake entry is a wide open, vertical fracture zone in the roof, trending about $N.42^{\circ}E$. There is a zone as much as a foot wide where the rock has fallen out, and one can look 4 or 5 feet up into an open fissure, lined with calcite crystals and containing wedged angular chunks of limestone. Surprisingly, this feature appears to be confined to the roof strata. The coal beneath is solid and the banding is undisturbed. The lower few inches of the Anna Shale also are undisturbed except for a few closed, parallel fractures trending northeast.

Near the south rib the fracture zone widens and curves to a more westerly heading, entering the coal pillar before intersecting the thrust fault.

5.) Crosscut 135, just north of Entry 8. Fracture zone in roof may be a continuation of the one at Loc. 4. The trend is irregular and slightly curved, about east-northeast. In general it is a zone of short open en echelon fractures. Again the disturbance is confined to the limestone and the



FORM 180 W

Zeigler Coal Mine No. 11 -4-

Nelson

upper part of the Anna Shale. The coal is not visibly deformed.

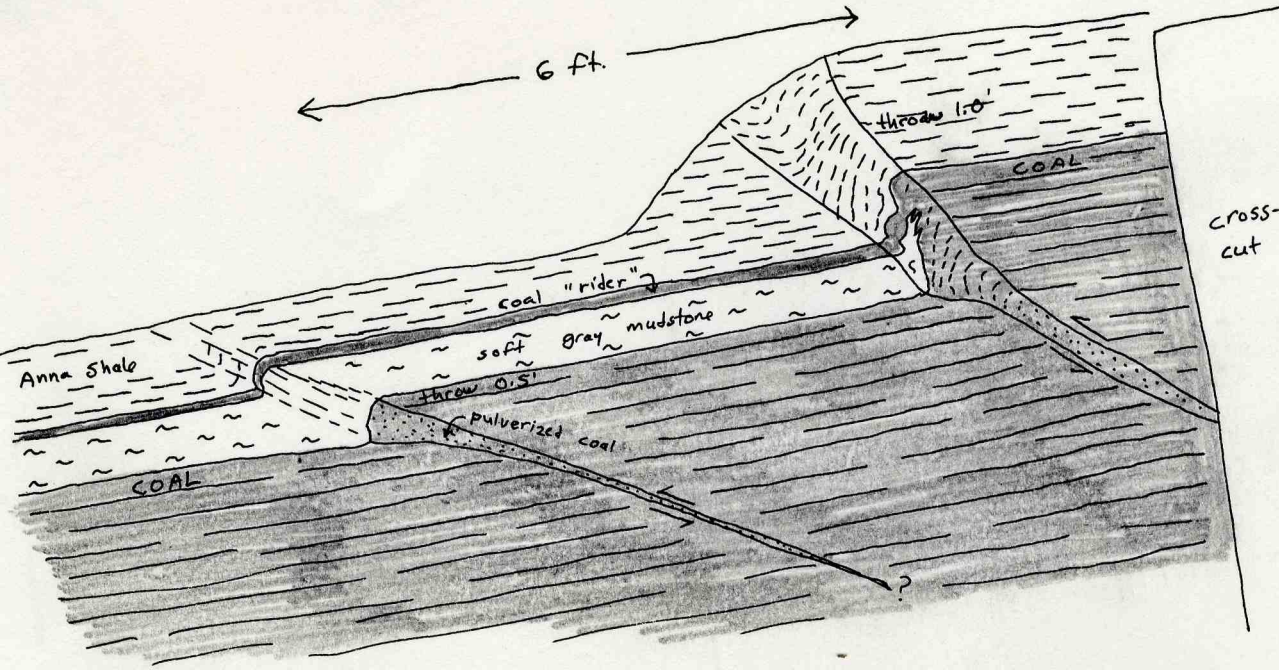
6.) Intersection of entry 9 and crosscut 135. Thrust fault observed only on northwest corner of intersection; apparent dip northeast, vertical offset about 0.3 feet at top of coal. We were unable to find the fault on the south side of the entry; although water is seeping from the roof, no obvious fractures are present. The limestone at this point is nodular and shaly, tends to slab out of the roof. Less than a foot of Anna Shale is present.

