

RCP, Inc

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

Reducted

July 12, 2011

Pacific Gas and Electric Company 3600 Adobe Rd
Petaluma, Ca 94954
Attention:
Redacted
Attention:

Test Contractor: Milbar Hydro-test Incorporated -- FY12-112
Asset Owner: Pacific Gas and Electric Company -- 41474079

Construction Contractor: Snelson -- 41474053-T51

Test Section: PG&E T-51 Line 300A MP 121.87 - 122.68

Test Date: June 8, 2011

Certificate Number: RCP 61362 - T-51, L-300A

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 Incorporated met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 1).

Prior to initiation of the hydrostatic test period, the test segment was subjected to a spike pressure of 940 psig for 30 minutes, without observed leakage or yielding of the pipe segment.

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 872 psig and the established MAOP is 793 psig.

Pressure decreased 62 psi during the test. 10,345.60 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 4,520.98 ounces, gain, which is equivalent to a 1.48 °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 physicallyattempting to measure the average temperature of 4,297 feet of buried and 225 feet of exposed pipe from a single point on the line.

Sincerely,

Redacted

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ompany	Pacific Gas and El	ectric Company			Job Number	41474079
ompany onstruction Co.	Snelson	ectific Company			Job Number Job Number	41474079 41474053-T51
dro. Test Co.	Milbar Hydro-test I	ncorporated			Project No.	FY12-112
st Section	•	300A MP 121.87 - 122.	68			
e Name	RCP 61362 - T-51	, L-300A				
			Hydrostatic Test	Pressure		
APPLICABLE COD	E FOR CERTIFICATION:				Test Date:	8-Jun-11
		Code of I	ederal Regulations, Title 49,	Part 192 Subpart J (Cla		
This is to certify	that the pipeline or p		ribed below was hydrostatically			edure:
Pipeline:		300A MP 121.87 - 122.		MD 400 00		
From:	MP 121.87			MP 122.68		
G	1	Discrete	Pipe Data		rification	4000/ 654/6
Segment 1	Length 2,105 ft	Diameter 34.000 in.	Wall Thickness 0.313 in.		cification 2, DSAW, Arc Weld, Steel	100% SMYS 956 p
2	2,192 ft	34.000 in.	0.469 in.		D, DSAW, Arc Weld, Steel	1,655 p
3	203 ft	34.000 in.	0.375 in.	API5L-X60), DSAW, Arc Weld, Steel	1,324 p
4	22 ft	34.000 in.	0.500 in.	API5L-X60), DSAW, Arc Weld, Steel	1,765 p
			Initial Test Con	ditions	Dine Ter	nperature
	ssure at Test Point:	940 psig	Date/Time:	6/8/11 2:38 PM	Unrestrained: Restrained:	71.0 °F 79.0 °F
Am	bient Temperature:	90.0 °F	Elevation @ Test Point:	1,791 ft	Location:	42+97
essure @ High Point (Cal/Measure):			Elevation @ High Point:	1,804 ft	Location:	00+00
essure @ Low	Point (Cal/Measure):	940 psig	Elevation @ Low Point:	1,791 ft	Location:	42+97
			Final Test Con	ditions		
Pressure at Test Point:		878 psig	D-4- /Ti	0/0/44 40:50 DM		nperature
			Date/Time:	6/8/11 10:53 PM	Unrestrained: Restrained:	66.0 °F 78.0 °F
Am	bient Temperature:	77.0 °F	Elevation @ Test Point:	1,791.0 ft	Location:	42+97
essure @ High Point (Cal/Measure):		872 psig	Elevation @ High Point:	1,804.0 ft	Location:	00+00
· · · · · · · · · · · · · · · · · ·		878 psig	Elevation @ Low Point:	1,791.0 ft	Location:	42+97
	_	Total Fluid Injected:	10015 00 5 11		Volum	ne gain
		otal Fluid Withdrawn:	10345.60 fluid ounces			
let Change in V	olume of the Test Se	ction ± (+ Gain, - Loss):	4,520.98 oz	gain	0.0173%	1.484 °F equivalent
	Test Duration:	: 8 hours				
aximum Test Pr	eccure.	940 psig				
SMYS @:	98.3%	Test Point	97.7%	High Point	98.3%	Low Point
				Minimum Test Pressu	re (Calculated/Measured):	872 psig
-	Maximum Allowable (Operating Pressure:		DOT Part 192	Test Factor= 1.10	793 psig
Were leaks		,			100(1 000)	. co poig
Acceptable Hydrostatic Test?	Yes	without observed le. No leaks were obse Pressure lost 62 ps 10,345.60 ounces o to the end of the tes larger than the antic Test pressure did no	the hydrostatic test period, the trakage or yielding of the pipe set arved during the test period. The si during the test. The buried pip of fluld was intentionally released to be 4,520,98 or ipated error attributed to the ter of remain steady even though n sically attempting to measure the line.	gment. e test section included 4, be segment lost 1°F fluid d from the test section N unces, gain, which is equ nperature measurement o leaks were observed.	297 feet of buried and 225 fe temperature and the expose et corrected volumetric chan iivalent to a 1.48 °F change i instrumentation utilized. The volumetric gain is attribu	et of exposed pipe. In the pipe segment lost 5°F. It is ge from beginning of the pipe temperature and the pipe temperatur

