



Gas Pipeline Facilities Strength Test Pressure Report

(For Pipeline Facilities Designed to Operate over 100 PSIG)

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

Feeder Main Number, Line Number, or Station Name L-147	Area 1	Division/District Peninsula	Job Number 41474081	Date Job Authorized 9/2/2011
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Description of Job -- Include Reference Drawing Numbers, and Pipeline Mileposts
T-42-Test 4 - Hydrostatically test tie-in piping, hydrostatic test piping and existing 24" & 20" and Existing MLV 0.00 L-147. Existing material listed; ie. pipe, elbows, sleeves, are from the "Material of Record". (refer to DWG 41474081-Sheet 7).

Hydrotest L-147 from MP 0.00 to MP 0.85, San Carlos, CA (T-42)

Location Class 3	Design Factor (F) .5	MAOP to be Established for this Piping by this Test 400 PSIG	Future Design Pressure 400 PSIG
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STATIC HEAD DUE TO ELEVATION DIFFERENCE (WHERE APPLICABLE)	Max. Elevation 600 Ft.	Static Head Calculation	0.433 X Elev. Diff. = 5 PSIG
	Min. Elevation 589 Ft.	For Water	
	Elev. Diff. 11 Ft.	Other (Specify)	X Elev. Diff. = PSIG

Size		Pipe Specification		Footage to Be Tested	Pipe Spec. and Footage Verified in Field	% of SMYS			Pressure to Give 90% SMYS
O.D.	W.T.	API or ASTM Grade Long Seam (ERW, DSAW, Seamless, Etc.)				At MAOP	At Min. Test Press.	At Max. Test Press.	
24.00	0.375	API 5L, X-60, DSAW	(Item#106)	2'	GS	21.33	32.00	44.96	1688
24.00	0.375	Cap, Y-60	(Item#158)	1 Ea.	BS	21.33	32.00	44.96	1688
24.00	0.250	API 5L, X-52, DSAW	(Item#3)	22'	MOR	36.92	55.38	77.82	975
24.00	UNK	Elbow, Unknown Grade	(Item#6)	2 Ea.	MOR	-	-	-	-
20.00	0.500	API 5L, GRB, SMLS		18'	MOR	22.86	34.29	48.17	1575
20.00	0.500	Insulated Joint, ANSI 600		1 Ea.	MOR	-	-	-	-
20.00	0.500	Elbow, GRB		1 Ea.	MOR	22.86	34.29	48.17	1575
20.00	0.500	Tee, Reducing 20"x20"x10", GRB		1 Ea.	MOR	22.86	34.29	48.17	1575
20.00	0.500	Valve, ANSI 300		1 Ea.	MOR	-	-	-	-
10.75	0.365	API 5L, GRB, SMLS		5'	BS	16.83	25.24	35.47	2139
10.75	0.365	Valve, ANSI 300		1 Ea.	BS	-	-	-	-

Minimum Test Pressure @ Max. Elevation 600 PSIG	Test Fluid To Be Used WATER	MINIMUM TEST DURATION - UNDER 30% SMYS (1 HR. MINIMUM) - 30% SMYS & OVER (8 HRS. MINIMUM) - PREINSTALLATION TEST (SEE ATTACHMENT 'A', GAS STD. A-34)	8 HOURS
Maximum Test Pressure @ Min. Elevation 843 PSIG	Prepared By: Redacted Date: 10-6-2011	Approved By: Mark Cabral Date: 10-7-2011	

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

Time and Date Test Pressure Reached 12:00 Am 10-25-11	Elevation at Test Point 589 FT	Min. Required Test Press. At Test Point (1) 600 PSIG	Max. Allowable Test Press at Test Point (4) 838.23 PSIG
Time and Date Test Ended 8:15 Am 10-25-11	Max. Elevation in Test Section 589 FT	Min. Indicated Test Pressure (2) 607 PSIG	Max. Indicated Test Pressure (5) 670 PSIG
Actual Duration of Test Hours: minutes	Min. Elevation in Test Section 578 FT	Min. Test Pressure at Max. Elevation (3) 607 PSIG	Max. Test Pressure at Min. Elevation (6) 674.77 PSIG

