

# Pacific Gas and Electric Company Project 1581

# Strength Test Pressure Report L-114 Replacement MP 12.70 – MP 16.57



# Gulf Document No.: 1581-114\_2A-RP-0001-00\_0

Rev. No.	Date	Revision Description	Preparer Name	Reviewing Engineer Name	Project Manager	Client Approval
0	9/9/2013	Initial Submittal	Redacted			Redacted
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# **REVISION LOG**

## PROJECT: PG&E 2013 PIPELINE REPLACEMENT PROJECT

#### **REPORT NUMBER:**

GULF PROJECT NO.: 1581

TITLE:

L-114 Strength Test Pressure Report, MP 12.70 – 16.57

Provide a brief description of changes for all revisions following Rev. 0

Rev.	Date	Revision Description
0	9/9/2013	Initial submittal



### PART 1 - TEST DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER/ESTIMATOR)

Test D	escript	ion						a da se							
Line N	umber o	r Static	on Name	L-11	14			Division/District Diablo Job Number 30943472							
Purpos	se of Tes	t: Tes	t new in	stalla	ition			MAOP to be Established by this Test 720 PSIG							
Test T	ie-in Pie	ces at	MP 12.	70, N	nclude reference IP 13.73, MP EB-58. Draw	14.35,	MP 14.58	and I	MP 1		ewly insta	lled 24" L-	114 from		
New	/ Facility	(no sp	ike test re	quired	) 🗌 Existing	Facilit	y	1		ke test for	existing fa	cility, expl	ain:		
Static	Head C	alcula	tion					<u> </u>							
Minimu	um Eleva ım Eleva on Diffei	tion	<u>N/A</u> <u>N/A</u> <u>N/A</u>	er a la bre	T T T			For	Othe	er _(Elev. D er Test Mec e responsible	lium	<u>.</u>		a this field.	
Pipe to	o be Tes	sted	(Helenite)	in di				1.00					<u>in compreta</u>		
	ze	API	or   ei	NYS	Long Seam	JF	Footage	Act	ual	Location	Most		% of SMY	S	
OD (in.)	WT (in.)	AFI AST Spe	M (	osi)	(ERW, DSAW, SMLS etc.)	(E)	to be Tested	Foo	age Class Res De		Restrictive Design Factor	At MAOP	At Min. Test Press.	At Max. Test Press.	
24,000	0.375	API-	5L 60	0000	SAWL	1,00	100			3	0,5	38,40	90.03	93.01	
22,000	0.375	API-	5L 65	000	HFW	1.00	25			3	0,5	32.49	76.18	78,70	
24,000	0.375	MSS-SI	P-75 60	000	24x22 Reducer	•	2 ea			3	0.5	38,40	90,03	93.01	
22.000	0.375	MSS-SI	P-75 60	000	24x22 Reducer	•	<u>^</u>			3	0.5	35.19	82.52	85.26	
All fitti	ngs inclu	uded in	the test	(exc	ept those liste	ed abov	ve) are the	same	wall	thickness	and grade	as the pip	e 🛛		
Pipe sp	oecs veri	fied in	field 🗌	Si	gnature of pe	rson si	upervising	test							
Compo	onent(s)	limiting	g test pro	ssur	e/Control Poi	nt exce	ptions								
Test S	pecifica	ntions	(include	a spik	e test when tes	ting exi	sting faciliti	es)							
Test Fac	tor <u>1.5</u>	[1A]	Min, Tes	t Pre	ssure at Max. E	lev. <u>168</u>	8 PSIG	[18]	Max	. Test Press	ure at Min.	Elev. <u>1744</u> P	SIG		
Spike T	'eet	[1C]	Spike F	actor				[1D]	Spil	ke Pressure	at Max. Ele	A Box [1ALX	11CI =	PSIG	
(comple		[1E]			re at Min. Elev.		PSIG	[1F]	<b> </b>	. Post-Spike					
for spike										[1E] X 0.95 =		PSIG			
Test M	edium to	be Us	ed <u>WA</u>	<u>ER</u>	Minimum T	est Dui	ration <u>8.(</u>	<u>)</u> Hou	rs	■ 30% S ■ Pre-in	MYS and o stallation Te	: 1 hour mini er: 8 hours r st: Refer to A utes minimu	ninimum -34, Attach		
Signat	ures	Galari.								<u>+ -</u>					
Prepar	ed by (si	gnatur	e) Rec	acteo	1		rint Name	and P	hone	Number		Date 9/6/2013		AN ID edact	
Redacte	ed by (s	ianətu	ra			<u></u> ⊢⊢∟ ₽	rint Name lacted					Date 019/1		d AN ID dacted	
Test Si	<b>lp</b> ervise	d by (s	ignature	)		<u> </u>	ime and Da eached (fro				ime and E Ended (from	ate Test	Actual Di Test (from	uration of 1 Part 2)	



