Pacific Gas and Electric Company®

Pacific Gas and Electric Company
Project 1581

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

GULF INTERSTATE ENGINEERING

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

GULF INTERSTATE ENGINEERING

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

Pacific Gas and Electric Company
Gas Pipeline Facilities Strength Test Pressure Report
(For Pipeline Facilities Designed to Operate over 100 PSIG)

62-4921 (12/2012)
Use in Accordance with
Numbered Document A-34, A-37,
and GO 112-E
Sheet 1 of 2
Test Number 6 of 8
STPR Revision Number 0

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

Test Description

Line 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 **PSIG**	

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.

☒ **New Facility** (no spike test required) ☐ **Existing Facility**
Will spike test be performed? ☐ **Yes** ☐ **No** (explain on right)

If no spike test for existing facility, explain:

Static Head Calculation

Maximum Elevation N/A FT
Minimum Elevation N/A FT
Elevation Difference N/A FT

For Water _(Elev. Diff.) x 0.433 = _ PSIG

For Other Test Medium _____
Contact the responsible engineer for guidance on completing this field.

Pipe to be Tested

Size OD (in.)	Size WT (in.)	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 At MAOP	% of SMYS At Min. Test Press.	% of SMYS 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	HFW	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 ☒

Pipe specs verified in field ☐ **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 1.5	[1A]	**Min. Test Pressure at Max. Elev.** 1688 **PSIG**	[1B]	**Max. Test Pressure at Min. Elev.** 1744 **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 WATER **Minimum Test Duration** 8.0 **Hours**

- Under 30% SMYS: 1 hour minimum
- 30% SMYS and over: 8 hours minimum
- Pre-installation Test: Refer to A-34, Attachment A
- Spike Test: 30 minutes minimum (included in test)

Signatures

Prepared by (signature) Redacted	**Print Name and Phone Number** Redacted	**Date** 9/6/2013	**LAN ID** Redacted
Approved by (signature) Redacted	**Print Name** Redacted	**Date** 9/9/13	**LAN ID** 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)

Pacific Gas and Electric Company
Gas Pipeline Facilities Strength Test Pressure Report
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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		Pressure Range After Spike Test _____ 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? ☐ Yes ☐ No		If yes, explain:	
Acceptable Strength Test? ☐ Yes ☐ 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 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

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

Pacific Gas and Electric Company
Gas Pipeline Facilities Strength Test Pressure Report
(For Pipeline Facilities Designed to Operate over 100 PSIG)

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Sheet 1 of 2
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PART 1 – TEST DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER/ESTIMATOR)

Test Description

Line 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 **PSIG**	

Description of Pipe being Tested (include reference drawings, field stationing, and mile points)
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.

☒ **New Facility** (no spike test required) ☐ **Existing Facility**
Will spike test be performed? ☐ **Yes** ☐ **No** (explain on right)

If no spike test for existing facility, explain:

Static Head Calculation

Maximum Elevation 92 FT
Minimum Elevation 92 FT
Elevation Difference 0 FT

For Water 0 **(Elev. Diff.) x 0.433 =** 0 **PSIG**

For Other Test Medium _____
Contact the responsible engineer for guidance on completing this field.

Pipe to be Tested

Size OD (in.)	Size WT (in.)	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 At MAOP	% of SMYS At Min. Test Press.	% of SMYS 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	HFW	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 ☒

Pipe specs verified in field ☐ **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 1.5	[1A]	**Min. Test Pressure at Max. Elev.** 1688 **PSIG**	[1B]	**Max. Test Pressure at Min. Elev.** 1744 **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 WATER
Minimum Test Duration 8.0 **Hours**

- Under 30% SMYS: 1 hour minimum
- 30% SMYS and over: 8 hours minimum
- Pre-installation Test: Refer to A-34, Attachment A
- Spike Test: 30 minutes minimum (included in test)

Signatures

Prepared by (signature) Redacted	**Print Name and Phone Number** Redacted	**Date** 9/6/2013	**LAN ID** Redacted
Approved by (signature) Redacted	**Print Name** Redacted	**Date** 9/9/13	**LAN ID** 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)

Pacific Gas and Electric Company
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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		Pressure Range After Spike Test _____ 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? ☐ Yes ☐ No		If yes, explain:	
Acceptable Strength Test? ☐ Yes ☐ 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 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

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

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Sheet 1 of 2
Test Number 8 of 8
STPR Revision Number 0

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

Test Description

Line 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 **PSIG**	

Description of Pipe being Tested (include reference drawings, field stationing, and mile points)
Test newly installed 8" line from MLV-13.05 on L-114 to line L-316. Wall Map EB-58. Drawing 30943472, sheet 6A.

☒ **New Facility** (no spike test required) ☐ **Existing Facility**
Will spike test be performed? ☐ **Yes** ☐ **No** (explain on right)

If no spike test for existing facility, explain:

Static Head Calculation

Maximum Elevation 95 **FT**
Minimum Elevation 95 **FT**
Elevation Difference 0 **FT**

For Water 0 **(Elev. Diff.) x 0.433 =** 0 **PSIG**

For Other Test Medium _____
Contact the responsible engineer for guidance on completing this field.

Pipe to be Tested

Size OD (in.)	Size WT (in.)	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 At MAOP	% of SMYS At Min. Test Press.	% of SMYS 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	HFW	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 ☒

Pipe specs verified in field ☐ **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 1.5	[1A]	**Min. Test Pressure at Max. Elev.** 1477 **PSIG**	[1B]	**Max. Test Pressure at Min. Elev.** 1510 **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 WATER **Minimum Test Duration** 8.0 **Hours**

- Under 30% SMYS: 1 hour minimum
- 30% SMYS and over: 8 hours minimum
- Pre-installation Test: Refer to A-34, Attachment A
- Spike Test: 30 minutes minimum (included in test)

Signatures

Prepared by (signature) Redacted	**Print Name and Phone Number** Redacted	**Date** 9/9/2013	**LAN ID** Redact
Approved by (signature) Redacted	**Print Name** Redacted	**Date** 9/9/13	**LAN ID** 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)

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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		Pressure Range After Spike Test _____ 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? ☐ Yes ☐ No		If yes, explain:	
Acceptable Strength Test? ☐ Yes ☐ 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 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

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

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