RCP

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August 30, 2011

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AUG 30 2011
PG&E

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

Test Contractor:	Milbar Hydro-Test Inc. -- T-90B 8/30/2011
Asset Owner:	Pacific Gas and Electric Company -- 414197333-4
Construction Contractor:	Snelson -- 41474005-T90B
Test Section:	PG&E T-90B L-300B, MP 493.90 - 496.37
Test Date:	August 29, 2011
Certificate Number:	RCP 61362 - T-90B, L-300B, MP 493.90 - 496.37

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).

The test segment was subjected to a spike pressure test of 1113 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 8.68 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.68 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 1018 psig and the established MAOP is 679 psig.

Pressure decreased 85 psi during the test. 27,724.80 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 5,777.38 ounces, loss, which is equivalent to a 0.72 °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 loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.

Sincerely,

Redacted

cc. file

Hydrostatic Test Certification

RCP

Company	Pacific Gas and Electric Company	Number	414197333-4
Construction Co.	Snelson	Number	11474005-T90B
Hydro. Test Co.	Milbar Hydro-Test Inc.	Job No.	T-90B 8/30/2011
Test Section	PG&E T-90B L-300B, MP 493.90 - 496.37		
File Name	RCP 61362 - T-90B, L-300B, MP 493.90 - 496.37		

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AUG 30 2011

PG&E

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 29-Aug-11

Code of Federal Regulations, Title 49, Part 192, Subpart J (Cla

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-90B L-300B, MP 493.90 - 496.37		
From:	158+57	To:	287+67

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	34 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
2	11,658 ft	34.000 in.	0.438 in.	API5L-X52, DSAW, Arc Weld, Steel	1,338 psi
3	1,077 ft	34.000 in.	0.380 in.	API5L-X60, DSAW, Arc Weld, Steel	1,341 psi
4	121 ft	12.750 in.	0.500 in.	API5L-X42, SM, Arc Weld, Steel	3,294 psi
5	40 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
6	23 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi

Initial Test Conditions

Pressure at Test Point:	1,113 psig	Date/Time:	8/29/11 7:49 PM	Pipe Temperature Unrestrained:	77.0 °F
Ambient Temperature:	69.0 °F			Restrained:	76.0 °F
		Elevation @ Test Point:	113.0 ft	Location:	158+57
Pressure @ High Point (Cal/Measure):	1,104 psig	Elevation @ High Point:	134.0 ft	Location:	287+67
Pressure @ Low Point (Cal/Measure):	1,116 psig	Elevation @ Low Point:	105.0 ft	Location:	232+00

Final Test Conditions

Pressure at Test Point:	1,028 psig	Date/Time:	8/30/11 4:30 AM	Pipe Temperature Unrestrained:	71.0 °F
Ambient Temperature:	57.0 °F			Restrained:	76.0 °F
		Elevation @ Test Point:	113.0 ft	Location:	158+57
Pressure @ High Point (Cal/Measure):	1,019 psig	Elevation @ High Point:	134.0 ft	Location:	287+67
Pressure @ Low Point (Cal/Measure):	1,031 psig	Elevation @ Low Point:	105.0 ft	Location:	232+00

Total Fluid Injected:		Volume loss	
Total Fluid Withdrawn:	27724.80 fluid ounces		
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	(5,777.38) oz	loss	(0.0078)%	(0.718) °F equivalent

Test Duration: 8.68 hours

Minimum Test Pressure:	Test Point	1,028 psig	Max Elevation	1,019 psig	Min Elevation	1,031 psig
Maximum Test Pressure:		1,113 psig		1,104 psig		1,116 psig
% SMYS :				57.7%		83.4%
Test Segment Observed % SMYS :			Minimum	33.8%	Maximum	83.4%

Minimum Test Pressure (Calculated/Measured): 1,019 psig

Maximum Allowable Operating Pressure: DOT Part 192 | Test Factor= 1.50 | 679 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	The test segment was subjected to a spike pressure test of 1113 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 8.68 hour test duration period. No leaks were observed during the test period. The test section included 12,856 feet of buried and 97 feet of exposed pipe. Pressure lost 85 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment lost 6°F. 27,724.80 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 5,777.38 ounces, loss, which is equivalent to a 0.72 °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 loss is attributed to the error characteristic

Remarks

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30-Aug-11

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company		Job Number 414197333-4
Construction Co.	Snelson	COPY	Job Number 41474005-T90B
Testing Co.	Milbar Hydro-Test Inc.	AUG 30 2011	Project No. T-90B 8/30/2011
Test Section	PG&E T-90B L-300B, MP 493.90 - 496.37	PG&E	
File Name	RCP 61362 - T-90B, L-300B, MP 493.90 - 496.37		

