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Type Log I

Amoco Production
J. E. Smith Unit # 1
C W/2 Sec.26 - 10N - 12W
KB 1565'

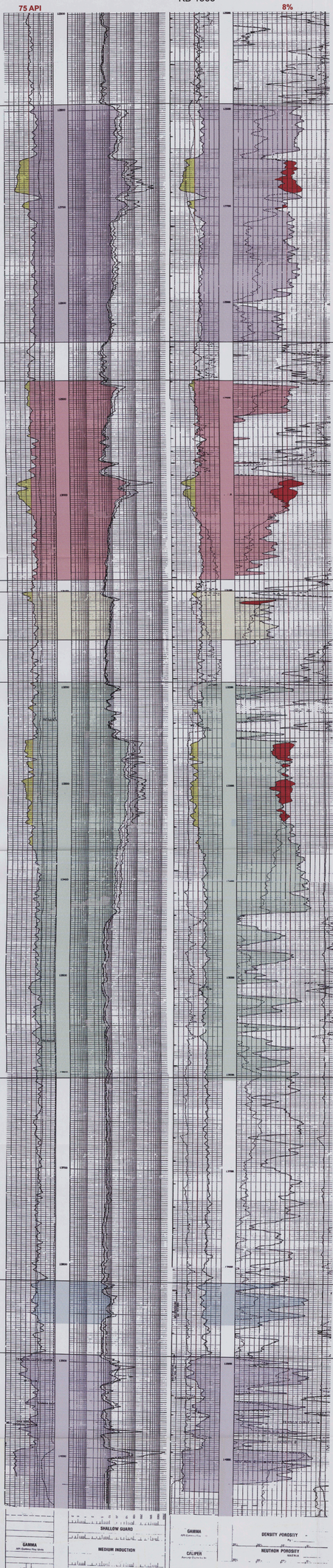

PLATE I

Lithologic Type Log

By: Falyaz M. Ali Date: May,2008

Geology

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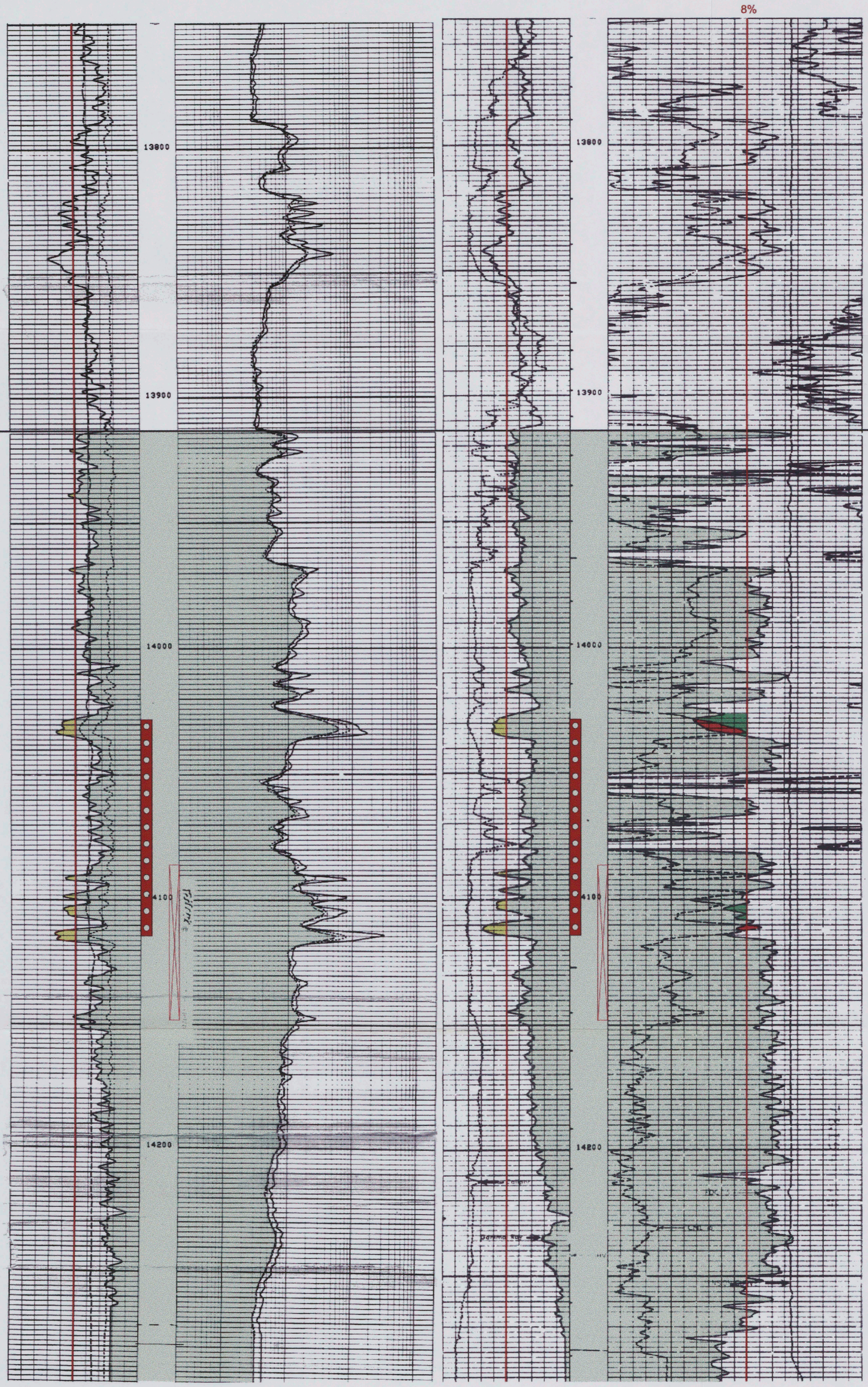
Hunt Energy

Gillingham # 1

NW NW SW Sec. 21 - 9N - 12W

GL 1424'



Lower Red Fork ss.

PLATE II

Hunt Gillingham # 1
Detailed cored
and
Perforated intervals

By: Faiyaz M. Ali

Date: May,2008

Geology

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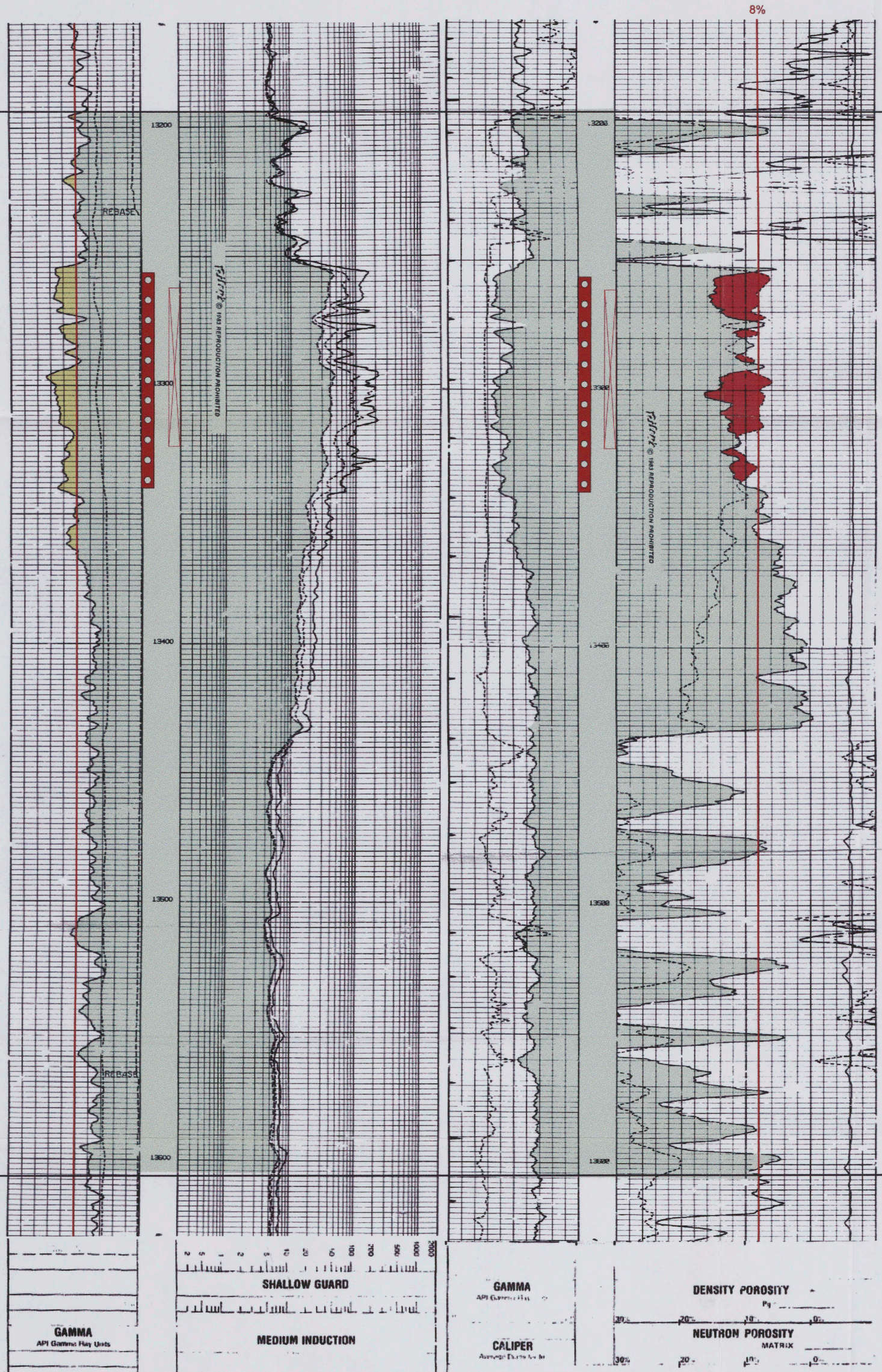
Amoco Production

J. E. Smith Unit # 1

C W/2 Sec.26 - 10N - 12W

KB 1565'



Lower Red Fork ss.

