Pacific Gas and Electric Company

Gas Pipeline Facilities Strength Test Pressure Report

(For Pipeline Facilities Designed to Operate over 100 PSIG)

FINAL

62-4921 (Rev. 2/04)
California Gas Transmission
(Use in Accordance with Gas Standard A-34 and GO 112-D)

Sheet 1 of 3

PART I - DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER)

Feeder Main Number, Line Number, or Station Name	Area	Division/District	Job Number	Date Job Authorized
L-132	1	Peninsula	41497349	July 22, 2011

Description of Job -- Include Reference Drawing Numbers, and Pipeline Mileposts

TEST 2 – Hydrostatically test tie-in piping, hydrostatic test piping and existing 24" and 30" L-132. Existing pipeline material listed; ie. pipe, elbows, sleeves, etc. are from the "Material of Record" (refer to Dwg. 41497349, Sheet 8) TEST INCLUDES 30" (ITEM 103) 18'-5½" FOR LOC. "A" ON T-32 *

Hydrotest L-132 from MP 18.4621 – 23.1638 Menlo Park to Redwood City, CA (Test section 31) (EDGEWOOD CROSS OVER)
ASSEMBLY JUMPERED TO T-31, TEST 2 AT LOC. "A"

Location Class	Design Factor (F)	MAOP to be Established for this Piping by this Test	Future Design Pressure
3	.5	400 PSIG	400 PSIG

STATIC HEAD DUE TO ELEVATION DIFFERENCE (WHERE APPLICABLE)			Static Head Calculation		
	Max. Elevation	553 Ft.	For Water	0.433 X Elev. Diff. =	167 PSIG
	Min. Elevation	168 Ft.	Other (Specify)	X Elev. Diff. =	PSIG
	Elev. Diff.	385 Ft.			

Pipe Specification: Size O.D.	Size W.T.	API or ASTM Grade Long Seam (ERW, DSAW, Seamless, Etc.)		Footage to Be Tested	Pipe Spec. and Footage Verified In Field	% of SMYS: At MAOP	At Min. Test Press.	At Max. Test Press.	Pressure to Give 90% SMYS
30.00	.375	API 5L GR X-42, DSAW	(item#1)	605'	MOR	38.10	57.14	79.52	945
30.00	.375	API 5L GR X-65, DSAW	(item#103)	2' *	22.3' JE	24.62	36.92	51.38	1463
30.00	.3125	API 5L GR X-52, DSAW	(item#2)	3802'	MOR	36.92	55.38	77.08	975
24.00	.375	API 5L GR X-60, DSAW	(item#106)	~~37~~	118.8' JE	21.33	32.00	44.53	1688
24.00	.3125	API 5L GR X-42, DSAW	(item#3)	357'	MOR	36.57	54.86	76.34	984
24.00	.3125	GR B, SMLS	(item#4)	580'	MOR	43.89	65.83	91.61	820
24.00	.281	GR B 45000 SMYS, SMLS	(item#5)	~~20276'~~	20215.5' JE	37.96	56.94	79.24	948
24.00	.281	API 5L GR X-42, DSAW	(item#6)	20'	MOR	40.67	61.01	84.90	885
24.00	.250	API 5L GR X-42, DSAW	(item#7)	16'	MOR	45.71	68.57	95.43	788
4.50	.237	API 5L GR B, SMLS	(item#21)	3'	MOR	10.85	16.27	22.65	3318
3.50	.216	API 5L GR B, SMLS	(item#22)	3'	MOR	9.26	13.89	19.33	3888

		Test Fluid To Be Used	MINIMUM TEST DURATION	
Minimum Test Pressure @ Max. Elevation	600 PSIG	WATER	- UNDER 30% SMYS (1 HR. MINIMUM)	8 HOURS
Maximum Test Pressure @ Min. Elevation	835 PSIG		- 30% SMYS & OVER (8 HRS. MINIMUM)	
			- PREINSTALLATION TEST (SEE ATTACHMENT 'A', GAS STD. A-34)	

Prepared By:	Date:	For Information or Changes, Call:	Approved By:	Date:
Mark Cabral	8-3-11	R. Scott Clapp (530) 514-6482		8/5/11

