NAPSR – PHMSA DIMP Implementation Team

National Association of Pipeline Safety Representatives
Office of Pipeline Safety

Chris McLaren
PHMSA DIMP Coordinator

Welcome

Thank you for Your Participation at NEPSR's 2012 Pipeline Safety Seminar!

Today's Topics

- MFFR Requirements
- What the 2011 Data is showing us so far
- One year's worth of Data is not a Trend
- Review the 2012 Data to date

Mechanical Fitting Failure Reporting

- § 191.12 Distribution Systems: Mechanical Fitting Failure Reports. Each mechanical fitting failure, as required by § 192.1009, must be submitted on a MFFR Form PHMSA F–7100.1–2.
- Must submit for previous calendar year by March 15th
- May elect to submit its reports throughout the year
- Tools have been implemented for batch uploads
- Must also report this information to the State pipeline safety authority, if applicable.

Reporting and Data Analysis

- Communication of Performance Data through DIMP web page (www.primis.phmsa.dot.gov/dimp)
- The MFFR instructions will be revised in 2013.
- See Advisory Bulletin (ADB-2012-07) – All hazardous leaks involving a fitting regardless of material; Apparent cause of Incorrect Operations; Electronic submission
- Failures resulting from a construction or installation defect should be identified with the "Incorrect Operations" leak cause and not the "Material or Welds/Fusions" leak cause category (as is described in PHMSA F 7100.1-2 and the Instructions).

General - 2011 MFF Reporting

- Total number of reports – 8199
- Total number of Operators – 191
- The state of origin includes 48 States and DC
- Total number of manufacturers – 71
- Records missing manufacturer – 51%

INSTRUCTIONS FOR COMPLETING FORM PHMSA F 7100.1-2

- Please make best effort at providing the best possible information
- Make an entry in each block for which data are available. Some companies may have very old pipe for which installation records do not exist. Estimate data based on reasonable knowledge, if necessary. Avoid entering "Unknown" if at all possible.

Data Summary

- Confirmation of information we thought we knew
  - The decade of installation (60's to 80's)
  - States with the most mileage have the most failures
- Majority of issues involve couplings
- Typical failure occurred Belowground, Outside, and in a Service-to-Service connection
- Plastic or combination fittings higher risk for cause of leak being incorrect operation or material/weld
- Steel fittings higher risk for equipment as cause

State of Origin by Fitting Failure

Top 10 States	Top 10 Steel States	Top 10 Plastic States
TX – 13%	TX – 18%	PA – 26%
IL – 12%	IL – 18%	OH – 11%
PA – 9%	IN – 9%	CA – 10%
OH – 7%	NY – 6%	NY – 5%
IN – 7%	OH – 6%	GA – 4%
NY – 6%	MS – 5%	CT – 4%
MI – 5%	MI – 5%	MA – 4%
VA – 3%	TN – 4%	MO – 3%
CA – 3%	CA – 3%	SC – 3%
TN – 3%	VA – 3%	AZ – 3%

Decade Installed

Decade	Total	Percentage
Pre 1940s	35	2%
1940s	22	1%
1950s	176	10%
1960s	318	19%
1970s	468	28%
1980s	354	21%
1990s	154	9%
2000s	161	10%
2010s	5	Less then 1%

Other Areas of Analysis

- Comparison of First Pipe Material and Second Pipe Material
- Leak Location (above or below ground, inside or outside, service type) by Fitting Material
- Fitting Material by Leak Cause
- Fitting Joint Sizes
- State and Region specific data trends
- Manufacturing data trends
  - Manufacturer of Fitting by Year Manufactured
  - Manufacturer of Fitting by Years in Service

Data from 2012 (so far) and Trends

- **Trend analysis is expected to require 3 years or more worth of data**

- **General Overview of the MFFR Information**

	2011	2012 (as of 9/15/12)
Number of Reports	8197	1233
Number of Reporting Operators	184	51
Number of states of origin	48 and DC	27
Number of Manufacturers	106	53-58
Percent of Missing Manufacturers	51%	49%

Decade of Installation of Mechanical Fitting that Failed

	2011 Count (%)	2012 Count (%)
Pre 1940s	35 (2%)	19 (4%)
1940s	22 (1%)	4 (1%)
1950s	176 (10%)	64 (12%)
1960s	318 (19%)	125 (24%)
1970s	468 (28%)	166 (32%)
1980s	354 (21%)	106 (20%)
1990s	154 (9%)	19 (4%)
2000s	161 (10%)	16 (3%)
2010s	5 (<1%)	1 (<1%)

Average and Range Time to Failure by Material Type

	2011	2012
	From Year of Install	From Year of Install
	Average (Range)	Average (Range)
Steel	39 (0 – 124)	43 (3 – 112)
Plastic	21 (-1 – 70)	19 (0 – 47)
Combination	26 (0 – 76)	26 (1 – 38)
Unknown	41 (0 – 71)	----------
Other	49 (0 – 111)	51 (26 – 73)
Brass	41 (0 – 82)	57 (32 – 132)

Based on 2011 data and other information, when the year of manufactured and the year of install are both reported, the majority of the dates are within a year of each other. Since, the dates are similar and year of install was reported more, year of install was used

