

## EVALUATION REPORT OF LIQUID PIPELINE CONSTRUCTION

A completed **Standard Inspection Report** is to be submitted to the Director within 60 days from completion of the inspection. A **Post Inspection Memorandum (PIM)** is to be completed and submitted to the Director within 30 days from the completion of the inspection, or series of inspections, and is to be filed as part of the **Standard Inspection Report**.

Inspection Report	Post Inspection Memorandum
Inspector/Submit Date: _____	Inspector/Submit Date: _____ Peer Review/Date: _____ Director Approval/Date: _____
<b>POST INSPECTION MEMORANDUM (PIM)</b>	
Name of Operator:	OPID #:
Name of Unit(s):	Unit #(s):
Records Location:	
Unit Type & Commodity:	
Inspection Type:	Inspection Date(s):
PHMSA Representative(s):	AFO Days:

**Summary:**

**Findings:**



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.100	DESIGN REQUIREMENTS	S	U	N/A	N/C
.112	Pipe Specifications <input type="checkbox"/> New <input type="checkbox"/> Replacement <ul style="list-style-type: none"> <li>▪ Manufacturer:</li> <li>▪ Manufacturing Standard:</li> <li>▪ Pipe Grade:</li> <li>▪ Outside Diameter (D):</li> <li>▪ Wall Thickness (t):</li> <li>▪ Type of Longitudinal Seam:</li> <li>▪ Specified Min. Yield Strength:</li> <li>▪ Joint Design - Bevel:</li> <li>▪ External Coating:</li> <li>▪ Internal Coating:</li> <li>▪ Minimum Joint Length:</li> <li>▪ Footage or Miles:</li> </ul>				
.104	Check all components for pressure rating.				
.106	Pipeline design formula: $P = (2St/D) \times F \times E \times T$				
.108	External design pressure.				
.110(a)	Design pipeline system to anticipated external loads, e.g., earthquakes, vibration, thermal expansion, and contraction. Follow section 419 of ASME/ANSI B31.4 for expansion and flexibility.				
.110(b)	Pipe/components supported in a manor to minimize localized stresses. Compute and compensate for stresses to the pipe wall caused by attachments to the pipe.				
.112(b)	Pipe manufactured in accordance to API or ASTM.				
.112(c)	Mark each length of pipe $\geq 4\frac{1}{2}$ inches OD to indicate SMYS or grade, pipe size, and specification.				
.114	Used pipe installed in a pipeline system must comply with §195.112(a) and (b) and the following:				
	▪ Meet an API or ASTM specification.				
	▪ Free of buckles, cracks, grooves, gouges, dents, corroded areas, or other surface defects that exceed the maximum depth.				
	▪ Depth of the corroded areas - is the remaining wall thickness equal to or greater than the minimum required by the tolerance in specifications.				
.116	Valves installed in the pipeline system must comply with the following:				
	(a) Sound engineering design.				
	(b) Compatible with the pipe or fittings to which the valve is attached.				
	(c) Compatible with carbon dioxide or each hazardous liquid the pipeline may carry.				
	(d) Both hydrostatically shell and seat tested without leakage.(Sect. 10 API 6D)				
	(e) Equipped with a means for clearly indicating open or closed.				
	(f) Marked on the body or nameplate with the following:				
	(1) Manufacturer's name or trademark.				
	(2) Class designation or maximum working pressure.				
	(3) Body material.				
	(4) Nominal size.				
.118(a)	Marking, end preparation, and bursting requirements of ANSI B16.9 or MSS SP-75.				
.118(b)	Fittings free of any buckles, dents, cracks, gouges, or other defects that might reduce strength.				
.118(c)	Butt welded fittings rated at or above same pressure and temperature of the pipe.				
.120	New and replaced line pipe, valve, fitting, or other line component designed and constructed to accommodate the passage of instrumented internal inspection devices.				

