

Oficina principal
Av. Rivera
Navarrete 501,
Piso 11, San Isidro
Lima-Perú
T (511) 513 7500
F (511) 441 4217

Oficina Talara
Av. Jorge Chávez s/n
La Brea-Negritos,
Talara-Perú
Apartado 5- C Talara
T (51) (073) 284 000
F (51) (073) 393 137

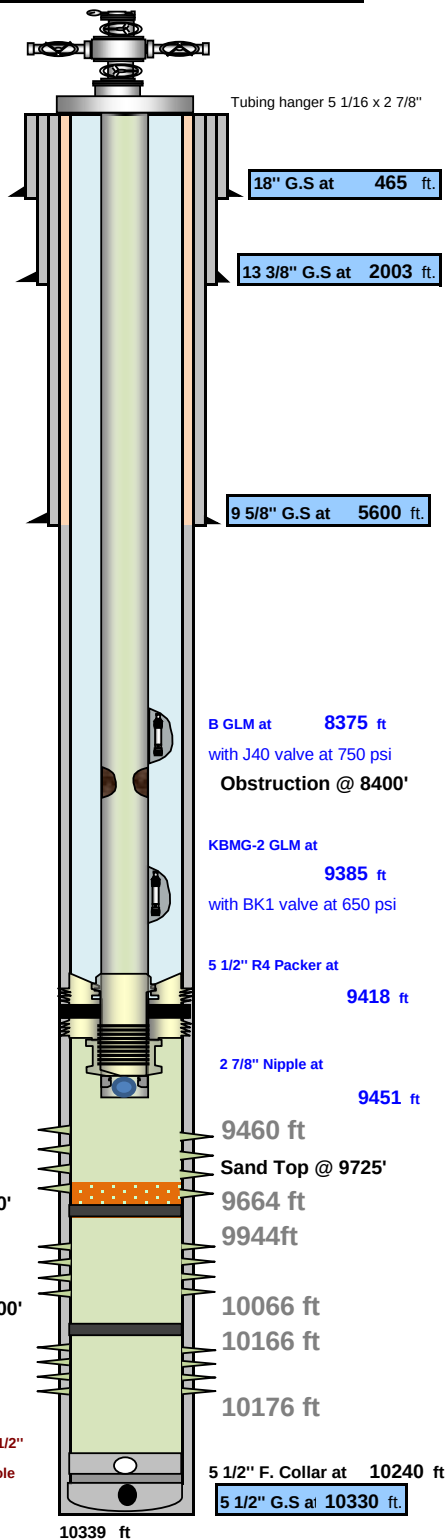
SAVIA Perú S.A.
www.saviaperu.com

WELL : LO16-14

RIG LESS ACIDIZING TREATMENT IN BASAL SALINA FM



CURRENT COMPLETION STRING



TD: 10339 ft

Production Eng. Dept.

JUN 12th, 2012

CASING

OD	ID	GRADE	Wt (PPF)	THREAD	TOP	DEPTH (ft)
18"	17.625	ASTM-A53B	71.0	WELD	0	465
13 3/8"	12.615	K-55	54.5	BUTT	0	2003
9 5/8"	8.755	N-80	43.5	BUTT	0	5600
5 1/2"	4.892	N-80	17.0	BUTT	0	6080
	4.778	N-80	20.0	BUTT	6080	10330

TUBING

OD	ID	GRADE	Wt (PPF)	THREAD	TOP	BOTTOM
2.875	2.441	N-80	6.5	EUE	0	9418

PROCEDURE

- 1) Test Halliburton lines with 1000 psi.
- 2) Test master valve with 1000 psi.
- 3) Pump as follow:
 - 10 bbl Fe Acid,
 - Q: 1-4 bpm.
- 4) Wait acid reaction for 30 min.
- 5) Kick off well with Gas Lift
- 6) Neutralize recovered fluids on surface.
- 7) Monitor production and well head pressure.