PLATE III

Amoco Smith Unit # 1
Detailed cored
and
Perforated intervals

By: Faiyaz M. Ali

Date: May,2008

Geology

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Plate IV - Core Description

Hunt Gillingham 1
21-8N-12W
Caddo County, Oklahoma
Cored Interval: Lower Red Fork Sandstone
Cored Depth: 14,085'-14,149' (62 ft); 2 ft interval was not cored between 14,099'-14,101'

Profile	Depth (ft)	Sorting P	Sorting M	Sorting G	Thickness (in)	Lithology	Grain Size Silt	Grain Size VF	Grain Size F	Grain Size M	Grain Size C	Grain Size VC	Facies	Description
	14085		x		3	Shale		x					Silty Shale	Dark gray shale with 0.5 to 1 cm siltstone interbedded layers. The siltstone interbedded layers are in planar, wavy, non-parallel, lenticular beds. Figure 3.17 shows the picture of depth 3.17 feet.
			x		1	Shale		x					Black Shale	Black shale.
			x		8	Shale		x					Silty Shale	Dark gray shale with 0.5 to 1 cm siltstone interbedded layers. The siltstone interbedded layers are in planar, wavy, non-parallel, lenticular beds.
	14086													
			x		1	Shale		x					Silty Shale	Dark shale with flame structure.
			x		3	Shale		x					Dark Shale	Dark gray shale with siderite stains.
			x		3	Shale		x					Silty Shale	Dark gray shale with 0.5 to 1 cm siltstone interbedded layers. The siltstone interbedded layers are in planar, wavy, non-parallel beds, and bioturbation.
			x		2	Shale		x					Fissile Shale	Fissile shale.
			x	x	15	Shale		x					Silty Shale	Dark gray shale with 0.5 to 1 cm siltstone interbedded layers. The siltstone interbedded layers are in planar, wavy, non-parallel, cross beds, and bioturbation.
	14087													
	14088													
			x		4	Shale		x					Silty Shale	Dark gray shale with planar siltstone layers
			x		2	Shale		x					Silty Shale	Dark gray shale with wavy, lenticular and cross beds of siltstone.
				x	2	Siltstone	x						Shaly Siltstone	Siltstone with shale interbeds that are 0.2 cm, wavy, and non-parallel beds.
			x		6.5	Shale		x					Silty Shale	Dark gray shale will siltstone layers that are wavy, lenticular, and planar beds ranging from 0.3 to 0.5 cm. Core Plug and thin section taken at depth 14,089.65 feet. Figures 3.15 and 3.16 show the pictures at depth 14,089.5, and 14,089 feet.
	14089													
			x		0.5	Siltstone	x						Shaly Siltstone	Siltstone
			x		3	Shale		x					Silty Shale	Dark gray shale with planar siltstone layers that are around 0.3 cm.
			x		10	Siltstone	x						Shaly Siltstone	Siltstone with shale interbeds that are 0.1 to 0.3 cm, wavy, non-parallel, cross beds, and ripples. Core plug taken at depth 14,090.55 feet.
	14090													
			x		3	Shale		x					Silty Shale	Dark gray shale with siltstone layers that are wavy, lenticular, non-parallel, and around 0.1 to 0.4 cm.
			x		2	Siltstone	x						Shaly Siltstone	Siltstone with shale interbeds that are 0.1 to 0.3 cm, wavy, non-parallel, cross beds, and ripples.
			x		1	Shale		x					Silty Shale	Dark gray shale with siltstone layers.
	14091		x		5	Siltstone	x						Shaly Siltstone	Siltstone with ripples, cross bedding, and shale interbeds that are around 0.1 to 0.3 cm. Core plug taken at depth 14,091.65 feet. Figures 3.13 and 3.14 show the pictures of depth 14,091.5, and 14,091 feet.
			x		2	Shale		x					Silty Shale	Dark gray shale with siltstone interbeds that are 0.1 to 0.4 cm, wavy, lenticular, and non-parallel.
			x		9	Shale		x					Silty Shale	Dark gray shale with siltstone interbeds that are up to 1.5 cm, wavy, lenticular, cross bedded, and non-parallel.
	14092													
			x		2	Shale		x					Silty Shale	Dark gray shale with siltstone interbeds that are 0.2 cm, and siderite staining.
					3									Missing core.
			x		2	Siltstone	x						Shaly Siltstone	Siltstone with shale interbeds that are 0.2 cm, ripples, and cross bedding.
			x		1.5	Shale		x					Silty Shale	Dark gray shale with siltstone 0.2 cm planar beds.
			x		1.5	Siltstone	x						Shaly Siltstone	Siltstone with shale interbeds, cross bedding.
	14093													
			x		1	Shale		x					Silty Shale	Dark gray shale with siltstone 0.5 cm wavy, lenticular beds.
			x		1	Shale		x					Silty Shale	Dark gray shale with planar siltstone bedding 0.2 cm.
		x			4	Siltstone	x						Shaly Siltstone	Siltstone with dark gray shale interbeds of 0.2 cm, ripples, cross beds, and bioturbation.
			x		1	Shale		x					Silty Shale	Dark gray shale with planar siltstone bedding 0.1 cm.
		x			4	Siltstone	x						Shaly Siltstone	Siltstone with dark gray shale interbeds, flame structures, folding, and contortion.
	14094													
			x		2	Shale		x					Silty Shale	Dark gray shale with siltstone structures.
			x		15	Sandstone			x				Very Fine Sandstone	Very fine sandstone with dark gray shale interbeds that are around 0.1 cm, and mud clast of 0.3 cm.
	14095													
			x		5	Sandstone			x				Very Fine Sandstone	Very fine sandstone with dark gray shale intervbeds that are 0.1 cm, bioturbation, and ripples.
				x	6	Siltstone	x						Shaly Siltstone	Siltstone with dark gray shale interbeds that are 0.1 cm, and bioturbation. Core plug and thin section taken at depth 14,096.15 feet.
	14096													
				x	2	Shale		x					Black Shale	Black Shale
			x		1	Shale		x					Silty Shale	Dark gray shale with siltstone interbeds 0.1 cm, and bioturbation.
				x	6	Shale		x					Dark Gray Shale	Dark gray shale.
	14097													
			x		6	Shale		x					Silty Shale	Dark gray shale with siltstone interbeds that are up to 0.7 cm, wavy, and non-parallel beds.
				x	6	Shale		x					Silty Shale	Dark gray shale with high silt content.
	14098													
			x		1	Shale		x					Silty Shale	Dark gray shale with siltstone wavy lenticular beds
			x		1	Siltstone	x						Shaly Siltstone	Siltstone with dark gray shale interbeds that are 0.1 cm.
			x		2	Shale		x					Silty Shale	Dark gray shale with siltstone wavy lenticular beds
				x	2	Siltstone	x						Siltstone	Siltstone with bioturbation.
				x	2	Shale		x					Silty Shale	Dark gray shale with siltstone interbeds that are 0.3 to0.4 cm.
			x		2	Shale		x					Dark Gray Shale	Dark gray shale with siltstone crossbedding, siderite band, and erosional contact.
	14099		x		2	Shale		x					Silty Shale	Dark gray shale with planar and cross bedded siltstone, bioturbation, and flame structure at the bottom.
														This two foot interval was not cored.
	14100													
	14101													
			x		4	Siltstone	x						Siltstone	Siltstone
			x		6	Shale		x					Silty Shale	Dark gray shale with contorted siltstone.
	14102	x			5	Shale		x					Shale	Dark gray shale with biotubation.
			x		4	Shale		x					Shale	Dark gray shale with flame structure.
			x		7	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with planar dark gray shale beds 0.1 to 0.3 cm. Core plug and thin section taken at depth 14,103.50 feet.
	14103													
			x		1	Shale		x					Shale	Dark gray shale with fine grained sandstone interbeds 0.1 to 0.2 cm.
			x	x	9	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with planar and cross bedded dark gray shale 0.1 to 0.3 cm. There is a presence of micro fault.
	14104													
			x		18	Siltstone	x						Shaly Siltstone	Siltstone with dark gray shale planar interbeds that are 0.1 to 0.3 cm thick.
	14105													
				x	2	Shale		x					Black Shale	Black Shale.
		x			8	Siltstone	x						Shaly Siltstone	Siltstone with dark gray shale planar interbeds that are 0.1 to 0.3 cm thick, burrows and mud clasts that are 0.3 cm.
	14106													
			x		1	Siltstone	x						Siltstone	Siltstone with flame structure.
		x			7	Shale		x					Silty Shale	Dark gray shale with flame structure, planar, wavy, non-parallel, and cross siltstone beds.
	14107													
			x		42	Shale		x					Silty Shale	Dark gray shale with planar siltstone beds that are 0.2 to 0.8 cm thick. Siderite staining is prevalent throughout the interval, and bioturbation is also present. Core plug taken at depths 14,108.40 and 14,108.55 feet.
	14108													
	14109													
	14110													
			x		8	Siltstone	x						Shaly Siltstone	Siltstone with dark gray shale layers that are around 0.3 cm thick, and also siderite staining that is around 0.5 cm thick.
	14111													
				x	1	Shale		x					Shale	Dark gray shale.
		x			2	Siltstone	x						Siltstone	Siltstone with ripples and bioturbation. Figure 3.12 shows the picture of depth 14,111.5 feet.
			x		4	Siltstone	x						Shaly Siltstone	Siltstone with dark gray shale that is around 0.1 to 0.3 cm thick, and siderite staining around 0.1 to 0.2 cm thick.
	14112													
			x		15	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with mud clast around 0.3 cm round. Ripples, bioturbation, and cross bedding. Presence of dark gray shale layers that are around 0.1 cm thick. Core plug and thin section taken at depth 14,112.20 feet.
	14113													
			x		3	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with dark gray shale that is around 0.1 to 0.3 cm thick, with flame structures, wavy, and cross bedding.
