Bakersfield (661-746-0511)
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SROD v6.8.6 - PREDICTION OF ROD PUMPING SYSTEM PERFORMANCE

WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:50 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
COMMENTS : Test Number: 03. Test Date Feb.1996

WARNINGS/NOTIFICATIONS (Please see Input Data Summary Report)

** PRIME MOVER **

Mfgr and Type : ROBBINS & MYERS 100 HP (FRM 445T) (OLD TYPE)

Max Speed (rpm)	: 1209	Speed Variation (%)	: 6.2
Min Speed (rpm)	: 1134	Cyclic Load Factor	: 1.107
Power Required (hp)	: 57.68	Peak Regenerative Power (hp)	: -13.92
Motor Load (% of Rating)	: 57.7	Prime Mover Output (hp)	: 49.34
Sheave Ratio (Unit/ Prime Mover)	: 1.554		

** PUMPING UNIT **

Mfgr and Type : ROTAFLEX RH1100-500-306

Actual Max Load (lbs)	: 41301	Actual Min Load (lbs)	: 16752
Average Pumping Speed (spm)	: 3.91	Max Load (% of Rating)	: 82.6
Polished Rod Power (hp)	: 44.41	Unit and Drive Train Loss (hp)	: 4.93
Computed Surface Stroke (in)	: 305.9		

** SUMMARY OF REDUCER LOADING **

	IN BALANCE
Max Torque (m in-lbs)	199.8
Min Torque (m in-lbs)	-44
Counterbalance Moment (lbs)	29011
Percent of Reducer Rating	62.4

** ROD LOADING **

	Diameter (in)	Length (ft)	Modulus (MM psi)	Fr Coeff	Guides	Loading
1)	1 *	3370	30.5	0.2	N (0)	160
2)	0.875	4300	30.5	0.2	N (0)	157
3)	1	1550	30.5	0.2	N (0)	86

* Requires slimhole couplings
Norris PPS-Standard guide weights has been considered

Max Stress (surf.) (psi) : 52459 Min Stress (surf.) (psi) : 21457

ROD LOADING AT SURFACE AS % OF RATING

Service Factor	Class C,K	Class D	API D
1	236	160	160
0.9	321	203	203
0.8	500	277	277
0.7	1131	436	436

** DOWNHOLE PERFORMANCE **

	Stroke (in)	BPD at 100% eff.	BPD at 85% eff.
Gross:	258.3	596 (24h/d)	507 (24h/d)
Net:	257.2	593 (24h/d)	504 (24h/d)

Tubing Stretch (in)	: 1.3	Lost Displacement (bpd)	: 3
Loss Along Rod String (hp)	: 4.02	Pump Power (hp)	: 40.39
Tubing Size (in)	: 2.875	Tubing Anchor Location (ft)	: 8968
Pump Spacing Guide (in)	: N/A	Pump Fillage (%)	: 100

** Non-Dimensional Variables **

Fo/S/Kr	: 0.27	N/No'	: 0.14

** OTHER BASIC DATA **

Reducer Rating (in-lbs)	: 320	Crank Rotation	: N/A
Overall Speed Ratio	: 48.3	Rod Damping Factors (up/down)	: 0.05 / 0.15
Min/Max Tubing Head Press. (psi)	: N/A	Buoyant Rod Weight (lbs)	: 21027
Total Load on Pump (lbs)	: 15635	Pump Bore Size (in)	: 2.25
Pump Load Adjustment (lbs)	: 0	Tubing Gradient (psi/ft)	: 0.433
Pump Depth (ft)	: 9220	Pump Intake Pressure (psi)	: 100

Pump Friction (lbs)	: 200	SV Load (lbs)	: 20727
TV Load (lbs)	: 36962		

** ROD LOADING AT SPECIAL DEPTHS (Top of Lower Interval) **

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Interval : 1

Depth (ft)	: 0	Rod Diameter (in)	: 1 *
Max Stress (psi)	: 52459	Min Stress (psi)	: 21457
Min Stress at Bottom (psi)	: 10596	Rod Weight (lbs/ft)	: 2.904

ROD LOADING AS % OF RATING

Service Factor	Class C,K	Class D	API D
1	236	160	160
0.9	321	203	203
0.8	500	277	277
0.7	1131	436	436

Interval : 2

Depth (ft)	: 3370	Rod Diameter (in)	: 0.875
Max Stress (psi)	: 49530	Min Stress (psi)	: 14299
Min Stress at Bottom (psi)	: 544	Rod Weight (lbs/ft)	: 2.224

ROD LOADING AS % OF RATING

Service Factor	Class C,K	Class D	API D
1	217	157	157
0.9	267	187	187
0.8	348	233	233
0.7	498	308	308

