

Drill Hole No. LH-101

Bearing: N 25 E Inclination: 68°N

Coordinates: North 626,500 East 1,455,943.01

Elevation: 948.34 948.30

Date: 3/3/78

Drilled By: Boyles Brothers Bob Kestv
Quinto.

Logged By: Ferryl C. Dale
Water Rotary 0.0-30.0

Total Depth: 439' Core 30.0-439.0

DEPTH		%	SAMPLE	SAMPLE	ANALYSES			DESCRIPTION OF MATERIAL DRILLED
FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
0.0	30.0							Water rotary hole, no sample. Artesian water 8.0 ft. about 10 g.p.m. (0.0-12.0 colluvium (12.0-30.0 highly broken sandstone)
30.0	44.0							Lt. gray, fine-grained well-cemented sandstone; weak thread fractures filled w/ carbon & threads of qtz, (35.0-38.0 highly broken)
44.0	54.0							Sandstone as above (black shale lenses 51.0' & 53.0'-53.5'), qtz fracture filling locally accompanying shale lenses. 53.0' Bedding dip 74°S.
54.0	77.0							Sandstone as above (black shale lenses 66.0-66.5, 68.2-68.5, 69.5-70.0; at 73.0-75.0 leached vugs, qtz stringers, carbon fracture fillings.
77.0	80.0							Interbedded black shale & gray sandstone lenses & lamina, highly fractured, abundant qtz filled fractures.
80.0	82.2							Black shales, occasional calcite & qtz. filling fracture.
82.2	84.3							Gray fine-grained sandstone as before.

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DEPTH		%	SAMPLE	SAMPLE	ANALYSES			DESCRIPTION OF MATERIAL DRILLED
FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
84.3	88.2							Black shales, occasional calcite & qtz. filling fractures.
88.2	90.8							Black shales w/ thin lamina of lt. gray sandstone about 0.2 ' apart. Bedding dip 79°S. abundant pyrite filled fractures.
90.8	99.0							Lt gray sandstone as before, w/ occasional qtz. stringer.
			95.0'	-76°S.				
99.0	110.0							Sandstone as above (black shale lenses 108.2-108.4)
110.0	121.0							Sandstone as above (major qtz patches & stringer 111.0-114.0)
121.0	132.0							Sandstone as before (qtz patches 122.0-122.5) lenses of black shales 123.5-124.0 & 127.0-127.5.
			131.0'	-83°S				
132.0	143.0							Sandstone as before (135.2-135.7 qtz stringers & patches) occasional qtz threads throughout. (137.5-138.5 interbedded black shale, qtz patches & gray sandstone)
			141.0'	-84°S				
143.0	155.0							Sandstone as before; occasional wisps of black shales. (151.0 carbon rich fracture w/ bedding

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FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
			150.0'	- 84°S				slicken sides, minor movement) 154.0 qtz stringers.
155.0	166.0							Sandstone as before; black shales lenses
			60.0'	-87°S.				161.0-161.5; interbedded black shales qtz
								stringers & sandstone lamina 163.5-165.5,
								gnarled bedding. Bedding dip 82°S
166.0	177.5		172.0'	-75°S.				Sandstone as before (172.0-174.0 interbedded
								black shales & sandstone lamina.
177.5	189.0							Sandstone as before; occasional qtz. & calcite
								stringers, contorted bedding or gnarled bedding.
189.0	202.0							Sandstone as before, locally darker gray
								color, locally finer grained (199.0-200.0
								MnO ₂ stringer possibly Pyrolusite??) at the
								contact flow breccia is evident. Weak pyrite.
202.0	212.0							Sandstone as before; occasional qtz & calcite
								stringers, occasional carbon filled threads,
								scattered wisps of black shale, mottled tex-
								ture in sandstone due to loading at time of
								deposition, graphitic.
212.0	223.5							Sandstone as before; graphitic, qtz & calcite
								stringers & blebs occasionally, pyrite veneering

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FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
								fractures (218.0 Dip 72°N. carbon rich fracture w/ minor movement)
223.5	234.3							Sandstone as before; very graphitic locally, occasionally qtz & calcite stringers.
234.3	245.2							Sandstone as before; black shale lenses 235.0-235.5, occasional qtz & calcite stringers.
245.2	256.0		246.0	67°S				Sandstone as before; occasional lenses of black shale, (246.0-247.0 very unusual sedimentary structure appears to be sandstone & shale squeezed together, bedding is gnarled. Occasional qtz stringer. Shales are carbon rich
256.0	266.5							Sandstone as before; (257.0-258.0, 261.0-261.5 black shale lenses, carbon rich) occasional qtz threads.
266.5	278.0							Sandstone as before; (black shale lenses 272.0-272.5, 277.0-277.3) (277.0 black shale w/ slicken sides minor movement Dip 87°N. qtz stringers invaded black shale.)
278.0	288.5							Sandstone as before; dark gray locally, black shale lense 282.0-282.6) mottled texture

