



RCP, Inc

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

Redacted

September 22, 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 -T65A
Test Section:	PG&E T-65A L-300A, MP 449.706 - 450.83
Test Date:	September 22, 2011
Certificate Number:	RCP 61362 - T-65A, L-300A, MP 449.706 - 450.83

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 3).

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.25 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 964 psig and the established MAOP is 642 psig.

Pressure increased 1 psi during the test. No fluid was intentionally injected or released from the test section. Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 328.41 ounces, loss, which is equivalent to a 0.08 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.

Test pressure remained steady and no leaks were observed. The volumetric loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.

Sincerely,

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Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	414197305-T65
Construction Co.	Snelson	Job Number	41474005-T65A
Hydro. Test Co.	Milbar Hydro-Test Inc.	Project No.	FY12-112
Test Section	PG&E T-65A L-300A, MP 449.706 - 450.83		
File Name	RCP 61362 - T-65A, L-300A, MP 449.706 - 450.83		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: _____ Test Date: 22-Sep-11

Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3)

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-65A L-300A, MP 449.706 - 450.83

From: 54+98

To: 0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	30 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
2	26 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi
3	3,263 ft	34.000 in.	0.344 in.	API5L-X52, DSAW, Arc Weld, Steel	1,052 psi
4	1,245 ft	34.000 in.	0.408 in.	API5L-X60, DSAW, Arc Weld, Steel	1,433 psi
5	118 ft	34.000 in.	0.505 in.	API5L-X60, DSAW, Arc Weld, Steel	1,782 psi
6	896 ft	36.000 in.	0.414 in.	API5L-X65, DSAW, Arc Weld, Steel	1,495 psi
7	127 ft	1.315 in.	0.154 in.	API5L-Grade B, SM, Arc Weld, Steel	8,198 psi
8	18 ft	2.375 in.	0.154 in.	API5L-Grade B, SM, Arc Weld, Steel	4,539 psi
9	40 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi

Initial Test Conditions

Pressure at Test Point:	964 psig	Date/Time:	9/22/11 10:40 AM	Pipe Temperature	
Ambient Temperature:	68.0 °F	Elevation @ Test Point:	460.0 ft	Unrestrained:	77.0 °F
Pressure @ High Point (Cal/Measure):	964 psig	Elevation @ High Point:	460.0 ft	Restrained:	75.0 °F
Pressure @ Low Point (Cal/Measure):	1,026 psig	Elevation @ Low Point:	316.0 ft	Location:	0+00
				Location:	00+00
				Location:	54+53

Final Test Conditions

Pressure at Test Point:	965 psig	Date/Time:	9/22/11 6:55 PM	Pipe Temperature	
Ambient Temperature:	76.0 °F	Elevation @ Test Point:	460.0 ft	Unrestrained:	84.0 °F
Pressure @ High Point (Cal/Measure):	965 psig	Elevation @ High Point:	480.0 ft	Restrained:	75.0 °F
Pressure @ Low Point (Cal/Measure):	1,027 psig	Elevation @ Low Point:	316.0 ft	Location:	0+00
				Location:	00+00
				Location:	54+53
Total Fluid Injected:		Volume loss			
Total Fluid Withdrawn:					
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	(328.41) oz	loss	(0.0010)%	(0.076) °F equivalent	

Test Duration: 8.25 hours

Minimum Test Pressure:	963 psig	963 psig	1,025 psig	
Maximum Test Pressure:	965 psig	965 psig	1,027 psig	
% SMYS:	11.9%	50.5%	57.6%	
Test Segment Observed % SMYS:	Minimum	11.9%	Maximum	91.7%

Minimum Test Pressure (Calculated/Measured): 964 psig

Maximum Allowable Operating Pressure: DOT Part 192 Test Factor= 1.50 642 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	<p>No leaks were observed during the test period. The test section included 5,667 feet of buried and 96 feet of exposed pipe. Pressure gained 1 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment gained 7°F.</p> <p>No fluid was intentionally injected or released from the test section. Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 328.41 ounces, loss, which is equivalent to a 0.08 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.</p> <p>Test pressure remained steady and no leaks were observed. The volumetric loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.</p>

Remarks: Leak at 75% ramp up due to 1/2" ball valve not being fully closed at farm tap.

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Dead Weight Log Sheet

Owner Company Pacific Gas and Electric Company

Job Number 414197305-T65

Construction Co. Snelson

Job Number 41474005 - T65A

Testing Co. Milbar Hydro-Test Inc.

