CORE ANALYSIS RESULTS

SHELL OIL COMPANY

MUDGE NO. 303

BASIN DAKOTA FIELD

SAN JUAN COUNTY, NEW MEXICO



Petroleum Reservoir Engineering

DALLAS, TEXAS

Company_	SHELL O'L COMPANY	_ Formation	DACOTA	Page 2	of3
	MUDGE NO. 303				
	BASIN DAKOTA				
	SAN JUAN State NEW MEXICO				
•	NW NE SEC. 16-T25N-R11W				

## CORE ANALYSIS RESULTS

(Figures in parentheses refer to footnote remarks)

Control   Cont		PERMEABILITY MILLIDARCYS			(Figures in parentheses refer to footh  RESIDUAL SATURATION			1				
26	SAMPLE	DEPTH FEET				% VOLUME % PORE	WATER	GRAIN DENSITY	REMARKS			
27			(K <sub>A</sub> )									
28												
29 32-33 0.4 15.2 0.0 50.7 Sd Gy VFC Silty Sl/Shy Clay 30 33-34 0.3 0.1 14.8 0.0 kb.6 2.64 Sd Gy VFC Silty Sl/Shy Clay 31 34-35 0.1 9.6 0.0 66.7 Sd Gy VFC Silty Sl/Shy Clay 32 35-36 0.3 14.0 0.0 kb.5 Sd Gy VFC Silty Sl/Shy Clay 33 36-37 0.2 11.7 0.0 k5.2 Sd Gy VFC Silty Sl/Shy Clay 34 37-38 0.h 0.2 14.2 0.0 k7.9 2.64 Sd Gy VFC Silty Clay 35 38-39 0.1 11.7 0.0 51.2 VF Sd Gy VFC Silty Clay 36 39-10 0.1 7.3 0.0 65.7 VF Sd Gy VFC Silty Clay 37 h0-h1 0.1 2.9 3.h 72.5 Silt Drk Gy VFC V/Shy Clay 38 h1-12 0.3 11.6 0.0 37.1 Sd Gy VFC Silty Clay 39 h2-h3 0.h 0.2 15.1 0.0 h5.0 2.6h Sd Gy VFC Silty Clay h1 h1-15 2.1 11.0 0.0 h5.0 2.6h Sd Gy VFC Silty Clay h1 h1-15 2.1 11.0 0.0 h3.5 VF Sd Gy VFC Silty Clay h2 h5-h6 0.h 11.5 0.0 h3.5 VF Sd Gy VFC Silty Sl/Shy Clay h3 h5-h7 0.5 13.4 0.0 53.0 Sd Gy VFC Silty Sl/Shy Clay h3 h7-h8 0.1 11.6 0.0 h6.5 Sd Gy VFC Silty Sl/Shy Clay h4 h7-h8 0.1 11.6 0.0 h6.5 Sd Gy VFC Silty Sl/Shy Clay h5 h8-h9 0.3 0.2 11.9 0.0 h7.0 2.6h VF Sd Gy VFC Silty Sl/Shy Clay h5 h8-19 0.3 13.8 0.7 h4.9 Sd Gy VFC Silty Sl/Shy Clay h5 50-51 0.3 13.8 0.7 h4.9 Sd Gy VFC Silty Clay h5 51-52 0.2 10.5 0.0 37.1 VF Sd Gy VFC Silty Clay h5 51-55 0.1 9.9 0.0 35.4 Sd Gy VFC Silty Clay Sd Gy VFC Si		30 <b>-3</b> 1	-									
33-34 0.3 0.1 14.8 0.0 18.6 2.64 Sd Gy VFC Silty Sl/Shy Clay 31 34-35 0.1 9.6 0.0 66.7 Sd Gy VFC Silty Sl/Shy Clay 32 35-36 0.3 14.0 0.0 18.5 Sd Gy VFC Silty Sl/Shy Clay 33 36-37 0.2 11.7 0.0 45.2 Sd Gy VFC Silty Sl/Shy Clay 34 37-38 0.4 0.2 14.2 0.0 47.9 2.64 Sd Gy VFC Silty Clay 35 38-39 0.1 11.7 0.0 51.2 VF Sd Gy VFC Silty Clay 36 39-40 0.1 7.3 0.0 65.7 VF Sd Gy VFC Silty Shy Clay 37 h0-11 0.1 2.9 3.4 72.5 Silt Drk Gy VFC VFS Clay 38 h1-12 0.3 11.6 0.0 37.1 Sd Cy VFC Silty Clay 39 h2-43 0.4 0.2 15.1 0.0 45.0 2.64 Sd Gy VFC Silty Sl/Shy Clay 40 43-44 0.4 11.7 0.9 42.7 VF Sd Gy VFC Silty Sl/Shy Clay 41 41-45 2.1 11.0 0.0 43.6 VF Sd Gy VFC Silty Sl/Shy Clay 42 45-46 0.4 11.5 0.0 43.5 VF Sd Gy VFC Silty Sl/Shy Clay 43 46-47 0.5 13.4 0.0 53.0 Sd Gy VFC Silty Sl/Shy Clay 44 47-48 0.1 11.6 0.0 46.5 Sd Gy VFC Silty Sl/Shy Clay 45 48-49 0.3 0.2 11.9 0.0 47.0 2.64 VF Sd Gy VFC Silty Sl/Shy Clay 46 49-50 0.4 12.2 0.0 43.4 VF Sd Gy VFC Silty Sl/Shy Clay 47 50-51 0.3 13.8 0.7 44.9 Sd Gy VFC Silty Clay 48 51-52 0.2 10.5 0.0 37.1 VF Sd Gy VFC