RCP, Inc

801 Louisiana, Ste.200
Houston, Texas 77002
(713)655-8080
Redacted

September 23, 2011

Pacific Gas and Electric Company
350 N. Wiget
Walnut Creek, CA 94598
Attention: Redacted

Test Contractor:	Milbar Hydro-Test Inc. -- FY12-112
Asset Owner:	Pacific Gas and Electric Company -- 414197305-T65
Construction Contractor:	Snelson -- 41474005 -T65B
Test Section:	PG&E T-65B L-300B, MP 445.5937 - 446.4777
Test Date:	September 23, 2011
Certificate Number:	RCP 61362 - T-65B L-300B, MP 445.5937 - 446.4777

To whom it may concern,

This letter is to certify that the hydrostatic test performed on pipe owned by Pacific Gas and Electric Company and tested by Milbar Hydro-Test Inc. met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 2).

The test segment was subjected to a spike pressure test of 1038 psig for 30 minutes, without observed leakage or yielding of the pipe segment. The 30 minute spike test and subsequent pressure reduction with volume bleed was included and is part of the 8.65 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.65 continuous hours without evidence of a leak failure. Water was the test medium. At the highest elevation point in the test section, the calculated test pressure was 968 psig and the established MAOP is 774 psig.

Pressure decreased 64 psi during the test. 11,481.60 ounces of fluid was intentionally released from the test section Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 239.53 ounces, gain, which is equivalent to a 0.06 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.

Test pressure did not remain steady even though no leaks were observed. The volumetric gain is attributed to the error characteristic of the temperature measurement instrumentation utilized.

Sincerely,
Redacted

cc. file

SB_GT&S_0047304

Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	414197305-T65
Construction Co.	Snelson	Job Number	41474005 -T65B
Hydro. Test Co.	Milbar Hydro-Test Inc.	Project No.	FY12-112
Test Section	PG&E T-65B L-300B, MP 445.5937 - 446.4777		
File Name	RCP 61362 - T-65B L-300B, MP 445.5937 - 446.4777		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 23-Sep-11

Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 2)

This is to certify that the pipeline or pipeline section(s) described below was hydrostatically pressure tested in accordance with the following procedure:

Pipeline: PG&E T-65B L-300B, MP 445.5937 - 446.4777

From: 45+74 To: 0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	63 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi
2	4,782 ft	34.000 in.	0.344 in.	API5L-X52, DSAW, Arc Weld, Steel	1,052 psi
3	39 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
4	44 ft	34.000 in.	0.505 in.	API5L-X65, DSAW, Arc Weld, Steel	1,931 psi

Initial Test Conditions

Pressure at Test Point:	1,038 psig	Date/Time:	9/23/11 11:36 AM	Pipe Temperature Unrestrained:	81.0 °F
Ambient Temperature:	84.0 °F			Restrained:	75.0 °F
		Elevation @ Test Point:	555.0 ft	Location:	45+74
Pressure @ High Point (Cal/Measure):	1,032 psig	Elevation @ High Point:	568.0 ft	Location:	0+00
Pressure @ Low Point (Cal/Measure):	1,046 psig	Elevation @ Low Point:	537.0 ft	Location:	26+71

Final Test Conditions

Pressure at Test Point:	974 psig	Date/Time:	9/23/11 8:15 PM	Pipe Temperature Unrestrained:	83.0 °F
Ambient Temperature:	71.0 °F			Restrained:	75.0 °F
		Elevation @ Test Point:	555.0 ft	Location:	45+74
Pressure @ High Point (Cal/Measure):	968 psig	Elevation @ High Point:	568.0 ft	Location:	0+00
Pressure @ Low Point (Cal/Measure):	982 psig	Elevation @ Low Point:	537.0 ft	Location:	26+71
Total Fluid Injected:				Volume gain	
Total Fluid Withdrawn:		11481.60 fluid ounces			
Net Change in Volume of the Test Section ± (+ Gain, - Loss):		239.53 oz	gain	0.0008%	0.064 °F equivalent

Test Duration: 8.65 hours

Minimum Test Pressure:	Test Point	969 psig	Max Elevation	963 psig	Min Elevation	977 psig
Maximum Test Pressure:		1,038 psig		1,032 psig		1,046 psig
% SMYS :				98.1%		99.4%
Test Segment Observed % SMYS :			Minimum	53.8%	Maximum	99.4%

Minimum Test Pressure (Calculated/Measured):			968 psig
Maximum Allowable Operating Pressure:	DOT Part 192	Test Factor= 1.25	774 psig

Were leaks observed?	**No**	Explain:
Acceptable Hydrostatic Test?	**Yes**	The test segment was subjected to a spike pressure test of 1038 psig for 30 minutes, without observed leakage or yielding of the pipe segment. The 30 minute spike test and subsequent pressure reduction with volume bleed was included and is part of the 8.65 hour test duration period. No leaks were observed during the test period. The test section included 4,782 feet of buried and 146 feet of exposed pipe. Pressure lost 64 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment gained 2°F. 11,481.60 ounces of fluid was intentionally released from the test section Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 239.53 ounces, gain, which is equivalent to a 0.06 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized. Test pressure did not remain steady even though no leaks were observed. The volumetric gain is attributed to the error characteristic of the temperature measurement instrumentation utilized.
Remarks		

Redacted

23-Sep-11

SB_GT&S_0047305

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	414197305-T65
Construction Co.	Snelson	Job Number	41474005 - T65B
Testing Co.	Milbar Hydro-Test Inc.	Project No.	FY12-112
Test Section	PG&E T-65B L-300B, MP 445.5937 - 446.4777		
File Name	RCP 61362 - T-65B L-300B, MP 445.5937 - 446.4777		

