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August 22, 2011

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

Test Contractor:	Milbar hydro-test inc -- FY12-112
Asset Owner:	Pacific Gas and Electric Company -- 414197334-T81
Construction Contractor:	Snelson -- 41474005 -T81
Test Section:	PG&E T-81 L-300B, MP 256.66 - 257.5096
Test Date:	August 22, 2011
Certificate Number:	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C

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 1).

The test segment was subjected to a spike pressure test of 1042 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 8.42 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.42 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 961 psig and the established MAOP is 874 psig.

Pressure decreased 68 psi during the test. 9,715.20 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 1,864.91 ounces, loss, which is equivalent to a 0.54 °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,

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Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	414197334-T81
Construction Co.	Snelson	Job Number	41474005-T81
Hydro. Test Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096		
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 1) Test Date: 22-Aug-11

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-81 L-300B, MP 256.66 - 257.5096		
From:	45+64	To:	0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	26 ft	34.000 in.	0.505 in.	API5L-X60, DSAW, Arc Weld, Steel	1,782 psi
2	52 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi
3	4,510 ft	34.000 in.	0.344 in.	API5L-X52, DSAW, Arc Weld, Steel	1,052 psi
4	6 ft	34.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,147 psi
5	48 ft	34.000 in.	0.438 in.	API5L-X48, DSAW, Arc Weld, Steel	1,235 psi
6	40 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi

Initial Test Conditions

Pressure at Test Point:	1,042 psig	Date/Time:	8/22/11 9:35 AM	Pipe Temperature	
Ambient Temperature:	78.0 °F	Elevation @ Test Point:	420.0 ft	Unrestrained:	81.0 °F
Pressure @ High Point (Cal/Measure):	1,030 psig	Elevation @ High Point:	448.0 ft	Restrained:	83.0 °F
Pressure @ Low Point (Cal/Measure):	1,042 psig	Elevation @ Low Point:	420.0 ft	Location:	45+64
				Location:	0+00
				Location:	45+64

Final Test Conditions

Pressure at Test Point:	974 psig	Date/Time:	8/22/11 6:00 PM	Pipe Temperature	
Ambient Temperature:	90.0 °F	Elevation @ Test Point:	420.0 ft	Unrestrained:	86.0 °F
Pressure @ High Point (Cal/Measure):	962 psig	Elevation @ High Point:	448.0 ft	Restrained:	83.0 °F
Pressure @ Low Point (Cal/Measure):	974 psig	Elevation @ Low Point:	420.0 ft	Location:	45+64
				Location:	0+00
				Location:	45+64

Total Fluid Injected:		Volume loss	
Total Fluid Withdrawn:	9715.20 fluid ounces		
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	(1,864.91) oz	loss	(0.0069)% (0.636) °F equivalent

Test Duration: 8.42 hours

Minimum Test Pressure:	974 psig	962 psig	974 psig	
Maximum Test Pressure:	1,042 psig	1,030 psig	1,042 psig	
% SMYS:		83.4%	99.0%	
Test Segment Observed % SMYS:	Minimum	54.5%	Maximum	99.0%

Minimum Test Pressure (Calculated/Measured): 962 psig

Maximum Allowable Operating Pressure: DOT Part 192 Test Factor= 1.10 874 psig

Were leaks observed? **No** Explain:

Acceptable Hydrostatic Test? **Yes**

The test segment was subjected to a spike pressure test of 1042 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 8.42 hour test duration period.

No leaks were observed during the test period. The test section included 4,564 feet of buried and 118 feet of exposed pipe. Pressure lost 68 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment gained 5°F.

9,715.20 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 1,864.91 ounces, loss, which is equivalent to a 0.54 °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.

Remarks

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	414197334-T81
Construction Co.	Snelson	Job Number	41474005 -T81
Testing Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096		
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		

Date	22-Aug-11	Test Log
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Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
1	8/22/11	9:10 AM	782 psig	75 °F	80 °F	83 °F	Start Spike		
2	8/22/11	9:11 AM	792 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
3	8/22/11	9:12 AM	802 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
4	8/22/11	9:13 AM	812 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
5	8/22/11	9:14 AM	822 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
6	8/22/11	9:15 AM	832 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
7	8/22/11	9:16 AM	842 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
8	8/22/11	9:17 AM	852 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
9	8/22/11	9:18 AM	862 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
10	8/22/11	9:19 AM	872 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
11	8/22/11	9:20 AM	882 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
12	8/22/11	9:21 AM	892 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
13	8/22/11	9:22 AM	902 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
14	8/22/11	9:23 AM	912 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
15	8/22/11	9:24 AM	922 psig	75 °F	80 °F	83 °F	Inject		1,833 oz.
16	8/22/11	9:25 AM	932 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
17	8/22/11	9:26 AM	942 psig	75 °F	80 °F	83 °F	Inject		1,833 oz.
18	8/22/11	9:27 AM	952 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
19	8/22/11	9:28 AM	962 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
20	8/22/11	9:29 AM	972 psig	75 °F	80 °F	83 °F	Inject		1,833 oz.
21	8/22/11	9:30 AM	982 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
22	8/22/11	9:31 AM	992 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
23	8/22/11	9:32 AM	1,002 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
24	8/22/11	9:33 AM	1,012 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
25	8/22/11	9:34 AM	1,022 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
26	8/22/11	9:34 AM	1,032 psig	76 °F	80 °F	83 °F	Inject		1,763 oz.
27	8/22/11	9:34 AM	1,042 psig	77 °F	80 °F	83 °F	Inject		1,763 oz.
28	8/22/11	9:35 AM	1,042 psig	78 °F	81 °F	83 °F	On Test		
29	8/22/11	9:45 AM	1,041 psig	79 °F	82 °F	83 °F			
30	8/22/11	9:55 AM	1,041 psig	80 °F	83 °F	83 °F			
31	8/22/11	10:05 AM	1,041 psig	82 °F	83 °F	83 °F	End Spike		
32	8/22/11	10:06 AM	1,031 psig	82 °F	83 °F	83 °F	Bleed	1,472 oz.	
33	8/22/11	10:07 AM	1,021 psig	82 °F	83 °F	83 °F	Bleed	1,472 oz.	
34	8/22/11	10:08 AM	1,011 psig	82 °F	83 °F	83 °F	Bleed	1,472 oz.	
35	8/22/11	10:09 AM	1,001 psig	82 °F	84 °F	83 °F	Bleed	1,472 oz.	
36	8/22/11	10:10 AM	991 psig	82 °F	84 °F	83 °F	Bleed	1,472 oz.	
37	8/22/11	10:11 AM	981 psig	82 °F	84 °F	83 °F	Bleed	1,472 oz.	
38	8/22/11	10:12 AM	975 psig	82 °F	84 °F	83 °F	Bleed	883 oz.	
39	8/22/11	10:25 AM	975 psig	83 °F	84 °F	83 °F			
40	8/22/11	10:30 AM	975 psig	85 °F	83 °F	83 °F			
41	8/22/11	10:45 AM	975 psig	86 °F	85 °F	83 °F	Warm		
42	8/22/11	11:00 AM	974 psig	86 °F	85 °F	83 °F			
43	8/22/11	11:15 AM	974 psig	86 °F	85 °F	83 °F			

