County ..... WELLS
T ... 27 N ..... R ... 11 E .....
Sec ..... NW SE 29 .....
Other Survey .....

Quarry or Pit .. X .... Core ... X ... Dim ..... Other .....
Name .. Rockford Quarry .. Abandoned .....
Former Names .....
. .....
Operator .... Heller Stone Company .....
Former Operators .....

COAL AND INDUSTRIAL MINERALS SECTION
INDIANA GEOLOGICAL SURVEY
DEPARTMENT OF NATURAL RESOURCES
611 NORTH WALNUT GROVE
BLOOMINGTON, INDIANA 47401

MEMORANDUM REPORTS BY:

	Name	Date
1	Dallas Fiandt	August 16, 1950
2	D. J. McGregor	July 21, 1953
3	J. A. Sunderman	Nov. 1960
4	A. P. Pinsak & J. A. Sunderman	July 1970
5		
6		
7		
8		
9		
10		

REMARKS

Description of quarry from stratigraphy of the Silurian rocks of northern Indiana
Chemical analyses

Description of core

Description of section from guidebook
Abandoned in 1962 when company moved to Markle in Huntington County.

Core description of Heller Stone Company core

(from floor of quarry)

Rockford, Wells County

NE¼NE¼SW¼ sec. 29, T. 27 N., R. 11 E.

(2220 ft. E. of W. line of sec. 29;
2460 ft. N. of S. line of sec. 29.)

(Quarry face near this point is about 32 ft. high and has 4 to 6 ft. of glacial drift over bedrock.)

at top of core = quarry floor

Altitude: 788 ft.

Jack A. Sunderman

November, 1960

Unit No.	Range (feet)	Thickness (feet)	Description	Hand sample No. (L60-)	Depth
12	0.0 6.3 3.7	6.3	Dolomite: light gray with some medium gray mottling; very fine-grained; fossil fragmental and (or) carbonate mud-dolomitized; slightly porous; some powdery white silica surrounding thin gray chert bands; interval from 24.2 to 24.8 ft. removed by Geophysics Section.	RS:482 CS:481	4.4
				RS:480	14.3
11	6.3 29.9	23.6	Argillaceous dolomite: tan-gray; very fine-grained; clayey carbonate mud-dolomitized (?); dense to slightly porous; dark tan-gray finely braided organic partings; scattered spots of soft white non-effervescent mineral; a few grains of pyrite.	479 477 CS:478 725 476	21.2 28.4 6.3-23.7 23.7-24.3 24.3-29.9
10	29.9-31.2	1.3	Argillaceous dolomite: dull light gray; very fine-grained; clay-carbonite mud(?)-dolomitized(?); slightly porous; a few small pyrite crystals; a few thin clay partings.	RS:475 CS:475	30.6
9	31.2-44.1	12.9	Dolomite: blue-gray to gray brown and white, mottled very fine-grained; carbonate mud(?)-dolomitized; porous; a few small vugs; small pyrite crystals line some vugs; white mottles consist of soft, powdery material; intervals from 41.9 to 44.1 ft. and 36.0 to 36.7 removed by Geophysics Section.	RS:473 471 CS:472 724 470	32.2 41.3 31.2-35.3 35.3 36.0 36.0-41.9
8	44.1-51.2	7.1	Dolomite: light gray to white with faint blue-gray mottling; fine-grained; fossil-fragmental (?) dolomitized; very porous (fine pores), a few ½-in. vugs; a few small stylolites.	RS:469 CS:723 468	49.5 41.9-44.1 44.1-51.2
7	51.2-55.9	4.7	Argillaceous dolomite: tan with some mottled tan and blue-gray; very fine-grained; has olive-gray wavy ~~organic~~ carbonaceous partings about 1 in. apart; porous; a few small pyrite grains; some coarse grained calcite crusts on vertical surfaces; fossil fragmental (and calcite mud?)-dolomitized	RS:467 CS:466	54.9 51.2-55.9
6	55.9 61.7	5.8	Dolomite: medium tan and dull blue-gray, mottled; very fine-grained; finely porous, with some small vugs; a few medium size (1 in. deep) stylolites, a few brachiopod and other fossil casts recognizable; fossil fragmental-dolomitized.	RS:465 CS:464	59.5 55.9-61.7