Date **23-Sep-11**

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
1	9/23/11	11:02 AM	715 psig	79 °F	78 °F	75 °F			
2	9/23/11	11:03 AM	725 psig	79 °F	78 °F	75 °F	Inject		1,696 oz.
3	9/23/11	11:04 AM	735 psig	79 °F	78 °F	75 °F	Inject		1,696 oz.
4	9/23/11	11:05 AM	745 psig	79 °F	78 °F	75 °F	Inject		1,631 oz.
5	9/23/11	11:06 AM	755 psig	79 °F	78 °F	75 °F	Inject		1,631 oz.
6	9/23/11	11:07 AM	765 psig	79 °F	78 °F	75 °F	Inject		1,631 oz.
7	9/23/11	11:08 AM	775 psig	79 °F	78 °F	75 °F	Inject		1,696 oz.
8	9/23/11	11:09 AM	785 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
9	9/23/11	11:10 AM	795 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
10	9/23/11	11:11 AM	805 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
11	9/23/11	11:12 AM	815 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
12	9/23/11	11:13 AM	825 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
13	9/23/11	11:14 AM	835 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
14	9/23/11	11:15 AM	845 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
15	9/23/11	11:16 AM	855 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
16	9/23/11	11:17 AM	865 psig	79 °F	79 °F	75 °F	Inject		1,565 oz.
17	9/23/11	11:18 AM	875 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
18	9/23/11	11:19 AM	885 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
19	9/23/11	11:20 AM	895 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
20	9/23/11	11:21 AM	905 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
21	9/23/11	11:22 AM	915 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
22	9/23/11	11:23 AM	925 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
23	9/23/11	11:24 AM	935 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
24	9/23/11	11:25 AM	945 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
25	9/23/11	11:26 AM	955 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
26	9/23/11	11:27 AM	965 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
27	9/23/11	11:28 AM	975 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
28	9/23/11	11:29 AM	985 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
29	9/23/11	11:30 AM	995 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
30	9/23/11	11:31 AM	1,005 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
31	9/23/11	11:32 AM	1,015 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
32	9/23/11	11:33 AM	1,025 psig	79 °F	79 °F	75 °F	Inject		1,696 oz.
33	9/23/11	11:34 AM	1,035 psig	79 °F	79 °F	75 °F	Inject		1,631 oz.
34	9/23/11	11:35 AM	1,038 psig	79 °F	79 °F	75 °F	Inject		587 oz.
35	9/23/11	11:36 AM	1,038 psig	84 °F	81 °F	75 °F	On Test		
36	9/23/11	11:46 AM	1,038 psig	84 °F	82 °F	75 °F			
37	9/23/11	11:56 AM	1,038 psig	86 °F	82 °F	75 °F			
38	9/23/11	12:06 PM	1,038 psig	87 °F	83 °F	75 °F	End Spike		
39	9/23/11	12:07 PM	1,028 psig	87 °F	83 °F	75 °F	Bleed	1,664 oz.	
40	9/23/11	12:08 PM	1,018 psig	87 °F	83 °F	75 °F	Bleed	1,664 oz.	
41	9/23/11	12:09 PM	1,008 psig	87 °F	83 °F	75 °F	Bleed	1,664 oz.	
42	9/23/11	12:10 PM	998 psig	87 °F	83 °F	75 °F	Bleed	1,664 oz.	
43	9/23/11	12:11 PM	988 psig	87 °F	83 °F	75 °F	Bleed	1,664 oz.	
44	9/23/11	12:12 PM	978 psig	87 °F	83 °F	75 °F	Bleed	1,664 oz.	

SB_GT&S_0047306

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	414197305-T65
Construction Co.	Snelson	Job Number	41474005 - T65B
Testing Co.	Milbar Hydro-Test Inc.	Project No.	FY12-112
Test Section	PG&E T-65B L-300B, MP 445.5937 - 446.4777		
File Name	RCP 61362 - T-65B L-300B, MP 445.5937 - 446.4777		

