

NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION 2040 South Pacheco Street Santa Fe, New Mexico 87505 (605) 827-7131

PVZV 2005731081

December 8, 1997

Conoco Inc. 10 Desta Drive, Suite 100W Midland, TX 79705-4500 Attention: Jerry Hoover

Administrative Order TX-277

Dear Mr. Hoover:

Reference is made to your request for an exception to the tubing setting requirements as contained in Division Rule 107 (j) for the below-named wells.

Pursuant to the authority granted me by Rule 107 (d) (4), you are hereby authorized to make tubingless completions in the following wells:

Well Name, Number and Location:

FC Decker Primo Com No. 2, API No. 30-045-27480, Section 19, Township 32 North, Range 10 West, NMPM, San Juan County, New Mexico.

Hamilton Federal No. 3R, API No. 30-045-28636, Section 30, Township 32 North, Range 10 West, NMPM, San Juan County, New Mexico.

FC Waller Com No. 1, API No. 30-045-28501, Section 14, Township 32 North, Range 11 West, NMPM, San Juan County, New Mexico.

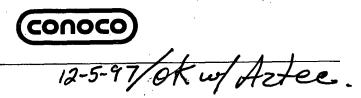
FC Federal No. 3, API No. 30-045-27545, Section 13, Township 32 North, Range 11 West, NMPM, San Juan County, New Mexico.

FC Federal No. 1, API No. 30-045-27544, Section 30, Township 32 North, Range 10 West, NMPM, San Juan County, New Mexico.

FC Federal No. 2, API No. 30-045-27630, Section 12, Township 32 North, Range 11 West, NMPM, San Juan County, New Mexico.

The Division reserves the right to rescind this authority in the event that waste appears to be resulting therefrom.

Sincerely, William J. LeMay Director WJL/RJ/kv cc: Oil Conservation Division - Aztec



1997 OIL CONSERVATION DIVISION

Mr. Roy Johnson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505

Re: Applications for Tubingless Exception to Rule 107 for 6 Basin Fruitland Coal Wells in San Juan County

Dear Mr. Johnson:

The attached applications for tubingless exceptions to Rule 107 are for 6 high rate flowing Fruitland Coal wells in San Juan County. In an effort to maximize current producing rates as well as ultimate recoveries from these wells Conoco is proposing that they be operated as discussed in the attached applications as long as they continue to produce in a flowing regime keeping the wellbores unloaded of all produced fluids.

A meeting was scheduled with Mr. Ernie Busch on November 19, 1997 to discuss these proposed exceptions. We presented each of these wells, their history, our proposed operational plan, and the data attached to these applications to him at that time. We also answered all questions that he had concerning potential corrosion or waste. At the conclusion of our meeting, Mr. Busch seemed satisfied with our justification for these exceptions and said that he would support your approval of them.

Very truly yours,

Jerry W. Hoover Sr. Conservation Coordinator

cc: Mr. Ernie Busch, Aztec District OCD Office



a.

Mr. Roy Johnson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505

Re: Application for Tubingless Exception to Rule 107
for the FC Decker Primo Com No. 2 Basin Fruitland Coal Well
API #30-045-27480, 2050' FNL & 1330' FEL, Sec. 19
Township 32N, Range 10W, San Juan County

Dear Mr. Johnson:

In order to maintain efficient producing rates and maximize recovery from this well an exception to Rule 107, requiring this well to be produced with tubing, is requested. Producing with tubing causes an additional 50-55 psi of bottom hole flowing pressure across a reservoir that has already declined to less than 220 psi. Removing tubing and installing compressors should maintain rates high enough to keep the water production unloaded for several more years before tubing and pumps will ultimately need to be installed.

To maximize ultimate recovery, it is critical to maximize the current producing rate by the most economic method while production can still benefit from tax credits. Producing without tubing will not only significantly reduce the BHFP and maintain higher producing rates, but will require less well work to keep the wellbore cleaned out and reduce operating costs to the benefit of all interest owners.

The attached well history and wellbore schematic shows that a 5-1/2" liner has been installed across this originally open hole completion. Before running the liner, the well was re-cavitated and cleaned out. Producing without tubing in this recently remediated wellbore will result in a more efficient use of remaining reservoir pressure and will not in any way cause waste.

The fluids being produced by this well are not corrosive to the liner and casing and no signs of corrosion have been observed on any pipe recovered from the well or surface equipment. There are several technical reasons involving the Fruitland Coal reservoir and the producing mechanisms that seem to explain why corrosion does not occur in these wells.

By the very nature of the coal any gas (including any CO_2) in the reservoir is absorbed into the coal and is not in a free state that can, through contact with formation water, form corrosive acids in the reservoir. Since production occurs through a fracture dominated system, gas in the mattrix remains absorbed at a higher pressure in the coal mattrix until desorption occurs very

close to the wellbore into the fractures and is produced quickly through the much lower pressured fractures into the wellbore. A production plot is also attached showing the production history of the well.

This well is flowing at a high enough rate to keep the wellbore unloaded from any produced water. Therefore, in a high rate flow regime any contact of CO_2 with water is brief and insignificant in the formation of any potentially corrosive acid. The casing in this well is additionally protected from corrosion by cathodic protection.

All of the information and history of this well as discussed in this application was presented in a personal meeting with Mr. Ernie Busch of the Aztec Distric Office on November 19, 1997. Mr. Busch verbally agreed that based on this information and the attachments to this application that an exception to Rule 107 should be granted for this well.

If there are any further questions concerning this application, please contact either Mr. Busch or me at (915) 686-6548.

Very truly yours,

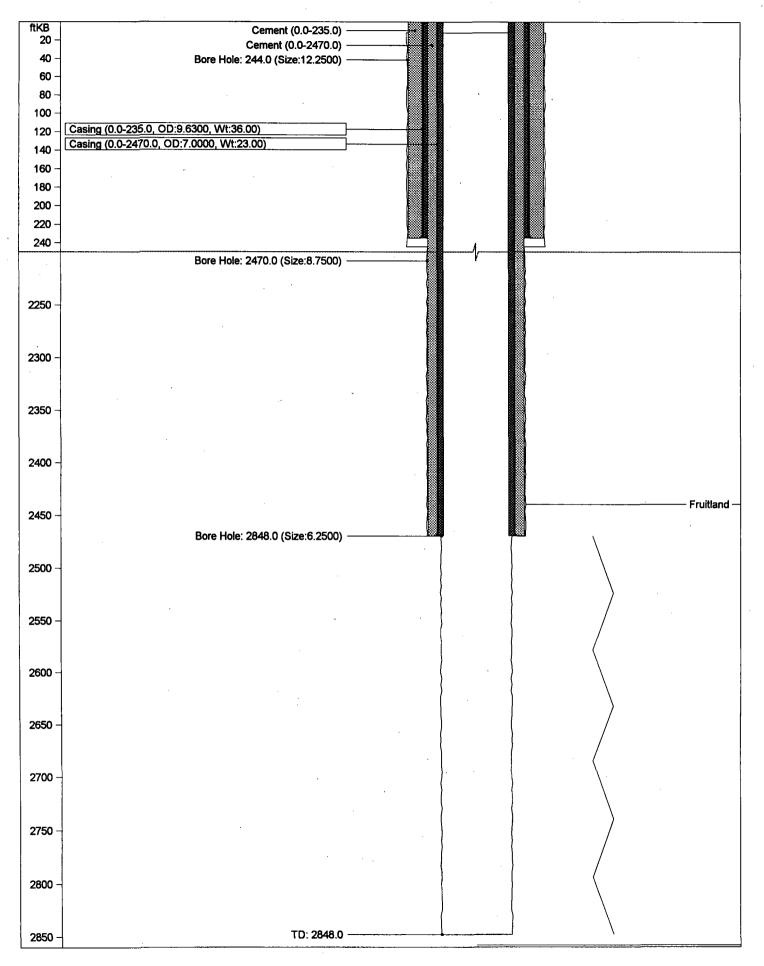
Jerry W. Hoover Sr. Conservation Coordinator