				x	18	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with bioturbation, and cross bedding. Core plug and thin section taken at depth 14,114.40 feet.
	14114													
		x			3	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with dark gray shale that is 0.2 cm thick. Bioturbation, ripples, cross bedding, and siderite staining is present.
	14115													
			x		2	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone. Core plug and thin section taken at depth 14,115.40 feet.
			x		3	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with dark gray shale that contorted, and also presence of mud clasts 0.3 cm round. Figures 3.10 and 3.11 show the pictures of depth 14,115.5 feet.
				x	4	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with dark gray shale that contorted, and also presence of siderite staining.
			x		3	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with bioturbation, ripples, cross bedding, and flame structure.
	14116													
				x	9	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone bioturbation, ripples, siderite staining of 0.5 cm, and flame structure.
		x			3	Sandstone			x				Fine Grained Sandstone	Fine grained sandstone with dark gray shale interbeds 0.3 cm thick. Wavy, non-parallel, cross bedding, and bioturbation. Core plug and thin section taken at depth 14,117.00 depth.
	14117													
			x		3	Shale		x					Silty Shale	Dark gray shale with wavy siltstone interbedded layers that are around 0.2 to 0.4 cm thick. Also siderite staining is present, 0.3 cm thick. Figures 3.8 and 3.9 show the pictures of depth 14,117 feet.
			x		2	Shale		x					Silty Shale	Dark gray shale with planar siltstone interbedded layers that are around 0.2 cm thick.
		x			1	Shale		x					Shale	Dark gray shale with flame structure.
				x	3	Shale		x					Dark Shale	Dark gray shale.
	14118													
			x		5	Shale		x					Silty Shale	Dark gray shale with wavy siltstone interbedded layers.
				x	3	Shale		x					Shale	Dark gray shale.
				x	3	Shale		x					Silty Shale	Dark gray shale with wavy siltstone interbedded layers.
	14119													
				x	4	Shale		x					Shale	Dark gray shale with biotubation.
				x	11	Shale		x					Shale	Dark gray shale with siderite staining.
	14120													
			x		2	Shale		x					Silty Shale	Dark gray shale with flame structure.
				x	1	Shale		x					Shale	Dark gray shale.
				x	1	Shale		x					Shale	Dark gray shale with siderite staining.
				x	4	Shale		x					Shale	Dark gray shale with siderite staining throughout.
	14121		x		1	Shale		x					Shale	Dark gray shale with flame structure.
			x		3	Shale		x					Shale	Dark gray shale with biotubation.
				x		Shale		x					Shale	Dark gray shale with siderite staining throughout.
	14122		x		3	Shale		x					Shale	Dark gray shale with biotubation.
				x	3	Shale		x					Silty Shale	Dark gray shale with planar siltstone interbedded layers that are around 0.2 cm thick.
			x		4	Shale		x					Silty Shale	Dark gray shale with planar siltstone interbedded layers that are around 0.2 cm thick, bioturbation, and siderite staining.
			x		3	Shale		x					Silty Shale	Dark gray shale with planar, and wavy siltstone bedding that are around 0.2 to 0.5 cm thick.
	14123			x	6	Shale		x					Silty Shale	Dark gray shale with planar siltstone bedding, bioturbation, and siderite staining.
			x		4	Shale		x					Silty Shale	Dark gray shale with siltstone planar and wavy beds, ripples, and bioturbation.
	14124		x		5	Shale		x					Silty Shale	Dark gray shale with biotubation.
				x	11	Shale		x					Silty Shale	Dark gray shale with planar siltstone interbeds throughout, and bioturbation.
	14125													
			x		8	Shale		x					Silty Shale	Dark gray shale with 0.1 cm planar siltstone beds, bioturbation, and cross bedding.
			x		2	Shale		x					Silty Shale	Dark gray shale with flame structure.
	14126		x		18	Shale		x					Silty Shale	Dark gray shale with planar, and wavy siltstone bedding that are around 0.1 to 0.3 cm thick. Bioturbation and siderite staining.
	14127													
				x	3	Shale		x					Silty Shale	Dark gray shale with planar siltstone bedding, bioturbation, and dish structures.
			x		2	Shale		x					Shale	Dark gray shale with biotubation.
				x	3	Shale		x					Silty Shale	Dark gray shale with biotubation, dish structures, and 0.1 cm thick siltstone beds.
	14128			x	3	Shale		x					Silty Shale	Dark gray shale with 0.1 cm planar, and wavy siltstone beds.
			x		1	Shale		x					Silty Shale	Dark gray shale with flame structure.
		x			10	Shale		x					Silty Shale	Dark gray shale with 0.1 to 0.5 cm thick planar, and wavy siltstone with bioturbation. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top. Figure 3.7 shows the picture of depth 14,128 feet.
	14129													
			x		22	Shale		x					Silty Shale	Dark gray shale with 0.1 to 0.5 cm thick planar siltstone with bioturbation. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top.
	14130													
	14131													
			x		5	Shale		x					Silty Shale	Dark gray shale with alternating siltstone beds that are 0.1 to 0.3 cm thick. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top. There is a presence of a fault.
			x		11	Shale		x					Silty Shale	Dark gray shale with alternating siltstone beds that are 0.1 to 0.3 cm thick. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top. There is presence of bioturbation. Core plug taken at depth 14,132.75 feet.
	14132													
				x	13	Siltstone	x						Shaly Siltstone	Siltstone with alternating dark gray shale beds that are 0.1 to 0.5 cm thick. Core plug and taken at depth 14,133.15 feet.
	14133													
		x			7	Shale		x					Silty Shale	Dark gray shale with alternating siltstone beds that are 0.1 to 0.7 cm thick. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top. There is presence of bioturbation.
	14134													
		x			3	Shale		x					Silty Shale	Dark gray shale with alternating siltstone beds that are 0.1 to 0.3 cm thick. There is presence of flame structure.
		x			21	Shale		x					Silty Shale	Dark gray shale with alternating siltstone beds that are 0.1 to 0.7 cm thick. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top. Figure 3.6 shows the picture of depth 14,135 feet.
	14135													
	14136													
			x		6	Shale		x					Silty Shale	Dark gray shale with alternating siltstone beds that are wavy, and non-paralle. There is presence of burrows.
				x	6	Shale		x					Silty Shale	Very thin alternating layers dark gray shale and siltstone.
	14137													
			x		7	Siltstone	x						Shaly Siltstone	Very thin alternating layers of siltstone and dark gray shale. Siltstone is around 0.3 to 0.5 cm thick, and the dark gray shale is around 0.2 to 0.5 cm thick. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top.There is presence of bioturbation.
			x		3	Siltstone	x						Shaly Siltstone	Very thin alternating layers of siltstone and dark gray shale. Siltstone is around 0.3 to 0.5 cm thick, and the dark gray shale is around 0.2 to 0.5 cm thick.
	14138		x		26	Shale	x						Silty Shaly	Very thin alternating layers of siltstone and dark gray shale. Siltstone is around 0.3 to 0.5 cm thick, and the dark gray shale is around 0.2 to 0.5 cm thick. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top. There is presence of bioturbation, and siderite staining.
	14139													
	14140													
			x		72	Shale		x					Silty Shale	Very thin alternating layers of siltstone and dark gray shale. Siltstone is around 0.3 to 0.5 cm thick, and the dark gray shale is 0.2 to 0.5 cm thick. Sharp contact between shale and siltstone; gradational contact between siltstone and shale going bottom to top. There is presence of bioturbation. Core plug taken at depth 14,143.45 feet.
	14141													
	14142													
	14143													
	14144													
	14145													
	14146													
			x		27	Shale		x					Silty Shale	Very thin layers of alternating siltstone and dark gray shale. Siltstone is around 0.3 to 1.1 cm thick, and the dark gray shale is around 03 to 0.7 cm thick. Sharp contact between the shale the siltstone; gradational contact between the siltstone and the shale going bottom to top. There is presence of faults. Core plug and thin section taken 14,146.90 feet. Figure 3.4 displays the picture of depth 14,148.5 feet. Figure shows the picture of depth 14,148.00 feet.
	14147													
	14148													
				x	9	Siltstone	x						Siltstone	Siltstone with siderite stains.
	14149													

Legend

- Siltstone
- Shaly Sandstone
- Coarse Grained Sandstone
- Medium Grained Sandstone
- Fine Grained Sandstone
- Dark Gray Shale
- Black Gray Shale
- Fissile Shale
- Fining Upward Sequence
- Coarsening Upward Sequence
- Wavy Lenticular Bedding
- Siderite Stains
- Bioturbation
- Flame Structure
- Cross Bedding
- Planar Bedding
- Ripples
- Folding and Contortion
- Clast
- Fault
- Sharp Angular Contact