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	414197334-T81
Construction Co.	Snelson	Job Number	41474005 -T81
Testing Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096		
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		

Date	22-Aug-11	Test Log
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Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
44	8/22/11	11:30 AM	974 psig	86 °F	85 °F	83 °F			
45	8/22/11	11:45 AM	974 psig	86 °F	86 °F	83 °F			
46	8/22/11	12:00 PM	974 psig	86 °F	85 °F	83 °F			
47	8/22/11	12:15 PM	974 psig	86 °F	86 °F	83 °F			
48	8/22/11	12:30 PM	974 psig	86 °F	86 °F	83 °F			
49	8/22/11	12:45 PM	974 psig	86 °F	86 °F	83 °F			
50	8/22/11	1:00 PM	974 psig	86 °F	86 °F	83 °F	Warm		
51	8/22/11	1:15 PM	974 psig	87 °F	88 °F	83 °F			
52	8/22/11	1:30 PM	974 psig	87 °F	88 °F	83 °F			
53	8/22/11	1:45 PM	974 psig	88 °F	88 °F	83 °F			
54	8/22/11	2:00 PM	974 psig	88 °F	89 °F	83 °F			
55	8/22/11	2:15 PM	974 psig	89 °F	89 °F	83 °F			
56	8/22/11	2:30 PM	974 psig	89 °F	89 °F	83 °F			
57	8/22/11	2:45 PM	974 psig	90 °F	88 °F	83 °F			
58	8/22/11	3:00 PM	974 psig	90 °F	88 °F	83 °F			
59	8/22/11	3:15 PM	974 psig	90 °F	88 °F	83 °F			
60	8/22/11	3:30 PM	974 psig	90 °F	88 °F	83 °F			
61	8/22/11	3:45 PM	974 psig	90 °F	88 °F	83 °F			
62	8/22/11	4:00 PM	974 psig	90 °F	88 °F	83 °F			
63	8/22/11	4:15 PM	974 psig	90 °F	88 °F	83 °F			
64	8/22/11	4:30 PM	974 psig	90 °F	88 °F	83 °F	Warm		
65	8/22/11	4:45 PM	974 psig	90 °F	87 °F	83 °F			
66	8/22/11	5:00 PM	974 psig	90 °F	86 °F	83 °F			
67	8/22/11	5:15 PM	974 psig	90 °F	86 °F	83 °F			
68	8/22/11	5:30 PM	974 psig	90 °F	86 °F	83 °F			
69	8/22/11	5:45 PM	974 psig	90 °F	86 °F	83 °F			
70	8/22/11	6:00 PM	974 psig	90 °F	86 °F	83 °F	End of Test		

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Spike Test	45,614.9 oz.
Hydrostatic Test	9,715.2 oz.

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	<table border="1"> <tr> <td>High Test Pressure:</td> <td>1,042 psig</td> </tr> <tr> <td>Low Test Pressure:</td> <td>974 psig</td> </tr> </table>	High Test Pressure:	1,042 psig	Low Test Pressure:	974 psig
High Test Pressure:	1,042 psig					
Low Test Pressure:	974 psig					



Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	414197334-T81
Construction Co.	Snelson	Job Number	41474005-T81
Hydro. Test Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096	WATER	
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		

General Pipe Data

Description	Segment					
	1	2	3	4	5	6
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.505 in.	0.375 in.	0.344 in.	0.375 in.	0.438 in.	0.500 in.
Inside Diameter	32.990 in.	33.250 in.	33.312 in.	33.250 in.	33.125 in.	33.000 in.
Spec./Grade	API5L-X60	API5L-X65	API5L-X52	API5L-X52	API5L-X48	API5L-X65
Length Unrestrained	26 ft	52 ft				40 ft
Length Restrained			4,510 ft	6 ft	48 ft	
Temperature -- On Test	81 °F	81 °F	83.0 °F	83.0 °F	83.0 °F	81.0 °F
Temperature -- End of Test	86 °F	86 °F	83.0 °F	83.0 °F	83.0 °F	86.0 °F
Pressure -- On Test	1,042 psig	1,042 psig	1,042 psig	1,042 psig	1,042 psig	1,042 psig
Pressure -- End of Test	974 psig	974 psig	974 psig	974 psig	974 psig	974 psig