Silty Clay 49 52-53 0.1 11.3 0.0 50.3 Sd Gy VFC Silty Sl/Shy Clay 50 53-54 0.4 0.3 12.5 0.0 46.4 2.64 Sd Gy VFC Silty Sl/Shy Clay 51 54-55 0.1 9.9 0.0 35.4 Sd Gy VFC Silty Sl/Shy Clay 52 55-56 0.1 11.1 0.0 45.0 Sd Gy VFC Silty Sl/Shy Clay 53 56-57 0.1 6.4 1.6 53.1 VF Sd Gy VFC Silty Sl/Shy Clay 54 57-58 0.1 2.7 3.7 62.9 Silt Drk Gy VFC Shy Clay 55 53-59 0.1 2.2 1.6 69.1 Silt Drk Gy VFC Shy Clay 56 59-60 0.1 1.9 0.0 57.8 Silt Drk Gy VFC Shy Clay 57 60-61 0.1 4.8 6 1.2 40.7 2.64 VF Sd Gy VFC Silty Clay 58 61-62 0.1 8.6 0.0 44.1 VF Sd Gy VFC Silty Clay 59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFC Silty Clay 59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFC Silty Sly Shy Clay 59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFC Silty Sly Shy Clay 59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFC Silty Sly Shy Clay												
31 31-35 0.1 9.6 0.0 66.7 Sd Cy VFC Silty Sl/Shy Clay 32 35-36 0.3 1h.0 0.0 h8.5 Sd Cy VFC Silty Sl/Shy Clay 33 36-37 0.2 1l.7 0.0 h5.2 Sd Cy VFC Silty Clay 34 37-38 0.h 0.2 lh.2 0.0 h7.9 2.6h Sd Cy VFC Silty Clay 35 38-39 0.l 1l.7 0.0 51.2 VF Sd Cy VFC Silty Clay 36 39-lo <0.l 7.3 0.0 65.7 VF Sd Cy VFC Silty Shy Clay 37 h0-h1 <0.l 2.9 3.h 72.5 Silt Drk Gy VFC VShy Clay 38 h1-h2 0.3 1l.6 0.0 37.1 Sd Cy VFC Silty Clay 39 h2-h3 0.h 0.2 l5.1 0.0 h5.0 2.6h Sd Cy VFC Silty Clay 40 h3-h4 0.h 1l.7 0.9 h2.7 VF Sd Cy VFC Silty Clay 41 h1-h5 2.l 1ll.0 0.0 h3.6 VF Sd Cy VFC Silty Clay 42 h5-h6 0.h 1l.5 0.0 h3.5 VF Sd Cy VFC Silty Sl/Shy Clay 43 h6-h7 0.5 13.h 0.0 53.0 Sd Cy VFC Silty Sl/Shy Clay 45 h8-h9 0.3 0.2 ll.9 0.0 h7.0 2.6h VF Sd Cy VFC Silty Sl/Shy Clay 46 h9-50 0.h 12.2 0.0 h3.h VF Sd Cy VFC Silty Clay 47 50-51 0.3 13.8 0.7 h4.9 Sd Cy VFC Silty Clay 48 51-52 0.2 10.5 0.0 37.1 VF Sd Cy VFC Silty Clay 49 52-53 0.1 1l.3 0.0 50.3 Sd Cy VFC Silty Clay 49 52-53 0.1 1l.3 0.0 50.3 Sd Cy VFC Silty Clay 50 53-5h 0.h 0.3 12.5 0.0 h6.h 2.6h Sd Cy VFC Silty Clay 51 55-56 0.1 1l.1 0.0 h5.0 Sd Cy VFC Silty Clay 52 55-56 0.1 1l.1 0.0 h5.0 Sd Cy VFC Silty Sl/Shy Clay 53 56-57 0.1 6.h 1.6 53.1 VF Sd Cy VFC Silty Sl/Shy Clay 54 57-58 0.1 2.7 3.7 62.9 Silt Drk Gy VFC Shy Clay 55 58-59 0.1 2.2 h.6 59.1 Silt Drk Gy VFC Shy Clay 56 59-60 0.1 1.9 0.0 57.8 Silt Drk Gy VFC Shy Clay 57 60-61 0.1 0.1 8.6 1.2 h0.7 2.6h VF Sd Cy VFC Shy Clay 58 61-62 0.1 11.h 0.0 57.3 VF Sd Cy VFC Shy Clay 58 61-62 0.1 11.h 0.0 57.3 VF Sd Cy VFC Shy Clay 59 62-63 0.1 11.h 0.0 57.3 VF Sd Cy VFC Silty Sl/Shy Clay 59 62-61 0.1 11.h 0.0 57.8 Silt Drk Gy VFC Shy Clay 59 62-63 0.1 11.h 0.0 57.8 Silt Drk Gy VFC Shy Clay 59 62-61 0.1 11.h 0.0 57.3 VF Sd Cy VFC Silty Shy Clay 59 62-63 0.1 11.h 0.0 57.3 VF Sd Cy VFC Shy Clay 59 62-63 0.1 11.h 0.0 57.3 VF Sd Cy VFC Silty Shy Clay					-							
35-36   0.3				0.1				2.64				