Test Fluid Used water	Pipe Specification and Footage Verified (See Part I) AGS 135
Make, Range, and Serial No. of Pressure Recording Gauge CLIFMOCK 0-1000 MFG-42553	Date Last Calibrated 10-10-11
Test Supervised By Redacted	Date 10-25-11
Make, Range, and Serial No. of Dead Weight Tester (See Note 7) AMETEK 65-3000 14L-9321	Date Last Calibrated 10-10-11
Test Supervised By Redacted	Date 10-25-11

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:**
- Add the static head due to elevation difference (between test point and maximum elevation) to "minimum test pressure at maximum elevation" from PART I.
 - Use lowest pressure on test gauge at any time during test.
 - Subtract static head due to elevation difference (between test point and maximum elevation) from minimum indicated test pressure.
 - Subtract static head due to elevation difference (between test point and minimum elevation) from "maximum test pressure at minimum elevation" from PART I.
 - Highest pressure on test gauge at any time during test.
 - Add static head due to elevation difference (between test point and minimum elevation) to maximum indicated test pressure.
 - 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 information in the space provided above.
- DISTRIBUTION**
 JOB FILE (AT SPONSORING ORGANIZATION)
 GSM&TS RESPONSIBLE DISTRICT SUPERINTENDENT
 PROJECT MANAGER/PROJECT ENGINEER
 TECHNICAL & CONSTRUCTION SERVICES - ASSIGNED JOBS ONLY
 CAPITAL ACCOUNTING (FOREMAN'S COPY OF JOB)
 RECORDS SECTION (WC), GSM&TS
 REPORT FAILURES UNDER TEST TO GAS ENGINEERING & PLANNING