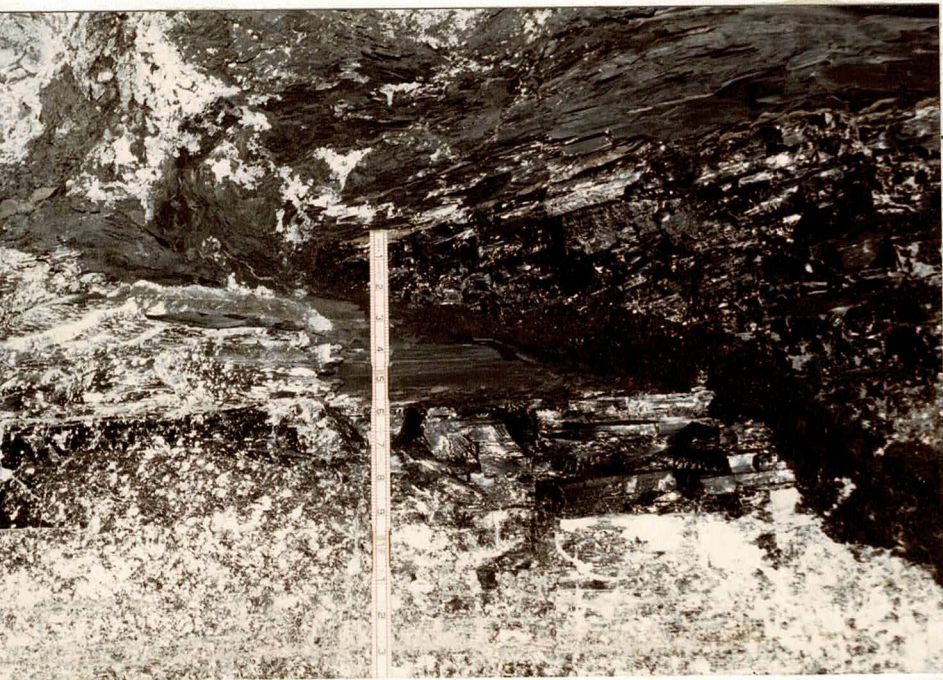
In the next intersection east is more water seepage possibly associated with fractures in the Anna Shale. The fractures trend N.60°E. and look like ordinary joints; no mineralization or visible separation.

7.) Entry 5 (belt) and crosscut 133, intersection. Thrust fault crosses on a heading of about N.22°W. On the north rib it splits into two faults and a good view is had. See sketch.

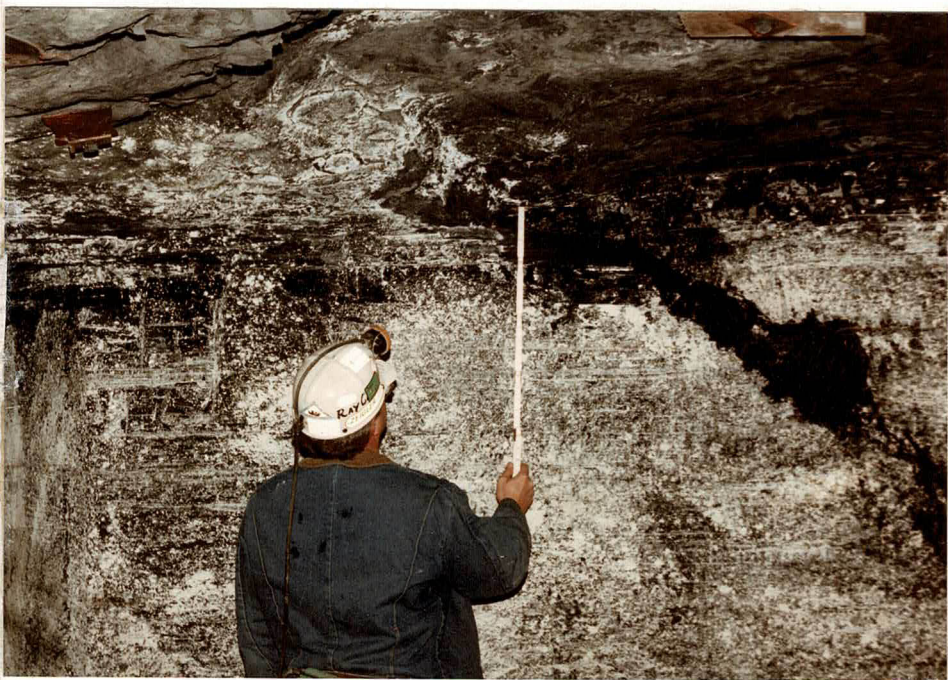
Notice how the coal splits west of the eastern, larger thrust fault in the sketch.