Interval : 3

Depth (ft)	: 7670	Rod Diameter (in)	: 1
Max Stress (psi)	: 24610	Min Stress (psi)	: -371
Min Stress at Bottom (psi)	: -4287	Rod Weight (lbs/ft)	: 2.904

ROD LOADING AS % OF RATING

Service Factor	Class C,K	Class D	API D
1	110	86	86
0.9	122	96	96
0.8	137	108	108
0.7	156	123	123

*** Slimhole couplings are required for this rod section.**

**** SUGGESTED ROD GUIDES ****

WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:50 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
COMMENTS : Test Number: 03. Test Date Feb.1996

Rod Number From Surface	Interval From (ft) - To (ft)	Max Side Load in Interval (lbs/rod)	Molded Guides (number/rod)	Wheeled Guides (number/rod)	Rod Taper Index

**** ROD GUIDE DESIGN ****

WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:50 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
COMMENTS : Test Number: 03. Test Date Feb.1996

Rod Number From Surface	Interval From (ft)	To (ft)	Max Side Load in Interval (lbs/rod)	Molded Guides (number/rod)	Wheeled Guides (number/rod)	Rod Taper Index
1	0	20	0	0	0	1
2	20	45	0	0	0	1
3	45	70	0	0	0	1
4	70	95	0	0	0	1
5	95	120	0	0	0	1
6	120	145	0	0	0	1
7	145	170	0	0	0	1
8	170	195	0	0	0	1
9	195	220	0	0	0	1
10	220	245	0	0	0	1
11	245	270	0	0	0	1
12	270	295	0	0	0	1
13	295	320	0	0	0	1
14	320	345	0	0	0	1
15	345	370	0	0	0	1
16	370	395	0	0	0	1
17	395	420	0	0	0	1
18	420	445	0	0	0	1
19	445	470	0	0	0	1
20	470	495	0	0	0	1
21	495	520	0	0	0	1
22	520	545	0	0	0	1
23	545	570	0	0	0	1
24	570	595	0	0	0	1
25	595	620	0	0	0	1
26	620	645	0	0	0	1
27	645	670	0	0	0	1
28	670	695	0	0	0	1
29	695	720	0	0	0	1
30	720	745	0	0	0	1
31	745	770	0	0	0	1
32	770	795	0	0	0	1
33	795	820	0	0	0	1
34	820	845	0	0	0	1
35	845	870	0	0	0	1
36	870	895	0	0	0	1
37	895	920	0	0	0	1
38	920	945	0	0	0	1
39	945	970	0	0	0	1
40	970	995	0	0	0	1
41	995	1020	0	0	0	1
42	1020	1045	0	0	0	1
43	1045	1070	0	0	0	1
44	1070	1095	0	0	0	1
45	1095	1120	0	0	0	1
46	1120	1145	0	0	0	1
47	1145	1170	0	0	0	1
48	1170	1195	0	0	0	1
49	1195	1220	0	0	0	1
50	1220	1245	0	0	0	1
51	1245	1270	0	0	0	1
52	1270	1295	0	0	0	1
53	1295	1320	0	0	0	1
54	1320	1345	0	0	0	1
55	1345	1370	0	0	0	1
56	1370	1395	0	0	0	1
57	1395	1420	0	0	0	1
58	1420	1445	0	0	0	1
59	1445	1470	0	0	0	1
60	1470	1495	0	0	0	1
61	1495	1520	0	0	0	1
62	1520	1545	0	0	0	1