33 36-37 0.2 11.7 0.0 45.2 Sd Gy VFG Silty Clay 34 37-38 0.4 0.2 14.2 0.0 47.9 2.64 Sd Gy VFG Silty Clay 35 38-39 0.1 11.7 0.0 51.2 VF Sd Gy VFG Silty Clay 36 39-40 <0.1 7.3 0.0 65.7 VF Sd Gy VFG Silty Clay 37 40-41 <0.1 2.9 3.4 72.5 Silt Drk Gy VFG Silty Clay 38 11-42 0.3 11.6 0.0 37.1 Sd Gy VFG Silty Clay 39 12-43 0.4 0.2 15.1 0.0 15.0 2.64 Sd Gy VFG Silty Clay 40 43-44 0.4 11.7 0.9 12.7 VF Sd Gy VFG Silty Sl/Shy Clay 41 14-45 2.1 11.0 0.0 43.6 VF Sd Gy VFG Silty Sl/Shy Clay 42 15-46 0.4 11.5 0.0 13.5 VF Sd Gy VFG Silty Sl/Shy Clay 43 14-647 0.5 13.4 0.0 53.0 Sd Gy VFG Silty Sl/Shy Clay 44 147-18 0.1 11.6 0.0 16.5 Sd Gy VFG Silty Sl/Shy Clay 45 18-49 0.3 0.2 11.9 0.0 147.0 2.64 VF Sd Gy VFG Silty Sl/Shy Clay 46 19-50 0.4 12.2 0.0 13.4 VF Sd Gy VFG Silty Sl/Shy Clay 47 50-51 0.3 13.8 0.7 14.9 Sd Gy VFG Silty Clay 48 51-52 0.2 10.5 0.0 37.1 VF Sd Gy VFG Silty Clay 49 52-53 0.1 11.3 0.0 50.3 Sd Gy VFG Silty Sl/Shy Clay 50 53-54 0.4 0.3 12.5 0.0 46.4 2.64 Sd Gy VFG Silty Sl/Shy Clay 51 54-55 0.1 9.9 0.0 35.4 Sd Gy VFG Silty Sl/Shy Clay 52 55-56 0.1 11.1 0.0 15.0 Sd Gy VFG Silty Sl/Shy Clay 53 56-57 0.1 6.4 1.6 53.1 VF Sd Gy VFG Silty Sl/Shy Clay 54 57-58 0.1 2.7 3.7 62.9 Silt Drk Gy VFG Shy Clay 55 58-59 0.1 2.2 1.6 59.1 Silt Drk Gy VFG Shy Clay 56 59-60 0.1 1.9 0.0 57.8 Silt Drk Gy VFG Shy Clay 57 60-61 0.1 0.1 8.6 1.2 10.7 2.64 VF Sd Gy VFG Silty Clay 58 61-62 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Clay 59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Clay 59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Clay	31				2							
31.         37-38         0.1         0.2         11.2         0.0         17.9         2.64         Sd Cy VFC Silty Clay           35         38-39         0.1         11.7         0.0         51.2         VF Sd Gy VFG Silty Clay           36         39-40         0.1         7.3         0.0         65.7         VF Sd Gy VFG Silty Shy Clay           37         40-11         0.1         2.9         3.1         72.5         Silt Drk Gy VFG Silty Clay           38         11-12         0.3         11.6         0.0         37.1         Sd Gy VFG Silty Clay           39         12-13         0.1         0.2         15.1         0.0         15.0         2.61         Sd Gy VFG Silty Sl/Shy Clay           40         13-14         0.1         11.7         0.9         12.7         VF Sd Gy VFG Silty Sl/Shy Clay           10         13-14         0.0         13.6         VF Sd Gy VFG Silty Sl/Shy Clay           12         15-16         0.1         11.5         0.0         13.5         VF Sd Gy VFG Silty Sl/Shy Clay           13         146-17         0.5         13.1         0.0         53.0         Sd Gy VFG Silty Sl/Shy Clay           14         17-18         0.1	32	- ·										
