

Avalon Delaware Unit
June 17, 1994

Yates Petroleum Concerns

1) Formula

- a. One Phase
- b. Exxon Present - Value Method
 - i. 20% Discount Too High
 - ii. 1-1-95 More Likely Start Date
 - iii. These Effects are Important

<u>Method</u>	<u>%</u>	<u>Exxon</u>	<u>Yates</u>
<Exxon>	20	0.756	0.108
Yates	20	0.726 (0.733)	0.113 (0.111) w/ 1-1-94 START DATE
Yates	15	0.696	0.123
Yates	10	0.683	0.125

- c. Traditional Formulas
 - i. Parameters
 - Original Oil in Place
 - Remaining Primary Oil
 - Waterflood + Workover Oil
 - CO₂ Oil
 - ii. "Reasonable" Combinations give
 - Exxon 0.704 to 0.739
 - Yates 0.116 to 0.126

2) Voting Percentage for Approval

- a. 75% too low
 Big Minority Owners need voice

3) After Payout Interests

- a. Exxon thinks \$225,000 wellbore adjustment will help
- b. Yates rechecking nonconsent status - 5 wells
- c. At least three wells will not payout through inventory

4) Overhead Rate

5) Non-Consent in Unit

- a. Really talking about collecting bills?
- b. Complicated with interest.

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.00						
Rem Primary	0.43						
WF & WO	0.29						
CO2 Delta	0.28						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.001507
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.755635
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000103
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.025268
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.010588
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.001392
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.012634
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.003144
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.005524
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.008303
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.014410
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.053724
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.107768
	1.000000	1.000000	1.000000	1.000000			1.000000

AVERAGE EXXON 20% DISCOUNT CASE

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.00						
Rem Primary	0.29						
WF & WO	0.20						
CO2 Delta	0.51						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.002745
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.726117
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000168
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.026965
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.010923
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.002535
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.013482
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.005727
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.006292
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.010625
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.026246
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.054874
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.113301
	1.000000	1.000000	1.000000	1.000000			1.000000

YATES 20 % DISCOUNT CASE

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.00						
Rem Primary	0.12						
WF & WO	0.23						
CO2 Delta	0.65						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta	OWNER	INTEREST	
Cities	0.011368	0.000000	0.000000	0.005383	Cities	0.003499	
Exxon	0.602341	0.850937	0.702359	0.664458	Exxon	0.695553	
GWA Others	0.001387	0.000041	0.000000	0.000306	GWA Others	0.000204	
Hudson Brothers	0.033232	0.016519	0.033246	0.030441	Hudson Brothers	0.029416	
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578	JJ Redfren Jr	0.011750	
Keystone Others	0.036358	0.000000	0.000000	0.004971	Keystone Others	0.003231	
Mary Ard	0.016616	0.008259	0.016623	0.015220	Mary Ard	0.014707	
Merit	0.023220	0.000000	0.000000	0.011230	Merit	0.007300	
MWJ	0.017660	0.003496	0.006234	0.007904	MWJ	0.006991	
Pennzoil	0.021073	0.004236	0.007341	0.015545	Pennzoil	0.012301	
Premier	0.055592	0.000000	0.000000	0.051463	Premier	0.033451	
Stonewall Others	0.047720	0.037202	0.075049	0.057011	Stonewall Others	0.058783	
Yates et al	0.123490	0.072063	0.144563	0.124490	Yates et al	0.122816	
	1.000000	1.000000	1.000000	1.000000		1.000000	

YATES 15 % DISCOUNT CASE

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.00						
Rem Primary	0.06						
WF & WO	0.19						
CO2 Delta	0.75						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.004037
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.682848
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000232
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.030139
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.011889
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.003728
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.015069
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.008423
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.007322
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.013308
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.038597
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.059250
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.125158
	1.000000	1.000000	1.000000	1.000000			1.000000