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.200	<b>CONSTRUCTION REQUIREMENTS</b>	S	U	N/A	N/C																										
	<b>SPECIFICATIONS</b>																														
	.202 Comprehensive written construction specifications.																														
	.204 Qualified inspector performing inspections.																														
	.208 Supports and braces not welded to the pipe operating above 100 p.s.i.																														
	.210(a) Pipeline ROW selected to avoid areas containing private dwellings, industrial buildings, and places of public assembly.																														
	.210(b) Pipeline located within <b>50 feet</b> of any private dwelling, industrial building, or place of public assembly provide with at least an <b>additional 12 inches of cover</b> .																														
	.212(b) Field bends made in compliance:																														
	(1) Not impair serviceability.																														
	(2) Smooth, free from buckles, cracks, or mechanical damage.																														
	(3) Longitudinal weld near neutral axis unless - an internal bending mandrel is used; or pipe is ≤ <b>12 ¾ inches</b> or <b>D/t ratio is less than 70%</b> .																														
	<b>INSTALLATION OF PIPE</b>																														
	.246(a) Pipe installed to minimize stresses and protect the pipe coating from damage.																														
	.248(a) Installed below the level of cultivation. (refer to table below)																														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 50%; text-align: center;">Location</th> <th colspan="2" style="text-align: center;">Cover (inches)</th> </tr> <tr> <th style="text-align: center;">For Normal Excavation</th> <th style="text-align: center;">For Rock Excavation</th> </tr> </thead> <tbody> <tr> <td>Industrial, commercial, and residential areas</td> <td style="text-align: center;">36</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Crossings of inland bodies of water with a width of at least 100 ft from high water mark to high water mark</td> <td style="text-align: center;">48</td> <td style="text-align: center;">18</td> </tr> <tr> <td>Drainage ditches at public roads and railroads</td> <td style="text-align: center;">36</td> <td style="text-align: center;">36</td> </tr> <tr> <td>Deepwater port safety zone</td> <td style="text-align: center;">48</td> <td style="text-align: center;">24</td> </tr> <tr> <td>Gulf of Mexico and its inlets in water less than 15 ft deep as measured from the mean low tide.</td> <td style="text-align: center;">36</td> <td style="text-align: center;">18</td> </tr> <tr> <td>Other offshore areas under water less than 12 ft deep as measured from the mean low tide.</td> <td style="text-align: center;">36</td> <td style="text-align: center;">18</td> </tr> <tr> <td>Any other area</td> <td style="text-align: center;">30</td> <td style="text-align: center;">18</td> </tr> </tbody> </table>	Location	Cover (inches)		For Normal Excavation	For Rock Excavation	Industrial, commercial, and residential areas	36	30	Crossings of inland bodies of water with a width of at least 100 ft from high water mark to high water mark	48	18	Drainage ditches at public roads and railroads	36	36	Deepwater port safety zone	48	24	Gulf of Mexico and its inlets in water less than 15 ft deep as measured from the mean low tide.	36	18	Other offshore areas under water less than 12 ft deep as measured from the mean low tide.	36	18	Any other area	30	18				
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	.248(b) If minimum cover prescribed above cannot be attained because it is impracticable to do otherwise additional protection being provided as required?																														
	.250 <b>12 inches</b> of clearance between the pipeline and any other underground structure.																														
	.252 Backfilling performed in a manner that provides firm support for the pipe and does no damage to the coating																														
	.256 Pipe at each railroad or highway crossing installed so as to adequately withstand the dynamic forces exerted by anticipated traffic loads.																														
	<b>VALVES</b>																														
	.258(a) Install valve in a location, accessible to authorized employees and protected from damage or tampering.																														
	.258(b) Each submerged valve located offshore or in inland navigable waters must be marked, or located by conventional survey techniques, to facilitate quick location when operation of the valve is required.																														
	.260 Are valves being installed at each of the following locations:																														
	(a) On the suction end and discharge end of a pump station in a manner that permits isolation of the pump station equipment in the event of an emergency.																														
	(b) On each line entering or leaving a breakout storage tank area in a manner that permits isolation of the tank area from other facilities.																														