38-39   0.1   11.7   0.0   51.2   VF Sd Gy VFG Silty Clay   36   39-40   0.1   7.3   0.0   65.7   VF Sd Gy VFG Silty Shy Clay   37   40-41   0.1   2.9   3.4   72.5   Silt Drk Gy VFG VfShy Clay   38   41-42   0.3   11.6   0.0   37.1   Sd Gy VFG Silty Clay   39   42-43   0.4   0.2   15.1   0.0   45.0   2.64   Sd Gy VFG Silty Clay   40   43-44   0.4   11.7   0.9   42.7   VF Sd Gy VFG Silty Clay   41   44-45   2.1   11.0   0.0   43.6   VF Sd Gy VFG Silty Clay   42   45-46   0.4   11.5   0.0   43.5   VF Sd Gy VFG Silty Sl/Shy Clay   44   47-48   0.1   11.6   0.0   46.5   Sd Gy VFG Silty Sl/Shy Clay   44   47-48   0.1   11.6   0.0   46.5   Sd Gy VFG Silty Sl/Shy Clay   45-46   0.3   0.2   11.9   0.0   47.0   2.64   VF Sd Gy VFG Silty Sl/Shy Clay   46   49-50   0.4   12.2   0.0   43.4   VF Sd Gy VFG Silty Sl/Shy Clay   47   50-51   0.3   13.8   0.7   44.9   Sd Gy VFG Silty Clay   48   51-52   0.2   10.5   0.0   37.1   VF Sd Gy VFG Silty Clay   49   52-53   0.1   11.3   0.0   50.3   Sd Gy VFG Silty Clay   50   53-54   0.4   0.3   12.5   0.0   46.4   2.64   Sd Gy VFG Silty Clay   51   54-55   0.1   9.9   0.0   35.4   Sd Gy VFG Silty Clay   52   55-56   0.1   11.1   0.0   45.0   Sd Gy VFG Silty Clay   52   55-56   0.1   11.1   0.0   45.0   Sd Gy VFG Silty Clay   52   53-59   0.1   2.7   3.7   62.9   Silt Drk Gy VFG Shy Clay   52   53-59   0.1   2.7   3.7   62.9   Silt Drk Gy VFG Shy Clay   53   56-57   0.1   6.4   1.6   53.1   VF Sd Gy VFG Shy Clay   55   58-59   0.1   2.2   4.6   59.1   Silt Drk Gy VFG Shy Clay   56   59-60   0.1   1.9   0.0   57.8   Silt Drk Gy VFG Shy Clay   58   61-62   0.1   8.6   0.0   41.4   0.0   54.3   VF Sd Gy VFG Silty Clay   59   62-63   0.1   11.4   0.0   54.3   VF Sd Gy VFG Silty Clay   59   62-63   0.1   11.4   0.0   54.3   VF Sd Gy VFG Silty Clay   51.59   62-63   0.1   11.4   0.0   54.3   VF Sd Gy VFG Silty Clay   51.59	33							- (1				
37	34		-	0.2				•				
37	35											
11	36											
12-13	37				-				•			
h0         h3-hh         0.4         11.7         0.9         h2.7         VF Sd Gy VFG Silty Clay           h1         hh-h5         2.1         11.0         0.0         h3.6         VF Sd Gy VFG Silty Sl/Shy Clay           h2         h5-h6         0.h         11.5         0.0         h3.5         VF Sd Gy VFG Silty Sl/Shy Clay           h3         h6-h7         0.5         13.4         0.0         53.0         Sd Gy VFG Silty Sl/Shy Clay           h4         h7-h8         0.1         11.6         0.0         h6.5         Sd Gy VFG Silty Sl/Shy Clay           h5         18-h9         0.3         0.2         11.9         0.0         h7.0         2.6h VF Sd Gy VFG Silty Sl/Shy Clay           h6         h9-50         0.4         12.2         0.0         h3.h         VF Sd Gy VFG Silty Clay           h7         50-51         0.3         13.8         0.7         h4.9         Sd Gy VFG Silty Clay           h8         51-52         0.2         10.5         0.0         37.1         VF Sd Gy VFG Silty Clay           50         53-54         0.h         0.3         12.5         0.0         46.h         2.6h         Sd Gy VFG Silty Clay           51         54-55 <t< td=""><td></td><td>41-42</td><td>0.3</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		41-42	0.3									