YATES 10 % DISCOUNT CASE

Parameter	Weight	Company	WI Partic	NRI Partic
New Rem Res	11.90%	ABO	1.136421%	0.861423%
Cum Prod		BLM	0.000000%	6.207346%
Primary RUR		Cities	0.353206%	0.309055%
Primary EUR		ZZZOthers	7.263136%	7.506554%
Workover EUR		Exxon	69.558184%	59.398970%
Workover Delta		Fee Other	0.000000%	0.279366%
WF EUR		GWA Others	0.000000%	0.000000%
WF+WO	22.49%	UJ Redfern Jr	0.117208%	0.099298%
CO2 EUR		Mary Hudson A	1.468714%	1.247991%
CO2 Delta	65.61%	Merit	0.736803%	0.644703%
Factor	Use	MWJ	0.695783%	0.594885%
YPC et al WI	12.26%	MYCO	3.353718%	2.489191%
YPC et al NRI	10.71%	Penzoil	1.235639%	1.537023%
YPC NRI-ORRI	9.25%	Premier	3.376482%	2.954421%
Total NRI/WI	87.38%	SLO	0.000000%	6.013288%
(NRI-ORRI)/WI	75.44%	W.A. Hudson, I	2.937429%	2.495985%
		Yates Acct 4	0.738291%	0.636320%
Checks	0.00%	Yates Else	0.353206%	0.309055%
100.00%	100.00%	Yates ORRI	0.000000%	1.464441%
100.00%	100.00%	YDC	3.353718%	2.489191%
129796	129796	YPC	3.322062%	2.461492%
		YPC et al WI	12.257417%	10.711114%

ONE PHASE

START 1-1-95

15 % DISCOUNT FACTOR

$$C_1 = 837.7 \text{ MBO} \times 9M / 1187.4 \text{ MBO} = \$6.3494 \text{ Million}$$

$$F_1 = 12$$

$$I_1 = 35$$

$$C = \frac{6.3494}{6.3494 + 12 + 35} = \frac{6.3494}{53.3494} = 0.1190$$

$$F = \frac{12}{53.3494} = 0.2249$$

$$I = \frac{35}{53.3494} = 0.6561$$

Parameter	Weight	Company	WI Partic	NRI Partici
New Rem Res	5.47%	ABO	1.162133%	0.880429%
Cum Prod		BLM	0.000000%	6.057083%
Primary EUR		Cities	0.402572%	0.352250%
Primary EUR		ZZZOthers	7.412897%	7.649319%
Workover EUR		Exxon	68.233127%	58.279148%
Workover Delta		Fee Other	0.000000%	0.307685%
WF EUR		GWA Others	0.000000%	0.000000%
WF+WO	19.75%	JJ Redfern Jr	0.119265%	0.101182%
CO2 EUR		Mary Hudson A	1.510730%	1.285709%
CO2 Delta	74.78%	Merit	0.839783%	0.734810%
Factor	Use	MWJ	0.731196%	0.626228%
YPC et al WI	12.55%	MYCO	3.423240%	2.539088%
YPC et al NRI	10.89%	Penzoil	1.330711%	1.642835%
YPC NRI-ORRI	9.46%	Premier	3.848396%	3.367347%
Total NRI/WI	86.77%	SLO	0.000000%	6.135233%
(NRI-ORRI)/WI	75.42%	W.A. Hudson, I	3.021461%	2.571421%
		Yates Acct 4	0.751442%	0.646473%
Checks	0.00%	Yates Else	0.402572%	0.352250%
100.00%	100.00%	Yates ORRI	0.000000%	1.424838%
100.00%	100.00%	YDC	3.423240%	2.539088%
129796	129796	YPC	3.387235%	2.507583%
		YPC et al WI	12.549862%	10.889750%

ONE PHASE

START 1-1-95

10 % DISCOUNT FACTOR

$$C_1 = 837.7 \text{ MBO} \times \frac{11 \text{ M}}{1187.4 \text{ MBO}}$$

$$F_1 = 28$$

$$I_1 = 106$$

$$C = \frac{C_1}{C_1 + F_1 + I_1} = 0.0547$$

$$F = \frac{F_1}{C_1 + F_1 + I_1} = 0.1975$$

$$I = \frac{I_1}{C_1 + F_1 + I_1} = 0.7478$$

Parameter	Weight	Company	WI Partic	NRI Partic
New Rem Res	28.77%	ABO	1.049685%	0.796260%
Cum Prod		BLM	0.000000%	6.545503%
Primary RUR		Cities	0.273908%	0.239669%
Primary EUR		ZZZOthers	6.725925%	6.965178%
Workover EUR		Exxon	72.681068%	62.044651%
Workover Delta		Fee Other	0.000000%	0.224759%
WF EUR		GWA Others	0.000000%	0.000000%
WF+WO	20.35%	JJ Redfern Jr	0.109006%	0.092183%
CO2 EUR		Mary Hudson A	1.345396%	1.140795%
CO2 Delta	50.88%	Merit	0.571385%	0.499962%
Factor	Use	MWJ	0.618458%	0.527491%
YPC et al WI	11.30%	MYCO	3.105617%	2.307131%
YPC et al NRI	10.08%	Penzoil	1.062737%	1.336610%
YPC NRI-ORRI	8.53%	Premier	2.618433%	2.291129%
Total NRI/WI	89.19%	SLO	0.000000%	5.729738%
(NRI-ORRI)/WI	75.46%	W.A. Hudson, I	2.690791%	2.281593%
		Yates Acct 4	0.687179%	0.593771%
Checks	0.00	Yates Else	0.273908%	0.239669%
100.00%	100.00%	Yates ORRI	0.000000%	1.551284%
100.00%	100.00%	YDC	3.105617%	2.307131%
129796	129796	YPC	3.080887%	2.285493%
		YPC et al WI	11.302893%	10.080740%