Geology

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Plate V - Core Description

J. E. Smith Unit 1
26-18N-17W
Caddo County, Oklahoma
Cored Interval: Lower Red Fork Sandstone
Cored Depth: 13,262'-13,327' (60 ft)

Depth (ft)	Lithology	Thickness (in)	Sorting	Cross Size	Trace Fossils	Description
13262	Sandstone	63	x	x	Fine Grained Sandstone	Fine grained sandstone with ripples, cross-bedding, and bioturbation. Core plug taken at depth 13,262.40 feet. Core plug and thin section taken at depth 13,268.30 feet
13273	Sandstone	3	x	x	Fine Grained Sandstone	Fine grained sandstone with bioturbation. Core plug taken at depth 13,270.10 feet. Figure 3.27 shows the picture of depth 13,270.5 feet.
13276	Sandstone	2	x	x	Fine Grained Sandstone	Fine grained sandstone with ripples, bioturbation, and ripples.
13278	Sandstone	7	x	x	Shaly Sandstone	Shaly sandstone with planar bedding, bioturbation, and ripples.
13284	Sandstone	4	x	x	Fine Grained Sandstone	Fine grained sandstone with cross bedding.
13290	Sandstone	11	x	x	Shaly Sandstone	Shaly sandstone with planar bedding, bioturbation, sideritic staining, and ripples.
13294	Sandstone	4	x	x	Fine Grained Sandstone	Fine grained sandstone.
13296	Shale	2	x	x	Silty Shale	Dark gray shale.
13298	Sandstone	2	x	x	Fine Grained Sandstone	Fine grained sandstone. Core plug and thin section taken at depth 13,280.35 feet.
13300	Shale	3	x	x	Dark gray shale.	Dark gray shale.
13303	Sandstone	4	x	x	Fine grained sandstone with ripples.	Fine grained sandstone with ripples.
13306	Sandstone	2	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13309	Sandstone	4	x	x	Shaly Sandstone	Shaly sandstone with bioturbation, lamo structures, cross bedding, and ripples. Figure 3.24 and 3.25 show the pictures of depth interval from 13,309.4 feet. Figures 3.24 and 3.25 show the pictures of depth 13,283 feet
13312	Sandstone	30	x	x	Shaly Sandstone	
13314	Bandstone	9	x	x	Shaly Sandstone	
13315	Missing core.					
13324	Sandstone	9	x	x	Fine Grained Sandstone	Fine grained sandstone with sideritic banding, bioturbation, lamo structures, and contorted bedding.
13333	Sandstone	24	x	x	Fine Grained Sandstone	Fine grained sandstone with sideritic banding, bioturbation, lamo structures, and contorted bedding. Core plug and thin section taken at depth 13,335.10 feet. Figure 3.22 shows the picture of depth 13,288.5 feet.
13342	Missing core.					
13343	Sandstone	7	x	x	Fine Grained Sandstone	Fine grained sandstone with ripples and bioturbation.
13345	Sandstone	2	x	x	Fine Grained Sandstone	Fine grained sandstone with thin shale interbeds.
13347	Shale	3	x	x	Silty Shale	Dark gray shale with flame structure, and bioturbation.
13350	Shale	2	x	x	Silty Shale	Dark gray shale
13352	Shale	4	x	x	Silty Shale	Dark gray shale with flame structure, and bioturbation.
13356	Missing core.					
13357	Shale	11	x	x	Silty Shale	Dark gray shale.

Plate V - Core Description

J. E. Smith Unit 1
26-18N-17W
Caddo County, Oklahoma
Cored Interval: Lower Red Fork Sandstone
Cored Depth: 13,262'-13,327' (60 ft)

Depth (ft)	Lithology	Thickness (in)	Sorting	Cross Size	Trace Fossils	Description
13262	Sandstone	63	x	x	Fine Grained Sandstone	Fine grained sandstone with cross beds that are 0.2 to 0.8 cm thick. Figure 3.21 shows the picture of depth 13,268.
13325	Sandstone	50	x	x	Fine Grained Sandstone	Fine grained sandstone with heavy bioturbation. Core plug and thin section taken at depth 13,299.25 feet.
13329	Sandstone	2	x	x	Fine Grained Sandstone	Fine grained sandstone.
13331	Sandstone	4	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13332	Sandstone	4	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13335	Sandstone	4	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13336	Sandstone	68	x	x	Fine Grained Sandstone	Fine grained sandstone with heavy bioturbation. Core plug and thin section taken at depth 13,305.60 feet. Core plug taken at depth 13,305.10 feet. Core plug and thin section taken at depth 13,307.40 feet. Core plug and thin section taken at depth 13,309.00 feet. Figure 3.19 shows the picture of depth interval from 13,308 to 13,315 feet.
13337	Sandstone	4	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13339	Sandstone	2	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13341	Sandstone	4	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13343	Sandstone	2	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13345	Sandstone	2	x	x	Fine Grained Sandstone	Fine Grained Sandstone.
13347	Sandstone	2	x	x	Fine Grained Sandstone	Fine Grained Sandstone.

OU
THESIS
ALI
cop.3

Amoco Production

J. E. Smith Unit # 1

C W/2 Sec.26 - 10N - 12W

KB 1565'