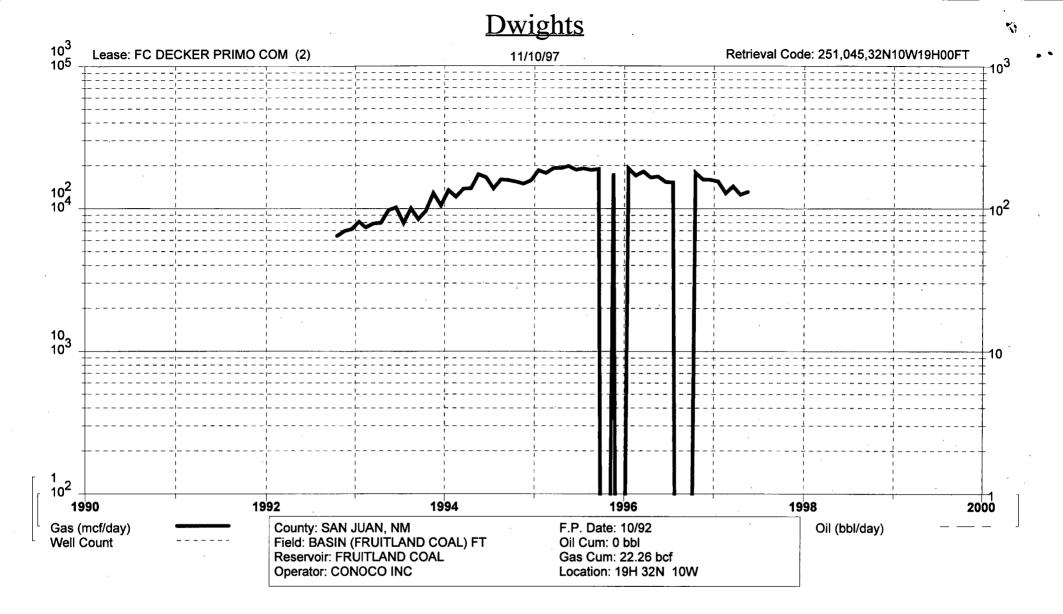
cc: Mr. Ernie Busch, Aztec District OCD Office

FC DECKER PRIMO COM 2 (GMH 6/9/97)

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API Code				3004527		Fi	eld Code	<u></u>		676394530
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PBTD				2848.0	ftKB		asin Code			580
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County				SAN J			pud			25-Aug-90
District				San Jua			Finish Drl			27-Aug-90
Permit No.				Coa			ompletion			11-Apr-91
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F FC DECKER PRIMO COM 2 (GMH 6/9/97)







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Mr. Roy Johnson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505

Re: Application for Tubingless Exception to Rule 107 for the Hamilton Fed. No. 3R Basin Fruitland Coal Well API #30-045-28636, 1175' FSL & 1020' FWL, Sec. 30 Township 32N, Range 10W, San Juan County

Dear Mr. Johnson:

In order to maintain efficient producing rates and maximize recovery from this well an exception to Rule 107, requiring this well to be produced with tubing, is requested. Producing with tubing causes an additional 50-55 psi of bottom hole flowing pressure across a reservoir that has already declined to less than 220 psi. Removing tubing and installing compressors should maintain rates high enough to keep the water production unloaded for several more years before tubing and pumps will ultimately need to be installed.

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If there are any further questions concerning this application, please contact either Mr. Busch or me at (915) 686-6548.

Very truly yours,

/Jerry W. Hoover Sr. Conservation Coordinator

cc: Mr. Ernie Busch, Aztec District OCD Office

HAMILTON FED 3R (GOP 9/11/97)

HAMILTON	V FED 3R (G	OP 9/11/97										
API Code			04528	63600		Fi	eld Code			676383454		
TD			2920.0				asin			SAN JUAN BASIN		
PBTD			2920.0	ftKB		Ba	asin Code			580		
State			New M			Pe	ermit			30-Sep-91		
County			SAN J				pud			30-Nov-91		
District		Si	an Juai				nish Drl			03-Dec-91		
Permit No.			Coa				ompletion			21-Dec-91		
TD Measured	t · t		2920 f			At	bandon					
Reservoir			ruitland									
Field		CEI	DAR H	ILL FRT		_						
Location												
Meridian				NM		T	op Latitud	e		36.95215		
Twnship			32N				op Longitu	Ide		107.9288		
Range			10W				pp NS Dis	tance		1175.0 ft S		
Section			30				op EW Di			1020.0 ft W		
Quarter			NE	SW SW	<u> </u>		ottom Lati			0		
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Elevations	<u> </u>											
КВ				17.0 ft			as FIng			0.0 ft		
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(in)		(ftKB)			_							
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Casing Ce										N		
Casing		Тор	Amo	unt				C	comments			
		(ftKB)	(sx					-				
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Intermediate		0.0	425				Cement c					
	Pump Thru	Plug										
Date		ltem		1		Int		OD		Comment		
					6	itKB))	(in)				
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Perforatio		<u> </u>										
Date		<u></u>	Si Si	hots	I				Comment	S		
	· · ·						Comments					
16-Sep-97	2760.0	- 2776.0		/ ft) 4.0	6441"	EHD						
16-Sep-97		<u>.0 - 2778.0 4.0 6441 E</u> 0.0 - 2890.0 4.0 8041"										
16-Sep-97		0-2684.0 4.0 8041 0-2684.0 4.0 17641										
	ns & Treatm						-					
Date		Zon			nt		Fluid			Comments		
10-Dec-91	Open Hole	Fruitian	d		- 2920.0	R.A.	<u>riula</u> ist	+				
10-060-91	Cavitation	Coal	۲ I	2000.0	- 2920.0	INI	ləl					
17-Apr-97	Open Hole	Fruitlan	- +	2508 0	- 2920.0	- RA	ist	Tag fill 4	B 2663' 8	CO to 2920'. Under-ream open		
17-Api-97	Cavitation	Coal		2000.0	- 2920.0		131			14-2920. Under-ream open		
	CavitatiUII	Cual										
								. Perform (

HAMILTON FED 3R (GOP 9/11/97)

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7.