		42-43	0.4	0.2	15.1	0.0			•			
12		43-44	0.4		11.7	0.9	42.7					
12	47	44-45	2.1		11.0	0.0	43.6					
43         46-47         0.5         13.4         0.0         53.0         Sd Gy VFG Silty Sl/Shy Clay           44         47-48         0.1         11.6         0.0         46.5         Sd Gy VFG Silty Sl/Shy Clay           45         48-49         0.3         0.2         11.9         0.0         47.0         2.64 VF Sd Gy VFG Silty Sl/Shy Clay           46         49-50         0.4         12.2         0.0         43.4         VF Sd Gy VFG Silty Clay           47         50-51         0.3         13.8         0.7         44.9         Sd Gy VFG Silty Clay           48         51-52         0.2         10.5         0.0         37.1         VF Sd Gy VFG Silty Clay           49         52-53         0.1         11.3         0.0         50.3         Sd Gy VFG Silty Clay           50         53-54         0.4         0.3         12.5         0.0         46.4         2.64         Sd Gy VFG Silty Clay           51         54-55         0.1         9.9         0.0         35.4         Sd Gy VFG Silty Clay           52         55-56         0.1         11.1         0.0         45.0         Sd Gy VFG Silty Clay           54         57-58         0.1         2	42	45-46	0.4		11.5	0.0						
47       50-51       0.3       13.8       0.7       44.9       Sd Gy VFG Silty Clay         48       51-52       0.2       10.5       0.0       37.1       VF Sd Gy VFG Silty Clay         49       52-53       0.1       11.3       0.0       50.3       Sd Gy VFG Silty Clay         50       53-54       0.4       0.3       12.5       0.0       46.4       2.64       Sd Gy VFG Silty Clay         51       54-55       0.1       9.9       0.0       35.4       Sd Gy VFG Silty Clay         52       55-56       0.1       11.1       0.0       45.0       Sd Gy VFG Silty Clay         53       56-57       <0.1	43	45-47	0.5		13.4	0.0						
47       50-51       0.3       13.8       0.7       44.9       Sd Gy VFG Silty Clay         48       51-52       0.2       10.5       0.0       37.1       VF Sd Gy VFG Silty Clay         49       52-53       0.1       11.3       0.0       50.3       Sd Gy VFG Silty Clay         50       53-54       0.4       0.3       12.5       0.0       46.4       2.64       Sd Gy VFG Silty Clay         51       54-55       0.1       9.9       0.0       35.4       Sd Gy VFG Silty Clay         52       55-56       0.1       11.1       0.0       45.0       Sd Gy VFG Silty Clay         53       56-57       <0.1	44	47-48	0.1		11.6	0.0	46.5					