Date **23-Sep-11**

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
45	9/23/11	12:15 PM	969 psig	87 °F	83 °F	75 °F	Bleed	1,498 oz.	
46	9/23/11	12:30 PM	969 psig	89 °F	84 °F	75 °F			
47	9/23/11	12:45 PM	970 psig	90 °F	85 °F	75 °F			
48	9/23/11	1:00 PM	970 psig	92 °F	86 °F	75 °F			
49	9/23/11	1:15 PM	970 psig	93 °F	86 °F	75 °F			
50	9/23/11	1:30 PM	971 psig	93 °F	87 °F	75 °F			
51	9/23/11	1:45 PM	971 psig	95 °F	88 °F	75 °F			
52	9/23/11	2:00 PM	972 psig	96 °F	88 °F	75 °F			
53	9/23/11	2:15 PM	972 psig	97 °F	89 °F	75 °F			
54	9/23/11	2:30 PM	972 psig	98 °F	89 °F	75 °F			
55	9/23/11	2:45 PM	973 psig	98 °F	90 °F	75 °F			
56	9/23/11	3:00 PM	973 psig	99 °F	90 °F	75 °F			
57	9/23/11	3:15 PM	974 psig	98 °F	91 °F	75 °F			
58	9/23/11	3:30 PM	974 psig	97 °F	91 °F	75 °F			
59	9/23/11	3:45 PM	975 psig	96 °F	90 °F	75 °F			
60	9/23/11	4:00 PM	975 psig	95 °F	90 °F	75 °F			
61	9/23/11	4:15 PM	975 psig	93 °F	89 °F	75 °F			
62	9/23/11	4:30 PM	975 psig	90 °F	89 °F	75 °F			
63	9/23/11	4:45 PM	975 psig	89 °F	89 °F	75 °F			
64	9/23/11	5:00 PM	976 psig	89 °F	89 °F	75 °F			
65	9/23/11	5:15 PM	976 psig	88 °F	89 °F	75 °F			
66	9/23/11	5:30 PM	976 psig	86 °F	89 °F	75 °F			
67	9/23/11	5:45 PM	976 psig	83 °F	88 °F	75 °F			
68	9/23/11	6:00 PM	976 psig	82 °F	87 °F	75 °F			
69	9/23/11	6:15 PM	976 psig	80 °F	86 °F	75 °F			
70	9/23/11	6:30 PM	976 psig	78 °F	86 °F	75 °F			
71	9/23/11	6:45 PM	975 psig	76 °F	85 °F	75 °F			
72	9/23/11	7:00 PM	975 psig	73 °F	84 °F	75 °F			
73	9/23/11	7:15 PM	975 psig	72 °F	83 °F	75 °F			
74	9/23/11	7:30 PM	974 psig	72 °F	82 °F	75 °F			
75	9/23/11	7:45 PM	974 psig	71 °F	82 °F	75 °F			
76	9/23/11	8:00 PM	974 psig	71 °F	82 °F	75 °F			
77	9/23/11	8:15 PM	974 psig	71 °F	83 °F	75 °F	End of Test		
							Spike Test		53,747.2 oz.
							Hydrostatic Test	11,481.6 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure:	1,038 psig
		Low Test Pressure:	969 psig

SB_GT&S_0047307

Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	414197305-T65
Construction Co.	Snelson	Job Number	41474005 -T65B
Hydro. Test Co.	Milbar Hydro-Test Inc.	Project No.	FY12-112
Test Section	PG&E T-65B L-300B, MP 445.5937 - 446.4777	WATER	
File Name	RCP 61362 - T-65B L-300B, MP 445.5937 - 446.4777		

General Pipe Data

Description	Segment 1	2	3	4
Restrained or Unrestrained?	Unrestrained	Restrained	Unrestrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.375 in.	0.344 in.	0.500 in.	0.505 in.
Inside Diameter	33.250 in.	33.312 in.	33.000 in.	32.990 in.
Spec./Grade	API5L-X65	API5L-X52	API5L-X65	API5L-X65
Length Unrestrained	63 ft		39 ft	44 ft
Length Restrained		4,782 ft		
Temperature – On Test	81 °F	75 °F	81.0 °F	81.0 °F
Temperature – End of Test	83 °F	75 °F	83.0 °F	83.0 °F
Pressure – On Test	1,038 psig	1,038 psig	1,038 psig	1,038 psig
Pressure – End of Test	974 psig	974 psig	974 psig	974 psig

Unrestrained Pipe

Sum:	Vo	6,528.33 gal / 835,626 oz.	Vtp1	6,556.28 gal / 839,204 oz.	Vtp2	6,551.87 gal / 838,640 oz.
Vo Unrestrained	2,842 gal	1,733 gal	1,954 gal			
Fwp 1	1.003181	1.003181	1.003181			
Fpp 1	1.003835	1.002855	1.002825			
Fpt 1	1.000382	1.000382	1.000382			
Fwt 1	1.002556	1.002556	1.002556			
Fpwt 1 = Fpt/Fwt	0.997832	0.997832	0.997832			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	2,855.50 gal	1,739.51 gal	1,961.27 gal			
Fwp 2	1.002984	1.002984	1.002984			
Fpp 2	1.003598	1.002679	1.002651			
Fpt 2	1.000419	1.000419	1.000419			
Fwt 2	1.002868	1.002868	1.002868			
Fpwt = Fpt/Fwt	0.997557	0.997557	0.997557			
Vtp = Vo(Fwp)(Fpp)(Fpwt)	2,853.48 gal	1,738.38 gal	1,960.01 gal			

Restrained Pipe

Sum:	Vo	216,506.10 gal / 27,712,781 oz.	Vtp1	217,541.07 gal / 27,845,257 oz.	Vtp2	217,457.65 gal / 27,834,579 oz.
Vo Unrestrained		216,506 gal				
Fwp 1		1.003181				
Fpp 1		1.003103				
Fpt 1		1.000182				
Fwt 1		1.001688				
Fpwt 1 = Fpt/Fwt		0.998496				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		217,541 gal				
Fwp 2		1.002984				
Fpp 2		1.002915				
Fpt 2		1.000182				
Fwt 2		1.001688				
Fpwt = Fpt/Fwt		0.998496				
Vtp = Vo(Fwp)(Fpp)(Fpwt)		217,458 gal				

Combined Pipe

Sum:	Vo	223,034.43 gal / 28,548,407 oz.	Vtp1	224,097.35 gal / 28,684,461 oz.	Vtp2	224,009.52 gal / 28,673,219 oz.