LO16-14

Directional Survey

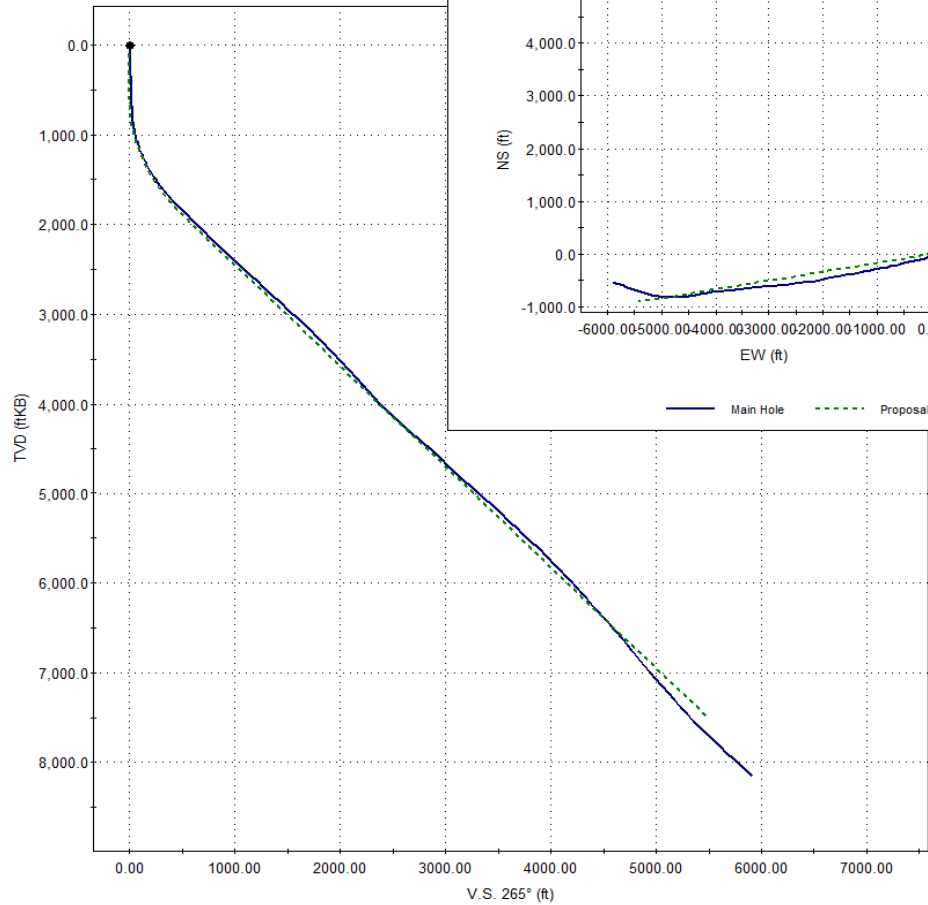
API/UWI	Producing Formation	Area	County	State/Province	Operator	Edit	
960-43-01-xxx-84714	Upp.Bs. Salina	Lobitos	Piura	Talara	Petro-Tech Peruana	014	
KB Elevation (ft)	CF Elev (ft)	Spud Date	Surface Legal Location		N/S Dist. (ft)	N/S Ref.	E/W Dist. (ft)
50.00	17.00	04/02/1995	Z-2B-21-008-D-LO16		678.0	S	5356.0
					E/W Ref.		
					W		

Directional Surveys: Survey of main hole

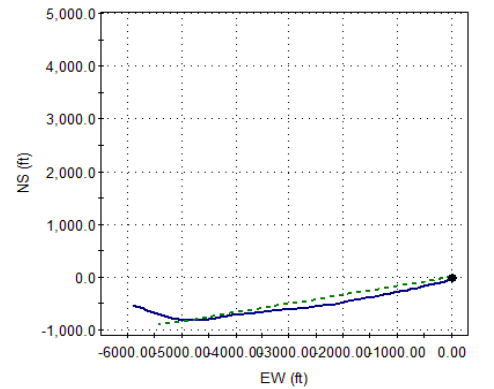
[Edit](#)

Description	Survey Company	Job
Survey of main hole	Anadrill Schlumberger	Drilling - original, 01/02/1995

Vertical Section



Plan



LO16-14

Directional Survey

API/UWI 960-43-01-xxx-84714	Producing Formation Upp.Bs. Salina	Area Lobitos	County Piura	State/Province Talara	Operator Petro-Tech Peruana	LH 014
KB Elevation (ft) 50.00	CF Elev (ft) 17.00	Spud Date 04/02/1995	Surface Legal Location Z-2B-21-008-D-LO16	N/S Dist. (ft) 678.0	N/S Ref. S	E/W Dist. (ft) 5356.0
						E/W Ref. W

