



RCP, Inc

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

Redacted

July 28, 2011

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

Test Contractor: Contra Costa Inspection Co. -- T# 47A-1 7/28/2011
Asset Owner: Pacific Gas and Electric Company -- 41497363
Construction Contractor: ARB -- 0629-53-3500
Test Section: PG&E T-47A-1 Line 153, MP 17.65- 18.01
Test Date: July 28, 2011
Certificate Number: RCP 61362 - T-47A-1, L-153 MP 17.65 -18.01

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 Contra Costa Inspection Co. 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 790 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 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8 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 730 psig and the established MAOP is 487 psig.

Pressure decreased 55 psi during the test. 3,590.40 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 1,102.29 ounces, gain, which is equivalent to a 1.51 °F change in pipe temperature and larger than the anticipated 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 inherent error associated with physically attempting to measure the average temperature of 1,705 feet of buried and 76 feet of exposed pipe from a single point on the line.

Sincerely,

Redacted

cc. file

C:\Users\Redact\Documents\PG&E test 47A\
Master_Standard_Hydrostatic_Test_Plan_7.20.2011
Letter



Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41497363
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T# 47A-1 7/28/2011
Test Section	PG&E T-47A-1 Line 153, MP 17.65- 18.01		
File Name	RCP 61362 - T-47A-1, L-153 MP 17.65 -18.01		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: _____ Test Date: 28-Jul-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-47A-1 Line 153, MP 17.65- 18.01		
From:	17+40.5	To:	0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	58 ft	30.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,625 psi
2	1,703 ft	30.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,300 psi
3	2 ft	2.375 in.	0.154 in.	API5L-Grade B, SM, Arc Weld, Steel	4,539 psi
4	18 ft	30.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	2,167 psi

Initial Test Conditions

Pressure at Test Point:	790 psig	Date/Time:	7/28/11 11:50 AM	Pipe Temperature	
Ambient Temperature:	71.0 °F	Elevation @ Test Point:	18.0 ft	Unrestrained:	65.0 °F
Pressure @ High Point (Cal/Measure):	786 psig	Elevation @ High Point:	28.0 ft	Restrained:	64.0 °F
Pressure @ Low Point (Cal/Measure):	790 psig	Elevation @ Low Point:	18.0 ft	Location:	0+00
				Location:	14+90
				Location:	0+00

Final Test Conditions

Pressure at Test Point:	735 psig	Date/Time:	7/28/11 7:50 PM	Pipe Temperature	
Ambient Temperature:	64.0 °F	Elevation @ Test Point:	18.0 ft	Unrestrained:	68.0 °F
Pressure @ High Point (Cal/Measure):	731 psig	Elevation @ High Point:	28.0 ft	Restrained:	64.0 °F
Pressure @ Low Point (Cal/Measure):	735 psig	Elevation @ Low Point:	18.0 ft	Location:	0+00
				Location:	14+90
				Location:	0+00

Total Fluid Injected:		Volume gain	
Total Fluid Withdrawn:	3590.40 fluid ounces		
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	1,102.29 oz	gain	0.0138% 1.513 °F equivalent

Test Duration: 8.00 hours

Minimum Test Pressure:	724 psig	720 psig	724 psig
Maximum Test Pressure:	790 psig	786 psig	790 psig
% SMYS :	60.8%	60.4%	60.8%

Minimum Test Pressure (Calculated/Measured): 731 psig

Maximum Allowable Operating Pressure: DOT Part 192 Test Factor= 1.50 487 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	<p>The test segment was subjected to a spike pressure test of 790 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 hour test duration period.</p> <p>No leaks were observed during the test period. The test section included 1,705 feet of buried and 76 feet of exposed pipe. Pressure lost 55 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment gained 3°F.</p> <p>3,590.40 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 1,102.29 ounces. gain, which is equivalent to a 1.51 °F change in pipe temperature and larger than the anticipated error attributed to the temperature measurement instrumentation utilized.</p> <p>Test pressure did not remain steady even though no leaks were observed. The volumetric gain is attributed to the inherent error associated with physically attempting to measure the average temperature of 1,705 feet of buried and 76 feet of exposed pipe from a single point on the line.</p>

Remarks	Redacted
---------	----------



Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497363
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Contra Costa Inspection Co.	Project No.	# 47A-1 7/28/2011
Test Section	PG&E T-47A-1 Line 153, MP 17.65- 18.01		
File Name	RCP 61362 - T-47A-1, L-153 MP 17.65 -18.01		