63	1545	1570	0	0	0	1
64	1570	1595	0	0	0	1
65	1595	1620	0	0	0	1
66	1620	1645	0	0	0	1
67	1645	1670	0	0	0	1
68	1670	1695	0	0	0	1
69	1695	1720	0	0	0	1
70	1720	1745	0	0	0	1
71	1745	1770	0	0	0	1
72	1770	1795	0	0	0	1
73	1795	1820	0	0	0	1
74	1820	1845	0	0	0	1
75	1845	1870	0	0	0	1
76	1870	1895	0	0	0	1
77	1895	1920	0	0	0	1
78	1920	1945	0	0	0	1
79	1945	1970	0	0	0	1
80	1970	1995	0	0	0	1
81	1995	2020	0	0	0	1
82	2020	2045	0	0	0	1
83	2045	2070	0	0	0	1
84	2070	2095	0	0	0	1
85	2095	2120	0	0	0	1
86	2120	2145	0	0	0	1
87	2145	2170	0	0	0	1
88	2170	2195	0	0	0	1
89	2195	2220	0	0	0	1
90	2220	2245	0	0	0	1
91	2245	2270	0	0	0	1
92	2270	2295	0	0	0	1
93	2295	2320	0	0	0	1
94	2320	2345	0	0	0	1
95	2345	2370	0	0	0	1
96	2370	2395	0	0	0	1
97	2395	2420	0	0	0	1
98	2420	2445	0	0	0	1
99	2445	2470	0	0	0	1
100	2470	2495	0	0	0	1
101	2495	2520	0	0	0	1
102	2520	2545	0	0	0	1
103	2545	2570	0	0	0	1
104	2570	2595	0	0	0	1
105	2595	2620	0	0	0	1
106	2620	2645	0	0	0	1
107	2645	2670	0	0	0	1
108	2670	2695	0	0	0	1
109	2695	2720	0	0	0	1
110	2720	2745	0	0	0	1
111	2745	2770	0	0	0	1
112	2770	2795	0	0	0	1
113	2795	2820	0	0	0	1
114	2820	2845	0	0	0	1
115	2845	2870	0	0	0	1
116	2870	2895	0	0	0	1
117	2895	2920	0	0	0	1
118	2920	2945	0	0	0	1
119	2945	2970	0	0	0	1
120	2970	2995	0	0	0	1
121	2995	3020	0	0	0	1
122	3020	3045	0	0	0	1
123	3045	3070	0	0	0	1
124	3070	3095	0	0	0	1
125	3095	3120	0	0	0	1
126	3120	3145	0	0	0	1
127	3145	3170	0	0	0	1
128	3170	3195	0	0	0	1
129	3195	3220	0	0	0	1
130	3220	3245	0	0	0	1
131	3245	3270	0	0	0	1
132	3270	3295	0	0	0	1
133	3295	3320	0	0	0	1
134	3320	3345	0	0	0	1
135	3345	3370	0	0	0	1
136	3370	3395	0	0	0	2
137	3395	3420	0	0	0	2
138	3420	3445	0	0	0	2
139	3445	3470	0	0	0	2
140	3470	3495	0	0	0	2
141	3495	3520	0	0	0	2

142	3520	3545	0	0	0	2
143	3545	3570	0	0	0	2
144	3570	3595	0	0	0	2
145	3595	3620	0	0	0	2
146	3620	3645	0	0	0	2
147	3645	3670	0	0	0	2
148	3670	3695	0	0	0	2
149	3695	3720	0	0	0	2
150	3720	3745	0	0	0	2
151	3745	3770	0	0	0	2
152	3770	3795	0	0	0	2
153	3795	3820	0	0	0	2
154	3820	3845	0	0	0	2
155	3845	3870	0	0	0	2
156	3870	3895	0	0	0	2
157	3895	3920	0	0	0	2
158	3920	3945	0	0	0	2
159	3945	3970	0	0	0	2
160	3970	3995	0	0	0	2
161	3995	4020	0	0	0	2
162	4020	4045	0	0	0	2
163	4045	4070	0	0	0	2
164	4070	4095	0	0	0	2
165	4095	4120	0	0	0	2
166	4120	4145	0	0	0	2
167	4145	4170	0	0	0	2
168	4170	4195	0	0	0	2
169	4195	4220	0	0	0	2
170	4220	4245	0	0	0	2
171	4245	4270	0	0	0	2
172	4270	4295	0	0	0	2
173	4295	4320	0	0	0	2
174	4320	4345	0	0	0	2
175	4345	4370	0	0	0	2
176	4370	4395	0	0	0	2
177	4395	4420	0	0	0	2
178	4420	4445	0	0	0	2
179	4445	4470	0	0	0	2
180	4470	4495	0	0	0	2
181	4495	4520	0	0	0	2
182	4520	4545	0	0	0	2
183	4545	4570	0	0	0	2
184	4570	4595	0	0	0	2
185	4595	4620	0	0	0	2
186	4620	4645	0	0	0	2
187	4645	4670	0	0	0	2
188	4670	4695	0	0	0	2
189	4695	4720	0	0	0	2
190	4720	4745	0	0	0	2
191	4745	4770	0	0	0	2
192	4770	4795	0	0	0	2
193	4795	4820	0	0	0	2
194	4820	4845	0	0	0	2
195	4845	4870	0	0	0	2
196	4870	4895	0	0	0	2
197	4895	4920	0	0	0	2
198	4920	4945	0	0	0	2
199	4945	4970	0	0	0	2
200	4970	4995	0	0	0	2
201	4995	5020	0	0	0	2
202	5020	5045	0	0	0	2
203	5045	5070	0	0	0	2
204	5070	5095	0	0	0	2
205	5095	5120	0	0	0	2
206	5120	5145	0	0	0	2
207	5145	5170	0	0	0	2
208	5170	5195	0	0	0	2
209	5195	5220	0	0	0	2
210	5220	5245	0	0	0	2
211	5245	5270	0	0	0	2
212	5270	5295	0	0	0	2
213	5295	5320	0	0	0	2
214	5320	5345	0	0	0	2
215	5345	5370	0	0	0	2
216	5370	5395	0	0	0	2
217	5395	5420	0	0	0	2
218	5420	5445	0	0	0	2
219	5445	5470	0	0	0	2
220	5470	5495	0	0	0	2

