RCP, Inc
801 Louisiana, Ste.200
Houston, Texas 77002
Redacted

July 9, 2011

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

Test Contractor:	Contra Costa Inspection Co. -- T# 7/08/2011
Asset Owner:	Pacific Gas and Electric Company -- 41497362
Construction Contractor:	ARB -- 0629-53-3500
Test Section:	PG&E T-46 Line 153, MP 13.62 - 17.62
Test Date:	July 8, 2011
Certificate Number:	RCP 61362 - T-45, L-153

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 695 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 641 psig and the established MAOP is 427 psig.

Pressure decreased 52 psi during the test. 26,880.00 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 101.77 ounces, gain, which is equivalent to a 0.01 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.

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

Sincerely,

Redacted

cc. file

Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41497382
Construction Co.	ARB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T# 7/08/2011
Test Section	PG&E T-46 Line 153, MP 13.62 - 17.62		
File Name	RCP 61362 - T-45, L-153		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 8-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-46 Line 153, MP 13.62 - 17.62
From: 00+00 To: 211+92

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	207 ft	30.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,025 psi
2	32 ft	30.000 in.	0.375 in.	API5L-X60, DSAW, Arc Weld, Steel	1,500 psi
3	20,804 ft	30.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,300 psi
4	162 ft	30.000 in.	0.375 in.	API5L-Grade B, OTH, Arc Weld, Steel	875 psi
11	6 ft	1.315 in.	0.113 in.	API5L-Grade B, SM, Arc Weld, Steel	6,015 psi

Initial Test Conditions

Pressure at Test Point:	695 psig	Date/Time:	7/8/11 8:25 PM	Pipe Temperature Unrestrained:	68.0 °F
Ambient Temperature:	60.0 °F			Restrained:	70.0 °F
		Elevation @ Test Point:	12.0 ft	Location:	00+00
Pressure @ High Point (Cal/Measure):	694 psig	Elevation @ High Point:	15.0 ft	Location:	211+92
Pressure @ Low Point (Cal/Measure):	707 psig	Elevation @ Low Point:	(15.0) ft	Location:	103+00

Final Test Conditions

Pressure at Test Point:	643 psig	Date/Time:	7/9/11 4:45 AM	Pipe Temperature Unrestrained:	64.0 °F
Ambient Temperature:	58.0 °F			Restrained:	70.0 °F
		Elevation @ Test Point:	12.0 ft	Location:	00+00
Pressure @ High Point (Cal/Measure):	642 psig	Elevation @ High Point:	15.0 ft	Location:	211+92
Pressure @ Low Point (Cal/Measure):	655 psig	Elevation @ Low Point:	(15.0) ft	Location:	103+00
	Total Fluid Injected:			Volume gain	
	Total Fluid Withdrawn:	26880.00 fluid ounces			
Net Change in Volume of the Test Section ± (+ Gain, - Loss):		101.77 oz	gain	0.0001%	0.012 °F equivalent

Test Duration: 8 hours

Minimum Test Pressure:	Test Point	643 psig	Max Elevation	642 psig	Min Elevation	655 psig
Maximum Test Pressure:		695 psig		694 psig		707 psig
% SMYS :		79.4%		79.3%		80.8%

			Minimum Test Pressure (Calculated/Measured):	642 psig
Maximum Allowable Operating Pressure:		DOT Part 192	Test Factor= 1.50	427 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	The test segment was subjected to a spike pressure test of 695 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. No leaks were observed during the test period. The test section included 21,201 feet of buried and 290 feet of exposed pipe. Pressure lost 52 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment lost 4°F. 26,880.00 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 101.77 ounces, gain, which is equivalent to a 0.01 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized. Test pressure did not remain steady even though no leaks were observed. The volumetric gain is attributed to the error characteristic of the temperature measurement instrumentation utilized.
Remarks		

Redacted

9-Jul-11

RCP

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	4149/362
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Contra Costa Inspection Co.	Project No.	T# 7/08/2011
Test Section	PG&E T-46 Line 153, MP 13.62 - 17.62		
File Name	RCP 61362 - T-45, L-153		

