



**RCP, Inc**

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December 5, 2011

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

Test Contractor:	Milbar -- FY12-112-T-64
Asset Owner:	Pacific Gas and Electric Company -- 41497320
Construction Contractor:	Snelson -- 41497320-T-64
Test Section:	PG&E T-64 , L-300A , MP 414.79 - 416.977
Test Date:	December 5, 2011
Certificate Number:	RCP 61362 - T-64, L-300A, MP 414.79 - 416.977

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 met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 1 - Roads/Facility).

The test segment was subjected to a spike pressure test of 1155 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 8.22 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.22 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 1079 psig and the MAOP per 49 CFR Part 192, Subpart J can be as high as 980 psig. The MAOP established by this test is sufficient to qualify for Pacific Gas and Electric Company's desired MAOP of 840 psig.

Pressure decreased 76 psi during the test. 30,515.20 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 3,100.82 ounces, gain, which is equivalent to a 0.62 °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

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Test 64  
Letter



### Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41497320
Construction Co.	Snelson	Job Number	41497320-T-64
Hydro. Test Co.	Milbar	Project No.	FY12-112-T-64
Test Section	PG&E T-64, L-300A, MP 414.79 - 416.977		
File Name	RCP 61362 - T-64, L-300A, MP 414.79 - 416.977		

#### Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION:	Test Date:	5-Dec-11
Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 1 - Roads/Facility)		

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-64, L-300A, MP 414.79 - 416.977		
From:	112+15.3	To:	0+00

#### Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	40.29 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi
2	11,216.80 ft	34.000 in.	0.406 in.	API5L-X52, DSAW, Arc Weld, Steel	1,242 psi
3	1.17 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi
4	38.00 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi

#### Initial Test Conditions

Pressure at Test Point:	1,155 psig	Date/Time:	12/5/11 11:45 AM	Pipe Temperature	
Ambient Temperature:	58.0 °F	Elevation @ Test Point:	1,391.0 ft	Unrestrained:	57.0 °F
Pressure @ High Point (Cal/Measure):	1,155 psig	Elevation @ High Point:	1,391.0 ft	Restrained:	60.0 °F
Pressure @ Low Point (Cal/Measure):	1,203 psig	Elevation @ Low Point:	1,281.0 ft	Location:	112+15.3
				Location:	112+15.3
				Location:	0+00

#### Final Test Conditions

Pressure at Test Point:	1,079 psig	Date/Time:	12/5/11 7:58 PM	Pipe Temperature	
Ambient Temperature:	38.0 °F	Elevation @ Test Point:	1,391.0 ft	Unrestrained:	52.0 °F
Pressure @ High Point (Cal/Measure):	1,079 psig	Elevation @ High Point:	1,391.0 ft	Restrained:	60.0 °F
Pressure @ Low Point (Cal/Measure):	1,127 psig	Elevation @ Low Point:	1,281.0 ft	Location:	112+15.3
				Location:	112+15.3
				Location:	0+00

Total Fluid Injected:		Volume gain	
Total Fluid Withdrawn:	30515.20 fluid ounces		
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	3,100.82 oz	gain	0.0047% 0.618 °F equivalent

Test Duration:	8.22 hours				
Minimum Test Pressure:	1,075 psig	Max Elevation	1,075 psig	Min Elevation	1,123 psig
Maximum Test Pressure:	1,155 psig		1,155 psig		1,203 psig
% SMYS:			60.4%		98.8%
Test Segment Observed % SMYS:	Minimum	60.4%	Maximum	98.8%	

Minimum Test Pressure (Calculated/Measured):	1,079 psig
Maximum Allowable Operating Pressure:	DOT Part 192 Test Factor= 1.10 980 psig

The MAOP established by this test is sufficient to qualify for Pacific Gas and Electric Company's desired MAOP of 840 psig.

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	<p>The test segment was subjected to a spike pressure test of 1155 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 8.22 hour test duration period.</p> <p>No leaks were observed during the test period. The test section included 11,217 feet of buried and 79 feet of exposed pipe. Pressure lost 76 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment lost 5°F.</p> <p>30,515.20 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 3,100.82 ounces, gain, which is equivalent to a 0.62 °F change in pipe temperature and within the 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 error characteristic of the temperature measurement instrumentation utilized.</p>

Remarks	Redacted
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# Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497320
Construction Co.	Snelson	Job Number	41497320-T-64
Testing Co.	Milbar	Project No.	FY12-112-T-64
Test Section	PG&E T-64, L-300A, MP 414.79 - 416.977		
File Name	RCP 61362 - T-64, L-300A, MP 414.79 - 416.977		