Unrestrained Pipe

Sum:	Vo	5,277.31 gal 675,495 oz.		Vtp1	5,300.10 gal 678,412 oz.		Vtp2	5,294.02 gal 677,635 oz.	
Vo Unrestrained	1,155 gal	2,346 gal						1,777 gal	
Fwp 1	1.003193	1.003193						1.003193	
Fpp 1	1.002836	1.003850						1.002866	
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)	1,158.96 gal	2,356.98 gal						1,784.15 gal	
Fwp 2	1.002984	1.002984						1.002984	
Fpp 2	1.002651	1.003598						1.002679	
Fpt 2	1.000473	1.000473						1.000473	
Fwt 2	1.003373	1.003373						1.003373	
Fpwt = Fpt/Fwt	0.997110	0.997110						0.997110	
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,157.67 gal	2,354.20 gal						1,782.16 gal	

Restrained Pipe

Sum:	Vo	206,610.76 gal 26,446,177 oz.		Vtp1	207,383.63 gal 26,545,105 oz.		Vtp2	207,299.23 gal 26,534,302 oz.	
Vo Unrestrained		204,191 gal		271 gal	2,149 gal				
Fwp 1		1.003193		1.003193	1.003193				
Fpp 1		1.003144		1.002885	1.002476				
Fpt 1		1.000278		1.000278	1.000278				
Fwt 1		1.002868		1.002868	1.002868				
Fpwt 1 = Fpt/Fwt		0.997417		0.997417	0.997417				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		204,957 gal		272 gal	2,155 gal				
Fwp 2		1.002984		1.002984	1.002984				
Fpp 2		1.002944		1.002702	1.002320				
Fpt 2		1.000278		1.000278	1.000278				
Fwt 2		1.002868		1.002868	1.002868				
Fpwt = Fpt/Fwt		0.997417		0.997417	0.997417				
Vtp = Vo(Fwp)(Fpp)(Fpwt)		204,873 gal		271 gal	2,155 gal				

Combined Pipe

Sum:	Vo	211,888.07 gal 27,121,673 oz.		Vtp1	212,683.72 gal 27,223,517 oz.		Vtp2	212,593.26 gal 27,211,937 oz.	
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Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	414197334-T81
Construction Co.	Snelson	Job Number	41474005-T81
Hydro. Test Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096	WATER	
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		

Description	General Pipe Data						Segment					
	1	2	3	4	5	6						
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Unrestrained						
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.						
Wall Thickness	0.505 in.	0.375 in.	0.344 in.	0.375 in.	0.438 in.	0.500 in.						
Inside Diameter	32.990 in.	33.250 in.	33.312 in.	33.250 in.	33.125 in.	33.000 in.						
Spec./Grade	API5L-X60	API5L-X65	API5L-X52	API5L-X52	API5L-X48	API5L-X65						
Length Unstrained	26.00 ft	52.00 ft				40 ft						
Length Restrained			4,510 ft	6 ft	48 ft							
Temperature -- On Test	83 °F	83 °F	82 °F	82 °F	82 °F	83 °F						
Temperature -- End of Test	84 °F	84 °F	83 °F	83 °F	83 °F	84 °F						
Pressure -- On Test	1,008 psig	1,008 psig	1,008 psig	1,008 psig	1,008 psig	1,008 psig						
Pressure -- End of Test	1,008 psig	1,008 psig	1,008 psig	1,008 psig	1,008 psig	1,008 psig						
Unrestrained Pipe												
Sum:	Vo	5,277.31 gal 675,495 oz.		Vtp1	5,297.52 gal 678,082 oz.		Vtp2	5,296.69 gal 677,976 oz.				
Vo Unrestrained	1,155 gal	2,346 gal						1,777 gal				
Fwp 1	1.003089	1.003089						1.003089				
Fpp 1	1.002744	1.003724						1.002772				
Fpt 1	1.000419	1.000419						1.000419				
Fwt 1	1.002868	1.002868						1.002868				
Fpwt 1 = Fpt/Fwt	0.997557	0.997557						0.997557				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,158.42 gal	2,355.79 gal						#####				
Fwp 2	1.003089	1.003089						1.003089				
Fpp 2	1.002744	1.003724						1.002772				
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)	1,158.23 gal	2,355.43 gal						#####				
Restrained Pipe												
Sum:	Vo	206,610.76 gal 26,446,177 oz.		Vtp1	207,367.80 gal 26,543,079 oz.		Vtp2	207,341.43 gal 26,539,703 oz.				
Vo Restrained		204,191 gal		271 gal	2,149 gal							
Fwp 1		1.003089		1.003089	1.003089							
Fpp 1		1.003040		1.002790	1.002394							
Fpt 1		1.000266		1.000266	1.000266							
Fwt 1		1.002725		1.002725	1.002725							
Fpwt 1 = Fpt/Fwt		0.997548		0.997548	0.997548							
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		204,941 gal		272 gal	2,155 gal							
Fwp 2		1.003089		1.003089	1.003089							
Fpp 2		1.003044		1.002794	1.002398							
Fpt 2		1.000278		1.000278	1.000278							
Fwt 2		1.002868		1.002868	1.002868							
Fpwt = Fpt/Fwt		0.997417		0.997417	0.997417							
Vtp = Vo(Fwp)(Fpp)(Fpwt)		204,915 gal		272 gal	2,155 gal							
Combined Pipe												
Sum:	Vo	211,888.07 gal 27,121,673 oz.		Vtp1	212,665.32 gal 27,221,161 oz.		Vtp2	212,638.12 gal 27,217,679 oz.				
1 °F Change	27.21 gal	3,482.49 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	26 ft	Unrestrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW
2	52 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X65	1,434 psig	Steel	Arc Weld	DSAW
3	4,510 ft	Restrained	34.000 in.	0.3440 in.	API5L-X52	1,052 psig	Steel	Arc Weld	DSAW
4	6 ft	Restrained	34.000 in.	0.3750 in.	API5L-X52	1,147 psig	Steel	Arc Weld	DSAW
5	48 ft	Restrained	34.000 in.	0.4375 in.	API5L-X48	1,235 psig	Steel	Arc Weld	DSAW
6	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 Attention: Scott Clapp	414197334-T81
Construction Company	Snelson	Job Number
Address	601 West State Street Sedro-Wooley, WA 98284 Attention: Jeff Elliot	41474005-T81
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-81 L-300B, MP 256.66 - 257.5096 From: 45+64 To: 0+00	
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C	