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Test 51.xlsm
Certification Page 2 of 13

7/12/2011

RCP	Dead Weight Log Sheet		
Owner Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	Snelson	Job Number	41474053-T51
Testing Co.	Milbar Hydro-test Incorporated	Project No.	FY12-112
Test Section	PG&E T-51 Line 300A MP 121.87 - 122.68		
File Name	RCP 61362 - T-51, L-300A		

Date		8-Jun-11	Test Log						
Test Period				Temperature '			Remarks		
Log No.	Date	Time	Test Pressure	Ambient	Pi Unrestrained	pe Restrained	Comment	Bleed	Inject
	6/8/11	2:07 PM	651 psig	92 °F	71 °F	79 °F	Start Spike		
2	6/8/11	2:08 PM	660 psig	92 °F	71 °F	79 °F			1,270 oz.
3	6/8/11	2:09 PM	670 psig	92 °F	71 °F	79 °F			1,552 oz.
4	6/8/11	2:10 PM	680 psig	92 °F	71 °F	79 °F			1,481 oz.
5	6/8/11	2:11 PM	690 psig	92 °F	71 °F	79 °F			1,481 oz.
6	6/8/11	2:12 PM	700 psig	92 °F	71 °F	79 °F			1,552 oz.
7	6/8/11	2:14 PM	710 psig	92 °F	71 °F	79 °F			1,481 oz.
8	6/8/11	2:15 PM	720 psig	92 °F	71 °F	79 °F			1,552 oz.
9	6/8/11	2:16 PM	730 psig	92 °F	71 °F	79 °F			1,552 oz.
10	6/8/11	2:17 PM	740 psig	92 °F	71 °F	79 °F			1,481 oz.
11	6/8/11	2:18 PM	750 psig	90 °F	71 °F	79 °F			1,552 oz.
12	6/8/11	2:19 PM	760 psig	90 °F	71 °F	79 °F			1,481 oz.
13	6/8/11	2:20 PM	770 psig	90 °F	71 °F	79 °F			1,552 oz.
14		2:21 PM	780 psig	90 °F	71 °F	79 °F			1,481 oz.
15		2:22 PM	790 psig	90 °F	71 °F	79 °F			1,552 oz.
16		2:23 PM	800 psig	90 °F	71 °F	79 °F			1,481 oz.
17		2:24 PM	810 psig	90 °F	71 °F	79 °F			1,552 oz.
18		2:25 PM	820 psig	90 °F	71 °F	79 °F			1,481 oz.
19		2:26 PM	830 psig	90 °F	71 °F	79 °F			1,552 oz.
20		2:27 PM	840 psig	90 °F	71 °F	79 °F			1,622 oz.
21		2:28 PM	850 psig	90 °F	71 °F	79 °F			1,513 oz.
22		2:29 PM	860 psig	90 °F	71 °F	79 °F			1,520 oz.
23		2:30 PM	870 psig	90 °F	71 °F	79 °F			1,481 oz.
24		2:31 PM	880 psig	90 °F	71 °F	79 °F			1,552 oz.
25		2:32 PM	890 psig	90 °F	71 °F	79 °F			1,481 oz.
26		2:34 PM	900 psig	90 °F	71 °F	79 °F			1,622 oz.
27		2:35 PM	910 psig	90 °F	71 °F	79 °F			1,552 oz.
28		2:36 PM	920 psig	90 °F	71 °F	79 °F	A CONTRACTOR OF THE PARTY OF TH	and the state of t	1,513 oz.
29		2:37 PM	930 psig	90 °F	71 °F	79 °F	· Province and a second contraction of		1,520 oz.
30		2:38 PM	940 psig	90 °F	71 °F	79 °F	A Commence of the Commence of		1,552 oz.
31		2:38 PM	940 psig	90 °F	71 °F	79 °F	On.	Test	1,002 02.
32		2:48 PM	940 psig 940 psig	90 F 92 °F	71 °F	79 °F	Oli	1631	
33		2:58 PM	940 psig 940 psig	92 ⊪ 91 °F	71 °F	79 °F			
34		3:08 PM	· CONTRACTOR CONTRACTOR CONTRACTOR	91 F 92 °F	71 °F	79 F 80 °F	End Spike		
			940 psig	**************			спи орке		
			 VERNERS REPRESENTATIONS TO A PROPERTY 	STATES AND ADDRESS OF THE STATES OF THE STAT				1 606 57	
			* * TOTAL PROCESSION OF THE PR		and a second contract of the second contract of the second				SALES ENGLISHED STREET
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			 Section of the section of the section		*****************				
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			- NAMES OF THE PERSON OF THE P						
35 36 37 38 39 40 41 42 43	6/8/11 6/8/11 6/8/11 6/8/11 6/8/11 6/8/11 6/8/11	3:13 PM 3:25 PM 3:31 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM	940 psig 930 psig 879 psig 879 psig 880 psig 880 psig 880 psig 880 psig 881 psig 881 psig	92 °F 91 °F 91 °F 92 °F 92 °F 92 °F 93 °F 93 °F 93 °F	71 °F 71 °F 71 °F 71 °F 71 °F 71 °F 71 °F 71 °F 71 °F	80 °F 80 °F 80 °F 80 °F 80 °F 80 °F 80 °F 80 °F 80 °F		1,696 8,650	