Date 29-Aug-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
1	8/29/11	7:13 PM	760 psig	72 °F	78 °F	75 °F	Start Spike		
2	8/29/11	7:14 PM	770 psig	72 °F	78 °F	76 °F	Inject		3,807 oz.
3	8/29/11	7:15 PM	780 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
4	8/29/11	7:16 PM	790 psig	72 °F	78 °F	76 °F	Inject		4,089 oz.
5	8/29/11	7:17 PM	800 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
6	8/29/11	7:18 PM	810 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
7	8/29/11	7:19 PM	820 psig	72 °F	78 °F	76 °F	Inject		4,089 oz.
8	8/29/11	7:20 PM	830 psig	72 °F	78 °F	76 °F	Inject		4,512 oz.
9	8/29/11	7:21 PM	840 psig	72 °F	78 °F	76 °F	Inject		4,019 oz.
10	8/29/11	7:22 PM	850 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
11	8/29/11	7:23 PM	860 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
12	8/29/11	7:24 PM	870 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
13	8/29/11	7:25 PM	880 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
14	8/29/11	7:26 PM	890 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
15	8/29/11	7:27 PM	900 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
16	8/29/11	7:28 PM	910 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
17	8/29/11	7:29 PM	920 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
18	8/29/11	7:30 PM	930 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
19	8/29/11	7:31 PM	940 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
20	8/29/11	7:32 PM	950 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
21	8/29/11	7:33 PM	960 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
22	8/29/11	7:34 PM	970 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
23	8/29/11	7:35 PM	980 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
24	8/29/11	7:36 PM	990 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
25	8/29/11	7:37 PM	1,000 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
26	8/29/11	7:38 PM	1,010 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
27	8/29/11	7:39 PM	1,020 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
28	8/29/11	7:40 PM	1,030 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
29	8/29/11	7:41 PM	1,040 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
30	8/29/11	7:42 PM	1,050 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
31	8/29/11	7:43 PM	1,060 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
32	8/29/11	7:44 PM	1,070 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
33	8/29/11	7:45 PM	1,080 psig	72 °F	78 °F	76 °F	Inject		4,160 oz.
34	8/29/11	7:46 PM	1,090 psig	72 °F	78 °F	76 °F	Inject		4,301 oz.
35	8/29/11	7:47 PM	1,100 psig	72 °F	78 °F	76 °F	Inject		4,230 oz.
36	8/29/11	7:48 PM	1,110 psig	72 °F	77 °F	76 °F	Inject		4,230 oz.
37	8/29/11	7:49 PM	1,113 psig	69 °F	77 °F	76 °F	Inject		1,551 oz.
38	8/29/11	7:49 PM	1,113 psig	69 °F	77 °F	76 °F	On Test		
39	8/29/11	7:59 PM	1,113 psig	69 °F	77 °F	76 °F			
40	8/29/11	8:09 PM	1,112 psig	67 °F	75 °F	76 °F			
41	8/29/11	8:19 PM	1,112 psig	67 °F	75 °F	76 °F	End Spike		
42	8/29/11	8:20 PM	1,103 psig	67 °F	75 °F	76 °F	Bleed	3,283 oz.	
43	8/29/11	8:21 PM	1,093 psig	67 °F	75 °F	76 °F	Bleed	3,648 oz.	
44	8/29/11	8:22 PM	1,083 psig	67 °F	75 °F	76 °F	Bleed	3,648 oz.	

RCP

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company		Job Number 414197333-4
Construction Co.	Snelson	COPY	Job Number 41474005-T90B
Testing Co.	Millbar Hydro-Test Inc.	AUG 30 2011	Project No. T-90B 8/30/2011
Test Section	PG&E T-90B L-300B, MP 493.90 - 496.37	PG&E	
File Name	RCP 61362 - T-90B, L-300B, MP 493.90 - 496.37		