SB_GT&S_0047308

Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	414197305-T65
Construction Co.	Snelson	Job Number	41474005 -T65B
Hydro. Test Co.	Milbar Hydro-Test Inc.	Project No.	FY12-112
Test Section	PG&E T-65B L-300B, MP 445.5937 - 446.4777		WATER
File Name	RCP 61362 - T-65B L-300B, MP 445.5937 - 446.4777		

General Pipe Data

Description	Segment 1	2	3	4
Restrained or Unrestrained?	Unrestrained	Restrained	Unrestrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.375 in.	0.344 in.	0.500 in.	0.505 in.
Inside Diameter	33.250 in.	33.312 in.	33.000 in.	32.990 in.
Spec./Grade	API5L-X65	API5L-X52	API5L-X65	API5L-X65
Length Unstrained	63.00 ft		39.00 ft	44 ft
Length Restrained		4,782 ft		
Temperature -- On Test	81 °F	74 °F	81 °F	81 °F
Temperature -- End of Test	82 °F	75 °F	82 °F	82 °F
Pressure -- On Test	1,006 psig	1,006 psig	1,006 psig	1,006 psig
Pressure -- End of Test	1,006 psig	1,006 psig	1,006 psig	1,006 psig

Unrestrained Pipe

Sum:	Vo	6,528.33 gal / 835,626 oz.	Vtp1	6,554.98 gal / 839,037 oz.	Vtp2	6,553.99 gal / 838,911 oz.
Vo Unrestrained	2,842 gal	1,733 gal	1,954 gal			
Fwp 1	1.003083	1.003083	1.003083			
Fpp 1	1.003717	1.002767	1.002738			
Fpt 1	1.000382	1.000382	1.000382			
Fwt 1	1.002556	1.002556	1.002556			
Fpwt 1 = Fpt/Fwt	0.997832	0.997832	0.997832			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	2,854.88 gal	1,739.18 gal	1,960.91 gal			
Fwp 2	1.003083	1.003083	1.003083			
Fpp 2	1.003717	1.002767	1.002738			
Fpt 2	1.000400	1.000400	1.000400			
Fwt 2	1.002725	1.002725	1.002725			
Fpwt = Fpt/Fwt	0.997682	0.997682	0.997682			
Vtp = Vo(Fwp)(Fpp)(Fpwt)	2,854.45 gal	1,738.92 gal	1,960.62 gal			

Restrained Pipe

Sum:	Vo	216,506.10 gal / 27,712,781 oz.	Vtp1	217,527.71 gal / 27,843,547 oz.	Vtp2	217,499.35 gal / 27,839,917 oz.
Vo Restrained		216,506 gal				
Fwp 1		1.003083				
Fpp 1		1.003005				
Fpt 1		1.000169				
Fwt 1		1.001542				
Fpwt 1 = Fpt/Fwt		0.998630				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		217,528 gal				
Fwp 2		1.003083				
Fpp 2		1.003009				
Fpt 2		1.000182				
Fwt 2		1.001688				
Fpwt = Fpt/Fwt		0.998496				
Vtp = Vo(Fwp)(Fpp)(Fpwt)		217,499 gal				

Combined Pipe

Sum:	Vo	223,034.43 gal / 28,548,407 oz.	Vtp1	224,082.69 gal / 28,682,584 oz.	Vtp2	224,053.35 gal / 28,678,828 oz.
1 °F Change	29.34 gal	3,756.07 oz.				

SB_GT&S_0047309

RCP

Hydrostatic Test Pipe Data Table

Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	63 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X65	1,434 psig	Steel	Arc Weld	DSAW
2	4,782 ft	Restrained	34.000 in.	0.3440 in.	API5L-X52	1,052 psig	Steel	Arc Weld	DSAW
3	39 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
4	44 ft	Unrestrained	34.000 in.	0.5050 in.	API5L-X65	1,931 psig	Steel	Arc Weld	DSAW

Hydrostatic Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget	414197305-T65
	Walnut Creek, CA 94598	
	Attention: Redacted	
Construction Company	Snelson	Job Number
Address	601 West State Street	41474005 -T65B
	Sedro-Wooley, WA 98284	
	Attention: Redacted	
Hydrostatic Test Co.	Milbar Hydro-Test Inc.	Project No.
Address	P O Box 7701	FY12-112
	Shreveport, La. 71137-7701	
Test Section	PG&E T-65B L-300B, MP 445.5937 - 446.4777	
	From: 45+74	
	To: 0+00	
File Name	RCP 61362 - T-65B L-300B, MP 445.5937 - 446.4777	