Date	28-Jul-11	Test Log		
------	-----------	----------	--	--

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
1	7/28/11	11:30 AM	538 psig	71 °F	65 °F	64 °F	Start Spike		
2	7/28/11	11:31 AM	548 psig	71 °F	65 °F	64 °F	Inject		428 oz.
3	7/28/11	11:32 AM	558 psig	71 °F	65 °F	64 °F	Inject		428 oz.
4	7/28/11	11:32 AM	568 psig	71 °F	65 °F	64 °F	Inject		428 oz.
5	7/28/11	11:33 AM	578 psig	71 °F	65 °F	64 °F	Inject		428 oz.
6	7/28/11	11:34 AM	588 psig	71 °F	65 °F	64 °F	Inject		428 oz.
7	7/28/11	11:35 AM	598 psig	71 °F	65 °F	64 °F	Inject		428 oz.
8	7/28/11	11:36 AM	608 psig	71 °F	65 °F	64 °F	Inject		428 oz.
9	7/28/11	11:37 AM	618 psig	71 °F	65 °F	64 °F	Inject		428 oz.
10	7/28/11	11:38 AM	628 psig	71 °F	65 °F	64 °F	Inject		428 oz.
11	7/28/11	11:38 AM	638 psig	71 °F	65 °F	64 °F	Inject		428 oz.
12	7/28/11	11:39 AM	648 psig	71 °F	65 °F	64 °F	Inject		428 oz.
13	7/28/11	11:40 AM	658 psig	71 °F	65 °F	64 °F	Inject		428 oz.
14	7/28/11	11:40 AM	668 psig	71 °F	65 °F	64 °F	Inject		428 oz.
15	7/28/11	11:41 AM	678 psig	71 °F	65 °F	64 °F	Inject		428 oz.
16	7/28/11	11:42 AM	688 psig	71 °F	65 °F	64 °F	Inject		428 oz.
17	7/28/11	11:43 AM	698 psig	71 °F	65 °F	64 °F	Inject		428 oz.
18	7/28/11	11:44 AM	708 psig	71 °F	65 °F	64 °F	Inject		428 oz.
19	7/28/11	11:45 AM	718 psig	71 °F	65 °F	64 °F	Inject		428 oz.
20	7/28/11	11:45 AM	728 psig	71 °F	65 °F	64 °F	Inject		428 oz.
21	7/28/11	11:46 AM	738 psig	71 °F	65 °F	64 °F	Inject		428 oz.
22	7/28/11	11:47 AM	748 psig	71 °F	65 °F	64 °F	Inject		428 oz.
23	7/28/11	11:47 AM	758 psig	71 °F	65 °F	64 °F	Inject		428 oz.
24	7/28/11	11:48 AM	768 psig	71 °F	65 °F	64 °F	Inject		428 oz.
25	7/28/11	11:48 AM	778 psig	71 °F	65 °F	64 °F	Inject		428 oz.
26	7/28/11	11:49 AM	788 psig	71 °F	65 °F	64 °F	Inject		428 oz.
27	7/28/11	11:49 AM	790 psig	71 °F	65 °F	64 °F	Inject		86 oz.
28	7/28/11	11:50 AM	790 psig	71 °F	65 °F	64 °F	On Test		
29	7/28/11	12:00 PM	790 psig	72 °F	65 °F	64 °F			
30	7/28/11	12:10 PM	790 psig	69 °F	65 °F	64 °F			
31	7/28/11	12:20 PM	790 psig	71 °F	66 °F	64 °F	End Spike		
32	7/28/11	12:22 PM	780 psig	73 °F	66 °F	64 °F		544 oz.	
33	7/28/11	12:26 PM	770 psig	73 °F	66 °F	64 °F		544 oz.	
34	7/28/11	12:29 PM	760 psig	73 °F	66 °F	64 °F		544 oz.	
35	7/28/11	12:30 PM	724 psig	70 °F	67 °F	64 °F		1,958 oz.	
36	7/28/11	12:45 PM	725 psig	75 °F	67 °F	64 °F			
37	7/28/11	1:00 PM	726 psig	73 °F	68 °F	64 °F			
38	7/28/11	1:15 PM	726 psig	73 °F	68 °F	64 °F			
39	7/28/11	1:30 PM	727 psig	73 °F	69 °F	64 °F			
40	7/28/11	1:45 PM	727 psig	73 °F	69 °F	64 °F			
41	7/28/11	2:00 PM	728 psig	76 °F	70 °F	64 °F			
42	7/28/11	2:15 PM	729 psig	76 °F	70 °F	64 °F			
43	7/28/11	2:30 PM	729 psig	75 °F	70 °F	64 °F			



Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497363
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Contra Costa Inspection Co.	Project No.	# 47A-1 7/28/2011
Test Section	PG&E T-47A-1 Line 153, MP 17.65- 18.01		
File Name	RCP 61362 - T-47A-1, L-153 MP 17.65 -18.01		