#### PART 2 - TEST DATA (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

Test Elevation							and the second second			
Elevation at	Max.	Elevation	in Tes	t Section	FT	Min. E	Min. Elevation in Test Section FT			
Test Point FT	[2A]	Static Hea	ıd b/t 1	Fest Point and N	fax. Elev, PSIG	[2B] Static Head b/t Test Point and Min. Elev PSIG				
No Spike Test: Calc	ulatio	ns and Te	st Re	sults (complete	for strength test with	iout a sp	ike test)			
Min. Required Test Press Box [1A] + Box [2A] =			1	Allowable Test Pr B] – Box [2B] =		Pressu	re Range During Test	PSIG		
[2C] Min. Test Pressure		ited PSIG	[2D]	Max. Test Press	ure Indicated PSIG					
	alculated Min. Test Pressure at Max. Elev. ox [2C] – Box [2A] = PSIG				Fest Pressure at Min. Elev. 3] = PSIG					
Spike Test: Calculat	lions	and Test I	Result	S (complete for s	trength test with a s	pike test	)			
Spike Pressure at Test Point Box [1E] – Box [2B] = PSIG				Required Test Pres A] + Box [2A] =	ssure at Test PointPSIG	Point	Max. Post-Spike Pressure at Test Pressure Rar			
[2E] Spike Pressure Inc	2E] Spike Pressure Indicated				ure Indicated PSIG		2G] Max. Post-Spike Test Pressure Indicated			
Calculated Spike Pressu Box [2E] + Box [2B] =				lated Min. Test Pr F] – Box [2A] =	essure at Max. Elev. PSIG	Calculated Max. Post-Spike Pressure at Min. Elev. Box [2G] + Box [2B] = PSIG				
Test Acceptance	1991		1							
Were Leaks Observed	7				If yes, explain:					
Acceptable Strength T Yes No Report strength test failure		gulatory Com	pliance		If no, explain;					
Test Medium Used	'ime a	nd Date Te	st Pres	sure Reached	Time and Date Te	est End	st Ended Actual Duration of Test			
Test Instruments					1					
Make, Range, and Ser	al No.	of Pressu	re Rec	ording Device			Date Last Calibrate	ed		
Make, Range and Seria A dead weight tester and/o or greater than 90% of SM	r an ele				r tests of any pipe seg	gment eq	ual to Date Last Calibrate	ed		
Signatures										
Test Supervised by (signature) Print Name				Print Name			Date	LAN ID		
Testing Contractor (if	third p	arty)								
Approved by (signatu	re)			Print Name			Date	LAN ID		
Attachments					Distribution					

• Test chart

Schematic piping sketch

Test log with pressure noted every 15 minutes

 Gas Job Closeout Desk, 6121 Bollinger Canyon Road, Building Z1, San Ramon, CA 94583