221	5495	5520	0	0	0	2
222	5520	5545	0	0	0	2
223	5545	5570	0	0	0	2
224	5570	5595	0	0	0	2
225	5595	5620	0	0	0	2
226	5620	5645	0	0	0	2
227	5645	5670	0	0	0	2
228	5670	5695	0	0	0	2
229	5695	5720	0	0	0	2
230	5720	5745	0	0	0	2
231	5745	5770	0	0	0	2
232	5770	5795	0	0	0	2
233	5795	5820	0	0	0	2
234	5820	5845	0	0	0	2
235	5845	5870	0	0	0	2
236	5870	5895	0	0	0	2
237	5895	5920	0	0	0	2
238	5920	5945	0	0	0	2
239	5945	5970	0	0	0	2
240	5970	5995	0	0	0	2
241	5995	6020	0	0	0	2
242	6020	6045	0	0	0	2
243	6045	6070	0	0	0	2
244	6070	6095	0	0	0	2
245	6095	6120	0	0	0	2
246	6120	6145	0	0	0	2
247	6145	6170	0	0	0	2
248	6170	6195	0	0	0	2
249	6195	6220	0	0	0	2
250	6220	6245	0	0	0	2
251	6245	6270	0	0	0	2
252	6270	6295	0	0	0	2
253	6295	6320	0	0	0	2
254	6320	6345	0	0	0	2
255	6345	6370	0	0	0	2
256	6370	6395	0	0	0	2
257	6395	6420	0	0	0	2
258	6420	6445	0	0	0	2
259	6445	6470	0	0	0	2
260	6470	6495	0	0	0	2
261	6495	6520	0	0	0	2
262	6520	6545	0	0	0	2
263	6545	6570	0	0	0	2
264	6570	6595	0	0	0	2
265	6595	6620	0	0	0	2
266	6620	6645	0	0	0	2
267	6645	6670	0	0	0	2
268	6670	6695	0	0	0	2
269	6695	6720	0	0	0	2
270	6720	6745	0	0	0	2
271	6745	6770	0	0	0	2
272	6770	6795	0	0	0	2
273	6795	6820	0	0	0	2
274	6820	6845	0	0	0	2
275	6845	6870	0	0	0	2
276	6870	6895	0	0	0	2
277	6895	6920	0	0	0	2
278	6920	6945	0	0	0	2
279	6945	6970	0	0	0	2
280	6970	6995	0	0	0	2
281	6995	7020	0	0	0	2
282	7020	7045	0	0	0	2
283	7045	7070	0	0	0	2
284	7070	7095	0	0	0	2
285	7095	7120	0	0	0	2
286	7120	7145	0	0	0	2
287	7145	7170	0	0	0	2
288	7170	7195	0	0	0	2
289	7195	7220	0	0	0	2
290	7220	7245	0	0	0	2
291	7245	7270	0	0	0	2
292	7270	7295	0	0	0	2
293	7295	7320	0	0	0	2
294	7320	7345	0	0	0	2
295	7345	7370	0	0	0	2
296	7370	7395	0	0	0	2
297	7395	7420	0	0	0	2
298	7420	7445	0	0	0	2
299	7445	7470	0	0	0	2