ONE PHASE
START 1-1-95
20 % DISCOUNT

START 1-1-94

$$C_1 = 837.7 \text{ HBO} \times \frac{\$ 8M}{1187.4 \text{ HBO}} = \$ 5.6539 \text{ Million}$$

$$F_1 = 4$$

$$I_1 = 10$$

$$\boxed{6.6431}$$

$$C = \frac{C_1}{C_1 + F_1 + I_1} = \frac{5.6539}{19.6539} = 0.2877$$

$$0.3218$$

$$F = 0.2035$$

$$0.1938$$

$$I = 0.5088$$

$$0.4844$$



EXXON 73.2919
Yates 11.0992

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.00						
Rem Primary	0.20						
WF & WO	0.60						
CO2 Delta	0.20						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.001077
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.724494
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000069
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.029340
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.012516
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.000994
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.014670
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.002246
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.006020
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.008361
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.010293
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.063872
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.126048
	1.000000	1.000000	1.000000	1.000000			1.000000

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.20						
Rem Primary	0.20						
WF & WO	0.40						
CO2 Delta	0.20						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.003350
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.704491
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000347
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.029337
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.011588
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.008266
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.014668
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.006890
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.008306
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.011107
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.021411
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.058406
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.121834
	1.000000	1.000000	1.000000	1.000000			1.000000

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.10						
Rem Primary	0.25						
WF & WO	0.40						
CO2 Delta	0.25						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.002483
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.720026
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000225
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.028362
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.011535
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.004879
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.014181
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.005130
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.007110
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.009989
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.018425
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.058345
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.119312
	1.000000	1.000000	1.000000	1.000000			1.000000

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.10						
Rem Primary	0.30						
WF & WO	0.40						
CO2 Delta	0.20						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.002213
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.729350
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000212
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.027666
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.011318
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.004630
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.013833
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.004568
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.006889
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.009424
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.015852
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.057354
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.116691
	1.000000	1.000000	1.000000	1.000000			1.000000

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.00						
Rem Primary	0.30						
WF & WO	0.50						
CO2 Delta	0.20						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.001077
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.739352
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000074
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.027667
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.011782
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.000994
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.013833
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.002246
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.005747
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.008050
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.010293
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.060087
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.118798
	1.000000	1.000000	1.000000	1.000000			1.000000

AVALON DELAWARE UNIT							
Weighting Factors							
OOIP	0.25						
Rem Primary	0.25						
WF & WO	0.25						
CO2 Delta	0.25						
	1.00						
OWNER	OOIP	Rem Primary	WF&WO	CO2 Delta		OWNER	INTEREST
Cities	0.011368	0.000000	0.000000	0.005383		Cities	0.004188
Exxon	0.602341	0.850937	0.702359	0.664458		Exxon	0.705024
GWA Others	0.001387	0.000041	0.000000	0.000306		GWA Others	0.000434
Hudson Brothers	0.033232	0.016519	0.033246	0.030441		Hudson Brothers	0.028360
JJ Redfren Jr	0.009943	0.007247	0.014585	0.011578		JJ Redfren Jr	0.010838
Keystone Others	0.036358	0.000000	0.000000	0.004971		Keystone Others	0.010332
Mary Ard	0.016616	0.008259	0.016623	0.015220		Mary Ard	0.014180
Merit	0.023220	0.000000	0.000000	0.011230		Merit	0.008613
MWJ	0.017660	0.003496	0.006234	0.007904		MWJ	0.008824
Pennzoil	0.021073	0.004236	0.007341	0.015545		Pennzoil	0.012049
Premier	0.055592	0.000000	0.000000	0.051463		Premier	0.026764
Stonewall Others	0.047720	0.037202	0.075049	0.057011		Stonewall Others	0.054246
Yates et al	0.123490	0.072063	0.144563	0.124490		Yates et al	0.116152
	1.000000	1.000000	1.000000	1.000000			1.000000