47       50-51       0.3       13.8       0.7       44.9       Sd Gy VFG Silty Clay         48       51-52       0.2       10.5       0.0       37.1       VF Sd Gy VFG Silty Clay         49       52-53       0.1       11.3       0.0       50.3       Sd Gy VFG Silty Clay         50       53-54       0.4       0.3       12.5       0.0       46.4       2.64       Sd Gy VFG Silty Clay         51       54-55       0.1       9.9       0.0       35.4       Sd Gy VFG Silty Clay         52       55-56       0.1       11.1       0.0       45.0       Sd Gy VFG Silty Clay         53       56-57       <0.1	45	48-49	0.3	0.2	11.9	0.0						
47       50-51       0.3       13.8       0.7       44.9       Sd Gy VFG Silty Clay         48       51-52       0.2       10.5       0.0       37.1       VF Sd Gy VFG Silty Clay         49       52-53       0.1       11.3       0.0       50.3       Sd Gy VFG Silty Clay         50       53-54       0.4       0.3       12.5       0.0       46.4       2.64       Sd Gy VFG Silty Clay         51       54-55       0.1       9.9       0.0       35.4       Sd Gy VFG Silty Clay         52       55-56       0.1       11.1       0.0       45.0       Sd Gy VFG Silty Clay         53       56-57       <0.1	46	119-50	0.4		12.2	0.0						
49       52-53       0.1       11.3       0.0       50.3       Sd Gy VFG Silty Sl/Shy Clay         50       53-54       0.4       0.3       12.5       0.0       46.4       2.64       Sd Gy VFG Silty Clay         51       54-55       0.1       9.9       0.0       35.4       Sd Gy VFG Silty Clay         52       55-56       0.1       11.1       0.0       45.0       Sd Gy VFG Silty Clay         53       56-57       <0.1	47	50 <b>-</b> 51	0.3		13.8	0.7	44.9					
49       52-53       0.1       11.3       0.0       50.3       Sd Gy VFG Silty Sl/Shy Clay         50       53-54       0.4       0.3       12.5       0.0       46.4       2.64       Sd Gy VFG Silty Clay         51       54-55       0.1       9.9       0.0       35.4       Sd Gy VFG Silty Clay         52       55-56       0.1       11.1       0.0       45.0       Sd Gy VFG Silty Clay         53       56-57       <0.1	48	51-52	0.2		10.5	0.0						
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	49	52 <b>-</b> 53	0.1									
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	50		0.4	0.3				2.64				
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	51		0.1		9.9							
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	52 "	<b>ランーフ</b> ひ										
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	53	56 <b>-</b> 57	<0.1		6.4				•			
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	54											
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	55	58 <b>-</b> 59	<0.1		2.2	•						
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	56	59-60	<0.1		1.9		57.8		•			
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	57 °	60-61	<0.1	<0.1	8.6	1.2	40.7					
59 62-63 0.1 11.4 0.0 54.3 VF Sd Gy VFG Silty Sl/Shy Clay	58 -		<0.1									
60 63-64 0.1 7.8 0.0 59.0 Sd Gy VFG Silty Sl/Shy Clay	59		0.1									
	60	63-64	0.1		7.8	0.0	59.0		Sd Gy VFG Silty Sl/Shy Clay			