Date **29-Aug-11**

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe Unrestrained	Pipe Restrained	Comment	Bleed	Inject
45	8/29/11	8:23 PM	1,073 psig	67 °F	75 °F	76 °F	Bleed	3,648 oz.	
46	8/29/11	8:24 PM	1,063 psig	67 °F	75 °F	76 °F	Bleed	3,648 oz.	
47	8/29/11	8:25 PM	1,053 psig	67 °F	75 °F	76 °F	Bleed	3,648 oz.	
48	8/29/11	8:26 PM	1,043 psig	67 °F	75 °F	76 °F	Bleed	3,648 oz.	
49	8/29/11	8:27 PM	1,036 psig	67 °F	75 °F	76 °F	Bleed	2,554 oz.	
50	8/29/11	8:40 PM	1,035 psig	66 °F	74 °F	76 °F			
51	8/29/11	8:45 PM	1,035 psig	65 °F	74 °F	76 °F			
52	8/29/11	9:00 PM	1,035 psig	65 °F	74 °F	76 °F			
53	8/29/11	9:15 PM	1,035 psig	65 °F	73 °F	76 °F			
54	8/29/11	9:30 PM	1,035 psig	65 °F	73 °F	76 °F			
55	8/29/11	9:45 PM	1,034 psig	64 °F	73 °F	76 °F			
56	8/29/11	10:00 PM	1,034 psig	64 °F	73 °F	76 °F			
57	8/29/11	10:15 PM	1,034 psig	64 °F	73 °F	76 °F			
58	8/29/11	10:30 PM	1,033 psig	63 °F	73 °F	76 °F			
59	8/29/11	10:45 PM	1,033 psig	63 °F	73 °F	76 °F			
60	8/29/11	11:00 PM	1,033 psig	63 °F	73 °F	76 °F			
61	8/29/11	11:15 PM	1,033 psig	62 °F	72 °F	76 °F			
62	8/29/11	11:30 PM	1,032 psig	62 °F	72 °F	76 °F			
63	8/29/11	11:45 PM	1,032 psig	61 °F	72 °F	76 °F			
64	8/30/11	12:00 AM	1,032 psig	61 °F	72 °F	76 °F			
65	8/30/11	12:15 AM	1,032 psig	61 °F	72 °F	76 °F			
66	8/30/11	12:30 AM	1,031 psig	61 °F	72 °F	76 °F			
67	8/30/11	12:45 AM	1,031 psig	60 °F	72 °F	76 °F			
68	8/30/11	1:00 AM	1,031 psig	60 °F	72 °F	76 °F			
69	8/30/11	1:15 AM	1,031 psig	60 °F	72 °F	76 °F			
70	8/30/11	1:30 AM	1,031 psig	60 °F	72 °F	76 °F			
71	8/30/11	1:45 AM	1,030 psig	61 °F	72 °F	76 °F			
72	8/30/11	2:00 AM	1,030 psig	61 °F	72 °F	76 °F			
73	8/30/11	2:15 AM	1,030 psig	60 °F	71 °F	76 °F			
74	8/30/11	2:30 AM	1,030 psig	58 °F	71 °F	76 °F			
75	8/30/11	2:45 AM	1,029 psig	58 °F	71 °F	76 °F			
76	8/30/11	3:00 AM	1,029 psig	58 °F	71 °F	76 °F			
77	8/30/11	3:15 AM	1,029 psig	59 °F	71 °F	76 °F			
78	8/30/11	3:30 AM	1,029 psig	59 °F	71 °F	76 °F			
79	8/30/11	3:45 AM	1,029 psig	58 °F	71 °F	76 °F			
80	8/30/11	4:00 AM	1,028 psig	57 °F	71 °F	76 °F			
81	8/30/11	4:15 AM	1,028 psig	57 °F	71 °F	76 °F			
82	8/30/11	4:30 AM	1,028 psig	57 °F	71 °F	76 °F	End of Test		
							Spike Test		148,971.2 oz.
							Hydrostatic Test	27,724.8 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure:	1,113 psig
		Low Test Pressure:	1,028 psig

Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	414197333-4
Construction Co.	Snelson	Job Number	41474005-T90B
Hydro. Test Co.	Milbar Hydro-Test Inc.	Project No.	T-90B 8/30/2011
Test Section	PG&E T-90B L-300B, MP 493.90 - 496.37	WATER	
File Name	RCP 61362 - T-90B, L-300B, MP 493.90 - 496.37		

General Pipe Data

Description	Segment 1	2	3	4	5	6
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Restrained	Unrestrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	12.750 in.	34.000 in.	34.000 in.
Wall Thickness	0.500 in.	0.438 in.	0.380 in.	0.500 in.	0.500 in.	0.375 in.
Inside Diameter	33.000 in.	33.125 in.	33.240 in.	11.750 in.	33.000 in.	33.250 in.
Spec./Grade	API5L-X65	API5L-X52	API5L-X60	API5L-X42	API5L-X65	API5L-X65
Length Unrestrained	34 ft				40 ft	23 ft
Length Restrained		11,658 ft	1,077 ft	121 ft		
Temperature -- On Test	77 °F	76 °F	76.0 °F	76.0 °F	77.0 °F	77.0 °F
Temperature -- End of Test	71 °F	76 °F	76.0 °F	76.0 °F	71.0 °F	71.0 °F
Pressure -- On Test	1,113 psig	1,113 psig	1,113 psig	1,113 psig	1,113 psig	1,113 psig
Pressure -- End of Test	1,028 psig	1,028 psig	1,028 psig	1,028 psig	1,028 psig	1,028 psig

Unrestrained Pipe

Sum:	Vo	4,325.36 gal / 553,646 oz.	Vtp1	4,347.30 gal / 556,454 oz.	Vtp2	4,348.05 gal / 556,550 oz.