Frequency of Failures by Fitting Material Type

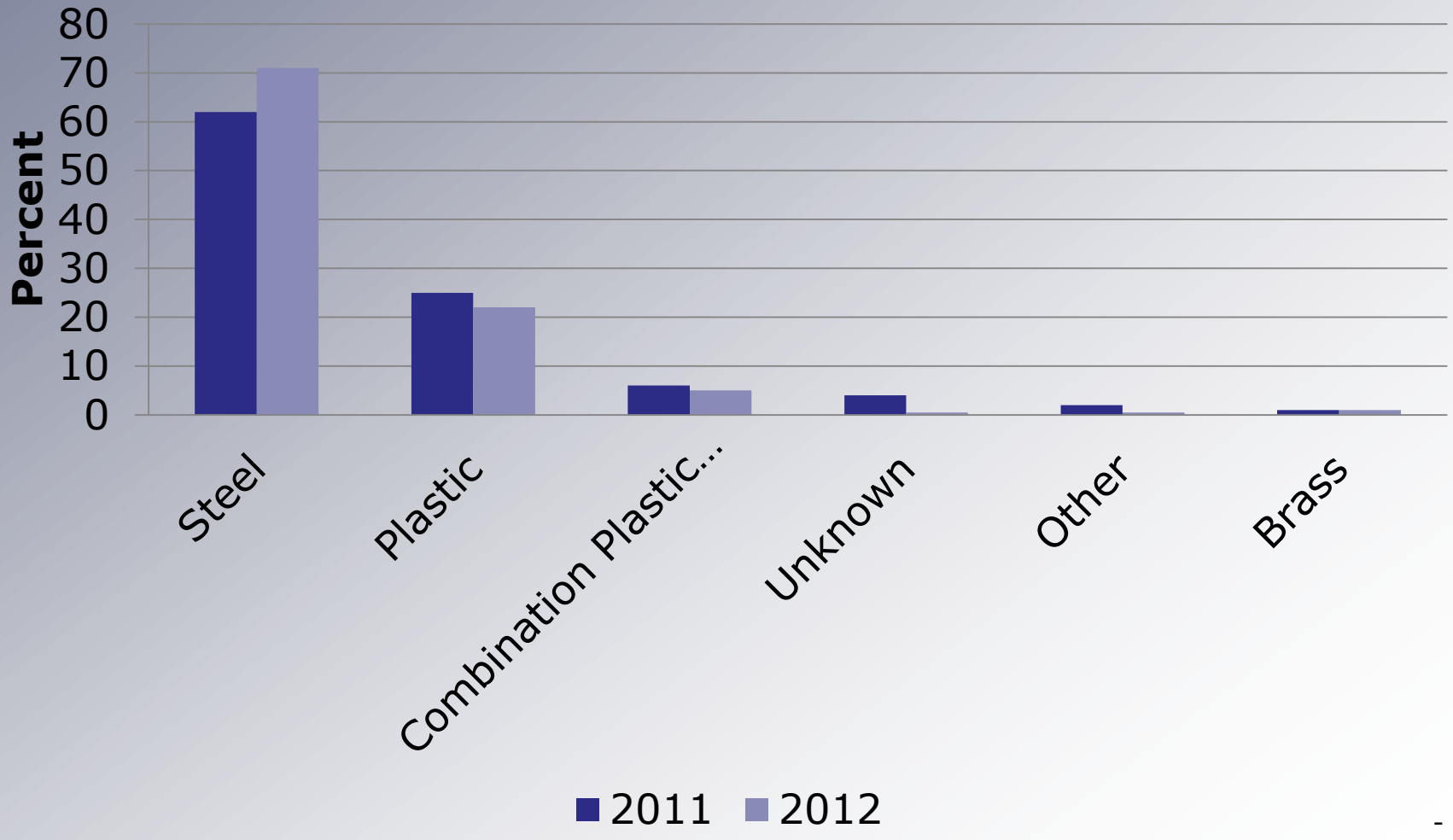
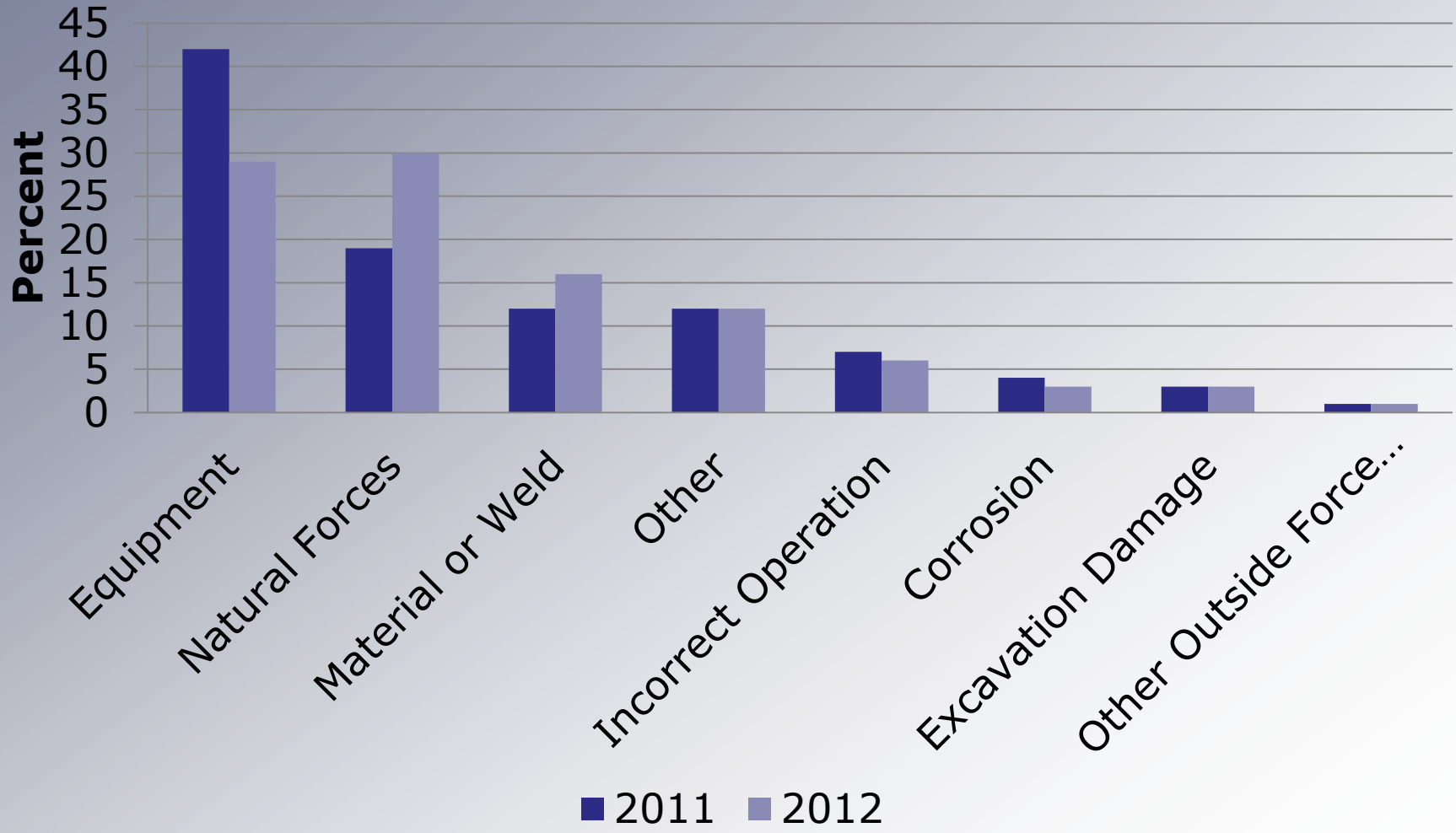


