

JAMES E. RUSSELL PETROLEUM, INC.

SAVONBURG NORTHEAST FIELD

NELSON, NO. HW-31

WORKOVER

WELL DATA:

T.D.: 760'

Perfs.: 668'-683', 686'-692.5',
694'-696'

Casing: 2 7/8" O.D. Depth Unknown

P.B.T.D.: 729'

OBJECTIVE: To increase injection.

June 15, 1983:

Set up Splane pulling unit and company wash equipment. Ran in 1" with big mill bit. Washed up scale and frac sand. Washed well with 15 bbls. of injection salt water down to a T.D. of 729'. Pulled up 1" and spotted 2 kegs of acid @ 698'. Flushed acid out of 1" and pulled pipe out. Tied on to casing and pumped in 5 bbls. slowly because casing had a hole in it.* Pressure was between 500 & 400 psi. Shut-in pressure 100 psi. Moved off.

June 17, 1983:

22 bbls. @ 320 psi

* Note: Leak in top of casing was sealed with a clamp.

June 18, 1983:

16 bbls. @ 0 psi

June 19, 1983:

23 bbls. @ 0 psi

June 20, 1983:

11 bbls. @ 0 psi

June 21, 1983:

35 bbls. @ 0 psi

February 10, 1984:

Using TOP Wireline Services, Inc., ran a Differential/Gradient Temperature Survey. Logger's T.D. 726'.

Well was shut-in at 4:00 p.m. 2-9-84, ran log at 9:30 a.m. 2-10-84. Shut-in 17½ hours.

Water exiting pipe at 654'-690', 702'-713.

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April 10, 1986:

Reason for Job: to clean out well for channelblock job.

Rigged up Splane Well Servicing Unit and company wash equipment. Ran a string of 1" 10 rd. pipe in well and washed to a T.D. of 730'. Circulated hole clean. Pulled 1" up to 685' and spotted 2 kegs of acid on perfs. Pulled 1" out and displaced acid out of 2½". Rigged down.

April 17, 1986:

Reason for Job: Profile modification treatment.

Mixed with 70 BBls. fresh water, 135 lbs. synthetic polymer (5,500 ppm), 250 lbs. salt (1%), and 24 lbs. 8 oz. Calcium Chloride (0.1%). Blended half the required reagents as follows: 3 lbs. 4 oz. Sodium Dichromate and 12 lbs. 8 oz. Sodium Thiosulfate. Began injection at 35 B/D at wellhead pressure of 0 psi. Samples taken periodically and pressure monitored.

April 18, 1986:

Blended 3 lbs. 4 oz. Sodium Dichromate and 12 lbs. 8 oz. Sodium Thiosulfate. Continued injection at 35 B/D. Well taking at 560 psi. Samples taken periodically. Tests were run on offset producers checking for traces of polymer, no traces found.

April 19, 1986:

Completed injection of 59 BBls. polymer. Cleared pipe with 4.5 BBls. injection water and shut in well at 580 psi. Polymer did not show at any of the surrounding producers.

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October 30, 1986:

Reason for Job: To Increase Injection to Rec. Rate of 45 Bbls.

Rigged up company wash equipment and pulling unit. Ran a string of 1" 10rd pipe with small bit. Washed well to a T.D. of 728'. Circulated hole clean and pulled pipe up to 685' and spotted 2 kegs of acid on perfs. Worked acid in perfs and shut down for 1 hour. Backflowed well and circulated hole clean. Spotted 2 kegs of acid @ 685' and displaced. Pulled 1" out and hooked up wellhead connection. Worked acid in perfs with 4 bbls. of lease salt water. Closed in and rigged down.

October 30, 1986:

5 bbls. @ 700 psi

October 31, 1986:

57 bbls. @ 600 psi

November 1, 1986:

14 bbls. @ 560 psi, had to start meter

September 4, 1987:

Reason for Job: To Increase Injection after PMT Current: 10 B/D @ 640 ps
Rec.: 45 B/D

Broke down wellhead and backflowed small amount. Rigged up and ran string 1" with full size mill bit. Set down solid at 660'. Washed to seating nipple. Pulled 1" and changed to small bit. Ran in and washed to 730' getting out very little polymer with a lot of frac sand. Pulled 1" to 700' and spotted 30 gal. acid, pressured up on well and shut in.