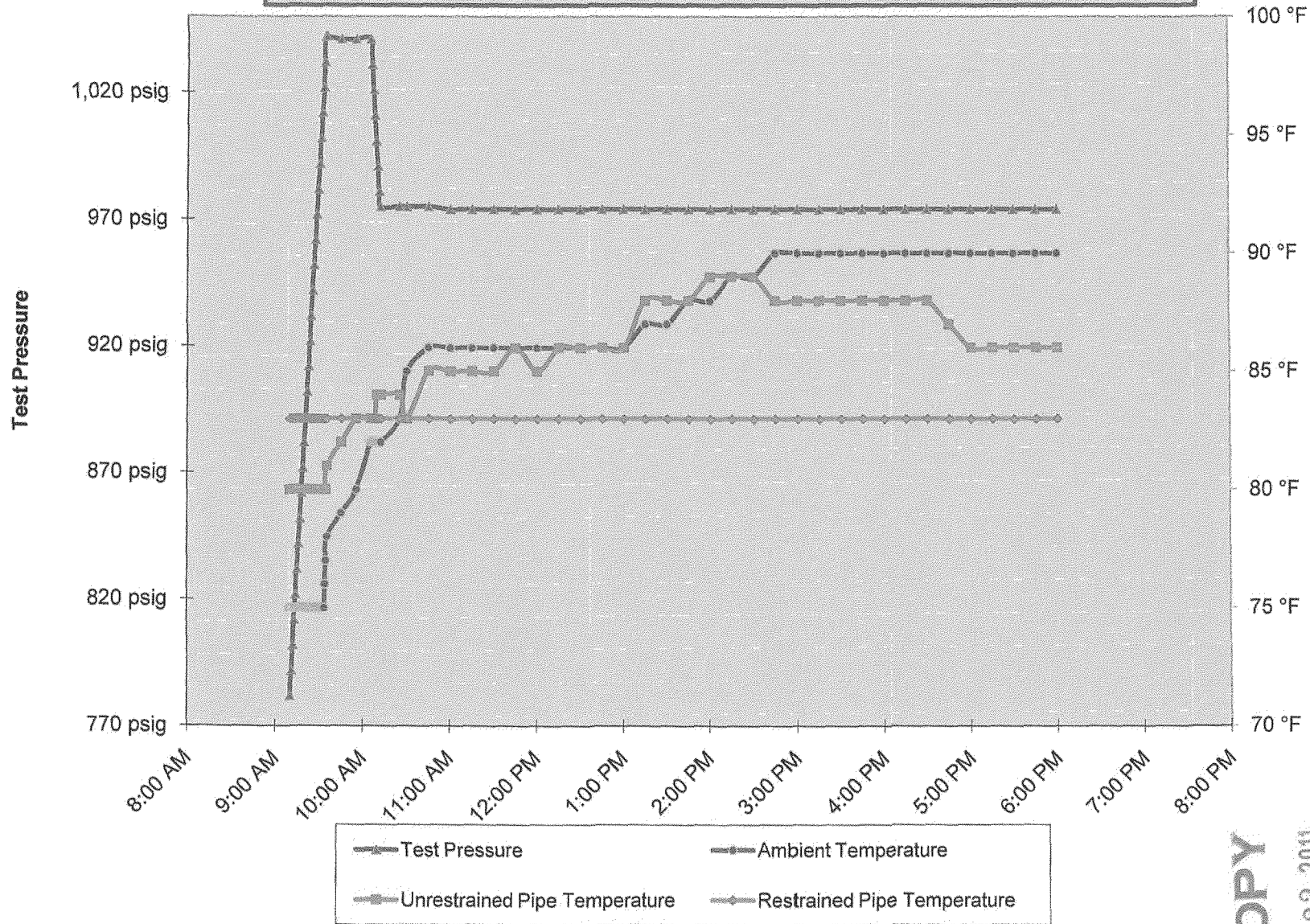
Part II – Test Data (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)				Note: Minimum test pressure and duration are not to be charged without written approval.			
Time and Date Test Pressure Reached	8/22/11 9:35 AM	Elevation at Test Point	420 ft	Min. Required Test Press At Test Point (1)	959.13 psig	Max. Allowable Test Press at Test Point (4)	1,042.00 psig
Time and Date Test Ended	8/22/11 6:00 PM	Max. Elevation in Test Section	448 ft	Min. Indicated Test Pressure (2)	974.00 psig	Max. Indicated Test Pressure (5)	1,042.00 psig
Actual Duration of Test	8 hours 25 minutes	Min. Elevation in Test Section	420 ft	Min. Test Pressure at Max. Elevation (3)	961.87 psig	Max. Test Pressure at Min. Elevation (6)	1,042.00 psig