Vo Unrestrained	1.511 gal	1.777 gal	1.037 gal
Fwp 1	1.003412	1.003412	1.003412
Fpp 1	1.003061	1.003061	1.004112
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)	1.517.94 gal	1,785.81 gal	1,043.55 gal
Fwp 2	1.003150	1.003150	1.003150
Fpp 2	1.002827	1.002827	1.003798
Fpt 2	1.000200	1.000200	1.000200
Fwt 2	1.001170	1.001170	1.001170
Fpwt = Fpt/Fwt	0.999032	0.999032	0.999032
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,518.23 gal	1,786.15 gal	1,043.67 gal

Restrained Pipe

Sum:	Vo	571,141.66 gal / 73,106,133 oz.	Vtp1	573,677.53 gal / 73,430,723 oz.	Vtp2	573,415.04 gal / 73,397,125 oz.

Vo Unrestrained	521.909 gal	48.551 gal	682 gal
Fwp 1	1.003412	1.003412	1.003412
Fpp 1	1.002614	1.003011	1.000851
Fpt 1	1.000194	1.000194	1.000194
Fwt 1	1.001813	1.001813	1.001813
Fpwt 1 = Fpt/Fwt	0.998384	0.998384	0.998384
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	524.210 gal	48.784 gal	683 gal
Fwp 2	1.003150	1.003150	1.003150
Fpp 2	1.002419	1.002785	1.000790
Fpt 2	1.000194	1.000194	1.000194
Fwt 2	1.001813	1.001813	1.001813
Fpwt = Fpt/Fwt	0.998384	0.998384	0.998384
Vtp = Vo(Fwp)(Fpp)(Fpwt)	523.971 gal	48.761 gal	683 gal

Combined Pipe

Sum:	Vo	575,467.02 gal / 73,659,779 oz.	Vtp1	578,024.82 gal / 73,987,177 oz.	Vtp2	577,763.09 gal / 73,953,675 oz.

Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	414197333-4
Construction Co.	Snelson	Job Number	41474005-T90B
Hydro. Test Co.	Millbar Hydro-Test Inc.	Project No.	T-90B 8/30/2011
Test Section	PG&E T-90B L-300B, MP 493.90 - 496.37		WATER
File Name	RCP 61362 - T-90B, L-300B, MP 493.90 - 496.37		

General Pipe Data

Description	Segment 1	2	3	4	5	6
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Restrained	Unrestrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	12.750 in.	34.000 in.	34.000 in.
Wall Thickness	0.500 in.	0.438 in.	0.380 in.	0.500 in.	0.500 in.	0.375 in.
Inside Diameter	33.000 in.	33.125 in.	33.240 in.	11.750 in.	33.000 in.	33.250 in.
Spec./Grade	API5L-X65	API5L-X52	API5L-X60	API5L-X42	API5L-X65	API5L-X65
Length Unstrained	34.00 ft				40 ft	23 ft
Length Restrained		11,658 ft	1,077 ft	121 ft		
Temperature -- On Test	73 °F	75 °F	75 °F	75 °F	73 °F	73 °F
Temperature -- End of Test	74 °F	76 °F	76 °F	76 °F	74 °F	74 °F
Pressure -- On Test	1,070 psig	1,070 psig	1,070 psig	1,070 psig	1,070 psig	1,070 psig
Pressure -- End of Test	1,070 psig	1,070 psig	1,070 psig	1,070 psig	1,070 psig	1,070 psig

Unrestrained Pipe

Sum:	Vo	4,325.36 gal / 553,646 oz.	Vtp1	4,348.21 gal / 556,571 oz.		Vtp2	4,347.77 gal / 556,515 oz.
Vo Unrestrained	1,511 gal			1,777 gal	1,037 gal		
Fwp 1	1.003280			1.003280	1.003280		
Fpp 1	1.002943			1.002943	1.003953		
Fpt 1	1.000237			1.000237	1.000237		
Fwt 1	1.001423			1.001423	1.001423		
Fpwt 1 = Fpt/Fwt	0.998815			0.998815	0.998815		
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,518.27 gal			1,786.20 gal	1,043.74 gal		
Fwp 2	1.003280			1.003280	1.003280		
Fpp 2	1.002943			1.002943	1.003953		
Fpt 2	1.000255			1.000255	1.000255		
Fwt 2	1.001542			1.001542	1.001542		
Fpwt = Fpt/Fwt	0.998715			0.998715	0.998715		
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,518.12 gal			1,786.02 gal	1,043.63 gal		