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.200	CONSTRUCTION REQUIREMENTS	S	U	N/A	N/C
	(c) On each mainline at locations along the pipeline system that minimizes damage or pollution from accidental hazardous liquid discharge, as appropriate for the terrain in open country, for offshore areas, or for populated areas.				
	(d) On each lateral takeoff from a trunk line in a manner that permits shutting off the lateral without interrupting the flow in the trunk line.				
	(e) On each side of a water crossing that is more than 100 feet wide from high-water mark to high-water mark unless a waiver has been granted for a particular case where valves not are justified.				
	(f) On each side of a reservoir holding water for human consumption.				

.200	WELDING	S	U	N/A	N/C
.214(a)	Welding must be performed by qualified welders using qualified welding procedures. Are welding procedures qualified in accordance with Sec. 5 of API 1104 or Section IX of ASME Boiler & Pressure Code? Welding procedures must be qualified by destructive testing.				
.214(b)	Each welding procedure must be recorded in detail, including results of qualifying tests.				
.222(a)	Welders must be qualified in accordance with <b>Section 6 of API Standard 1104 (19th Ed., 1999)</b> or <b>Section IX of the ASME Boiler and Pressure Vessel Code (2004 Ed.</b> Including addenda through July 1, 2005), except that a welder qualified under an earlier edition than listed in <b>195.3</b> may weld, but may not requalify under that earlier edition.				
.222(b)	Welders may not weld with a particular welding process unless, within the preceding 6 calendar months, the welder has – (1) Engaged in welding with that process; and (2) Had one weld tested and found acceptable under Section 9 of API 1104.				
.224	Welding operations protected from weather conditions.				
.226(a)	Arc burns require repair.				
.226(b)	If a notch is not repairable by grinding, a cylinder of the pipe containing the entire notch must be removed. Do arc burn repair procedures require verification of the removal of the metallurgical notch by nondestructive testing? ( <b>Ammonium Persulfate</b> ).				
.226(c)	Ground not welded to pipe.				
.228	Visual inspections must be supplemented by nondestructive testing. Except for cracks, acceptability of welds per <b>Section 9 or Appendix A, API 1104</b> or as applicable.				
.230(a)	Remove or repair cracks $\leq 8\%$ , remove cracks longer than <b>8%</b> .				
.230(b)	Welds repaired, remove defect down to clean metal, preheat pipe, and assure acceptability.				
.230(c)	Repairs in a previously repaired area, must be in accordance with qualified written welding procedures, and mechanical properties of the repaired weld equal to those specified for the original weld.				

.200	NONDESTRUCTIVE TESTING OF WELDS	S	U	N/A	N/C
.228/.234	Detailed written procedure established and qualified for nondestructive testing.				
.234(b)	Nondestructive testing of welds must be performed: (1) In accordance with written procedures for <b>NDT</b> . (2) Radiographer trained and qualified. (Level II or better). (3) By a process that will indicate any defects that may affect the integrity of the weld				
.234(c)	Procedures established for proper interpretation.				
.234(d)	Nondestructively test <b>10%</b> of each welder's welds per day.				
.234(e)	Test <b>100% or 90%</b> , if impractical. (1) Stream, river, lake, reservoir, or other body of water. (2) Within railroad or public road ROWs. (3) Overhead road crossings and within tunnels. (4) Within the limits of any incorporated subdivision. (5) Within populated areas such as residential subdivisions.				
.234(f)	<b>100%</b> of all girth welds nondestructively tested on used pipe.				

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.200	NONDESTRUCTIVE TESTING OF WELDS	S	U	N/A	N/C
	.234(g) Test <b>100%</b> of girth welds at tie-ins.				

	CORROSION PROTECTION REQUIREMENTS	S	U	N/A	N/C
	.557 Buried or submerged pipelines (constructed, relocated, replaced, or changed) must be externally coated prior to placing in service. See code for exceptions.				
	.563(a) Adequate cathodic protection of the system.				
	Cathodic protection system installed <b>1 year</b> . (refer. ADB note below)				
	.567 Sufficient number of test leads properly installed.				

.266	CONSTRUCTION RECORDS	S	U	N/A	N/C
	Are there complete records showing the following:				
	(a) Number of girth welds and number of nondestructively tested welds, including number? and disposition of each rejected weld.				
	(b) The amount, location, and cover of each size of pipe installed?				
	(c) The location of each crossing of another pipeline?				
	(d) The location of each buried utility crossing?				
	(e) The location of each overhead crossing?				
	(f) The location of each valve and corrosion test station?				