### PART 1 - TEST DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER/ESTIMATOR)

	ine Number or Station Name L-114									Division/District Diablo Job Number 30943472					
Purpose of Test: Test new installation									MAOP to be Established by this Test 720 PSIC						
					-			MAOP to be Established by this Test 720 PSIG							
Test S		ek Tie	-in Piece	e at N	iclude reference IP 13.71 for i						2.70 to MP	16.57. W	all Map El	B-58.	
	さん じんごうじょう 一変す				) 🔲 Existing es 🗌 No (expla			lf no	o spik	e test for	existing fa	icility, exp	lain:		
Static	Head C	alcula	tion												
Maximum Elevation 92 FT Minimum Elevation 92 FT								For	Wate	r <u>0 (</u> Elev.	Diff.) x 0.4	33 = <u>0</u> PSI	G		
	ım Eleva on Differ		<u>92</u> 0	F F				For Other Test Medium Contact the responsible engineer for guidance on completing this field							
	GUTTI TELEVISION		2					Con	act the	e responsibl	e engineer f	or guidance	on completir	ng this fiel	
	o be Tes							1					0/ of CMAY	<u>c</u>	
OD (in.)	Ze WT (in.)	API AST Spe	М (	MYS psi)	Long Seam (ERW, DSAW, SMLS etc.)	JF (E)	Footage to be Tested	Acl Foo		Location Class	Most Restrictiv Design Factor	e At MAOP	% of SMY At Min. Test Press,	At Mar Test Press	
24.000	0.375	API-	5L 60	0000	SAWL	1.00	25	1		3	0.5	38,40	90.03	93.01	
22,000	0.375	API-	5L 6!	5000	HFW	1.00	10			3	0,5	32,49	76,18	78,70	
24.000	0,375	MSS-SF	<sup>2-75</sup> 60	0000	24x22 Reducer		1 ea			3	0.5	38.40	90.03	93.01	
22.000	0.375	MSS-SF	<sup>2-75</sup> 6(	0000	24x22 Reducer	•	Λ			3	0.5	35.19	82.52	85.26	
								L			L			1	
All Fittin	ngs inclu				ept those liste				wall	thickness	and grade	as the pip	<u>≫e ⊠</u>		
	oce vori	fied in	hold	<b>1</b>		10011 01									
	ecs veri	fied in	field 📋												
Pipe sp					e/Control Poi										
Pipe sp Compo	nent(s) l	imiting	ı test pro	essur		nt exce	ptions								
Pipe sp Compo <b>Test S</b>	nent(s) l pecifica	imiting tions	ı test pro	essur a spik	e/Control Poi	nt exce ting exit	ptions ating faciliti		Max	. Test Press	sure at Min.	Elev. <u>1744</u>	PSIG		
Pipe sp Compo Test S Fest Fac	nent(s) l pecifica tor <u>1.5</u>	imiting Itions	i test pro (include Min. Tel	essur a spik st Pres	- e/Control Poi e test when tes	nt exce ting exit	ptions ating faciliti	<b>əs)</b> [18]						DSI	
Pipe sp Compo Test S Fest Fac Spike T	prient(s)   pecifica tor <u>1.5</u> est	imiting Itions [1A] [1C]	(include Min. Tes Spike F	essur a spik st Pres actor	e/Control Poi e test when tes ssure at Max. E	nt exce ting exit lev. <u>168</u> 8	ptions bting faciliti } PSIG	25) [18] [10]	Spik	e Pressure	at Max. Ele	<b>v.</b> Box [1A] x	[1C] =	PSI	
Pipe sp Compo	nent(s) I pecifica tor <u>1.5</u> est te only	imiting Itions	(include Min. Tes Spike F	essur a spik st Pres actor	- e/Control Poi e test when tes	nt exce ting exit lev. <u>168</u> 8	ptions bting faciliti } PSIG	<b>əs)</b> [18]	Spik Max.	e Pressure	at Max. Ele e Pressure		[1C] =	PSI	