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Dead Weight Sheet Page 3 of 13 7/12/2011

RCP				Dea	d Weight	Log Shee	et				
Owner Cor	empany Pacific Gas and Electric Company							Job Number	41474079		
Construction	on Co.	Snelson	·······				Job 41474053 Number				
Testing Co		Milbar H	lydro-test Incorp	orated				Project No.	FY12-112		
Test Section	n	PG&E	T-51 Line 300A I	MP 121.87	- 122.68						
File Name		RCP 61	362 - T-51, L-30	0A							
	Date		8-Jun-11			-	Test Log				
Log No.	Test Po		Test Pressure		Temperature °		Remarks				
	Date	Time		Ambient	Unrestrained	Restrained	Comment	Bleed	Inject		
44	*******	5:15 PM	881 psig	93 °F	71 °F	79 °F					
45		5:30 PM	882 psig	93 °F	71 °F	79 °F					
46		5:45 PM	882 psig	92 °F	70 °F	79 °F					
47 48		6:00 PM 6:15 PM	882 psig 882 psig	92 °F 91 °F	70 °F 70 °F	79 °F 79 °F					
49		6:30 PM	882 psig	91 °F	70 °F	79°F					
50		6:45 PM	882 psig	90 °F	70 °F	79 °F					
51		7:00 PM	882 psig	89 °F	68 °F	79 °F			and the second		
52		7:15 PM	882 psig	88 °F	68 °F	79 °F					
53	6/8/11	7:30 PM	882 psig	87 °F	68 °F	79 °F					
54	6/8/11	7:45 PM	882 psig	86 °F	68 °F	79 °F					
55		B:00 PM	882 psig	85 °F	68 °F	79 °F					
56		8:15 PM	881 psig	84 °F	68 °F	79 °F					
57		8:30 PM	881 psig	83 °F	67 °F	79 °F					
58 59		8:45 PM 9:00 PM	881 psig	81 °F 80 °F	67 °F 67 °F	79 °F 79 °F					
60		9:00 FM 9:15 PM	880 psig 880 psig	79°F	66 °F	79°F					
61		9:30 PM	880 psig	79 °F	66 °F	79 °F					
62		9:45 PM	880 psig	78 °F	66 °F	79 °F					
63	6/8/11 10		879 psig	77 °F	66 °F	78 °F					
64	6/8/11 10		879 psig	77 °F	66 °F	78 °F					
65	6/8/11 10		879 psig	77 °F	66 °F	78°F					
66	6/8/11 10	*************	879 psig	77 °F	66 °F	78 °F	on the second				
67	6/8/11 10	J:53 PM	878 psig	77 °F	66 °F	78 °F	End of Test				
							Spike Test		44,009.5 oz		
						<i>y</i>	Hydrostatic Test	10,345.6 oz.			
	abaamiad s	luring the	e test period?	Exposed :	and buried pipe,		High Test Pressure:	940 psig			