8.) Intersection of entry 3 and crosscut 133. The fault is not visible in the coal because of the way the coal is mined, but two faults can be seen in the roof. The upper one is shown by a grooved, slickensided surface in the roof more or less along the outer line of the crosscut. The plane strikes about N.12°E. and dips 20° east; the grooves or corrugations and striae bear N.75°E. The lower fault is seen above the entry just west of the





Thrust fault on north rib, Location 1.



Closer view of same.



Open fissure in limestone, Location 4. Ray Columbo.



Open fissure. Ruler graduated in tenths of feet.



Open fissure.

intersection and along the west rib of the cross-cut. The shale is crushed, the limestone shattered into sharp angular fragments coated with calcite crystals. The dip is very shallow, about 10° east. Also present are short, open fractures and irregular fissures, trending more or less east-west.

9.) Entry 2, just east of crosscut 133. Thrust fault observed on north rib, with vertical offset about 0.5 ft.; plane dips about 18° east. The fault plane was not positively located on the south rib, but crushed Anna Shale and shattered limestone were noted. The fault planes observed at Loc. 8 cannot be traced into this area.

It appears that there is not a single thrust, but a series of short discontinuous ones. The exposures are not very good due to mud on the ribs. Water is dripping in several places.

10.) Entry 1, about halfway between crosscuts 133 and 134. There appear to be two thrust faults. The lower one can be traced to both sides of the entry and strikes about $N.22^\circ W$. The second, about 4 feet above the first, forms a sharp, small kink band in the north rib, but cannot be traced to the south rib.

Seems highly unlikely that these faults connect with those of the previous note.

11.) Northward extension of crosscut 133 (into 2nd Main North). Fault plane well exposed although it cannot be accurately plotted because these entries are not marked on my base map. The fault plane strikes about $N.25^\circ W$., and dips 35° northeast; in places it dips more gently. The coal is displaced



FORM 180 W

Zeigler Coal Mine No. 11 -6-

Nelson

1-2 feet. Grooves and striations are plainly visible in many places. They bear about N.65°E., indicating nearly pure dip-slip motion.

Faulting continues about another 3 pillars northward to the current face of the 2nd Main North. This area was examined briefly and could not be mapped due to lack of a base map. There seems to be a single fault striking N.20-30°W, dipping 20-30° northeast, and having roughly 1 foot of vertical offset. The general features - water seepage, shattered limestone with calcite crystals sharp folding and crushing of coal and shale - continue as before.

See note 4, visit of 4/3/80; open
vertical fracture.



Mine Notes - Zeigler, C.C. No. 11 - Randolph County

Trip May 25, 1989 by Phil DeMaris,
Anil Atri and Mark Phillips of SIU,
escorted by Mark Hitt.

Coverage Introduction
Energy Shale lens on E. Mains
Far E. Mains
3rd N. Panel Area
2nd N. Panel Area
Summary
Samples Z11-A-1 to -6

Introduction

This is the 5th mine visited on the IMSRP-supported ground stability study. Atri and Phillips had visited sites in W. & N. parts of mine yesterday. Chugh is out-of-country. We planned to visit face of Main East, then N. units off E. Main. We'll also look at Fault on E. Mains near 2nd N. panel. Went u/g at 9:00.

