



**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		Redacted



**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)**

<b>Test Description</b>												
Line Number or Station Name <b>L-114</b>						Division/District <b>Diablo</b>			Job Number <b>30943472</b>			
Purpose of Test: <b>Test new installation</b>						MAOP to be Established by this Test <b>720 PSIG</b>						
Description of Pipe being Tested (include reference drawings, field stationing, and mile points) Test Tie-in Pieces at MP 12.70, MP 13.73, MP 14.35, MP 14.58 and MP 16.57 for newly installed 24" L-114 from MP 12.70 to MP 16.57. Wall Map EB-58. Drawing 30943472, sheet 27.												
<input checked="" type="checkbox"/> <b>New Facility</b> (no spike test required) <input type="checkbox"/> <b>Existing Facility</b> Will spike test be performed? <input type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> (explain on right)						If no spike test for existing facility, explain:						
<b>Static Head Calculation</b>												
Maximum Elevation <b>N/A</b> FT						For Water (Elev. Diff.) x 0.433 = <b>  </b> PSIG						
Minimum Elevation <b>N/A</b> FT						For Other Test Medium <b>  </b>						
Elevation Difference <b>N/A</b> FT						Contact the responsible engineer for guidance on completing this field.						
<b>Pipe to be Tested</b>												
Size		API or ASTM Spec	SMYS (psi)	Long Seam (ERW, DSAW, SMLS etc.)	JF (E)	Footage to be Tested	Actual Footage	Location Class	Most Restrictive Design Factor	% of SMYS		
OD (in.)	WT (in.)									At MAOP	At Min. Test Press.	At Max. Test Press.
24.000	0.375	API-5L	60000	SAWL	1.00	100		3	0.5	38.40	90.03	93.01
22.000	0.375	API-5L	65000	HFV	1.00	25		3	0.5	32.49	76.18	78.70
24.000	0.375	MSS-SP-75	60000	24x22 Reducer	-	2 ea		3	0.5	38.40	90.03	93.01
22.000	0.375	MSS-SP-75	60000	24x22 Reducer	-	^		3	0.5	35.19	82.52	85.26
All fittings included in the test (except those listed above) are the same wall thickness and grade as the pipe <input checked="" type="checkbox"/>												
Pipe specs verified in field <input type="checkbox"/> Signature of person supervising test												
Component(s) limiting test pressure/Control Point exceptions												
<b>Test Specifications (include a spike test when testing existing facilities)</b>												
Test Factor <b>1.5</b>	[1A]	Min. Test Pressure at Max. Elev. <b>1688 PSIG</b>				[1B]	Max. Test Pressure at Min. Elev. <b>1744 PSIG</b>					
Spike Test (complete only for spike test)	[1C]	Spike Factor <b>  </b>				[1D]	Spike Pressure at Max. Elev. Box [1A] X [1C] = <b>  </b> PSIG					
	[1E]	Spike Pressure at Min. Elev. <b>  </b> PSIG				[1F]	Max. Post-Spike Pressure at Min. Elev. Box [1E] X 0.95 = <b>  </b> PSIG					
Test Medium to be Used <b>WATER</b>		Minimum Test Duration <b>8.0 Hours</b>				<ul style="list-style-type: none"> <li>▪ Under 30% SMYS: 1 hour minimum</li> <li>▪ 30% SMYS and over: 8 hours minimum</li> <li>▪ Pre-installation Test: Refer to A-34, Attachment A</li> <li>▪ Spike Test: 30 minutes minimum (included in test)</li> </ul>						
<b>Signatures</b>												
Prepared by (signature)		Redacted			Print Name and Phone Number			Redacted		Date		LAN ID
										9/6/2013		Redacted
Approved by (signature)		Redacted			Print Name			Redacted		Date		LAN ID
										9/9/13		Redacted
Test Supervised by (signature)				Time and Date Test Pressure Reached (from Part 2)			Time and Date Test Ended (from Part 2)			Actual Duration of Test (from Part 2)		