Date	Dead	son for	Current and									
Date	1	kover	Summary									
17-Apr-	97 Re-C		Re-Cavitation - POOH & LD 2 7/8" tbg. Lost WL pump thru plug prior to RU Cavitation rig. RIH w/ 6 1/4" bit & tag @ 2663', CO to 2909', pushing plug down hole. CO to 2920'. RIH w/ 11" under-reamer and UR to 2920', UR clogged w/ scale.									
11-Sep-	97 CO 8	& Run Liner										
Formation	/Horizon T	ops										
	op KB)		_	For	mation							
····	850.0	San Jose		······································								
	1450.0) Ojo Alamo		·								
	1650.0	Farmington			······································							
	2500.0	Fruitland										
	2950.0	Pictured Cliffs	S									
Logs Run												
Date	Туре		Int	Company	Comments							
20-Sep-96	GR-TEMP-	SPIN 2300	.0 - 2887.0	Halliburton								
General N	otes											
Date	Note											
21-Dec-	01 Initial	Potential: E 51	90 MCEGPE) on 3/4 ck; SICP 343	····· ································							

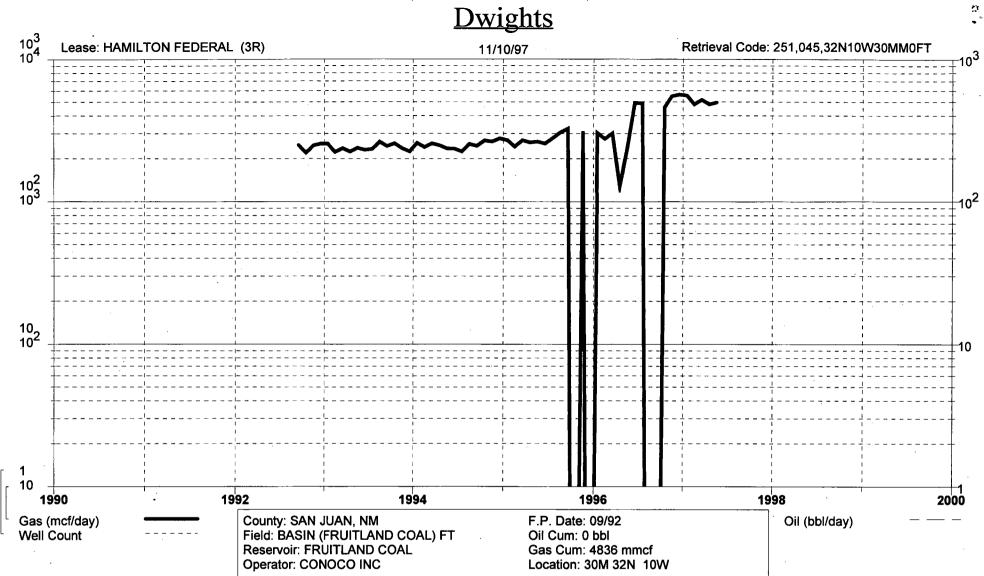
5'

HAMILTON FED 3R (GOP 9/11/97)

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ftKB Cement (0.0-192.0) Bore Hole: 200.0 (Size:12.2500) Cement (0.0-2508.0) Casing (0.0-192.0, OD:9.6300, Wt:36.00) Casing (0.0-2508.0, OD:7.0000, Wt:20.00) Bore Hole: 2920.0 (Size:11.0000) Bore Hole: 2920.0 (Size:11.0000) Fruitland Ŀ. Perf (2640.0-2684.0) Perf (2760.0-2776.0) Liner (2434.0-2919.0, OD:5.5000, Wt:15.50) Perf (2870.0-2890.0) WL Pump Thru Plug (2919.0-2920.0, OD:2.4000) TD: 2920.0 -

10/29/97



Mr. Roy Johnson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505

Re: Application for Tubingless Exception to Rule 107 for the FC Waller Com No. 1 Basin Fruitland Coal Well API #30-045-28501, 790' FNL & 1430' FEL, Sec. 14 Township 32N, Range 11W, San Juan County

Dear Mr. Johnson:

In order to maintain efficient producing rates and maximize recovery from this well an exception to Rule 107, requiring this well to be produced with tubing, is requested. Producing with tubing causes an additional 50-55 psi of bottom hole flowing pressure across a reservoir that has already declined to less than 220 psi. Removing tubing and installing compressors should maintain rates high enough to keep the water production unloaded for several more years before tubing and pumps will ultimately need to be installed.

CONOC

To maximize ultimate recovery, it is critical to maximize the current producing rate by the most economic method while production can still benefit from tax credits. Producing without tubing will not only significantly reduce the BHFP and maintain higher producing rates, but will require less well work to keep the wellbore cleaned out and reduce operating costs to the benefit of all interest owners.

The attached well history and wellbore schematic shows that a 5-1/2" liner has been installed across this originally open hole completion. Before running the liner, the well was re-cavitated and cleaned out. Producing without tubing in this recently remediated wellbore will result in a more efficient use of remaining reservoir pressure and will not in any way cause waste.

The fluids being produced by this well are not corrosive to the liner and casing and no signs of corrosion have been observed on any pipe recovered from the well or surface equipment. There are several technical reasons involving the Fruitland Coal reservoir and the producing mechanisms that seem to explain why corrosion does not occur in these wells.

By the very nature of the coal any gas (including any CO_2) in the reservoir is absorbed into the coal and is not in a free state that can, through contact with formation water, form corrosive acids in the reservoir. Since production occurs through a fracture dominated system, gas in the mattrix remains absorbed at a higher pressure in the coal mattrix until desorption occurs very

close to the wellbore into the fractures and is produced quickly through the much lower pressured fractures into the wellbore. A production plot is also attached showing the production history of the well.

This well is flowing at a high enough rate to keep the wellbore unloaded from any produced water. Therefore, in a high rate flow regime any contact of CO_2 with water is brief and insignificant in the formation of any potentially corrosive acid. The casing in this well is additionally protected from corrosion by cathodic protection.

All of the information and history of this well as discussed in this application was presented in a personal meeting with Mr. Ernie Busch of the Aztec Distric Office on November 19, 1997. Mr. Busch verbally agreed that based on this information and the attachments to this application that an exception to Rule 107 should be granted for this well.

If there are any further questions concerning this application, please contact either Mr. Busch or me at (915) 686-6548.

Very truly yours,

Øerry W. Hoover Sr. Conservation Coordinator

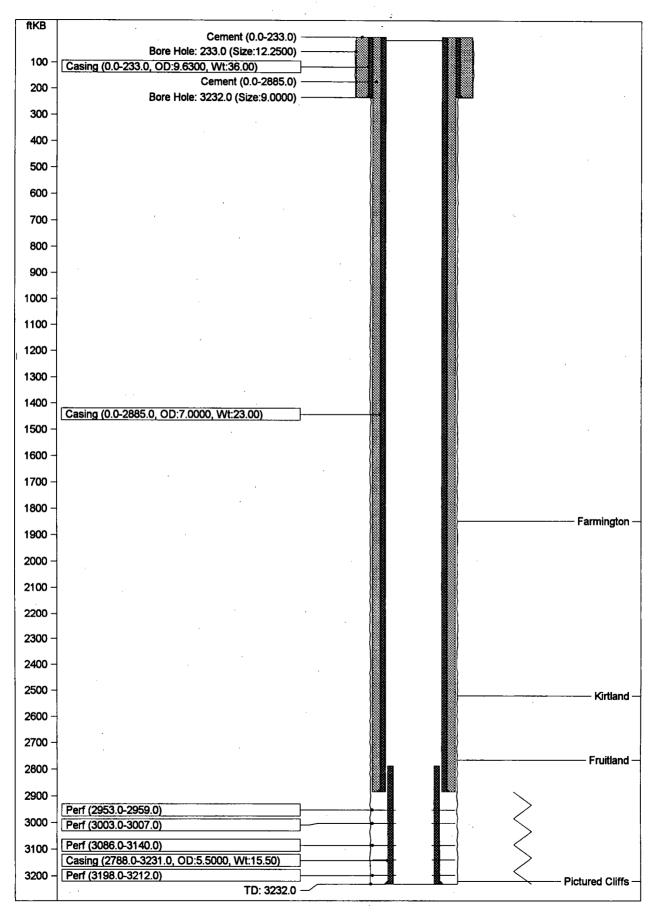
cc: Mr. Ernie Busch, Aztec District OCD Office