300	7470	7495	0	0	0	2
301	7495	7520	0	0	0	2
302	7520	7545	0	0	0	2
303	7545	7570	0	0	0	2
304	7570	7595	0	0	0	2
305	7595	7620	0	0	0	2
306	7620	7645	0	0	0	2
307	7645	7670	0	0	0	2
308	7670	7695	0	0	0	3
309	7695	7720	0	0	0	3
310	7720	7745	0	0	0	3
311	7745	7770	0	0	0	3
312	7770	7795	0	0	0	3
313	7795	7820	0	0	0	3
314	7820	7845	0	0	0	3
315	7845	7870	0	0	0	3
316	7870	7895	0	0	0	3
317	7895	7920	0	0	0	3
318	7920	7945	0	0	0	3
319	7945	7970	0	0	0	3
320	7970	7995	0	0	0	3
321	7995	8020	0	0	0	3
322	8020	8045	0	0	0	3
323	8045	8070	0	0	0	3
324	8070	8095	0	0	0	3
325	8095	8120	0	0	0	3
326	8120	8145	0	0	0	3
327	8145	8170	0	0	0	3
328	8170	8195	0	0	0	3
329	8195	8220	0	0	0	3
330	8220	8245	0	0	0	3
331	8245	8270	0	0	0	3
332	8270	8295	0	0	0	3
333	8295	8320	0	0	0	3
334	8320	8345	0	0	0	3
335	8345	8370	0	0	0	3
336	8370	8395	0	0	0	3
337	8395	8420	0	0	0	3
338	8420	8445	0	0	0	3
339	8445	8470	0	0	0	3
340	8470	8495	0	0	0	3
341	8495	8520	0	0	0	3
342	8520	8545	0	0	0	3
343	8545	8570	0	0	0	3
344	8570	8595	0	0	0	3
345	8595	8620	0	0	0	3
346	8620	8645	0	0	0	3
347	8645	8670	0	0	0	3
348	8670	8695	0	0	0	3
349	8695	8720	0	0	0	3
350	8720	8745	0	0	0	3
351	8745	8770	0	0	0	3
352	8770	8795	0	0	0	3
353	8795	8820	0	0	0	3
354	8820	8845	0	0	0	3
355	8845	8870	0	0	0	3
356	8870	8895	0	0	0	3
357	8895	8920	0	0	0	3
358	8920	8945	0	0	0	3
359	8945	8970	0	0	0	3
360	8970	8995	0	0	0	3
361	8995	9020	0	0	0	3
362	9020	9045	0	0	0	3
363	9045	9070	0	0	0	3
364	9070	9095	0	0	0	3
365	9095	9120	0	0	0	3
366	9120	9145	0	0	0	3
367	9145	9170	0	0	0	3
368	9170	9195	0	0	0	3
369	9195	9220	0	0	0	3

**** INPUT DATA SUMMARY ****

WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:51 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
COMMENTS : Test Number: 03. Test Date Feb.1996

WELL NAME	: Well 3
ANALYST	: Scott Malone
COMPANY	: Sandia Data
PUMPING UNIT ID	: EVI1100-500-306
(Description)	(ROTAFLEX RH1100-500-306)
MOTOR ID	: RM100HP
(Description)	(ROBBINS & MYERS 100 HP (FRM 445T) (OLD TYPE))
C'BAL OPTION	: SROD Defined
COUNTERBALANCE WEIGHT (lbs)	: 0
CRANK HOLE	: 1 - 305.9 (in)
ROTATION OF UNIT	: C'WISE
SPEED VARIATION	: VARIED
PUMP DEPTH (ft)	: 9220
PUMP DIAMETER (in)	: 2.25
PUMP INTAKE PRESSURE (psi)	: 100
PERCENT COMPLETE PUMP FILLAGE	: 100
PUMPING SPEED (SPM)	: 3.9
TUBINGHEAD PRESSURE (psi)	: 40
TUBING ANCHOR DEPTH (ft)	: 8968
TUBING GRADIENT (psi/ft)	: 0.433
TUBING SIZE	: 3 - 2 7/8 in.

Rod/Taper Information:

ROD STRING DESIGN OPTION : SPECIFY ROD DESIGN

	Diameter (in)	Length (ft)	Tensile (psi)	Modulus (MM psi)	Weight (lbs/ft)	Guide Type
1)	API D					
	1	3370	115000	30.5	2.904	N
2)	API D					
	0.875	4300	115000	30.5	2.224	N
3)	API D					
	1	1550	115000	30.5	2.904	N

SERVICE FACTOR	: 1.
ELECTRIC COST (cents/kwh)	: 10
UPSTROKE DAMPING FACTOR	: 0.05
DOWNSTROKE DAMPING FACTOR	: 0.15
PUMP FRICTION (lbs)	: 200
STUFFING BOX FRICTION (lbs)	: 100
PUMP LOAD ADJUSTMENT (lbs)	: 0
BUOYANT WEIGHT ADJUSTMENT (lbs)	: 0
PUMP LOAD COEFFICIENT (lbs/ft/sec)	: 5
Run Time (h/d)	: 24
MAX SIDE LOAD FOR BASE ROD (lbs/rod)	: 50
MAX SIDE LOAD FOR MOLDED GUIDE (lbs/rod)	: 40
MAX SIDE LOAD FOR WHEELED GUIDE (lbs/rod)	: 200
ROD FRICTION COEFFICIENT	: 0.2
MOLDED GUIDE FRICTION RATIO	: 1.5
WHEELED GUIDE FRICTION RATIO	: 0.1
OTHER GUIDE FRICTION RATIO	: 2
WELL DEVIATION SURVEY	: See Well Deviation Report

Auto Add Rod Guide Weights

**** WARNINGS / NOTIFICATIONS ****

Slimhole couplings have been added.