Date		5-Dec-11		Test Log					
Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
				Unrestrained	Restrained				
1	12/5/11	11:07 AM	788 psig	56 °F	56 °F	60 °F	Start Spike		
2	12/5/11	11:08 AM	798 psig	56 °F	56 °F	60 °F	Inject		4,021 oz.
3	12/5/11	11:09 AM	808 psig	56 °F	56 °F	60 °F	Inject		3,882 oz.
4	12/5/11	11:10 AM	818 psig	56 °F	56 °F	60 °F	Inject		3,790 oz.
5	12/5/11	11:11 AM	828 psig	56 °F	56 °F	60 °F	Inject		3,559 oz.
6	12/5/11	11:12 AM	838 psig	56 °F	56 °F	60 °F	Inject		3,836 oz.
7	12/5/11	11:13 AM	848 psig	56 °F	56 °F	60 °F	Inject		3,836 oz.
8	12/5/11	11:14 AM	858 psig	56 °F	56 °F	60 °F	Inject		3,928 oz.
9	12/5/11	11:15 AM	868 psig	56 °F	56 °F	60 °F	Inject		3,744 oz.
10	12/5/11	11:16 AM	878 psig	56 °F	56 °F	60 °F	Inject		3,882 oz.
11	12/5/11	11:17 AM	888 psig	56 °F	56 °F	60 °F	Inject		3,790 oz.
12	12/5/11	11:18 AM	898 psig	56 °F	57 °F	60 °F	Inject		3,836 oz.
13	12/5/11	11:19 AM	908 psig	56 °F	57 °F	60 °F	Inject		3,882 oz.
14	12/5/11	11:20 AM	918 psig	56 °F	57 °F	60 °F	Inject		3,744 oz.
15	12/5/11	11:21 AM	928 psig	56 °F	57 °F	60 °F	Inject		3,744 oz.
16	12/5/11	11:22 AM	938 psig	56 °F	57 °F	60 °F	Inject		3,790 oz.
17	12/5/11	11:23 AM	948 psig	56 °F	57 °F	60 °F	Inject		3,882 oz.
18	12/5/11	11:24 AM	958 psig	56 °F	57 °F	60 °F	Inject		3,975 oz.
19	12/5/11	11:25 AM	968 psig	56 °F	57 °F	60 °F	Inject		3,836 oz.
20	12/5/11	11:26 AM	978 psig	56 °F	57 °F	60 °F	Inject		3,836 oz.
21	12/5/11	11:27 AM	988 psig	56 °F	57 °F	60 °F	Inject		3,790 oz.
22	12/5/11	11:28 AM	998 psig	56 °F	57 °F	60 °F	Inject		3,651 oz.
23	12/5/11	11:29 AM	1,008 psig	56 °F	57 °F	60 °F	Inject		3,882 oz.
24	12/5/11	11:30 AM	1,018 psig	56 °F	57 °F	60 °F	Inject		3,975 oz.
25	12/5/11	11:31 AM	1,028 psig	56 °F	57 °F	60 °F	Inject		3,697 oz.
26	12/5/11	11:32 AM	1,038 psig	56 °F	57 °F	60 °F	Inject		3,836 oz.
27	12/5/11	11:33 AM	1,048 psig	56 °F	57 °F	60 °F	Inject		3,790 oz.
28	12/5/11	11:34 AM	1,058 psig	56 °F	57 °F	60 °F	Inject		3,882 oz.
29	12/5/11	11:35 AM	1,068 psig	56 °F	57 °F	60 °F	Inject		3,790 oz.
30	12/5/11	11:36 AM	1,078 psig	56 °F	57 °F	60 °F	Inject		3,744 oz.
31	12/5/11	11:37 AM	1,088 psig	56 °F	57 °F	60 °F	Inject		3,744 oz.
32	12/5/11	11:38 AM	1,098 psig	56 °F	57 °F	60 °F	Inject		3,744 oz.
33	12/5/11	11:39 AM	1,108 psig	56 °F	57 °F	60 °F	Inject		3,790 oz.
34	12/5/11	11:40 AM	1,118 psig	58 °F	57 °F	60 °F	Inject		3,882 oz.
35	12/5/11	11:41 AM	1,128 psig	58 °F	57 °F	60 °F	Inject		3,651 oz.
36	12/5/11	11:42 AM	1,138 psig	58 °F	57 °F	60 °F	Inject		3,790 oz.
37	12/5/11	11:43 AM	1,148 psig	58 °F	57 °F	60 °F	Inject		3,928 oz.
38	12/5/11	11:44 AM	1,155 psig	58 °F	57 °F	60 °F	Inject		2,634 oz.
39	12/5/11	11:45 AM	1,155 psig	58 °F	57 °F	60 °F	On Test		
40	12/5/11	11:55 AM	1,155 psig	56 °F	56 °F	60 °F			
41	12/5/11	12:05 PM	1,155 psig	58 °F	55 °F	60 °F			
42	12/5/11	12:15 PM	1,155 psig	54 °F	55 °F	60 °F	End Spike		
43	12/5/11	12:21 PM	1,145 psig	57 °F	57 °F	60 °F		3,814 oz.	
44	12/5/11	12:25 PM	1,135 psig	57 °F	57 °F	60 °F		3,814 oz.	
45	12/5/11	12:28 PM	1,125 psig	57 °F	57 °F	60 °F		3,814 oz.	
46	12/5/11	12:31 PM	1,115 psig	57 °F	57 °F	60 °F		3,814 oz.	
47	12/5/11	12:34 PM	1,105 psig	57 °F	57 °F	60 °F		3,814 oz.	



# Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41497320
Construction Co.	Snelson	Job Number	41497320-T-64
Testing Co.	Milbar	Project No.	FY12-112-T-64
Test Section	PG&E T-64, L-300A, MP 414.79 - 416.977		
File Name	RCP 61362 - T-64, L-300A, MP 414.79 - 416.977		

Date	5-Dec-11	<b>Test Log</b>
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Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
48	12/5/11	12:37 PM	1,095 psig	57 °F	57 °F	60 °F		3,814 oz.	
49	12/5/11	12:40 PM	1,085 psig	57 °F	57 °F	60 °F		3,814 oz.	
50	12/5/11	12:43 PM	1,075 psig	57 °F	57 °F	60 °F		3,814 oz.	
51	12/5/11	12:58 PM	1,075 psig	55 °F	57 °F	60 °F			
52	12/5/11	1:13 PM	1,075 psig	56 °F	58 °F	60 °F	Sun Shine		
53	12/5/11	1:28 PM	1,075 psig	55 °F	58 °F	60 °F	Cool		
54	12/5/11	1:43 PM	1,076 psig	55 °F	58 °F	60 °F			
55	12/5/11	1:58 PM	1,076 psig	54 °F	59 °F	60 °F			
56	12/5/11	2:13 PM	1,076 psig	54 °F	59 °F	60 °F	Sun Shine		
57	12/5/11	2:28 PM	1,076 psig	53 °F	59 °F	60 °F	Cool		
58	12/5/11	2:43 PM	1,076 psig	53 °F	59 °F	60 °F			
59	12/5/11	2:58 PM	1,077 psig	53 °F	58 °F	60 °F	Cool		
60	12/5/11	3:13 PM	1,077 psig	53 °F	58 °F	60 °F			
61	12/5/11	3:28 PM	1,077 psig	53 °F	58 °F	60 °F			
62	12/5/11	3:43 PM	1,077 psig	52 °F	58 °F	60 °F	Cool		
63	12/5/11	3:58 PM	1,077 psig	50 °F	58 °F	60 °F			
64	12/5/11	4:13 PM	1,078 psig	48 °F	57 °F	60 °F			
65	12/5/11	4:28 PM	1,078 psig	48 °F	57 °F	60 °F			
66	12/5/11	4:43 PM	1,078 psig	45 °F	56 °F	60 °F	Cool		
67	12/5/11	4:58 PM	1,078 psig	43 °F	55 °F	60 °F			
68	12/5/11	5:13 PM	1,078 psig	43 °F	56 °F	60 °F			
69	12/5/11	5:28 PM	1,078 psig	42 °F	55 °F	60 °F			
70	12/5/11	5:43 PM	1,078 psig	40 °F	54 °F	60 °F			
71	12/5/11	5:58 PM	1,078 psig	40 °F	54 °F	60 °F	Cold		
72	12/5/11	6:13 PM	1,078 psig	39 °F	54 °F	60 °F			
73	12/5/11	6:28 PM	1,079 psig	39 °F	53 °F	60 °F	Cold		
74	12/5/11	6:43 PM	1,079 psig	39 °F	53 °F	60 °F			
75	12/5/11	6:58 PM	1,079 psig	39 °F	53 °F	60 °F			
76	12/5/11	7:13 PM	1,079 psig	39 °F	53 °F	60 °F			
77	12/5/11	7:28 PM	1,079 psig	38 °F	52 °F	60 °F	Cold		
78	12/5/11	7:43 PM	1,079 psig	39 °F	52 °F	60 °F			
79	12/5/11	7:58 PM	1,079 psig	38 °F	52 °F	60 °F	End of Test		
							<b>Spike Test</b>		139,988.5 oz.
							<b>Hydrostatic Test</b>	30,515.2 oz.	

Were leaks observed during the test period?	Exposed and buried pipe, no leaks observed.	High Test Pressure: 1,155 psig	Low Test Pressure: 1,075 psig
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## Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41497320
Construction Co.	Snelson	Job Number	41497320-T-64
Hydro. Test Co.	Milbar	Project No.	FY12-112-T-64
Test Section	PG&E T-64, L-300A, MP 414.79 - 416.977	<b>WATER</b>	
File Name	RCP 61362 - T-64, L-300A, MP 414.79 - 416.977		

### General Pipe Data

Description	Segment			
	1	2	3	4
Restrained or Unrestrained?	Unrestrained	Restrained	Unrestrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.500 in.	0.408 in.	0.375 in.	0.500 in.
Inside Diameter	33.000 in.	33.188 in.	33.250 in.	33.000 in.
Spec./Grade	API5L-X65	API5L-X52	API5L-X65	API5L-X65
Length Unrestrained	40 ft		1 ft	38 ft
Length Restrained		11,217 ft		
Temperature -- On Test	57 °F	60 °F	57.0 °F	57.0 °F
Temperature -- End of Test	52 °F	60 °F	52.0 °F	52.0 °F
Pressure -- On Test	1,155 psig	1,155 psig	1,155 psig	1,155 psig
Pressure -- End of Test	1,079 psig	1,079 psig	1,079 psig	1,079 psig