RCP				Pipe S	egment Vol	ume Calculatio	ns		
Company	Pacific Gas and	d Electric Company	/		Job Number	41474079			
Construction Co.	Snelson				Job Number	41474053-T51			
lydro. Test Co.	Milbar Hydro-te	est Incorporated				Project No.	FY12-112		
est Section		ne 300A MP 121.8	7 - 122 68						
ile Name	RCP 61362 - T						WATER		
ne Name	RCP 01302 - 1	-51, L-300A		General Pi					
				(Ceneral L	Segment				
Description	1	2 <u>*</u>	3	4	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Restrained or Unrestrained?	Restrained	Restrained	decenne de la comunica del la comunica de la comuni	Unrestrained					
outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.					
/all Thickness iside Diameter	0.313 in. 33.375 in.	0.469 in. 33.062 in.	0.375 in. 33.250 in.	0.500 in. 33.000 in.					
pec./Grade	API5L-X52	API5L-X60	API5L-X60	API5L-X60	2				
ength Unrestrained			203 ft	22 ft					
ength Restrained	2,105 ft	2,192 ft	<u>-</u>						
emperature On Test emperature End of Test	79 °F 78 °F	79 °F 78 °F	71.0 °F 66.0 °F	71.0 °F 66.0 °F					
ressure On Test	78 F 940 psig	78 F 940 psig	940 psig	940 psig	·				
ressure End of Test	878 psig	878 psig	878 psig	878 psig	***********				
				Unrestrain	ed Pipe				
Sum:	Vo	10,134.17 gal		Vtp1	10,187.91 gal	Vtp2	10,188.76 gal		
	٧٥	1,297,174 oz.			1,304,053 oz.	Vtpz	1,304,161 oz.		
o Unrestrained			9,157 gal	977 gal					
wp 1			1.002880 1.003473	1.002880 1.002585	X				
pt 1			1.000200	1.002303					
wt 1			1.001170	1.001170					
pwt 1 = Fpt/Fwt			0.999032	0.999032					
tp 1 = Vo(Fwp)(Fpp)(Fpwt)			9,206.03 gal	981.88 gal					
wp 2			1.002689	1.002689					
pp 2			1.003244	1.002415	Xxxxxxxxxxxxxxxxxxxxxxxxxx				
pt 2	.,		1.000109	1.000109					
wt 2 pwt = Fpt/Fwt			1.000582 0.999527	1.000582 0.999527					
tp = Vo(Fwp)(Fpp)(Fpwt)			9,206.74 gal	982.01 gal					
				Restraine					
	1	193,424.43 gal			194,090.97 gal		194,044.62 gal		
Sum:	VO 2	24,758,327 oz.		Vtp1	24,843,645 oz.	Vtp2	24,837,712 oz.		
o Unrestrained	95,665 gal	97,759 gal							
wp 1	1.002880	1.002880							
pp 1 pt 1	1.003114 1.000230	1.002078 1.000230							
wt 1	1.002255	1.002255							
pwt 1 = Fpt/Fwt	0.997979	0.997979							
tp 1 = Vo(Fwp)(Fpp)(Fpwt)	96,045 gal	98,046 gal							
wp 2	1.002689	1.002689							
op 2	1.002909	1.001942							
pt 2 wt 2	1.000218 1.002122	1.000218 1.002122							
wt 2 pwt = Fpt/Fwt	0.998100	0.998100							
tp = Vo(Fwp)(Fpp)(Fpwt)	96,019 gal	98,026 gal		***************************************					
				Combine					
Cum:	V-2	203,558.60 gal		1/4 4	204,278.88 gal 26,147,697 oz.	V450	204,233.38 gal		
Sum:	VO 2	26,055,501 oz.		vipi	26.147.697 oz.	·····Vtp2	26,141,873 oz.		