Directional Surveys: Survey of main hole

Description Survey of main hole	Survey Company Anadrill Schlumberger	Job Drilling - original, 01/02/1995
------------------------------------	---	--

Survey Data

MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	DLS (°/100ft)	VS (ft)	Tie-in EW (ft)
0.00	2.60	218.71	0.00	0.00	0.00	0.00	0.00	
667.00	2.60	218.71	666.31	-23.61	-18.92	0.00	20.99	
757.00	4.30	226.41	756.15	-27.53	-22.64	1.95	25.05	
787.00	5.00	222.01	786.05	-29.28	-24.33	2.62	26.89	
848.00	7.60	222.61	846.67	-34.22	-28.84	4.26	31.83	
908.00	10.70	226.91	905.90	-40.95	-35.60	5.29	39.17	
938.00	11.80	223.41	935.33	-45.08	-39.74	4.31	43.67	
968.00	12.70	225.31	964.65	-49.63	-44.19	3.29	48.52	
998.00	13.50	229.71	993.86	-54.21	-49.21	4.26	53.93	
1,028.00	14.30	233.91	1,022.99	-58.66	-54.87	4.29	59.97	
1,059.00	15.10	234.51	1,052.97	-63.26	-61.26	2.63	66.75	
1,089.00	15.80	235.51	1,081.89	-67.84	-67.80	2.50	73.68	
1,119.00	16.50	237.51	1,110.70	-72.44	-74.76	2.98	81.03	
1,179.00	18.20	242.41	1,167.97	-81.36	-90.26	3.73	97.27	
1,209.00	19.20	244.51	1,196.39	-85.65	-98.86	4.02	106.23	
1,239.00	20.10	247.51	1,224.64	-89.75	-108.08	4.51	115.78	
1,269.00	21.10	250.11	1,252.73	-93.55	-117.92	4.52	125.93	
1,300.00	22.10	251.51	1,281.55	-97.30	-128.70	3.63	137.00	
1,330.00	23.10	255.01	1,309.25	-100.61	-139.74	5.59	148.29	
1,360.00	24.40	255.71	1,336.71	-103.67	-151.43	4.43	160.21	
1,390.00	25.80	255.71	1,363.87	-106.81	-163.76	4.67	172.78	
1,421.00	26.70	255.71	1,391.67	-110.19	-177.04	2.90	186.32	
1,452.00	27.60	255.01	1,419.26	-113.77	-190.73	3.08	200.27	
1,482.00	28.40	255.71	1,445.75	-117.33	-204.36	2.88	214.17	
1,514.00	29.30	256.41	1,473.78	-121.05	-219.34	3.00	229.43	
1,545.00	30.40	257.11	1,500.66	-124.58	-234.36	3.72	244.71	
1,576.00	31.60	257.81	1,527.23	-128.04	-249.95	4.04	260.54	
1,607.00	32.80	259.21	1,553.47	-131.33	-266.13	4.56	276.96	
1,638.00	33.80	260.21	1,579.38	-134.37	-282.88	3.68	293.91	
1,670.00	34.80	260.81	1,605.81	-137.34	-300.67	3.30	311.90	
1,702.00	35.70	260.61	1,631.94	-140.32	-318.89	2.84	330.32	
1,733.00	36.60	260.61	1,656.97	-143.30	-336.93	2.90	348.55	
1,764.00	37.50	260.61	1,681.72	-146.35	-355.36	2.90	367.18	
1,799.00	38.40	260.61	1,709.31	-149.86	-376.60	2.57	388.65	
1,828.00	38.90	259.91	1,731.96	-152.93	-394.45	2.29	406.70	
1,859.00	39.60	259.91	1,755.97	-156.36	-413.76	2.26	426.25	
1,890.00	40.20	259.41	1,779.75	-159.93	-433.32	2.19	446.05	
1,921.00	40.60	258.51	1,803.36	-163.78	-453.04	2.28	466.04	
2,005.00	41.50	254.51	1,866.72	-176.66	-506.65	3.31	520.60	
2,169.00	41.80	257.11	1,989.27	-203.37	-612.30	1.07	628.24	
2,292.00	41.70	257.11	2,081.03	-221.64	-692.14	0.08	709.41	
2,385.00	41.70	257.11	2,150.47	-235.44	-752.45	0.00	770.72	
2,479.00	41.90	257.81	2,220.55	-249.04	-813.61	0.54	832.86	
2,573.00	42.00	258.51	2,290.46	-261.94	-875.11	0.51	895.28	