Unit No.	Range (feet)	Thickness (feet)	Description	Hand sample No.(L60-)	Depth
					64.4
5	61.7 68.2	6.5	Dolomite: light tan faintly mottled with light blue-gray; fine-grained, dolomitized-fossil fragmental (?), a few small stylolites; uniformly porous (small pores); bottom 6 in. is medium tan, more dense than above. Intervals from 66.1 to 67.7 and 61.7 to 62.3 removed by Geophysics Section	RS:463 CS:722 462 721 461	61.7- 62.3 62.3- 66.1 66.1- 67.7 67.7- 68.2
4	68.2- 70.0	1.8	Argillaceous, ~~organic~~ carbonaceous dolomite: gray-tan and black; has shiny brown to black very irregular interlaced carbonaceous partings $\frac{1}{4}$ to $\frac{1}{2}$ in. apart; dolomite is tan, porous very fine-grained, dolomitized-fossiliferous; small vugs probably are molds of obliterated fossils.	RS:460 CS:459	69.6 68.2- 70.0
3	70.0 83.4	13.4	Argillaceous, ~~organic~~ carbonaceous dolomite; gray and black; has shiny black irregular (knobby) organic partings $\frac{1}{2}$ to 1 in. apart; a few small (6 in.) intervals free of partings; dolomite is dense lithographic, with a few small pyrite grains, a few small calcite veins and crystals.	RS:458 457 CS:456	78.3 80.3 70.0- 83.4
2	83.4 85.6	2.2	Dolomite or dolomitic limestone: gray-tan, some has greenish tinge; very fine-grained; has a few wavy gray-green shale partings; slightly porous; has a few large (0.1-0.5in.) calcite crystals and thin calcite veins.	RS:455 CS:454	84.6 83.4- 85.6
1	85.6- 93.0	7.4	Dolomite or dolomitic limestone: tan; very fine-grained; dolomitized-fossiliferous, or fossil fragmental; has small pores; most fossils obliterated, a few poorly preserved molds are present in the form of small vugs; intervals from 90.6 to 92.6 ft. and 89.1 to 90.1 ft. removed by Geophysics Section.	CS 452 720 451 719 450	85.6- 89.1 89.1- 90.1 90.6 92.6 93.0

MEMORANDUM REPORT BY DUNCAN J. MC GREGOR

HELLER STONE COMPANY PLANT AND QUARRY AT ROCKFORD, WELLS COUNTY Loc 108

Date of field examination. -- July 21, 1953.

Location. -- A plant and quarry operated by Mr. Gerald Heller is located on the east edge of Rockford in the NW¼SE¼ sec. 29, T. 27 N., R. 11 E.

Geology. -- Fiandt's memorandum report of August 16, 1950, discusses adequately the geology of the quarry. The thick section he measured was the result of the dip of the beds. Because Fiandt's section could be followed, it was not deemed necessary to collect further samples.

Operation. -- Operation is at a standstill because there is little market in the area for crushed stone and agriculture limestone. Mr. Heller indicated he would close operations at the quarry in the near future unless there was an increase in sales. Quarry operation will not go deeper. According to Mr. Heller, the cost of deepening the quarry floor would equal or exceed the cost of securing more land.

Production. -- New screens were installed last year, which increased production about one-half. It is estimated that yearly production could reach 100,000 tons.

References cited. --

Fiandt, Dallas, 1950, Heller Stone Company Quarry at Rockford, Wells County, Indiana, unpublished memorandum report, 4 pp.

Respectfully submitted,

Duncan J. McGregor

Duncan J. McGregor.

August 21, 1950

MEMORANDUM REPORT BY DALLAS FIANDT

HELLER STONE CO. QUARRY AT ROCKFORD, WELLS COUNTY

Date of field examination.--August 16, 1950.

Location.--On the east edge of Rockford, in Wells County, a quarry and crushing plant are operated by the Heller Stone Co., in the NW¼SE¼ sec. 29, T. 27 N., R. 11 E.

Ownership.--The operation is the property of Mr. Gerald Heller, Bluffton, Indiana. Twenty-five acres are owned in fee by the company.

Geology.--The physiographic province in which the quarry is situated has been named the Tipton Till plain (Malott, 1922). The topography is flat to gently rolling with only slight local relief. Rock Creek has cut through the glacial drift in places and has exposed bedrock along its course for several miles in the vicinity of Rockford (Ward, 1906).

The quarry is stratigraphically located in the inter-reef facies of the Liston Creek limestone. The reef core is not exposed in the quarry and probably lies to the south. North dips as high as 16 degrees can be seen in the east and west walls of the quarry. (See accompanying map). Small lenses of white,pure sandstone were found along bedding planes where the dip is greatest. The east wall of the quarry has been corroded, apparently by sulfuric acid, which may have resulted from the breakdown of pyrite.