Restrained Pipe

Sum:	Vo	571,141.66 gal / 73,106,133 oz.		Vtp1	573,607.12 gal / 73,421,712 oz.		Vtp2	573,544.72 gal / 73,413,724 oz.
Vo Restrained		521,909 gal	48,551 gal	682 gal				
Fwp 1		1.003280	1.003280	1.003280				
Fpp 1		1.002511	1.002893	1.000817				
Fpt 1		1.000182	1.000182	1.000182				
Fwt 1		1.001688	1.001688	1.001688				
Fpwt 1 = Fpt/Fwt		0.998496	0.998496	0.998496				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		524,146 gal	48,778 gal	683 gal				
Fwp 2		1.003280	1.003280	1.003280				
Fpp 2		1.002515	1.002897	1.000820				
Fpt 2		1.000194	1.000194	1.000194				
Fwt 2		1.001813	1.001813	1.001813				
Fpwt = Fpt/Fwt		0.998384	0.998384	0.998384				
Vtp = Vo(Fwp)(Fpp)(Fpwt)		524,089 gal	48,772 gal	683 gal				

Combined Pipe

Sum:	Vo	575,467.02 gal / 73,659,779 oz.	Vtp1	577,955.33 gal / 73,978,282 oz.	Vtp2	577,892.49 gal / 73,970,239 oz.
1 °F Change	62.84 gal	8,043.43 oz.				

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	34 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
2	11,658 ft	Restrained	34.000 in.	0.4375 in.	API5L-X52	1,338 psig	Steel	Arc Weld	DSAW
3	1,077 ft	Restrained	34.000 in.	0.3800 in.	API5L-X60	1,341 psig	Steel	Arc Weld	DSAW
4	121 ft	Restrained	12.750 in.	0.5000 in.	API5L-X42	3,294 psig	Steel	Arc Weld	SM
5	40 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
6	23 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X65	1,434 psig	Steel	Arc Weld	DSAW

Hydrostatic Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget	414197333-4
	Walnut Creek, CA 94598	
	Attention: Redacted	
Construction Company	Snelson	Job Number
Address	601 West State Street	41474005-T90B
	Sedro-Wooley, WA 98284	
	Attention: Redacted	
Hydrostatic Test Co.	Milbar Hydro-Test Inc.	Project No.
Address	P.O. Box 7701	T-90B 8/30/2011
	Shreveport, LA 71137-7701	
	Attention:	
Test Section	PG&E T-90B L-300B, MP 493.90 - 496.37	
	From: 158+57	
	To: 287+67	
File Name	RCP 61362 - T-90B, L-300B, MP 493.90 - 496.37	

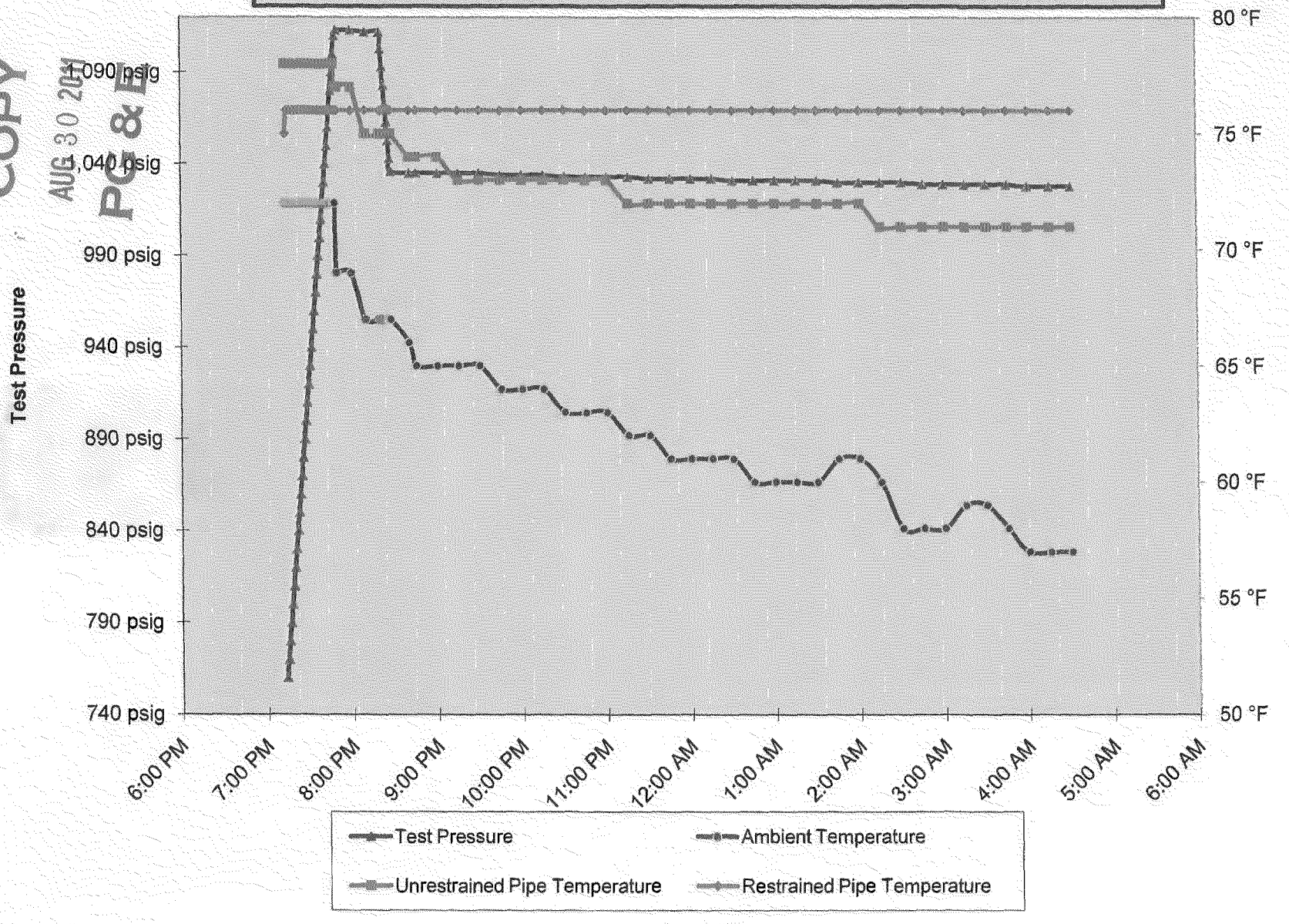
Part II – Test Data (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