VF=Vertical Fracture

NOTE

(\*) REFER TO ATTACHED LETTER.
(1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.

<sup>(2)</sup> OFF LOCATION ANALYSES-NO INTERPRETATION OF RESULTS.

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Petroleum Reservoir Engineering

DALLAS.	TEXAS
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Company SHELL OTL COMPANY	Formation	DAKOTA	Page1	of3
Vell MUDGE NO. 303	Cores	DIAMOND 4"	File	RP-3-2759
Tield BASIN DAKOTA				
County SAN JUAN State NEW MEXICO				
ocation NN NE SEC. 16-T25N-R11//	Remarks			

### CORE ANALYSIS RESULTS

(Figures in parentheses refer to footnote remarks)

				(Figu	res in parentheses refe	r to jooir	iote remarks)	
SAMPLE	DEPTH	PERMEA MILLID	BILITY	POROSITY	RESIDUAL SATURATIO	N	GRAIN	REMARKS
NUMBER	FEET	HORIZONTAL	VERTICAL	PERCENT	% VOLUME % PORE	TOTAL WATER % PORE	DENSITY	
<u></u>		(K <sub>A</sub> )						
1 2 3 4 5 6 7 8 9	5781-82 82-83 83-84 84-85 85-86 86-87 87-88 88-89 89-90	<pre>0.1</pre>	<0.1	3.5 3.3 3.2 5.3 3.1 7.3 8.7 6.5	0.0 0.0 26.9 9.4 4.7 6.4 37.0 42.5 21.5	88.5 90.3 88.0 59.6 66.0 76.7 80.6 45.2 35.7 33.8	2.67 2.64	Silt Drk Gy VFG V/Shy Clay Silt Gy VFG Shy Clay Silt Gy VFG Shy Clay Silt Gy VFG Shy Clay
11	91-92	<0.1		3.7	32.5	27.1		VF Silt Drk Gy VFG V/Shy Clay
12 13 14	5794-95 95-96 96-97	<0.1 <0.1 <0.1	<0.1	2.8 3.8 2.4	3.6 5.3 0.0	82.2 76.3 87.5	2.66	Silt Drk Gy VFG V/Shy Clay Silt Drk Gy VFG V/Shy Clay Silt Drk Gy VFG V/Shy Clay
15 16	5805-07 07-08	<0.1 <0.1		4.2 3.0	0.0	85.8 90.0		Silt Drk Gy VFG V/Shy Clay Silt Drk Gy VFG V/Shy Clay
17 1.8	5815 <b>-</b> 16 16 <b>-</b> 17	<0.1 <0.1	<0.1	3.7 3.7	19.0 13.5	64.8 70.3	2.63	Silt Drk Gy VFG V/Shy Clay Silt Drk Gy VFG V/Shy Clay
19 20 21 22 23 24 25	5822-23 23-24 24-25 25-26 26-27 27-28 28-29	<pre>&lt;0.1 &lt;0.1 &lt;0.1 0.1 0.1 0.4 0.5</pre>	<0.1	7.5 6.4 8.0 8.2 8.3 13.4 15.1	2.7 0.0 2.5 0.0 0.0 0.0	76.0 56.1 75.0 41.5 42.2 46.3 49.0	2.63	Sd Drk Cy VFG V/Silty V/Shy Clay Sd Gy VFG Silty Clay Sd Gy VFG Silty Shy Clay Sd Gy VFG Silty Clay

VF=Vertical Fracture

(\*) REFER TO ATTACHED LETTER.
 (1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.

<sup>(2)</sup> OFF LOCATION ANALYSES-NO INTERPRETATION OF RESULTS.

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Petroleum Reservoir Engineering

#### DALLAS, TEXAS

ompan	v SHELL	OTL COMP.	ALEX		Formation	DA	KOTA		Page.	3	of	3	
Vell	•	NO. 303			Cores	DI	AMOND 4"		_File_			3-2759	
ield	PASIN	DAKOTA		Drilling Flui	id <u>M</u> A	TER BASE	MUD	_Date	Report	3-3	3-76		
ounty_	SAN JU	All St	ate_NEW_	MEXICO	Elevation	61	201 KB		_Anal	ysts	RG		
ocation	NW NE	SEC. 16-	T25N-R11	<u>W</u>	Remarks								
				CC (Figur	ORE ANALYS res in parentheses refe	IS RE	SULTS sote remarks)						
~													
<del>`</del> T	D. COTU	PERMEA MILLID		POROSITY	RESIDUAL SATURATION		GRATN			REMAI	RKS		
SAMPLE	DEPTH FEET			POROSITY PERCENT		N TOTAL WATER % PORE	GRAIN DENSITY			REMAI	RKS		
		MILLID	ARCYS		SATURATION	TOTAL WATER	1 1			REMAI	R K S		

NOTE:

(\*) REFER TO ATTACHED LETTER.
(1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.