Project No. FY12-112

Test Section PG&E T-65A L-300A, MP 449.706 - 450.83

File Name RCP 61362 - T-65A, L-300A, MP 449.706 - 450.83

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Date 22-Sep-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
1	9/22/11	10:19 AM	710 psig	66 °F	76 °F	75 °F			
2	9/22/11	10:19 AM	720 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
3	9/22/11	10:19 AM	730 psig	66 °F	76 °F	75 °F	Inject		1,974 oz.
4	9/22/11	10:20 AM	740 psig	66 °F	76 °F	75 °F	Inject		2,115 oz.
5	9/22/11	10:21 AM	750 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
6	9/22/11	10:22 AM	760 psig	66 °F	76 °F	75 °F	Inject		2,115 oz.
7	9/22/11	10:23 AM	770 psig	66 °F	76 °F	75 °F	Inject		1,974 oz.
8	9/22/11	10:24 AM	780 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
9	9/22/11	10:25 AM	790 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
10	9/22/11	10:25 AM	800 psig	66 °F	76 °F	75 °F	Inject		2,115 oz.
11	9/22/11	10:26 AM	810 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
12	9/22/11	10:26 AM	820 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
13	9/22/11	10:26 AM	830 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
14	9/22/11	10:27 AM	840 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
15	9/22/11	10:28 AM	850 psig	66 °F	76 °F	75 °F	Inject		2,115 oz.
16	9/22/11	10:29 AM	860 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
17	9/22/11	10:30 AM	870 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
18	9/22/11	10:31 AM	880 psig	66 °F	76 °F	75 °F	Inject		2,045 oz.
19	9/22/11	10:32 AM	890 psig	66 °F	76 °F	75 °F	Inject		2,115 oz.
20	9/22/11	10:32 AM	900 psig	66 °F	76 °F	75 °F	Inject		1,974 oz.
21	9/22/11	10:33 AM	910 psig	66 °F	76 °F	75 °F	Inject		2,186 oz.
22	9/22/11	10:34 AM	920 psig	66 °F	76 °F	75 °F	Inject		1,974 oz.
23	9/22/11	10:35 AM	930 psig	66 °F	76 °F	75 °F	Inject		2,115 oz.
24	9/22/11	10:36 AM	940 psig	66 °F	76 °F	75 °F	Inject		1,974 oz.
25	9/22/11	10:37 AM	950 psig	66 °F	76 °F	75 °F	Inject		2,115 oz.
26	9/22/11	10:38 AM	960 psig	66 °F	76 °F	75 °F	Inject		2,115 oz.
27	9/22/11	10:39 AM	964 psig	66 °F	76 °F	75 °F	Inject		846 oz.
28	9/22/11	10:40 AM	964 psig	68 °F	77 °F	75 °F	On Test		
29	9/22/11	10:55 AM	964 psig	70 °F	77 °F	75 °F			
30	9/22/11	11:10 AM	963 psig	72 °F	77 °F	75 °F			
31	9/22/11	11:25 AM	963 psig	73 °F	78 °F	75 °F			
32	9/22/11	11:40 AM	963 psig	76 °F	78 °F	75 °F			
33	9/22/11	11:55 AM	963 psig	79 °F	79 °F	75 °F			
34	9/22/11	12:10 PM	963 psig	79 °F	79 °F	75 °F			
35	9/22/11	12:25 PM	964 psig	80 °F	80 °F	75 °F			
36	9/22/11	12:40 PM	964 psig	82 °F	81 °F	75 °F			
37	9/22/11	12:55 PM	964 psig	83 °F	82 °F	75 °F			
38	9/22/11	1:10 PM	964 psig	84 °F	82 °F	75 °F			
39	9/22/11	1:25 PM	964 psig	86 °F	83 °F	75 °F			
40	9/22/11	1:40 PM	964 psig	86 °F	84 °F	75 °F			
41	9/22/11	1:55 PM	964 psig	87 °F	84 °F	75 °F			
42	9/22/11	2:10 PM	964 psig	87 °F	85 °F	75 °F			
43	9/22/11	2:25 PM	964 psig	85 °F	85 °F	75 °F			
44	9/22/11	2:40 PM	964 psig	86 °F	85 °F	75 °F			



Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	414197305-T65
Construction Co.	Snelson	Job Number	41474005 -T65A
Hydro. Test Co.	Milbar Hydro-Test Inc.	Project No.	FY12-112
Test Section	PG&E T-65A L-300A, MP 449.706 - 450.83	WATER	
File Name	RCP 61362 - T-65A, L-300A, MP 449.706 - 450.83		