FC WALLER COM 1 (GOP 8/25/97)

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	RCOM1 (C		6						
API Code			8004528			Field Code)		676394377
TD			3232.0			Basin			SAN JUAN BASIN
PBTD			3232.0			Basin Cod	e		580
State	·		New M			Permit			27-Dec-90
County District			SAN J			Spud Finish Dri			29-Jan-91
Permit No.			<u>San Jua</u> Co						25-Feb-91
TD Measured			3232			Completion Abandon	n		13-Mar-91
Reservoir			Fruitlan			Abandon	·		
Field					· · ·				
Location	I							<u> </u>	
Meridian				NM		Top Latitu	do		37.02261
Twnship				32N		Top Longi			108.0069
Range				11W		Top NS D	istance		790.0 ft N
Section				14		Top EW D			1430.0 ft E
Quarter			SE	NW NE		Bottom La			0
						Bottom Lo			- O
						Btm NS D			0.0 ft
						Btm EW D			0.0 ft
Elevations									
КB			6	511.0 ft	<u></u>	Cas Fing			0.0 ft
Grd				499.0 ft		Tub Head			0.0 ft
KB-Grd				12.0 ft					
Bore Hole I	Data								•
		Depth				T		Si	Ze
		(ftKB)							n)
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		2885.0							500
		3232.0					500		
		3232.0							000
Casing Stri	ing - Surfac	e Casing							
Item		Btm	Jnts	D	W	t Grd	Thd	T	Comments
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	ing - Interm	ediate Ca	sino						
ltem		Btm	Jnts	ID	W	t Grd	Thd	T	Comments
(in)		(ftKB)							
7.0000 in Cas	sing	2885.0	0 61	6.3	700 23	.00 N-80	LT&C		
Casing Stri	ing - Produ	ction Line							
Item		Btm	Jnts	ID	W	t Grd	Thd	T	Comments
(in)		(ftKB)							
5.5000 in Cas	sing	3231.0	D 10	4.9	500 15	5.50	FL-4S	Baker SL	P-R Liner Hanger on top of flush
	-								g. 6 1/4" bit, bit sub, x-over on
								bottom.	
Casing Cer	ment								
Casing			Amo	unt					
	String	Тор						comments	
		Top (ftKB)	(S)	0				Comments	
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Surface Casir Intermediate C Perforation Date 28-Aug-97	ng Casing IS IS 3003.0	(ftKB) 0.0 0.0 nt - 3007.0	(s) 15 52	() 0 C 5 T hots (/ft) 4.0					3
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Surface Casir ntermediate C Perforation Date 28-Aug-97 28-Aug-97 28-Aug-97 28-Aug-97 28-Aug-97 Stimulation Date 27-Feb-91 14-Mar-96	ng Casing 15 3003.0 3086.0 3198.0 2953.0 ns & Treatn Type Open Hole Cavitation Open Hole	(ftKB) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	(s) 15 52 S) 0 C 5 T hots (/ft) 4.0 4.0 4.0 2885.0	OC unkno	wn. Cement	circ 953 to 3212	Comment: 2 in four gur	is runs as indicated.
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Surface Casir ntermediate C Perforation Date 28-Aug-97 28-Aug-97 28-Aug-97 28-Aug-97 Stimulation Date 27-Feb-91 14-Mar-96 Completion Date	ng Casing 15 3003.0 3086.0 3198.0 2953.0 ns & Treatn Type Open Hole Cavitation Open Hole Cavitation ns & Worko Reaso Worko	(ftKB) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	nd Summ	() 0 C 5 T hots (/ft) 4.0 4.0 4.0 2885.0 2885.0 2885.0 ary	OC unkno Perforate - 3232.0 - 3232.0	liner from 2 Fluid Mist	953 to 3212	Comment: 2 in four gur 2 tog & liner, n	Comments under-ream OH to 9", perform
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FC WALLER COM 1 (GOP 8/25/97)

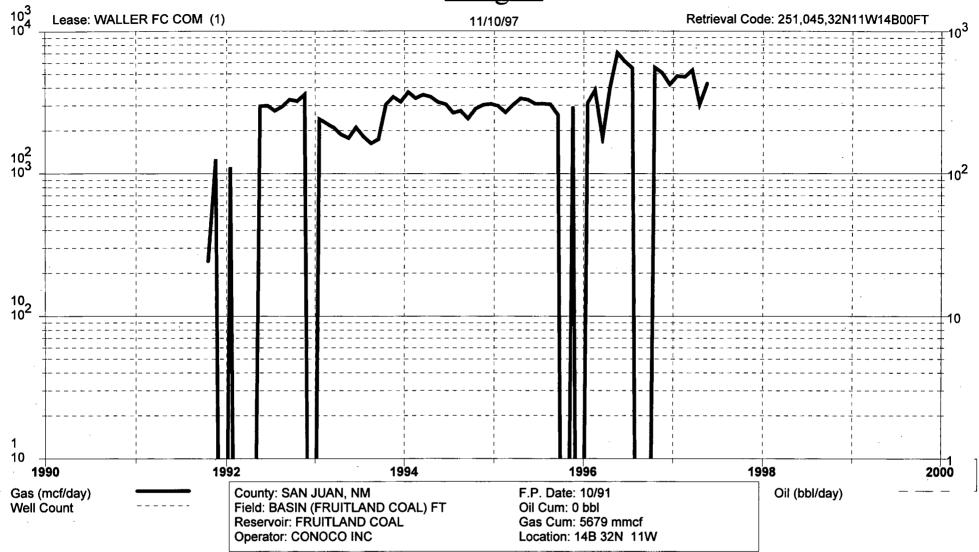


10/29/97

FC WALLER COM 1 (GOP 8/25/97)

Date		Reason for Vorkover	Summary	Summary									
24-Aug-	97 F	Run Liner	fill, CO w/ g	Run Liner - Set Inflatable BP, NU BOP and blooey tee, retrieve BP. TIH w/ 6-1/4" bit and tag fill, CO w/ gas. Run liner from ???? - ????. Change out 11" x 7-1/16" 3000# Csg Spool. Perforate liner. Set plug in tubing hanger, ND BOP, and NU WH.									
Formation	/Horizo	on Tops			· · · ·								
	op (B)			Form	ation								
	18	46.0 Farmi	ngton										
		21.0 Kirtlar											
	27	66.0 Fruitla	and										
	32	21.0 Pictur	red Cliffs	·····									
Logs Run													
Date	1	уре	Int	Company	Comments								
07-Jun-96	GR-TE	MP-SPIN	2800.0 - 3094.0	Halliburton	· · · · · · · · · · · · · · · · · · ·								
General N	otes			÷									
Date	1	lote											
13-Mar-9	91 I	nitial Potenti	al E 1516 MCEGPI	D; no oil; 102 BWPD	• • • • • • • • • • • • • • • • • • •								







Mr. Roy Johnson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505

Re: Application for Tubingless Exception to Rule 107 for the FC Federal No. 3 Basin Fruitland Coal Well API #30-045-27545, 820' FNL & 1620' FEL, Sec. 13, Township 32N, Range 11W, San Juan County

Dear Mr. Johnson:

In order to maintain efficient producing rates and maximize recovery from this well an exception to Rule 107, requiring this well to be produced with tubing, is requested. Producing with tubing causes an additional 50-55 psi of bottom hole flowing pressure across a reservoir that has already declined to less than 220 psi. Removing tubing and installing compressors should maintain rates high enough to keep the water production unloaded for several more years before tubing and pumps will ultimately need to be installed.