Pipe sp Compo Test S Fest Fac Spike T (comple for spike	nent(s) I pecifica tor <u>1.5</u> est te only	imiting Itions (14) (12) (1E)	(include Min. Tes Spike F Spike P	essur a spik st Pres actor ressu	e/Control Poi e test when tes ssure at Max. E	nt exce ting exit	ptions sting faciliti } PSIG _ PSIG	<b>35)</b> [18] [10] [17]	Spik Max Box	e Pressure Post-Spik [1E] X 0.95 = • Under • 30% \$ • Pre-in	at Max. Ele e Pressure - r 30% SMYS SMYS and o Istallation Te	v. Box [1A] x at Min. Elev	[1C] = imum minimum A-34, Attachi	ment A	
Pipe sp Compo Test S Fest Fac Spike T (comple for spike	enent(s) I pecifica tor <u>1.5</u> est te only te only test) edium to	imiting Itions (14) (12) (1E)	(include Min. Tes Spike F Spike P	essur a spik st Pres actor ressu	e/Control Poi e test when tes ssure at Max. E	nt exce ting exit	ptions sting faciliti } PSIG _ PSIG	<b>35)</b> [18] [10] [17]	Spik Max Box	e Pressure Post-Spik [1E] X 0.95 = • Under • 30% \$ • Pre-in	at Max. Ele e Pressure - r 30% SMYS SMYS and o Istallation Te	v. Box [1A] x at Min. Elev PSIG :: 1 hour min ver: 8 hours st: Refer to /	[1C] = imum minimum A-34, Attachi	ment A	
Pipe sp Compo Test S Fest Fac Spike T (comple for spike Test Ma Signat	enent(s) I pecifica tor <u>1.5</u> est te only te only test) edium to	imiting tions [1A] [1C] [1E] be Us	(include Min. Tet Spike F Spike P ed <u>WA</u> T	essur a spik st Pres actor ressu	e/Control Poi e test when tes sure at Max. E re at Min. Elev. Minimum T	nt exce ting exit lev. <u>168</u> est Dur	ptions sting faciliti } PSIG _ PSIG	::::::::::::::::::::::::::::::::::::	Spik Max. Box   rs	e Pressure Post-Spik (1E) x 0.95 = • Under • 30% \$ • Pre-in • Spike	at Max. Ele e Pressure 30% SMYS SMYS and o Istallation Te Test: 30 min	v. Box [1A] x at Min. Elev PSIG 1 hour min ver: 8 hours st: Refer to A nutes minimu Date	[1C] = minimum A-34, Attachi Im (included	ment A	
Pipe sp Compo Test S Fest Fac Spike T (comple for spike Test Mo Signat Prepare	enent(s) I pecifica tor <u>1.5</u> est te only te only etest) edium to ures ed by (si	imiting tions [14] [15] be Us	(include Min. Tes Spike F Spike P ed <u>WA</u>	essur a spik at Pres actor ressur	e/Control Poi e test when tes sure at Max. E re at Min. Elev. Minimum T	nt exce ting exis lev. <u>1684</u> est Dur Re Re	ptions sting faciliti PSIG PSIG ation <u>8.(</u>	25) [18] [19] [17] [17] [17] [17]	Spik Max. Box   rs	e Pressure Post-Spik (1E) x 0.95 = • Under • 30% \$ • Pre-in • Spike	at Max. Ele e Pressure r 30% SMYS SMYS and o istallation Te Test: 30 min	v. Box [1A] x at Min. Elev PSIG : 1 hour min ver: 8 hours st: Refer to / nutes minimu	[1C] = imum minimum A-34, Attachi im (included L Re	ment A in test) AN ID	