General Pipe Data

Description	Segment								
	1	2	3	4	5	6	7	8	9
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Restrained	Restrained	Restrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	36.000 in.	1.315 in.	2.375 in.	34.000 in.
Wall Thickness	0.500 in.	0.375 in.	0.344 in.	0.406 in.	0.505 in.	0.414 in.	0.154 in.	0.154 in.	0.500 in.
Inside Diameter	33.000 in.	33.250 in.	33.312 in.	33.188 in.	32.990 in.	35.172 in.	1.007 in.	2.067 in.	33.000 in.
Spec./Grade	API5L-X65	API5L-X65	API5L-X52	API5L-X60	API5L-X60	API5L-X65	API5L-Grade B	API5L-Grade B	API5L-X65
Length Unrestrained	30 ft	26 ft							40 ft
Length Restrained			3.263 ft	1.245 ft	118 ft	896 ft	127 ft	18 ft	
Temperature -- On Test	77 °F	77 °F	75.0 °F	75.0 °F	75.0 °F	75.0 °F	75.0 °F	75.0 °F	77.0 °F
Temperature -- End of Test	84 °F	84 °F	75.0 °F	75.0 °F	75.0 °F	75.0 °F	75.0 °F	75.0 °F	84.0 °F
Pressure -- On Test	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig
Pressure -- End of Test	965 psig	965 psig	965 psig	965 psig	965 psig	965 psig	965 psig	965 psig	965 psig

Unrestrained Pipe

Sum:	Vo	4,282.95 gal		Vtp1	4,300.94 gal		Vtp2	4,296.89 gal	
		548,218 oz.			550,521 oz.			550,002 oz.	
Vo Unrestrained	1.333 gal	1,173 gal						1,777 gal	
Fwp 1	1.002954	1.002954						1.002954	
Fpp 1	1.002651	1.003561						1.002651	
Fpt 1	1.000309	1.000309						1.000309	
Fwt 1	1.001966	1.001966						1.001966	
Fpwt 1 = Fpt/Fwt	0.998347	0.998347						0.998347	
Vtp 1 = Vo(Fwp)/(Fpp)(Fpwt)	1.338.20 gal	1,178.48 gal						#####	
Fwp 2	1.002957	1.002957						1.002957	
Fpp 2	1.002654	1.003565						1.002654	
Fpt 2	1.000437	1.000437						1.000437	
Fwt 2	1.003044	1.003044						1.003044	
Fpwt = Fpt/Fwt	0.997401	0.997401						0.997401	
Vtp = Vo(Fwp)/(Fpp)(Fpwt)	1.336.94 gal	1,177.37 gal						#####	

Restrained Pipe

Sum:	Vo	254,153.11 gal		Vtp1	255,209.50 gal		Vtp2	255,210.98 gal	
		32,531,598 oz.			32,666,816 oz.			32,667,006 oz.	
Vo Unrestrained		147,733 gal	55,949 gal	5,240 gal	45,223 gal	5 gal	3 gal		
Fwp 1		1.002954	1.002954	1.002954	1.002954	1.002954	1.002954	1.002954	
Fpp 1		1.002886	1.002444	1.001984	1.002538	1.000245	1.000446		
Fpt 1		1.000182	1.000182	1.000182	1.000182	1.000182	1.000182		
Fwt 1		1.001688	1.001688	1.001688	1.001688	1.001688	1.001688		
Fpwt 1 = Fpt/Fwt		0.998496	0.998496	0.998496	0.998496	0.998496	0.998496		
Vtp 1 = Vo(Fwp)/(Fpp)(Fpwt)		148,373 gal	56,167 gal	5,258 gal	45,404 gal	5 gal	3 gal		
Fwp 2		1.002957	1.002957	1.002957	1.002957	1.002957	1.002957		
Fpp 2		1.002889	1.002447	1.001966	1.002541	1.000245	1.000447		
Fpt 2		1.000182	1.000182	1.000182	1.000182	1.000182	1.000182		
Fwt 2		1.001688	1.001688	1.001688	1.001688	1.001688	1.001688		
Fpwt = Fpt/Fwt		0.998496	0.998496	0.998496	0.998496	0.998496	0.998496		
Vtp = Vo(Fwp)/(Fpp)(Fpwt)		148,374 gal	56,167 gal	5,258 gal	45,404 gal	5 gal	3 gal		

Combined Pipe

Sum:	Vo	258,436.06 gal		Vtp1	259,510.44 gal		Vtp2	259,507.88 gal	
		33,079,816 oz.			33,217,337 oz.			33,217,008 oz.	