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All of the information and history of this well as discussed in this application was presented in a personal meeting with Mr. Ernie Busch of the Aztec Distric Office on November 19, 1997. Mr. Busch verbally agreed that based on this information and the attachments to this application that an exception to Rule 107 should be granted for this well.

If there are any further questions concerning this application, please contact either Mr. Busch or me at (915) 686-6548.

Very truly yours,

Jerry W. Hoover Sr. Conservation Coordinator

cc: Mr. Ernie Busch, Aztec District OCD Office

FC FEDERAL 3 (GOP 9/8/97))

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API Code 3000 KRB Field Code 67639437T PBTD 3000.0 fKB Basin Code SAN JUAN BSNI PBTD 3000.0 fKB Basin Code SAN JUAN SSNI State New Mexaco Permit 05-Sep-89 County SAN JUAN Spad 16A.ug-90 Datroct Completion 12-Feb-91 10000 fKB Demot No Completion 12-Feb-91 10000 fKB Demot No Frado fKB Basin Code 9700 fKB Permit No Coal Completion 12-Feb-91 Too Massured Doot fKB Basin Code 9700 fKB Partinian NM Top Langhude 070 fKB Maridian NM Top Longhude 070 fKB Range 11 Top EW Distance 1070 fKB 0.0 fK Quarter SE NW NE Botom Langlude 0.0 fK Gat 6268 0 ft Cas Fing 0.0 fK Grid 6268 0 ft Cas Fing 0.0 fK Grid 6268 0 ft	FOFEDER	AL 3	(GOP	9/8/9	7))													
TD 3000 0 ft/CB Basin SAN JUM BASIN State New Mexico Permit 005 380 State New Mexico Permit 005 880 County SAN JUAN Spud 16 Aug-80 Dietrick San Juan O.U. Finish Drl 16 Aug-80 Permit No. Coall Completion 12 Aug-80 Permit No. Statu Pert Coall Statu Pert Aug-80 107 Statu Pert Aug-80 Permit No. Distance 107 Statu Pert Aug-80 107 Statu Pert Aug-80 Permit No. Distance 0.0 ft 107 Statu Pert Aug-80 107 Statu Pert Aug-80 Perot Non Statu Pert Aug-80 Permit No D	API Code				3								676394377					
State New Medoc Permit 05.5ep.36 Ounty SAN JUAN Spud 16.Aug.90 Dietrict San Juan O.U. Finish Drl 16.Aug.90 Demit No. Coal Completion 12.Feb.91 TD Messured 3000 ftKB Abandon 12.Feb.91 Reservoir Fruitland Coal Completion 12.Feb.91 Field BASIN FRT COAL 1070 Langlude 107.0254 Meridian NM Top Langlude 107.0256 Range 11W Top Langlude 107.0256 Range 11W Top Langlude 0 Guarter SE NW NE Bottom Langlude 0 Guarter SE NW NE Bottom Langlude 0 Grid 6296.0 ft Cas Fing 0.0 ft KB 6296.0 ft Cas Fing 0.0 ft KB-Grid 12.0 ft Stac (in) (in) KB 6296.0 ft Tub Head 0.0 ft (in) KB-Grid 12.0 ft									_				SAN JUAN BASIN					
Country SAN JUAN Spud 176 Aug-90 Detroit San Juan OU. Finish Drl 18-Aug-90 Permit No. Coal Completion 12-Feb-91 TO Measured 3000 fKB Abandon 12-Feb-91 Reservoir Futiliand Coal Abandon 12-Feb-91 Merdian NM Top Langtude 37,02254 Wardian NM Top Langtude 820,01 fKB Range 111W Top Stance 820,01 fKB Guarter SE NW NE Bottom Longtude 0 Quarter SE NW NE Bottom Longtude 0 0 Gene Hole Data 6298.0 ft Cas Fing 0.0 ft 0 RG- 6298.0 ft Cas Fing 0.0 ft 0 0 RG- 6298.0 ft Cas Fing 0.0 ft 0 0 0 RG- 6298.0 ft Cas Fing 0.0 ft 0 0 0 0 0 0 0 0 0 0 0 <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>)</td> <td></td> <td></td>					_)							
District San Juan O.U. Finish Drl (18 Aug.90) Permit No. Coal Completion 12 Feb-91 TD Messured 3000 fKB Abandon 12 Feb-91 TD Messured BASIN FRT COAL Image Campletion 12 Feb-91 Field BASIN FRT COAL 37 02254 Merdian NM Top Lengtude 107 9992 Range 11W Top Lengtude 107 9992 Range 11W Top Lengtude 0 Quarter SE NW NE Bottom Latitude 0 Quarter SE NW NE Bottom Latitude 0 Cast Fing 0.0 ft 0.0 ft 0.0 ft K8 6298.0 ft Cas Fing 0.0 ft Grd 6286.0 ft Cas Fing 0.0 ft K8.Grd 12.0 ft Size 0.0 ft Grd 58.9200 3000.0 6.2500 3000.0 Size (im) 12.0 ft Image Image Image Grd Size (i																		
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cavitation.	10 Eak (14			tion	Initial C	omelati		1/01	porfed !-	AF 2600 2	00.9	lated well with 0 7/0" the after					
	10-FeD-9	Я		ompie				on - Set 5	1/2"	perred lin	ier 2002-3	uuu & comp	neteo well with 2 //8" tog after C					
	00 1 0	<u> </u>		0.0						4 4 1011 41								
28-Jan-96 CO Fill & Remove CO Fill & Remove Liner - LD 4 1/2" tbg, chg out tbg hd. CO fill from 5 1/2" liner & test	20-Jan-9	Ö		a ken														
Liner POOH w/ 5 1/2" liner. CO fill from 2900-2995. Under-ream OH to 9 1/2". Perform OH			Liner							170m 290	0-2995. UI	ider-ream C	on to 9 1/2". Perform OH					
cavitation. Did not run tbg.			l			cavitati	on. Did i	not run tbg					· · · · · · · · · · · · · · · · · · ·					

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FC FEDERAL 3 (GOP 9/8/97))