**** DYNO GRAPH ****

WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:51 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
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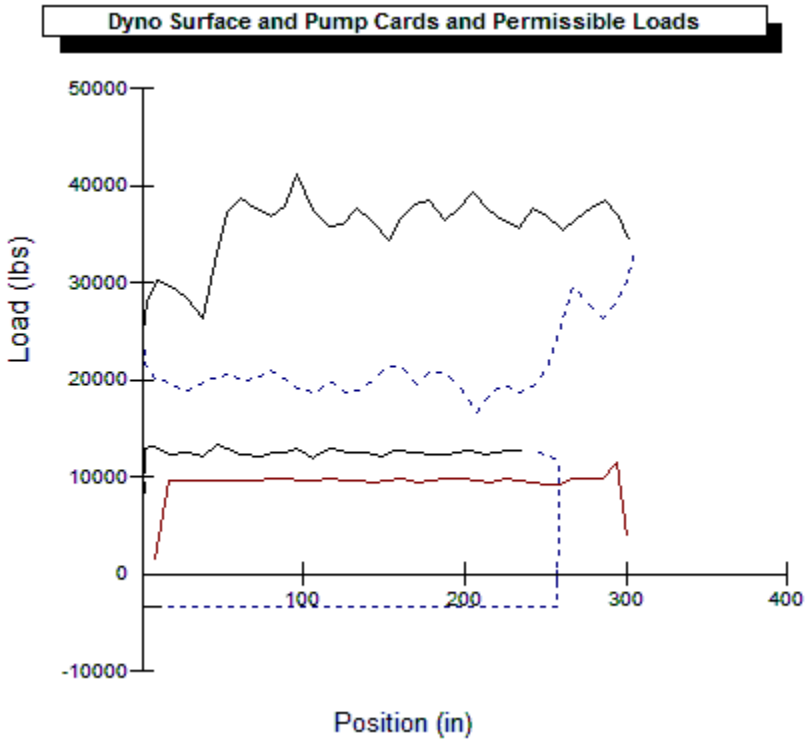
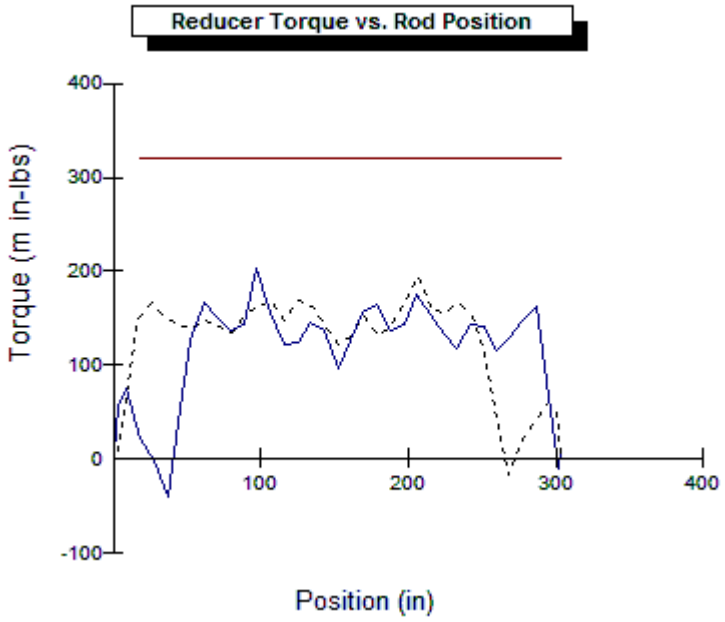