PART I - DESIGN DATA (TO BE PREPARED BY PROJECT ENGINEER)									
Feeder/Main Number L-147	Number, or Station Name	Area 1	Division/District Peninsula	Job Number 41474081	Date Job Authorized 9/2/2011				
Description of Job -- Include Reference Drawing Numbers, and Pipeline Mileposts Test 2 - Hydrostatically test tie-in piping, hydrostatic test piping and existing 24" L-147. Existing material listed; i.e. pipe, elbows, sleeves, are from the "Material of Record". (refer to DWG 41474081-Sheet 7).									
Hydrotest L-147 from MP 0.02 to MP 0.85, San Carlos, CA (T-42)									
Location Class 3	Design Factor (F) .5	MAOP to be Established for this Piping by this Test 400 PSIG			Future Design Pressure 400 PSIG				
STATIC HEAD DUE TO ELEVATION DIFFERENCE (WHERE APPLICABLE)		Max. Elevation 672 Ft.	Static Head Calculation		For Water 0.433 X Elev. Diff. = 173 PSIG				
		Min. Elevation 273 Ft.	Other (Specify)		X Elev. Diff. = PSIG				
		Elev. Diff. 399 Ft.							
Pipe Specification				Foolage to Be Tested	Pipe Spec. and Foolage Verified	% of SMYS			Pressure to Give 90% SMYS
Size O.D.	W.T.	API or ASTM Grade Long Seam (ERW, DSAW, Seamless, Etc.)	At MAOP			At Min. Test Press.	At Max. Test Press.		
24.00	0.375	API 5L, X-60, DSAW (Item#106)	20'	31.5' <i>AD</i>	21.33	32.00	44.96	1688	
24.00	0.375	Elbow, Y-60 (Item#123)	2' <i>AD</i>	<i>AD</i>	21.33	32.00	44.96	1688	
24.00	0.281	GRB, SMLS, 40,000 SMYS (item #1)	4119'	<i>MOR</i>	42.70	64.06	90.00	843	
24.00	0.281	GRB, SMLS, 45,000 SMYS (Item#2)	4245'	<i>MOR</i>	37.96	56.94	80.00	948	
24.00	0.250	API 5L, X-52, DSAW (Item#3)	849'	859.4' <i>AD</i>	36.92	55.38	77.82	975	
24.00	0.271	API 5L, X-60, DSAW (Item#4)	244'	<i>MOR</i>	29.52	44.28	62.21	1220	
24.00	0.281	API 5L, X-52 DSAW (Item#5)	129'	116' <i>AD</i>	32.85	49.27	69.23	1096	
Minimum Test Pressure @ Max. Elevation		600 PSIG		Test Fluid To Be Used	MINIMUM TEST DURATION			8 HOURS	
Maximum Test Pressure @ Min. Elevation		843 PSIG		WATER	- UNDER 30% SMYS (1 HR. MINIMUM)				
Prepared By: Redacted		Date: 9/2/2011	For Information or Changes, Call: Redacted		- 30% SMYS & OVER (8 HRS. MINIMUM)			SAS STD. A-34	
Approved: Redacted		Date: 9/2/11			- PREINSTALLATION TEST (SEE ATTACHMENT 'A')				
PART II - TEST DATA (TO BE PREPARED BY PERSON CONDUCTING 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	10-14-11 4:30 PM	Elevation at Test Point	390' FT	Min. Required Test Press. at Test Point (1)	152.53 PSIG	Max. Allowable Test Press at Test Point (4)	872.5 PSIG		
Time and Date Test Ended	10-14-11 12:50 PM	Max. Elevation in Test Section	672' FT	Min. Indicated Test Pressure (2)	765.00 PSIG	Max. Indicated Test Pressure (5)	822.00 PSIG		
Actual Duration of Test	8 Hours 10 Minutes	Min. Elevation in Test Section	273'	Min. Test Pressure (3)	60.47 PSIG	Max. Test Pressure at Min. Elevation (6)	812.37 PSIG		
Test Fluid Used	Water								
Make, Range, and Serial No. of Pressure Recording Gauge	CASIM 0-1000 MFG 42553		Date Last Calibrated	10-10-11		Make, Range, and Serial No. of Dead Weight Tester (See Note 7)	LM 0-1000 14201		
Test	Redacted		Date:	10-15-11		Approved:	Redacted		
PUT SCHEMATIC PIPING SKETCH ON BACK OF THIS SHEET SHOW LOCATION OF FACILITY TESTED, MINIMUM AND MAXIMUM ELEVATION IN FEET, MILE POINTS, VALVES, BRANCHED UNITS AND SHORT SECTIONS (SHOW REFERENCE NUMBERS ON FACE OF ALL DRAWINGS AND ATTACHMENTS). FOR STATION PIPING, OF EACH ASSEMBLY TESTED.					USE AN ADDITIONAL SHEET IF NECESSARY OF PIPE, ALSO SHOW A DETAILED SKETCH				
NOTES:					DISTRIBUTION				
(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.					JOB FILE (AT SPONSORING ORGANIZATION)				
(2) Use lowest pressure on test gauge at any time during test.					GSM&TS RESPONSIBLE DISTRICT SUPERINTENDENT				
(3) Subtract static head due to elevation difference (between test point and maximum elevation) from minimum indicated test pressure.					PROJECT MANAGER/PROJECT ENGINEER				
(4) Subtract static head due to elevation difference (between test point and minimum elevation) from "maximum test pressure at minimum elevation" from PART I.					TECHNICAL & CONSTRUCTION SERVICES - ASSIGNED JOBS ONLY				
(5) Highest pressure on test gauge at any time during test.					CAPITA				
(6) Add static head due to elevation difference (between test point and minimum elevation) to maximum indicated test pressure.					ACCOUNTING (FOREMAN'S COPY OF JOB)				
(7) A dead weight tester is only required when testing to a pressure which produces a strain level of 90% of SMYS or greater. However, if a dead weight tester is used on any test, enter the space provided.					RECORDS SECTION (WC), GSM&TS				
					REPORT				
					... T FAILURES UNDER TEST TO GAS ENGINEERING & PLANNING				

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

Feeder Main Number, Line Number, or Station Name L-147	Area 1	Division/District Peninsula	Job Number 41474081	Date Job Authorized 9/2/2011
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Description of Job -- Include Reference Drawing Numbers, and Pipeline Mileposts
Test 2 - Hydrostatically test tie-in piping, hydrostatic test piping and existing 24" L-147. Existing material listed; i.e. pipe, elbows, sleeves, are from the "Material of Record". (refer to DWG 41474081-Sheet 7).