Date 8-Jul-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	Comment	Bleed	Inject
1	7/8/11	7:45 PM	474 psig	65 °F	70 °F	70 °F	Start Spike		
2	7/8/11	7:47 PM	484 psig	65 °F	70 °F	70 °F	Inject		6,376 oz.
3	7/8/11	7:49 PM	494 psig	64 °F	70 °F	70 °F	Inject		5,340 oz.
4	7/8/11	7:51 PM	504 psig	64 °F	70 °F	70 °F	Inject		6,267 oz.
5	7/8/11	7:53 PM	514 psig	64 °F	70 °F	70 °F	Inject		5,449 oz.
6	7/8/11	7:55 PM	524 psig	64 °F	70 °F	70 °F	Inject		5,232 oz.
7	7/8/11	7:57 PM	534 psig	64 °F	70 °F	70 °F	Inject		5,340 oz.
8	7/8/11	7:59 PM	544 psig	64 °F	70 °F	70 °F	Inject		5,667 oz.
9	7/8/11	8:01 PM	554 psig	64 °F	69 °F	70 °F	Inject		5,504 oz.
10	7/8/11	8:03 PM	564 psig	64 °F	69 °F	70 °F	Inject		5,449 oz.
11	7/8/11	8:05 PM	574 psig	63 °F	69 °F	70 °F	Inject		5,449 oz.
12	7/8/11	8:07 PM	584 psig	63 °F	69 °F	70 °F	Inject		5,667 oz.
13	7/8/11	8:09 PM	594 psig	63 °F	69 °F	70 °F	Inject		5,014 oz.
14	7/8/11	8:11 PM	604 psig	63 °F	69 °F	70 °F	Inject		5,319 oz.
15	7/8/11	8:13 PM	614 psig	63 °F	69 °F	70 °F	Inject		4,708 oz.
16	7/8/11	8:15 PM	624 psig	63 °F	68 °F	70 °F	Inject		5,613 oz.
17	7/8/11	8:16 PM	634 psig	62 °F	68 °F	70 °F	Inject		5,286 oz.
18	7/8/11	8:17 PM	644 psig	62 °F	68 °F	70 °F	Inject		5,123 oz.
19	7/8/11	8:18 PM	654 psig	62 °F	68 °F	70 °F	Inject		5,123 oz.
20	7/8/11	8:19 PM	664 psig	62 °F	68 °F	70 °F	Inject		5,286 oz.
21	7/8/11	8:20 PM	674 psig	62 °F	68 °F	70 °F	Inject		4,796 oz.
22	7/8/11	8:21 PM	684 psig	62 °F	68 °F	70 °F	Inject		4,660 oz.
23	7/8/11	8:22 PM	685 psig	61 °F	68 °F	70 °F	Inject		4,850 oz.
24	7/8/11	8:23 PM	694 psig	61 °F	68 °F	70 °F	Inject		1,101 oz.
25	7/8/11	8:25 PM	695 psig	60 °F	68 °F	70 °F	On Test		
26	7/8/11	8:35 PM	695 psig	60 °F	68 °F	70 °F			
27	7/8/11	8:45 PM	695 psig	60 °F	68 °F	70 °F			
28	7/8/11	8:55 PM	695 psig	60 °F	68 °F	70 °F	End Spike		
29	7/8/11	9:00 PM	685 psig	60 °F	67 °F	70 °F	Bleed	5,376 oz.	
30	7/8/11	9:15 PM	675 psig	60 °F	66 °F	70 °F		5,376 oz.	
31	7/8/11	9:30 PM	645 psig	60 °F	66 °F	70 °F		10,128 oz.	
32	7/8/11	9:45 PM	645 psig	58 °F	66 °F	70 °F			
33	7/8/11	10:00 PM	645 psig	58 °F	66 °F	70 °F			
34	7/8/11	10:15 PM	645 psig	58 °F	66 °F	70 °F			
35	7/8/11	10:30 PM	645 psig	58 °F	66 °F	70 °F			
36	7/8/11	10:45 PM	645 psig	58 °F	66 °F	70 °F			
37	7/8/11	11:00 PM	644 psig	58 °F	65 °F	69 °F			
38	7/8/11	11:15 PM	644 psig	58 °F	65 °F	69 °F			
39	7/8/11	11:30 PM	644 psig	58 °F	65 °F	69 °F			
40	7/8/11	11:45 PM	644 psig	58 °F	64 °F	69 °F			
41	7/9/11	12:00 AM	644 psig	58 °F	64 °F	69 °F			
42	7/9/11	12:15 AM	644 psig	58 °F	64 °F	69 °F			
43	7/9/11	12:30 AM	644 psig	58 °F	64 °F	69 °F			

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497362
Construction Co.	ARB	Job Number	0629-53-3500
Testing Co.	Contra Costa Inspection Co.	Project No.	T# 7/08/2011
Test Section	PG&E T-46 Line 153, MP 13.62 - 17.62		
File Name	RCP 61362 - T-45, L-153		

Date 8-Jul-11

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe Unrestrained	Pipe Restrained	Comment	Bleed	Inject
44	7/9/11	12:45 AM	644 psig	58 °F	64 °F	69 °F			
45	7/9/11	1:00 AM	644 psig	58 °F	64 °F	69 °F			
46	7/9/11	1:15 AM	644 psig	58 °F	64 °F	69 °F			
47	7/9/11	1:30 AM	644 psig	58 °F	64 °F	69 °F			
48	7/9/11	1:45 AM	644 psig	57 °F	64 °F	69 °F			
49	7/9/11	2:00 AM	644 psig	57 °F	64 °F	69 °F			
50	7/9/11	2:15 AM	643 psig	57 °F	64 °F	69 °F			
51	7/9/11	2:30 AM	643 psig	57 °F	64 °F	69 °F			
52	7/9/11	2:45 AM	643 psig	58 °F	64 °F	69 °F			
53	7/9/11	3:00 AM	643 psig	58 °F	64 °F	69 °F			
54	7/9/11	3:15 AM	643 psig	57 °F	64 °F	69 °F			
55	7/9/11	3:30 AM	643 psig	57 °F	64 °F	69 °F			
56	7/9/11	3:45 AM	643 psig	58 °F	64 °F	69 °F			
57	7/9/11	4:00 AM	643 psig	58 °F	64 °F	69 °F			
58	7/9/11	4:15 AM	643 psig	58 °F	64 °F	69 °F			
59	7/9/11	4:30 AM	643 psig	58 °F	64 °F	70 °F			
60	7/9/11	4:45 AM	643 psig	58 °F	64 °F	70 °F	End of Test		
							Spike Test		116,809.6 oz.
							Hydrostatic Test	26,880.0 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure:	695 psig
		Low Test Pressure:	643 psig

Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41497362
Construction Co.	ARB	Job Number	0629-03-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T# 7/08/2011
Test Section	PG&E T-46 Line 153, MP 13.62 - 17.62	WATER	
File Name	RCP 01362 - T-46, L-153		

General Pipe Data

Description	Segment										
	1	2	3	4	5	6	7	8	9	10	11
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Restrained	Restrained	Unrestrained	Unrestrained	Unrestrained	restrained	restrained	restrained
Outside Diameter	30.000 in.	30.000 in.	30.000 in.	30.000 in.	30.000 in.	4.500 in.	2.375 in.	30.000 in.	20.000 in.	4.500 in.	1.315 in.
Wall Thickness	0.375 in.	0.375 in.	0.375 in.	0.375 in.	0.313 in.	0.156 in.	0.154 in.	0.500 in.	0.375 in.	0.237 in.	0.113 in.
Inside Diameter	29.250 in.	29.250 in.	29.250 in.	29.250 in.	29.375 in.	4.188 in.	2.067 in.	29.000 in.	19.250 in.	4.026 in.	1.089 in.
Spec./Grade	API5L-X65	API5L-X60	API5L X52	API5L Grade B	API5L-X52	API5L Grade B	API5L Grade B	API5L X60	API5L X60	API5L-Grade B	API5L-Grade B
Length Unrestrained	207 ft					3 ft	13 ft	22 ft	16 ft	24 ft	5 ft
Length Restrained		32 ft	20,804 ft	102 ft	203 ft						
Temperature – On Test	68 °F	70 °F	70.0 °F	70.0 °F	70.0 °F	66.0 °F	66.0 °F	66.0 °F	66.0 °F	66.0 °F	66.0 °F
Temperature – End of Test	64 °F	70 °F	70.0 °F	70.0 °F	70.0 °F	64.0 °F	64.0 °F	64.0 °F	64.0 °F	64.0 °F	64.0 °F
Pressure – On Test	695 psig	695 psig	695 psig	695 psig	695 psig	695 psig	695 psig	695 psig	695 psig	695 psig	695 psig
Pressure – End of Test	643 psig	643 psig	643 psig	643 psig	643 psig	643 psig	643 psig	643 psig	643 psig	643 psig	643 psig