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Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	414197305-T65
Construction Co.	Snelson	Job Number	41474005 -T65A
Hydro. Test Co.	Milbar Hydro-Test Inc.	Project No.	FY12-112
Test Section	PG&E T-65A L-300A, MP 449.706 - 450.83		
File Name	RCP 61362 - T-65A, L-300A, MP 449.706 - 450.83		WATER

General Pipe Data

Description	Segment								
	1	2	3	4	5	6	7	8	9
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Restrained	Restrained	Restrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	36.000 in.	1.315 in.	2.375 in.	34.000 in.
Wall Thickness	0.500 in.	0.375 in.	0.344 in.	0.406 in.	0.505 in.	0.414 in.	0.154 in.	0.154 in.	0.500 in.
Inside Diameter	33.000 in.	33.250 in.	33.312 in.	33.188 in.	32.990 in.	35.172 in.	1.007 in.	2.067 in.	33.000 in.
Spec./Grade	API5L-X65	API5L-X65	API5L-X52	API5L-X60	API5L-X60	API5L-X65	API5L-Grade B	API5L-Grade B	API5L-X65
Length Unrestrained	30.00 ft	26.00 ft							40 ft
Length Restrained			3,263 ft	1,245 ft	118 ft	896 ft	127 ft	18 ft	
Temperature -- On Test	80 °F	80 °F	74 °F	74 °F	74 °F	74 °F	74 °F	74 °F	80 °F
Temperature -- End of Test	81 °F	81 °F	75 °F	75 °F	75 °F	75 °F	75 °F	75 °F	81 °F
Pressure -- On Test	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig
Pressure -- End of Test	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig	964 psig

Unrestrained Pipe

Sum:	Vo	4,282.95 gal 548,218 oz.	Vtp1	4,299.24 gal 550,302 oz.	Vtp2	4,298.72 gal 550,236 oz.
Vo Unrestrained	1,333 gal	1,173 gal				1,777 gal
Fwp 1	1.002954	1.002954				1.002954
Fpp 1	1.002651	1.003561				1.002651
Fpt 1	1.000364	1.000364				1.000364
Fwt 1	1.002418	1.002418				1.002418
Fpwt 1 = Fpt/Fwt	0.997951	0.997951				0.997951
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,337.67 gal	1,178.01 gal				1,784 gal
Fwp 2	1.002954	1.002954				1.002954
Fpp 2	1.002651	1.003561				1.002651
Fpt 2	1.000382	1.000382				1.000382
Fwt 2	1.002556	1.002556				1.002556
Fpwt = Fpt/Fwt	0.997832	0.997832				0.997832
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,337.51 gal	1,177.87 gal				1,783 gal

Restrained Pipe

Sum:	Vo	254,153.11 gal 32,531,598 oz.	Vtp1	255,242.78 gal 32,671,075 oz.	Vtp2	255,209.50 gal 32,666,816 oz.
Vo Restrained		147,733 gal	55,949 gal	5,240 gal	45,223 gal	5 gal
Fwp 1		1.002954	1.002954	1.002954	1.002954	1.002954
Fpp 1		1.002882	1.002441	1.001961	1.002535	1.000242
Fpt 1		1.000169	1.000169	1.000169	1.000169	1.000169
Fwt 1		1.001542	1.001542	1.001542	1.001542	1.001542
Fpwt 1 = Fpt/Fwt		0.998630	0.998630	0.998630	0.998630	0.998630
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		148,393 gal	56,174 gal	5,258 gal	45,409 gal	5 gal
Fwp 2		1.002954	1.002954	1.002954	1.002954	1.002954
Fpp 2		1.002886	1.002444	1.001964	1.002538	1.000245
Fpt 2		1.000182	1.000182	1.000182	1.000182	1.000182
Fwt 2		1.001688	1.001688	1.001688	1.001688	1.001688
Fpwt = Fpt/Fwt		0.998496	0.998496	0.998496	0.998496	0.998496
Vtp = Vo(Fwp)(Fpp)(Fpwt)		148,373 gal	56,167 gal	5,258 gal	45,404 gal	3 gal

Combined Pipe

Sum:	Vo	258,436.06 gal 33,079,816 oz.	Vtp1	259,542.01 gal 33,221,378 oz.	Vtp2	259,508.22 gal 33,217,053 oz.
1 °F Change	33.79 gal		4,325.15 oz.			