The following section was measured and the quarryable units sampled:

Unit	Description	Thickness in feet
8	Soil: tan, glacial, clay till.	3.0
	Liston Creek formation	
7	Dolomite: tan and gray, very porous, massive, granular. Chip sample F50-287. Rock sample F50-288 taken 6.0 feet from base of unit.	28.8

F50-287

6	Dolomitic limestone: Gray, thin-bedded, dense, calcareous, finely granular. Chip sample F50-285. Rock sample F50-286 taken 8.0 feet from top of unit.	26.0
5	Dolomite: Gray and tan, very porous, massive, saccharoidal. Contains lenses of white sandstone at the base. Chip sample F50-283. Rock sample F50-284 taken 2.8 feet from base of unit.	18.0
4	Dolomite: Tan to gray, thin-bedded, granular. Contains much nodular and bedded chert. Chip sample F50-281. Rock sample F50-282 taken 9.6 feet from base of unit.	21.0
3	Dolomite: Light gray, well-bedded, finley laminated, argillaceous, granular. Chip sample F50-278. Rock sample F50-280 was taken 1.5 feet from top of unit.	4.9
2	Dolomite: Brown to light gray, porous, cherty, rubbly, calcareous, granular. Becomes more crystalline toward top. Chip sample F50-278. Rock sample F50-279 taken 4.4 feet from base of unit.	19.1
1	Dolomite: Gray, dense, slightly, porous, laminated in part, thin-bedded, argillaceous. Rock sample F50-277 taken 0.8 feet from top of unit. Taken in sump and not chip sampled.	3.0
	Total thickness of Liston Creek formation	120.8
	Total thickness of measured section	123.8

The above total thickness includes the thickness of each bed as it dipped into the quarry floor and samples were taken nearly horizontally along the face normal to the dip of the individual beds. The measurement of section may be slightly inaccurate, as it was often impossible to hold a steel tape normal to the dip of the beds (see accompanying map).

Quarrying operations.--The entire section is being quarried in one level. The stone is trucked to the primary crusher and taken from there to the secondary crushers on a conveyor belt.

Equipment in use includes a water well drilling rig, a 1-yard Northwest shovel, an 18 by 24 inch jaw crusher, a 20 by 30 inch 2 roll crusher, a 40 by 22 inch 3 roll crusher, a combination 1-yard clam shell and drag line, and 4 quarry trucks. The company does its own stripping. Electricity furnishes power for the operation.

All products are hauled by truck. Nearest rail connection would be the New York Central at Liberty Center, a road distance of 5.5 miles.

Eight employees carry on the present operation.

Production.--The present daily production is approximately 550 tons, which is about half capacity. The production is 90 percent road rock and 10 percent agricultural lime.

Reserves.--Of the 25 acres owned by the company, 20 are estimated to be quarryable. If the quarry depth, 30 feet, remains constant, 4,557,800 tons should be obtained. An acre would produce 227,890 tons of stone. The quarry cannot be greatly deepened without taking it so far below the level of Rock Creek that the water could not be handled.

Respectfully submitted,

Dallas Fiandt

Dallas Fiandt
Party Chief

Cumings, E. R. and Shrock, R. R. (1928) The geology of the Silurian rocks of northern Indiana, Ind. Dept. Cons., Pub. 75, 226 pages, 45 figs., maps.

Malott, C. A. (1922) The physiography of Indiana, in Handbook of Indiana Geology, Ind. Dept. Cons., Pub. No. 21, p. 59-256.

Ward, L. C. (1906) Roads and road materials of northern Indiana, Ind. Dept. of Geol. and Nat. Res., 30th Ann. Rept.

This quarry closed 1962 when company moved to Marble in Huntington Co.