Energy Shale lens at 112-115 c/c on E. Mains

A. We stopped on E. Main travelway at 114 c/c (9045' tag) when we spotted poor roof (Atri's #1).

Examination indicates it is Energy Shale as in Crown II--it has coarse crystalline pyrite just above coal contact, pectins are common (seen later) in bottom foot of shale, and it has non-fissile texture. It is dark gray but tonally distinct with caplamp from Anna; it scratches "gray". We walked back to West edge at 112 c/c; Mark calls this simply "bad top". Here there is .11' dull coal at top of Herrin under thin Energy, much of which fell before bolting. At edge Energy is broken up by intersecting medium-angle slip planes. Dull coal was not seen toward center of lens, but was seen at contact and 20' to south under Energy. It is not certain that this dull coal is primary since low-

20F6, plus maps

angle soft-sediment deformation is common near the lens edge. Sampled block with "normal" Herrin, dull coal, and base of Energy to investigate nature of dull coal (-A-1). Top of Herrin drops 1-2 feet moving into Energy roof areas. At 113 c/c I sampled bottom 0.2' of Energy for carbon analysis; pectins up to 1" wide seen in bottom 0.4' (-A-2). Atri and Phillips examined east edge of lens (115 c/c); lens is roughly 220' across and reaches around 4' thick. Top of Herrin drops 1 1/2' going into area (differential compaction) plus further drops locally due to faulted "grabens" from Energy shale. These slip-defined shallow grabens into top coal cause roof problems. Some coaly matter in bottom 1' of unit also tends to weather and drop shale. Some coal is primary to shale; some is due to uplift of stringers (free) and riders (connected) from Herrin peat due to partial erosion or early lateral movements of shale mud; detailed mapping would clarify this. Bolters we talked to called Energy Shale "white top".

Far East Mains

B. We continued further east to where a set of 4 new overcasts were under construction. At first overcast:

- ca. 4' Limestone, lenticular-bedded at base
Lawson (?); gray shale; w. Lingula and rare plant debris
- 0.2' Tough calc. band w. tan vug fills;
microcrystalline and very hard on bits (A-3)
- 2.4' Lawson(?); gray shale; not mottled,
weakly bedded (calc.?)
- 4.8' Brereton Ls.
- 1.8' Anna Shale

The Brereton Ls. is broadly nodular bedded in bottom 1' and structureless to weakly banded above that. Brer. is 5.2' thick near where A-3 was sampled.

Nice pyrite "dollars" come from this mine and are typically found in bottom 1' of unit; ones I saw were 0.8 to 1.0' up. The typical discoidal concretions ("heads") found in the unit were not seen here, but we were told that you can have "dollars" and "heads" in the same area.

C. We walked east from overcasts and hit another Energy shale lens after 4 to 5 c/c of Anna roof. I sampled base of Energy -A-4 at 176 c/c on north rib of north entry. Energy shale is fairly good roof except where medium-angled slip planes meet the coal. Nearby measured 1.85' Herrin below blue band. We continued east 4-6 more c/c; coal reached 7 1/2' thickness before we turned west. Spoke again to bolters at overcasts and met their Face Boss, Jack Harris. Bolters indicated that limestone was sometimes lost over "white top" (Energy) roof areas, but then hit again around 10' up.

3rd North Panel Area

D. In 3rd N. panel at 4th c/c we saw Anna roof with low-angle slickensides which was less stable roof. Just under 3' of Anna to flat-bottomed Brereton at 5th c/c; area is wet. Room 6 shows slickensided Anna; top 0.3' of underclay was sampled there (-A-5) Underclay is light greenish gray, very friable with discrete carbon traces (med. gray in room light).

E. 8th Room wet area is "raining" from most of the roof bolts. Originally thought this was thick Anna but is actually 1.85' Energy under 2.0' Anna (bottom 0.8' Anna is darker) measured on east side. Brereton roof seen nearby had rolling base with boulder-sized shallow protrusions on the base. Area

which is wet is a topographic low (top of H.) and has at least 2' of Energy. Fresh surfaces of Energy are dryer, so it is being wet from above. Wettest zone runs N-S, but is not from a point source nor a fault plane. Water is prob. from above Brereton; which unit is speculation. Small coalified tree compression seen 1' above base of Energy is 0.4' wide by 1' long seen, and could be longer. Basal 0.15' Energy Sh. sampled (-A-6). These very wet conditions are unusual in mine; maybe a combination of thin or missing Brereton occurring in a local low?