**PART 2 – TEST DATA (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)**

Test Elevation					
Elevation at Test Point _____ FT		Max. Elevation in Test Section _____ FT		Min. Elevation in Test Section _____ FT	
[2A]	Static Head b/t Test Point and Max. Elev. _____ PSIG		[2B]	Static Head b/t Test Point and Min. Elev. _____ PSIG	
No Spike Test: Calculations and Test Results (complete for strength test without a spike test)					
Min. Required Test Pressure at Test Point Box [1A] + Box [2A] = _____ PSIG		Max. Allowable Test Pressure at Test Point Box [1B] – Box [2B] = _____ PSIG		Pressure Range During Test _____ PSIG	
[2C]	Min. Test Pressure Indicated _____ PSIG	[2D]	Max. Test Pressure Indicated _____ PSIG		
Calculated Min. Test Pressure at Max. Elev. Box [2C] – Box [2A] = _____ PSIG		Calculated Max. Test Pressure at Min. Elev. Box [2D] + Box [2B] = _____ PSIG			
Spike Test: Calculations and Test Results (complete for strength test with a spike test)					
Spike Pressure at Test Point Box [1E] – Box [2B] = _____ PSIG		Min. Required Test Pressure at Test Point Box [1A] + Box [2A] = _____ PSIG		Max. Post-Spike Pressure at Test Point Box [1F] – Box [2B] = _____ PSIG	
[2E]	Spike Pressure Indicated _____ PSIG	[2F]	Min. Test Pressure Indicated _____ PSIG	[2G]	Max. Post-Spike Test Pressure Indicated _____ PSIG
Calculated Spike Pressure at Min. Elev. Box [2E] + Box [2B] = _____ PSIG		Calculated Min. Test Pressure at Max. Elev. Box [2F] – Box [2A] = _____ PSIG		Calculated Max. Post-Spike Pressure at Min. Elev. Box [2G] + Box [2B] = _____ PSIG	
Test Acceptance					
Were Leaks Observed? <input type="checkbox"/> Yes <input type="checkbox"/> No			If yes, explain:		
Acceptable Strength Test? <input type="checkbox"/> Yes <input type="checkbox"/> No Report strength test failures to Regulatory Compliance			If no, explain:		
Test Medium Used	Time and Date Test Pressure Reached	Time and Date Test Ended	Actual Duration of Test		
Test Instruments					
Make, Range, and Serial No. of Pressure Recording Device			Date Last Calibrated		
Make, Range and Serial No. of Dead Weight Tester <small>A dead weight tester and/or an electronic pressure recorder is required for tests of any pipe segment equal to or greater than 90% of SMYS.</small>			Date Last Calibrated		
Signatures					
Test Supervised by (signature)		Print Name	Date	LAN ID	
Testing Contractor (if third party)					
Approved by (signature)		Print Name	Date	LAN ID	

**Attachments**

- Test chart
- Schematic piping sketch
- Test log with pressure noted every 15 minutes