### Unrestrained Pipe

Vo	3,531.29 gal 452,005 oz.	Vtp1	3,555.80 gal 455,143 oz.	Vtp2	3,555.11 gal 455,054 oz.
Vo Unrestrained	1,790 gal	53 gal	1,688 gal		
Fwp 1	1.003541	1.003541	1.003541		
Fpp 1	1.003176	1.004267	1.003176		
Fpt 1	0.999945	0.999945	0.999945		
Fwt 1	0.999749	0.999749	0.999749		
Fpwt 1 = Fpt/Fwt	1.000197	1.000197	1.000197		
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,802.53 gal	53.20 gal	1,700.08 gal		
Fwp 2	1.003307	1.003307	1.003307		
Fpp 2	1.002967	1.003986	1.002967		
Fpt 2	0.999854	0.999854	0.999854		
Fwt 2	0.999411	0.999411	0.999411		
Fpwt = Fpt/Fwt	1.000443	1.000443	1.000443		
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,802.18 gal	53.18 gal	1,699.75 gal		

### Restrained Pipe

Vo	504,069.35 gal 64,520,876 oz.	Vtp1	507,302.97 gal 64,934,780 oz.	Vtp2	507,089.49 gal 64,907,455 oz.
Vo Unrestrained	504,069 gal				
Fwp 1	1.003541				
Fpp 1	1.002864				
Fpt 1	1.000000				
Fwt 1	1.000000				
Fpwt 1 = Fpt/Fwt	1.000000				
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	507,303 gal				
Fwp 2	1.003307				
Fpp 2	1.002675				
Fpt 2	1.000000				
Fwt 2	1.000000				
Fpwt = Fpt/Fwt	1.000000				
Vtp = Vo(Fwp)(Fpp)(Fpwt)	507,089 gal				

### Combined Pipe

Vo	507,600.63 gal 64,972,881 oz.	Vtp1	510,858.77 gal 65,389,923 oz.	Vtp2	510,844.60 gal 65,362,509 oz.
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## Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41497320		
Construction Co.	Snelson	Job Number	41497320-T-64		
Hydro. Test Co.	Milbar	Project No.	FY12-112-T-64		
Test Section	PG&E T-64, L-300A, MP 414.79 - 416.977	<b>WATER</b>			
File Name	RCP 61362 - T-64, L-300A, MP 414.79 - 416.977				
<b>General Pipe Data</b>					
Description	Segment				
	1	2	3	4	
Restrained or Unrestrained?	Unrestrained	Restrained	Unrestrained	Unrestrained	
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	
Wall Thickness	0.500 in.	0.406 in.	0.375 in.	0.500 in.	
Inside Diameter	33.000 in.	33.188 in.	33.250 in.	33.000 in.	
Spec./Grade	API5L-X65	API5L-X52	API5L-X65	API5L-X65	
Length Unstrained	40 ft		1 ft	38 ft	
Length Restrained		11,217 ft			
Temperature -- On Test	54 °F	59 °F	54 °F	54 °F	
Temperature -- End of Test	55 °F	60 °F	55 °F	55 °F	
Pressure -- On Test	1,117 psig	1,117 psig	1,117 psig	1,117 psig	
Pressure -- End of Test	1,117 psig	1,117 psig	1,117 psig	1,117 psig	
<b>Unrestrained Pipe</b>					
Vo	3,531.29 gal 452,005 oz.	Vtp1	3,555.59 gal 455,116 oz.	Vtp2	3,555.40 gal 455,091 oz.
Vo Unrestrained	1,790 gal		53 gal		1,688 gal
Fwp 1	1.003424		1.003424		1.003424
Fpp 1	1.003072		1.004127		1.003072
Fpt 1	0.999891		0.999891		0.999891
Fwt 1	0.999532		0.999532		0.999532
Fpwt 1 = Fpt/Fwt	1.000359		1.000359		1.000359
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,802.42 gal		53.19 gal		1,699.98 gal
Fwp 2	1.003424		1.003424		1.003424
Fpp 2	1.003072		1.004127		1.003072
Fpt 2	0.999909		0.999909		0.999909
Fwt 2	0.999605		0.999605		0.999605
Fpwt = Fpt/Fwt	1.000305		1.000305		1.000305
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,802.32 gal		53.19 gal		1,699.88 gal
<b>Restrained Pipe</b>					
Vo	504,069.35 gal 64,520,878 oz.	Vtp1	507,235.23 gal 64,926,110 oz.	Vtp2	507,196.22 gal 64,921,116 oz.
Vo Restrained			504,069 gal		
Fwp 1			1.003424		
Fpp 1			1.002766		
Fpt 1			0.999988		
Fwt 1			0.999907		
Fpwt 1 = Fpt/Fwt			1.000081		
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			507,235 gal		
Fwp 2			1.003424		
Fpp 2			1.002770		
Fpt 2			1.000000		
Fwt 2			1.000000		
Fpwt = Fpt/Fwt			1.000000		
Vtp = Vo(Fwp)(Fpp)(Fpwt)			507,196 gal		
<b>Combined Pipe</b>					
Vo	507,600.63 gal 64,972,881 oz.	Vtp1	510,790.82 gal 65,381,226 oz.	Vtp2	510,751.62 gal 65,376,207 oz.
1 °F Change	39.20 gal		5,018.22 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	40.29 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW
2	11,216.80 ft	Restrained	34.000 in.	0.4060 in.	API5L-X52	1,242 psig	Steel	Arc Weld	DSAW
3	1.17 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X65	1,434 psig	Steel	Arc Weld	DSAW
4	38.00 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: Redacted	41497320
Construction Company	Snelson	Job Number
Address	601 West State Street Sedro-Woolley, WA 98284 Attention: Redacted	41497320-T-64
Hydrostatic Test Co.	Milbar	Project No.
Address	P.O. Box 7701 Shreveport, LA 71137-7701	FY12-112-T-64
Test Section	PG&E T-64, L-300A, MP 414.79 - 416.977 From: 112+15.3 To: 0+00	
File Name	RCP 61362 - T-64, L-300A, MP 414.79 - 416.977	