2nd N. Panel Area (See Map A)

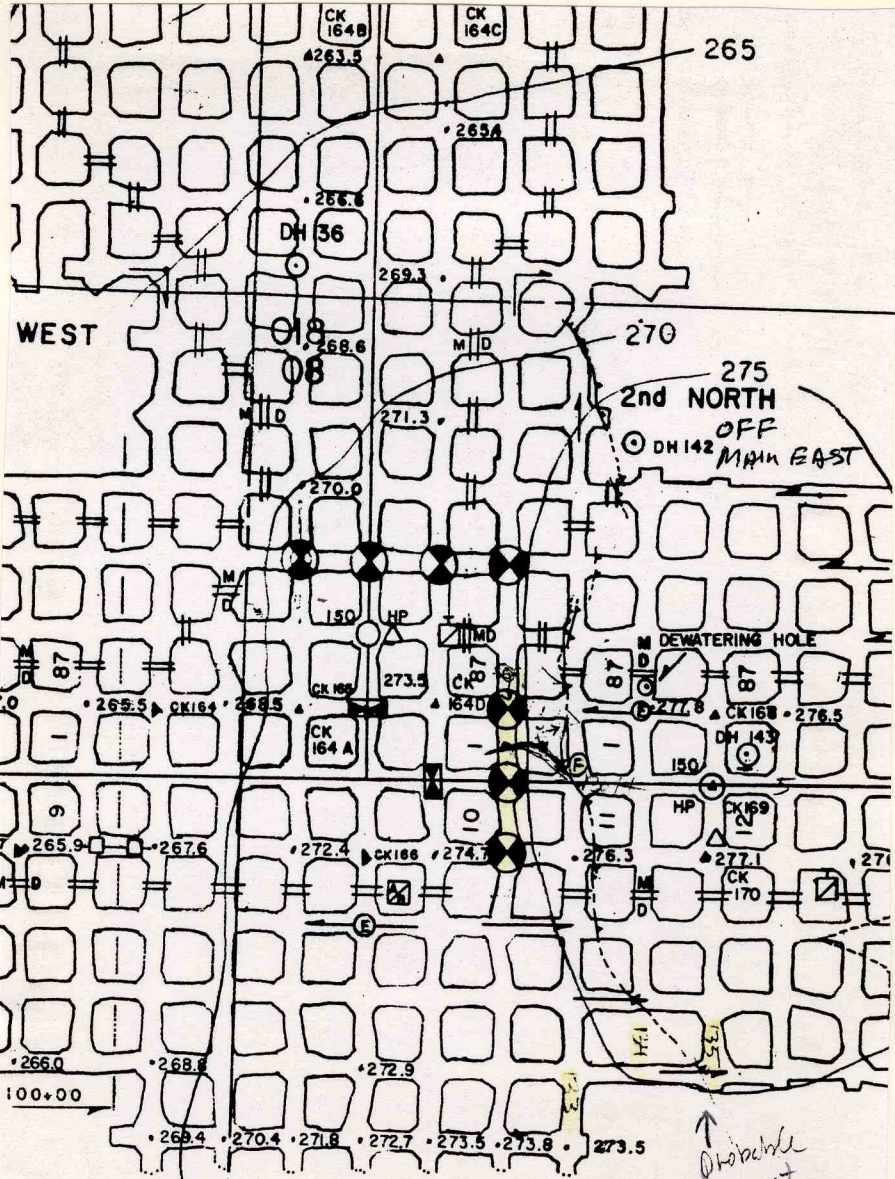
F. On mains on belt entry at 133 c/c pillar corner shows nice double-planned thrust fault (striking roughly NNW-SSE) with pulverized coal zones crossing bedding. One c/c south (track) roof is 1 1/2' Energy, ca. 2' Anna and Brereton above. Fossiliferous 0.15' thick unit ("B5. Ls") is under Anna Shale; was also seen one other place previously. Brereton is nodular and appears to have loosened on contacts over thrust fault area.