ROH		Pipe Seg	gment V	olume <i>A</i>	Mowanc	e Calo	culation	S				
Company	Pacific Gas an	d Electric Com	pany			Job Num		bb Number 41474079				
Construction Co.	Snelson						Job Number		414	74053-T51		
lydro. Test Co.	Milbar Hydro-te	est Incorporate	d				Project No.		F'	Y12-112		
Test Section	PG&E T-51 Li			***************************************							***************	
File Name	RCP 61362 - T	-51, L-300A							WATER			
				Gen	eral Pipe Data							
Description		2	3	4		Segment			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Restrained or Unrestrained?	Restrained	Restrained	Unrestrained	Unrestrained								
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.					 :			
Vall Thickness	0.313 in.	0.469 in.	0.375 in.	0.500 in.					 !			
nside Diameter	33.375 in.	33.062 in.	33.250 in.	33.000 in.					:·····································			
Spec./Grade	API5L-X52	API5L-X60	API5L-X60						·			
ength Unstrained			203.00 ft	22 ft					: :			
ength Restrained	2,105 ft	2,192 ft									,	
emperature On Test	78 °F	78 °F	68 °F	68 °F								
emperature End of Test	79 °F	79 °F	69 °F	69 °F								
Pressure On Test	909 psig	909 psig	909 psig	909 psig								
Pressure End of Test	909 psig	909 psig	909 psig	909 psig	estrained Pipe							
		10,134.17 ga			10,188.98 ga			10,187.89	nal			
Sum:	Vo	1,297,174 oz		Vtp1	1,304,190 oz		Vtp2	1,304,049				
/o Unrestrained	<u> </u>		9,157 gal	977 gal			kamanamana !					
wp 1			1.002785	1.002785		······			(:			
-pp 1]		1.003358	1.002500								
-pt 1			1.000146	1.000146					<u>:</u>			
Fwt 1	į		1.000803	1.000803								
Fpwt 1 = Fpt/Fwt			0.999343	0.999343								
/tp 1 = Vo(Fwp)(Fpp)(Fpwt)			9,206.97 gal	982.01 gal								
Fwp 2			1.002785	1.002785								
-pp 2	ļ		1.003358	1.002500								
-pt 2	ļ		1.000164	1.000164					<u>;</u>			
Fwt 2			1.000929	1.000929					: 			
Fpwt = Fpt/Fwt			0.999236	0.999236					: : :			
tp = Vo(Fwp)(Fpp)(Fpwt)			9,205.98 gat									
		102 424 42 -		Re	strained Pipe			104.056.4	1			
Sum:	Vo	193,424.43 g 24,758,327 d		Vtp1	194,079.15 g 24,842,131 o		Vtp2	194,056.4 24,839,22				
/o Restrained	95,665 gal	97,759 gal	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii				immummi			iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii		
Fwp 1	1.002785	1.002785							 !			
Fpp 1	1.003010	1.002009										
Fpt 1	1.000218	1.000218							 : :			
Fwt 1	1.002122	1.002122										
Fpwt 1 = Fpt/Fwt	0.998100	0.998100							<u> </u>			
/tp 1 = Vo(Fwp)(Fpp)(Fpwt)	96,037 gal	98,042 gal										
wp 2	1.002785	1.002785							ļ			
-pp 2	1.003013	1.002012							<u> </u>			
Fpt 2 Fwt 2	1.000230	1.000230							:			
-wt∠ Fpwt = Fpt/Fwt	1.002255 0.997979	1.002255 0.997979							:			
									 !			
/tp = Vo(Fwp)(Fpp)(Fpwt)	96,026 gal	98,030 gal										
		203,558.60 g			mbined Pipe 204,268.13 gal				204	.244.33 gal		
Sum:	Vo	ZUJ,JJ0.0U (jui :	Vtp1	204,200. 13 yal	1	Vtp2		204	z74.00 yai		