LO16-14

Directional Survey

API/UWI 960-43-01-xxx-84714	Producing Formation Upp.Bs. Salina	Area Lobitos	County Piura	State/Province Talara	Operator Petro-Tech Peruana	LH 014
KB Elevation (ft) 50.00	CF Elev (ft) 17.00	Spud Date 04/02/1995	Surface Legal Location Z-2B-21-008-D-LO16	N/S Dist. (ft) 678.0	N/S Ref. S	E/W Dist. (ft) 5356.0
						E/W Ref. W

Survey Data									Edit
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	DLS (°/100ft)	VS (ft)	Tie-in EW (ft)	
2,677.00	42.20	258.51	2,367.62	-275.82	-943.43	0.19	964.58		
2,760.00	42.50	258.51	2,428.96	-286.96	-998.23	0.36	1020.16		
2,858.00	43.00	258.51	2,500.93	-300.21	-1063.42	0.51	1086.28		
2,948.00	43.20	258.51	2,566.64	-312.46	-1123.68	0.22	1147.41		
3,042.00	43.30	259.21	2,635.11	-324.91	-1186.87	0.52	1211.47		
3,134.00	43.70	259.21	2,701.84	-336.76	-1249.08	0.43	1274.50		
3,228.00	43.90	259.21	2,769.69	-348.94	-1312.99	0.21	1339.25		
3,365.00	43.50	259.21	2,868.74	-366.66	-1405.97	0.29	1433.45		
3,490.00	43.10	259.21	2,959.71	-382.71	-1490.18	0.32	1518.78		
3,616.00	42.90	259.21	3,051.86	-398.80	-1574.59	0.16	1604.30		
3,740.00	42.30	259.21	3,143.13	-414.51	-1657.04	0.48	1687.83		
3,928.00	41.30	259.21	3,283.28	-437.97	-1780.13	0.53	1812.55		
4,117.00	39.70	259.21	3,426.99	-460.95	-1900.70	0.85	1934.71		
4,241.00	38.60	259.21	3,523.15	-475.60	-1977.61	0.89	2012.62		
4,366.00	37.80	259.21	3,621.38	-490.07	-2053.54	0.64	2089.56		
4,493.00	36.70	259.21	3,722.48	-504.47	-2129.05	0.87	2166.06		
4,746.00	38.50	261.41	3,922.93	-530.38	-2281.20	0.89	2319.94		
4,868.00	40.30	261.41	4,017.19	-541.95	-2357.76	1.48	2397.24		
4,994.00	42.20	262.31	4,111.92	-553.70	-2440.00	1.58	2480.20		
5,119.00	44.30	262.81	4,202.96	-564.78	-2524.92	1.70	2565.78		
5,271.00	44.40	262.81	4,311.66	-578.08	-2630.34	0.07	2671.97		
5,395.00	43.90	262.81	4,400.63	-588.89	-2716.03	0.40	2758.29		
5,565.00	43.20	263.51	4,523.84	-602.85	-2832.32	0.50	2875.37		
5,913.00	42.90	266.31	4,778.17	-623.93	-3068.89	0.56	3112.87		
5,944.00	42.50	266.31	4,800.95	-625.29	-3089.87	1.29	3133.89		
5,975.00	42.50	267.01	4,823.81	-626.51	-3110.78	1.53	3154.82		
6,131.00	42.50	264.91	4,938.83	-633.93	-3215.90	0.91	3260.18		
6,196.00	42.60	262.11	4,986.72	-638.90	-3259.56	2.92	3304.11		
6,226.00	42.70	262.11	5,008.78	-641.69	-3279.70	0.34	3324.42		
6,257.00	42.50	262.11	5,031.60	-644.57	-3300.48	0.64	3345.38		
6,422.00	42.50	262.81	5,153.25	-659.20	-3410.99	0.29	3456.76		
6,504.00	42.70	263.51	5,213.61	-665.81	-3466.10	0.63	3512.24		
6,661.00	42.70	263.51	5,328.99	-677.84	-3571.88	0.00	3618.68		
6,747.00	42.70	264.21	5,392.20	-684.08	-3629.87	0.55	3676.99		
6,840.00	42.50	264.91	5,460.65	-690.05	-3692.54	0.55	3739.94		
6,933.00	42.10	265.61	5,529.44	-695.22	-3754.91	0.66	3802.53		
7,057.00	41.60	267.01	5,621.81	-700.55	-3837.47	0.85	3885.23		
7,306.00	38.90	262.11	5,811.88	-715.60	-3997.52	1.67	4045.99		
7,368.00	39.50	261.41	5,859.93	-721.22	-4036.30	1.20	4085.12		
7,399.00	39.60	260.61	5,883.83	-724.30	-4055.80	1.68	4104.82		
7,429.00	39.30	259.91	5,907.00	-727.53	-4074.59	1.79	4123.82		
7,461.00	39.10	257.81	5,931.80	-731.43	-4094.43	4.19	4143.93		
7,492.00	39.40	257.11	5,955.80	-735.69	-4113.57	1.73	4163.38		
7,523.00	39.30	257.11	5,979.78	-740.08	-4132.73	0.33	4182.86		
7,554.00	39.20	257.81	6,003.78	-744.33	-4151.88	1.46	4202.32		
7,584.00	38.80	258.51	6,027.10	-748.21	-4170.36	1.98	4221.07		
7,615.00	38.70	259.21	6,051.27	-751.96	-4189.40	1.45	4240.37		