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	10:31 AM 11-12-11	Elevation at Test Point	508' FT	Min. Required Test Press. At Test Point (1)	619.50 PSIG	Max. Allowable Test Press at Test Point (4)	682.62 PSIG
Time and Date Test Ended	6:55 PM 11-12-11	Max. Elevation in Test Section	553' FT	Min. Indicated Test Pressure (2)	630.00 PSIG	Max. Indicated Test Pressure (5)	684.00 PSIG
Actual Duration of Test	8-HOURS 24-minutes	Min. Elevation in Test Section	168' FT	Min. Test Pressure at Max. Elevation (3)	610.50 PSIG	Max. Test Pressure at Min. Elevation (6)	836.35 PSIG

Test Fluid Used: water

Pipe Specification and Footage Verified (See Part I): JE A584

Make, Range, and Serial No. of Pressure Recording Gauge	Date Last Calibrated	Make, Range, and Serial No. of Dead Weight Tester (See Note 7)	Date Last Calibrated
Barton 0-1000, 202-3829	10-25-11	AMETEK 25-3000, 1L-4321	10-10-11

Test Supervised By:	Date:	Approved By:	Date:
Randy Williams SRB	11-12-11	Joel Navarro	11-14-11

PUT SCHEMATIC PIPING SKETCH ON BACK OF THIS SHEET

SHOW LOCATION OF FACILITY TESTED, MINIMUM AND MAXIMUM ELEVATION IN FEET, MILE POINTS, VALVE NUMBERS AND INCORPORATED AREAS. USE AN ADDITIONAL SHEET IF NECESSARY (SHOW REFERENCE NUMBERS ON FACE OF ALL DRAWINGS AND ATTACHMENTS). FOR STATION PIPING, FABRICATED UNITS AND SHORT SECTIONS OF PIPE, ALSO SHOW A DETAILED SKETCH OF EACH ASSEMBLY TESTED.

NOTES:

(1) Add the static head due to elevation difference (between test point and maximum elevation) to "minimum test pressure at maximum elevation" from PART I.
(2) Use lowest pressure on test gauge at any time during test.
(3) Subtract static head due to elevation difference (between test point and maximum elevation) from minimum indicated test pressure.
(4) Subtract static head due to elevation difference (between test point and minimum elevation) from "maximum test pressure at minimum elevation" from PART I.
(5) Highest pressure on test gauge at any time during test.
(6) Add static head due to elevation difference (between test point and minimum elevation) to maximum indicated test pressure.
(7) A dead weight tester is only required when testing to a pressure which produces a stress level of 90% of SMYS or greater. However, if a dead weight tester is used on any test, enter the information in the space provided above.

DISTRIBUTION

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▷ REPORT FAILURES UNDER TEST TO GAS ENGINEERING & PLANNING

SB_GT&S_0056880

Pacific Gas and Electric Company

Gas Pipeline Facilities Strength Test Pressure Report

(For Pipeline Facilities Designed to Operate over 100 PSIG)

FINAL

62-4921 (Rev. 2/04)
California Gas Transmission
(Use in Accordance with Gas Standard A-34 and GO 112-D)

PART I - DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER)

Feeder Main Number, Line Number, or Station Name	Area	Division/District	Job Number	Date Job Authorized
L-132	1	Peninsula	41497349	July 22, 2011

Description of Job – Include Reference Drawing Numbers, and Pipeline Mileposts

TEST 2 – Hydrostatically test tie-in piping, hydrostatic test piping and existing 24" and 30" L-132. Existing pipeline material listed; ie. pipe, elbows, sleeves, etc. are from the "Material of Record" (refer to Dwg. 41497349, Sheet 8)

Hydrotest L-132 from MP 18.4621 – 23.1638 Menlo Park to Redwood City, CA (Test section 31)

Location Class	Design Factor (F)	MAOP to be Established for this Piping by this Test	Future Design Pressure
3	.5	400 PSIG	400 PSIG

STATIC HEAD DUE TO ELEVATION DIFFERENCE (WHERE APPLICABLE)			Static Head Calculation		
	Max. Elevation	553 Ft.	For Water	0.433 X Elev. Diff. =	167 PSIG
	Min. Elevation	168 Ft.	Other (Specify)	X Elev. Diff. =	PSIG
	Elev. Diff.	385 Ft.			