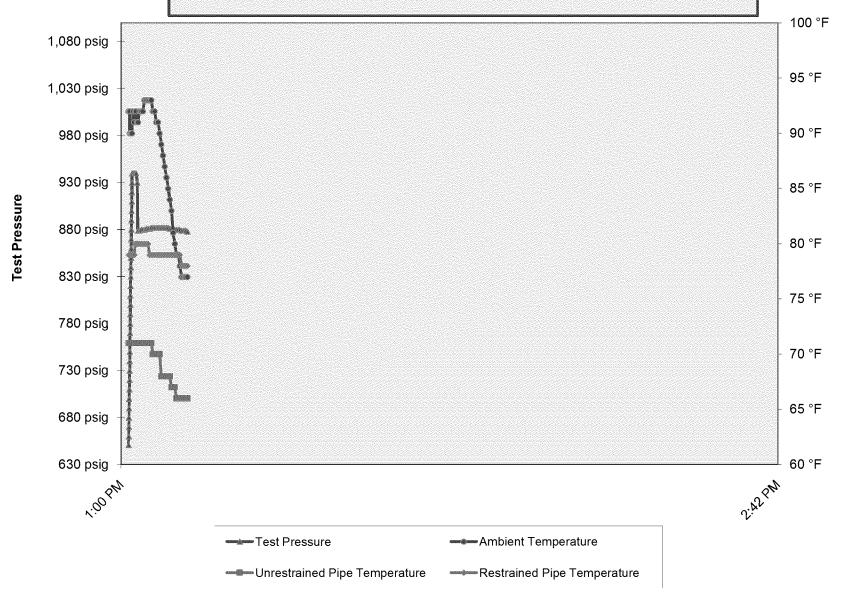
Hydrostatic Test Pipe Data Table

Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	2,105 ft	Restrained	34.000 in.	0.3125 in.	API5L-X52	956 psig	Steel	Arc Weld	DSAW
2	2,192 ft	Restrained	34.000 in.	0.4690 in.	API5L-X60	1,655 psig	Steel	Arc Weld	DSAW
3	203 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X60	1,324 psig	Steel	Arc Weld	DSAW
4	22 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X60	1,765 psig	Steel	Arc Weld	DSAW

	Hydrostatic Test Project Owner & Participants	
Owner Company	Pacific Gas and Electric Company	Job Number
Address	3600 Adobe Rd	
	Petaluma, Ca 94954	41474079
	Attention: Redacted	
Construction Company	Snelson	Job Number
Address	601 West State Street	
	Sedro-Woolley, WA 98284	41474053-T51
	Attention: Redacted	
Hydrostatic Test Co.	Milbar Hydro-test Incorporated	Project No.
Address	P. O. Box 7701	
	Shreveport, Louisiana 71137-7701	FY12-112
	Attention: Tommy Minter	
	PG&E T-51 Line 300A MP 121.87 - 122.68	
Test Section	From: MP 121.87	
	To: MP 122.68	
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File Name	RCP 61362 - T-51, L-300A	
************	an englanda an	







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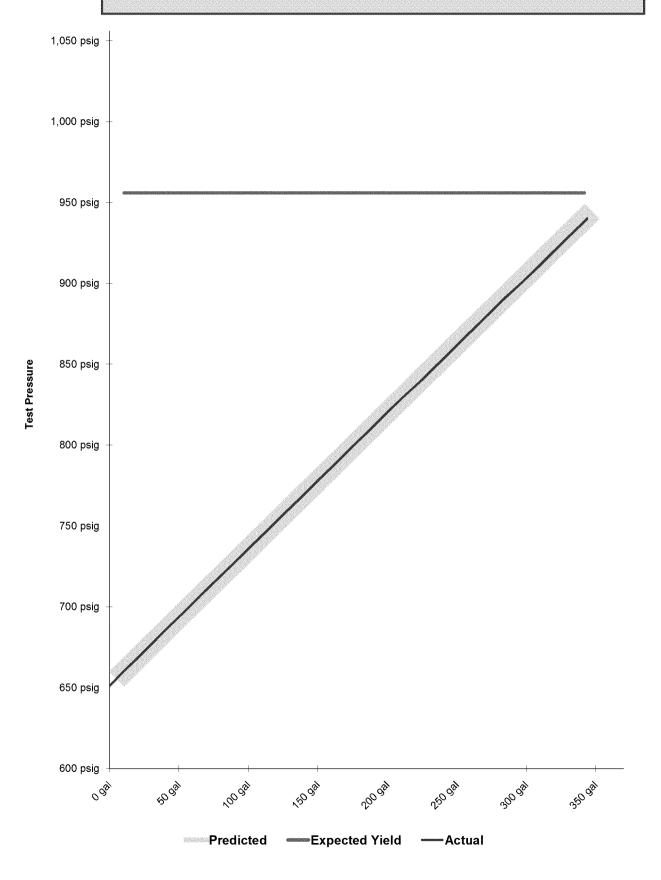
PlotT