Mileage between stops	
1.2	STOP. TURN LEFT (east) onto Lower Huntington Road at T-junction. Enter area of ground moraine.
1.6	STOP. TURN HARD RIGHT (south) onto Baer Avenue and State Route 3 at Y-junction.
6.4	Enter ground-moraine area of low relief.
9.4	Enter area of Wabash Moraine.
10.6	SLOW. Village of Zanesville. BEAR LEFT (south) onto State Route 303 at T-junction in town of Zanesville.
10.7	Enter Wells County.
13.0	Reenter area of ground moraine. Drift is less than 50 feet thick, here to stop 5.
17.1	SLOW. Cross the Erie Railroad tracks.
17.2	STOP. Continue STRAIGHT AHEAD on State Route 303 across U. S. Route 224.
18.4	STOP. Continue STRAIGHT AHEAD on State Route 303 across State Route 116.
19.0	Cross the Wabash River. There are very few terraces along the upper reaches of the Wabash.
22.0	TURN RIGHT (west) onto blacktop county road (100 N).
23.8	TURN RIGHT (north) into quarry of the Heller Stone Co. Park as directed.
24.2	STOP 5. HELLER STONE CO. QUARRY. Time allowed for this stop is 30 MINUTES.

The quarry is in the NE¼SW¼ sec. 29, T. 27 N., R. 11 E., at Rockford, Wells County.

The Heller Stone Co. has cut a series of cores at points between 4 miles northwest and northeast of this stop and a 93-foot core from the floor of this quarry. (See Heller Stone Co. Crevistón no. 2 in Appendix.) All the deeper cores penetrated a 15- to 28-foot nodular shaly dolomite at the expectable Waldron position. The top of this zone lies 55 feet below the quarry floor. At one of the northern points characteristic Mississinewa Shale was found to a depth of 40 feet in a hole that did not begin in reef or reef-detrital rocks and that was not drilled deeper. The projection of these data to this quarry suggests that the rocks here lie in the basal part of and below the stratigraphic position of the Mississinewa Shale. The exposed section is complicated by its position in and near biohermal structures.

The attitude and wedging of the beds, together with older reports on this quarry, which record a much greater stratigraphic thickness (measured normal to bedding) than now evident, suggest that the biohermal core lay to the southeast of the diagrammed section (fig. 8).

The following section was measured and described at the middle of the west wall of the quarry by Arthur P. Pinsak and Jack A. Sunderman, July 1960.

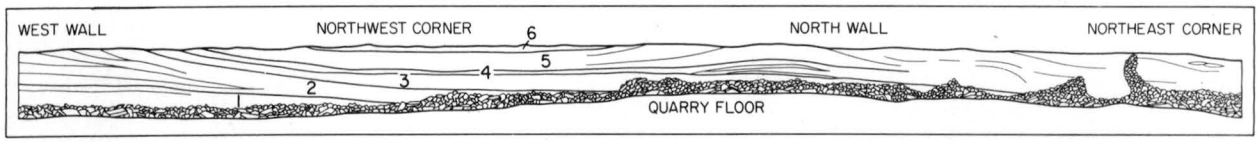

Figure 8.--Diagram of the walls in the northwestern part of the Heller Stone Co. quarry at Rockford, Wells County (stop 5). Compiled from a composite photograph; height of quarry face is about 30 feet. Some of the more conspicuous bedding surfaces are shown to indicate structural relationships in the flank of a bioherm, but they do not show magnitude of bedding. For description of numbered units see measured section.

Silurian System:	Ft
Mississinewa Shale (a reef-flank facies) and (or) lower Niagaran rocks, 29.7 ft exposed:	
6. Dolomite, wavy and thin-bedded, gray to gray-tan, fine- to medium-grained, fossiliferous, vuggy with crystalline dolomite; has shaly and carbonaceous partings; weathers rubbly	3.1 to 4.2
5. Dolomite, thin-bedded, light-gray to tan-gray, fine- to medium-grained, fossil-fragmental, vuggy, fossiliferous; porosity is associated especially with many fossil molds and casts	7.5
4. Dolomite, cherty, tan, fine-grained, fossiliferous, vuggy; chert is dark gray brown to light gray porcellaneous with corroded boundaries; unit is bounded above and below by gray-green shaly partings; unit thickens northward to occupy much of the north quarry wall becoming very cherty and containing wavy argillaceous partings; weathers rubbly	1.5
3. Dolomite, thin- to medium-bedded, banded gray and dark-gray, fine-grained, argillaceous; has partings of calcareous shale	9.5
2. Dolomite, cherty, mottled tan and gray, fine-grained, medium-bedded, vuggy; chert is dark gray nodular, concentrated in bands	6.0
1. Dolomite, white to light-gray, glauconitic, fine-grained, pyritic; glauconite concentrated especially on bedding planes; upper surface is the quarry floor; exposed	1.0
The altitude of the quarry floor is 782 ft.	29.7

Lenses of white sandstone occur at the top of the north face of the quarry. The sandstone is fine grained to medium grained and calcareous and consists of well-rounded and sorted grains. Maximum thickness of the sand lenses is 2 feet, and some of the top surfaces dip as much as 45° (S70°W). Similar sand lenses are associated with small biohermal and biostromal masses that may be seen near many Niagaran bioherms.