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

Time and Date Test Pressure Reached	8/29/11 7:49 PM	Elevation at Test Point	113 ft	Min. Required Test Press At Test Point (1)	1,013.10 psig	Max. Allowable Test Press at Test Point (4)	1,116.53 psig
Time and Date Test Ended	8/30/11 4:30 AM	Max. Elevation in Test Section	134 ft	Min. Indicated Test Pressure (2)	1,028.00 psig	Max. Indicated Test Pressure (5)	1,113.00 psig
Actual Duration of Test	8 hours 41 minutes	Min. Elevation in Test Section	105 ft	Min. Test Pressure at Max. Elevation (3)	1,018.90 psig	Max. Test Pressure at Min. Elevation (6)	1,116.47 psig

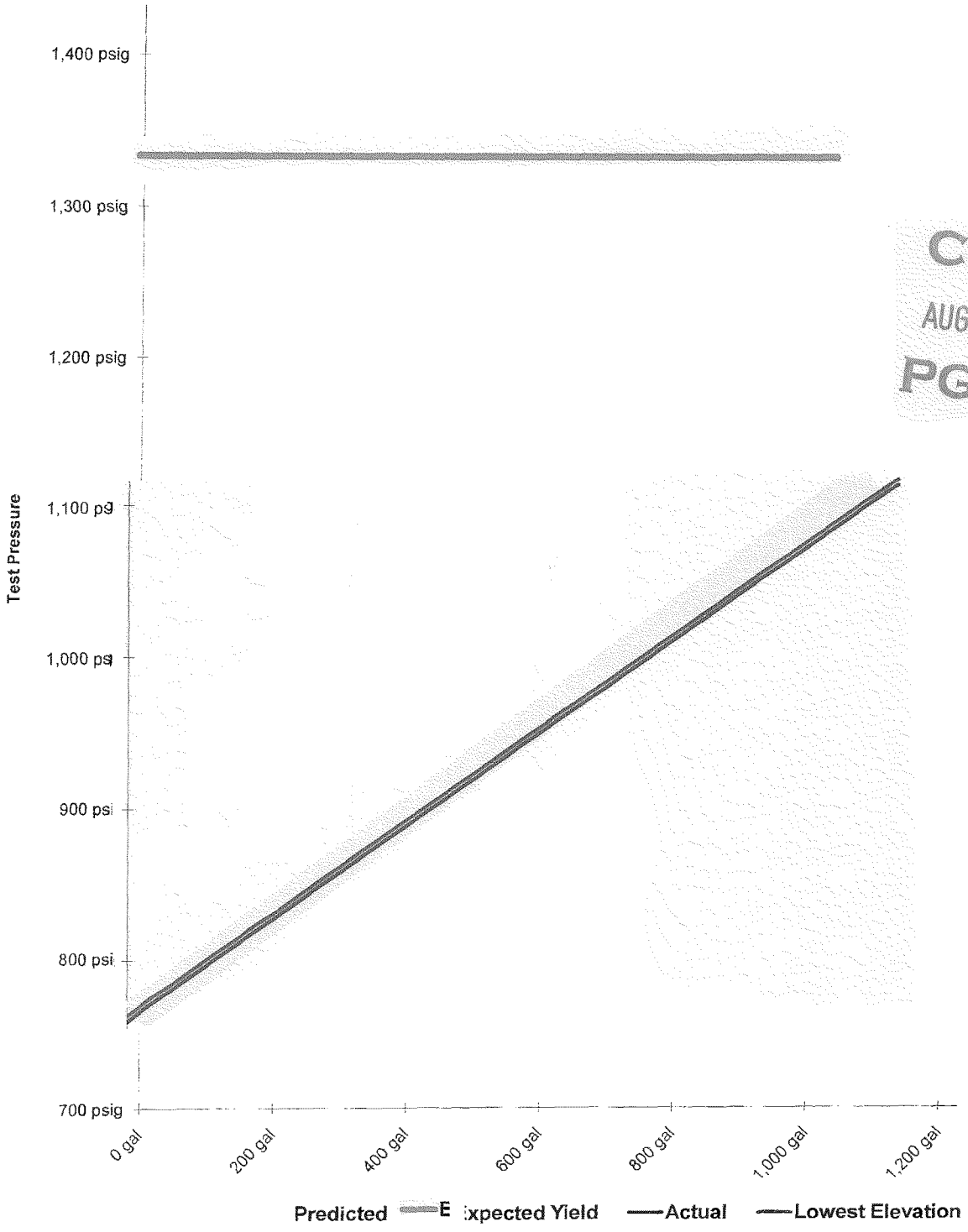
RCP

PG&E T-90B L-300B, MP 493.90 - 496.37



RCP

Spike Pressure Test
Stress Strain Curve -- PG&E T-90B L-300B, MP 493.90 - 496.37



Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
760 psig	0	0.00 gal		0	0.000
770 psig	54	29.74 gal	31.13 gal	2.974	3.113
780 psig	115	63.34 gal	62.27 gal	3.360	3.113
790 psig	173	95.29 gal	93.40 gal	3.195	3.114
800 psig	233	128.34 gal	124.54 gal	3.305	3.114
810 psig	294	161.93 gal	155.68 gal	3.360	3.114
820 psig	352	193.88 gal	186.82 gal	3.195	3.114
830 psig	416	229.13 gal	217.96 gal	3.525	3.114
840 psig	473	260.53 gal	249.11 gal	3.140	3.115
850 psig	532	293.02 gal	280.26 gal	3.250	3.115
860 psig	593	326.62 gal	311.41 gal	3.360	3.115
870 psig	652	359.12 gal	342.56 gal	3.250	3.115
880 psig	712	392.17 gal	373.71 gal	3.305	3.115
890 psig	772	425.22 gal	404.87 gal	3.305	3.115