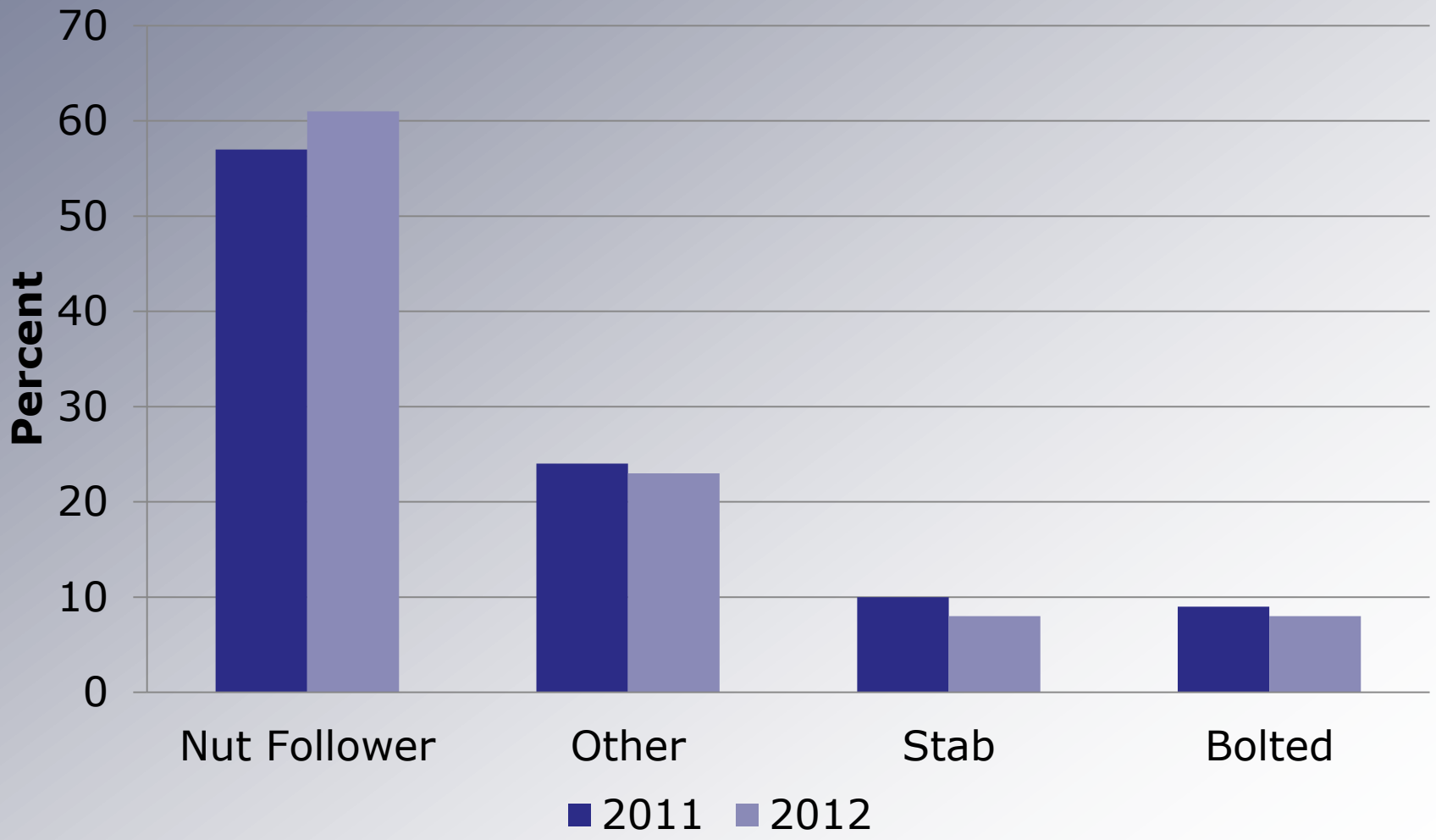
Chart of Leak Causes



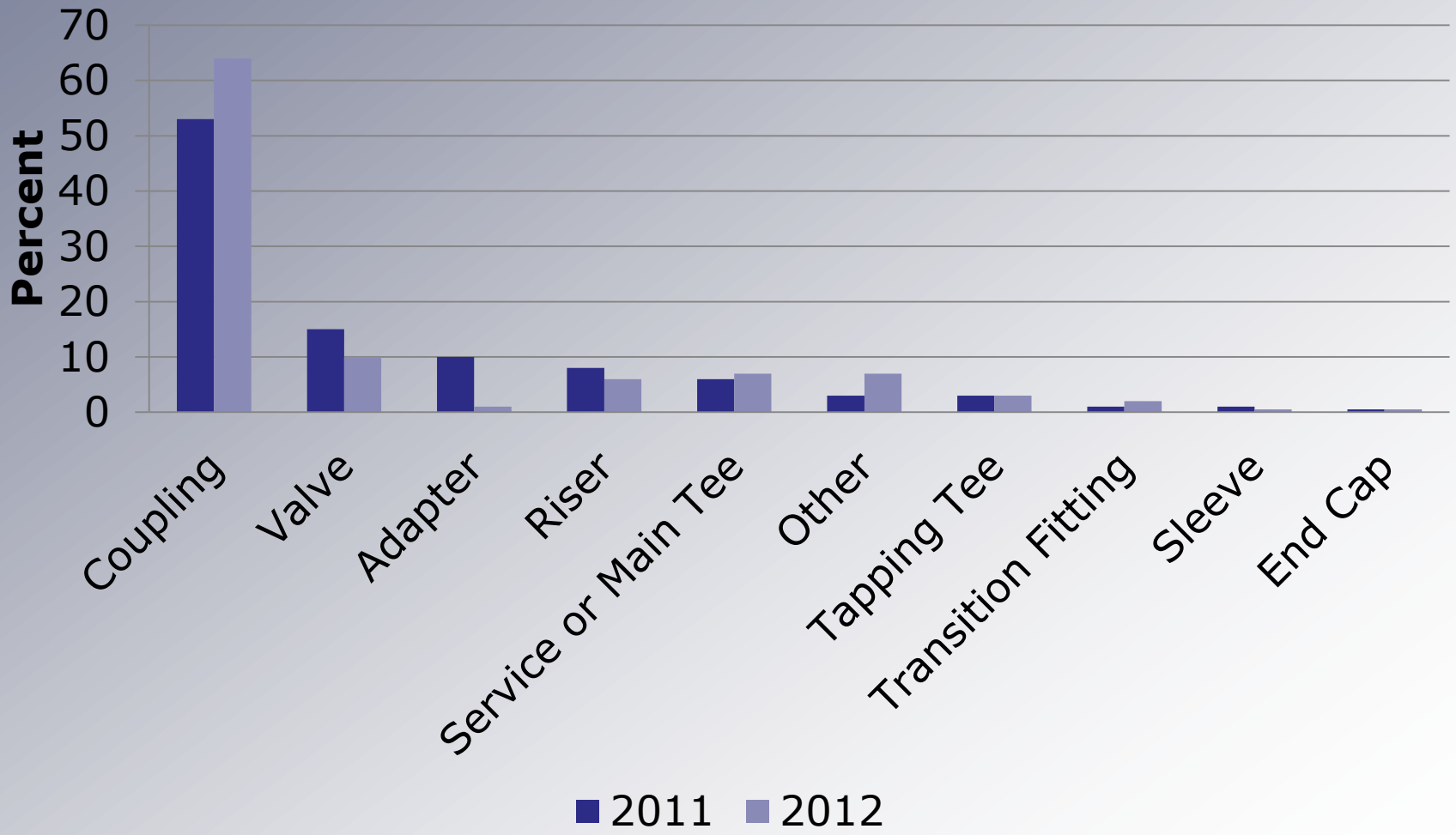
Leak Causes Expanded

Question	Responses	2011 Count (%)	2012 Count (%)
Leak Cause Natural Forces Thermal Expansion / Contraction?	**No**	736 (57%)	120 (42%)
	Yes	561 (43%)	168 (58%)
Leak Cause Material/Welds	**Construction/Installation Defect**	242 (24%)	41 (21%)
	Design Defect	171 (17%)	55 (27%)
	Material Defect	613 (60%)	104 (52%)
Leak Cause Exc Damage Occurred	**At time of leak discovery**	166 (75%)	27 (84%)
	Previous to leak discovery	54 (25%)	5 (16%)