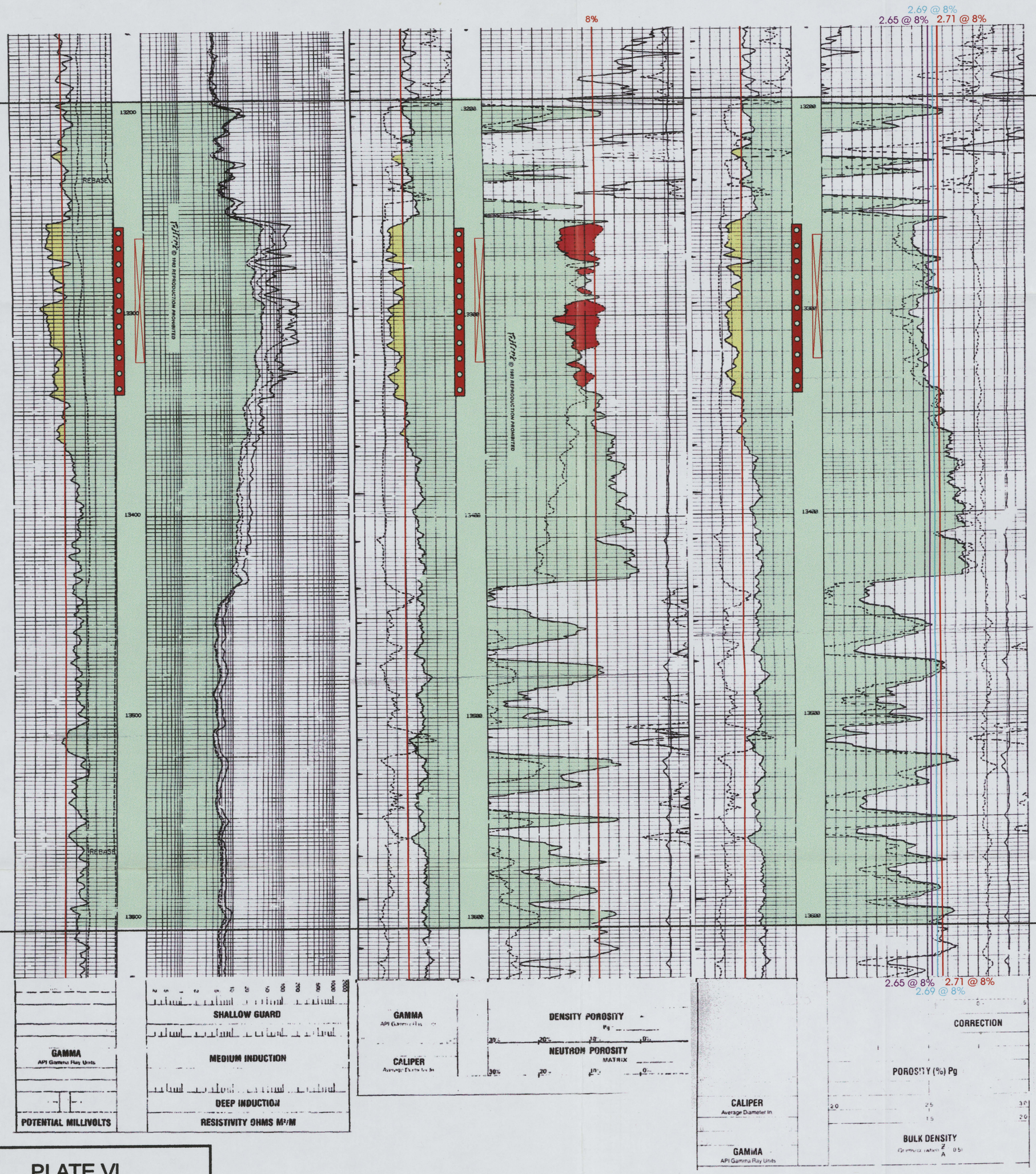


PLATE VI

Amoco Smith Unit # 1
Porosity Comparison

By: Faiyaz M. Ali

Date: May,2008

Geology

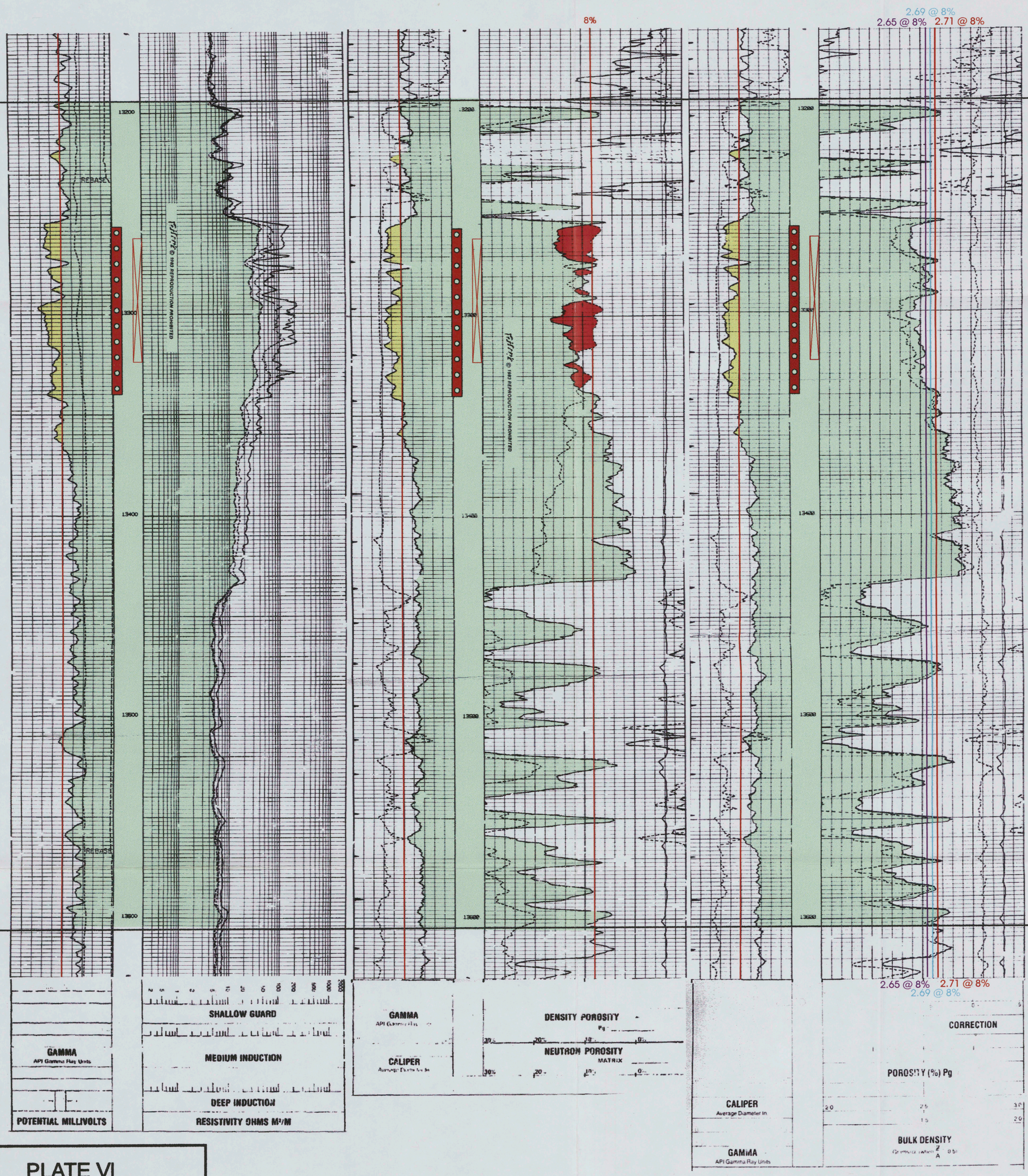
OU
THESIS
ALI
cop.3

Amoco Production

J. E. Smith Unit # 1

C W/2 Sec.26 - 10N - 12W

KB 1565'



Lower Red Fork ss.

PLATE VI

Amoco Smith Unit # 1
Porosity Comparison

By: Faiyaz M. Ali

Date: May,2008

Geology

OU
THESIS
ALI
C9R3

GETTY OIL COMPANY
LASLEY
1-4

X

SUN EXPL & PROD CO
LASLEY G U
2

A

DAVIS OIL CO
TALKINGTON
1

CHAMPLIN PETRO CMPNY
C A SMITH
1

B

AMOCO PROD CO
SMITH
1

HELMERICH&PAYNE INC
SANBORN
1-32

SANGUINE LTD
STOVER
1

C

SMR PROPERTY MGMT
OPIT
1-1

X'

DEVON LOUISIANA CORPORATION
SEGER INDIAN SCHOOL
1

ZEPHYR OPER CO LLC
KING FAMILY THE
1

DOMINION
MARIE
1

WILLIAMS L G OIL
LITKE
17-1

Y

WILLIAMS L G OIL
ALLRED
18-1

HUNT ENERGY
GILLINGHAM
1

WAGNER & BROWN
CROWELL
1

ARKLA
HELEN DAILY
29-1

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

WASHITA

CADDO

APACHE CORP
3-1

CHESAPEAKE
JENNINGS
1

Y'

TRANS-WSTRN EXPL INC
COPELAND
1-16

NEG OPERATING LIMITED LIABILITY CORP
ARTHUR
24-1

APACHE CORP
WINTER LIVESTOCK
1-19

Z

A'

SOHIO
STOCKTON
1-21

CONOCO
VOIGT
1-28

CRUSADER ENERGY
CAY
1-1

8N 14W

8N 13W

8N 12W

8N 11W

HELMERICH&PAYNE INC
WHITE BUFFALO
1

B'

ANDOVER OIL
CHINQUA
16-1

TAYLOR JOHN A
C C WEAVER
1-15

7N 14W

7N 13W

7N 12W

7N 11W

HELMERICH & PAYNE
CHARLES ADAMS
1-25

Z'

ST. MARY
CORRELL
1-28

C'

Plate VII

Base Cross Section Map

Basin Dip as Orientation

Basin Strike as Orientation

0 4,000 8,000 12,000
FEET

By: Faiyaz M. Ali

July 30, 2008

PETRA 7/30/2008 8:37:58 PM

Geology

OU THESES ALF C49.2

Type Log II

(Sequence Stratigraphy)

Sanguine
Seger Indian School # 2

SW NE NE Sec. 15 - 10N - 14W

KB 1534'

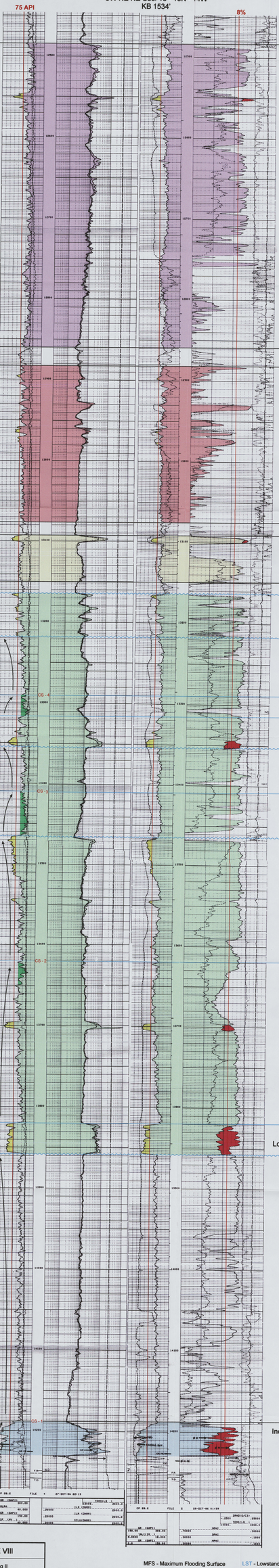


PLATE VIII

Type Log II
(Sequence Stratigraphy)