900 psig	831	457.71 gal	436.02 gal	3.250	3.116
910 psig	891	490.76 gal	467.18 gal	3.305	3.116
920 psig	952	524.36 gal	498.34 gal	3.360	3.116
930 psig	1011	556.86 gal	529.50 gal	3.250	3.116
940 psig	1070	589.35 gal	560.67 gal	3.250	3.116
950 psig	1131	622.95 gal	591.84 gal	3.360	3.117
960 psig	1190	655.45 gal	623.00 gal	3.250	3.117
970 psig	1250	688.50 gal	654.17 gal	3.305	3.117
980 psig	1311	722.10 gal	685.35 gal	3.360	3.117
990 psig	1370	754.59 gal	716.52 gal	3.250	3.117
1,000 psig	1431	788.19 gal	747.70 gal	3.360	3.118
1,010 psig	1491	821.24 gal	778.87 gal	3.305	3.118
1,020 psig	1550	853.74 gal	810.05 gal	3.250	3.118
1,030 psig	1611	887.34 gal	841.23 gal	3.360	3.118
1,040 psig	1670	919.83 gal	872.42 gal	3.250	3.118
1,050 psig	1730	952.88 gal	903.60 gal	3.305	3.119
1,060 psig	1790	985.93 gal	934.79 gal	3.305	3.119
1,070 psig	1851	1,019.53 gal	965.98 gal	3.360	3.119
1,080 psig	1910	1,052.03 gal	997.17 gal	3.250	3.119
1,090 psig	1971	1,085.62 gal	1,028.37 gal	3.360	3.119
1,100 psig	2031	1,118.67 gal	1,059.56 gal	3.305	3.120
1,110 psig	2091	1,151.72 gal	1,090.76 gal	3.305	3.120
1,113 psig	2113	1,163.84 gal	1,100.12 gal	4.039	3.120
1,113 psig		1,163.84 gal	1,100.12 gal	0.000	0.000
1,113 psig		1,163.84 gal	1,100.12 gal	0.000	0.000
1,113 psig		1,163.84 gal	1,100.12 gal	0.000	0.000
1,113 psig		1,163.84 gal	1,100.12 gal	0.000	0.000
1,113 psig		1,163.84 gal	1,100.12 gal	0.000	0.000
1,113 psig		1,163.84 gal	1,100.12 gal	0.000	0.000
1,113 psig		1,163.84 gal	1,100.12 gal	0.000	0.000