Unrestrained Pipe

Sum:	Vo	8,243.03 gal 1,055,108 oz.			Vlp1	8,273.13 gal 1,059,960 oz.	Vlp2		8,273.41 gal 1,058,008 oz.		
Vo Unrestrained	7,226 gal					2 gal	2 gal	755 gal	242 gal	16 gal	0.2 gal
Fwp 1	1.002128					1.002128	1.002128	1.002128	1.002128	1.002128	1.002128
Fpp 1	1.002259					1.000777	1.000389	1.001680	1.001487	1.000492	1.000279
Fpt 1	1.000146					1.000146	1.000146	1.000146	1.000146	1.000146	1.000146
Fwt 1	1.000803					1.000803	1.000803	1.000803	1.000803	1.000803	1.000803
Fpwt 1 = Fpt/Fwt	0.999343					0.999343	0.999343	0.999343	0.999343	0.999343	0.999343
Vlp 1 = Vo(Fwp)(Fpp)(Fpwt)	7,252.68 gal					2.15 gal	2.27 gal	757.26 gal	242.62 gal	15.90 gal	0.24 gal
Fwp 2	1.001968					1.001968	1.001968	1.001968	1.001968	1.001968	1.001968
Fpp 2	1.002090					1.000719	1.000360	1.001554	1.001375	1.000455	1.000258
Fpt 2	1.000073					1.000073	1.000073	1.000073	1.000073	1.000073	1.000073
Fwt 2	1.000375					1.000375	1.000375	1.000375	1.000375	1.000375	1.000375
Fpwt = Fpt/Fwt	0.999698					0.999698	0.999698	0.999698	0.999698	0.999698	0.999698
Vlp = Vo(Fwp)(Fpp)(Fpwt)	7,252.88 gal					2.15 gal	2.27 gal	757.31 gal	242.64 gal	15.91 gal	0.24 gal

Restrained Pipe

Sum:	Vo	740,121.21 gal 94,735,515 oz.		Vlp1	742,265.34 gal 95,009,964 oz.	Vlp2		742,055.55 gal 94,983,150 oz.		
Vo Unrestrained		1,117 gal	726,202 gal	5,655 gal	7,147 gal					
Fwp 1		1.002128	1.002128	1.002128	1.002128					
Fpp 1		1.001660	1.001660	1.001680	1.002018					
Fpt 1		1.000121	1.000121	1.000121	1.000121					
Fwt 1		1.001036	1.001036	1.001036	1.001036					
Fpwt = Fpt/Fwt		0.999086	0.999086	0.999086	0.999086					
Vlp 1 = Vo(Fwp)(Fpp)(Fpwt)		1,120 gal	728,304 gal	5,671 gal	7,170 gal					
Fwp 2		1.001968	1.001968	1.001968	1.001968					
Fpp 2		1.001557	1.001557	1.001557	1.001869					
Fpt 2		1.000121	1.000121	1.000121	1.000121					
Fwt 2		1.001036	1.001036	1.001036	1.001036					
Fpwt = Fpt/Fwt		0.999086	0.999086	0.999086	0.999086					
Vlp = Vo(Fwp)(Fpp)(Fpwt)		1,120 gal	728,099 gal	5,670 gal	7,168 gal					

Combined Pipe

Sum:	Vo	748,364.24 gal 95,790,623 oz.	Vlp1	750,538.47 gal 96,068,925 oz.	Vlp2	750,329.27 gal 95,042,146 oz.

Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41497362
Construction Co.	APB	Job Number	0629-53-3500
Hydro. Test Co.	Contra Costa Inspection Co.	Project No.	T# 7/09/2011
Test Section	PG&E T-46 Line 153, MP 13.62 - 17.62		WATER
File Name	RCP 61362 - T-45, L-153		

General Pipe Data

Description	Segment										
	1	2	3	4	5	6	7	8	9	10	11
Restrained or Unrestrained?	Unrestrained	Restrained	Restrained	Restrained	Restrained	Unrestrained	Unrestrained	Unrestrained	Unrestrained	Unrestrained	Unrestrained
Outside Diameter	30.000 in.	30.000 in.	30.000 in.	30.000 in.	30.000 in.	4.500 in.	2.375 in.	30.000 in.	20.000 in.	4.500 in.	1.315 in.
Wall Thickness	0.375 in.	0.375 in.	0.375 in.	0.375 in.	0.313 in.	0.156 in.	0.154 in.	0.500 in.	0.375 in.	0.237 in.	0.113 in.
Inside Diameter	29.250 in.	29.250 in.	29.250 in.	29.250 in.	29.375 in.	4.188 in.	2.067 in.	29.000 in.	19.250 in.	4.026 in.	1.089 in.
Spec./Grade	API5L-X65	API5L-X60	API5L-X52	API5L Grade B	API5L-X52	API5L-Grade B	API5L-Grade B	API5L-X60	API5L-X60	API5L-Grade B	API5L -Grade B
Length Unstrained	207.00 ft					3 ft	13 ft	22 ft	16 ft	24 ft	5 ft
Length Restrained		32 ft	20,604 ft	182 ft	203 ft						
Temperature – On Test	65 °F	69 °F	69 °F	69 °F	69 °F	65 °F	65 °F	65 °F	65 °F	65 °F	65 °F
Temperature – End of Test	66 °F	70 °F	70 °F	70 °F	70 °F	66 °F	66 °F	66 °F	66 °F	66 °F	66 °F
Pressure – On Test	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig
Pressure – End of Test	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig	669 psig