By: Faiyaz M. Ali

Date: May,2008

Fining Upward Sequence

Coarsening Upward Sequence

MFS - Maximum Flooding Surface

CS - Condensed Section

SB - Sequence Boundary

LST - Lowstand System Tract

HST - Highstand System Tract

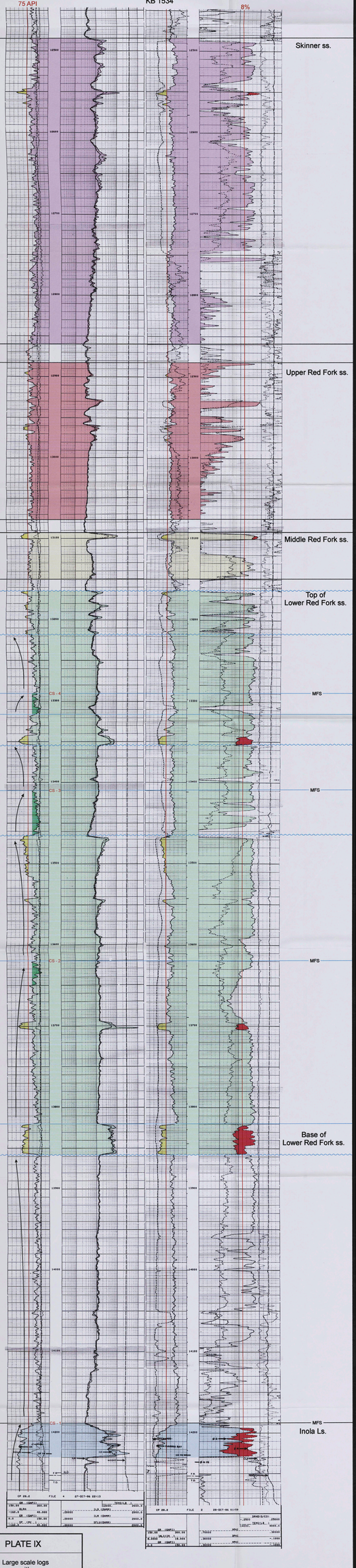
TST - Transgressive System Tract

OU
THESIS
ALI.
C49.3

Type Log II

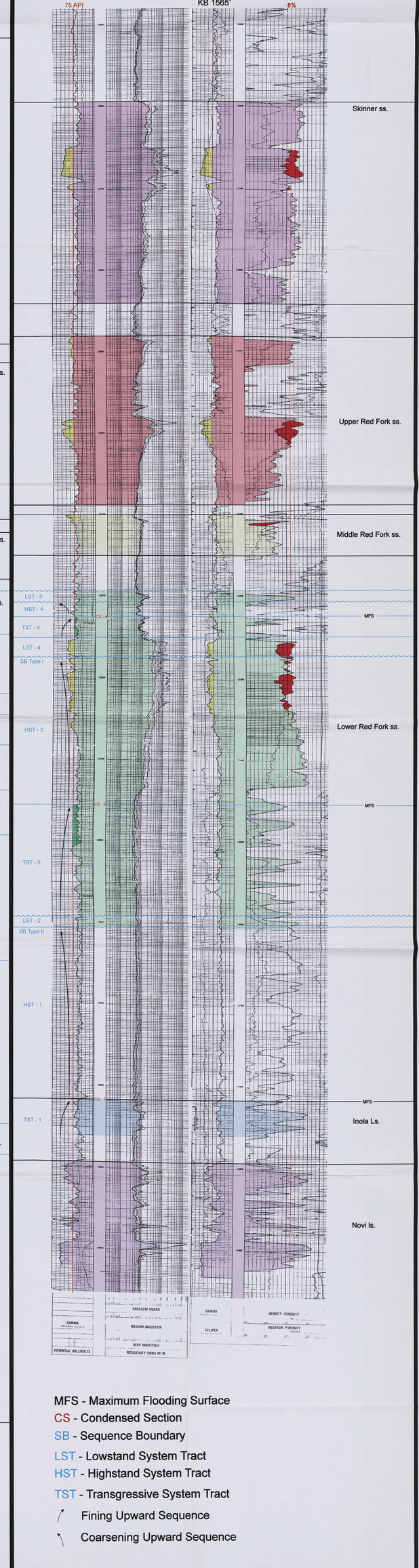
(Sequence Stratigraphy)

Sanguine
Seger Indian School # 2
SW NE NE Sec. 15 - 10N - 14W
KB 1534'



Type Log I

Amoco Production
J. E. Smith Unit # 1
C W/2 Sec.26 - 10N - 12W
KB 1565'



MFS - Maximum Flooding Surface
CS - Condensed Section
SB - Sequence Boundary
LST - Lowstand System Tract
HST - Highstand System Tract
TST - Transgressive System Tract
Fining Upward Sequence
Coarsening Upward Sequence

PLATE IX

Large scale logs
with
Sequence Stratigraphic
markers for different environments

By: Faiyaz M. Ali

Date: May,2008

OU
THESIS
ALI
cop 3

Generalized Sequence Stratigraphic Model for the Lower Red Fork Sandstone.

First Sequence | **Second Sequence** | **Third Sequence** | **Fourth Sequence** | **Fifth Sequence** | **Sixth Sequence**

(LST) Lowstand Systems Tract

(TST) Transgressive Systems Tract

(HST) Highstand Systems Tract

(CS) Condensed Section

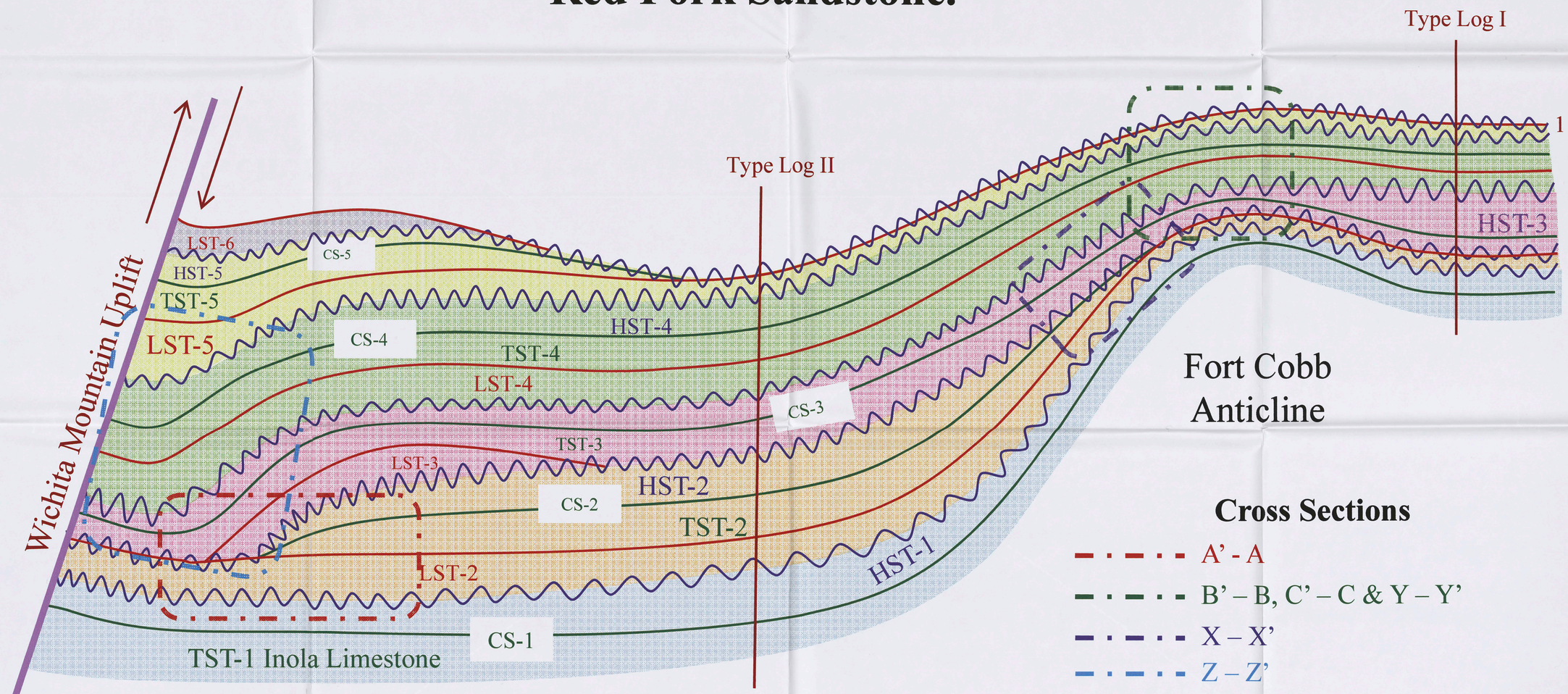
Sequence Boundary

1) Top of Lower Red Fork Sandstone

2) Base of Lower Red Fork Sandstone

Plate X
General Sequence Stratigraphic Model
By: Faiyaz Ali, 2008

Generalized Sequence Stratigraphic Model for the Lower Red Fork Sandstone.



Cross Sections

- A' - A
- B' – B, C' – C & Y – Y'
- X – X'
- Z – Z'

First Sequence | **Second Sequence** | **Third Sequence** | **Fourth Sequence** | **Fifth Sequence** | **Sixth Sequence**

(LST) Lowstand Systems Tract

(TST) Transgressive Systems Tract

(HST) Highstand Systems Tract

(CS) Condensed Section

Sequence Boundary

1) Top of Lower Red Fork Sandstone 2) Base of Lower Red Fork Sandstone

Plate XI
General Sequence Stratigraphic Model With Cross Section, and Type Log Locations.
By: Faiyaz Ali, 2008

OU
THESIS
ALI
COP 3

A'

APACHE CORP
WINTER LIVESTOCK
1-19
T8N R14W S19

<3.51MI>

APACHE CORP
BOYD
1
T8N R14W S6

<4.03MI>

WILLIAMS L G OIL
LITKE
17-1
T9N R14W S17

<4.88MI>

DEVON LOUISIANA CORPORATION
SEGER INDIAN SCHOOL
1
T10N R14W S22

<4.47MI>

DAVIS OIL CO
TALKINGTON
1
T10N R13W S17

<2.66MI>

SUN EXPL & PROD CO
LASLEY G W
2
T10N R13W S11

A

Rel Depth(ft)
-100
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700

GR 0 150
ILD 0.2 2000

Datum
Top Upper Red Fork
Top Middle Red Fork
TOP_LOWER_REDFORK [FAA]
LST-6
HST-5 SB Type I
TST-5
LST-5
HST-4 SB Type I
TST-4
LST-4
HST-3 SB Type I
TST-3
HST-2 SB Type I
TST-2
LST-2
BASE_LOWER_REDFORK [FAA]
HST-1 SB Type II
CS-1
TST-1 (Inola Limestone)
Novi Limestone
CS-2
CS-3
CS-4
CS-5