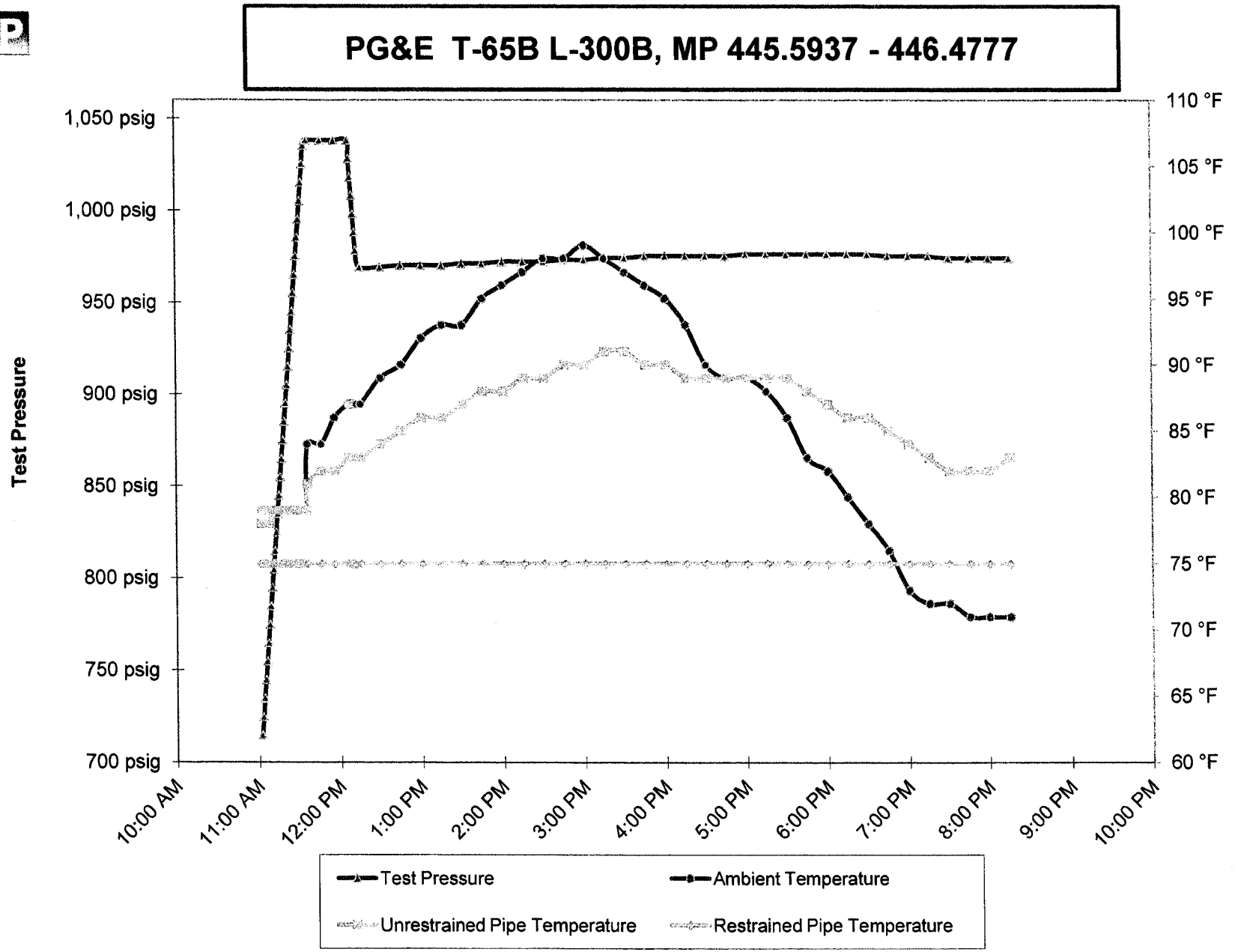
Part II – Test Data (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

Note: Minimum test pressure and duration are not to be changed without written approval.

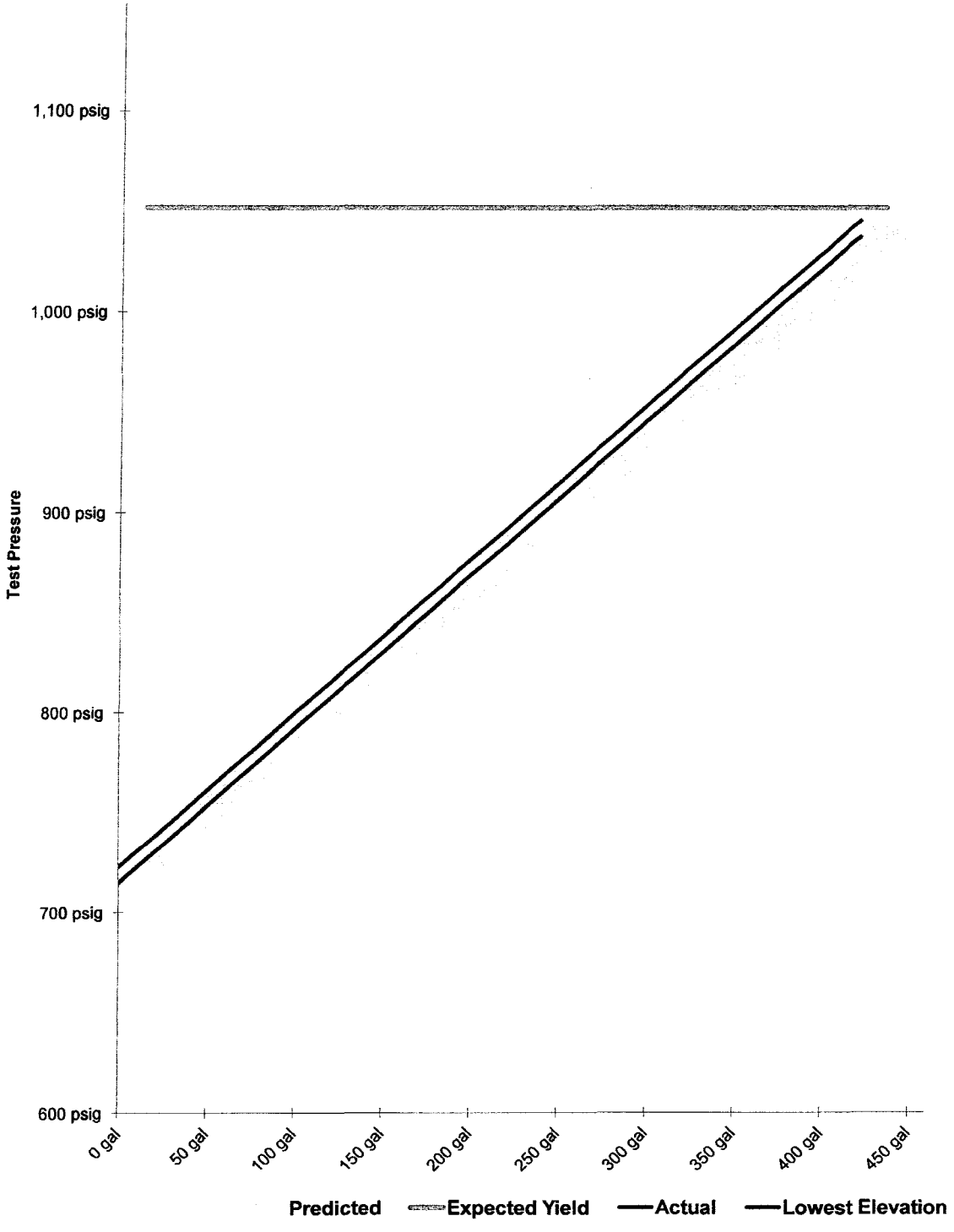
Time and Date Test Pressure Reached	9/23/11 11:36 AM	Elevation at Test Point	555 ft	Min. Required Test Press At Test Point (1)	952.63 psig	Max. Allowable Test Press at Test Point (4)	1,038.20 psig
Time and Date Test Ended	9/23/11 8:15 PM	Max. Elevation in Test Section	568 ft	Min. Indicated Test Pressure (2)	969.00 psig	Max. Indicated Test Pressure (5)	1,038.00 psig
Actual Duration of Test	8 hours 39 minutes	Min. Elevation in Test Section	537 ft	Min. Test Pressure at Max. Elevation (3)	963.37 psig	Max. Test Pressure at Min. Elevation (6)	1,045.80 psig