Unrestrained Pipe

Sum:	Vo	8,243.03 gal 1,055,108 oz.		Vtp1	8,274.12 gal 1,059,087 oz.		Vlp2	8,273.32 gal 1,059,085 oz.			
Vo Unrestrained	7,228 gal					2 gal	2 gal	755 gal	242 gal	16 gal	0 gal
Fwp 1	1.002048					1.002048	1.002048	1.002048	1.002048	1.002048	1.002048
Fpp 1	1.002174					1.000748	1.000374	1.001817	1.001431	1.000474	1.000269
Fpt 1	1.000091					1.000091	1.000091	1.000091	1.000091	1.000091	1.000091
Fwt 1	1.000467					1.000467	1.000467	1.000467	1.000467	1.000467	1.000467
Fpwt 1 = Fpt/Fwt	0.999624					0.999624	0.999624	0.999624	0.999624	0.999624	0.999624
Vlp 1 = Vo(Fwp)(Fpp)(Fpwt)	7,253.53 gal					2.15 gal	2.27 gal	757 gal	243 gal	16 gal	0 gal
Fwp 2	1.002048					1.002048	1.002048	1.002048	1.002048	1.002048	1.002048
Fpp 2	1.002174					1.000748	1.000374	1.001817	1.001431	1.000474	1.000269
Fpt 2	1.000109					1.000109	1.000109	1.000109	1.000109	1.000109	1.000109
Fwt 2	1.000582					1.000582	1.000582	1.000582	1.000582	1.000582	1.000582
Fpwt = Fpt/Fwt	0.999527					0.999527	0.999527	0.999527	0.999527	0.999527	0.999527
Vlp = Vo(Fwp)(Fpp)(Fpwt)	7,252.83 gal					2.15 gal	2.27 gal	757 gal	243 gal	16 gal	0 gal

Restrained Pipe

Sum:	Vo	740,121.21 gal 94,735,515 oz.		Vtp1	742,228.58 gal 95,005,258 oz.		Vlp2	742,160.00 gal 94,996,556 oz.			
Vo Restrained		1,117 gal	726,202 gal	5,055 gal	7,147 gal						
Fwp 1		1.002048	1.002048	1.002048	1.002048						
Fpp 1		1.001615	1.001615	1.001615	1.001940						
Fpt 1		1.000109	1.000109	1.000109	1.000109						
Fwt 1		1.000929	1.000929	1.000929	1.000929						
Fpwt 1 = Fpt/Fwt		0.999181	0.999181	0.999181	0.999181						
Vlp 1 = Vo(Fwp)(Fpp)(Fpwt)		1,120 gal	728,269 gal	5,671 gal	7,169 gal						
Fwp 2		1.002048	1.002048	1.002048	1.002048						
Fpp 2		1.001619	1.001619	1.001619	1.001944						
Fpt 2		1.000121	1.000121	1.000121	1.000121						
Fwt 2		1.001036	1.001036	1.001036	1.001036						
Fpwt = Fpt/Fwt		0.999086	0.999086	0.999086	0.999086						
Vtp = Vo(Fwp)(Fpp)(Fpwt)		1,120 gal	728,201 gal	5,670 gal	7,169 gal						

Combined Pipe

Sum:	Vo	748,364.74 gal 95,700,623 oz.		Vtp1	750,502.70 gal 96,064,346 oz.		Vlp2	750,433.92 gal 96,055,541 oz.			
1 °F Change	68.79 gal		8,801.00 oz.								

RCP

Hydrostatic Test Pipe Data Table

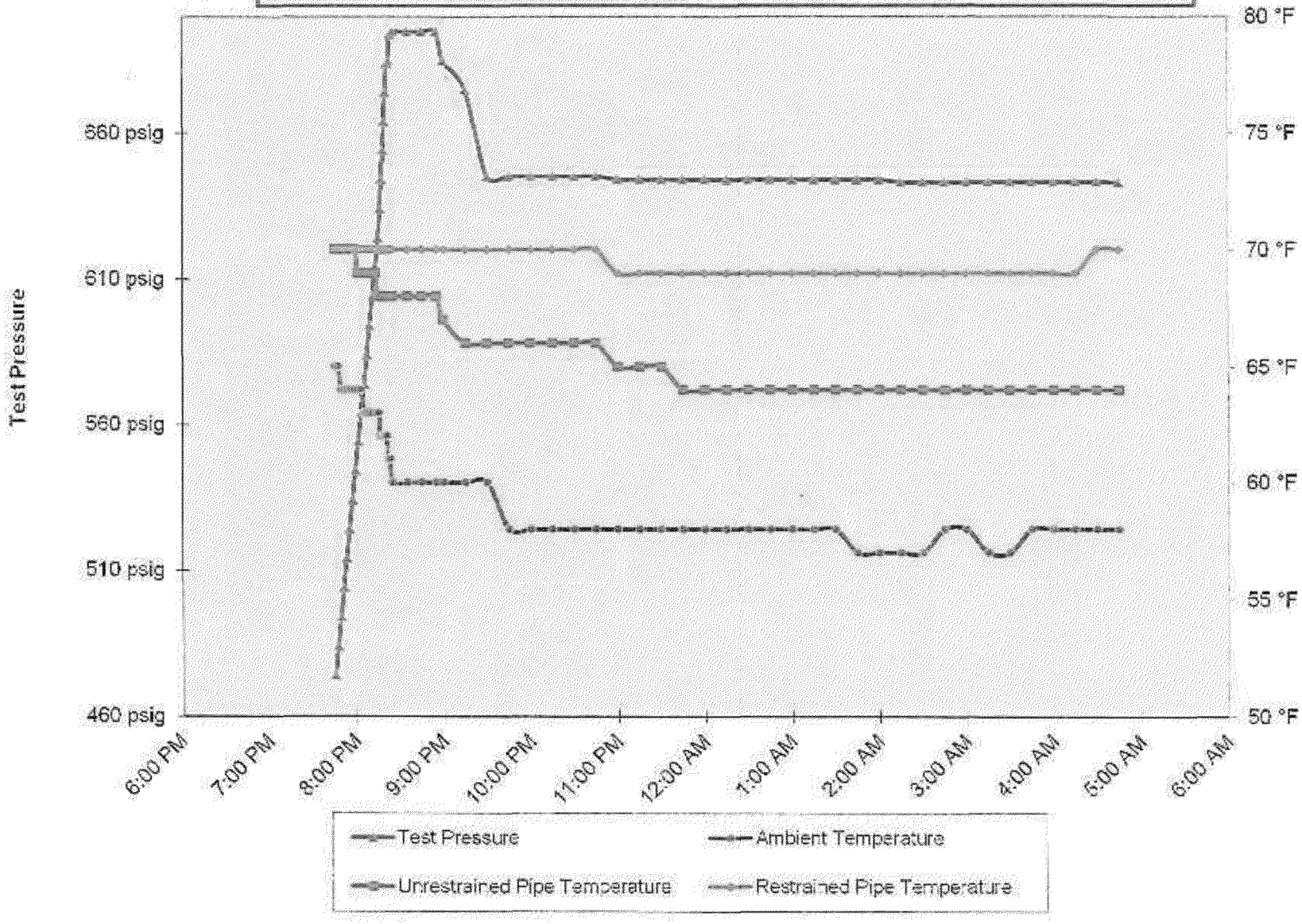
Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	207 ft	Unrestrained	30.000 in.	0.3750 in.	API5L-X65	1,625 psig	Steel	Arc Weld	DSAW
2	32 ft	Restrained	30.000 in.	0.3750 in.	API5L-X60	1,500 psig	Steel	Arc Weld	DSAW
3	20,804 ft	Restrained	30.000 in.	0.3750 in.	API5L-X52	1,300 psig	Steel	Arc Weld	DSAW
4	162 ft	Restrained	30.000 in.	0.3750 in.	API5L-Grade B	875 psig	Steel	Arc Weld	OTH
5	203 ft	Restrained	30.000 in.	0.3125 in.	API5L-X52	1,083 psig	Steel	Arc Weld	DSAW
6	3 ft	Unrestrained	4.500 in.	0.1560 in.	API5L-Grade B	2,427 psig	Steel	Arc Weld	SM
7	13 ft	Unrestrained	2.375 in.	0.1540 in.	API5L-Grade B	4,539 psig	Steel	Arc Weld	SM
8	22 ft	Unrestrained	30.000 in.	0.5000 in.	API5L-X60	2,000 psig	Steel	Arc Weld	SM
9	16 ft	Unrestrained	20.000 in.	0.3750 in.	API5L-X60	2,250 psig	Steel	Arc Weld	DSAW
10	24 ft	Unrestrained	4.500 in.	0.2370 in.	API5L-Grade B	3,687 psig	Steel	Arc Weld	SM
11	5 ft	Unrestrained	1.315 in.	0.1130 in.	API5L-Grade B	6,015 psig	Steel	Arc Weld	SM