.300	PRESSURE TESTING	S	U	N/A	N/C
	.302(a) Has the pipeline been hydrostatically tested or is a hydrostatic test planned?				
	.302(c) If the pipeline was hydrostatically tested:				
	1. Was the entire buried portion tested without leakage for <b>8 hours</b> ?				
	2. Was the above ground portion tested for at least <b>4 hours</b> ?				
	.304 Does the operator hydrostatically test all pipe and attached fittings, including components, unless - if a component is the only item being replaced or added and the manufacturer certifies that it was hydrostatically tested at the factory or it was manufactured under a quality control system that ensures that the component is at least equal inn strength to a prototype that was hydrostatically tested at the factory?				
	Test pressure must be maintained for at least 4 continuous hours at a pressure equal to 125 percent, or more, of the MOP. If not visually inspected during the test, at least an additional 4 hours at 110 percent of MOP is required.				
	.306 Appropriate test medium				
	.308 Was pipe associated with tie-ins either pretested or hydrostatically tested in place?				
	.310(a) Are hydrostatic test records retained for the life of the facility tested?				
	.310(b) Do the hydrostatic test records include the following:				
	(1) The pressure recording charts?				
	(2) The test instrument calibration data?				
	(3) The operator's name, the name of the person responsible for making the test, and the name of the test company used, if any?				
	(4) The date and time of the test?				
	(5) The minimum test pressure?				
	(6) The test medium?				
	(7) A description of the facility tested and the test apparatus?				
	(8) An explanation of any pressure discontinuities, including test failures, that appear on the pressure recording charts?				
	(9) Where elevation differences in the test section exceed <b>100 feet</b> , a profile of the pipeline showing the elevation and test sites over the entire length of the test section?				

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<b>.300</b>	<b>PRESSURE TESTING</b>	<b>S</b>	<b>U</b>	<b>N/A</b>	<b>N/C</b>
	(10)    Temperature of the test medium or pipe during the test period?				

<b>.501-.509</b>	<b>OPERATOR QUALIFICATION FIELD VERIFICATION</b>	<b>S</b>	<b>U</b>	<b>N/A</b>	<b>N/C</b>
	Operator Qualification - Use PHMSA Form 15 Operator Qualification Field Inspection Protocol Form if applicable to the project.				

Leave this list with the operator.

### Recent Applicable PHMSA Advisory Bulletins

<b><u>Number</u></b>	<b><u>Date</u></b>	<b><u>Subject</u></b>
ADB-07-01	April 27, 2007	Pipeline Safety: Senior Executive Signature and Certification of Integrity Management Program Performance Reports
ADB-07-02	September 6, 2007	Pipeline Safety: Updated Notification of the Susceptibility to Premature Brittle-Like Cracking of Older Plastic Pipe
ADB-07-02	February 29, 2008	Correction - Pipeline Safety: Updated Notification of the Susceptibility to Premature Brittle-Like Cracking of Older Plastic Pipe
ADB-08-01	May 13, 2008	Pipeline Safety - Notice to Operators of Gas Transmission Pipelines on the Regulatory Status of Direct Sales Pipelines
ADB-08-02	March 4, 2008	Pipeline Safety - Issues Related to Mechanical Couplings Used in Natural Gas Distribution Systems
ADB-08-03	March 10, 2008	Pipeline Safety - Dangers of Abnormal Snow and Ice Build-Up on Gas Distribution Systems
ADB-08-04	June 5, 2008	Pipeline Safety - Installation of Excess Flow Valves into Gas Service Lines
ADB-08-05	June 25, 2008	Pipeline Safety - Notice to Hazardous Liquid Pipeline Operators of Request for Voluntary Adv Notification of Intent To Transport Biofuels
ADB-08-06	July 2, 2008	Pipeline Safety - Dynamic Riser Inspection, Maintenance, and Monitoring Records on Offshore Floating Facilities

For more PHMSA Advisory Bulletins, go to <http://ops.dot.gov/regs/advise.htm>