LO16-14

Directional Survey

API/UWI 960-43-01-xxx-84714	Producing Formation Upp.Bs. Salina	Area Lobitos	County Piura	State/Province Talara	Operator Petro-Tech Peruana	LH 014
KB Elevation (ft) 50.00	CF Elev (ft) 17.00	Spud Date 04/02/1995	Surface Legal Location Z-2B-21-008-D-LO16	N/S Dist. (ft) 678.0	N/S Ref. S	E/W Dist. (ft) 5356.0
						E/W Ref. W

Survey Data									Edit
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	DLS (°/100ft)	VS (ft)	Tie-In EW (ft)	
7,646.00	38.40	260.41	6,075.52	-755.38	-4208.41	2.60	4259.62		
7,677.00	36.40	261.41	6,100.14	-758.35	-4227.00	6.74	4278.40		
7,708.00	38.30	259.51	6,124.79	-761.48	-4245.54	7.17	4297.15		
7,739.00	38.60	259.21	6,149.06	-765.04	-4264.49	1.14	4316.34		
7,770.00	38.70	258.51	6,173.28	-768.78	-4283.48	1.45	4335.60		
7,800.00	38.10	257.81	6,196.79	-772.60	-4301.72	2.47	4354.11		
7,925.00	37.70	260.61	6,295.43	-786.98	-4377.13	1.41	4430.51		
7,987.00	37.40	260.91	6,344.58	-793.05	-4414.43	0.57	4468.20		
8,049.00	36.90	262.11	6,394.00	-798.58	-4451.46	1.42	4505.58		
8,080.00	36.70	262.91	6,418.82	-801.00	-4469.87	1.68	4524.14		
8,142.00	36.70	262.91	6,468.53	-805.57	-4506.64	0.00	4561.17		
8,235.00	36.40	263.61	6,543.25	-812.07	-4561.64	0.55	4616.53		
8,335.00	36.20	263.51	6,623.84	-818.71	-4620.46	0.21	4675.72		
8,427.00	35.80	264.91	6,698.27	-824.17	-4674.26	0.99	4729.79		
8,490.00	35.70	266.31	6,749.40	-826.99	-4710.96	1.31	4766.59		
8,552.00	35.50	267.71	6,799.81	-828.87	-4747.00	1.35	4802.65		
8,801.00	36.00	273.31	7,001.95	-827.54	-4892.34	1.33	4947.27		
8,801.00	36.00	273.31	7,001.95	-827.54	-4892.34	1.33	4947.27		
8,893.00	36.60	275.41	7,076.10	-823.39	-4946.64	1.50	5000.97		
8,986.00	37.30	277.51	7,150.42	-817.09	-5002.18	1.55	5055.71		
9,086.00	38.43	281.51	7,229.38	-806.93	-5062.68	2.70	5115.04		
9,186.00	39.34	283.11	7,307.22	-793.54	-5124.01	1.36	5174.89		
9,286.00	39.74	285.01	7,384.34	-778.07	-5185.75	1.27	5234.98		
9,386.00	39.96	287.01	7,461.12	-760.40	-5247.34	1.30	5294.71		
9,486.00	41.04	287.31	7,537.15	-741.23	-5309.39	1.10	5354.76		
9,586.00	43.71	287.21	7,611.02	-721.24	-5373.75	2.67	5417.04		
9,686.00	44.53	287.31	7,682.81	-700.58	-5440.23	0.82	5481.37		
9,786.00	45.02	288.51	7,753.80	-678.92	-5507.24	0.98	5546.14		
9,886.00	44.76	290.01	7,824.65	-655.64	-5573.87	1.09	5610.37		
9,986.00	45.69	290.21	7,895.08	-631.24	-5640.53	0.94	5674.54		
10,086.00	46.32	290.51	7,964.54	-606.21	-5707.97	0.67	5739.44		
10,186.00	46.25	290.51	8,033.65	-580.88	-5775.67	0.07	5804.55		
10,286.00	45.79	291.31	8,103.09	-555.20	-5842.89	0.74	5869.16		
10,356.00	46.03	291.01	8,151.79	-537.05	-5889.77	0.46	5914.21		