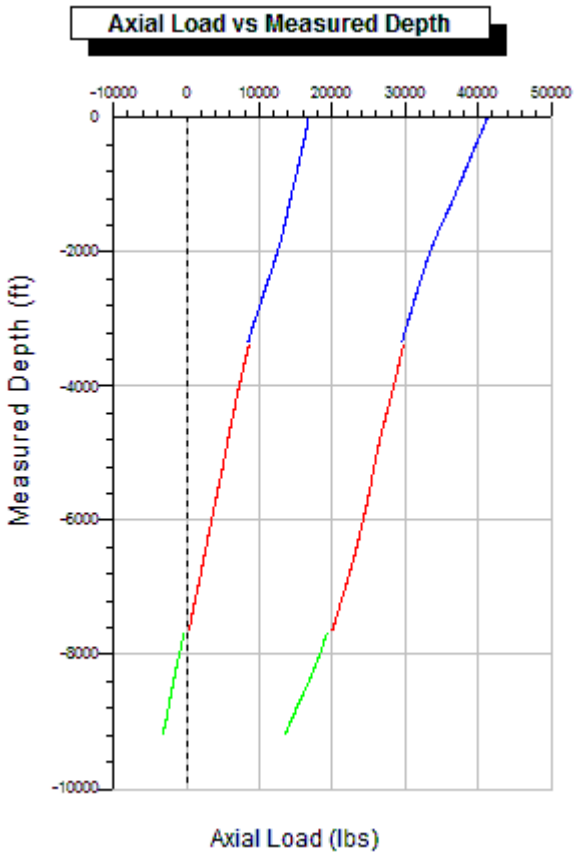
**** REDUCER TORQUE ****

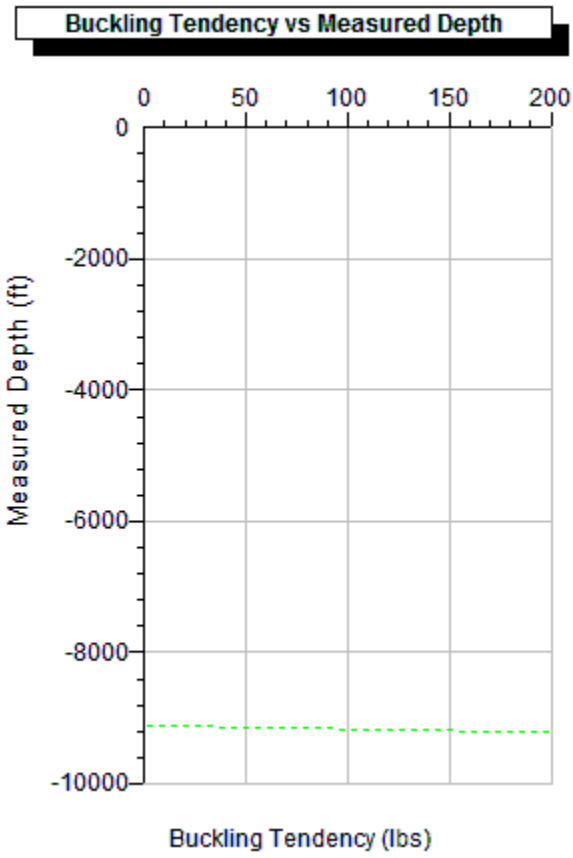
WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:51 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
COMMENTS : Test Number: 03. Test Date Feb.1996



**** AXIAL LOAD ~ BUCKLING TENDENCY ****

WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:51 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
COMMENTS : Test Number: 03. Test Date Feb.1996





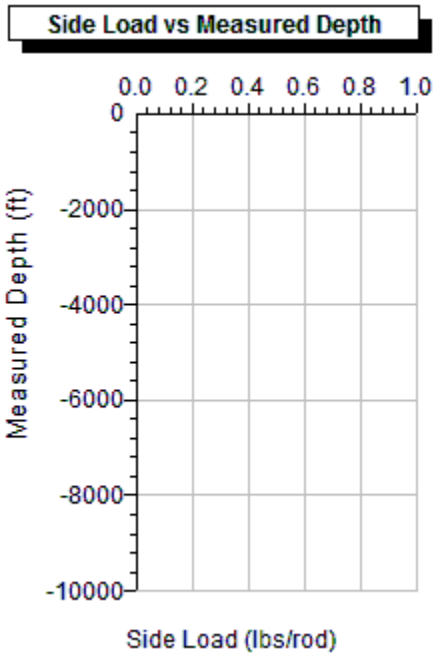
	Rod Type	Rod Diam in (in)	Max Load (lbs)	Min Load (lbs)	Max Stress (psi)	Min Stress (psi)	Rod Load @ 1 %
1.	API D	1	41201	16852	52459	21457	160
2.	API D	0.875	29784	8598	49530	14299	157
3.	API D	1	19329	-292	24610	-371	86

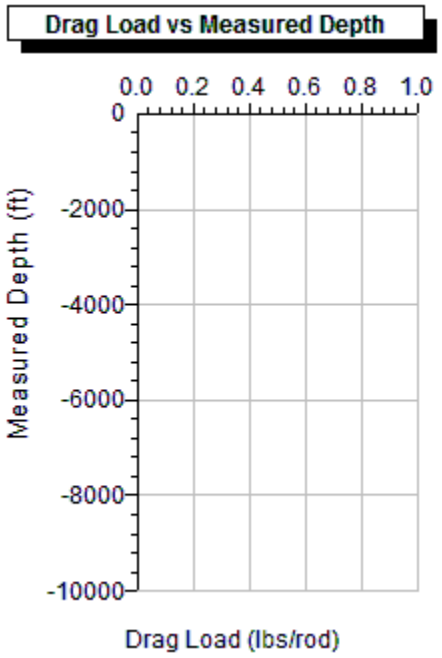
Max Buckling (lbs) : 200
Location of Max Buckling (ft) : 9220
Buckling Starts at (ft) : 9128
Buckling tendency does not include buoyancy forces because buoyancy forces do not cause buckling.