Hydrostatic Test Project Owner & Participants

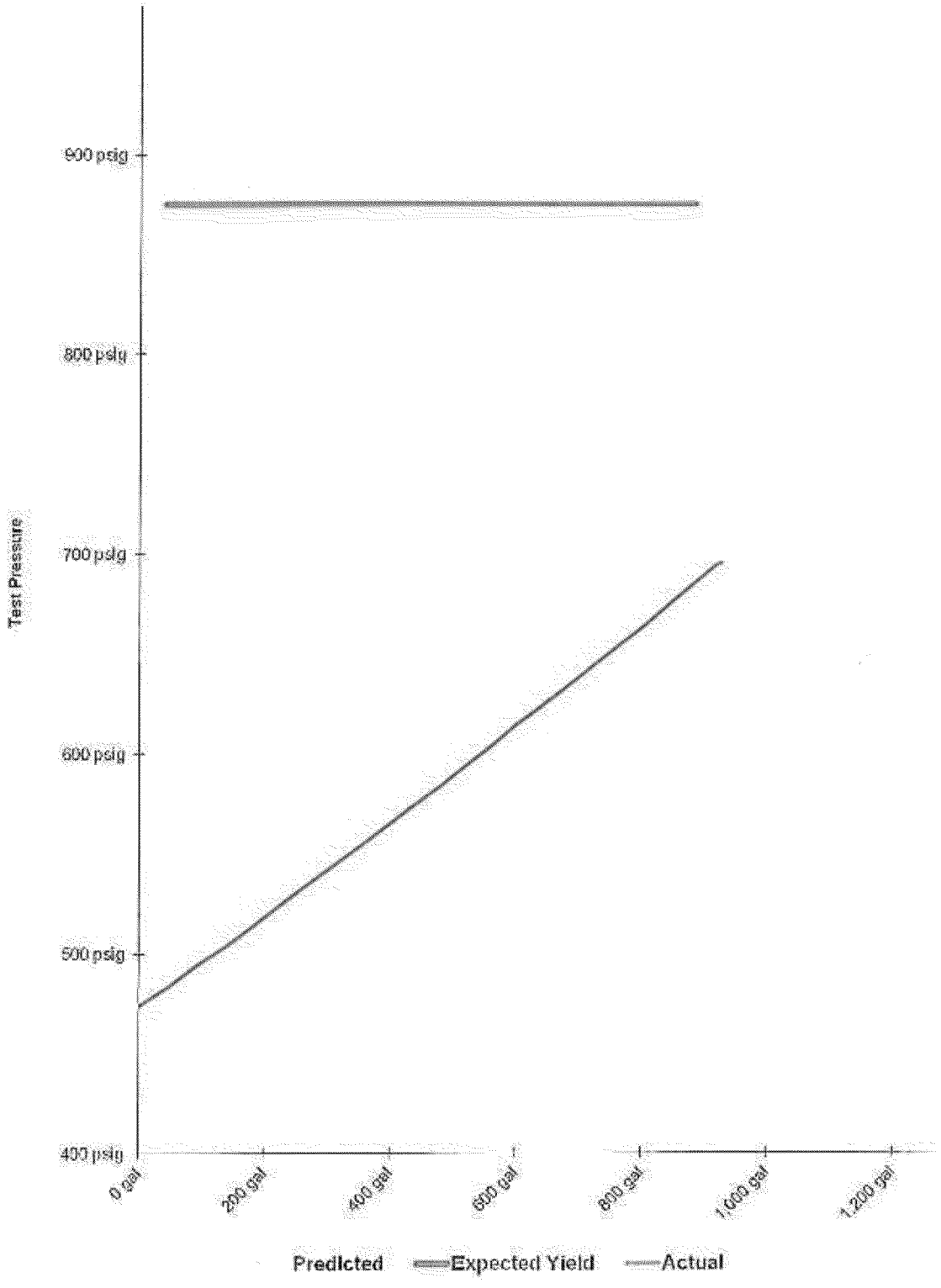
Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget Walnut Creek, CA 94598 Attention: Redacted	41497362
Construction Company	ARB	Job Number
Address	1875 Loveridge Road Pittsburg, CA 94565 Attention: Redacted	0629-53-3500
Hydrostatic Test Co.	Contra Costa Inspection Co.	Project No.
Address	2820 LaJolla Drive Antioch, Ca. 94531 Attention: Redacted	T# 7/08/2011
Test Section	PG&E T-46 Line 153, MP 13.62 - 17.62 From: 00+00 To: 211+92	
File Name	RCP 61362 - T-45, L-153	