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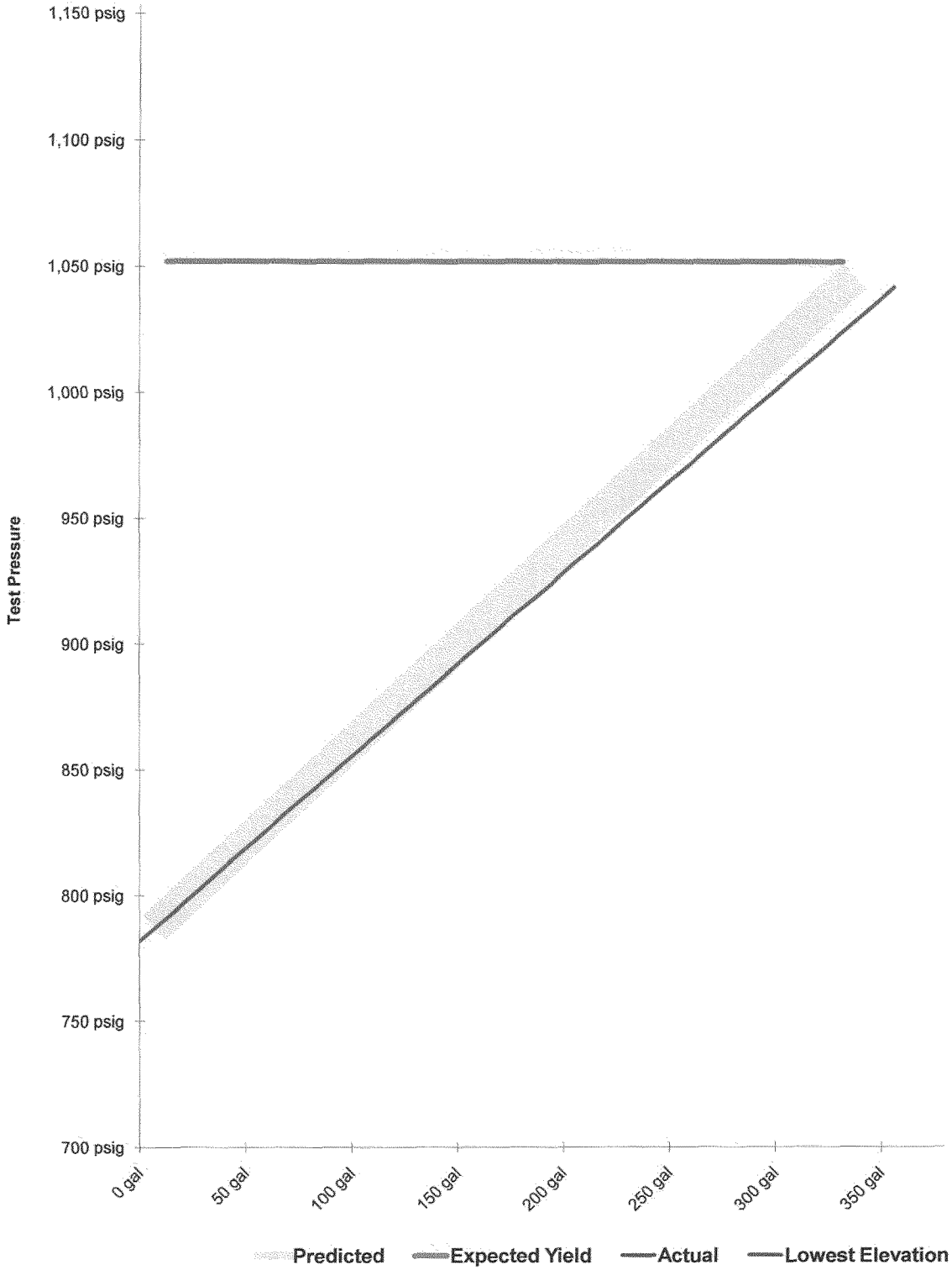
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PG&E T-81 L-300B, MP 256.66 - 257.5096

