

CemCADE* well cementing recommendation for Production

Operator : Chevron
Country : USA
State : CO

Well : Beezley 5X22
Field : Rangely

Prepared for : Chad Kavander

Location : H&P 316

Date Prepared : 10-6-10

Service Point : Grand Junction, CO

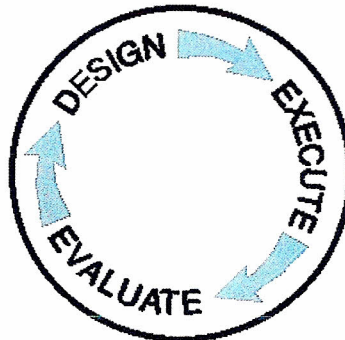
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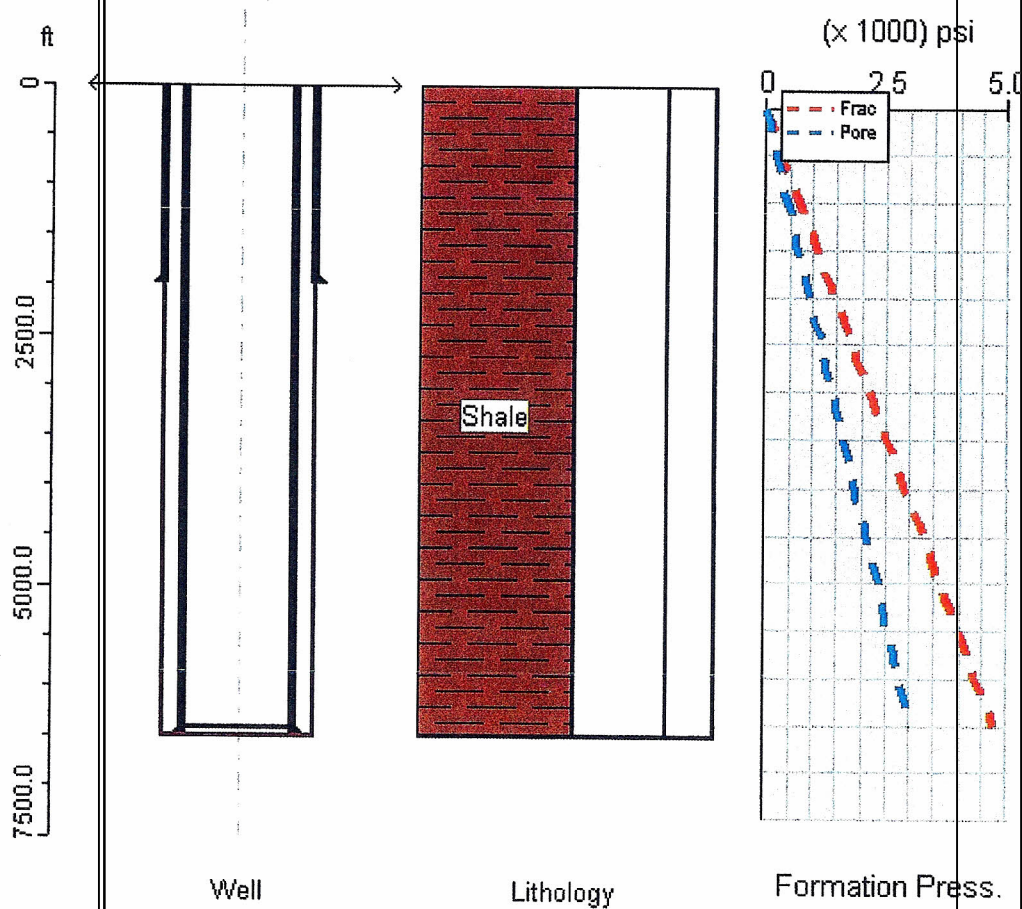
Client : Chevron
String : Production
Country : USA

Well :
District :
Loadcase : Intermediate Juan V1

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Section 1: well description

Configuration : Casing
Stage : Single
Rig Type : Land
Mud Line : 0.0 ft
Total MD : 6507.0 ft
BHST : 152 degF
Bit Size : 8 3/4 in



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MD (ft)	Previous String		
	OD (in)	Weight (lb/ft)	ID (in)
2003.0	9 5/8	36.0	8.921