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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	30 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
2	26 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X65	1,434 psig	Steel	Arc Weld	DSAW
3	3,263 ft	Restrained	34.000 in.	0.3440 in.	API5L-X52	1,052 psig	Steel	Arc Weld	DSAW
4	1,245 ft	Restrained	34.000 in.	0.4060 in.	API5L-X60	1,433 psig	Steel	Arc Weld	DSAW
5	118 ft	Restrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW
6	896 ft	Restrained	36.000 in.	0.4140 in.	API5L-X65	1,495 psig	Steel	Arc Weld	DSAW
7	127 ft	Restrained	1.315 in.	0.1540 in.	API5L-Grade B	8,198 psig	Steel	Arc Weld	SM
8	18 ft	Restrained	2.375 in.	0.1540 in.	API5L-Grade B	4,539 psig	Steel	Arc Weld	SM
9	40 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW

Hydrostatic Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget Walnut Creek, CA 94598	414197305-T65
	Attention: Redacted	
Construction Company	Snelson	Job Number
Address	601 West State Street Sedro-Wooley, WA 98284	41474005 -T65A
	Attention: Redacted	
Hydrostatic Test Co.	Milbar Hydro-Test Inc.	Project No.
Address	P O Box 7701 Shreveport, La. 71137-7701	FY12-112
Test Section	PG&E T-65A L-300A, MP 449.706 - 450.83 From: 54+98 To: 0+00	
File Name	RCP 61362 - T-65A, L-300A, MP 449.706 - 450.83	

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	9/22/11 10:40 AM	Elevation at Test Point	460 ft	Min. Required Test Press At Test Point (1)	947.00 psig	Max. Allowable Test Press at Test Point (4)	979.60 psig
Time and Date Test Ended	9/22/11 6:55 PM	Max. Elevation in Test Section	460 ft	Min. Indicated Test Pressure (2)	963.00 psig	Max. Indicated Test Pressure (5)	965.00 psig
Actual Duration of Test	8 hours 15 minutes	Min. Elevation in Test Section	316 ft	Min. Test Pressure at Max. Elevation (3)	963.00 psig	Max. Test Pressure at Min. Elevation (6)	1,027.40 psig

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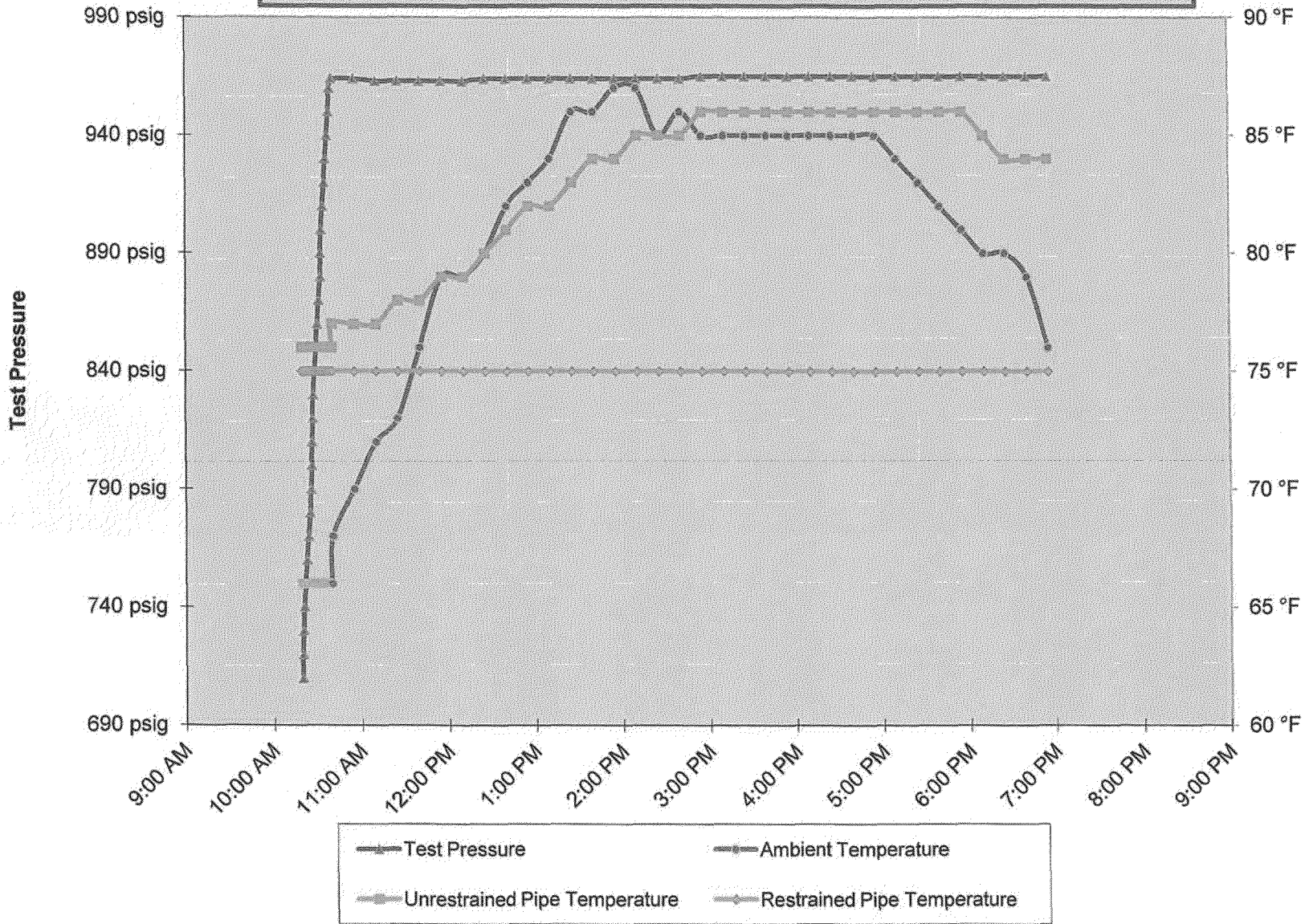
PG&E T-65A L-300A, MP 449.706 - 450.83

