



UKOPA MAHP Product Loss & Fault Database Update

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2016 Product Loss & Fault Data

- 1 product loss incident
 - Other – non welded joint

- 116 faults recorded in 2016
 - Associated with 129 individual defects

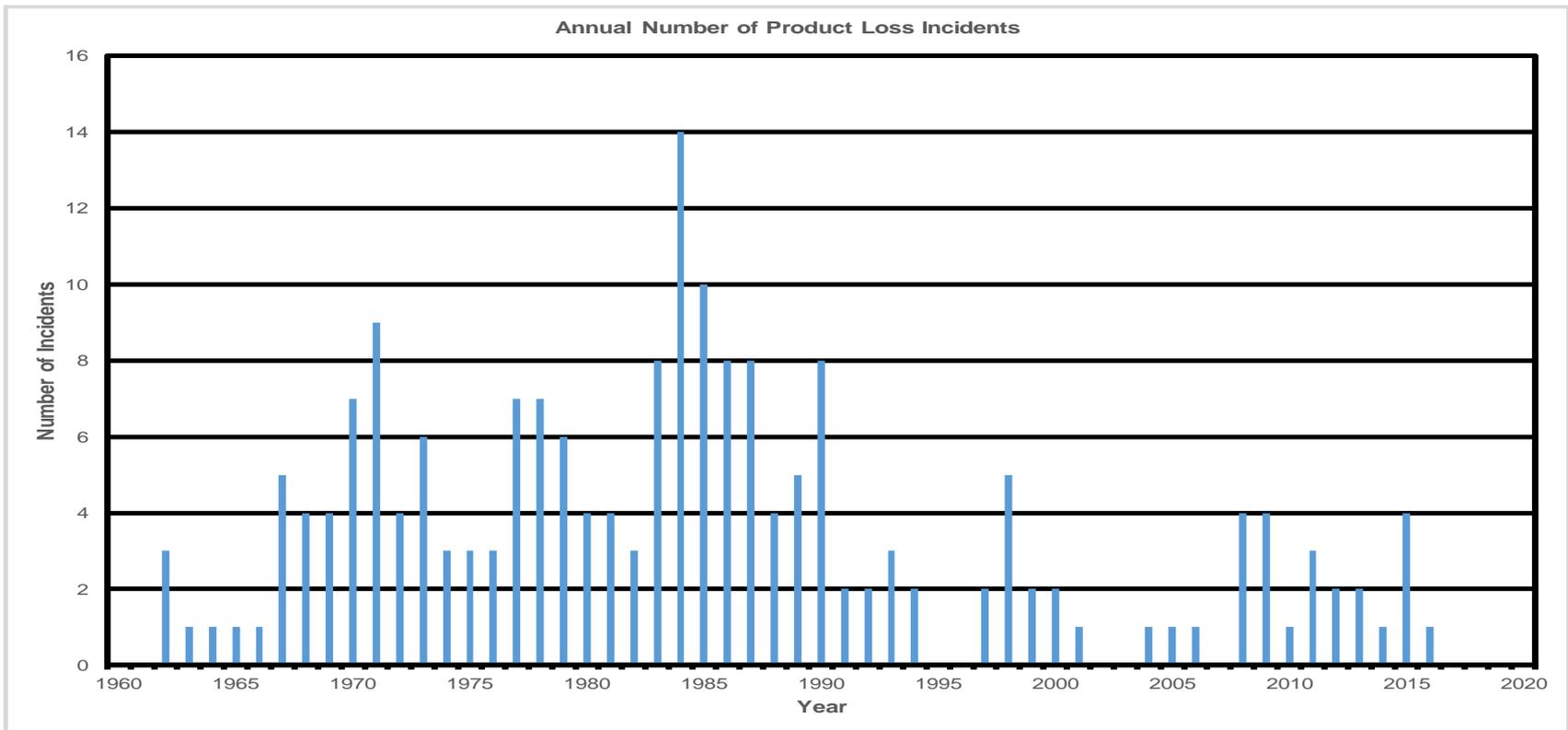
- Pipeline population data updates from NGN, Cadent & SGN incorporated

- UKOPA Pipeline Product Loss Incidents and Faults Report (1962 – 2016) v1.1
 - Uploaded to website on 12th February 2018