G. 2nd N. overcasts (c/c 131); northernmost one shows:
2'⁺ Brereton Ls.
1.5' Anna Shale
1.7' Energy Shale, very carb. at top

The Energy/Anna contact appears gradational here. Between 1st and 2nd o/c thrust fault mapped by J. Nelson unexpectedly crosses entry in E-W direction. Here, only 100' from F. there is a single low-angle plane which appears fully extensional in movement; it appears to strike about 50° out of line with exposure at F. Movement on base of Brereton appears minimal and crushed coal on fault plane is gone; fault plane in Herrin here is a single low-angled plane. Feature needs to be mapped further to be certain of its nature; a miner named Mike indicated to us he had followed the



5/25/89 Map A



↑ Probable
 West
 Fault
 Nelson's
 Notes

Z. No. 11
 5/25/89
 PSD

fault zone north to the 13th crosscut in the panel. Fault indicated on company mine map doesn't always coincide with Nelson's mapping. At 3rd overcast there is 2 1/2' Anna and over 4 1/2' Brereton with a roly base.

Summary

Identification of the brackish-to-marine facies of Energy Shale (found at Crown II) found in lenses is significant, because this is the unit which causes the majority of roof falls. Here it is dark gray and is so dark that it is difficult to distinguish from the Anna. The distinction can be made using texture (non-fissile vs. fissile Anna--at base at least); scratch ("gray" vs. black for Anna) and fossils; pectins (cf. Dunbarella) are especially common in the bottom foot of Energy Sh.

We saw no place with missing Brereton; only at site E. did we even suspect the Brereton was thin. Faults are uncommon: ^{due to faulting} only at F. was there significant loss of Brereton. In general roof stability is good.

Tentative study sites to date are:

1. Main North (day 1)
2. 3rd E. panel/N.M. (day 1)
3. Far E. Mains (day 2)
4. 3rd N. Panel area (day 2)
5. 2nd N. Panel area (day 2)

Samples: Z11-A-1 to -A-6

- A-1 A Block of top coal, dull coal and shale contact for casting [NW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 30]
- A-2 A Basal Energy Shale (c/c 113) with pectins; dark gray (carbon) [NW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 30]
- A-3 B Tough limey bed from "Lawson" interval-rough on bolt hole bits (XRD) (\downarrow below) [SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 29]
- A-4 C Basal Energy Shale, very dark gray (carbon) from 176 c/c [NW $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 29]
- A-5 D Top 0.3' of Herrin underclay, med. gray in daylight [SW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 29]
- A-6 E Basal 0.15' Energy Shale, dark gray (carbon) [SW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 29]

~~A-3~~ XRD examination of this thin persistent band indicates it is predominately calcite with significant amounts of quartz and pyrite and trace amounts of organic carbon and clay. The tan material in the scattered wgs is primarily fluor-apatite. More work on material, especially depositional settings, would be useful. Stratigraphy is unknown.



FORM 180 W

SAMPLE HISTORY

Plant sampled: Central Cleaning Plant

Date: Nov. 20, 1992

Company: Zeigler Holding Co.

Sample ID: SPRTN+11

Michael Reilly, Chairman and CEO

C32800

50 Jerome Lane
Fairview Heights, IL 62208

618-394-2400

Operations ofc - P.O. Box, Coulterville, IL 62237 (618-758-2395)

Joe A. Dixon, Geologist

Company representative: Ira Ruhmann and Alan E. Ashbrok - Chemist

Mine (source of sample):

Colctd by: W. T. Frankie

Spartan and No. 11 Mines

Seam identification: No. 6 Coal Seam

Time of closure:

Mining period represented (dates):

Panel(s) & location(s) in mine: Mine No. 11 from northeast part of mine.
Spartan Mine from southwest part of mine.