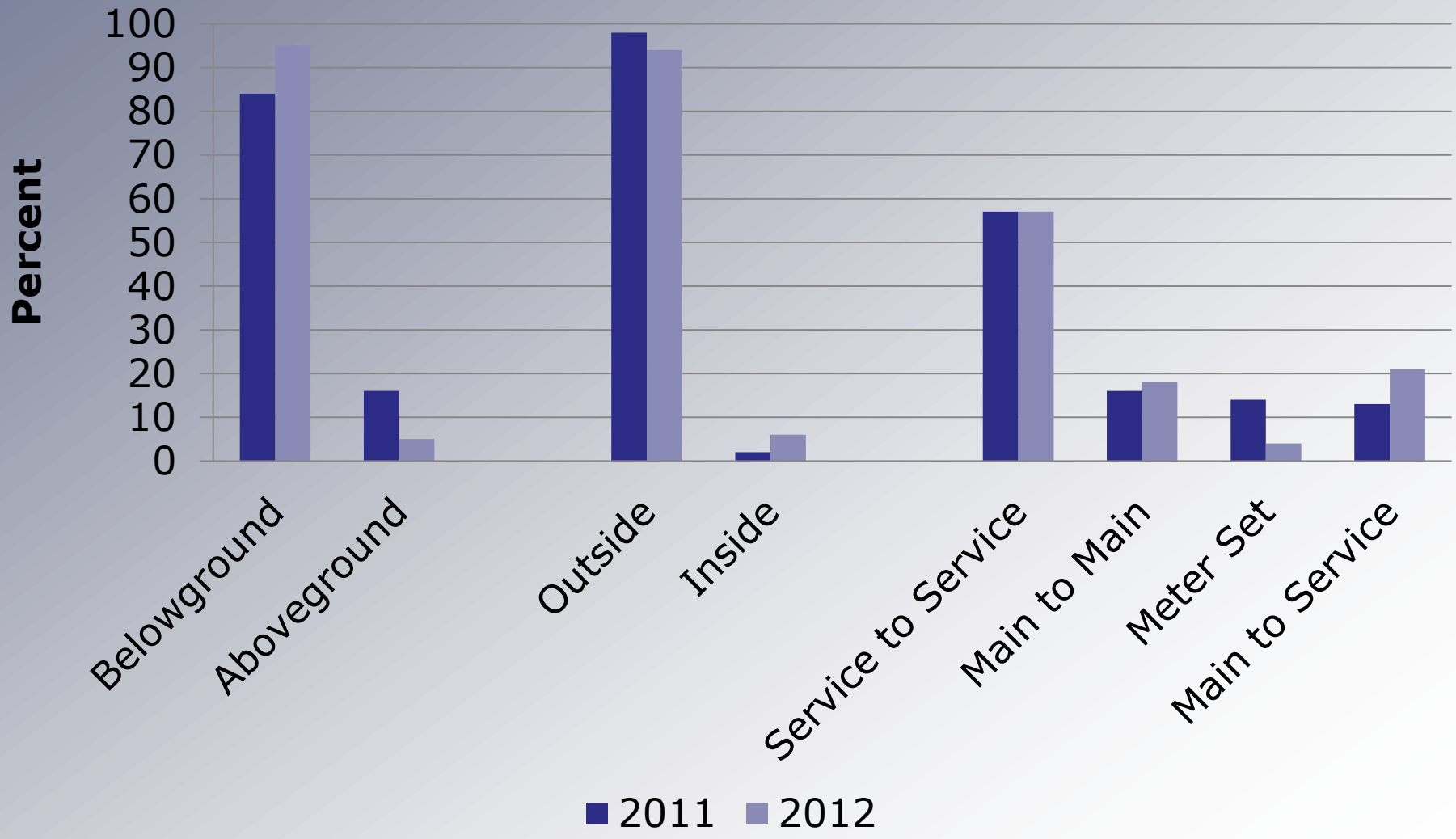
General Mechanical Fitting Type



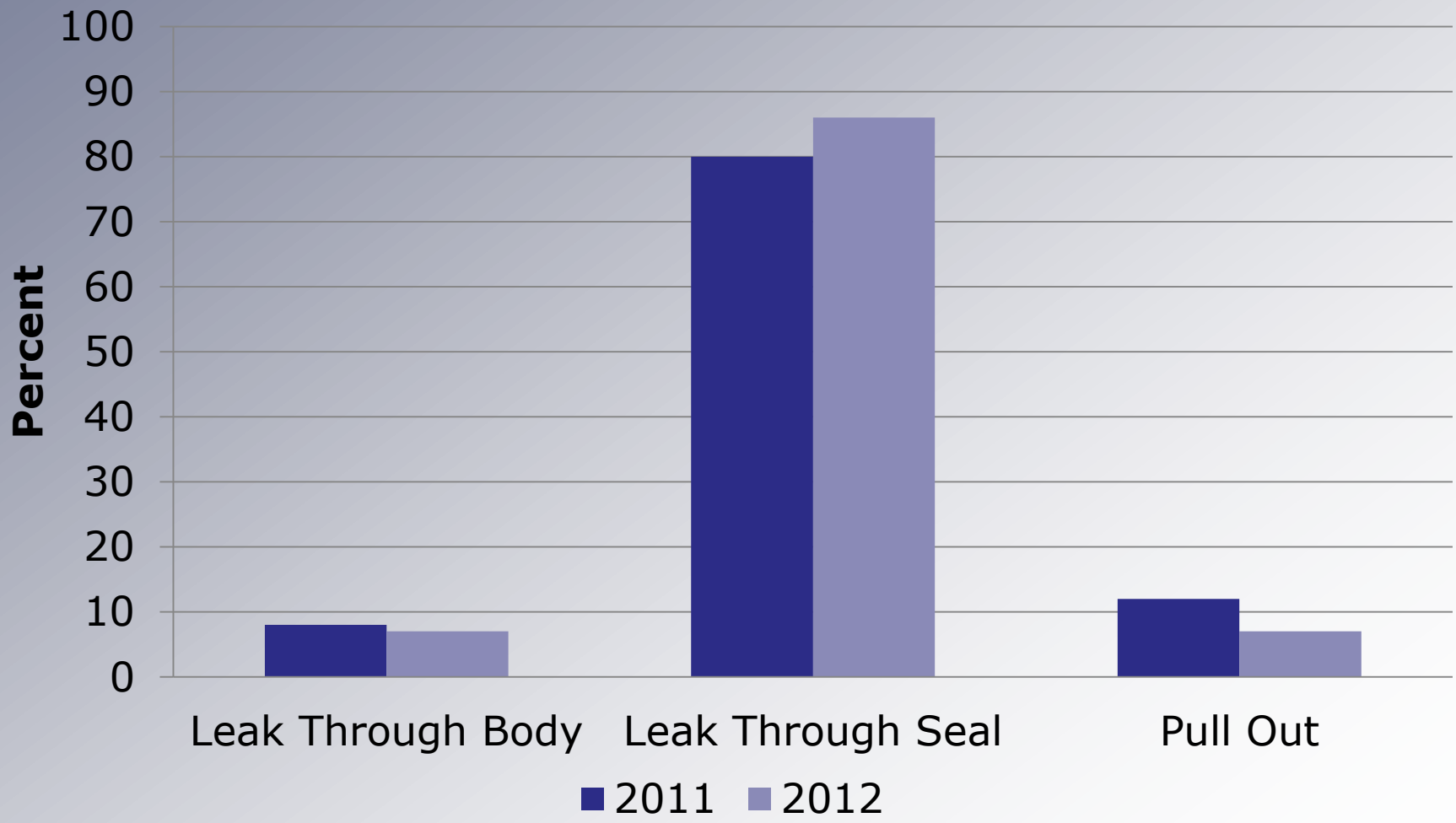