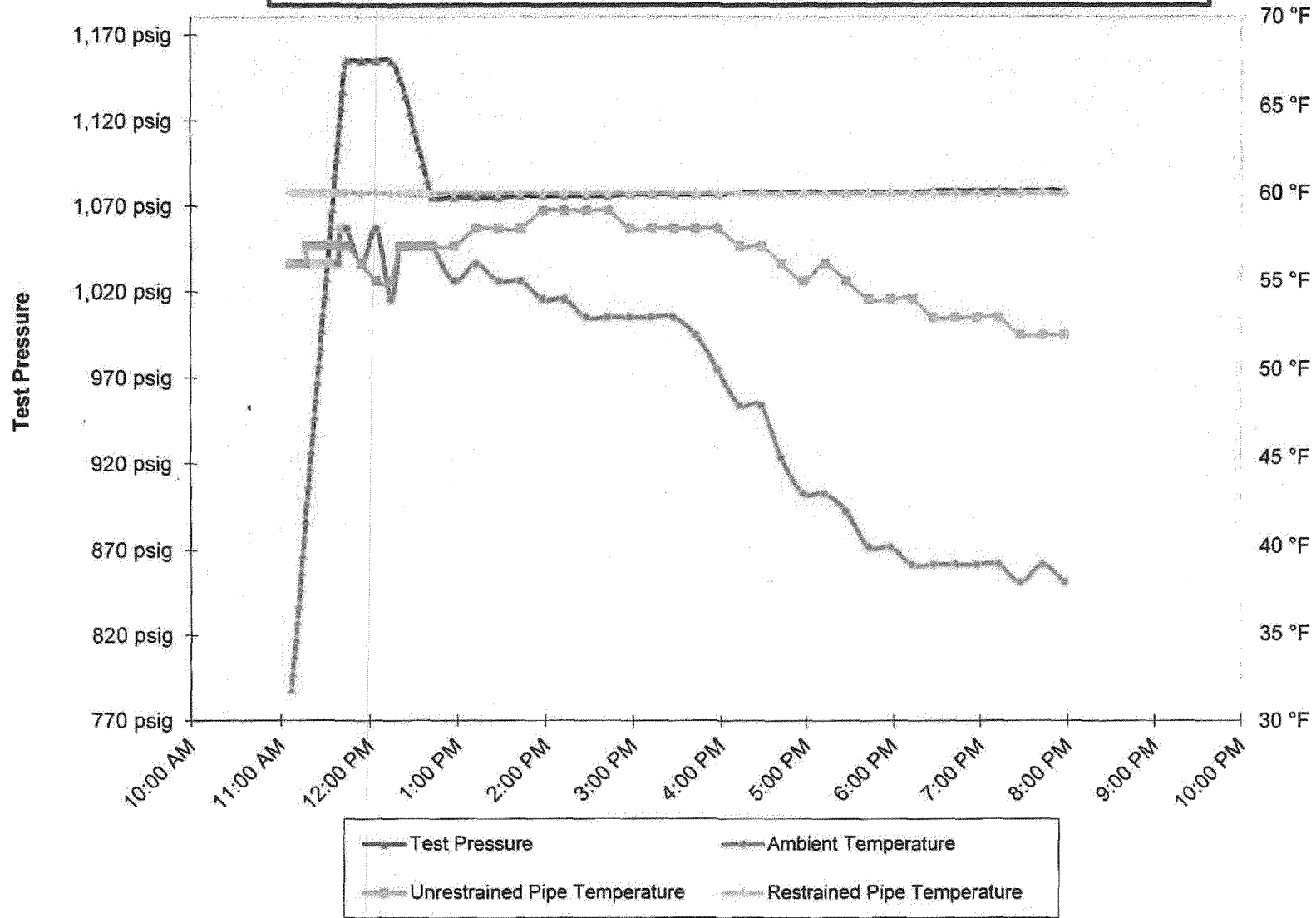
#### Part II - Test Data (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

