



# PROPOSED WELL PLAN OUTLINE

EST GL = 7379

EST KB = 7392

WELL NAME **Jicarilla K No. 17M**LOCATION **SEC 12, T-25N, R-5W, RIO ARRIBA CO., NM**

TVD IN	FORMATION TOPS & TYPE	DRILLING PROBLEMS	TYPE OF FORMATION EVALUATION	HOLE SIZE	CASING SIZE DEPTH	FRAC GRAD. psi/ft	FORMATION PRESSURE PSI	MUD WT TYPE	DAYS
1000 MD									
0				11" or 12 1/4"	8-5/8" 24# or 9 5/8" 36# J-55 or K-55. ST&C @ 350'		NORMAL	8.4 - 8.8# SPUD MUD	1
				7 7/8" or 8 3/4"	CIRC CMT			8.4 - 8.8# GEL/POLYMER MAINTAIN MW AS LOW AS POSSIBLE	
1									
2									
3	OJAM @ 3156'	POSSIBLE WATERFLOW					432 PSI	CONTROL FLUID LOSS PRIOR TO OJAM	
	FRLD @ 3332'	POSSIBLE GAS FLOW					360 PSI		
	PCCF @ 3700'	POSSIBLE LOST RETURNS POSSIBLE DIFFERENTIAL STICKING							
4	LEWS @ 3846'								
					DV TOOL SET @ 4200' (CONTINGENT ON LOST CIRCULATION) CMT TO SURFACE		400 PSI		
5	CHRA @ 4605'								
	CLFH/MV @ 5397'					0.5	457 PSI		
	MENF @ 5411'								
6	PTLK @ 5922'	POSSIBLE SEVERE LOST RETURNS							
	MNCS @ 6283'				DV TOOL SET @ 6225' (50'-100' ABOVE MNCS) CMT TO DV TOOL @ 4200' OR TO SURFACE				
7	U GLLP @ 6946'								
	M GLLP @ 7216'								
	SNST @ 7523'								
	GRHN @ 7822'	POSSIBLE WATERFLOW POSSIBLE OVERPRESSURE					715 PSI		
8	GRRS DKOT @ 7878'					0.5	BHP - 2500 PSI BHT = 175 deg F	8.4 - 8.8# GEL/POLYMER	16
	PAGU @ 8035'	IN DEEP DAKOTA	CASED HOLE LOGS	7-7/8" or 8 3/4"	4-1/2" 10.5# K-55 LTC @ 8129'				
	T.D. @ 8129'				CMT TO DV TOOL AT TOP OF MNCS				
	NOTE: PERMIT TO 8429'								

1:15 PM

DATE 03/23/00

PREPARED:

Ricky Joyce

DRILLING ENGINEER



**PRIMARY CEMENTING PROPOSAL**

**SURFACE & LONGSTRING**

---

**Conoco**

**Jicarilla K #17M**

---

**Well Location**

County : Rio Arriba  
State : New Mexico  
Country : USA

Prepared for : Ricky Joyce

Date Prepared : 21-Mar-00

Service Point : FARMINGTON, NM

Business Phone : 505-325-5096

FAX No. : 505-327-0317

Prepared by : Duane Gonzalez  
Phone : (281) 293-4538  
FAX : (281) 293-4424  
E-Mail address : dgonzalez@houston.dowell.slb.com

**Disclaimer Notice:**

This information is presented in good faith, but no warranty is given and Dowell assumes no liability for advice or recommendations made concerning results to be obtained from the use of any product or service. Prices quoted are estimates only, and are good for 30 days from the date of issue. Actual charges may vary depending upon time, equipment, and material, ultimately required to perform these services. Freedom from infringement of patents of Dowell or others is not to be inferred.