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FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
								280.5-282.0 due to squeezing of black shale & gray sandstone. Occasional qtz stringers.
288.5	299.5							Sandstone as before; locally lenses & wisps of black shales, graphitic & carbon rich locally.
299.5	311.0							Sandstone as before; very uniform.
311.0	322.0							Sandstone as before, occasional wisps of black shales, occasional qtz stringer Bedding Dip 87°S
322.0	333.4							Sandstone as before; occasional qtz stringer, (330.0-330.5 black shale & sandstone which appears to be flow breccia)
333.4	340.0							Sandstone as before; occasional wisps of black shale.
340.0	343.0		2735	3.0'				Possible Barite zone?? has the appearance of bedded barite, very strong calcite, Possible Witherite since strong CaCO ₃ .
343.0	345.4		2736	2.4'				Barite zone; small elongated nodules along bedding plane. Angular sandstone in black shale, also flow breccia.
345.0	346.6		2737	1.6'				Possible Barite zone?? interbedded sandstone&

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FROM	TO				Sp. Gr.	BaSO ₄		
								black shale w/ strong calcite or Witherite??
								Nodules thinly bedded along bedding plane.
346.6	350.0		2738	3.4'				Possible Barite zone, same as above.
350.0	355.0							Lt gray fine-grained sandstone w/ occas-
								ional wisps of black shales & black shale
								lenses.
355.0	365.2							Sandstone as before; bedding dip 88°S.
365.2	369.0		2739	3.8'				Barite zone; med. to high grade, approx.
								60-70% BaSO ₄ , possibility of Witherite. Thinly
								bedded barite interbedded w/ black shales.
								Bedding dip 88°S.
369.0	373.0		2740	4.0'				Barite zone; med grade approx 60% BaSO ₄ .
								Bedding dip 87°S. Thinly bedded barite inter-
								bedded w/ black shales. Scattered spherical
								nodules.
373.0	376.5		2741	3.5'				Barite zone; low to med approx 30% BaSO ₄ .
								scattered nodular barite. Host black shales.
376.5	380.0		2742	3.5'				Barite zone, approx 50% med grade. lamina
								of barite interbedded w/ thin lamina of black
								shales weak dissiminated pyrite Bedding dip 85°N

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FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
380.0	384.0		2743	4.0'				Barite zone; as before Bedding dip 89°N
384.0	388.0		2744	4.0'				Barite zone; 40% low-med grade barite,
								thinly bedded of barite & scattered nodules in
								black shales.
388.0	390.5		2745	2.5'				Barite zone approx 5% very low grade Barite,
								scattered barite nodules, Bedding dip 88°S.
390.5	400.0							Interbedded gray sandstone & black siltstone;
								well cemented w/ silica, occasional qtz stringer
400.0	411.0							Black shales, highly siliceous, interbedded
								shales w/ gray sandstone (403.0 fracture area
								recemented w/ qtz, bedding dip 76°N, carbon
								rich).
411.0	416.0							Black shales, well cemented w/ silica, locally
								lenses of dark gray sandstone, occasional
								fracture filled w/ qtz. Bedding dip 82°S.
416.0	419.5							Lt. gray sandstone, fine-grained, well-
								cemented w/ silica, occasional qtz threads &
								stringers.
419.5	430.0							Sandstone as above; plus fractures filled
								w/ qtz; (brecciated 421.0 recemented)
								occasional qtz threads & stringers.

Total Depth: _____

10/77

ARKANSAS

DRILL HOLE MH - 101

<u>DEPTH</u>	<u>DIP</u>	<u>TRUE BEARING</u>
90'	67.5 N	N 11 E
190'	65 N	N 14 E
300'	63 N	N 15 E
400'	63 N	N 15 E
439'	62 N	N 21 E

Samples Sent to Houston

MH-101

<u>Sample</u>	<u>Footage</u>	<u>Sp. Gravity</u>	<u>% Barite</u>
MH-101-2735	340.4-343.0		
101-2736	343.0-345.4		
101-2737	345.4-346.6		
101-2738	346.6-350.0		
101-2739	365.2-369.-		
101-2740	369.0-373.0		
101-2741	373.0-376.5		
101-2742	376.5-380.0		
101-2743	380.0-384.0		
101-2744	384.0-388.0		
101-2745	388.0-390.5		

FANCY HILL - DIAMOND DRILL HOLES - PHASE I

INDIVIDUAL CORE ANALYSES BY INTERVALS

SAMPLE	LOG #	DEPTH	INTERVAL	A.P. SPECIFIC GRAVITY	CALCULATED % BaSO ₄
MDDH-101					
#2735	1100	340.4-343.0	2.6	3.146	31.99
2736	1101	343.0-345.4	2.4	3.097	28.35
2737	1102	345.0-346.6	1.6	3.238	38.51
2738	1103	346.6-350.0	3.4	2.928	14.89
2739	1104	365.2-369.0	3.8	3.325	44.35
2740	1105	369.0-373.0	4.0	3.409	49.70
2741	1106	373.0-376.5	3.5	2.955	17.14
2742	1107	376.5-380.0	3.5	3.125	30.44
2743	1108	380.0-384.0	4.0	3.040	23.98
2744	1109	384.0-388.0	4.0	2.409	13.28
2745	1110	388.0-390.5	2.5	2.867	9.64
		TOTAL 35.3			
		Weighted Average		3.10	28.22