SB_GT&S_0047310

SB_GT&S_0047311



Spike Pressure Test
Stress Strain Curve -- PG&E T-65B L-300B, MP 445.5937 - 446.4777



RCP

Spike Pressure Test
Stress Strain Curve -- PG&E T-65B L-300B, MP 445.5937 - 446.4777

Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
715 psig	0	0.00 gal		0	0.000
725 psig	26	13.25 gal	13.44 gal	1.325	1.344
735 psig	52	26.50 gal	26.88 gal	1.325	1.344
745 psig	77	39.24 gal	40.31 gal	1.274	1.344
755 psig	102	51.98 gal	53.75 gal	1.274	1.344
765 psig	127	64.72 gal	67.19 gal	1.274	1.344
775 psig	153	77.97 gal	80.64 gal	1.325	1.344
785 psig	178	90.71 gal	94.08 gal	1.274	1.344
795 psig	203	103.45 gal	107.52 gal	1.274	1.344
805 psig	229	116.70 gal	120.96 gal	1.325	1.344
815 psig	254	129.44 gal	134.41 gal	1.274	1.344
825 psig	280	142.68 gal	147.85 gal	1.325	1.345
835 psig	305	155.42 gal	161.30 gal	1.274	1.345
845 psig	330	168.16 gal	174.75 gal	1.274	1.345
855 psig	356	181.41 gal	188.20 gal	1.325	1.345
865 psig	380	193.64 gal	201.64 gal	1.223	1.345
875 psig	406	206.89 gal	215.09 gal	1.325	1.345
885 psig	432	220.14 gal	228.54 gal	1.325	1.345
895 psig	457	232.88 gal	242.00 gal	1.274	1.345
905 psig	483	246.13 gal	255.45 gal	1.325	1.345
915 psig	508	258.87 gal	268.90 gal	1.274	1.345
925 psig	533	271.61 gal	282.35 gal	1.274	1.345
935 psig	559	284.86 gal	295.81 gal	1.325	1.345
945 psig	584	297.60 gal	309.26 gal	1.274	1.346
955 psig	610	310.85 gal	322.72 gal	1.325	1.346
965 psig	635	323.59 gal	336.18 gal	1.274	1.346
975 psig	661	336.84 gal	349.63 gal	1.325	1.346
985 psig	687	350.09 gal	363.09 gal	1.325	1.346
995 psig	713	363.34 gal	376.55 gal	1.325	1.346
1,005 psig	738	376.08 gal	390.01 gal	1.274	1.346
1,015 psig	764	389.32 gal	403.47 gal	1.325	1.346
1,025 psig	790	402.57 gal	416.94 gal	1.325	1.346
1,035 psig	815	415.31 gal	430.40 gal	1.274	1.346
1,038 psig	824	419.90 gal	434.44 gal	1.529	1.346
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000
1,038 psig		419.90 gal	434.44 gal	0.000	0.000

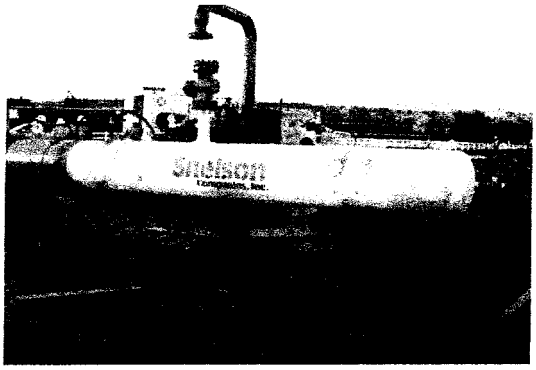
Pump gal per stroke	0.551 gal/stroke
Pump Piston Diameter	3.000 in
Pump Piston Stroke	6.00 in
Pump Cylinders	3 ea
Volume check gal per stroke	0.510 gal/stroke
Volume Released (gallons)	13.00 gal
Pressure Reduced (psi)	10 psi
Maximum2	460 gal
Minimum2	0 gal
Maximum1	1,153 psig
Minimum1	600 psig
Gallons/Stroke Used	0.510 gal/stroke
Predicted Gallons/Stroke	0.527 gal/stroke
Pressure Increment	10 psi
Max Pressure	1,038 psig
Buried Pipe Temperature	75 °F
Exposed Pipe Temperature	76 °F