## Well Data: 9 5/8 in. Surface

< Surface

Depth	350 ft.
Casing Size	9 5/8 in., 36 lbs./ft.
Open Hole Diameter	12 1/4 in.
BHST	90 °F
BHCT	80.0 °F
Total Excess	100 %
Tail Excess	100 %

## Mud Wt./Type: 8.8 ppg Fresh Wtr. Based

### Calculations:

#### Volume Factors:

Casing x Open Hole	0.3132 cu.ft./ft
Casing (Internal)	0.4338 cu.ft./ft

Top of Cement

Surface

#### Cement System:

Open Hole Fill	$(350 \times 0.3132 \times 2.) / 1.19 = 184 \text{ sks.}$
Casing Shoe Cement	$(40 \times 0.4338) / 1.19 = 15 \text{ sks.}$
Total Tail Cement	$= 198 \text{ sks.}$

< T.D. - 350 ft.

## Cementing Systems

**Spacer System: 20 bbls .**

**Fresh Water**

**Cement System: 200 sks.**

**Class B + 2% S1 + 0.25 pps D29**

Mix Weight	:	15.6 PPG
Yield	:	1.19 cu.ft./sk.
Mix Water	:	5.19 gal./sk.
Fluid Loss	:	N/C cc/30 minutes
Thickening Time	:	2:30 hours:minutes
Comp. Strength	:	1,000 psi in 12 hrs.

**Notice:**

Performance parameters for cement systems recommended are typically taken from existing laboratory data. In some cases, data exist which duplicate the recommended systems and job environment, but when those data do not exist, extrapolations are made from data which most closely match the anticipated conditions. Sufficient lead-time should always be allowed, so that pilot samples/field blends can be run to verify system performance parameters, before actually pumping the job.

## Well Data: 4 1/2 in. Production - Stage 1

< Surface

Depth	8,129 ft.
Casing Size	4 1/2 in., 10.5 lbs./ft.
Open Hole Diameter	8 3/4 in.
Previous Csg. Depth	350 ft.
Previous Csg. Size	9 5/8 in., 36 lbs./ft.
BHST	175 °F
BHCT	132.3 °F
Total Excess	35 %
Tail Excess	35 %
Stage Collar Depth	6,225 ft.

< Previous Csg.  
350 ft.

## Mud Wt./Type: 8.8 ppg Fresh Wtr. Based

### Calculations:

#### Volume Factors:

Casing x Open Hole	0.3071 cu.ft./ft
Casing x Previous Casing	0.3234 cu.ft./ft
Casing (Internal)	0.0896 cu.ft./ft

Top of Cement 6,225 ft.

#### Cement System:

Open Hole Fill	$(1,904 \times 0.3071 \times 1.35) / 1.6 = 493 \text{ sks.}$
Casing Shoe Cement	$(84 \times 0.0896) / 1.6 = 5 \text{ sks.}$
Total Tail Cement	$= 497 \text{ sks.}$

< Top of Cmt./DV Tool  
6,225 ft.

< T.D. - 8,129 ft.

## Cementing Systems

Spacer System: 20 bbls .

CW-100 Chemical Wash

Cement System: 495 sks.

50:50 Poz:Class B + 2.75% D20 + 0.2% D167 + 0.2% D46 + 0.25 pps D29

Mix Weight	:	12.4 PPG
Yield	:	1.6 cu.ft./sk.
Mix Water	:	8.29 gal./sk.
Fluid Loss	:	372 cc/30 minutes
Thickening Time	:	4:30 hours:minutes
Comp. Strength	:	1,200 psi in 48 hrs.

### Notice:

Performance parameters for cement systems recommended are typically taken from existing laboratory data. In some cases, data exist which duplicate the recommended systems and job environment, but when those data do not exist, extrapolations are made from data which most closely match the anticipated conditions. Sufficient lead-time should always be allowed, so that pilot samples/field blends can be run to verify system performance parameters, before actually pumping the job.