Date	28-Jul-11	Test Log
------	-----------	-----------------

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
44	7/28/11	2:45 PM	730 psig	75 °F	71 °F	64 °F			
45	7/28/11	3:00 PM	730 psig	79 °F	71 °F	64 °F			
46	7/28/11	3:15 PM	731 psig	79 °F	72 °F	64 °F			
47	7/28/11	3:30 PM	731 psig	79 °F	72 °F	64 °F			
48	7/28/11	3:45 PM	732 psig	79 °F	72 °F	64 °F			
49	7/28/11	4:00 PM	732 psig	79 °F	72 °F	64 °F			
50	7/28/11	4:15 PM	733 psig	78 °F	73 °F	64 °F			
51	7/28/11	4:30 PM	733 psig	78 °F	73 °F	64 °F			
52	7/28/11	4:45 PM	733 psig	77 °F	73 °F	64 °F			
53	7/28/11	5:00 PM	734 psig	74 °F	73 °F	64 °F			
54	7/28/11	5:15 PM	734 psig	74 °F	73 °F	64 °F			
55	7/28/11	5:30 PM	734 psig	73 °F	73 °F	64 °F			
56	7/28/11	5:45 PM	734 psig	70 °F	72 °F	64 °F			
57	7/28/11	6:00 PM	734 psig	70 °F	72 °F	64 °F			
58	7/28/11	6:15 PM	735 psig	69 °F	71 °F	64 °F			
59	7/28/11	6:30 PM	735 psig	69 °F	70 °F	64 °F			
60	7/28/11	6:45 PM	735 psig	67 °F	70 °F	64 °F			
61	7/28/11	7:00 PM	735 psig	67 °F	70 °F	64 °F			
62	7/28/11	7:15 PM	735 psig	66 °F	70 °F	64 °F			
63	7/28/11	7:30 PM	735 psig	65 °F	69 °F	64 °F			
64	7/28/11	7:45 PM	735 psig	64 °F	68 °F	64 °F			
65	7/28/11	7:50 PM	735 psig	64 °F	68 °F	64 °F	End of Test		
66	7/28/11	8:00 PM	735 psig	63 °F	68 °F	64 °F			

Spike Test		10,795.7 oz.
Hydrostatic Test	3,590.4 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>790 psig</td> </tr> <tr> <td>Low Test Pressure:</td> <td>724 psig</td> </tr> </table>	High Test Pressure:	790 psig	Low Test Pressure:	724 psig
High Test Pressure:	790 psig					
Low Test Pressure:	724 psig					



Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41497363
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T# 47A-1 7/28/2011
Test Section	PG&E T-47A-1 Line 153, MP 17.65- 18.01	WATER	
File Name	RCP 61362 - T-47A-1, L-153 MP 17.65 -18.01		

General Pipe Data

Description	Segment							
	1	2	3	4				
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Unrestrained				
Outside Diameter	30.000 in.	30.000 in.	2.375 in.	30.000 in.				
Wall Thickness	0.375 in.	0.375 in.	0.154 in.	0.500 in.				
Inside Diameter	29.250 in.	29.250 in.	2.067 in.	29.000 in.				
Spec./Grade	API5L-X65	API5L-X52	API5L-Grade B	API5L-X65				
Length Unrestrained	58 ft			18 ft				
Length Restrained		1,703 ft	2 ft					
Temperature – On Test	65 °F	64 °F	64.0 °F	65.0 °F				
Temperature – End of Test	68 °F	64 °F	64.0 °F	68.0 °F				
Pressure – On Test	790 psig	790 psig	790 psig	790 psig				
Pressure – End of Test	735 psig	735 psig	735 psig	735 psig				

Unrestrained Pipe

Sum:	Vo	2,642.23 gal 338,205 oz.	Vtp1	2,654.01 gal 339,714 oz.	Vtp2	2,652.38 gal 339,504 oz.
Vo Unrestrained	2,025 gal		618 gal			
Fwp 1	1.002419		1.002419			
Fpp 1	1.002568		1.001909			
Fpt 1	1.000091		1.000091			
Fwt 1	1.000467		1.000467			
Fpwt 1 = Fpt/Fwt	0.999624		0.999624			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	2,033.94 gal		620.07 gal			
Fwp 2	1.002250		1.002250			
Fpp 2	1.002389		1.001776			
Fpt 2	1.000146		1.000146			
Fwt 2	1.000803		1.000803			
Fpwt = Fpt/Fwt	0.999343		0.999343			
Vtp = Vo(Fwp)(Fpp)(Fpwt)	2,032.67 gal		619.71 gal			

Restrained Pipe

Sum:	Vo	59,446.75 gal 7,609,183 oz.	Vtp1	59,683.34 gal 7,639,467 oz.	Vtp2	59,665.54 gal 7,637,189 oz.
Vo Unrestrained		59,446 gal	0 gal			
Fwp 1		1.002419	1.002419			
Fpp 1		1.001884	1.000336			
Fpt 1		1.000048	1.000048			
Fwt 1		1.000375	1.000375			
Fpwt 1 = Fpt/Fwt		0.999674	0.999674			
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		59,683 gal	0 gal			
Fwp 2		1.002250	1.002250			
Fpp 2		1.001753	1.000314			
Fpt 2		1.000048	1.000048			
Fwt 2		1.000375	1.000375			
Fpwt = Fpt/Fwt		0.999674	0.999674			
Vtp = Vo(Fwp)(Fpp)(Fpwt)		59,665 gal	0 gal			

Combined Pipe

Sum:	Vo	62,088.97 gal 7,947,389 oz.	Vtp1	62,337.35 gal 7,979,181 oz.	Vtp2	62,317.91 gal 7,976,693 oz.
------	----	--------------------------------	------	--------------------------------	------	--------------------------------