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Spike Pressure Test Stress Strain Curve -- PG&E T-51 Line 300A MP 121.87 - 122.68



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	essure Vol Data	lume Plot	Predicted Pressure Volume Plot Data	Sle	ope	Spike Pressure Tes Stress Strain Curve PG&E T-51 Lin	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted	122.68	
651 psig	0	0.00 gal		0	0.00 gal	Pump gal per stroke	0.551 gal/stroke
660 psig	18	9.92 gal	10.64 gal	1.102	1.182	Pump Piston Diameter	
670 psig	40	22.04 gal	22.46 gal	1.212	1.182	Pump Piston Stroke	
680 psig	61	33.61 gal	34.28 gal	1.157	1.182	Pump Cylinders	
690 psig	82	45.18 gal	46.10 gal	1.157	1.182	Volume check gal per stroke	0.614 gal/stroke
700 psig	104	57.30 gal	57.92 gal	1.212	1.182	Volume Released (gallons)	13.25 gal
710 psig	125	68.88 gal	69.75 gal	1.157	1.182	Pressure Reduced (psi)	10.0 psi
720 psig	147	81.00 gal	81.57 gal	1.212	1.182	Maximum2	370 gal
730 psig	169	93.12 gal	93.40 gal	1.212	1.182	Minimum2	0 gal
740 psig	190	104.69 gal	105.22 gal	1.157	1.183	Maximum1	1,056 psig
750 psig	212	116.81 gal	117.05 gal	1.212	1.183	Minimum1	600 psig
760 psig	233	128.38 gal	128.88 gal	1.157	1.183	Gallons/Stroke Used	0.551 gal/stroke
770 psig	255	140.51 gal	140.70 gal	1.212	1.183	Predicted Gallons/Stroke	0.548 gal/stroke
780 psig	276	152.08 gal	152.53 gal	1.157	1.183		
790 psig	298	164.20 gal	164.36 gal	1.212	1.183	Pressure Increment	10 psi
800 psig	319	175.77 gal	176.19 gal	1.157	1.183		
810 psig	341	187.89 gal	188.02 gal	1.212	1.183	Max Pressure	940 psig
820 psig	362	199.46 gal	199.85 gal	1.157	1.183		
830 psig	384	211.58 gal	211.68 gal	1.212	1.183	Buried Pipe Temperature	79 °F
840 psig	407	224.26 gal	223.52 gal	1.267	1.183		
850 psig	428	236.08 gal	235.35 gal	1.182	1.183	Exposed Pipe Temperature	71 °F
860 psig	450	247.95 gal	247.19 gal	1.187	1.183		
870 psig	471	259.52 gal	259.02 gal	1.157	1.183	ASME B31.8 Appendix N	-5
880 psig	493	271.64 gal	270.86 gal	1.212	1.184		
890 psig	514	283.21 gal	282.69 gal	1.157	1.184	Average Actual Elastic Slope	1.191
900 psig	537	295.89 gal	294.53 gal	1.267	1.184		
		_		1.212	1.184	Average Predicted Elastic Slope	1.183
910 psig	559 580	308.01 gal	306.37 gal	1.182	1.184	Code Prescribed Minimum Yield Slope (less	
920 psig 930 psig	560 602	319.83 gal	318.21 gal 330.05 gal	1.187	1.184	10%) B31.8 N-5 (c)(2)	2.262
	624	331.70 gal	, ,		1.184	Established Minimum Yield Pressure B31.8 N-5	
940 psig	024	343.82 gal	341.89 gal 341.89 gal	1.212 0.000	0.000	(c)(2)	940 psig
940 psig		343.82 gal 343.82 gal		0.000	0.000	Maximum Allowed Volume (After Slope	
940 psig			341.89 gal			Deviation) B31.8 N-5 (c)(2)	418 gal
940 psig		343.82 gal	341.89 gal	0.000	0.000	, , , , , ,	
940 psig		343.82 gal	341.89 gal	0.000	0.000	Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal
940 psig	100000000000000000000000000000000000000	343.82 gal	341.89 gal				l
940 psig		343.82 gal	341.89 gal	0.000	0.000		
940 psig		343.82 gal	341.89 gal	0.000	0.000		
940 psig		343.82 gal	341.89 gal	0.000	0.000		
940 psig		343.82 gal	341.89 gal	0.000	0.000		
940 psig		343.82 gal	341.89 gal	0.000	0.000		
940 psig		343.82 gal	341.89 gal	0.000	0.000		
940 psig		343.82 gal	341.89 gal	0.000	0.000	Redacted	Det-
940 psig		343.82 gal	341.89 gal	0.000	0.000	Noduced	Date