#### PART 2 - TEST DATA (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

Test Elevation										
Elevation at	Max.	Elevation	in Tes	t Section	FT	Min. E	levation in Test Section	FT		
Test Point FT	[2A]	Static Hea	ıd b/t⊺	Fest Point and N	fax. Elev. PSIG	[2B]	Static Head b/t Test Poi	nt and Min. Elev. PSIG		
No Spike Test: Calc	ulatio	ns and Te	st Re	suits (complete	for strength test with	iout a sp	ike test)			
Min. Required Test Press Box [1A] + Box [2A] =				Allowable Test Pro B] – Box [2B] =		Pressu	re Range During Test	PSIG		
[2C] Min. Test Pressure		ited PSIG	[2D]	Max. Test Press	ure Indicated PSIG					
Calculated Min. Test Pres Box [2C] – Box [2A] =			Calculated Max. Test Pressure at Min. Elev. Box [2D] + Box [2B] = PSIG							
Spike Test: Calculat	tions	and Test I	Result	S (complete for s	trength test with a s	oike test	)			
Spike Pressure at Test P Box [1E] – Box [2B] =	isig		Required Test Pres A] + Box [2A] =	ssure at Test Point PSIG	Point	Max. Post-Spike Pressure at Test Pressure Rang				
[2E] Spike Pressure Ind		2SIG	[2F]	Min. Test Pressu	ure Indicated PSIG	[2G] Max. Post-Spike Test Pressure Indicate				
이 같은 것은 아이가 나는 것은 것은 것을 가지 않는 것을 가지 않는 것을 가지?	양 집 그렇게 잘 많은 것이 가 많은 것이 가지? 그렇게 생각한 것이 많은 것이 많이 많이 가지 않았다. 것이 같이 많이				essure at Max. Elev. PSIG	Calculated Max. Post-Spike Pressure at Min. Elev. Box [2G] + Box [2B] = PSIG				
Test Acceptance			1			L				
Were Leaks Observed	?				If yes, explain:					
Acceptable Strength T Yes No Report strength test failure		gulatory Corr	pliance		lf no, explain:					
Test Medium Used					Time and Date Te	est Ended Actual Duration of Test				
Test Instruments	- Sinter									
Make, Range, and Ser	ial No.	of Pressu	re Rec	ording Device			Date Last Calibrate	əd		
Make, Range and Seri A dead weight tester and/c or greater than 90% of SM	or an ele				or tests of any pipe seg	jment eq	ual to Date Last Calibrate	ed .		
Signatures										
Test Supervised by (s	Test Supervised by (signature) Print Name						Date	LAN ID		
Testing Contractor (if	thi <b>rd</b> p	oarty)		L						
Approved by (signatu	re)			Print Name			Date	LAN ID		
Attachments				L	Distribution					

- Test chart
- Schematic piping sketch

- · Gas Job Closeout Desk, 6121 Bollinger Canyon Road, Building Z1, San Ramon, CA 94583
- Test log with pressure noted every 15 minutes



### PART 1 - TEST DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER/ESTIMATOR)

Test D	escripti	on													
Line N	umber or	Static	on Name L-11	4			Divi	Division/District Diablo Job Number 30943472							
Purpos	e of Tes	t: Tes	t new installa	tion			MA	MAOP to be Established by this Test 720 PSIG							
			eing Tested (in 8" line from M							B. Drawing	3094347	2, sheet 6	A.		
		<ul> <li>Contract (Contract)</li> </ul>	ike test required) ormed? []] Ye			and the second	If no	o spik	e test for (	existing f	cility, expl	ain:			
Static	Head Ca	alcula	tion												
	um Eleva		<u>95</u> F				For	Wate	r <u>0 (</u> Elev. [	Diff.) x 0.4	83 = <u>0</u> PSIG	I			
	ım Eleva on Differ		<u>95</u> F 0 F				1.		r Test Med			1.41			
	) be Tes			Maggarati de la terre			1 Con		e responsible	engineer i	or guidance c	on completir	ig this field,		
Si		CONTRACTOR OF THE		l				tual				% of SMY	s		
OD (in.)	WT (in.)	API AST Spe	M (psi)	Long Seam (ERW, DSAW, SMLS etc.)	JF (E)	Footage to be Tested		tage	Location Class	Most Restrictiv Design Factor	At MAOP	At Min. Test Press.	At Max. Test Press.		
8.625	0.322	API-	5L 3500 <b>0</b>	SMLS	1.00	260	1		3	0.5	27.55	56.52	57.78		
16.000	0.375	API-	5L 35000	SMLS	1.00	10			3	0.5	43.89	90.03	92.04		
16.000	0.312	API-	5L 52000	HFW	1.00	10			3	0.5	35.50	72.83	74,46		
			the test (exc field Si	ept those list gnature of pe				wall	thickness	and grade	as the pip	e 🛛			
1 100 01						- F - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1									
Compo	nent(s) l	imiti <b>n</b> ç	g test pressur	e/Control Poi	nt exce	ptions									
Test S	pecifica	tions	(include a spik	e test when tes	ting exi	sting faciliti	es)	-							
Test Fac	tor <u>1.5</u>	[1A]	Min. Test Pres	sure at Max. E	lev. <u>147</u>	7_PSIG	[18]	Max	. Test Press	ure at Min.	Elev. <u>1510</u> P	ISIG			
Spike T	est	[1C]	Spike Factor				[1D]	Spik	e Pressure	at Max. Ele	v. Box [1A] x	[1C] =	PSIG		
(complet for spike		[1E]	Spike Pressur	e at Min. Elev.		_ PSIG	(1F)	1	. Post-Spike		t Min. Elev. PSIG				
Test M	edium to	be Us	ed <u>WATER</u>	Minimum T	est Dui	ration <u>8.(</u>	) O Hou	rs	= 30% S = Pre-in:	MYS and o stallation Te	: 1 hour minir ver: 8 hours r st: Refer to A lutes minimu	ninimum 34, Attachi			
Signat	ures			L											
Prepare	ed by (si	gnatur	e) Redacte	ed		rint Name dacted	and P	hone	Number		<b>Date</b> 9/9/2013		AN ID edact		
Redacte	ed by (ei d	lanatu	m) /			acted					Date 9/9/1		AN ID lacted		
Test Sı	ipervised	d by (s	ignature)			ime and Da eached (fro				ime and I inded (from		Actual Di Test (from			