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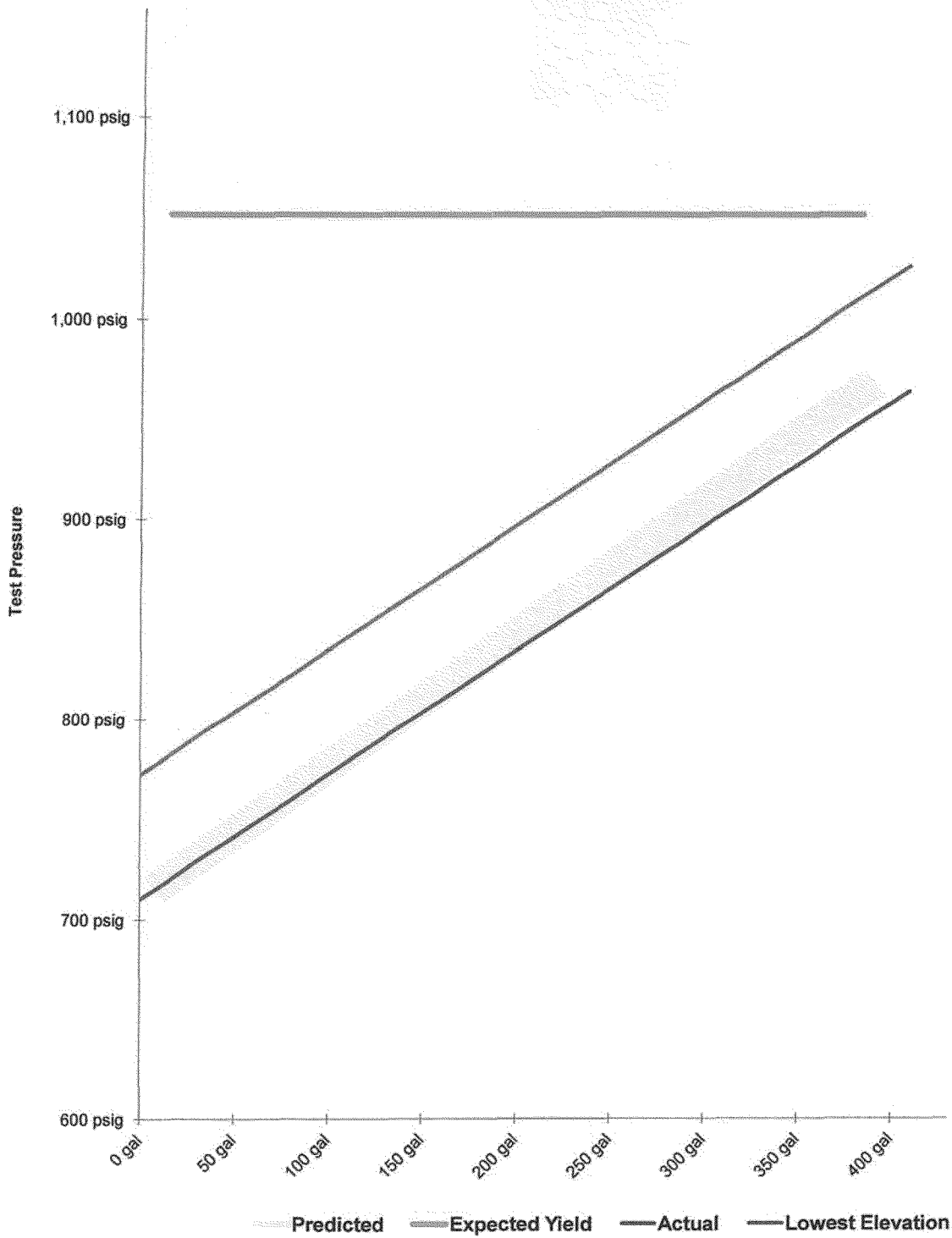
SEP 22 2011

