

Drill Hole No. MH-32

Date: Jan 10, 1978

Bearing: N. 25 E. Inclination: 60° N.

Drilled By: Boyles Bro. Ralph Jex

Coordinates: North 629,052.00 East 4,449,426.0

Logged By: Ferryl C. Gale

Elevation: 1074.76

Total Depth: T.D. 622.0'.

DEPTH		%	SAMPLE	SAMPLE	ANALYSES			DESCRIPTION OF MATERIAL DRILLED
FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
0.0	10.0							No recovery for 10.0'. Casing was being set. Note that from 0.0-4.0' regolith. From 4.0-10.0 rotary drill water dark gray in color. Consolidated bed rock of black shale.
10.0	20.0							Dark gray sandy shale carbon filled fractures, sandy lens dipping 88°S.
20.0	28.0							Dark gray shale interbedded w/ siltstone & sandstone, graphitic marcasite filling fractures, also carbon filling fractures.
28.0	38.0							Black sandy shale, dipping 88°S.
38.0	48.0							Black sandy shale as before lamina of shale & sandstone 2 cm. wide. Bedding dip 47.0°=88°S.
48.0	58.0							Very carbon rich black shale grading into gray sandstone. Bedding dip 65°N.
58.0	68.0							Fine grained gray sandstone, interbedded w/ black shale, graphitic, irregular bedding surface grading into competent sandstone. Wisps of black shale in sandstone locally.
68.0	78.0							carbon filled fractures. Bedding dip 67°=80°N.
								Gray & black shales interbedded w/ gray sandstone. gradation contact. Bedding dip 78°=84°N.

DRILL HOLE LOG

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DEPTH		% RECOVERY	SAMPLE NUMBER	SAMPLE INTERVAL	ANALYSES		DESCRIPTION OF MATERIAL DRILLED
FROM	TO				Sp. Gr.	BaSO ₄	
78.0	91.0						Interbedded gray & black sandstone w/ width of black carbonaceous shale, gnarled appearance. Bedding dip 75°S at 91.0'.
91.0	100.0						Sandstone as above, irregular bedding surface due to loading at the time of deposition. Thread fracture filled w/ gypsum. Disseminated marcasite locally. 99.0-99.5' bedding slicken sides.
100.0	110.0						Sandstone as before. 102.0-103.0 fault, minor movement w/ slicken sides in carbon rich shale. Bedding dip 101.0 72°S. 107.0-110.0 qtz fracture fillings, also disseminated Marcasite.
110.0	120.0						Gray sandstone w/ carbon fracture fillings, grading into black shales. Qtz fracture fillings & stringers 114.0-114.8. Fractures veneered w/ Marcasite. at 115.0 Bedding dip 75°S.
120.0	130.0						Interbedded gray sandstone & black shale. (0.03 qtz stringers) 121.0. Bedding dip at 122.0'=75°S.

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FROM	TO				Sp. Gr.	BaSO ₄		
								123.0- Calcite fracture fillings.
								126.0- Vuggy and leached, orange iron oxide staining along fractures.
130.0	140.0							Sandstone as before. Bedding dip 131.0-80°S.
								Bedding dip 136.0-77°S.
140.0	150.0							Gray fine grained sandstone, well cemented.
								Irregular bedding surface. Bedding dip 142.0=
								80°S. Carbon rich fracture fillings.
150.0	160.0							Sandstone as before occasional fracture filled
								w/ qtz. Locally vuggy & leached. Locally
								banded appearance due to interbedded sand-
								stone & shale. Bedding dip 78°S. 158.0'
160.0	170.0							As above.
								Bedding dip 163.0'=79°S.
170.0	180.0							Sandstone as before well cemented w/ silica.
								Calcite fracture fillings. Bedding dip 80°S.
180.0	190.0							Sandstone as before. Marcasite filling frac-
								tures, scattered qtz stringers 2 cm wide.
								Bedding dip 80°S. at 185'.
190.0	200.0							Sandstone interbedded w/ black shale.

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FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
								Bedding dip 199.4 is 86°S. Qtz filled fractures 1 cm. wide.
200.0	210.0							Sandstone as before, hit artesian water 5 GPM 207.0 Bedding dip 78°S.
								209.6 Calcite filled fractures. Wisps of black shale in sandstone.
210.0	220.0							Sandstone as before. Bedding dip 220.0'=80°S.
220.0	230.0							Sandstone interbedded w/ black shale.
								228.0-230.0 numerous calcite fracture fillings.
230.0	240.0							Gray sandstone as before. Bedding 234'=84°S.
240.0	250.0							Interbedded black shale & black sandstone, calcite fracture fillings. Scattered qtz fracture fillings.
250.0	260.0							Black & gray sandstone. Bedding dip 254'=85°S.
								Bedding dip 256.0'=87°S. Qtz & calcite fracture fillings.
260.0	270.0							Sandstone, well-cemented, homogenous, occasional fracture filled w/ qtz & calcite.
270.0	280.0							Sandstone as before.
280.0	290.0							Sandstone as before, carbon filled fractures, Calcite filled fractures. Bedding dip 282'=85°S.