**Distribution**

- 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)**

Test Description													
Line Number or Station Name <b>L-114</b>							Division/District <b>Diablo</b>			Job Number <b>30943472</b>			
Purpose of Test: <b>Test new installation</b>							MAOP to be Established by this Test <b>720 PSIG</b>						
Description of Pipe being Tested (include reference drawings, field stationing, and mile points) <b>Test Sand Creek Tie-in Piece at MP 13.71 for newly installed 24" L-114 from MP 12.70 to MP 16.57. Wall Map EB-58. Drawing 30943472, sheet 27.</b>													
<input checked="" type="checkbox"/> <b>New Facility</b> (no spike test required) <input type="checkbox"/> <b>Existing Facility</b> Will spike test be performed? <input type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> (explain on right)							If no spike test for existing facility, explain:						
Static Head Calculation													
Maximum Elevation <b>92</b> FT							For Water <u>0</u> (Elev. Diff.) x 0.433 = <u>0</u> PSIG						
Minimum Elevation <b>92</b> FT							For Other Test Medium _____						
Elevation Difference <b>0</b> FT							Contact the responsible engineer for guidance on completing this field.						
Pipe to be Tested													
Size		API or ASTM Spec	SMYS (psi)	Long Seam (ERW, DSAW, SMLS etc.)	JF (E)	Footage to be Tested	Actual Footage	Location Class	Most Restrictive Design Factor	% of SMYS			
OD (in.)	WT (in.)									At MAOP	At Min. Test Press.	At Max. Test Press.	
24.000	0.375	API-5L	60000	SAWL	1.00	25		3	0.5	38.40	90.03	93.01	
22.000	0.375	API-5L	65000	HFV	1.00	10		3	0.5	32.49	76.18	78.70	
24.000	0.375	MSS-SP-75	60000	24x22 Reducer	-	1 ea		3	0.5	38.40	90.03	93.01	
22.000	0.375	MSS-SP-75	60000	24x22 Reducer	-	^		3	0.5	35.19	82.52	85.26	
All fittings included in the test (except those listed above) are the same wall thickness and grade as the pipe <input checked="" type="checkbox"/>													
Pipe specs verified in field <input type="checkbox"/> Signature of person supervising test _____													
Component(s) limiting test pressure/Control Point exceptions _____													
Test Specifications (include a spike test when testing existing facilities)													
Test Factor <b>1.5</b>	[1A]	Min. Test Pressure at Max. Elev. <b>1688 PSIG</b>					[1B]	Max. Test Pressure at Min. Elev. <b>1744 PSIG</b>					
Spike Test (complete only for spike test)	[1C]	Spike Factor _____					[1D]	Spike Pressure at Max. Elev. Box [1A] x [1C] = _____ PSIG					
	[1E]	Spike Pressure at Min. Elev. _____ PSIG					[1F]	Max. Post-Spike Pressure at Min. Elev. Box [1E] x 0.95 = _____ PSIG					
Test Medium to be Used <b>WATER</b>			Minimum Test Duration <b>8.0 Hours</b>			<ul style="list-style-type: none"> <li>▪ Under 30% SMYS: 1 hour minimum</li> <li>▪ 30% SMYS and over: 8 hours minimum</li> <li>▪ Pre-installation Test: Refer to A-34, Attachment A</li> <li>▪ Spike Test: 30 minutes minimum (included in test)</li> </ul>							
Signatures													
Prepared by (signature)		Redacted			Print Name and Phone Number			Redacted		Date		LAN ID	
										9/6/2013		Redacted	
Approved by (signature)		Redacted			Print Name			Redacted		Date		LAN ID	
										9/9/13		Redacted	
Test Supervised by (signature)				Time and Date Test Pressure Reached (from Part 2)			Time and Date Test Ended (from Part 2)		Actual Duration of Test (from Part 2)				