Spike Pressure Test
Stress Strain Curve -- PG&E T-90B L-300B, MP 493.90 - 496.37

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	0.476 gal/stroke
Volume Released (gallons)	28.50 gal
Pressure Reduced (psi)	10 psi
Maximum2	1,230 gal
Minimum2	0 gal
Maximum1	1,439 psig
Minimum1	700 psig
Gallons/Stroke Used	0.551 gal/stroke
Predicted Gallons/Stroke	0.521 gal/stroke
Pressure Increment	10 psi
Max Pressure	1,113 psig
Buried Pipe Temperature	76 °F
Exposed Pipe Temperature	77 °F

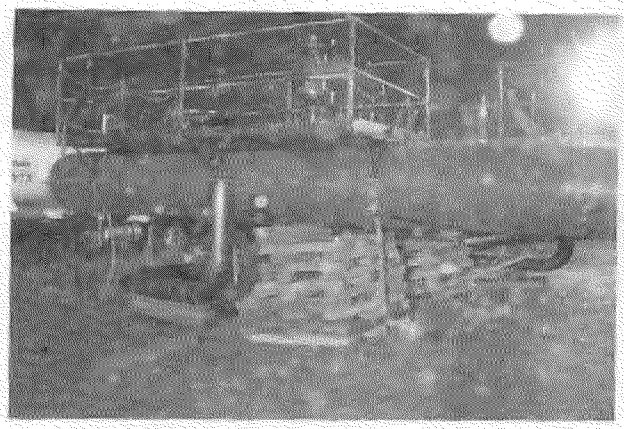
ASME B31.8 Appendix N-5

Average Actual Elastic Slope	3.291
Average Predicted Elastic Slope	3.117
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	6.252
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	1,113 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

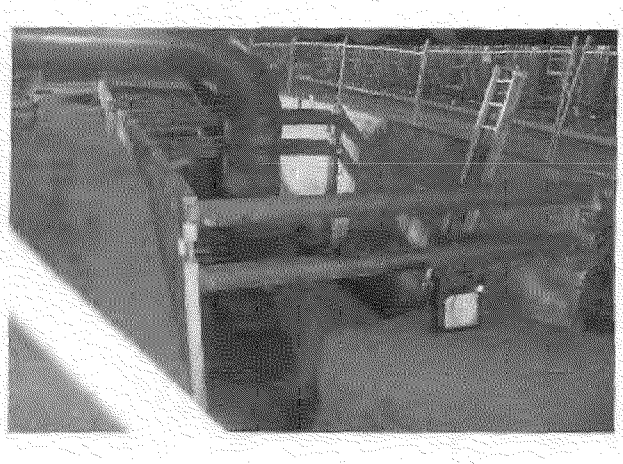
8/30/2011
Date

COPY
AUG 30 2011
PG&E

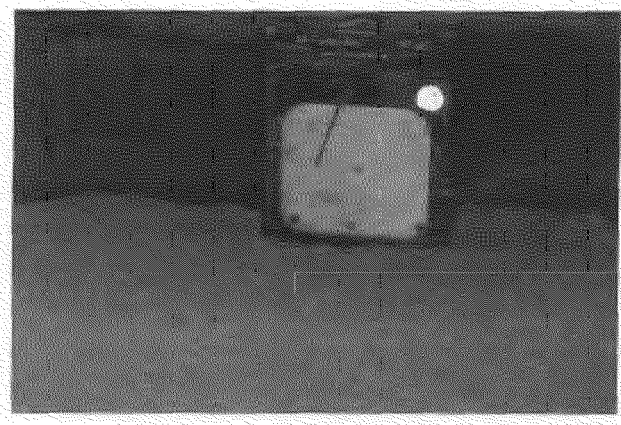


Test Location:Test Head T-90B

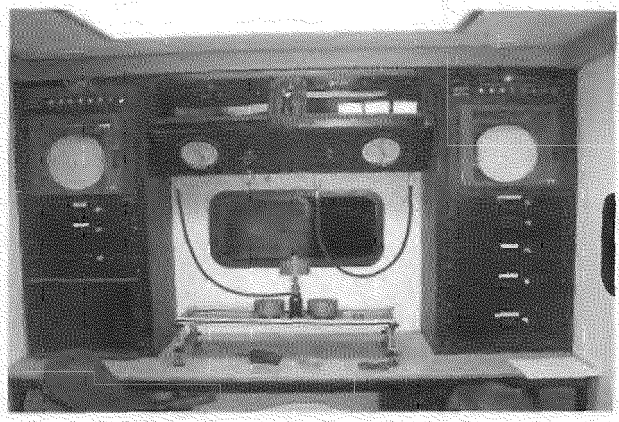
Test Location: Segment Header



Test Location: Pipeline Connect



Restrained Pipe Temp Recorder



Dead Weight and Temp/Press Chart Recorder

Pressure Chart Recorder

Injection pump