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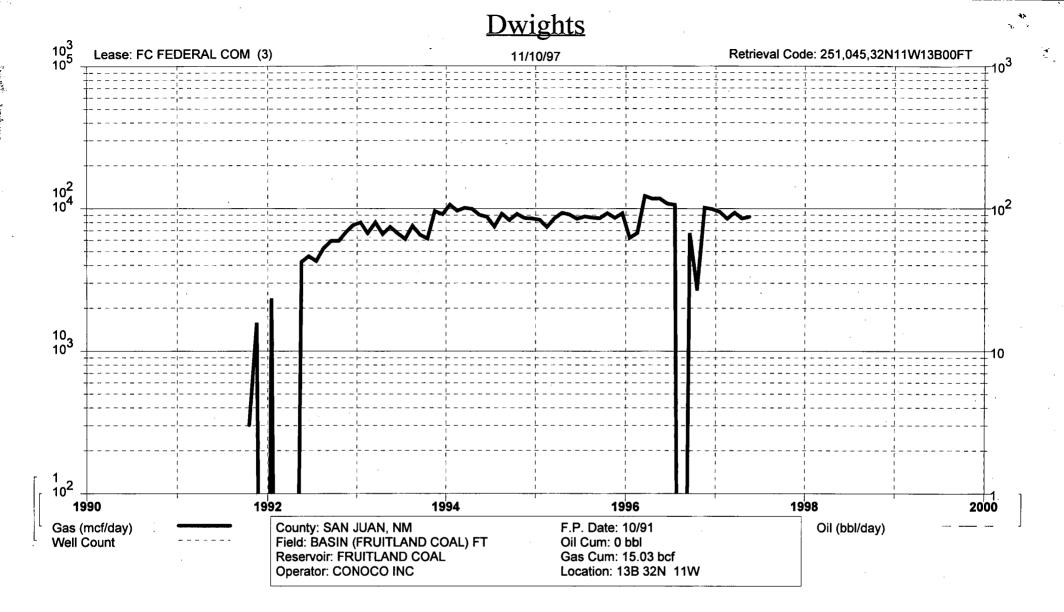
Date	Reason for			C							
Date	Workover		Summary								
26-Sep-	26-Sep-96 Re-Cavitation			Re-Cavitation - Tag fill @ 2923' & CO to 3000'. Under-ream OH to 11", perform OH cavitation, did not run tbg.							
08-Sep-	08-Sep-97 CO & Run Liner			CO & Run Liner - Tag PBTD @ 2950', 50' of fill. CO to 3002' w/ 6 1/4" bit & mist. TIH w/ bit, bit sub, x-over, 10 jts 5 1/2" FJ csg w/ Baker SLP-R liner hanger. Set liner 2543-3000'. Perf w/ 4 spf 2750-2980 (OA) w/ 680 holes.							
Formation	ı/Hori	zon To	ps								
	ор				Form	nation					
(ft	KB)										
			Farmington								
	;	2583.0	Fruitland co	al							
		3018.0	Pictured Cli	ffs							
.ogs Run											
Date		Туре		Int	Company	Comments					
20-Feb-91	None		0	.0 - 3000.0							
General N	otes										
Date		Note									
12-Feb-	91	Initial P	otential: F 2	2073 MCFGPD	on 3/4 ck; 652 BWPD; SIC	CP 615					
04-Jun-	07	Latitud	a probably in	n arror it refere	to 970 ENIL as appased to	actual location of 820 FNL.					

FC FEDERAL 3 (GOP 9/8/97))

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ftKB Cement (0.0-234.0) Bore Hole: 243.0 (Size:12.2500) Casing (0.0-234.0, OD:9.6300, Wt:36.00) Cement (0.0-2675.0) Bore Hole: 3000.0 (Size:11.0000) Casing (0.0-2675.0, OD:7.0000, Wt:23.00) Farmington Fruitland coal Perf (2750.0-2980.0) Casing (2543.0-3000.0, OD:5.5000, Wt:15.50) TD: 3000.0 **Pictured Cliffs**

10/29/97



Mr. Roy Johnson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505

Re: Application for Tubingless Exception to Rule 107 for the FC Federal No. 1 Basin Fruitland Coal Well API #30-045-27544, 1480' FNL & 1490' FEL, Sec. 30 Township 32N, Range 10W, San Juan County

Dear Mr. Johnson:

In order to maintain efficient producing rates and maximize recovery from this well an exception to Rule 107, requiring this well to be produced with tubing, is requested. Producing with tubing causes an additional 50-55 psi of bottom hole flowing pressure across a reservoir that has already declined to less than 220 psi. Removing tubing and installing compressors should maintain rates high enough to keep the water production unloaded for several more years before tubing and pumps will ultimately need to be installed.

To maximize ultimate recovery, it is critical to maximize the current producing rate by the most economic method while production can still benefit from tax credits. Producing without tubing will not only significantly reduce the BHFP and maintain higher producing rates, but will require less well work to keep the wellbore cleaned out and reduce operating costs to the benefit of all interest owners.

The attached well history and wellbore schematic shows that a 5-1/2" liner has been installed across this originally open hole completion. Before running the liner, the well was re-cavitated and cleaned out. Producing without tubing in this recently remediated wellbore will result in a more efficient use of remaining reservoir pressure and will not in any way cause waste.

The fluids being produced by this well are not corrosive to the liner and casing and no signs of corrosion have been observed on any pipe recovered from the well or surface equipment. There are several technical reasons involving the Fruitland Coal reservoir and the producing mechanisms that seem to explain why corrosion does not occur in these wells.

By the very nature of the coal any gas (including any CO_2) in the reservoir is absorbed into the coal and is not in a free state that can, through contact with formation water, form corrosive acids in the reservoir. Since production occurs through a fracture dominated system, gas in the mattrix remains absorbed at a higher pressure in the coal mattrix until desorption occurs very

close to the wellbore into the fractures and is produced quickly through the much lower pressured fractures into the wellbore. A production plot is also attached showing the production history of the well.

This well is flowing at a high enough rate to keep the wellbore unloaded from any produced water. Therefore, in a high rate flow regime any contact of CO_2 with water is brief and insignificant in the formation of any potentially corrosive acid. The casing in this well is additionally protected from corrosion by cathodic protection.

All of the information and history of this well as discussed in this application was presented in a personal meeting with Mr. Ernie Busch of the Aztec Distric Office on November 19, 1997. Mr. Busch verbally agreed that based on this information and the attachments to this application that an exception to Rule 107 should be granted for this well.

If there are any further questions concerning this application, please contact either Mr. Busch or me at (915) 686-6548.

Very truly yours,

/Jerry W. Hoover Sr. Conservation Coordinator

cc: Mr. Ernie Busch, Aztec District OCD Office

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FC FEDERAL 1 (GOP 9/2/97)

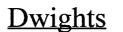
FC FEDER	AL 1 (GOP 9	12/97)									
API Code			300452	275440	 D	*****	Field Code)	676394530		
TD				0 ftKB	-		Basin		SAN JUAN BASIN		
PBTD			2874	0 ftKB			Basin Cod	e	580		
State				Mexico			Permit		05-Sep-89		
County				JUAN			Spud		30-Jul-90		
District		,	San Ju	an O.U	۱		Finish Drl		23-Jan-91		
Permit No.				oal			Completio	n	07-Feb-91		
TD Measured	1			1 ftKB			Abandon				
Reservoir			Fruitla	nd Coa	<u> </u>						
Field			DAR HIL	<u>L FRT</u>	COA	L]				
Location											
Meridian				NM			Top Latitu		36.95949		
Twnship				32N			Top Longi	tude	107.9192		
Range				10W			Top NS D	istance	1480.0 ft N		
Section				30			Top EW D		1490.0 ft E		
Quarter			N	Ê SW I	NE		Bottom La		0		
							Bottom Lo	ngitude	0		
							Btm NS D		0.0 ft		
							Btm EW D	Distance	0.0 ft		
Elevations											
KB				5061.0			Cas Fing		0.0 ft		
Grd				5049.0			Tub Head		0.0 ft		
KB-Grd				12.0 ft							
Bore Hole	Data										
		Depth					ſ		Size		
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		2525.0						8.7500			
		2874.0	· · · · · · · · · · · · · · · · · · ·					6.2500			
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Casing Str	ing - Surfaci	e Casino									
Item		Btm	Jnt	5	ID	Wt	Grd	Thd	Comments		
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Casing Str	ing - Interm										
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	ing - Produc					<u> </u>					
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	table Bridge								_		
Date		ltem					nt	OD	Comment		
44 14 00		- Dhr -					<u>(B)</u>	(in)			
14-Mar-96	Inflatable Bridg	e Piug				2869.0	- 2874.0	6.500	00 Report from TAB, production pulled		
									one plug and lost the other, pushed to		
					 				bottom. Length assumed		
Perforation		<u></u>	Shots								
Date	e Int						Comments				
00.0	ep-97 2560.0 - 2850.0				_						
06-Sep-97	2560.0 -	2850.0		4.0					guns using 0.41" shots thru 5-1/2" 15.5#		
									ing runs with 4-SPF as follows: 2560-66,		
					20	600-34,	2/22,36,28	32-50 for a tot	tal of 288 shots.		
	ns & Treatm			ļ.			1				
Date	Туре		one	ļ	Int		Fluid		Comments		
	Open Hole	Fruit		2525	5.0 - 2	2874.0	Mist				
	Cavitation	Coa									
	Open Hole	Fruit		2525	5.0 - 2	2874.0	Mist	POOH w/	liner & under-reamed hole to 9 1/2".		
	Cavitation	Coa									