ASME B31.8 Appendix N-5

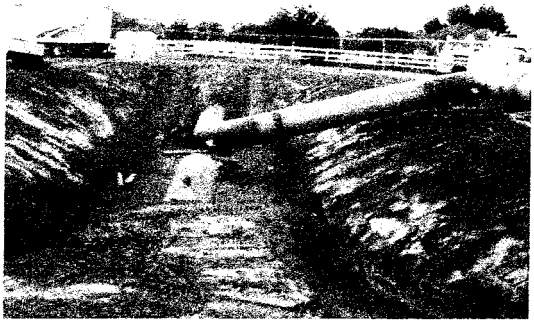
Average Actual Elastic Slope	1.305
Average Predicted Elastic Slope	1.345
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	2.479
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	1,038 psig
Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal

Redacted

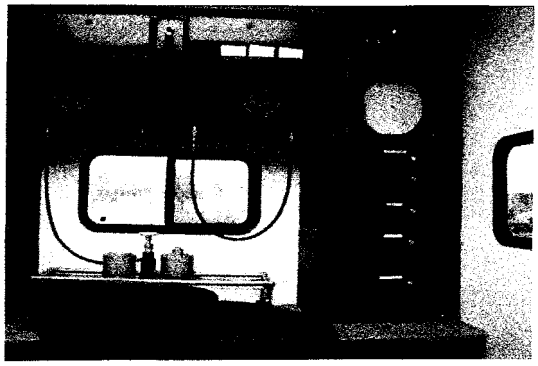
9/23/2011
Date



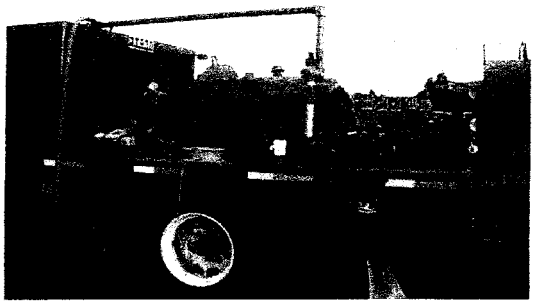
Test T-65B Test Head



Test T-65B Test Head Tie In



Test T-65B Deadweight



Test T-65B Pump Truck

Test T-65B Pressure Guage

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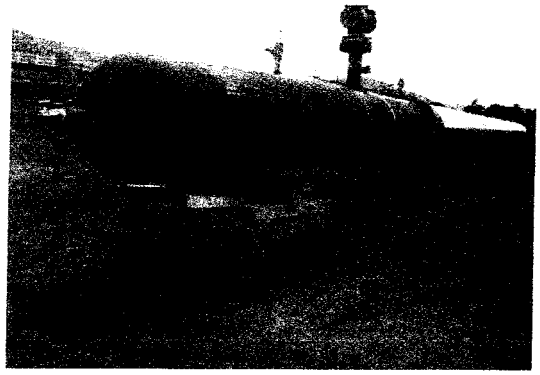
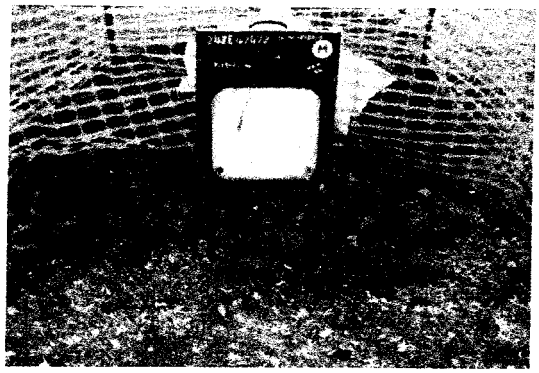


Test T-65B Test End



Test T-65B Restrained Temp. Rec.

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J-W MEASUREMENT COMPANY

669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer:	MILBAR	MANF: CHESSELL
Requesting Office:		MOD# 392
INSTRUMENT:	TT-22 CHART RECORDER W/TEMP.& PRESS. (3000#) - DOWNSTREAM @	
SERIAL NUMBER:	04042809	
CALIBRATION DATE:	5/20/2011	
RECERTIFY DUE DATE:	11/20/2011	
TESTED AND CERTIFIED BY:	Redacted (witness calibration and test of instruments in TT-22)	
ACCURACY:	CHART RECORDER- +/-0.05% OF F.S., TEMP.+/-3°F OF READING, PRESSURE TRANSMITTERS +/-0.05% OF READING	

ALL UNITS ARE CALIBRATED AND CERTIFIED WITH TEST EQUIPMENT TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY (NIST).

TEST EQUIPMENT	MODEL	SERIAL NUMBER
CHANDLER	5-1	16293 (accuracy-±.05%F.S).
CONTROL CO/TRACEABLE	4132	21271567 (accuracy-±.1%R+2°<200°F)

@ CHART RECORDER - CHESSELL(MOD: US: 21096-001 S/N: 04042809)
DOWNSTREAM PIPE - TEMP. SCADA RANGE MANAGER (S/N:0924121867)
DOWNSTREAM GRND- TEMP. SCADA RANGE MANAGER (S/N:0924121860)
DOWNSTREAM PRESSURE - DYLIX TRANSMITTER (S/N 90729627R-1002)
AMBIENT TEMP. SCADA RANGE MANAGER
3.3.3.3.