At the west end of the north wall pyritiferous high-alumina high-manganese shale beds occur within unit 4. The shale attains a maximum thickness of 3 feet, contains chert nodules and some ferric iron stain, and exhibits sulfur and calcium sulfate efflorescence on exposed surfaces. The bedding is highly contorted at this point and has high dips in all directions.

Mileage between stops

0.0 Return to vehicles and retrace route to quarry entrance.

0.4 STOP. TURN LEFT (east) onto blacktop county road (100 N).

2.1 STOP. TURN RIGHT (south) onto State Route 303.

SPECTROCHEMICAL ANALYSES OF THE HELLER STONE COMPANY PANT AND QUARRY AT ROCKFORD, WELLS COUNTY

SAMPLE NO.	UNIT	ROCK UNIT		TH. FT.	% $CaCO_3$	% $MgCO_3$	% SiO_2	% Al_2O_3	% Fe_2O_3	% TiO_2	% MnO	CALC. CO_2	CHEM. CO_2	IGN. LOSS	% S	% P_2O_5
F50-287	7	Liston	Creek	28.8	54.3	40.80	3.44	0.720	0.330	0.000	.0000	45.2	45.0	45.7	0.033	0.004
F50-285	6	"	"	26.0	55.0	37.00	5.50	1.460	0.440	0.062	.0000	43.5	43.3	~~00.0~~	0.138	0.007
F50-283	5	"	"	18.0	55.8	39.60	2.94	0.790	0.400	0.044	.0000	45.2	44.9	45.4	0.124	0.005
F50-281	4	"	"	21.0	49.0	35.30	13.40	1.150	0.470	0.055	.0000	40.0	39.0	~~00.0~~	0.225	0.006
F50-278	2 - 3	"	"	24.0	51.0	35.80	11.00	1.060	0.460	0.057	.0000	41.1	40.7	~~00.0~~	0.175	0.006

Core description of Heller Stone Company core (from floor of quarry)
Rockford^ Wells County
NE¼NE¼SW¼ sec. 29^ T. 27 N.^ R. 11 E.
(2220 ft. E. of W. line of sec. 29;
2460 ft. N. of S. line of sec. 29.)
(Quarry face near this point is about 32 ft.
high and has 4 to 6 ft. of glacial drift over bedrock.)
Altitude: 788 ft.
Jack A. Sunderman^ November^ 1960

Unit	Description	Range		Thick-ness	Depth	Sample
12	Dolomite: light gray with some medium gray mottling; very fine-grained; fossil fragmental and (or) carbonate mud-dolomitized; slightly porous; some powdery white silica surrounding thin gray chert bands; interval from 24.2 to 24.8 ft. removed by Geophysics Section.	0.0	6.3	6.3	4.4	RS-0482
12	Dolomite: light gray with some medium gray mottling; very fine-grained; fossil fragmental and (or) carbonate mud-dolomitized; slightly porous; some powdery white silica surrounding thin gray chert bands; interval from 24.2 to 24.8 ft. removed by Geophysics Section.	3.7				CS-0481
11	Argillaceous dolomite: tan-gray; very fine-grained; clayey carbonate mud-dolomitized (?); dense to slightly porous; dark tan-gray finely braided organic partings; scattered spots of soft white non-effervescent mineral; a few grains of pyrite.	6.3	29.9	23.6	14.3	RS-0480
11	Argillaceous dolomite: tan-gray; very fine-grained; clayey carbonate mud-dolomitized (?); dense to slightly porous; dark tan-gray finely braided organic partings; scattered spots of soft white non-effervescent mineral; a few grains of pyrite.				21.2	RS-0479
11	Argillaceous dolomite: tan-gray; very fine-grained; clayey carbonate mud-dolomitized (?); dense to slightly porous; dark tan-gray finely braided organic partings; scattered spots of soft white non-effervescent mineral; a few grains of pyrite.				28.4	RS-0477
11	Argillaceous dolomite: tan-gray; very fine-grained; clayey carbonate mud-dolomitized (?); dense to slightly porous; dark tan-gray finely braided organic partings; scattered spots of soft white non-effervescent mineral; a few grains of pyrite.				6.3	CS-0478
11	Argillaceous dolomite: tan-gray; very fine-grained; clayey carbonate mud-dolomitized (?); dense to slightly porous; dark tan-gray finely braided organic partings; scattered spots of soft white non-effervescent mineral; a few grains of pyrite.				23.7	CS-0725
11	Argillaceous dolomite: tan-gray; very fine-grained; clayey carbonate mud-dolomitized (?); dense to slightly porous; dark tan-gray finely braided organic partings; scattered spots of soft white non-effervescent mineral; a few grains of pyrite.				24.3	CS-0476