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

Time and Date Test Pressure Reached	12/5/11 11:45 AM	Elevation at Test Point	1,391 ft	Min. Required Test Press At Test Point (1)	1,050.00 psig	Max. Allowable Test Press at Test Point (4)	1,155.33 psig
Time and Date Test Ended	12/5/11 7:58 PM	Max. Elevation in Test Section	1,391 ft	Min. Indicated Test Pressure (2)	1,075.00 psig	Max. Indicated Test Pressure (5)	1,155.00 psig
Actual Duration of Test	8 hours 13 minutes	Min. Elevation in Test Section	1,281 ft	Min. Test Pressure at Max. Elevation (3)	1,075.00 psig	Max. Test Pressure at Min. Elevation (6)	1,202.67 psig

RCP

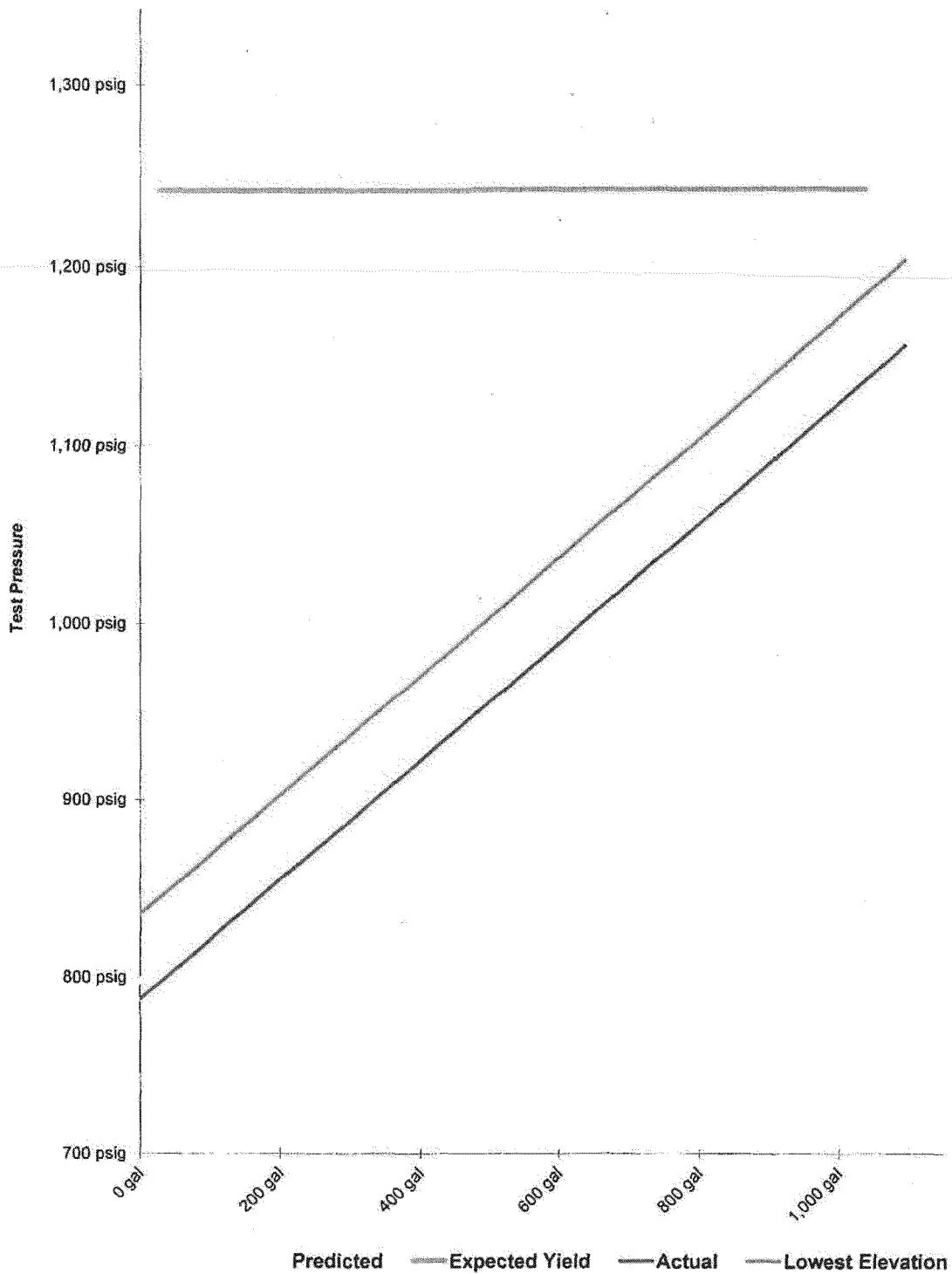
PG&E T-64 , L-300A , MP 414.79 - 416.977