**PART 2 – TEST DATA (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)**

<b>Test Elevation</b>			
Elevation at Test Point _____ FT	Max. Elevation in Test Section _____ FT		Min. Elevation in Test Section _____ FT
[2A]	Static Head b/t Test Point and Max. Elev. _____ PSIG	[2B]	Static Head b/t Test Point and Min. Elev. _____ PSIG
<b>No Spike Test: Calculations and Test Results (complete for strength test without a spike test)</b>			
Min. Required Test Pressure at Test Point Box [1A] + Box [2A] = _____ PSIG		Max. Allowable Test Pressure at Test Point Box [1B] – Box [2B] = _____ PSIG	
[2C]	Min. Test Pressure Indicated _____ PSIG	[2D]	Max. Test Pressure Indicated _____ PSIG
Calculated Min. Test Pressure at Max. Elev. Box [2C] – Box [2A] = _____ PSIG		Calculated Max. Test Pressure at Min. Elev. Box [2D] + Box [2B] = _____ PSIG	
<b>Spike Test: Calculations and Test Results (complete for strength test with a spike test)</b>			
Spike Pressure at Test Point Box [1E] – Box [2B] = _____ PSIG		Min. Required Test Pressure at Test Point Box [1A] + Box [2A] = _____ PSIG	
[2E] Spike Pressure Indicated _____ PSIG		[2F] Min. Test Pressure Indicated _____ PSIG	
Calculated Spike Pressure at Min. Elev. Box [2E] + Box [2B] = _____ PSIG		Calculated Min. Test Pressure at Max. Elev. Box [2F] – Box [2A] = _____ PSIG	
		Max. Post-Spike Pressure at Test Point Box [1F] – Box [2B] = _____ PSIG	
		[2G] Max. Post-Spike Test Pressure Indicated _____ PSIG	
		Calculated Max. Post-Spike Pressure at Min. Elev. Box [2G] + Box [2B] = _____ PSIG	
<b>Test Acceptance</b>			
Were Leaks Observed? <input type="checkbox"/> Yes <input type="checkbox"/> No		If yes, explain:	
Acceptable Strength Test? <input type="checkbox"/> Yes <input type="checkbox"/> No Report strength test failures to Regulatory Compliance		If no, explain:	
Test Medium Used	Time and Date Test Pressure Reached	Time and Date Test Ended	Actual Duration of Test
<b>Test Instruments</b>			
Make, Range, and Serial No. of Pressure Recording Device			Date Last Calibrated
Make, Range and Serial No. of Dead Weight Tester <small>A dead weight tester and/or an electronic pressure recorder is required for tests of any pipe segment equal to or greater than 90% of SMYS.</small>			Date Last Calibrated
<b>Signatures</b>			
Test Supervised by (signature)	Print Name	Date	LAN ID
Testing Contractor (if third party)			
Approved by (signature)	Print Name	Date	LAN ID

**Attachments**

- Test chart
- Schematic piping sketch
- Test log with pressure noted every 15 minutes

**Distribution**

- 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)**

<b>Test Description</b>												
Line Number or Station Name <u>L-114</u>							Division/District <u>Diablo</u>			Job Number <u>30943472</u>		
Purpose of Test: <u>Test new installation</u>							MAOP to be Established by this Test <u>720</u> PSIG					
Description of Pipe being Tested (include reference drawings, field stationing, and mile points) <u>Test newly installed 8" line from MLV-13.05 on L-114 to line L-316. Wall Map EB-58. Drawing 30943472, sheet 6A.</u>												
<input checked="" type="checkbox"/> <b>New Facility</b> (no spike test required) <input type="checkbox"/> <b>Existing Facility</b> Will spike test be performed? <input type="checkbox"/> Yes <input type="checkbox"/> No (explain on right)							If no spike test for existing facility, explain:					
<b>Static Head Calculation</b>												
Maximum Elevation <u>95</u> FT							For Water <u>0</u> (Elev. Diff.) x 0.433 = <u>0</u> PSIG					
Minimum Elevation <u>95</u> FT							For Other Test Medium _____					
Elevation Difference <u>0</u> FT							Contact the responsible engineer for guidance on completing this field.					
<b>Pipe to be Tested</b>												
Size		API or ASTM Spec	SMYS (psi)	Long Seam (ERW, DSAW, SMLS etc.)	JF (E)	Footage to be Tested	Actual Footage	Location Class	Most Restrictive Design Factor	% of SMYS		
OD (in.)	WT (in.)									At MAOP	At Min. Test Press.	At Max. Test Press.
8.625	0.322	API-5L	35000	SMLS	1.00	260		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	HPW	1.00	10		3	0.5	35.50	72.83	74.46
All fittings included in the test (except those listed above) are the same wall thickness and grade as the pipe <input checked="" type="checkbox"/>												
Pipe specs verified in field <input type="checkbox"/> Signature of person supervising test _____												
Component(s) limiting test pressure/Control Point exceptions _____												
<b>Test Specifications (include a spike test when testing existing facilities)</b>												
Test Factor <u>1.5</u>		[1A] Min. Test Pressure at Max. Elev. <u>1477</u> PSIG	[1B] Max. Test Pressure at Min. Elev. <u>1510</u> PSIG									
Spike Test (complete only for spike test)	[1C] Spike Factor _____	[1D] Spike Pressure at Max. Elev. Box [1A] x [1C] = _____ PSIG										
	[1E] Spike Pressure at Min. Elev. _____ PSIG	[1F] Max. Post-Spike Pressure at Min. Elev. Box [1E] x 0.95 = _____ PSIG										
Test Medium to be Used <u>WATER</u>			Minimum Test Duration <u>8.0</u> Hours			<ul style="list-style-type: none"> <li>▪ Under 30% SMYS: 1 hour minimum</li> <li>▪ 30% SMYS and over: 8 hours minimum</li> <li>▪ Pre-installation Test: Refer to A-34, Attachment A</li> <li>▪ Spike Test: 30 minutes minimum (included in test)</li> </ul>						
<b>Signatures</b>												
Prepared by (signature) <u>Redacted</u>		Print Name and Phone Number <u>Redacted</u>			Date <u>9/9/2013</u>		LAN ID <u>Redacted</u>					
Approved by (signature) <u>Redacted</u>		Print Name <u>Redacted</u>			Date <u>9/9/13</u>		LAN ID <u>Redacted</u>					
Test Supervised by (signature) _____				Time and Date Test Pressure Reached (from Part 2) _____			Time and Date Test Ended (from Part 2) _____		Actual Duration of Test (from Part 2) _____			