PG&E

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Spike Pressure Test
Stress Strain Curve -- PG&E T-65A L-300A, MP 449.706 - 450.83



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PG & E

Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope		Spike Pressure Test Stress Strain Curve -- PG&E T-65A L-300A, MP 449.706 - 450.83	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted		
710 psig	0	0.00 gal		0	0.000	Pump gal per stroke	0.551 gal/stroke
720 psig	29	15.97 gal	15.08 gal	1.597	1.508	Pump Piston Diameter	3.000 in
730 psig	57	31.40 gal	30.17 gal	1.542	1.509	Pump Piston Stroke	6.00 in
740 psig	87	47.92 gal	45.26 gal	1.652	1.509	Pump Cylinders	3 ea
750 psig	116	63.89 gal	60.35 gal	1.597	1.509	Volume check gal per stroke	0.000 gal/stroke
760 psig	146	80.42 gal	75.43 gal	1.652	1.509	Volume Released (gallons)	0.00 gal
770 psig	174	95.84 gal	90.52 gal	1.542	1.509	Pressure Reduced (psi)	10 psi
780 psig	203	111.81 gal	105.61 gal	1.597	1.509	Maximum2	430 gal
790 psig	232	127.79 gal	120.70 gal	1.597	1.509	Minimum2	0 gal
800 psig	262	144.31 gal	135.80 gal	1.652	1.509	Maximum1	1,153 psig
810 psig	291	160.28 gal	150.89 gal	1.597	1.509	Minimum1	600 psig
820 psig	320	176.26 gal	165.98 gal	1.597	1.509	Gallons/Stroke Used	0.551 gal/stroke
830 psig	349	192.23 gal	181.08 gal	1.597	1.510	Predicted Gallons/Stroke	0.517 gal/stroke
840 psig	378	208.20 gal	196.18 gal	1.597	1.510	Pressure Increment	10 psi
850 psig	408	224.73 gal	211.27 gal	1.652	1.510	Max Pressure	964 psig
860 psig	437	240.70 gal	226.37 gal	1.597	1.510	Buried Pipe Temperature	64 °F
870 psig	466	256.67 gal	241.47 gal	1.597	1.510	Exposed Pipe Temperature	71 °F
880 psig	495	272.65 gal	256.57 gal	1.597	1.510	ASME B31.8 Appendix N-5	
890 psig	525	289.17 gal	271.67 gal	1.652	1.510		
900 psig	553	304.59 gal	286.77 gal	1.542	1.510	Average Actual Elastic Slope	1.610
910 psig	584	321.67 gal	301.87 gal	1.707	1.510	Average Predicted Elastic Slope	1.510
920 psig	612	337.09 gal	316.98 gal	1.542	1.510	Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	3.059
930 psig	642	353.61 gal	332.08 gal	1.652	1.510	Established Minimum Yield Pressure B31.8 N-5 (c)(2)	964 psig
940 psig	670	369.04 gal	347.19 gal	1.542	1.511	Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
950 psig	700	385.56 gal	362.29 gal	1.652	1.511	Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal
960 psig	730	402.08 gal	377.40 gal	1.652	1.511	<div style="border: 1px solid black; width: 150px; height: 40px; display: flex; align-items: center; justify-content: center;"> Redacted </div> <div style="text-align: right; margin-top: 10px;"> 9/22/2011 Date </div>	
964 psig	742	408.69 gal	383.44 gal	1.652	1.511		
964 psig		408.69 gal	383.44 gal	0.000	0.000		
964 psig		408.69 gal	383.44 gal	0.000	0.000		
964 psig		408.69 gal	383.44 gal	0.000	0.000		
964 psig		408.69 gal	383.44 gal	0.000	0.000		
964 psig		408.69 gal	383.44 gal	0.000	0.000		
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964 psig		408.69 gal	383.44 gal	0.000	0.000		