Mine locations (descriptive):

1/4 or footage	section twp	rge
----------------	-------------	-----

Type of Preparation Plant: Built by McNally Pittsburg Inc., plant operates at approximately 1,100 tons per hour, Uses 2 Raw Coal Jigs, 35 Primary Hydrocyclones (air and water), 10 Classifying Cyclones. I have copy of prep plant flow diagram. Typical run = 6,265 Raw tons, 4,221 clean tons. Product is steam coal 2" actually 1 1/2" x 0.

Sampling point: at transfer point between plant and lean coal silo.

increments: pri. every 4 min.,
secondary every 20 sec.

Belt (describe position in plant)

Train load unit trains

Truck X

Company's sampling device (yes)

Type: two stage sampler

Other (describe) coal sample size is 4-8 mesh

Procedures (describe other aspects):

Additional Data: As of 10/31/92 they have processed 2,538,628 tons of raw coal from Mine No. 11 (58%) and 1,837,301 tons of raw coal from Spartan Mine (42%)

COAL, March 1996 :

Zeigler idled Mine # 11 in late Dec. '95 laying off 150 workers. Spartan Mine to run out of reserves in '97 at which time Mine # 11 may be reopened.

The depressed coal market has caused Zeigler Coal Holding to cut back one production unit at its Zeigler No. 11 and Spartan mines in southern Illinois, idling about 50 miners in the process.

Joe Angleton, president of the United Mine Workers of America in Illinois, said the moves were made because "there's no spot market out there ... there's been anticipation of this coming." Zeigler officials could not be reached for comment.

Flooding on the Mississippi River also has caused transportation problems for Zeigler.

A dispute between New England Electric Power Co. and Intracoastal Bulk Carriers over whether the utility has a contractual right to purchase the *Energy Independence*, an

June 12, 1995 • COAL WEEK

+	+	+	+	+	+	+	h
+	+	+	+	+	+	+	g
+	+	+	+	+	+	+	f
+	+	+	+	+	+	+	e
+	+	+	+	+	+	+	d
+	+	+	+	+	+	+	c
+	+	+	+	+	+	+	b
+	+	+	+	+	+	+	a
8	7	6	5	4	3	2	1

By _____ Date _____

Quadrangle _____

County _____ Sec. _____ T. _____ R. _____

Thickness

Top

Bottom

News Gazette 10-1995

Zeigler may close two mines, idle another

FAIRVIEW HEIGHTS (AP) — Zeigler Coal Holding Co. may close two Franklin County mines and idle one in Randolph County next year, affecting up to 710 workers.

That represents 11 percent of the state's 6,200 coal mining jobs. And an additional 160 Zeigler jobs could be lost in 1997, when the Spartan Mine in Randolph County is expected to run out of coal, the company said Thursday.

Old Ben Mine No. 26 near Sesser is expected to run out of coal in the third or fourth quarter of next year, Zeigler spokesman Vic Svec said. And the Old Ben Mine No. 24 near Benton probably will close in the first quarter of 1996, he said.

The 260 workers at Mine No. 26 and the 300 at Mine No. 24 got 60-day layoff notices in July but learned in August that the mines would stay in production for the rest of the year because of stronger-than-expected coal sales. But Zeigler does not expect enough sales next year to keep both mines open, Svec said. And in Randolph County, Zeigler Mine No. 11 near Coulterville and its 150 workers probably will be idled indefinitely next year, Svec said. It could reopen in 1997 when the Spartan mine runs out of coal, he said.

Zeigler's contract with the Tennessee Valley Authority, the primary customer for the two Franklin County mines, expires next year and probably will not be renewed, Svec said.

"We are making a last-ditch effort to find a home for that coal, but given the indicators that we've seen, I'd be lying if I said we were optimistic," he said.

Coal Week, Nov. 18, 1996; UMWA Distr. 12 President Joe Angleton confirmed that Zeigler 11 is back in operation (at same time he indicated that Spartan mine may stay open till June/July 1997 to exhaust its reserves if an agreement with unidentified customer can be reached; see there)

News Gazette Oct 1995