Landing Collar MD : 6427.0 ft
Casing/liner Shoe MD : 6507.0 ft

		Casing/Liner							
MD (ft)	OD (in)	Joint (ft)	Weight (lb/ft)	ID (in)	Grade	Collapse (psi)	Burst (psi)	Thread	
6507.0		7	40.0	23.0	6.366	K-55	3270	4360	LTC

Mean OH Diameter : 8.750 in
Mean Annular Excess : 30.0 %
Mean OH Equivalent Diameter : 9.210 in
Total OH Volume : 371.2 bbl (including excess)
The Well is considered VERTICAL

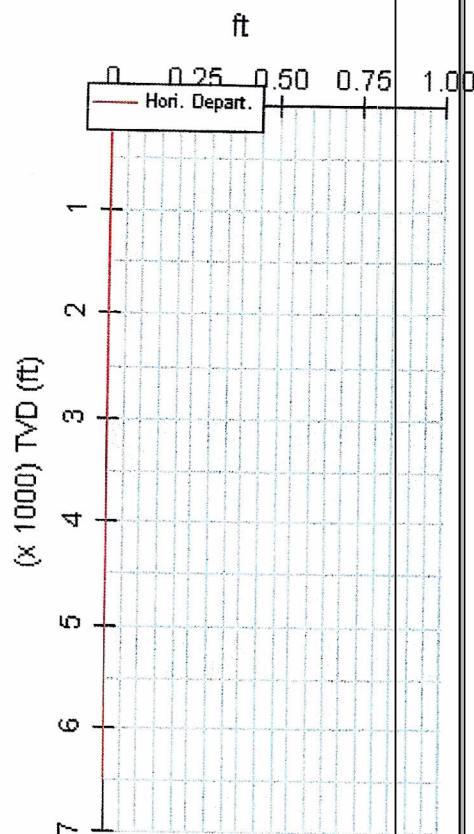
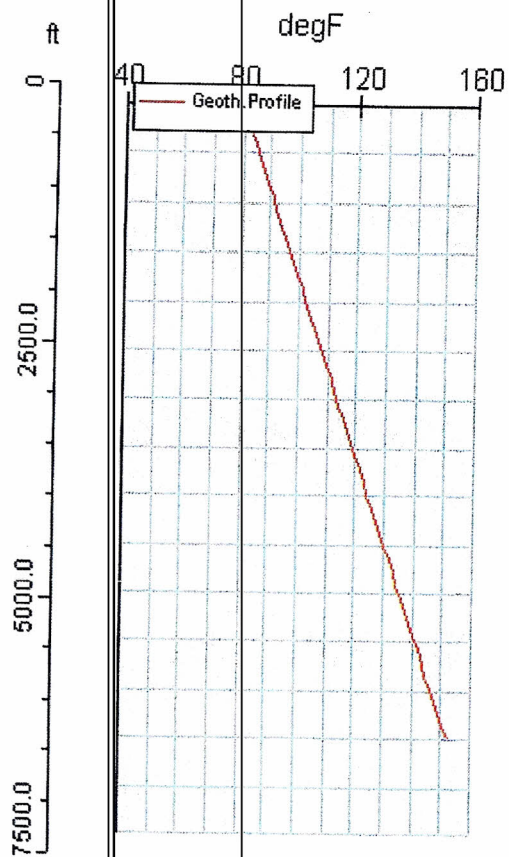
MD (ft)	Formation Data			Lithology
	Frac. (lb/gal)	Pore (lb/gal)	Name	
6507.0	14.00	9.00		Shale

Geothermal Temperature Profile			
MD (ft)	TVD (ft)	Temperature (degF)	Gradient (degF/100ft)
0.0	0.0	80	0.0
6507.0	6507.0	152	1.1

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Section 2: fluid sequence

Job Objectives:

Cement 7" intermediate Casing @ 6507ft in 8 3/4" OH with:
30bbl MUDPUSH II @ 10.5ppg
???sx 11ppg Extended G Lead (TOL = surface)
???sx 12ppg LiteCRETE (TOT = 4500ft)
Wash up truck with fresh water to the pit
Displace with Brine

Original fluid	Mud	10.00 lb/gal	
Displacement Volume	Pv: 12.000 cP	Ty: 8.00 lbf/100ft2	
Total Volume	253.0 bbl		
TOC	502.4 bbl		
	0.0 ft		