Plate XII

Cross Section A'-A

Basin Dip as Orientation

Horizontal Scale = 3440.7
Vertical Scale = 100.0
Vertical Exaggeration = 34.4x

LOG CURVES

0 — 150 GR (GAPI) 3 GAMMA RAY
0.2 — 2,000 ILD (ohmm) Deep Induction
0.2 — 2,000 AT90 (OHMM)
0.2 — 2,000 IL (OHMM) 2 RESISTIVITY (linear)

TOPS AND MARKERS

TOP_UPPER_REDFORK FAA
TOP_MIDDLE_REDFORK FAA
TOP_LOWER_REDFORK FAA
LST-6 FAA
HST-5_SB_TYPE_I FAA
TST-5 FAA
LST-5 FAA
HST-4_SB_TYPE_I FAA
TST-4 FAA
LST-4 FAA
HST-3_SB_TYPE_I FAA
TST-3 FAA
HST-2_SB_TYPE_I FAA
TST-2 FAA
LST-2 FAA
HST-1_SB_TYPE_II FAA
TST-1 FAA
BASE_LOWER_REDFORK FAA
TOP_INOLA_LIMESTONE FAA
NOVI FAA

Operator
Well Name
Well Number
Twn-Rge-Sec

By: Faiyaz M. Ali

July 29,2008 6:09 PM

HS=3441

PETRA 7/29/2008 6:09:15 PM (K:\A-CS\P)

Geology

OU
THESIS
ALI
COP 3

B'

HELMERICH&PAYNE INC
WHITE BUFFALO
1
T7N R13W S10

<5.34MI>

TRANS-WSTRN EXPL INC
COPELAND
1-16
T8N R13W S16

<7.44MI>

HUNT ENERGY
GILLINGHAM
1
T9N R12W S21

<2.11MI>

ZEPHYR OPER CO LLC
KING FAMILY THE
1
T9N R12W S8

<2.19MI>

HELMERICH&PAYNE INC
SANBORN
1-32
T10N R12W S32

<5.30MI>

CHAMPLIN PETRO CMPNY
C A SMITH
1
T10N R12W S3

B

Rel Depth(ft)

Datum
Top Upper Red Fork
Top Middle Red Fork
LST-6
HST-5 SB Type I
CS-5
TST-5
LST-5
HST-4 SB Type I
CS-4
TST-4
LST-4
HST-3 SB Type I
CS-3
TST-3
TOP_LOWER_REDFORK [FAA]
BASE_LOWER_REDFORK [FAA]
LST-2
HST-1 SB Type II
CS-1
TST-1 (Inola Limestone)
Novi Limestone

Plate XIII

Cross Section B-B'

Basin Dip as Orientation

Horizontal Scale = 3937.5
Vertical Scale = 100.0
Vertical Exaggeration = 39.4x

LOG CURVES

0 — 150 GR (GAPI) 3 GAMMA RAY

0.2 — 2,000 ILD (ohmm) Deep Induction

0.2 — 2,000 AT90 (OHMM)

0.2 — 2,000 IL (OHMM) 2 RESISTIVITY (linear)

TOPS AND MARKERS

- TOP_UPPER_REDFORK FAA
- TOP_MIDDLE_REDFORK FAA
- TOP_LOWER_REDFORK FAA
- HST-5_SB_TYPE_I FAA
- TST-5 FAA
- LST-5 FAA
- HST-4_SB_TYPE_I FAA
- TST-4 FAA
- LST-4 FAA
- HST-3_SB_TYPE_I FAA
- TST-3 FAA
- HST-2_SB_TYPE_I FAA
- TST-2 FAA
- LST-2 FAA
- HST-1_SB_TYPE_II FAA
- TST-1 FAA
- BASE_LOWER_REDFORK FAA
- TOP_INOLA_LIMESTONE FAA
- NOVI FAA

Operator
Well Name
Well Number
Twn-Rge-Sec

By: Faiyaz M. Ali

July 29,2008 7:20 PM

HS=3936

PETRA 7/29/2008 7:20:56 PM (07-B-CSP)

OU
THESIS
ALI
COPY

C'

C

ST. MARY
ORRELL
1-28
T7N R12W S28

<2.21MI>

TAYLOR JOHN A
C C WEAVER
1
T7N R12W S15

<3.07MI>

CRUSADER ENERGY
CAY
1-1
T7N R12W S1

<4.08MI>

CONOCO
DIDIER
1-28
T8N R11W S28

<6.42MI>

WAGNER & BROWN
CROWELL
1
T9N R12W S25

<3.98MI>

DOMINION
MARIE
1
T9N R11W S9

<1.87MI>

SANGUINE LTD
STOVER
1
T10N R11W S33

Rel Depth(ft)

Datum
Top Upper Red Fork
Top Middle Red Fork
LST-6
TST-5
HST-4 SB Type I
TST-4
HST-3 SB Type I
TST-3
HST-1 SB Type II
TST-1 (Inola Limestone)
Novi Limestone

CS-5
CS-4
CS-3
CS-1

TOP_LOWER_REDFORK [FAA]
BASE_LOWER_REDFORK [FAA]

Plate XIV

Cross Section C'-C

Basin Dip as Orientation

Horizontal Scale = 3808.5
Vertical Scale = 100.0
Vertical Exaggeration = 38.1x

LOG CURVES
0 150 GR (GAPI) 3 GAMMA RAY
0.2 2,000 ILD (ohmm) Deep Induction
0.2 2,000 AT90 (OHMM)
0.2 2,000 IL (OHMM) 2 RESISTIVITY (linear)

TOPS AND MARKERS
TOP_UPPER_REDFORK FAA
TOP_MIDDLE_REDFORK FAA
TOP_LOWER_REDFORK FAA
HST-5_SB_TYPE_I FAA
TST-5 FAA
LST-5 FAA
HST-4_SB_TYPE_I FAA
TST-4 FAA
LST-4 FAA
HST-3_SB_TYPE_I FAA
TST-3 FAA
HST-2_SB_TYPE_I FAA
LST-2 FAA
HST-1_SB_TYPE_II FAA
TST-1 FAA
BASE_LOWER_REDFORK FAA
TOP_INOLA_LIMESTONE FAA
NOVI FAA

Operator
Well Name
Well Number
Twn-Rge-Sec

By: Faiyaz M. Ali

July 29,2008 7:33 PM

HS=3808

PETRA 7/29/2008 7:33:28 PM (C'-C.CSP)

OU
THESIS
ALI
C99.3

X

X'

GETTY OIL COMPANY	<7.64MI>	SUN EXPL & PROD CO	<4.88MI>	HELMERICH&PAYNE INC	<2.64MI>	AMOCO PROD CO	<4.18MI>	SANGUINE LTD	<3.30MI>	SMR PROPERTY MGMT
LASLEY 1-4 T10N R14W S4		LASLEY G W 2 T10N R13W S11		SANBORN 1-32 T10N R12W S32		SMITH 1 T10N R12W S26		STOVER 1 T10N R11W S33		OPITZ 1-1 T9N R11W S1

Rel Depth(ft)

Datum

Top Upper Red Fork

Top Middle Red Fork

TOP_LOWER_REDFORK [FAA]

LST-5

HST-4 SB Type I

TST-4

CS-4

LST-4

HST-3 SB Type I

TST-3

CS-3

HST-2 SB Type I

CS-2

TST-2

LST-2

BASE_LOWER_REDFORK [FAA]

HST-1 SB Type II

CS-1

TST-1 (Inola Limestone)

Novi Limestone

CS-5

LST-6

HST-5 SB Type I

TST-5

TOP_LOWER_REDFORK [FAA]

BASE_LOWER_REDFORK [FAA]

Plate XV

Cross Section X-X'

Basin Strike as Orientation

Horizontal Scale = 3985.0
Vertical Scale = 100.0
Vertical Exaggeration = 39.9x

LOG CURVES

0 — 150 GR (GAPI) 3 GAMMA RAY

0.2 — 2,000 ILD (ohmm) Deep Induction

0.2 — 2,000 AT90 (OHMM)

0.2 — 2,000 IL (OHMM) 2 RESISTIVITY (linear)

TOPS AND MARKERS

- TOP_UPPER_REDFORK FAA
- TOP_MIDDLE_REDFORK FAA
- TOP_LOWER_REDFORK FAA
- HST-5_SB_TYPE_I FAA
- TST-5 FAA
- LST-5 FAA
- HST-4_SB_TYPE_I FAA
- TST-4 FAA
- LST-4 FAA
- HST-3_SB_TYPE_I FAA
- TST-3 FAA
- HST-2_SB_TYPE_I FAA
- TST-2 FAA
- LST-2 FAA
- HST-1_SB_TYPE_II FAA
- TST-1 FAA
- BASE_LOWER_REDFORK FAA
- TOP_INOLA_LIMESTONE FAA
- NOVI FAA

Operator
Well Name
Well Number
Twn-Rge-Sec

By: Faiyaz M. Ali

July 29,2008 7:52 PM

HS=3985

PETRA 7/29/2008 7:52:29 PM (X,X'.CSP)

QU
THESIS
ALI
C.2

Y

Y'

WILLIAMS L G OIL	<4.99MI>	WILLIAMS L G OIL	<7.41MI>	HUNT ENERGY	<3.82MI>	WAGNER & BROWN	<1.91MI>	ARKLA	<5.44MI>	CHESAPEAKE
LITKE 17-1		ALLRED 18-1		GILLINGHAM 1		CROWELL 1		HELEN DAILY 1		JENNINGS 1
T9N R14W S17		T9N R13W S18		T9N R12W S21		T9N R12W S25		T9N R11W S29		T8N R10W S6

Rel Depth(ft)