RCP

PG&E T-46 Line 153, MP 13.62 - 17.62



Spike Pressure Test
Stress Strain Curve -- PG&E T-46 Line 153, MP 13.62 - 17.62



RCP

Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
474 psig	0	0.00 gal		0	0.00 gal
484 psig	1170	49.81 gal	40.07 gal	4.981	4.007
494 psig	2150	91.53 gal	80.14 gal	4.172	4.007
504 psig	3300	140.49 gal	120.22 gal	4.896	4.007
514 psig	4300	183.07 gal	160.29 gal	4.257	4.008
524 psig	5260	223.94 gal	200.37 gal	4.087	4.008
534 psig	6240	265.66 gal	240.45 gal	4.172	4.008
544 psig	7280	309.94 gal	280.54 gal	4.428	4.008
554 psig	8290	352.94 gal	320.62 gal	4.300	4.009
564 psig	9290	395.51 gal	360.71 gal	4.257	4.009
574 psig	10290	438.09 gal	400.81 gal	4.257	4.009
584 psig	11330	482.36 gal	440.90 gal	4.428	4.009
594 psig	12250	521.53 gal	481.00 gal	3.917	4.010
604 psig	13226	563.08 gal	521.10 gal	4.155	4.010
614 psig	14090	599.87 gal	561.20 gal	3.678	4.010
624 psig	15120	643.72 gal	601.30 gal	4.385	4.010
634 psig	16090	685.02 gal	641.41 gal	4.130	4.011
644 psig	17030	725.04 gal	681.52 gal	4.002	4.011
654 psig	17970	765.06 gal	721.63 gal	4.002	4.011
664 psig	18940	806.35 gal	761.74 gal	4.130	4.011
674 psig	19820	843.82 gal	801.86 gal	3.747	4.012
684 psig	20710	881.71 gal	841.98 gal	3.789	4.012
694 psig	21600	919.60 gal	882.10 gal	3.789	4.012
695 psig	21802	928.20 gal	886.11 gal	8.600	4.012
695 psig		928.20 gal	886.11 gal	0.000	0.000
695 psig		928.20 gal	886.11 gal	0.000	0.000
695 psig		928.20 gal	886.11 gal	0.000	0.000
695 psig		928.20 gal	886.11 gal	0.000	0.000
695 psig		928.20 gal	886.11 gal	0.000	0.000
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695 psig		928.20 gal	886.11 gal	0.000	0.000
695 psig		928.20 gal	886.11 gal	0.000	0.000
695 psig		928.20 gal	886.11 gal	0.000	0.000

Spike Pressure Test
Stress Strain Curve -- PG&E T-46 Line 153, MP 13.62 - 17.62

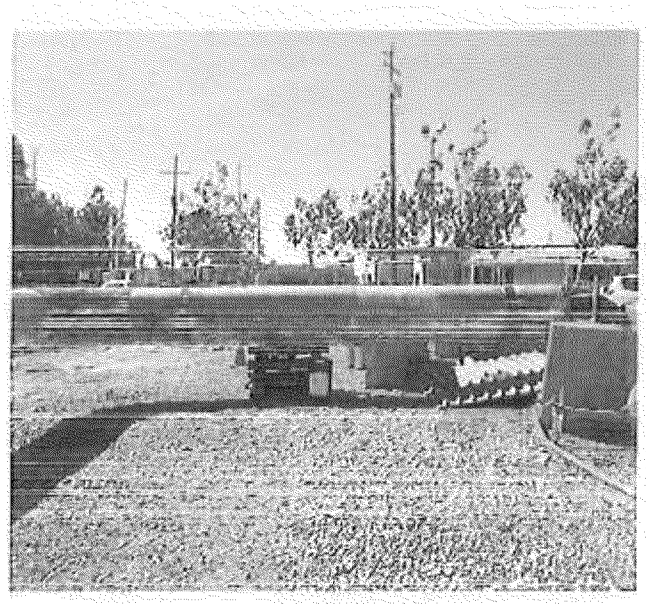
Pump gal per stroke	0.058 gal/stroke
Pump Piston Diameter	1.250 in
Pump Piston Stroke	3.50 in
Pump Cylinders	3 ea
Volume check gal per stroke	0.043 gal/stroke
Volume Released (gallons)	42.00 gal
Pressure Reduced (psi)	10 psi
Maximum2	980 gal
Minimum2	0 gal
Maximum1	975 psig
Minimum1	400 psig
Gallons/Stroke Used	0.043 gal/stroke
Predicted Gallons/Stroke	0.041 gal/stroke
1180	10 psi
Max Pressure	695 psig
Buried Pipe Temperature	70 °F
Exposed Pipe Temperature	70 °F

ASME B31.8 Appendix N-5

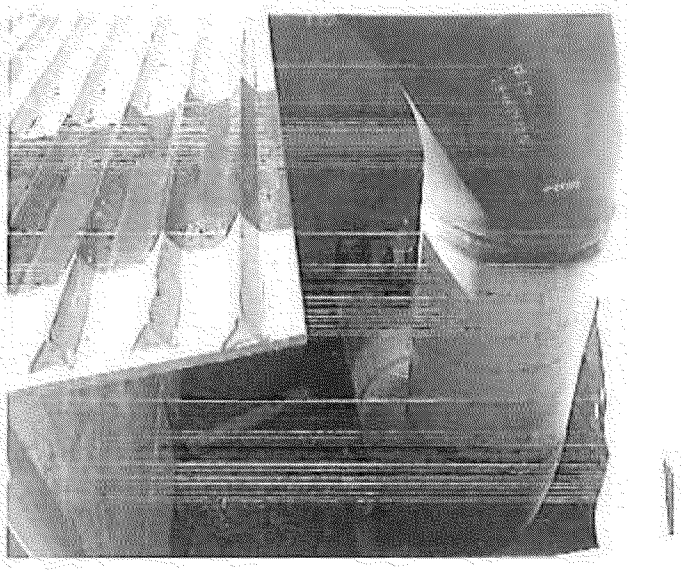
Average Actual Elastic Slope	4.178
Average Predicted Elastic Slope	4.010
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	7.935
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	694 psig
Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal