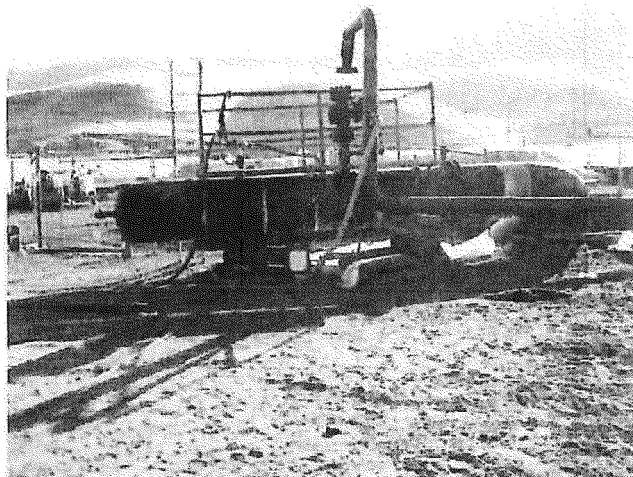


**Spike Pressure Test**  
**Stress Strain Curve -- PG&E T-64 , L-300A , MP 414.79 - 416.977**

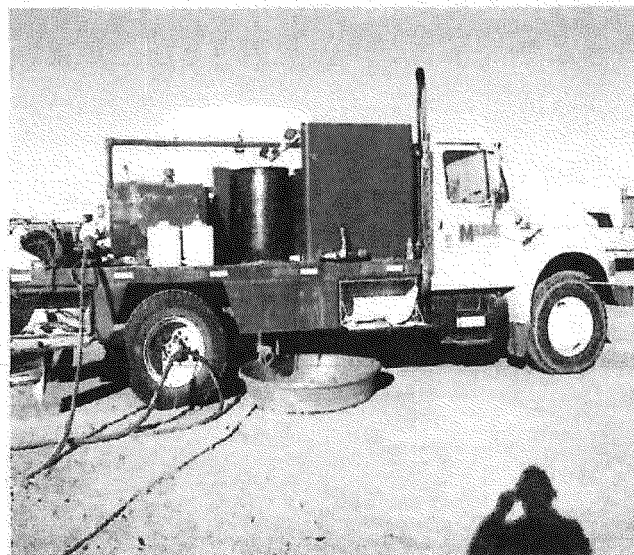




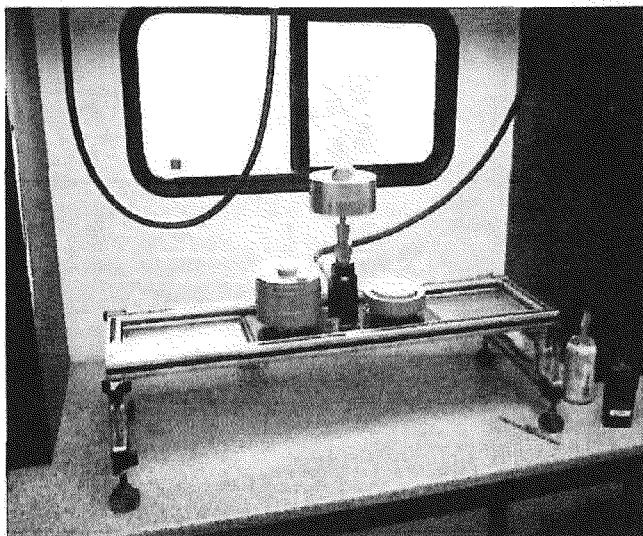
Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope		Spike Pressure Test Stress Strain Curve -- PG&E T-64 , L-300A , MP 414.79 - 416.977	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted		
788 psig	0	0.00 gal		0	0.000	39250	0.367 gal/stroke
798 psig	87	31.41 gal	28.24 gal	3.141	2.824	Pump Piston Diameter	3.000 in
808 psig	171	61.74 gal	56.48 gal	3.033	2.824	Pump Piston Stroke	6.00 in
818 psig	253	91.35 gal	84.73 gal	2.961	2.824	Pump Cylinders	2 ea
828 psig	330	119.15 gal	112.97 gal	2.780	2.825	Volume check gal per stroke	0.361 gal/stroke
838 psig	413	149.12 gal	141.22 gal	2.997	2.825	Volume Released (gallons)	29.80 gal
848 psig	496	179.09 gal	169.47 gal	2.997	2.825	Pressure Reduced (psi)	10 psi
858 psig	581	209.78 gal	197.72 gal	3.069	2.825	Maximum2	1,150 gal
868 psig	662	239.02 gal	225.97 gal	2.925	2.825	Minimum2	0 gal
878 psig	746	269.35 gal	254.22 gal	3.033	2.825	Maximum1	1,342 psig
888 psig	828	298.96 gal	282.48 gal	2.961	2.826	Minimum1	700 psig
898 psig	911	328.93 gal	310.74 gal	2.997	2.826	Gallons/Stroke Used	0.361 gal/stroke
908 psig	995	359.26 gal	339.00 gal	3.033	2.826	Predicted Gallons/Stroke	0.343 gal/stroke
918 psig	1076	388.50 gal	367.26 gal	2.925	2.826	Pressure Increment	10 psi
928 psig	1157	417.75 gal	395.52 gal	2.925	2.826	Max Pressure	1,155 psig
938 psig	1239	447.36 gal	423.78 gal	2.961	2.826	Buried Pipe Temperature	60 °F
948 psig	1323	477.69 gal	452.05 gal	3.033	2.827	Exposed Pipe Temperature	56 °F
958 psig	1409	508.74 gal	480.32 gal	3.105	2.827	ASME B31.8 Appendix N-5	
968 psig	1492	538.71 gal	508.59 gal	2.997	2.827		
978 psig	1575	568.67 gal	536.86 gal	2.997	2.827	Average Actual Elastic Slope	2.980