Engineering Data

Wellbore					Perforations							Logs				
Name		Profile Type			VS	Edit	Date	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Shot Total	Gun Sz (in)	Prop?	Date	Type	Edit
Proposal		Directional														
Name		Profile Type			VS	Edit	Date	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Shot Total	Gun Sz (in)	Prop?	Date	Type	Edit
Main Hole		Directional														
Size (in)	Top (ftKB)	Btm (ftKB)	Start Date	End Date	Edit	12/04/1995	9,460.0	9,664.0	1.0	108	3 3/8	4	01/04/1995	DLL-MSFL-GR	Edit	
22	398.0	471.0	04/02/1995	04/02/1995		23/04/1995	9,460.0	9,518.0	4.0	184	2 1/8		02/04/1995	AS-GR		
17	471.0	2,005.0	06/02/1995	11/02/1995		10/04/1995	9,944.0	10,066.0	1.0	30	4		02/04/1995	VDL-CALI-GR		
12 1/4	2,005.0	5,605.0	21/02/1995	26/02/1995		09/04/1995	10,166.0	10,176.0	2.0	12	4		03/04/1995	SHDL-GR		
8 1/2	5,605.0	9,979.0	01/03/1995	27/03/1995									07/04/1995	CBL-VDL		
7 7/8	9,979.0	10,339.0	27/03/1995	31/03/1995									07/04/1995	CCL-GR		
Bacterial treatment on 21/04/1999																Edit
Zone		Comment										P(si-post) (psi)	Prop?	Edit		
Upper Basal Salina, Main Hole		Open well w/ 360 psi - pump the mixture (bacterial treatment) thru annulus - displace & shut in well 5 days.										1,200.0				
MEOR Treatment on 12/06/2003																
Zone		Comment										P(si-post) (psi)	Prop?	Edit		
Upper Basal Salina		Test lines w/ 1000 psi.														
MEOR Treatment on 12/07/2003																Edit
Zone		Comment										P(si-post) (psi)	Prop?	Edit		
Upper Basal Salina		Test lines w/ 1000 psi.														
Zones																
Zone		Top (ftKB)		Bottom (ftKB)		Edit										
Upper Basal Salina		9,460.0		9,664.0												
Status Date		Zone Status		Fluid Type		Edit										
15/04/1995		Flowing		Oil												
Zone		Top (ftKB)		Bottom (ftKB)		Edit										
Lower Basal Salina		9,944.0		10,066.0												
Zone		Top (ftKB)		Bottom (ftKB)		Edit										
Lower Basal Salina		10,166.0		10,176.0												
Other In Hole																Edit
Des		Run Date		Top		Edit										
Bridge plug-permanent		10/04/1995		10,100.0												
Bridge plug-permanent		12/04/1995		9,750.0												
Sand top		04/09/2001		9,725.0												
Casing																Edit
Des		Run Date		Btm (ftKB)		Grade		Wt (lbs/ft)		Min ID (in)						
Conductor 18"		04/02/1995		465.0												
Surface 13 3/8"		12/02/1995		2,003.0												
Intermediate 9 5/8"		27/02/1995		5,600.0												
Production 5 1/2"		04/04/1995		10,330.0												
Tubing Strings																
Des		Run Date		Btm		Edit										
Tubing - Workstring		09/04/1995		9,410.0												
Conventional gas lift installation		18/08/1996		8,082.0												
Conventional gas lift installation		15/09/1999		9,468.0												
Conventional gas lift installation		04/09/2001		9,448.0												
Conventional gas lift installation		25/04/2004		9,453.0												