Redacted

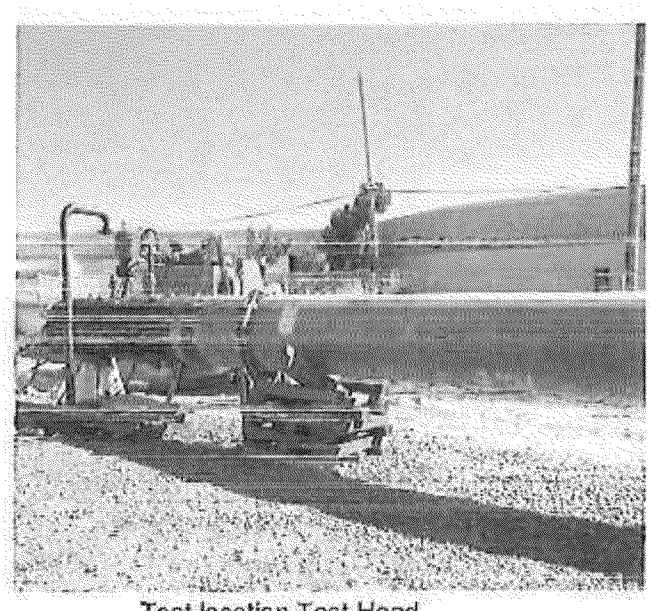
7/9/2011
Date



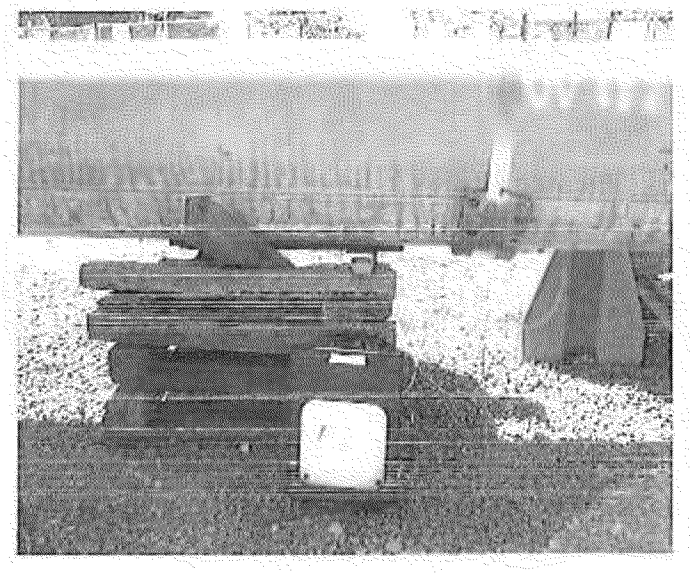
Test Location Tost Heador



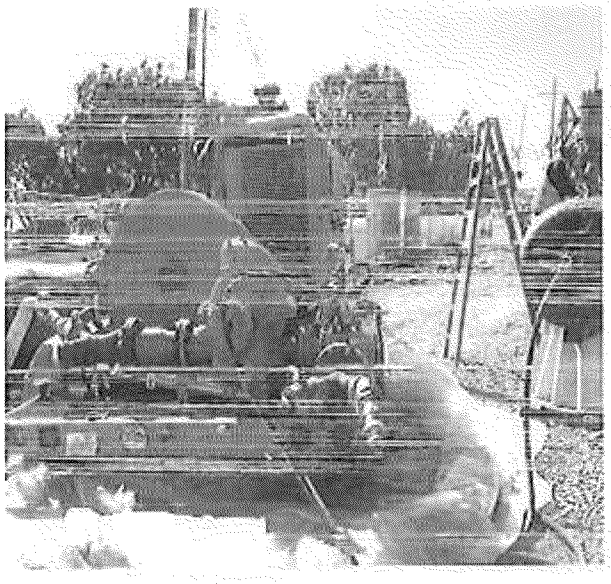
Test I ocation Test Header to existing pipe



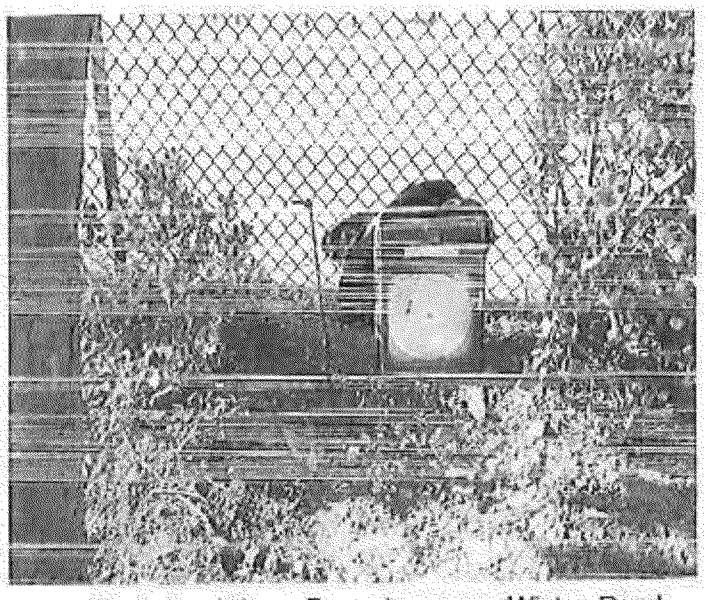
Test location Test Head



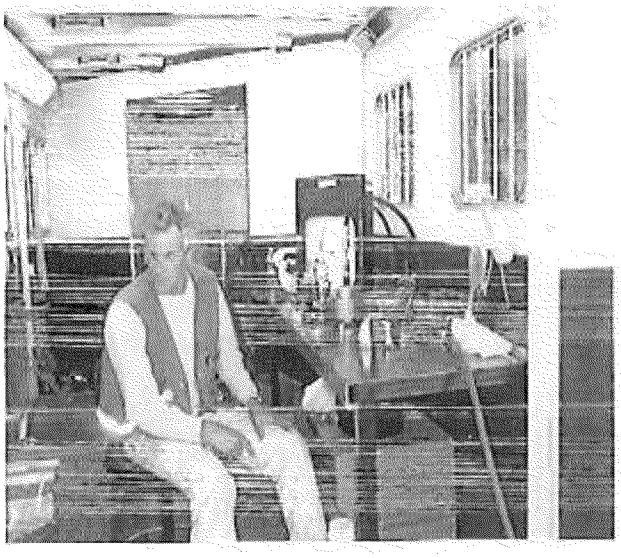
Unrestrained Temp. recorder



Injection pump



Restrained Temp Recorder across Winton Road



Deadweight and Pressure Recorder

End of test segment header

PCP

Hydrostatic Test Log Sheet

Owner Company	Pacific Gas & Electric	Job Number	41497362
Construction Co.	ARB	Job Number	8629-53-3500
Testing Co.	Contra Costa Inspection	Job Number	T# 7/08/2011