988 psig	1657	598.28 gal	565.13 gal	2.961	2.827	Average Predicted Elastic Slope	2.827
998 psig	1736	626.81 gal	593.41 gal	2.852	2.827	Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	5.661
1,008 psig	1820	657.13 gal	621.68 gal	3.033	2.828	Established Minimum Yield Pressure B31.8 N-5 (c)(2)	1,155 psig
1,018 psig	1906	688.19 gal	649.96 gal	3.105	2.828	Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
1,028 psig	1986	717.07 gal	678.24 gal	2.889	2.828	Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal
1,038 psig	2069	747.04 gal	706.52 gal	2.997	2.828	<div style="border: 1px solid black; width: 100%; height: 100%; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 2em; margin-right: 20px;">Redacted</span> <div style="text-align: right;"> <p>12/5/2011</p> <p>Date</p> </div> </div>	
1,048 psig	2151	776.65 gal	734.81 gal	2.961	2.828		
1,058 psig	2235	806.98 gal	763.09 gal	3.033	2.829		
1,068 psig	2317	836.58 gal	791.38 gal	2.961	2.829		
1,078 psig	2398	865.83 gal	819.67 gal	2.925	2.829		
1,088 psig	2479	895.08 gal	847.96 gal	2.925	2.829		
1,098 psig	2560	924.32 gal	876.25 gal	2.925	2.829		
1,108 psig	2642	953.93 gal	904.54 gal	2.961	2.829		
1,118 psig	2726	984.26 gal	932.84 gal	3.033	2.830		
1,128 psig	2805	1,012.78 gal	961.14 gal	2.852	2.830		
1,138 psig	2887	1,042.39 gal	989.44 gal	2.961	2.830		
1,148 psig	2972	1,073.08 gal	1,017.74 gal	3.069	2.830		
1,155 psig	3029	1,093.66 gal	1,037.55 gal	2.940	2.830		
1,155 psig		1,093.66 gal	1,037.55 gal	0.000	0.000		
1,155 psig		1,093.66 gal	1,037.55 gal	0.000	0.000		
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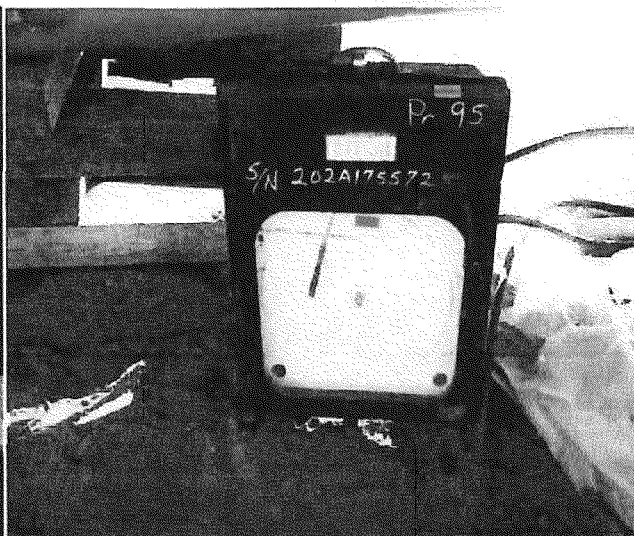
Test Header at Location A



Pressure Pump Truck



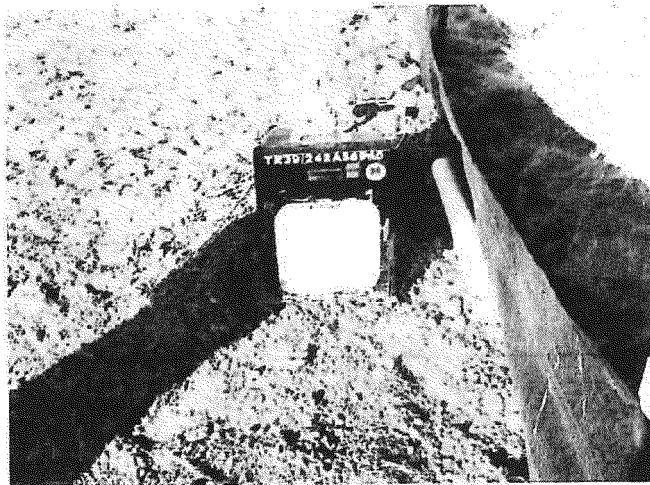
Deadweight Testing Equipment



Pressure (



Unrestrained Temp Recorder and Chart



Restrained Temp Recorder and Chart