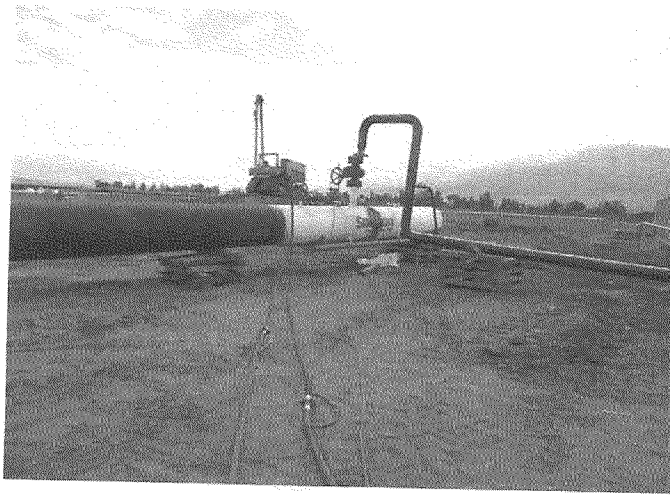


**Spike Pressure Test
Stress Strain Curve -- PG&E T-81 L-300B, MP 256.66 - 257.5096**



Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope		Spike Pressure Test Stress Strain Curve -- PG&E T-81 L-300B, MP 256.66 - 257.5096	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted		
782 psig	0	0.00 gal		0	0.000	Pump gal per stroke	0.551 gal/stroke
792 psig	25	13.77 gal	12.75 gal	1.377	1.275	Pump Piston Diameter	3.000 in
802 psig	50	27.54 gal	25.51 gal	1.377	1.276	Pump Piston Stroke	6.00 in
812 psig	74	40.76 gal	38.27 gal	1.322	1.276	Pump Cylinders	3 ea
822 psig	99	54.53 gal	51.02 gal	1.377	1.276	Volume check gal per stroke	0.462 gal/stroke
832 psig	123	67.75 gal	63.78 gal	1.322	1.276	Volume Released (gallons)	11.50 gal
842 psig	148	81.52 gal	76.54 gal	1.377	1.276	Pressure Reduced (psi)	10 psi
852 psig	173	95.29 gal	89.30 gal	1.377	1.276	Maximum2	380 gal
862 psig	198	109.06 gal	102.06 gal	1.377	1.276	Minimum2	0 gal
872 psig	223	122.83 gal	114.82 gal	1.377	1.276	Maximum1	1,153 psig
882 psig	248	136.60 gal	127.59 gal	1.377	1.276	Minimum1	700 psig
892 psig	272	149.82 gal	140.35 gal	1.322	1.276	Gallons/Stroke Used	0.551 gal/stroke
902 psig	297	163.59 gal	153.11 gal	1.377	1.276	Predicted Gallons/Stroke	0.513 gal/stroke
912 psig	322	177.36 gal	165.88 gal	1.377	1.276	Pressure Increment	10 psi
922 psig	348	191.68 gal	178.64 gal	1.432	1.277	Max Pressure	1,042 psig
932 psig	372	204.90 gal	191.41 gal	1.322	1.277		
942 psig	398	219.22 gal	204.17 gal	1.432	1.277	Buried Pipe Temperature	83 °F
952 psig	422	232.44 gal	216.94 gal	1.322	1.277		
962 psig	447	246.21 gal	229.71 gal	1.377	1.277	Exposed Pipe Temperature	82 °F
972 psig	473	260.53 gal	242.48 gal	1.432	1.277		
982 psig	497	273.75 gal	255.25 gal	1.322	1.277	ASME B31.8 Appendix N-5	
992 psig	522	287.52 gal	268.02 gal	1.377	1.277		
1,002 psig	547	301.29 gal	280.79 gal	1.377	1.277	Average Actual Elastic Slope	1.371
1,012 psig	572	315.06 gal	293.56 gal	1.377	1.277		
1,022 psig	597	328.83 gal	306.34 gal	1.377	1.277	Average Predicted Elastic Slope	1.276
1,032 psig	622	342.60 gal	319.11 gal	1.377	1.277		
1,042 psig	647	356.37 gal	331.88 gal	1.377	1.277	Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	2.604
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000	Established Minimum Yield Pressure B31.8 N-5 (c)(2)	1,042 psig
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000	Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000	Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000	<div style="border: 1px solid black; display: inline-block; padding: 5px;">Redacted</div> <div style="text-align: right; margin-top: 10px;"> <u>8-22-11</u> Date </div>	
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		

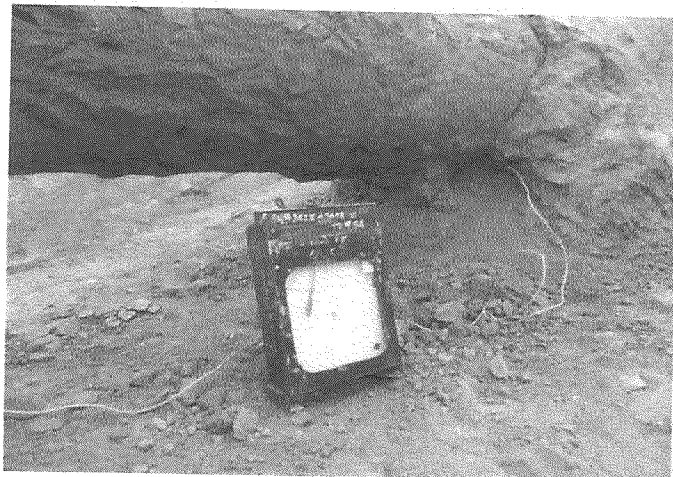
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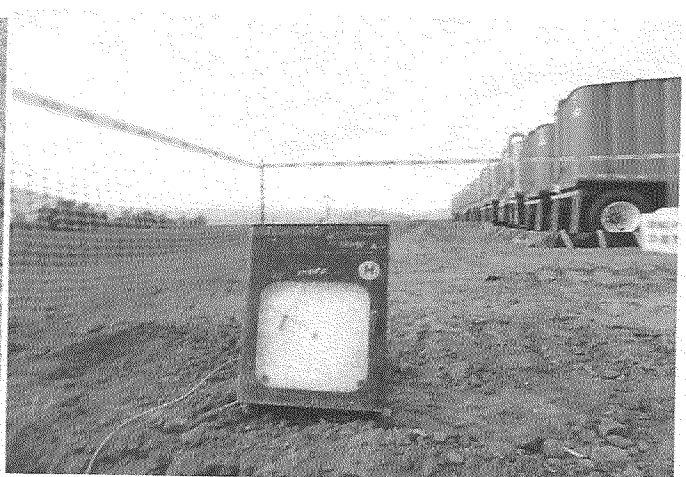
T-81 Test Head



T-81 Test Head



T-81 Alternate Rest. Temp. Rec.
T-81 Unrestrained Temp. Rec.