Specific Type of Fitting



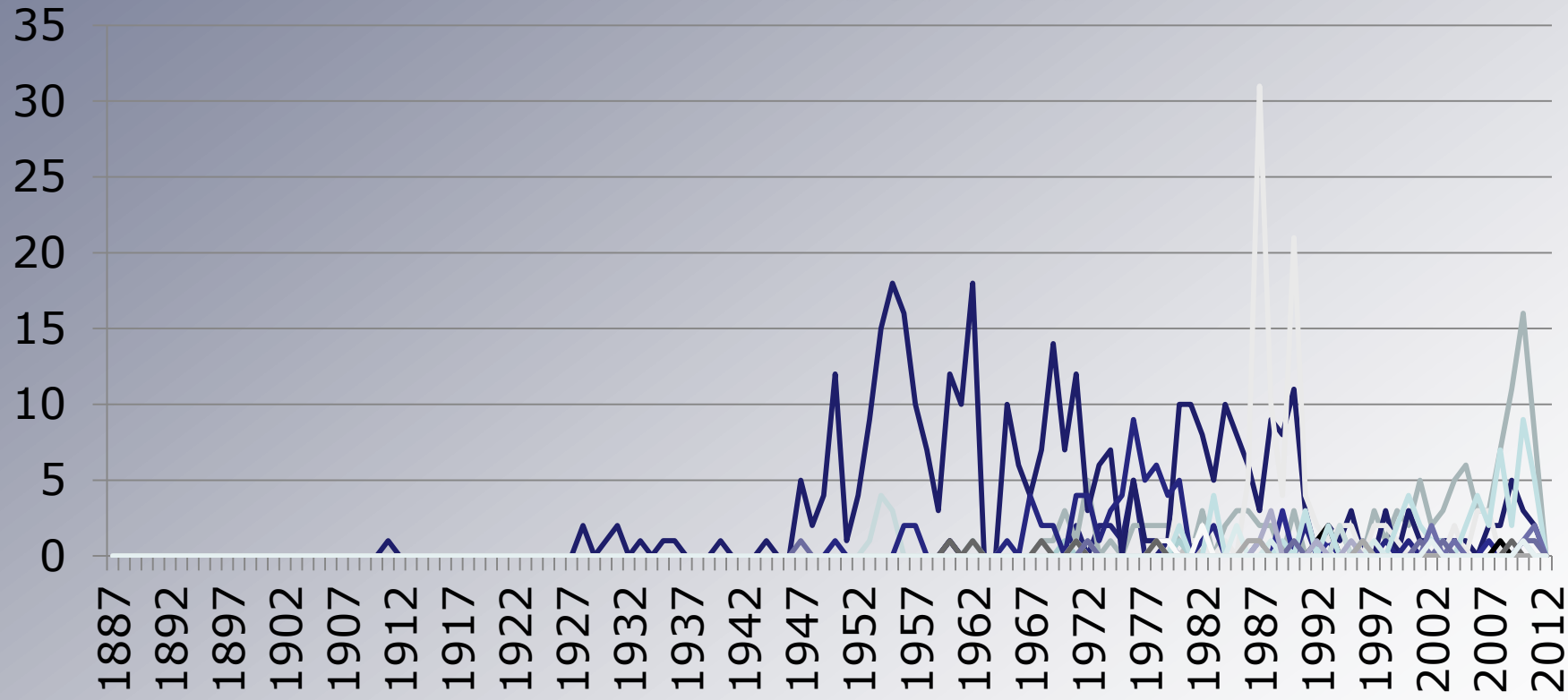
Leak Location



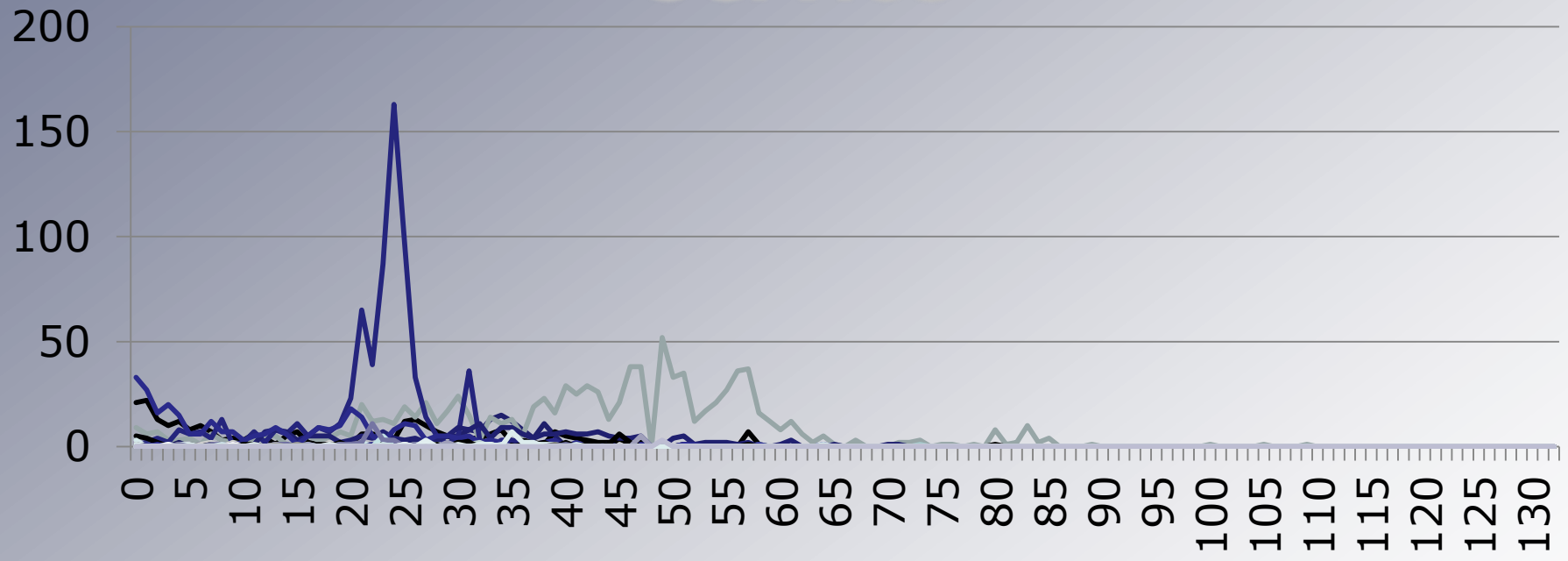