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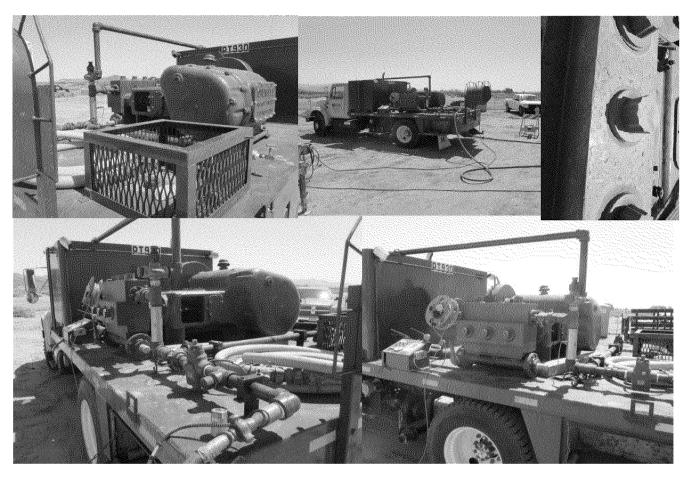




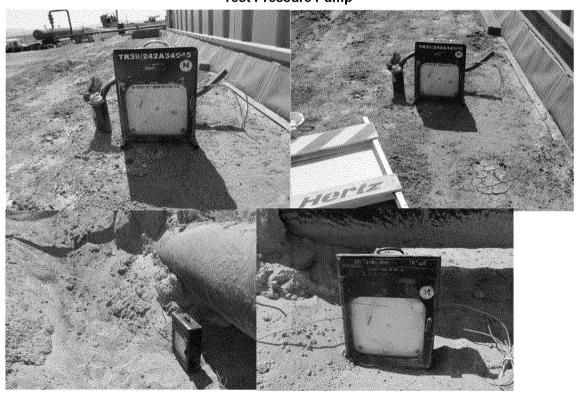
Exposed Test Headers and Piping

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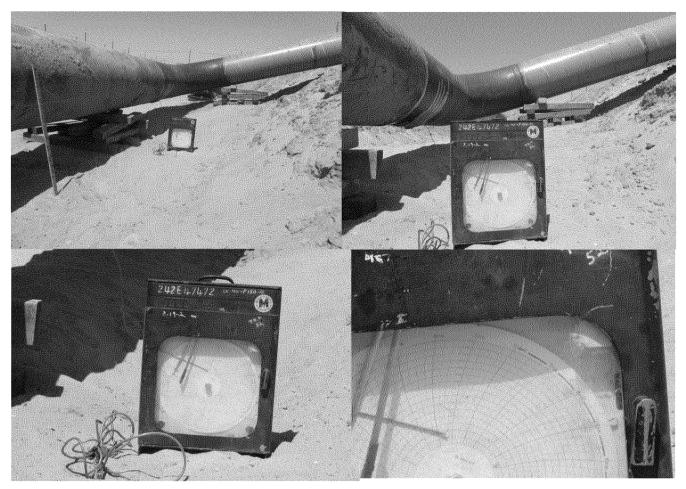
Test Pressure Pump



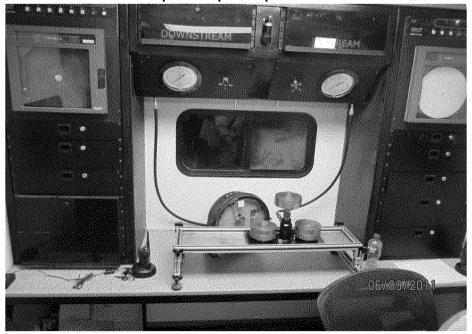
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Buried Pipe Temperature Recorders



Exposed Pipe Temperature Recorder



Deadweight and Pressure recording Chart