Vertical Section		Plan		Last Jobs & Procedure Summary of Proposal Job	
				Run Date	Comment
				18/06/1996	Petrex-117 (well produces to battery w/ 95 psi) - pump 100 bbls. of treated water & killed well - Ok. - lay down shoot. valve - nipple up BOP - RIH w/ notch collar to 3017' - pump hot crude x csg. - circulating w/ 25 bbls. - returns soft paraffin w/ crude - circulate to clean fluid (total used 50 BO) - POH - trip w/ scraper to 9670' - Ran conventional gas lift installation without stand. valve @ 8082' - R4 packer @ 8051' - lay down BOP - nipple up xmas. tree - well kicked off - Ok.
				15/09/1999	Petrex-313 bled off well w/ 100 psi. - recovered 33 BO - unset packer - pump 30 BO & killed well - lay down xmas. tree - nipple up BOP - POH conventional gas lift installation (65 jts. w/ interior paraffin) - well flow x csg. - bled off - recovered 32 BO - pump 30 bbls. & killed well - POH 42 jts. w/ interior paraffin - well flow - recovered 42 BO - pump 40 BO & killed well - finished POH installation (in jt. # 255 is contrasted the fishing tool w/ wireline cable) - RIH scraper @ 5853' - worked fish - negative - POH scraper without cable - RIH fishing tool (spear) to 5853' (recov. 300') - 7998' (recov. 300') & 9613' - POH - stucked pipe @ 9490' - worked pipe - Ok. - finished POH & recovered all cable - trip w/ scraper to 9608' - RIH conventional gas lift installation without stand. valve @ 9468' - R4 packer @ 9435' - lay down BOP - nipple up xmas. tree - set packer - swab well to 6800' - recovered 16 BO - well didn't kick off - swab well to 7350' - recovered 16 BO - kicked off - Ok.
				04/09/2001	Petrex 117 - Bled off - unset packer - lay down xmas. tree - nipple up BOP - POH conventional gas lift installation (first 180 jts. w/ interior paraffin - stand. valve broken - wireline cable in jt. # 300 & wireline fish w/ tail pipe) - trip w/ scraper @ 9725' - RIH conventional gas lift installation with stand. valve @ 9448' - R4 packer @ 9416' - lay down BOP - nipple up xmas. tree - set packer - swab well to 8000' - recovered 66 BO (8 runs) - well kicked off - tested installation. Ok.
				25/04/2004	PTX-313 : M/U lines to rig tank; bled off well; removed surface lines; took out head bolts; pulled out string w/ 68,000#; removed head; M/U BOP's and hopper; POOH conventional installation, 222 joints; well flowed pulverized gas; bled off well; finished POOH conventional installation, total 302 joints (recovered ± 9000' of wireline, cutting cable joint by joint); made trip w/ scraper to 9720'; RIH conventional installation w/ 301 joints of 2 7/8", S.N. without standing valve at 9453' (R4 packer at 9418"); N/D hopper and BOP's; installed head and set packer; swabbed well from 7380' to 9000', recovered 20 bbls of crude oil in 5 runs