Test Section			
Name	T-46, Line 153, MP 13.62-17.62		
		Station (0+00)	Elevation (Feet)
Test Location		00+00	12
Begin		00+00	12
End		211+92	15
High Elevation		211+92	15
Low Elevation		103+00	-15

Pipe Data

Section	Length (ft.)	O. D. (in.)	W.T. (in.)	Restrained (ft.)	Unrestrained (ft.)	Grade	Seam/Joint Type
1	~~173~~ 207	30	.375		207 ~~173~~	X65	DSAW, Arc Weld
2	4232	30	.375	4232		X60	DSAW, Arc Weld
3	~~20632~~ 20804	30	.375	20804 ~~20632~~		X52	DSAW, Arc Weld
4	162	30	.375	162		B	unknown, Arc Weld
5	~~233~~ 203	30	.3125	203 ~~233~~		X-52	DSAW, Arc Weld
6	3	4.5	.156		3	B	SML, Arc Weld
7	13	2.375	.154		13	B	SML, Arc Weld
8	22	30	.500		22	X60	SML, Arc Weld
9	16	20	.375		16	X60	DSAW, Arc Weld
10	24	4.5	.237		24	B	SML, Arc Weld
11	5	1.3	.1830		5	B	SML, Arc Weld

Test Period	Date	Time	Test Medium	
Begin	7-8-11	8:25 P	Water	☑
End	7-9-11	4:45 A	Nitrogen	☐
			Other	☐

Test Instrumentation

Description	Calibration Checked	Serial Number	Date Calibrated/Certified	Installation Correct
Dead Weight Pressure Tester	✓	HL-6301	6-7-11	☑ Yes
Pressure Recorder	☑ Yes	CLP-1703	5-2-11	☑ Yes
Ambient Temperature Recorder	☑ Yes	FLUKE	DAILY	☑ Yes
Restrained Pipe Temperature Recorder	☑ Yes	782406	3-2-11	☑ Yes
Unrestrained Pipe Temperature Recorder	☑ Yes	CLP-1701	5-2-11	☑ Yes

Hydrostatic Test Log

Log No.	Time	Test Pressure (psig)	Temperature (°F) Ambient	Pipe Restrained	Pipe Unrestrained	Volume (☐ Ounces ☒ Gallons) Bleed	Inject	Comments	Model Check: Is test good?
1	8:25p	695	60	70	70				
2	835p	695	60	70	68			un-stable	☑ Yes ☐ No
3	845p	695	60	70	68			Trailer	☑ Yes ☐ No
4	855p	695	60	70	67				☐ Yes ☐ No
5	915	685	60	70	66				☑ Yes ☐ No
6	930	645	60	70	66	-210			☑ Yes ☐ No
7	945	645	58	70	66				☑ Yes ☐ No
8	1000	645	58	70	66			others walking	☑ Yes ☐ No
9	1015	645	57	70	66			in Trailor	☑ Yes ☐ No
10	1030	645	58	70	66				☑ Yes ☐ No
11	1045	645	57	70	66				☑ Yes ☐ No

RCP

Hydrostatic Test Log

Log No.	Time	Test Pressure (psig)	Temperature (°F)			Volume ☐ Ounces ☐ Gallons		Comments	Model Check: Is test good?
			Ambient	Pipe					
				Restrained	Unrestrained	Bleed	Inject		
12	1100	644	57	69	65				☑ Yes ☐ No
13	1115	644	57	69	65				☑ Yes ☐ No
14	1130	644	57	69	65				☑ Yes ☐ No
15	1145	644	58	69	64				☑ Yes ☐ No
16	1200	644	58	69	64				☑ Yes ☐ No
17	1215	644	58	69	64				☑ Yes ☐ No
18	1230	644	58	69	64			others bumped	☑ Yes ☐ No
19	1245	644	58	69	64			Table	☑ Yes ☐ No
20	1:00A	644	58	69	64				☑ Yes ☐ No
21	1:15A	644	58	69	64				☑ Yes ☐ No
22	1:30	644	58	69	64				☑ Yes ☐ No
23	1:45	644	57	69	64				☑ Yes ☐ No
24	2:00	644	57	69	64				☑ Yes ☐ No
25	2:15	643	57	69	64				☑ Yes ☐ No
26	2:30	643	57	69	64				☑ Yes ☐ No
27	2:45	643	58	69	64				☑ Yes ☐ No
28	3:00	643	58	69	64			others bumped	☑ Yes ☐ No
29	315	643	57	69	64			Table	☑ Yes ☐ No
30	330	643	57	69	64				☑ Yes ☐ No
31	345	643	58	69	64				☑ Yes ☐ No
32	400	643	58	69	64				☑ Yes ☐ No
33	415	643	58	69	64				☑ Yes ☐ No
34	430	643	58	70	64				☑ Yes ☐ No
35	445	643	58	70	64				☑ Yes ☐ No
36									☐ Yes ☐ No
37									☐ Yes ☐ No
38									☐ Yes ☐ No
39									☐ Yes ☐ No
40									☐ Yes ☐ No
41									☐ Yes ☐ No
42									☐ Yes ☐ No
43									☐ Yes ☐ No
44									☐ Yes ☐ No
45									☐ Yes ☐ No
46									☐ Yes ☐ No
47									☐ Yes ☐ No
48									☐ Yes ☐ No

Was a leak observed during test Period? ☐ Yes ☑ No

If "Yes", Explain:

High Test Pressure: 695 PSI

Low Test Pressure: 643 PSI

Certification:

Test Supervisor: Redacted
Signature

Company Representative: Redacted
Signature

Date: 7/9/2011

SB_GT&S_0502657