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LOCATION NW NE SEC. 16-T25N-R11W STATE NEW MEXICO

Petroleum Reservoir Engineering

\_\_FIELD \_\_\_\_\_BASIN DAKOTA FILE \_\_\_\_\_ RP=3-2759 COMPANY SHELL OIL COMPANY COUNTY SAN JUAN \_\_\_\_ DATE \_\_\_ 3-3-76 WELL MUDGE NO. 303 \_\_ELEV. 6420' KB

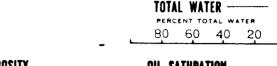
# CORE-GAMMA CORRELATION

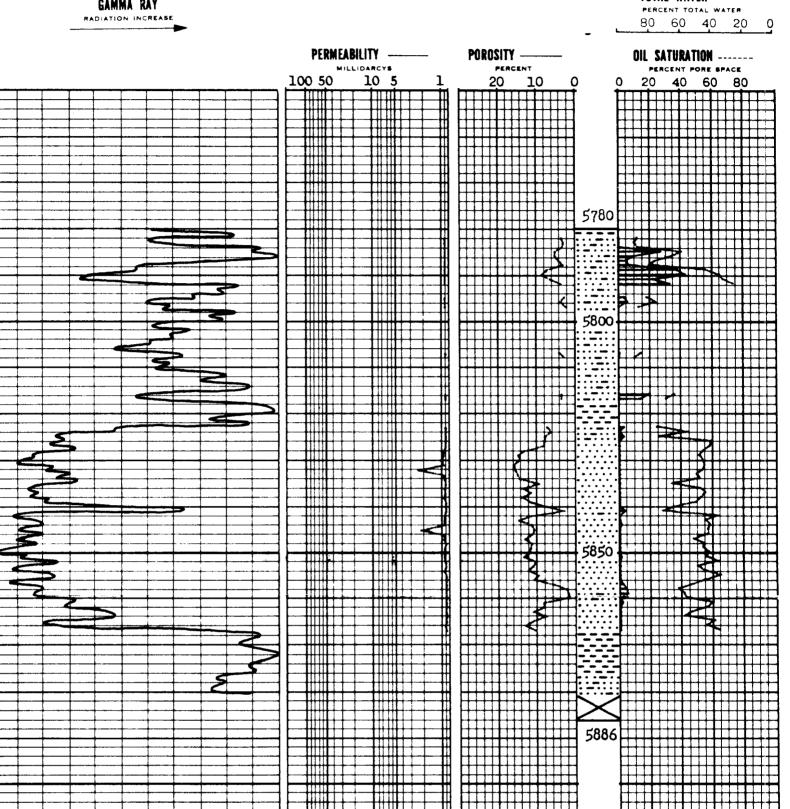
VERTICAL SCALE: 5" = 100'

#### CORE-GAMMA SURFACE LOG (PATENT APPLIED FOR

## COREGRAPH







# CORE SUMMARY AND CALCULATED RECOVERABLE DIL

formation name and depth interval: Dakota - 5825.0-5867.0 Feet								
FEET OF CORE RECOVERED FR ABOVE INTERVAL	ам	42	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	46.2				
FEET OF CORE Included in Averages		34	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	!				
AVERAGE PERMEABILITY: MILLIDARCYS	Hor. Vert.	0.4	OIL GRAVITY: OAPI					
PRODUCTVE CAPACITY: Millidarcy-feet	Hor. Vert.	13.2 1.6	ORIGINAL SOLUTION GAS-OIL RATIO: Cubic feet per barrel	!				
AVERAGE POROSITY: PER CEN	·	12.3	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED DIL PER BARREL BTOCK-TANK DIL					
AVERAGE RESIDUAL DIL SATU: PER CENT OF PORE SPACE	RATION:	0	CALCULATED ORIGINAL STOCK-TANK DIL IN PLACE: BARRELS PER ACRE-FOOT	•				

barrels per acre-foot, assuming production could be Calculated maximum solution gas drive recovery is continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

(c) Calculated

(e) Estimated

(m) Measured

(\*) Refer to attached letter.

# INTERPRETATION OF DATA

5781.0-5825.0 Feet - Interval interpreted as non-productive due to low permeability

and porosity.

5825.0-5867.0 Feet - Believed to be gas productive.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

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