**PART 2 – TEST DATA (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)**

Test Elevation			
Elevation at Test Point _____ FT	Max. Elevation in Test Section _____ FT		Min. Elevation in Test Section _____ FT
[2A]	Static Head b/t Test Point and Max. Elev. _____ PSIG		[2B] Static Head b/t Test Point and Min. Elev. _____ PSIG
<b>No Spike Test: Calculations and Test Results (complete for strength test without a spike test)</b>			
Min. Required Test Pressure at Test Point Box [1A] + Box [2A] = _____ PSIG		Max. Allowable Test Pressure at Test Point Box [1B] – Box [2B] = _____ PSIG	
[2C] Min. Test Pressure Indicated _____ PSIG	[2D] Max. Test Pressure Indicated _____ PSIG	Pressure Range During Test _____ PSIG	
Calculated Min. Test Pressure at Max. Elev. Box [2C] – Box [2A] = _____ PSIG			
<b>Spike Test: Calculations and Test Results (complete for strength test with a spike test)</b>			
Spike Pressure at Test Point Box [1E] – Box [2B] = _____ PSIG		Min. Required Test Pressure at Test Point Box [1A] + Box [2A] = _____ PSIG	
[2E] Spike Pressure Indicated _____ PSIG	[2F] Min. Test Pressure Indicated _____ PSIG	[2G] Max. Post-Spike Test Pressure Indicated _____ PSIG	Pressure Range After Spike Test _____ PSIG
Calculated Spike Pressure at Min. Elev. Box [2E] + Box [2B] = _____ PSIG		Calculated Min. Test Pressure at Max. Elev. Box [2F] – Box [2A] = _____ PSIG	
		Calculated Max. Post-Spike Pressure at Min. Elev. Box [2G] + Box [2B] = _____ PSIG	
<b>Test Acceptance</b>			
Were Leaks Observed? <input type="checkbox"/> Yes <input type="checkbox"/> No		If yes, explain:	
Acceptable Strength Test? <input type="checkbox"/> Yes <input type="checkbox"/> No		If no, explain:	
Report strength test failures to Regulatory Compliance			
Test Medium Used	Time and Date Test Pressure Reached	Time and Date Test Ended	Actual Duration of Test
<b>Test Instruments</b>			
Make, Range, and Serial No. of Pressure Recording Device			Date Last Calibrated
Make, Range and Serial No. of Dead Weight Tester A dead weight tester and/or an electronic pressure recorder is required for tests of any pipe segment equal to or greater than 90% of SMYS.			Date Last Calibrated
<b>Signatures</b>			
Test Supervised by (signature)	Print Name	Date	LAN ID
Testing Contractor (if third party)			
Approved by (signature)	Print Name	Date	LAN ID

**Attachments**

- Test chart
- Schematic piping sketch
- Test log with pressure noted every 15 minutes

**Distribution**

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