Name	Volume (bbl)	Ann. Len (ft)	Top (ft)	Density (lb/gal)	Rheology	
MUDPUSH II	30.0	0.0		10.50	Pv:15.000 cP	Ty:8.00 lbf/100ft2
11.0 GJ Lead	146.7	4507.0	0.0	11.00	Pv:36.624 cP	Ty:8.17 lbf/100ft2
12.0 LiteCRETE	72.8	2000.0	4507.0	12.00	Pv:93.730 cP	Ty:36.72 lbf/100ft2
Brine	253.0		0.0	10.00	viscosity:6.000 cP	

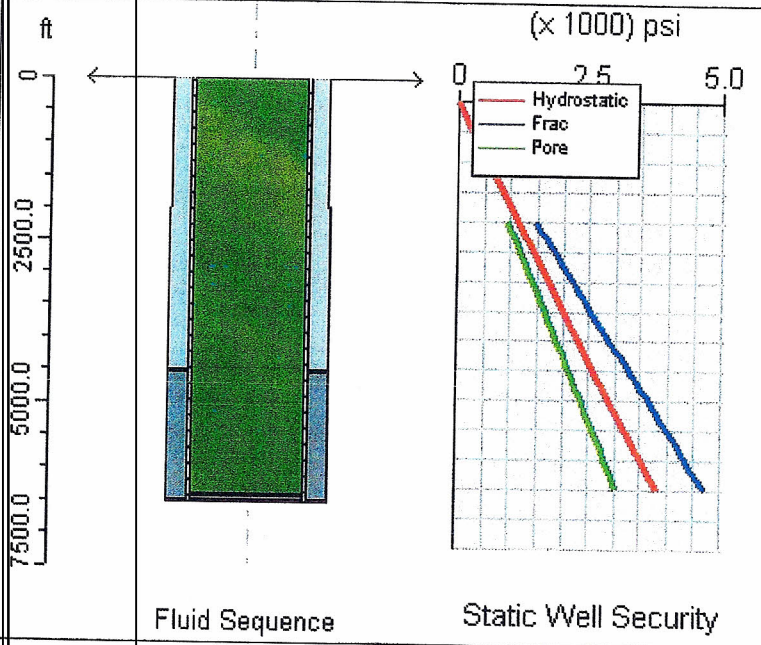
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Static Security Checks :

Frac	312 psi	at 2003.0 ft
Pore	208 psi	at 2003.0 ft
Collapse	2534 psi	at 6427.0 ft
Burst	4360 psi	at 0.0 ft
Csg.Pump out	55 ton	



Section 3: pumping schedule

Name	Flow Rate (bbl/min)	Volume (bbl)	Pumping Schedule			Inj. Temp. (degF)	Comments
			Stage Time (min)	Cum.Vol (bbl).			
MUDPUSH II	7.0	30.0	4.3	30.0		80	
11.0 GJ Lead	7.0	146.7	21.0	146.7		80	
12.0	7.0	72.8	10.4	72.8		80	
LiteCRETE							
Pause	0.0	0.0	8.0	0.0		80	
Brine	7.0	253.0	36.1	253.0		80	Drop top plug and wash up
Total			01:19 hr:mn	502.4 bbl			

Dynamic Security Checks :

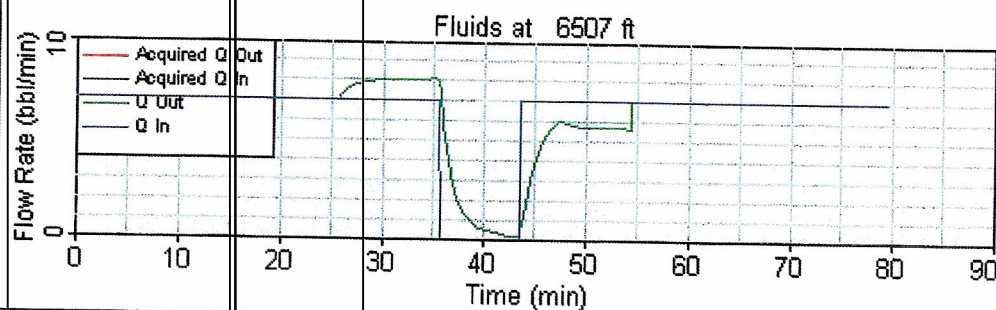
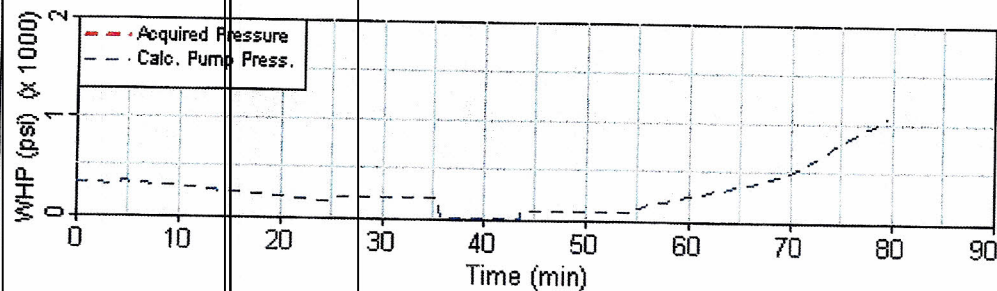
Frac	192 psi	at 2003.0 ft
Pore	104 psi	at 2003.0 ft
Collapse	2534 psi	at 6427.0 ft
Burst	3390 psi	at 0.0 ft