Datum

Top Upper Red Fork

Top Middle Red Fork

TOP_LOWER_REDFORK [FAA]

LST-6

HST-5 SB Type I

CS-5

TST-5

LST-5

HST-4 SB Type I

CS-4

TST-4

LST-4

HST-3 SB Type I

CS-3

TST-3

LST-2

BASE_LOWER_REDFORK [FAA]

HST-1 SB Type II

CS-1

TST-1 (Inola Limestone)

Novi Limestone

Plate XVI

Cross Section Y-Y'

Basin Strike as Orientation

Horizontal Scale = 4147.9
Vertical Scale = 100.0
Vertical Exaggeration = 41.5x

LOG CURVES

0 — 150 GR (GAPI) 3 GAMMA RAY

0.2 — 2,000 ILD (ohmm) Deep Induction

0.2 — 2,000 AT90 (OHMM)

0.2 — 2,000 IL (OHMM) 2 RESISTIVITY (linear)

TOPS AND MARKERS

- TOP_UPPER_REDFORK FAA
- TOP_MIDDLE_REDFORK FAA
- TOP_LOWER_REDFORK FAA
- HST-5_SB_TYPE_I FAA
- TST-5 FAA
- LST-5 FAA
- HST-4_SB_TYPE_I FAA
- TST-4 FAA
- LST-4 FAA
- HST-3_SB_TYPE_I FAA
- TST-3 FAA
- HST-2_SB_TYPE_I FAA
- TST-2 FAA
- LST-2 FAA
- HST-1_SB_TYPE_II FAA
- TST-1 FAA
- BASE_LOWER_REDFORK FAA
- TOP_INOLA_LIMESTONE FAA
- NOVI FAA

Operator
Well Name
Well Number
Twn-Rge-Sec

By: Faiyaz M. Ali

July 29,2008 8:23 PM

HS=4148

PETRA 7/29/2008 8:23:46 PM (Y-Y'.CSP)

OU
THESES
ALI
C90.3

Z

Z'

APACHE CORP	NEG OPERATING LIMITED LIABILITY CORP	TRANS-WSTRN EXPL INC	SOHIO	CRUSADER ENERGY	ANDOVER OIL	HELMERICH & PAYNE
WINTER LIVESTOCK 1-19 T8N R14W S19	ARTHUR 24-1 T8N R14W S24	COPELAND 1-16 T8N R13W S16	STOCKTON 1-21 T8N R12W S21	CAY 1-1 T7N R12W S1	CHINQUA 16-1 T7N R11W S16	CHARLES ADAMS 1-25 T7N R11W S25

<4.52MI> <3.06MI> <6.09MI> <4.07MI> <3.43MI> <4.02MI>

Rel Depth(ft)

Datum

Top Upper Red Fork

Top Middle Red Fork

LST-6

TST-5

CS-5

LST-5

HST-4 SB Type I

CS-4

TST-4

LST-4

HST-3 SB Type I

CS-3

TST-3

LST-2

HST-1 SB Type II

CS-1

TST-1 (Inola Limestone)

Novi Limestone

TOP_LOWER_REDFORK [FAA]

BASE_LOWER_REDFORK [FAA]

Plate XVII

Cross Section Z-Z'

Basin Strike as Orientation

Horizontal Scale = 4433.1
Vertical Scale = 100.0
Vertical Exaggeration = 44.3x

LOG CURVES

0 150 GR (GAPI) 3 GAMMA RAY

0.2 2,000 ILD (ohmm) Deep Induction

0.2 2,000 AT90 (OHMM)

TOPS AND MARKERS

- TOP_UPPER_REDFORK FAA
- TOP_MIDDLE_REDFORK FAA
- TOP_LOWER_REDFORK FAA
- LST-6 FAA
- HST-5_SB_TYPE_I FAA
- TST-5 FAA
- LST-5 FAA
- HST-4_SB_TYPE_I FAA
- TST-4 FAA
- LST-4 FAA
- HST-3_SB_TYPE_I FAA
- TST-3 FAA
- HST-2_SB_TYPE_I FAA
- LST-2 FAA
- HST-1_SB_TYPE_II FAA
- TST-1 FAA
- BASE_LOWER_REDFORK FAA
- TOP_INOLA_LIMESTONE FAA
- NOVI FAA

Operator
Well Name
Well Number
Twn-Rge-Sec

By: Faiyaz M. Ali

July 29,2008 8:30 PM

HS=4433

PETRA 7/29/2008 8:30:12 PM (Z-Z' (GP)

Geology

WASHITA

CADDO

10N 14W | 10N 13W | 10N 12W | 10N 11W

9N 14W | 9N 13W | 9N 12W | 9N 11W

8N 14W | 8N 13W | 8N 12W | 8N 11W

7N 14W | 7N 13W | 7N 12W | 7N 11W

Plate XVIII

Structure Map

Base of Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 30, 2008

PETRA 7/30/2008 8:08:48 PM

OU
THESIS
ALI
cop.3

WASHITA

CADDO

10N 14W | 10N 13W | 10N 12W | 10N 11W

9N 14W | 9N 13W | 9N 12W | 9N 11W

8N 14W | 8N 13W | 8N 12W | 8N 11W

7N 14W | 7N 13W | 7N 12W | 7N 11W

Plate XIX

Structure Map

Top of Lower Red Fork Sandstone

0 4,000 8,000 12,000
FEET

By: Faiyaz M. Ali

July 30, 2008

PETRA 7/30/2008 8:54:45 PM

OU
THESIS
ALI
COP.3

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

WASHITA

CADDO

8N 14W

8N 13W

8N 12W

8N 11W

7N 14W

7N 13W

7N 12W

7N 11W

Plate XX

Interval Isopach

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 30, 2008

PETRA 7/30/2008 8:52:14 PM

OU
THESES
ALI
cop.3

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

WASHITA

CADDO

8N 14W

8N 13W

8N 12W

8N 11W

7N 14W

7N 13W

7N 12W

7N 11W

Plate XXI

Total Net Sandstone Isopach

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 30, 2008

PETRA 7/30/2008 8:54:50 PM

OU
THESES
ALI
cop.3

OU
THESIS
ALI
Cop. 3

10N 14W

10N 13W

9N 14W

9N 13W

WASHITA

Plate XXII

HST-2 Gross Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

August 1, 2008

PETRA 8/1/2008 9:50:27 AM

WASHITA

10N 14W

10N 13W

9N 14W

9N 13W

Plate XXIII

HST-2 Net Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

August 1, 2008

PETRA 8/1/2008 9:52:06 AM

OU
THESIS
ALI
cop 3

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

WASHITA

CADDO

8N 14W

8N 13W

8N 12W

8N 11W

7N 14W

7N 13W

7N 12W

7N 11W

Plate XXIV

HST-3 Gross Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 31, 2008

PETRA 7/31/2008 7:06:53 PM

OU
THESIS
ALI
c.1

Geology

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

WASHITA

CADDO

8N 14W

8N 13W

8N 12W

8N 11W

7N 14W

7N 13W

7N 12W

7N 11W

Plate XXV

HST-3 Net Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 31, 2008

PETRA 7/31/2008 8:58:58 PM

OU
THESIS
ALI
c.2 3

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

WASHITA

CADDO

8N 14W

8N 13W

8N 12W

8N 11W

7N 14W

7N 13W

7N 12W

7N 11W

Plate XXVI

HST-3 Porosity Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 31, 2008

PETRA 7/31/2008 8:54:16 PM

OU
THESES
ALI
COP.3

WASHITA

CADDO

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

8N 14W

8N 13W

8N 12W

8N 11W

7N 14W

7N 13W

7N 12W

7N 11W

Plate XXVII

LST-4 Gross Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 31, 2008

PETRA 7/31/2008 12:03:40 PM

OU
THESIS
ALI
COR 3

10N 14W
10N 13W
10N 12W
10N 11W
9N 14W
9N 13W
9N 12W
9N 11W
8N 14W
8N 13W
8N 12W
8N 11W
7N 14W
7N 13W
7N 12W
7N 11W

WASHITA

CADDO

Plate XXVIII

LST-4 Net Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000
FEET

By: Faiyaz M. Ali

July 31, 2008

PETRA 7/31/2008 12:08:36 PM

OU
THESIS
ALI
cop.3

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

8N 14W

8N 13W

8N 12W

8N 11W

7N 14W

7N 13W

7N 12W

7N 11W

WASHITA

CADDO

Plate XXIX

LST-4 Porosity Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 31, 2008

PETRA 7/31/2008 12:09:24 PM

OU
THESIS
ALI
COP.3

Geology

WASHITA

CADDO

10N 14W | 10N 13W | 10N 12W | 10N 11W

9N 14W | 9N 13W | 9N 12W | 9N 11W

8N 14W | 8N 13W | 8N 12W | 8N 11W

7N 14W | 7N 13W | 7N 12W | 7N 11W

Plate XXX

HST-4 Gross Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 31, 2008

PETRA 7/31/2008 12:15:30 PM

OU
THESES
ALI
cop.3

Geology

10N 14W

10N 13W

10N 12W

10N 11W

9N 14W

9N 13W

9N 12W

9N 11W

WASHITA

CADDO

8N 14W

8N 13W

8N 12W

8N 11W

7N 14W

7N 13W

7N 12W

7N 11W

Plate XXXI

LST-5 Gross Sandstone Map

Lower Red Fork Sandstone

0 4,000 8,000 12,000

FEET

By: Faiyaz M. Ali

July 31, 2008

PETRA 7/31/2008 12:17:50 PM

OU
THESIS
ALI
COP 3

Geology