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FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
290.0	300.0							Sandstone as before, well-cemented, calcite fracture fillings.
300.0	310.0							Sandstone as before, occasional interbedded lamina of black shale. Bedding dip 308'=88°S.
310.0	320.0							Sandstone as before. 312.0 interesting sedimentary structure. Sandstone pinching out. 319.0 Bedding dip 89°S.
320.0	330.0							Gray sandstone & shales interbedded as before. 322.0-324.0-weak gypsum filled fractures. Bedding dip 329.0' is 85°S.
330.0	340.0							Sandstone as before, bedding dip 332.0=88°N. at 335.0-366.0 fault, highly broken gouge.
340.0	350.0							Sandstone, continuation of faulted & shear zone, highly broken.
350.0	366.0							Sandstone sheared & broken 5.0' core loss from 358.0-361.0. Fault continues to 366.0. Bedding dip 357.0 is 88°S.
366.0	370.0							Gray fine-grained sandstone.
370.0	390.0							Sandstone as before, 370 .0 carbon rich black shale, w/ slicken sides. Bedding dip 374.0-83°S
								Occasional lamina of black shale & scattered

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FROM	TO				Sp. Gr.	BaSO ₄		
								wisps of black shale.
390.0	400.0							Sandstone as before, vuggy & leached locally. Bedding dip 391.0 is 77°S.
400.0	410.0							Interbedded sandstone & shales gnarled bedding locally. Bedding dip 400.0 is 85°S. 404.0
								bedding slicken sides in black shale.
410.0	420.0							Gray sandstone w/ occasional wisps of black shales. Bedding dip 410.0-85°S.
420.0	430.0							Sandstone as before.
430.0	440.0							Sandstone as before. 430.2-430.7 highly brok- en, carbon rich. Bedding dip 430.0'-82°S.
440.0	450.0							Sandstone, well cemented.
450.0	460.0							Sandstone & black shale. Occasional wisps of black shale in sandstone. Bedding dip 455.0= 88°S.
460.0	470.0							Sandstone as before. Bedding dip 460.0=89°S.
470.0	480.0							Sandstone as before, 479.8-480.0=carbon rich lamina. 478.0 Bedding dip 88°S.
480.0	490.0							Sandstone interbedded w/ shale as before.
490.0	497.6							Sandstone as before w/ interbedded black

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FROM	TO				Sp. Gr.	BaSO ₄		
								shale, generally black shale is in thin lamina.
								Bedding dip 492.0 = 89°S. 495.0 = 88°S.
497.6	502.6		2813	5.0'	2.975	18.8		Barite zone, barite nodules in black shales, nodules scattered, black shales decomposed. Barite nodules elongated along bedding plane giving banded appearance.
502.6	506.6		2814	4.0'	3.128	30.7		Barite zone, approx. 30% BaSO ₄ , (black shale matrix highly decomposed 505.4-506.2).
								Bedding dip of Barite 506.0-84°S.
								Bedding dip of Barite 506.4 is 87°S.
506.6	510.6		2815	4.0'	3.220	37.3		Barite zone, black shale w/ nodular barite, banded appearance. Bedding dip of Barite 510.0 is 88°S.
510.6	513.5		2816	3.9'	2.960	17.6		Barite zone, 510.6-512.5 scattered barite nodules in black shale, low grade. Bedding dip of Barite 512.0 is 88°S. (512.5 bedding slicken sides.)
513.5	523.0							Gray shales w/ wisps of black shale locally. Bedding dip 517.0 88°N. 521.0 is 88°S. 522.0 is 83°S.

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DEPTH		%	SAMPLE	SAMPLE	ANALYSES		DESCRIPTION OF MATERIAL DRILLED
FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄	
523.0	535.6						Gray shales w/ interbedded black shale lamina. Bedding dip 529.0 is 89°N. approximately 18 feet of waste shale between barite zones. At barite contact black shale carbon rich & graphitic.
535.6	539.0		2817	3.4'	3.498	55.1	Barite zone, medium grade barite nodules in gray shales. Bedding dip of barite 536.0' is 89°S. Bedding dip of barite 538.0 is 88°S.
539.0	543.0		2818	4.0'	3.738	68.4	Barite zone nodular to massive barite, medium to high grade barite. Bedding dip of barite at 540.0 is 85°S.
543.0	547.0		2819	4.0'	3.730	67.9	Barite zone, high grade, approx 80% massive barite w/ threads of black shale. Bedding dip at 545.0 ft. is 84°S.
547.0	550.0		2820	3.0'	3.842	73.6	Barite zone, high grade approx 80% BaSO ₄ . massive barite w/ threads of black shale.
550.0	554.0		2821	4.0'	3.999	81.0	Barite zone, high grade approx 80% massive barite. Bedding dip at 553.0 is 88°S.
554.0	557.1		2822	3.1'	4.126	86.5	Barite zone, high grade approx. 80% BaSO ₄ .