10	Argillaceous dolomite: dull light gray; very fine-grained; clay-carbonate mud (?) -dolomitized (?); slightly porous; a few small pyrite crystals; a few thin clay partings.	29.9	31.2	1.3	30.6	RS-0475
10	Argillaceous dolomite: dull light gray; very fine-grained; clay-carbonate mud (?) -dolomitized (?); slightly porous; a few small pyrite crystals; a few thin clay partings.					CS-0474
9	Dolomite: blue-gray to gray brown and white^ mottled very fine-grained; carbonate mud (?)-dolomitized; porous; a few small vugs; small pyrite crystals line some vugs; white mottles consist of soft^ powdery material; intervals from 41.9 to 44.1 ft. and 36.0 to 36.7 removed by Geophysics Section.	31.2	44.1	12.9	32.2	RS-0473
9	Dolomite: blue-gray to gray brown and white^ mottled very fine-grained; carbonate mud (?)-dolomitized; porous; a few small vugs; small pyrite crystals line some vugs; white mottles consist of soft^ powdery material; intervals from 41.9 to 44.1 ft. and 36.0 to 36.7 removed by Geophysics Section.				41.3	RS-0471
9	Dolomite: blue-gray to gray brown and white^ mottled very fine-grained; carbonate mud (?)-dolomitized; porous; a few small vugs; small pyrite crystals line some vugs; white mottles consist of soft^ powdery material; intervals from 41.9 to 44.1 ft. and 36.0 to 36.7 removed by Geophysics Section.				31.2	CS-0472
9	Dolomite: blue-gray to gray brown and white^ mottled very fine-grained; carbonate mud (?)-dolomitized; porous; a few small vugs; small pyrite crystals line some vugs; white mottles consist of soft^ powdery material; intervals from 41.9 to 44.1 ft. and 36.0 to 36.7 removed by Geophysics Section.				35.2	CS-0724
9	Dolomite: blue-gray to gray brown and white^ mottled very fine-grained; carbonate mud (?)-dolomitized; porous; a few small vugs; small pyrite crystals line some vugs; white mottles consist of soft^ powdery material; intervals from 41.9 to 44.1 ft. and 36.0 to 36.7 removed by Geophysics Section.				36.0	CS-0470
8	Dolomite: light gray to white with faint blue-gray mottling; fine-grained; fossil-fragmental (?) dolomitized; very porous (fine pores)^ few ½-in. vugs; a few small stylolites.	44.1	51.2	7.1	49.5	RS-0469
8	Dolomite: light gray to white with faint blue-gray mottling; fine-grained; fossil-fragmental (?) dolomitized; very porous (fine pores)^ few ½-in. vugs; a few small stylolites.				41.9	CS-0723
8	Dolomite: light gray to white with faint blue-gray mottling; fine-grained; fossil-fragmental (?) dolomitized; very porous (fine pores)^ few ½-in. vugs; a few small stylolites.				44.1	CS-0468