T-81 Restrained Temp. Rec.

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Hydrostatic Test Log Sheet

Owner Company	PACIFIC GAS & ELECTRIC Co.	Job Number	414197334-T-81
Construction Co.	SNELSON	Job Number	41474005-T-81
Testing Co.	MILBAR HYDRO-TEST INC	Job Number	FY12-11Z

Test Section	Name		
		Station (0+00)	Elevation (Feet)
	Test Location	45+64	420 FT
	Begin	45+64	420 FT
	End	0+00	448 FT
	High Elevation	0+00	448 FT
Low Elevation	45+64	420 FT.	

Pipe Data	Section	Length (ft.)	O. D. (in.)	W.T. (in.)	Restrained (ft.)	Unrestrained (ft.)	Grade	Seam/Joint Type
	1	26	34	0.505		26	X-60	DSAW / Arc Weld
	2	52	34	0.375		52	X-65	DSAW / Arc Weld
	3	4510	34	0.344	4510		X-52	DSAW / Arc Weld
	4	6	34	0.375	6		X-52	DSAW / Arc Weld
	5	48	34	0.4375	48		X-48	DSAW / Arc Weld
	6	40	34	0.500		40	X-65	DSAW / Arc Weld
	7							
	8							
	9							
	10							
	11							
	12							

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Test Period	Date	8/22/11	Time	9:35 AM	Test Medium	Water	<input checked="" type="checkbox"/>
	Begin					Nitrogen	<input type="checkbox"/>
	End					Other	<input type="checkbox"/>

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Test Instrumentation	Description	Calibration Checked	Serial Number	Date Calibrated/Certified	Installation Correct
	Dead Weight Pressure Tester		5198	6/17/11	<input checked="" type="checkbox"/> Yes
	Pressure Recorder	<input checked="" type="checkbox"/> Yes	624082	6/17/11	<input checked="" type="checkbox"/> Yes
	Ambient Temperature Recorder	<input checked="" type="checkbox"/> Yes	624085	6/17/11	<input checked="" type="checkbox"/> Yes
	Restrained Pipe Temperature Recorder	<input checked="" type="checkbox"/> Yes	202E218034	6/17/11	<input checked="" type="checkbox"/> Yes
	Unrestrained Pipe Temperature Recorder	<input checked="" type="checkbox"/> Yes	242E47478	6/17/11	<input checked="" type="checkbox"/> Yes

Hydrostatic Test Log

Log No.	Time	Test Pressure (psig)	Temperature (°F)			Volume		Comments	Model Check: Is test good?
			Ambient	Pipe		<input checked="" type="checkbox"/> Ounces <input type="checkbox"/> Gallons	Inject		
				Restrained	Unrestrained	Bleed			
1	7:40	96	69	82	76				
2	8:08	782	71	82	77			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
3	8:23	780	72	82	78			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
4	8:38	779	74	83	79			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5	8:53	778	74	83	79			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
6	9:08	778	75	83	80			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
7	9:10	778	75	83	80			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
8	9:35	1042	78	83	91			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
9	9:45	1041	79	83	82			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
10	9:55	1041	80	83	83			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	



Hydrostatic Test Log

Log No.	Time	Test Pressure (psig)	Temperature (°F)			Volume		Comments	Model Check: Is test good?
			Ambient	Pipe		<input checked="" type="checkbox"/> Ounces	<input type="checkbox"/> Gallons		
				Restrained	Unrestrained	Bleed	Inject		
11	10:05	1041	82	83	83			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
12	10:09	1041	83	83	84			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
13	10:25	975	83	83	84	9715202		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14	10:30	975	85	83	83			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
15	10:45	975	86	83	83			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
16	11:00	975	86	85	85			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
17	11:15	974	86	83	85			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
18	11:30	974	86	83	85			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
19	11:45	974	86	83	86			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
20	12:00 P	974	86	83	85			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
21	12:15	974	86	83	86			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
22	12:30	974	86	83	86			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
23	12:45	974	86	83	86			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
24	1:00	974	86	83	86			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
25	1:15	974	87	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
26	1:30	974	87	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
27	1:45	974	88	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
28	2:00	974	88	83	89			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
29	2:15	974	89	83	89			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
30	2:30	974	89	83	89			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
31	2:45	974	90	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
32	3:00	974	90	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
33	3:15	974	90	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
34	3:30	974	90	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
35	3:45	974	90	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
36	4:00	974	90	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
37	4:15	974	90	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
38	4:30	974	90	83	88			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
39	4:45	974	90	83	87			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
40	5:00	974	90	83	86			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
41	5:15	974	90	83	86			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
42	5:30	974	90	83	86			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
43	5:45	974	90	83	85			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
44	5:55	974	90	83	85			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
45	6:00	974	90	83	85			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
46								<input type="checkbox"/> Yes <input type="checkbox"/> No	
47								<input type="checkbox"/> Yes <input type="checkbox"/> No	
48								<input type="checkbox"/> Yes <input type="checkbox"/> No	

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Was a leak observed during test Period? Yes No

If "Yes", Explain: _____

High Test Pressure: 1042
Low Test Pressure: 974

Certification:

Test Supervisor: Redacted Signature

Company Representative: Redacted Signature

Date: 8-22-11



Pacific Gas and Electric Company
Gas Pipeline Facilities Strength Test Pressure Report
 (For Pipeline Facilities Designed to Operate over 100 PSIG)

62-4921 (Rev. 2/14)
 California Gas Transmission
 (Use in Accordance with Gas Standard A-34 and G-0 112-0)