September 5, 1987:

Circulated hole clean, spotted 30 gal. acid and worked into perfs. Let set and work 1 hour. Circulated clean, pulled 1" & hooked up to inj.

September 6, 1987: 35 B/D @ 610 psi

September 7, 1987: 19 B/D @ 610 psi

September 8, 1987: 20 B/D @ 620 psi

April 22, 1988:

Reason for Job: To increase injection

Current: 10 B/D @ 640 psi

Rec: 45 B/D

Ran string 1" with jet and bit, washed to 730', pulled up and jetted perfs.
Spotted 25 gal. 28% acid, worked into perfs with 1 bbl. Let set and work 1 hour.
Washed clean, spotted 35 gal. 28% acid and worked into perfs with 3 bbl. Shut well
in at 600#.

4-24-88:

33 B/D @ 600 psi

4-25-88:

21 B/D @ 620 psi

June 1, 1996:

Well injecting at 36 barrels/day, 520 PSI.

June 2, 1996:

Shut-in.

June 3, 1996:

Ran Cornish Delta Temperature Survey 697.4' to surface; results generally satisfactory.

April 22, 1998:

Ran steel measuring line to T.D. of 668'.

May 1, 1998:

Using Company pulling unit and wash equipment, ran 1" and jet bit to 650'. Hooked up wash head and washed to 698'. Washed bottom up with six barrels of field salt water. Dropped ball for jetting procedure. Pulled bit up to 692', or bottom of perforations to be treated. Jetted up to 684', or top of perforations. Jetted at 650 PSI with ten barrels of water while reciprocating pipe up and down section. Stepped up rate and jetted with an additional five barrels of water at 950 PSI. Jetted water samples were retained during the procedure.

Finished jet treatment and lowered bottom of pipe to 692'. Spotted 50 gallons 28% HCl acid on perforations. Flushed acid out of 1" with 3/4 barrel of water. Pulled 1" and bit. Made surface connections on wellhead and hooked up to pump truck. Pressured up on well. Broke formation at 750 PSI. Pumped at steady rate of one barrel per 90 seconds at 650 PSI. Pumped five barrels at this rate. Reduced rate to one barrel per three minutes and treated with two barrels at pressure of 550 PSI. Finished treatment and shut well in at 450 PSI. Total of seven barrels field salt water used for pressurizing.

The following additives were used in 50 gallons of acid: one gallon Goldtreat; one gallon ESA-96; one quart ESA-91; one pint ESA-50.

One gallon of ESA-50 was mixed with 24 barrels of field salt water for washing and jetting.

May 4, 1998:

Ran coil tubing and treated well with additional 50 gallons of acid along with the same additives as described above.

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May 5, 1998:

35 bbls. @ 500 lbs.

May 6, 1998:

35 bbls. @ 500 lbs.

May 7, 1998:

39 bbls. @ 510 lbs.

30154 5/12/98

December 16, 1998:

Using Company coil tubing unit, spotted 50 gallons 28% acid, one gallon Goldtreat, one gallon ESA-96, one quart ESA-91 and one pint ESA-50 on perforations. Let set overnight.

December 17, 1998:

Repeated above procedure. Resumed normal injection rate.

December 19, 1998:

29 bbls. @ 660 PSI

December 22, 1998:

21 bbls. @ 670 PSI

James E. Russell Pet., Inc.

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WORKOVER RECORD

Date: April 10, 1986

Reason for Job: To clean out for channelblock job.

LEADER: H. L. Loom WELL NUMBER: HW 31

T.D. 731' Bands

P.W.T.D. 660 683 686 693 694 696

Casting 1 1/2" 0" Ft. 614

Injection Setting " Ft. Packback

Heating Hopper 60% Ft. Comments

Company Equip:	Unit No.	Time	Company Man Hours	Contractor Time
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4-10-86: Mini pump		25 hrs.		Splane 3 hrs.
	121	6 hrs.		

4-17-19-86: Channelblock unit		48 hrs.	26 hrs.	
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