7	Argillaceous dolomite: tan with some mottled tan and blue-gray; very fine-grained; has olive-gray wavy organic partings about 1 in. apart; porous; a few small pyrite grains; some coarse grained calcite crusts on vertical surfaces; fossil fragmental (and calcite mud?)-dolomitized	51.2	55.9	4.7	54.9	RS-0467
7	Argillaceous dolomite: tan with some mottled tan and blue-gray; very fine-grained; has olive-gray wavy organic partings about 1 in. apart; porous; a few small pyrite grains; some coarse grained calcite crusts on vertical surfaces; fossil fragmental (and calcite mud?)-dolomitized				51.2	CS-0466
6	Dolomite: medium tan and dull blue-gray^ mottled; very fine-grained; finely porous^ with some small vugs; a few medium size (1 in. deep) stylolites^ a few brachiopod and other fossil casts recognizable; fossil fragmental-dolomitized.	55.9	61.7	5.8	59.5	RS-0465
6	Dolomite: medium tan and dull blue-gray^ mottled; very fine-grained; finely porous^ with some small vugs; a few medium size (1 in. deep) stylolites^ a few brachiopod and other fossil casts recognizable; fossil fragmental-dolomitized.				55.9	CS-0464
5	Dolomite: light tan faintly mottled with light blue-gray; fine-grained^ dolomitized-fossil fragmental (?)^ a few small stylolites; uniformly porous (small pores); bottom 6 in. is medium tan^ more dense than above. Intervals from 66.1 to 67.7 and 61.7 to 62.3 removed by Geophysics Section	61.7	68.2	6.5	61.7	RS–463
5	Dolomite: light tan faintly mottled with light blue-gray; fine-grained^ dolomitized-fossil fragmental (?)^ a few small stylolites; uniformly porous (small pores); bottom 6 in. is medium tan^ more dense than above. Intervals from 66.1 to 67.7 and 61.7 to 62.3 removed by Geophysics Section				62.3	CA-0722
5	Dolomite: light tan faintly mottled with light blue-gray; fine-grained^ dolomitized-fossil fragmental (?)^ a few small stylolites; uniformly porous (small pores); bottom 6 in. is medium tan^ more dense than above. Intervals from 66.1 to 67.7 and 61.7 to 62.3 removed by Geophysics Section				66.1	CA-0462
5	Dolomite: light tan faintly mottled with light blue-gray; fine-grained^ dolomitized-fossil fragmental (?)^ a few small stylolites; uniformly porous (small pores); bottom 6 in. is medium tan^ more dense than above. Intervals from 66.1 to 67.7 and 61.7 to 62.3 removed by Geophysics Section				67.7	CA-0721
5	Dolomite: light tan faintly mottled with light blue-gray; fine-grained^ dolomitized-fossil fragmental (?)^ a few small stylolites; uniformly porous (small pores); bottom 6 in. is medium tan^ more dense than above. Intervals from 66.1 to 67.7 and 61.7 to 62.3 removed by Geophysics Section				68.2	CA-0461

4	Argillaceous^ organic dolomite: gray-tan and black; has shiny brown to black very irregular interlaced partings ¼ to ½ in. apart; dolomite is tan^ porous very fine-grained^ dolomitized fossiliferous; small vugs probably are molds of obliterated fossils.	68.2	70.0	1.8	69.6	RS-0460
4	Argillaceous^ organic dolomite: gray-tan and black; has shiny brown to black very irregular interlaced partings ¼ to ½ in. apart; dolomite is tan^ porous very fine-grained^ dolomitized fossiliferous; small vugs probably are molds of obliterated fossils.				68.2	CS-0459
3	Argillaceous^ carbonaceous dolomite; gray and black; has shiny black irregular (knobby) organic partings ½ to 1 in. apart; a few small (6 in.) intervals free of partings; dolomite is dense lithographic^ with a few small pyrite grains^ a few small calcite veins and crystals.	70.0	83.4	13.4	78.3	RS-0458
3	Argillaceous^ carbonaceous dolomite; gray and black; has shiny black irregular (knobby) organic partings ½ to 1 in. apart; a few small (6 in.) intervals free of partings; dolomite is dense lithographic^ with a few small pyrite grains^ a few small calcite veins and crystals.				80.3	RS-0457
3	Argillaceous^ carbonaceous dolomite; gray and black; has shiny black irregular (knobby) organic partings ½ to 1 in. apart; a few small (6 in.) intervals free of partings; dolomite is dense lithographic^ with a few small pyrite grains^ a few small calcite veins and crystals.				70.0	CS-0456
2	Dolomite or dolomitic limestone: gray-tan^ some has greenish tinge; very fine-grained; has a few wavy gray-green shale partings; slightly porous; has a few large (0.1-0. in.) calcite crystals and thin calcite veins.	83.4	85.6	2.2	84.6	RS-0455
2	Dolomite or dolomitic limestone: gray-tan^ some has greenish tinge; very fine-grained; has a few wavy gray-green shale partings; slightly porous; has a few large (0.1-0. in.) calcite crystals and thin calcite veins.				83.4	CS-0454
1	Dolomite or dolomitic limestone: tan; very fine-grained; dolomitized-fossiliferous^ or fossil fragmental; has small pores; most fossils obliterated^ a few poorly preserved molds are present in the form of small vugs; intervals from 90.6 to 92.6 ft. and 89.1 to 90.1 ft. removed by Geophysics Section.	85.6	93.0	7.4		

HELLER STONE QUARRY AT ROCKFORD^ WELL COUNTY
Date of field examination - August 16^ 1950.
By Dallas Fiandt
Location-On the east edge of Rockford^ in Wells County
NW¼SE¼ sec. 29^ T. 27 N.^ R. 11 E.