Leak Occurrence



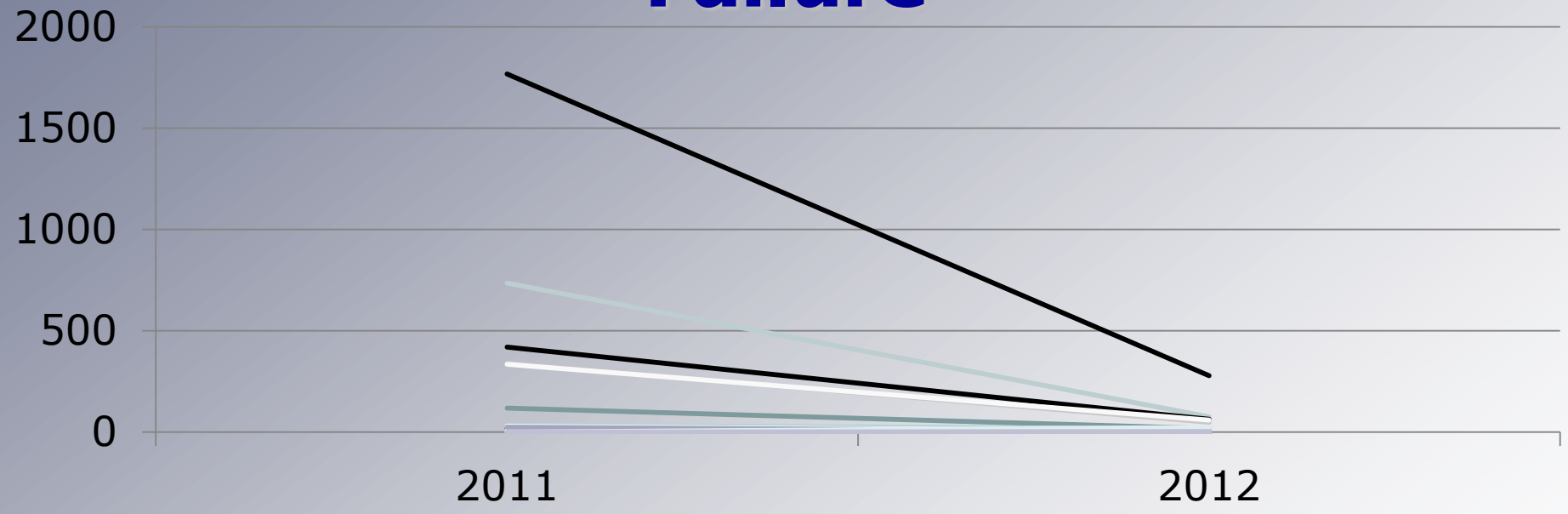
Manufacturer of Fitting by Year of Manufactured