Hydrotest L-147 from MP 0.02 to MP 0.85, San Carlos, CA (T-42)

Location Class 3	Design Factor (F) .5	MAOP to be Established for this Piping by this Test 400 PSIG	Future Design Pressure 400 PSIG
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STATIC HEAD DUE TO ELEVATION DIFFERENCE (WHERE APPLICABLE)	Max. Elevation 672 Ft.	Static Head Calculation	
	Min. Elevation 273 Ft.	For Water	0.433 X Elev. Diff. = 173 PSIG
	Elev. Diff. 399 Ft.	Other (Specify)	X Elev. Diff. = PSIG

Pipe Specification				Footage to Be Tested	Pipe Spec. and Footage Verified In Field	% of SMYS			Pressure to Give 90% SMYS
Size O.D.	W.T.	API or ASTM Grade Long Seam (ERW, DSAW, Seamless, Etc.)				At MAOP	At Min. Test Press.	At Max. Test Press.	
24.00	UNK	Elbow, Unknown Grade (Item#6)		13 Ea.	MOR	-	-	-	-
24.00	0.375	Elbow, Y-52 (Item#7)		4 Ea.	MOR	24.62	36.92	51.88	1463
24.00	UNK	Sleeve, Unknown Grade (Item#8)		3 Ea.	MOR	-	-	-	-
6.625	0.280	API 5L, GRB, SMLS (Item#10)		2'	MOR	13.52	20.28	28.49	2663
2.375	0.154	API 5L, GRB, SMLS (Item#11)		53'	MOR	8.81	13.22	18.57	4085

Minimum Test Pressure @ Max. Elevation 600 PSIG	Test Fluid To Be Used WATER	MINIMUM TEST DURATION - UNDER 30% SMYS (1 HR. MINIMUM) - 30% SMYS & OVER (8 HRS. MINIMUM) - PRE-INSTALLATION TEST (SEE ATTACHMENT 'A', GAS STD. A-34)	8 HOURS
Maximum Test Pressure @ Min. Elevation 843 PSIG			

Prepared By: Redacted	Date: 9/2/2011	For Information or Changes, Call: Redacted	App: Redacted	Date: 9/2/11
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 10-14-11 4:40 PM	Elevation at Test Point 330 FT	Min. Required Test Press. At Test Point (1) 752.53 PSIG	Max. Allowable Test Press at Test Point (4) 822.05 PSIG
Time and Date Test Ended 10-15-11 12:50 PM	Max. Elevation in Test Section 672 FT	Min. Indicated Test Pressure (2) 765.00 PSIG	Max. Indicated Test Pressure (5) 822.00 PSIG
Actual Duration of Test 3:40:53	Min. Elevation in Test Section 273 FT	Min. Test Pressure at Max. Elevation (3) 602.47 PSIG	Max. Test Pressure at Min. Elevation (6) 842.37 PSIG

Test Fluid Used water	Pipe Specification and Footage Verified (See Part I)		
Make, Range, and Serial No. of Pressure Recording Gauge elid mock 0-1000 MP 4255B	Date Last Calibrated 10-10-11	Make, Range, and Serial No. of Dead Weight Tester (See Note 7) KMETER 22" range 11 432L	Date Last Calibrated 10-10-11
Redacted	Date: 10-15-11	Approved By: Redacted	Date: 10/18/11

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 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 JOB FILE (AT SPONSORING ORGANIZATION) GMS&TS RESPONSIBLE DISTRICT SUPERINTENDENT PROJECT MANAGER/PROJECT ENGINEER TECHNICAL & CONSTRUCTION SERVICES - ASSIGNED JOBS ONLY CAPITAL ACCOUNTING (FOREMAN'S COPY OF JOB) RECORDS SECTION (WC), GMS&TS REPORT FILED IN THE RECORDS UNDER TEST TO GAS ENGINEERING & PLANNING
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