Pipe Specification: Size O.D.	Size W.T.	API or ASTM Grade Long Seam (ERW, DSAW, Seamless, Etc.)	Footage to Be Tested	Pipe Spec. and Footage Verified In Field	% of SMYS: At MAOP	At Min. Test Press.	At Max. Test Press.	Pressure to Give 90% SMYS
3.5	.188	API 5L GR B, SMLS (item#22)	8'	MOR	10.64	15.96	22.21	3384
2.375	.154	API 5L GR B, SMLS (item#23)	6'	MOR	8.81	13.22	18.40	4085
1.66	.140	API 5L GR B, SMLS (item#24)	5'	MOR	6.78	10.16	14.14	5313
1.05	.113	API 5L GR B, SMLS (item#25)	10'	MOR	5.31	7.96	11.08	6780
30.00	.375	Elbow, LR, GR Y-52 (item#8)	14 Ea.	MOR	30.77	46.15	64.23	1170
30.00	.375	Elbow, LR, GR Y-42 (item#9)	8 Ea.	MOR	38.10	57.14	79.52	945
24.00	.500	Elbow, LR, GR B (item#10)	6 Ea.	MOR	27.43	41.14	57.26	1313
24.00	.375	Elbow, LR, GR Y-52 (item#11)	1 Ea.	MOR	24.62	36.92	51.38	1463
24.00	.375	Elbow, LR, GR B (item#12)	1 Ea.	MOR	36.57	54.86	76.34	984
24.00	.3125	Elbow, LR, Grade Unknown (item#13)	15 Ea.	MOR	----	----	----	----

Minimum Test Pressure @ Max. Elevation	600 PSIG	Test Fluid To Be Used	MINIMUM TEST DURATION	8 HOURS
Maximum Test Pressure @ Min. Elevation	835 PSIG	WATER	- UNDER 30% SMYS (1 HR. MINIMUM) - 30% SMYS & OVER (8 HRS. MINIMUM) - PREINSTALLATION TEST (SEE ATTACHMENT 'A', GAS STD. A-34)	

Prepared By:	Date:	For Information or Changes, Call:	Approved By:	Date:
Mark Cabral	Mark Cabral	R. Scott Clapp (530) 514-6482		8/5/11

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	10:31 AM 11-12-11	Elevation at Test Point	508' FT	Min. Required Test Press. At Test Point (1)	619.50 PSIG	Max. Allowable Test Press at Test Point (4)	687.62 PSIG
Time and Date Test Ended	6:55 PM 11-12-11	Max. Elevation in Test Section	553' FT	Min. Indicated Test Pressure (2)	630.00 PSIG	Max. Indicated Test Pressure (5)	684.00 PSIG
Actual Duration of Test	8 - Hours 24 - minutes	Min. Elevation in Test Section	168' FT	Min. Test Pressure at Max. Elevation (3)	610.50 PSIG	Max. Test Pressure at Min. Elevation (6)	831.33 PSIG

Test Fluid Used: Water

Pipe Specification and Footage Verified (See Part I)

Make, Range, and Serial No. of Pressure Recording Gauge	Date Last Calibrated	Make, Range, and Serial No. of Dead Weight Tester (See Note 7)	Date Last Calibrated
Barton 0-1000, 202-3829	10-25-11	AMETEK 25-3000 HL 4321	10-10-11

Test Supervised By:	Date:	Approved By:	Date:
Ray McClure ARB	11-12-11	Joel Moore	11-14-11

PUT SCHEMATIC PIPING SKETCH ON BACK OF THIS SHEET

SHOW LOCATION OF FACILITY TESTED, MINIMUM AND MAXIMUM ELEVATION IN FEET, MILE POINTS, VALVE NUMBERS AND INCORPORATED AREAS. USE AN ADDITIONAL SHEET IF NECESSARY (SHOW REFERENCE NUMBERS ON FACE OF ALL DRAWINGS AND ATTACHMENTS). FOR STATION PIPING, FABRICATED UNITS AND SHORT SECTIONS OF PIPE, ALSO SHOW A DETAILED SKETCH OF EACH ASSEMBLY TESTED.

NOTES:

(1) Add the static head due to elevation difference (between test point and maximum elevation) to "minimum test pressure at maximum elevation" from PART I.
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(7) A dead weight tester is only required when testing to a pressure which produces a stress level of 90% of SMYS or greater. However, if a dead weight tester is used on any test, enter the information in the space provided above.