## Well Data: 4 1/2 in. Production - Stage 2

< Surface

Depth	8,129 ft.
Casing Size	4 1/2 in., 10.5 lbs./ft.
Open Hole Diameter	8 3/4 in.
Previous Csg. Depth	350 ft.
Previous Csg. Size	9 5/8 in., 36 lbs./ft.
BHST	150 °F
BHCT	116.0 °F
Total Excess	35 %
Lead Excess (calculated O.H.)	35.0 %
Tail Excess	35 %
Stage Collar Depth	6,225 ft.

< Previous Csg.  
350 ft.

**Mud Wt./Type: 8.8 ppg Fresh Wtr. Based**

### Calculations:

#### Volume Factors:

Casing x Open Hole	0.3071 cu.ft./ft
Casing x Previous Casing	0.3234 cu.ft./ft
Casing (Internal)	0.0896 cu.ft./ft

< Top of Tail  
5,247 ft.

Top of Lead	Surface
Top of Tail	5,247 ft.

#### Lead System:

Open Hole Fill	$(4,897 \times 0.3071 \times 1.35) / 2.88 = 706 \text{ sks.}$
Previous Casing Fill	$(350 \times 0.3234) / 2.88 = 40 \text{ sks.}$
Total Lead Cement	$= 745 \text{ sks.}$

< Stage Collar (DV)  
6,225 ft.

#### Tail System:

Open Hole Fill	$(978 \times 0.3071 \times 1.35) / 1.6 = 253 \text{ sks.}$
Casing Shoe Cement	$(84 \times 0.0896) / 1.6 = 5 \text{ sks.}$
Total Tail Cement	$= 258 \text{ sks.}$

< T.D. - 8,129 ft.



## Cementing Systems

**Spacer System: 20 bbls .**

**CW-100 Chemical Wash**

**Lead System: 745 sks.**

**Class B + 3% D79 + 1% S1 + 0.2% D46**

Mix Weight	:	11.4 PPG
Yield	:	2.88 cu.ft./sk.
Mix Water	:	17.71 gal./sk.
Fluid Loss	:	N/C cc/30 minutes
Thickening Time	:	5:00 hours:minutes
Comp. Strength	:	300 psi in 48 hrs.

**Tail System: 260 sks.**

**50:50 Poz:Class B + 2.75% D20 + 0.2% D167 + 0.2% D46 + 0.25 pps D29**

Mix Weight	:	12.4 PPG
Yield	:	1.6 cu.ft./sk.
Mix Water	:	8.29 gal./sk.
Fluid Loss	:	372 cc/30 minutes
Thickening Time	:	4:30 hours:minutes
Comp. Strength	:	1,200 psi in 48 hrs.

**Notice:**

Performance parameters for cement systems recommended are typically taken from existing laboratory data. In some cases, data exist which duplicate the recommended systems and job environment, but when those data do not exist, extrapolations are made from data which most closely match the anticipated conditions. Sufficient lead-time should always be allowed, so that pilot samples/field blends can be run to verify system performance parameters, before actually pumping the job.

This quote is valid for a period of thirty days from the date submitted. These prices are estimates based on current price structure and will vary somewhat with the materials, equipment, and time actually required at the time of service. The discount shown will be applicable to the most current Dowell price book in effect at the time of service. Not included are the costs of fluid storage, oil, water, (or transportation thereof) except as listed. Dowell does not offer these services.

The cement slurry data presented are from systems previously tested in Dowell laboratories. Thickening time tests should be run when field mix water is available and final temperatures are known. Mud\Cement compatibility tests should be run when final mud systems are in use. These tests could cause quantity variations of the materials recommended, thereby affecting the price of the job.

In the interest of safety, a pre-job tailgate safety meeting will be held with your representative and other on-location personnel to familiarize everyone with existing hazards and safety procedures. During this meeting a designated wash-up area will be assigned for our cementing unit to dispose of our cement slurry and drilling mud displacement fluid.

Thank you for considering Dowell for this work. Please do not hesitate to call with any questions or concerns.

Duane Gonzalez  
Houston, Tx