Geologic Memorandum
Thompson #3
47-091-0403

SAMPLE DESCRIPTION:

*Big Lime	1536-1605	
	1536-1590	Limestone - brown to white Shale - grey & red, 5% to 20%. Trace of glauconite.
	1590-1605	Limestone - dark grey and brown, fossilferous and oolitic. Sandy-10%, very fine grain sandstone.
*Keener Sand	1605-1640	Sandstone - white to clear, rounded, very fine grain. Limey - 10% to 40%, light tan Very good fluorescence @ 1640.
Shale Break		
*Big Injun	1643-1700	
	1643-1660	Sandstone - very fine grain, sub-rounded glauconitic. Shale - red 10%
	1660-1700	Limey Sandstone to Limestone - very fine grain, clear sandstone.
Shale/Siltstone	1700-2010	
*Gantz Sand	2010-2044	Sandstone - cloudy to white, sub-angular, fine to very fine grain. Siltstone - dark grey, 5% to 1%. Slight mineral fluorescence.
*50 Ft. Sand	2044-2112	
	2044-2090	Sandstone - medium to very fine grain, sub-rounded, cloudy to clear, slightly argilaceous. Shale - grey, 10%. Siltstone - grey, 20%.
	2090-2100	Siltstone - light grey to cloudy. Sandstone - very fine grain, rounded, clear, 5%, Trace of Dolomite
	2100-2112	Sandstone - Very fine grain, rounded, clear. Siltstone - white & light grey, 10%. Shale - grey, 10%
Interbedded	2112-2157	Sandstone/Siltstone/Shale

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SAMPLE DESCRIPTION:
(continued)

*30 Ft. Sand	2157-2192	
	2157-2170	Sandstone - very fine grain to silty. Cloudy to clear, angular. Siltstone - grey, 20% - trace of pyrite.
	2170-2180	Siltstone - grey to light grey, 40% Shale - grey to dark grey, 45% Sandstone - very fine grain, clear, 5%
	2180-2192	Sandstone - clear, fine to medium grain Siltstone/Shale - grey, 50%
Siltstone	2192-2230	
*Gordon Stray	2230-2247	Sandstone - very fine grain, trace of shale Siltstone - red and grey
Shale	2247-2285	
*Gordon	2285-2315	Shaley Sandstone - very fine grain Rusty color, with red and grey shale.
Interbedded	2315-2468	Shale/Siltstone
* 4th Sand	2468-2490	Sandstone - very fine grain to silty rusty color, siltstone/shale - red, 60%
Shale	2490-2548	
*5th Sand	2548-2592	Sandstone - very fine grain to medium grain, clear, rounded. Siltstone/shale - red and grey, interbedded with sandstone. Trace of dead oil.
Shale	2592-3034	
*Upper Speechley	3034-3070	Siltstone/Shale - interbedded.
Shale	3070-3192	
*Speechley	3192-3252	Siltstone/Shale - interbedded.
Shale	3252-3397	

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SAMPLE DESCRIPTION:
(continued)

* Balltown	3397-3448	Siltstone/Shale - interbedded
Shale	3448-3708	
* Bradford	3708-3818	Siltstone/Shale - interbedded
Shale	3818-4128	
* Riley	4128-4428	Siltstone/Shale - interbedded
Shale	4428-4558	
* Benson	4558-4580	Silty Sandstone to Siltstone - rusty color - interbedded
Shale	4580-4656	
	TD	

*Electric Log Tops

GEOLOGIC MEMORANDUM

THOMPSON #3
47-091-0403
FLEMINGTON DISTRICT
TAYLOR COUNTY, WV

GL:1411' KB:1421'
TD:4656'

APRIL 9, 1984
PREPARED BY: Norman DeRosa

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Drilling began on the Thompson #3 well on March 31, 1984. The target zone was the Benson Formation of the Chemung Group - Late Devonian. Surface casing (8-5/8 inch) is set at 1563 with 350 sacks of cement. The hole dusted to TD with the top of the Benson at 4558 feet and a natural show of 70 mcf. The open hole log done by Allegheny Nuclear Surveys included: Density, Neutron, Gamma Ray, Dual Spaced Induction, Temperature, and Caliper. Production casing was set at 4646 with cement top estimated at 3850 feet.

Primary Zone for Potential Completion:

This well has an excellent Benson Section which should probably be completed as a single zone.

Benson: 4558'-4580' Lenticular, very fine grained sandstone to coarse siltstone bodies in a grey shale matrix. Reddish brown. A pronounced temperature log deflection is displayed along with Neutron log - gas effect.
Avg. Paramaters:
Porosity Ø 11%, Sq 48%, So 37%, Sw 15%

Secondary Potentially Production Zones:

These zones are much less attractive than the Benson and should be kept as reserve zones for later completion.

Stringer: 2794-2800 Siltstone - Temperature deflection
2796-2798 Ø 9%, Sq 11%, So 53%, Sw 36%

4th Sand: Sandstone - fine grain, clear, Siltstone, very fine grain rusty color, Shale - grey and red, 20%
2483-2487 Ø 10%, Sq 40%, So 20%, Sw 40%

Gordon Stray: Sandstone - very fine grain, clear, siltstone/shale, grey 30%
2238-2242 Ø 10%, Sq 42%, So 18%, Sw 40%

Keener Sands: 1605-1640 Sandstone - white to clear, rounded, very fine grain, trace of glaconite. Grading to 40%, white to light tan limestone.

This section displayed very good flourescence (gas) and good gas effect from the Neutron Log.

1608-1612 Ø 9%, Sq 64%, So 3%, Sw 33%