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	Min. Elevation	168 Ft.	Other (Specify)		
	Elev. Diff.	385 Ft.		X Elev. Diff. =	PSIG

Pipe Specification: Size O.D.	Size W.T.	API or ASTM Grade Long Seam (ERW, DSAW, Seamless, Etc.)	Footage to Be Tested	Pipe Spec. and Footage Verified In Field	% of SMYS: At MAOP	At Min. Test Press.	At Max. Test Press.	Pressure to Give 90% SMYS
30.00	.500	Reducer, 24"x30", Concentric, 38000 SMYS (item#16)	1 Ea.	MOR	31.58	47.37	65.92	1140
30.00	.375	Reducer, 24"x30", Concentric, Y-42 (item#17)	1 Ea.	MOR	38.10	57.14	79.52	945
30.00	.375	Sleeve, GR X-52 (item#18)	1 Ea.	MOR	30.77	46.15	64.23	1170
24.00	.375	Sleeve, Grade Unknown (item#19)	3 Ea.	MOR	----	----	----	----
24.00	.500	Sleeve, Grade Unknown (item#20)	5 Ea.	MOR	----	----	----	----

		Test Fluid To Be Used	MINIMUM TEST DURATION	
Minimum Test Pressure @ Max. Elevation	600 PSIG	WATER	- UNDER 30% SMYS (1 HR. MINIMUM)	8 HOURS
Maximum Test Pressure @ Min. Elevation	835 PSIG		- 30% SMYS & OVER (8 HRS. MINIMUM)	
			- PREINSTALLATION TEST (SEE ATTACHMENT 'A', GAS STD. A-34)	

Prepared By:	Date:	For Information or Changes, Call:	Approved By:	Date:
Mark Cabral	Mark Cabral 8-3-11	R. Scott Clapp (530) 514-6482	Mike Allen	8/5/11

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	10:30 AM 11-12-11	Elevation at Test Point	508' FT	Min. Required Test Press. At Test Point (1)	609.50 PSIG	Max. Allowable Test Press at Test Point (4)	687.67 PSIG
Time and Date Test Ended	6:55 PM 11-12-11	Max. Elevation in Test Section	553' FT	Min. Indicated Test Pressure (2)	630.00 PSIG	Max. Indicated Test Pressure (5)	684 PSIG
Actual Duration of Test	8 Hour 24 MINUTES	Min. Elevation in Test Section	168' FT	Min. Test Pressure at Max. Elevation (3)	610.50 PSIG	Max. Test Pressure at Min. Elevation (6)	831.33 PSIG

Test Fluid Used	Pipe Specification and Footage Verified (See Part I)
Water	JE JR Allen A584

Make, Range, and Serial No. of Pressure Recording Gauge	Date Last Calibrated	Make, Range, and Serial No. of Dead Weight Tester (See Note 7)	Date Last Calibrated
Barton 0-1000 202-3829	10-25-11	AMETEK 25-3000 PL-4321	10-10-11

Test Supervised By:	Date:	Approved By:	Date:
Karl McKeon ARB	11-12-11	Joel Manne	11-14-11

PUT SCHEMATIC PIPING SKETCH ON BACK OF THIS SHEET

SHOW LOCATION OF FACILITY TESTED, MINIMUM AND MAXIMUM ELEVATION IN FEET, MILE POINTS, VALVE NUMBERS AND INCORPORATED AREAS. USE AN ADDITIONAL SHEET IF NECESSARY (SHOW REFERENCE NUMBERS ON FACE OF ALL DRAWINGS AND ATTACHMENTS). FOR STATION PIPING, FABRICATED UNITS AND SHORT SECTIONS OF PIPE, ALSO SHOW A DETAILED SKETCH OF EACH ASSEMBLY TESTED.

NOTES:

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RECORDS SECTION (WC), GMS&TS
▷ REPORT FAILURES UNDER TEST TO GAS ENGINEERING & PLANNING

24", 0.375wt, 8.9° "ELL" Y-60, 1EA, JE

▷ THIS IS A SUCCESSFUL RE-TEST. THE INITIAL TEST ATTEMPT DISCOVERED EXISTING MECHANICAL DAMAGE RESULTING IN A RUPTURE FAILURE. THE RUPTURED PIPE WAS REPLACED. SEE THE T-31 TEST FOLDER FOR DOCUMENTATION OF THE FAILED TEST.