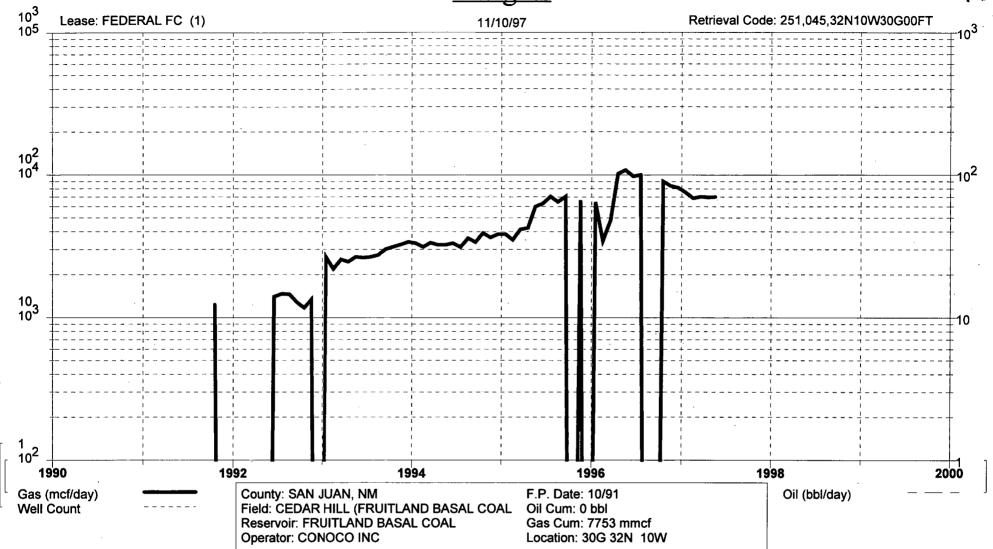
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FC FEDERAL 1 (GOP 9/2/97)

Completic	ons & Work	overs									
Date	Reas Work	on for over	Summary								
28-Jan-9	91 Initial	Completion	Initial Completion - Well originally completed with 5 1/2" perforated liner in hole.								
20-Feb-	96 Re-C	avitation	Re-Cavitation - POOH & LD 2445' of 3 1/2' tbg. Spear liner & LD same. CO fill from 2770'-2874'. Under-ream OH to 9 1/2". Lost inflatable BP & pushed it to bottom. Did not run tbg in well.								
02-Sep-	97 CO&	Run Liner	threads, pres	sure test and perforate f	68', run 5-1/2" 15.5# J-55 Flush Jt liner w/ FL-4S rom 2560-2850', net interval: 72' w/ 4 SPF 0.41" holes, 6" 3M tbg head w/ 2- 4" outlets, test to 3000#.						
Formation	n/Horizon T	ops	· · · · ·								
	op KB)			Fo	rmation						
	1560.0	Farmington									
-	2170.0	Kirtland									
	2460.0	Fruitland									
	2874.0	Pictured Cli	ffs								
Logs Run											
Date	Туре		Int	Company	Comments						
07-Feb-91			.0 - 2874.0								
General N	otes										
Date	Note										
07-Feb-9	91 Initial	Potential: F 1	290 MCFGPD	on 3/4 ck; 87 BWPD; S	ICP 650						

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FC FEDERAL 1 (GOP 9/2/97)

ftKB Cement (0.0-234.0) Bore Hole: 244.0 (Size:12.2500) Casing (0.0-234.0, OD:9.6300, Wt:36.00) Cement (0.0-2525.0) Bore Hole: 2874.0 (Size:9.5000) Casing (0.0-2525.0, OD:7.0000, Wt:23.00) Farmington Kirtland Fruitland Perf (2560.0-2850.0) Flush Jt Liner (2422.0-2867.0, OD:5.5000, Wt:15.50)

Inflatable Bridge Plug (2869.0-2874.0,

OD:6.5000)

10/29/97

Pictured Cliffs



Mr. Roy Johnson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, New Mexico 87505

Re: Application for Tubingless Exception to Rule 107 for the FC Federal No. 2 Basin Fruitland Coal Well API #30-045-27630, 1550' FSL & 1220' FWL, Sec. 12 Township 32N, Range 11W, San Juan County

Dear Mr. Johnson:

In order to maintain efficient producing rates and maximize recovery from this well an exception to Rule 107, requiring this well to be produced with tubing, is requested. Producing with tubing causes an additional 50-55 psi of bottom hole flowing pressure across a reservoir that has already declined to less than 220 psi. Removing tubing and installing compressors should maintain rates high enough to keep the water production unloaded for several more years before tubing and pumps will ultimately need to be installed.

To maximize ultimate recovery, it is critical to maximize the current producing rate by the most economic method while production can still benefit from tax credits. Producing without tubing will not only significantly reduce the BHFP and maintain higher producing rates, but will require less well work to keep the wellbore cleaned out and reduce operating costs to the benefit of all interest owners.

The attached well history and wellbore schematic shows that a 5-1/2" liner has been installed across this originally open hole completion. Before running the liner, the well was re-cavitated and cleaned out. Producing without tubing in this recently remediated wellbore will result in a more efficient use of remaining reservoir pressure and will not in any way cause waste.

The fluids being produced by this well are not corrosive to the liner and casing and no signs of corrosion have been observed on any pipe recovered from the well or surface equipment. There are several technical reasons involving the Fruitland Coal reservoir and the producing mechanisms that seem to explain why corrosion does not occur in these wells.

By the very nature of the coal any gas (including any CO_2) in the reservoir is absorbed into the coal and is not in a free state that can, through contact with formation water, form corrosive acids in the reservoir. Since production occurs through a fracture dominated system, gas in the mattrix remains absorbed at a higher pressure in the coal mattrix until desorption occurs very

close to the wellbore into the fractures and is produced quickly through the much lower pressured fractures into the wellbore. A production plot is also attached showing the production history of the well.

This well is flowing at a high enough rate to keep the wellbore unloaded from any produced water. Therefore, in a high rate flow regime any contact of CO_2 with water is brief and insignificant in the formation of any potentially corrosive acid. The casing in this well is additionally protected from corrosion by cathodic protection.

All of the information and history of this well as discussed in this application was presented in a personal meeting with Mr. Ernie Busch of the Aztec Distric Office on November 19, 1997. Mr. Busch verbally agreed that based on this information and the attachments to this application that an exception to Rule 107 should be granted for this well.