Unit	Description	Thick-ness	Sample
8	Soil: tan^ glacial^ clay till.	3.0	
	Liston Creek formation		
7	Dolomite: tan and gray^ very porous^ massive^ granular. Chip sample F50-287. Rock sample F50-288 taken 6.0 feet from base of unit.	28.8	F50-0288
7	Dolomite: tan and gray^ very porous^ massive^ granular. Chip sample F50-287. Rock sample F50-288 taken 6.0 feet from base of unit.		F50-0287
6	Dolomitic limestone: Gray^ thin-bedded^ dense^ calcareous^ finely granular. Chip sample F50-285. Rock sample F50-286 taken 8.0 feet from top of unit.	26.0	F50-0286
6	Dolomitic limestone: Gray^ thin-bedded^ dense^ calcareous^ finely granular. Chip sample F50-285. Rock sample F50-286 taken 8.0 feet from top of unit.		F50-0285
5	Dolomite: Gray and tan^ very porous^ massive^ saccharoidal. Contains lenses of white sandstone at the base. Chip sample F50-283. Rock sample F50-284 taken 2.8 feet from base of unit.	18.0	F50-0284
5	Dolomite: Gray and tan^ very porous^ massive^ saccharoidal. Contains lenses of white sandstone at the base. Chip sample F50-283. Rock sample F50-284 taken 2.8 feet from base of unit.		F50-0283
4	Dolomite: Tan to gray^ thin-bedded^ granular. Contains much nodular and bedded chert. Chip sample F50-281. Rock sample F50-282 taken 9.6 feet from base of unit.	21.0	F50-0282
4	Dolomite: Tan to gray^ thin-bedded^ granular. Contains much nodular and bedded chert. Chip sample F50-281. Rock sample F50-282 taken 9.6 feet from base of unit.		F50-0281
3	Dolomite: Light gray^ well-bedded^ finely laminated^ argillaceous^ granular. Chip sample F50-278. Rock sample F50-280 was taken 1.5 feet from top of unit.	4.9	F50-0280
3	Dolomite: Light gray^ well-bedded^ finely laminated^ argillaceous^ granular. Chip sample F50-278. Rock sample F50-280 was taken 1.5 feet from top of unit.		F50-0278
2	Dolomite: Brown to light gray^ porous^ cherty^ rubbly^ calcareous^ granular. Becomes more crystalline toward top. Chip sample F50-278. Rock sample F50-279 taken 4.4 feet from base of unit.	19.1	F50-0279
2	Dolomite: Brown to light gray^ porous^ cherty^ rubbly^ calcareous^ granular. Becomes more crystalline toward top. Chip sample F50-278. Rock sample F50-279 taken 4.4 feet from base of unit.		F50-0278
1	Dolomite: Gray^ dense^ slightly^ porous^ laminated in part^ thin-bedded^ argillaceous. Rock sample F50-277 taken 0.8 feet from top of unit. Taken in sump and not chip sampled.	3.0	F50-0277
	Total thickness of Liston Creek formation	120.8	
	Total thickness of measured section	123.8	

INDIANA GEOLOGICAL SURVEY
SPECTROCHEMICAL ANALYSES
(IN PERCENT)
ABANDONED HELLER STONE COMPANY QUARRY
NW SE SEC. 29, T. 27 N., R. 11 E.
WELLS COUNTY

RU/SAMPLE NO	THICK	CACO3	MGCO3	SIO2	AL2O3	FE2O3	TIO2	MNO	CALC CO2	CHEM CO2	LOI	S	P2O5
POST PALEOZOIC, SOIL	3.0												
LISTON CREEK													
F50-287	28.8	54.3	40.8	3.44	.72	.33			45.2	45.0	45.7	.033	.004
F50-285	26.0	55.0	37.0	5.50	1.46	.44	.062		43.5	43.3		.14	.007
F50-283	18.0	55.8	39.6	2.94	.79	.40	.044		45.2	44.9	45.4	.12	.005
F50-281	21.0	49.0	35.3	13.4	1.15	.47	.055		40.0	39.0		.22	.006
F50-278	24.0	51.0	35.8	11.0	1.06	.46	.057		41.1	40.7		.18	.006