J-W MEASUREMENT COMPANY

669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer:	MILBAR	Manufacturer:	CHANDLER
BRANCH:		MODEL NO:	5-1

INSTRUMENT:	DEADWEIGHT GAUGE (3000#) DW#16 TT#22 UPSTREAM
SERIAL NUMBER:	6106
CALIBRATION DATE:	5/19/2011
RECERTIFICATION DUE DATE:	11/19/2011
TESTED AND CERTIFIED BY:	Redacted
ACCURACY:	+/-.05% OF FULL SCALE

ALL UNITS ARE CALIBRATED AND CERTIFIED WITH TEST EQUIPMENT TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY (NIST).

MANUFACTURER:	REFINERY SUPPLY
MODEL:	35265-3
SERIAL NUMBER:	2206

J-W MEASUREMENT COMPANY

669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer:	MILBAR	Manufacturer:	BARTON
BRANCH:		MODEL NO.	N/A

INSTRUMENT: PRESS. RECORDER (3000#)

SERIAL NUMBER: 202A-175572

CALIBRATION DATE: 6/7/2011

RECERTIFICATION DUE DATE: 12/7/2011

TESTED AND CERTIFIED BY: Redacted

ACCURACY: +/-1.0% OF FULL SCALE

ALL UNITS ARE CALIBRATED AND CERTIFIED WITH TEST EQUIPMENT TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY (NIST).

MANUFACTURER: DRUCK

MODEL: DPI104

SERIAL NUMBER: 3084547

J-W MEASUREMENT COMPANY

669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer:	MILBAR	Manufacturer:	BARTON
Receiving Office:		MODEL NO.	242

INSTRUMENT: DUAL TEMP. RECORDER(150F X 150F) TR#52

SERIAL NUMBER: 242E-47472

CALIBRATION DATE: 5/18/2011

RECERTIFICATION DUE DATE: 11/18/2011

TESTED AND CERTIFIED BY: Redacted

ACCURACY: +/-1.0% OF FULL SCALE

ALL UNITS ARE CALIBRATED AND CERTIFIED WITH TEST EQUIPMENT TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY (NIST).

MANUFACTURER: COOPER

MODEL: TM99A

SERIAL NUMBER: C294467

J-W MEASUREMENT COMPANY

669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer:	MILBAR	Manufacturer:	BARTON
Receiving Office:		MODEL NO.	242

INSTRUMENT: DUAL TEMP. RECORDER(150F X 150F) TR#52

SERIAL NUMBER: 242E-47472

CALIBRATION DATE: 5/18/2011

RECERTIFICATION DUE DATE: 11/18/2011

TESTED AND CERTIFIED BY: Redacted

ACCURACY: +/-1.0% OF FULL SCALE

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MANUFACTURER: COOPER

MODEL: TM99A

SERIAL NUMBER: C294467

J-W MEASUREMENT COMPANY

669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer:	MILBAR	Manufacturer:	CHANDLER
BRANCH:		MODEL NO:	5-1

INSTRUMENT:	DEADWEIGHT GAUGE (3000#) DW#16 TT#22 UPSTREAM
SERIAL NUMBER:	6106
CALIBRATION DATE:	5/19/2011
RECERTIFICATION DUE DATE:	11/19/2011
TESTED AND CERTIFIED BY:	Redacted
ACCURACY:	+/-.05% OF FULL SCALE

ALL UNITS ARE CALIBRATED AND CERTIFIED WITH TEST EQUIPMENT TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY (NIST).

MANUFACTURER:	REFINERY SUPPLY
MODEL:	35265-3
SERIAL NUMBER:	2206

J-W MEASUREMENT COMPANY

669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer:	MILBAR	Manufacturer:	BARTON
BRANCH:		MODEL NO.	N/A

INSTRUMENT: PRESS. RECORDER (3000#)

SERIAL NUMBER: 202A-175572

CALIBRATION DATE: 6/7/2011

RECERTIFICATION DUE DATE: 12/7/2011

TESTED AND CERTIFIED BY: Redacted

ACCURACY: +/-1.0% OF FULL SCALE

ALL UNITS ARE CALIBRATED AND CERTIFIED WITH TEST EQUIPMENT TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY (NIST).

MANUFACTURER: DRUCK

MODEL: DPI104

SERIAL NUMBER: 3084547

J-W MEASUREMENT COMPANY

669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer: MILBAR MANF: CHESSELL
Requesting Office: MOD# 392

INSTRUMENT: TT-22
CHART RECORDER W/TEMP.& PRESS. (3000#) - DOWNSTREAM @

SERIAL NUMBER: 04042809

CALIBRATION DATE: 5/20/2011

RECERTIFY DUE DATE: 11/20/2011

TESTED AND CERTIFIED BY: Redacted (witness calibration and test of instruments in TT-22)

ACCURACY: CHART RECORDER- +/-0.05% OF F.S., TEMP.+/-3°F OF READING,
PRESSURE TRANSMITTERS +/-0.05% OF READING

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DOWNSTREAM PRESSURE - DYLIX TRANSMITTER (S/N 90729627R-1002)
AMBIENT TEMP. SCADA RANGE MANAGER
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