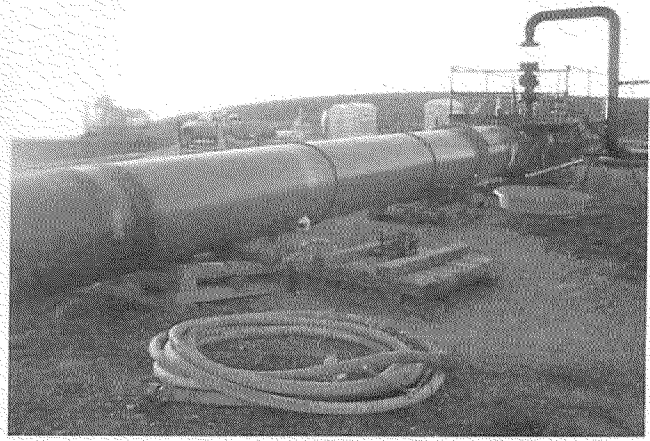
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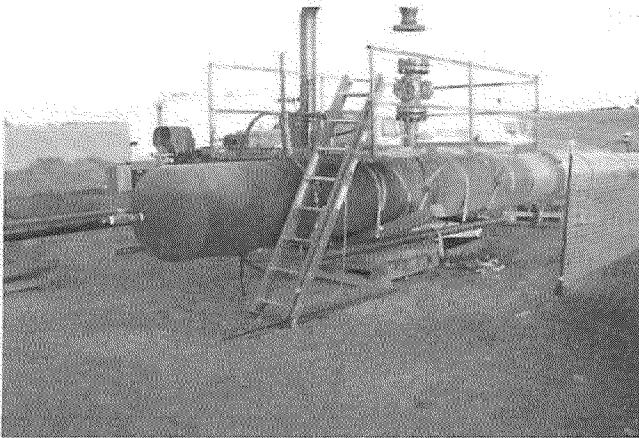
PG & E



Test T-65A Connect to Main Line



Test T-65A Test Head Connection



Test T-65A Test Head



Test T-65A Pressure Gauge



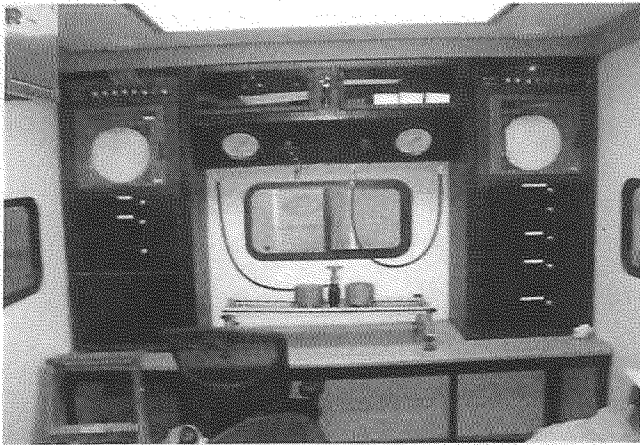
Test T-65A Restrained Temperature Recorder



Test T-65A Pump truck

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PG & E



Test T-65A Dead Weight & Recorders



Test T-65A Test End

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SEP 22 2011
PG & E



J-W MEASUREMENT COMPANY

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

CERTIFICATE OF CALIBRATION

Customer: MILBAR
BRANCH: Manufacturer: BARTON
Model No.: 242

INSTRUMENT: TEMP. RECORDER (150F) TR#39

SERIAL NUMBER: 242A-34945

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
BRANCH: Manufacturer: BARTON
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:

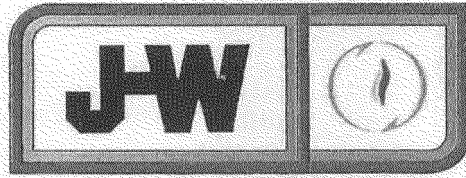
ACCURACY: +/-1.0% OF FULL SCALE

**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

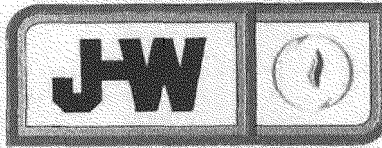
669 AERO DRIVE
SHREVEPORT, LA 71107
888-226-9110

CERTIFICATE OF CALIBRATION

Customer:	MILBAR	Manufacturer:	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 **MANF:** CHESELL
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).**

<u>TEST EQUIPMENT</u>	<u>MODEL</u>	<u>SERIAL NUMBER</u>
CHANDLER	5-1	16293 (accuracy±.05%F.S.)

CONTROL CO/TRACEABLE	4132	21271567 (accuracy±.1%R+2°<200°F)
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@ CHART RECORDER - CHESELL(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 - DYLIK TRANSMITTER (S/N 90729627R-1002)
AMBIENT TEMP. SCADA RANGE MANAGER
3.3.3.3.