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Temperature Results			
BHCT	118 degF	Simulated Max HCT	(degF)
Simulated BHCT	(degF)	Max HCT Depth	(ft)
CT at TOC	(degF)	Max HCT Time	(hr:mn:sc)
Static temperatures :			
At Time	(hr:mn)	(hr:mn)	Geo. Temp.
Top of Cement	(degF)	(degF)	(degF)
Bottom Hole	(degF)	(degF)	(degF)



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Section 4: fluid description

11.0 GJ Lead DESIGN

Fluid No: 2
Rheo. Model : BINGHAM
At temp. : 120 degF

Density : 11.00 lb/gal
Pv : 36.624 cP
Ty : 8.17 lbf/100ft2
Gel Strength : (lbf/100ft2)

DESIGN

BLEND

Name : G
Dry Density : 199.77 lb/ft3
Sack Weight : 94 lb

SLURRY

Mix Fluid : 20.988 gal/sk
Yield : 3.32 ft3/sk
Solid Fraction : 15.4 %

Job volume : 146.7 bbl
Quantity : 248.29 sk

BASE FLUID

Type : Fresh water

Density : 8.32 lb/gal

Base Fluid : 20.988 gal/sk

Code	Conc.	Additives	Function
D079	2.000 %	BWOC	Extender
D046	0.200 %	BWOC	Antifoam
D112	1.500 %	BWOC	Fluid loss
D202	0.200 %	BWOC	Dispersant
D029	0.250 lb/sk blend		Lost circ
D013	0.400 %	BWOC	Retarder

Thickening Time Schedule () (Bc) at (hr:mn)
Compressive Strength Schedule () (psi) at (hr:mn)

12.0 LiteCRETE DESIGN

Fluid No: 3
Rheo. Model : BINGHAM
At temp. : 80 degF

Density : 12.00 lb/gal
Pv : 93.730 cP
Ty : 36.72 lbf/100ft2
Gel Strength : (lbf/100ft2)

DESIGN

BLEND

Name : 12# LC-GJ
Dry Density : 114.77 lb/ft3
Sack Weight : 100 lb

SLURRY

Mix Fluid : 5.916 gal/sk
Yield : 1.68 ft3/sk
Solid Fraction : 52.9 %

Job volume : 72.8 bbl
Quantity : 243.24 sk

BASE FLUID

Type : Fresh water

Density : 8.32 lb/gal

Base Fluid : 5.916 gal/sk

Code	Conc.	Additives	Function
D046	0.300 %	BWOB	Antifoam
D013	0.450 %	BWOB	Retarder
D207	0.150 %	BWOB	Fluid loss
D202	0.400 %	BWOB	Dispersant
D029	0.250 lb/sk blend		Lost circ

Thickening Time Schedule () (Bc) at (hr:mn)
Compressive Strength Schedule () (psi) at (hr:mn)

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MUDPUSH II DESIGN

Fluid No: 4
Rheo. Model : BINGHAM
At temp. : 80 degF

Density : 10.50 lb/gal
P_v : 15.000 cP
T_y : 8.00 lbf/100ft²
Gel Strength : (lbf/100ft²)
Job volume : 30.0 bbl

Brine DESIGN

Fluid No: 5
Rheo. Model : NEWTONIAN
At temp. : 80 degF

Density : 10.00 lb/gal
Viscosity : 6.000 cP
Gel Strength : (lbf/100ft²)
Job volume : 253.0 bbl