*** Neutral Point in Rod String (Buoyancy Considered) ***
Measured Depth (ft) : 7683
Rod Diameter (in) : 1
Max/Min Load (lbs) : 19285/-322
Buckling Tendency (lbs) : 0

**** SIDE/DRAG LOAD ****

WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:51 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
COMMENTS : Test Number: 03. Test Date Feb.1996

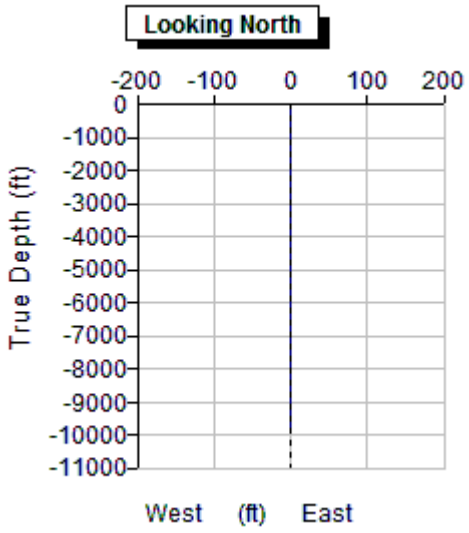


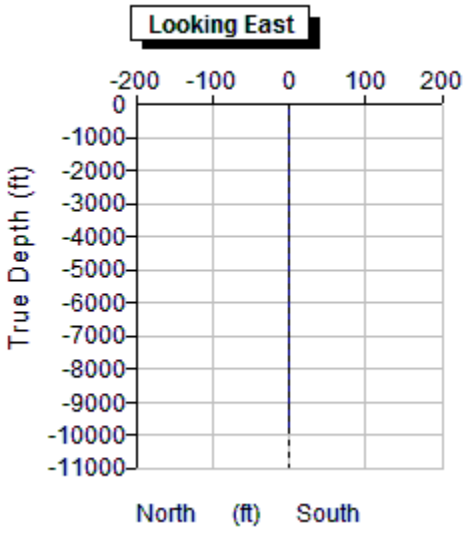


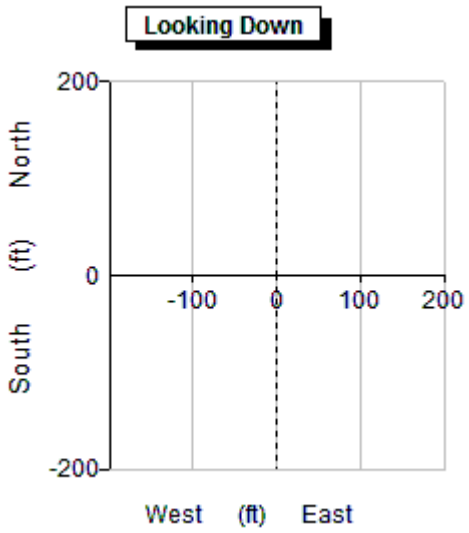
Max Side Load (lbs/rod) : 0
Max Drag Load (lbs/rod) : 0
Rod Length for Steel/Fiberglass (ft/ft) : 25/37.5

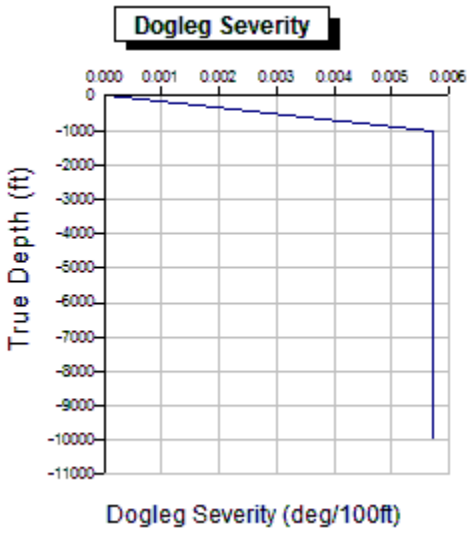
**** WELL DEVIATION ****

WELL NAME : Well 3 DATE/TIME : 9/10/2014 7:07:51 PM
ANALYST : Scott Malone COMPANY : Sandia Data
DATA FILE : Sandia Data Well 3(ROTO).inp6e (BASE CAS WELL TYPE : Deviated
COMMENTS : Test Number: 03. Test Date Feb.1996









MD (ft)	INC (deg)	Azimuth (deg)	TVD (ft)	N-S (ft)	E-W (ft)	Dogleg Severity (deg/100ft)
0.00	0.00	0.00	0.00	0.00N	0.00E	0.00
1000.00	0.00	0.00	1000.00	0.00N	0.00E	0.01
3000.00	0.00	0.00	3000.00	0.00N	0.00E	0.01
8000.00	0.00	0.00	8000.01	0.00N	0.00E	0.01
10000.00	0.00	0.00	10000.01	0.00N	0.00E	0.01