Manufacturer of Fitting by Years in Service



Manufacturer of Fitting by Year of Failure



AMP
Aldyl
American
CSI
Central
Chicago
Cleavenger
Conino
Continental
Dresser
Dupont
Fisher
Flo_Control
Handley
INTERNATIONAL_METAL_H
Innertite
Kerotest
Lyco
Mueller
NORMAL
Nordstrom
Normac
Norton_McMurray
OTHER
PER
PERMA_SERT
Perfection
Performance
Pergeltion
Plexco
Posilock
Powell
RW_Lyall
RobRoy
Rockwell
SMITH_BLAIR
Skinner
Spears
Telsco
US_Poly
Uponor
Wayne_Mfg
Generic
Norton_McMurry

Top 10 States Reporting, Top 10 Steel States, and Top 10 Plastic States

Top 10 States			Top 10 Steel States			Top 10 Plastic States		
Number of Services Annual Report 2011	**2011**	**2012**	**Number of Steel Services Annual Report 2011**	**2011**	**2012**	**Number of Plastic Services Annual Report 2011**	**2011**	**2012**
CA – 17%	TX – 10%	TX – 15%	CA – 13%	TX – 18%	TX – 49%	CA – 12%	PA – 26%	PA – 40%
TS – 10%	IL – 9%	IN – 7%	TX – 7%	IL – 18%	IN – 22%	TX – 7%	OH – 11%	SC – 19%
IL – 5%	PA – 7%	PA – 4%	IL – 6%	IN – 9%	IL – 8%	NY – 5%	CA – 10%	TX – 8%
NY – 5%	OH – 6%	IL – 2%	OH – 5%	NY – 6%	MO – 4%	OH – 5%	NY – 5%	OH – 8%
MI – 4%	IN – 5%	SC – 2%	NY – 5%	OH – 6%	OH – 3%	MI – 5%	GA – 4%	IN – 5%
OH – 4%	NY – 5%	OH – 2%	MI – 5%	MI – 5%	MI – 2%	IL – 5%	CT – 4%	WA – 5%
NJ – 4%	MI – 4%	MO – 2%	PA – 4%	MS – 5%	SC – 2%	PA – 5%	MA – 4%	AL – 4%
PA – 4%	MS – 3%	MI – 1%	NJ – 3%	TN – 4%	HI – 2%	GA – 3%	MO – 3%	MI – 4%
LA – 3%	CA – 2%	WA – 1%	GA – 3%	CO – 3%	PA – 1%	NJ – 3%	SC – 3%	OR – 2%
CO – 3%	VA – 2%	AL – 0.5%	IN – 3%	VA – 3%	WA – 1%	IN – 3%	AZ – 3%	KY – 1%

DIMP Website and Posting of DIMP Performance Measures

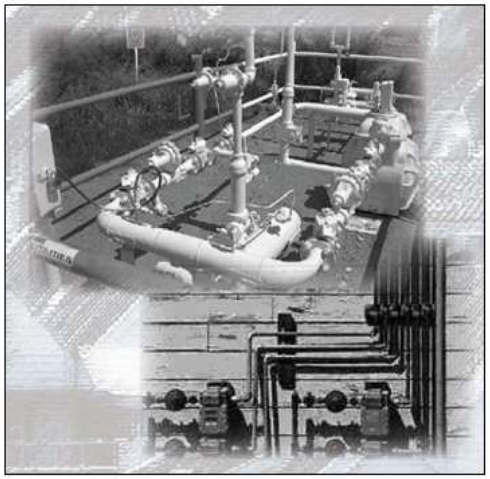
DIMP Home *Live Demo, as time allows*

U.S. Department of Transportation

- DIMP Home
- DIMP Communications: Public Meetings, Webinars, Webcasts, and State Seminars
- DIMP History
- DIMP Resources
- FAQs
- Performance Measures
- Questions and Comments for OPS
- Regulator Contacts

Webcast

Distribution Integrity Management



The Pipeline and Hazardous Materials Safety Administration (PHMSA) published the final rule establishing integrity management requirements for gas distribution pipeline systems on December 4, 2009 (74 FR 63906). The effective date of the rule is February 12, 2010. Operators are given until August 2, 2011 to write and implement their program.

PHMSA previously implemented integrity management regulations for hazardous liquid and gas transmission pipelines. These regulations aim to assure pipeline integrity and improve the already admirable safety record for the transportation of energy products. Congress and other stakeholders expressed interest in understanding the nature of similarly focused requirements for gas distribution pipelines. Significant differences in system design and local conditions affecting distribution pipeline safety preclude applying the same tools and management practices as were used for transmission pipeline systems. Therefore, PHMSA took a slightly different approach for distribution integrity management, following a joint effort involving PHMSA, the gas distribution industry, representatives of the public, and the National Association of Pipeline Safety Representatives to explore potential approaches.

The regulation requires operators, such as natural gas distribution companies to develop, write, and implement a distribution integrity management program with the following elements:

- Knowledge
- Identify Threats
- Evaluate and Rank Risks
- Identify and Implement Measures to Address Risks
- Measure Performance, Monitor Results, and Evaluate Effectiveness
- Periodically Evaluate and Improve Program
- Report Results

The DIMP Inspection Forms as well as other resources to support operators implement their program are on the DIMP Resources page and through PHMSA's Pipeline Safety website.

PHMSA has developed and continues to enhance guidance to help the public and the affected industry understand the requirements of the final rule in the form of FAQs.

DOT Website | PHMSA Website | Privacy Policy | FOIA

DIMP Website

Please regularly use PHMSA websites as they are a primary form of communication

PHMSA Office of Pipeline safety

http://phmsa.dot.gov/pipeline

DIMP Home Page

http://primis.phmsa.dot.gov/dimp/index.htm

Pipeline Safety Stakeholder Communications

http://primis.phmsa.dot.gov/comm/

Thank you for Your Participation

Questions and Answers