If there are any further questions concerning this application, please contact either Mr. Busch or me at (915) 686-6548.

Very truly yours,

Jerry W. Hoover Sr. Conservation Coordinator

cc: Mr. Ernie Busch, Aztec District OCD Office

FC FEDERAL 2 (GOP 9/23/97)

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FC FEDER	AL 2	(GOP (9/23/9					ļ					
API Code					045276				eld Code		676394377		
TD PBTD					3206.0 f 3206.0 f				asin Solo Codo		SAN JUAN BASIN		
State					New Me		_		asin Code ermit		580 14-Sep-89		
County					SAN JU				pud	· · ·	03-Aug-90		
District					an Juan			Finish Drl			05-Aug-90		
Permit No.					Coal			C	Completion 05-Mar-91				
TD Measure	d				3206			A	bandon				
Reservoir					ruitland								
ield				BAS	<u>SIN FRT</u>	COAL							
ocation													
Meridian Twnship						NM 32N			op Latitude		37.02884		
Range	·····					1W			op Longitu op NS Dis		107.9977 1500.0 ft S		
Section			<u></u>			12			op EW Dis		1220.0 ft W		
Quarter						IW SW			ottom Latit		0		
									ottom Long		0		
								Bt	m NS Dis	tance	0.0 ft		
								Bt	tm EW Dis	stance	0.0 ft		
levations	<u> </u>												
B						26.0 ft			as Fing		0.0 ft		
Grd						4.0 ft		TI	ub Head		0.0 ft		
B-Grd	D -4				12	2.0 ft							
<u> Sore Hole</u>	vata		<u></u>	<u></u>				<u>1</u>			01		
			Dept (ftKB								Size (in)		
			244.0					+			12.2500		
			2900.					+			7.8750		
	3206.0					-		1	6.2500				
	3206.0									9.5000			
Casing St	ring - S	Surface	e Casi	ing									
tem				lm	Jnts	ID	W	t	Grd	Thd	Comments		
in)				(B)									
0.6300 in Ca				234.0	5	8.92	<u>00 36</u>	.00	J-55	ST&C	<u> </u>		
Casing St	angedi	nterme				<u></u>			·····		1 .		
tem in)				tm CP	Jnts	ID	W	Ľ	Grd	Thd	Comments		
7.0000 in Ca	sina			(B) 900.0	0 72 6.3700		00 23	00	00 N-80 LT&C				
Casing St		Produc			<u></u>		<u></u> 23				1		
tem	anne saidhe			m	Jnts	ID	w	eneret K	Grd	Thd	Comments		
in)				(B)				•	0.4		O oniniento		
5.5000 in Lir	er		2	902.0	2	4.95	00 15	.50	J-55	LT&C	********		
5.5000 in Lir			3	207.0	7	4.95		.50		FL-4S			
Casing Ce	ment												
Casing	String		Тор		Amou					C	Comments		
			(ftKB		(SX)								
Surface Cas				0.0	150		ment circ		<u> </u>	-			
ntermediate				0.0	550	10		NN.	Cement c	IC.			
Perforatio Date	115	In	t			ots ft)				(Comments		
23-Sep-97	2	2966.0 -	3144.0	0		.0	2966-76'(10',), 3010-30	Holes @ 4 SPF in 4-Runs as follows: 020' (10', 40 Shots), 3080-3144' (64', 256		
Stimulatic	ns R T	reatm	ents		1	!	<u>onotoj. 1</u>		<u>ne. 04, 30</u>	N UNULO.			
Date		Type		Zon		<u>In</u>	<u></u> 1	<u>2000</u>	Fluid	T	Comments		
15-Feb-91	Open H		_F	ruitlan		2900.0 -		M	ist	+			
	Cavitati	ion		oal	-								
09-Feb-96	Open H		-	ruitlan	d	2900.0 -	3206.0	M	ist	Pulled tb	og & csg from well. CO fill from 3090-3206.		
	Cavitati			oal					-		eam hole to 9.5". Perform cavitation		
ompletic													
Date		Reason			Summa	ry							
		Workov			,								
23-Feb-		Initial Co									uring initial completion.		
09-Feb					Re-Cavitation - POOH & LD 4 1/2", 9.5#, J-55 tbg. Run 5 1/2" csg spear, spear & remove								
	09-Feb-96 Re-Cavitation			liner. CO fill from 3090-3206. Under-ream OH to 9 1/2". Install new tog head & wellhead. D									

FC FEDERAL 2 (GOP 9/23/97)

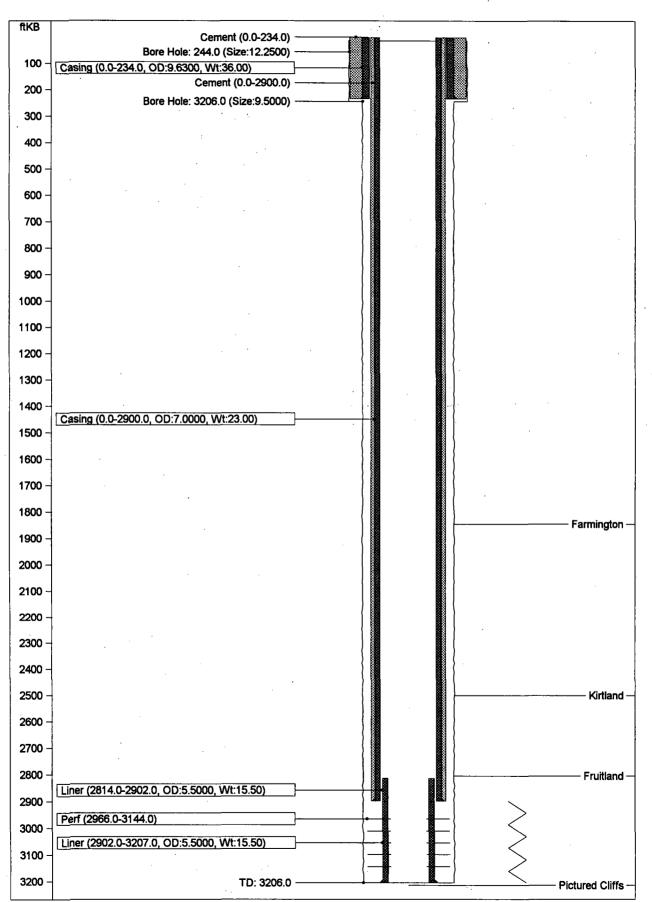
Date		Reaso Work		Summary CO and run liner - CO to TD @ 3208', Run 5-1/2" 15.5# Flush Jt Liner, perforate Fruitland Coal.							
19-Sep-	97	CO ar	nd run liner								
Formation	ı/Horiz	ion T	ops								
	op KB)				Fo	ormation					
		846.0	Farmington			••••••••••••••••••••••••••••••••••••••					
			Kirtland								
	7	2806.0	Fruitland								
	3	3216.0	Pictured Cli	ffs	· · · · · · · · · · · · · · · · · · ·						
.ogs Run											
Date		Туре		Int	Company	Comments					
05-Mar-91	None		0	.0 - 3207.0							
Sene ral N	otes										
Date		Note									
05-Mar-	91	Initial	Potential: E 1	624 MCEGPD	577 BWPD; SICP 810						

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FC FEDERAL 2 (GOP 9/23/97)

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10/29/97