Sheet 1 of 1

PART I - DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER)	
Feeder Main Number, Line Number, or Station Name L-300B	Area Central
Division/District Kern	Job Number 41497334-T81
Date Job Authorized 7-16-11	
Description of Job - Include Reference Drawing Numbers, and Pipeline Mileposts Test 1 - Segment A-C - Existing 34" materials listed are from the "Material of Record" (refer to DWG 41497334, sheet 5) Hydrostatically test 34" tie-in piping, hydrostatic test piping and existing 34" L-300B Hydrotest L-300B from MP 256.66 - 257.5096 Test Segment A-C Arvin, CA (Test section 81)	
Location Class 1	Design Factor (F) .72
MAOP to be Established for this Piping by this Test 757 PSIG	Future Design Pressure 757 PSIG
STATIC HEAD ONE TO ELEVATION DIFFERENCE (WHERE APPLICABLE)	Static Head Calculation
Max. Elevation 448 FL	For Water 420 FL
Min. Elevation 420 FL	Other (Specify)
Elev. Diff. 28 FL	
Pipe Specification	
Size	API or ASTM Grade
W.T.	Long Seam (ERW, DSAW, Seamless, Etc.)
34.00	.505 API 5L, GR X60, DSAW (item#101)
34.00	.375 API 5L, GR X65, DSAW (item#102)
34.00	.344 API 5L, GR X52, DSAW (item#1)
34.00	.375 API 5L, GR X52, DSAW (item#2)
34.00	.4375 API 5L, GR X48, DSAW (item#3)
34.00	.505 Y-60 GR. 90 ELBOWS
Pipe Spec. and Footage Verified in Field	
AI MAOP	AI Min. Test Press.
42.47	53.13
52.80	66.05
71.94	90.00
65.99	82.56
61.28	76.66
42.91	53.13
26'	25.6
40'	52.2
4510'	MISC
6	MISC
48	MISC
4.15	MISC
Pressure to Give 90% SMYS	
AI Max. Test Press.	Pressure to Give 90% SMYS
58.46	1604
72.67	1290
99.03	947
90.84	1032
84.35	1111
26.46	1604
MINIMUM TEST DURATION - UNDER 30% SMYS (1 HR. MINIMUM) - 30% SMYS & OVER (8 HRS. MINIMUM) - PREINSTALLATION TEST (SEE ATTACHMENT "GAS STD. A-34")	
Test Fluid To Be Used WATER	8 HOURS
Minimum Test Pressure @ Max. Elevation 947 PSIG	
Maximum Test Pressure @ Min. Elevation 1042 PSIG	
Prepared By: Mark Cabral	Date: 07/16/11
Approved By: <i>[Signature]</i>	Date: 7/21/11
Notes: Minimum test pressure and duration are not to be changed without written approval.	
PART II - TEST DATA (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)	
Time and Date Test Pressure Reached 9:35 AM 8/22/11	Elevation at Test Point 420 FT
Time and Date Test Ended 6:00 PM 8/22/11	Min. Indicated Test Pressure 448 FT
Actual Duration of Test 8hr 25min.	Min. Test Pressure at Max. Elevation 420 FT
Test Fluid Used Water	Min. Test Pressure at Min. Elevation 420 FT
Make, Range, and Serial No. of Pressure Recording Gauge Barton 0-3000# 624082	Make, Range, and Serial No. of Dead Weight Tester (See Note 7) Chandler, 50-3000, # 5198
Date Last Calibrated 6/17/11	Date Last Calibrated 6/17/11
Test Supervised By: <i>[Signature]</i>	Approved By: <i>[Signature]</i>
Date 8/22/11	
Date 8/22/11	
Pipe Specification and Footage Verified (See Part I)	
DISTRIBUTION JOB FILE (AT SPONSORING ORGANIZATION) GSMATS RESPONSIBLE DISTRICT SUPERINTENDENT PROJECT MANAGER/PROJECT ENGINEER TECHNICAL & CONSTRUCTION SERVICES - ASSIGNED JOBS ONLY CAPITAL ACCOUNTING (FOREMAN'S COPY OF JOB) RECORDS SECTION (M/C), GSMATS REPORT FAILURES UNDER TEST TO GAS ENGINEERING & PLANNING	

BUT SCHEMATIC PIPING SKETCH ON BACK OF THIS SHEET
 SHOW LOCATION OF FACILITY TESTED, MINIMUM AND MAXIMUM ELEVATION IN FEET, MALE POINTS, VALVE NUMBERS AND INCORPORATED AREAS. USE AN ADDITIONAL SHEET IF NECESSARY
 (SHOW REFERENCE NUMBERS ON FACE OF ALL DRAWINGS AND ATTACHMENTS). FOR STATION PIPING, FABRICATED UNITS AND SHORT SECTIONS OF PIPE, ALSO SHOW A DETAILED SKETCH
 OF EACH ASSEMBLY TESTED.

- NOTES:
- (1) Add the static head due to elevation difference (between test point and maximum elevation) to "minimum test pressure at maximum elevation" from PART I.
 - (2) Use lowest pressure on test gauge at any time during test.
 - (3) Subtract static head due to elevation difference (between test point and minimum elevation) from minimum indicated test pressure.
 - (4) Subtract static head due to elevation difference (between test point and minimum elevation) from "minimum test pressure at minimum elevation" from PART I.
 - (5) Highest pressure on test gauge at any time during test.
 - (6) Add static head due to elevation difference (between test point and minimum elevation) to maximum indicated test pressure.
 - (7) A dead weight tester is only required when testing to a pressure which produces a stress level of 90% of SMYS or greater. However, if a dead weight tester is used on any test, enter the information in the space provided above.

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