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FROM	TO	RECOVERY	NUMBER	INTERVAL	Sp. Gr.	BaSO ₄		
								Bedding dip of barite at 557.0' is 88°S.
557.1	562.6							Black shale, carbon rich, highly altered.
								graphitic, gouge. 2.0' core loss. Fault.
562.6	564.0		2823	1.4	3.506	55.6		Barite zone, high grade barite grading to
								medium, interbedded w/ black shale. Bedding
								dip 564.0 is 88°S.
564.0	570.0		2824	6.0	2.884	11.1		Barite zone, approx 20% BaSO ₄ , scattered
								nodules of barite in black shale. Core
								highly broken and fractured.
570.0	584.0							Black shale, gouge 10.0' core loss, highly
								broken, carbon rich locally.
584.0	593.0							Gray shales interbedded, gouge, carbon rich
								locally. Very broken, may be due to slip-
								page of shales near novaculite contact at the
								time of deformation & folding. 584.0-598.0
								2.0' core loss.
593.0	602.3							Dark gray shales & mud or gouge, highly
								altered, carbon rich locally. Bedding
								dip 596.0 is 88°N.
602.3	604.7		2825	2.4	2.950	16.7		Barite zone, approx 20% BaSO ₄ , Barite

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FROM	TO				Sp. Gr.	BaSO ₄		
								nodules interbedded w/ black shale. Bedding dip 602.8 is 88°N.
604.7	608.5							Gray shales & gouge.
608.5	610.5		2826	2.0	2.807	4.3		Barite zone, approx 10% BaSO ₄ , low grade, scattered nodules in gray shales.
610.5	620.0							Gray shales interbedded w/ black sandy shales. Hole sanded in; had to make several runs to bail out sand. 611.0-613.0 Core loss of 2.0 ft. Very gouge. Carbon rich locally, Bedding dip at 615.0 is 85°N. Bedding dip at 619.0 is 89°S.
620.0	622.0							Arkansas Novaculite, fine grained, cherty, white & tan, Marcasite filling fractures, also Marcasite patches.
				End of hole 622.0 ft.				
				Tro-Pari Survey				
					Dip	Az		Corrected
				Surface				
				100'	60°N	N16E + 8		N 24 E
				200'	58°N	N23E + 8		N 31 E
				300'	54°N	N 7E + 8		N 15 E

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[illegible]

Bottom hole corals 624, 393, 45 1, 449, 573, 62

595.36

100/77

FANCY HILL - DIAMOND DRILL HOLES
INDIVIDUAL CORE ANALYSES BY INTERVALS

SAMPLE	LOG #	DEPTH	INTERVAL	A.P. SPECIFIC GRAVITY	CALCULATED % BaSO ₄
MH - 32					
2813	2200	497.6-502.6	5.0	2.975	18.79
2814	2201	502.6-506.6	4.0	3.128	30.66
2815	2202	506.6-510.6	4.0	3.220	37.26
2816	2203	510.6-513.5	2.9	2.960	17.56
2817	2204	535.6-539.0	3.4	3.498	55.09
2818	2205	539.0-543.0	4.0	3.738	68.35
2819	2206	543.0-547.0	4.0	3.730	67.94
2820	2207	547.0-550.0	3.0	3.842	73.58
2821	2208	550.0-554.0	4.0	3.999	80.96
2822	2209	554.0-557.1	3.1	4.126	86.53
-	-	557.1-562.6	5.5	2.761	0.00
2823	2210	562.6-564.0	1.4	3.506	55.56
2824	2211	564.0-570.0	6.0	2.884	11.12
2825	2212	602.3-604.7	2.4	2.950	16.73
-	-	604.7-608.5	3.8	2.761	0.00
2826	2213	608.5-610.5	2.0	2.807	4.25
			Total	58.50	
			Weighted Average	3.274	40.95

ARKANSAS

DRILL HOLE MH - 32DEPTHDIPTRUE
BEARING

100 '

60 N

N 24 E

200 '

58 N

N 31 E

300 '

54 N

N 15 E ?

400 '

49 N

N 25 E

500 '

47 N

N 30 E

611 '

45 N

N 17 E

Samples sent to Houston
Assay Log

MH-32

<u>Sample</u>	<u>Footage</u>	<u>Specific Gravity</u>	<u>% Barite</u>
MH-32-2813	497.6-502.6	2.59	
32-2814	502.6-506.6		
32-2815	506.6-510.6		
32-2816	510.6-513.5		
32-2817	535.6-539.0		
32-2818	539.0-543.0		
32-2819	543.0-547.0		
32-2820	547.0-550.0		
32-2821	550.0-554.0		
32-2822	554.0-557.1		
32-2823	562.2-564.0		
32-2824	564.0-570.2		
32-2825	602.3-604.7		
32-2826	608.5-610.5		