#### PART 2 - TEST DATA (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

Test Elevation										
Elevation at	Max.	Elevation	in Tes	t Section	FT	Min. E	levation in Test Section	FT		
Test Point FT	[2A]	Static Hea	nd b/t ⊺	Fest Point and M	lax. Elev. PSIG	[28]	[2B] Static Head b/t Test Point and Min. Elev PSIG			
No Spike Test: Calc	ulatio	ns and Te	st Re	sults (complete f	for strength test with	out a sp	ike test)			
Min. Required Test Press Box [1A] + Box [2A] =			103 PS - 04	Allowable Test Pre  B] – Box [2B] =		Pressu	re Range During Test	PSIG		
[2C] Min. Test Pressure IndicatedPSIG			[2D]	Max. Test Press	ure Indicated PSIG					
Calculated Min. Test Pre Box [2C] – Box [2A] =	화장 관람의 문화			lated Max. Test Pr 2D] + Box [2B] =	ressure at Min. Elev. PSIG					
Spike Test: Calcula	tions a	and Test I	Result	S (complete for s	trength test with a s	pike test	)			
Spike Pressure at Test Point Box [1E] – Box [2B] = PSIG				Required Test Pres	ssure at Test PointPSIG	Point	Max. Post-Spike Pressure at Test   Pressure R			
[2E] Spike Pressure In		PSIG	[2F]	Min. Test Pressu	ure Indicated PSIG		sure IndicatedP\$IG			
	Calculated Spike Pressure at Min. Elev.         Calculated Min. Te           Box [2E] + Box [2B] = PSIG         Box [2F] - Box [2A]					Calculated Max. Post-Spike Pressure at Min. Elev. Box [2G] + Box [2B] = PSIG				
Test Acceptance			1				a section of the section of the section of the			
Were Leaks Observed	17				If yes, explain:					
Acceptable Strength		gulatory Con	npliance	)	lf no, explain:					
Test Medium Used			*****		Time and Date Te	est Ended Actual Duration of Test				
Test Instruments						Gestadat				
Make, Range, and Ser	ial No.	of Pressu	re Rec	ording Device			Date Last Calibrate	əd		
Make, Range and Seri A dead weight tester and/ or greater than 90% of SN	or an ele	of Dead W ectronic pres	e <b>ight</b> 1 sure rec	<b>Fester</b> corder is required fo	or tests of any pipe set	jment eq	ual to Bate Last Calibrate	əd		
Signatures										
Test Supervised by (s	ignatu	re)		Print Name			Date	LAN ID		
Testing Contractor (if	third p	arty)		1						
Approved by (signatu	re)			Print Name			Date	LANID		
Attachments				I	Distribution		<u> </u>			

Test chart

Schematic piping sketch

• Test log with pressure noted every 15 minutes

 Gas Job Closeout Desk, 6121 Bollinger Canyon Road, Building Z1, San Ramon, CA 94583