Product Loss Incident Data

197 Incidents (1962 – 2016)

1 in 2016



Product Loss Incident Data

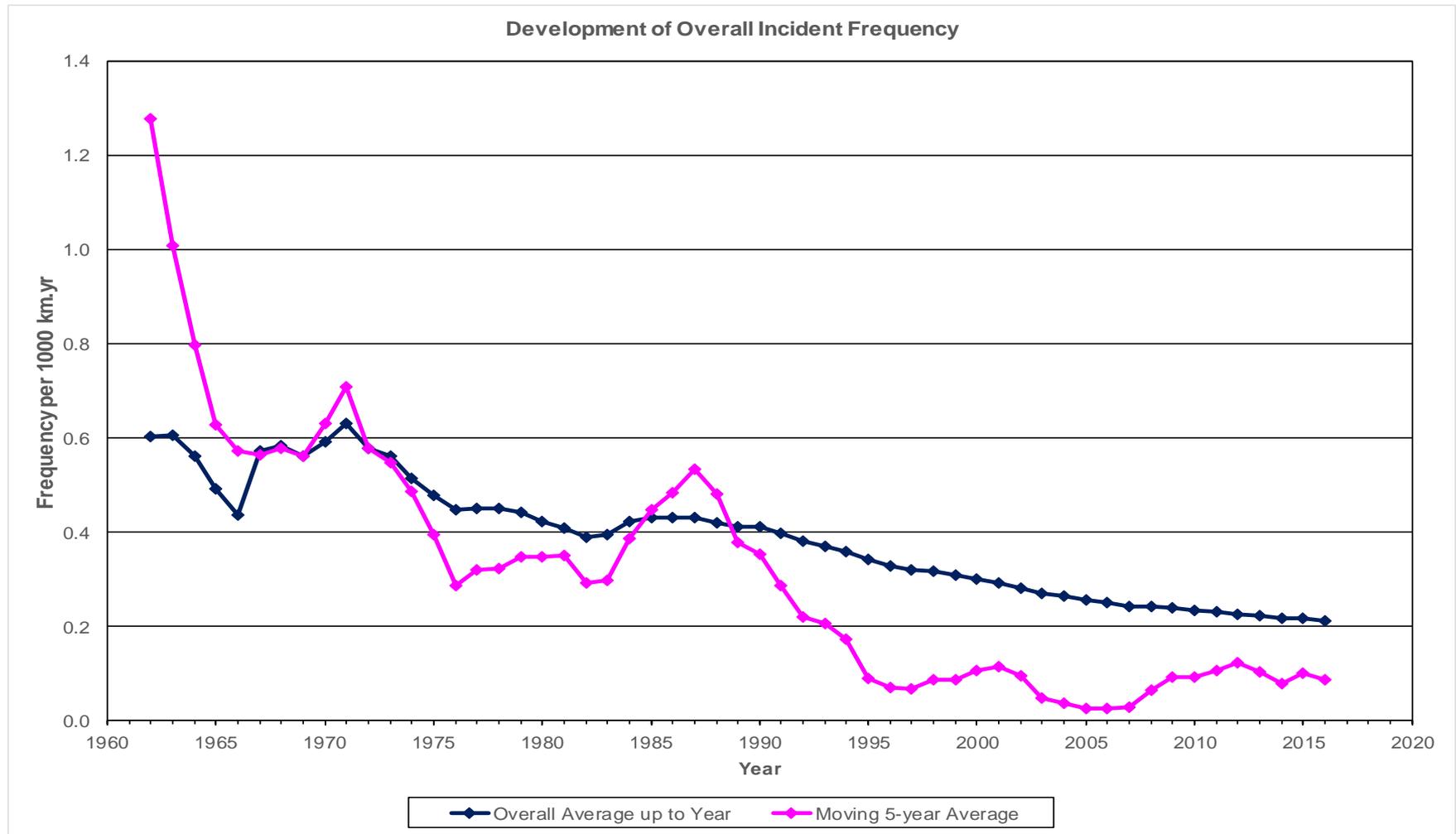
- ❑ 2016 MAHP Pipeline Population – 21,845 km

- ❑ Total Operational exposure – 927,351 km yrs

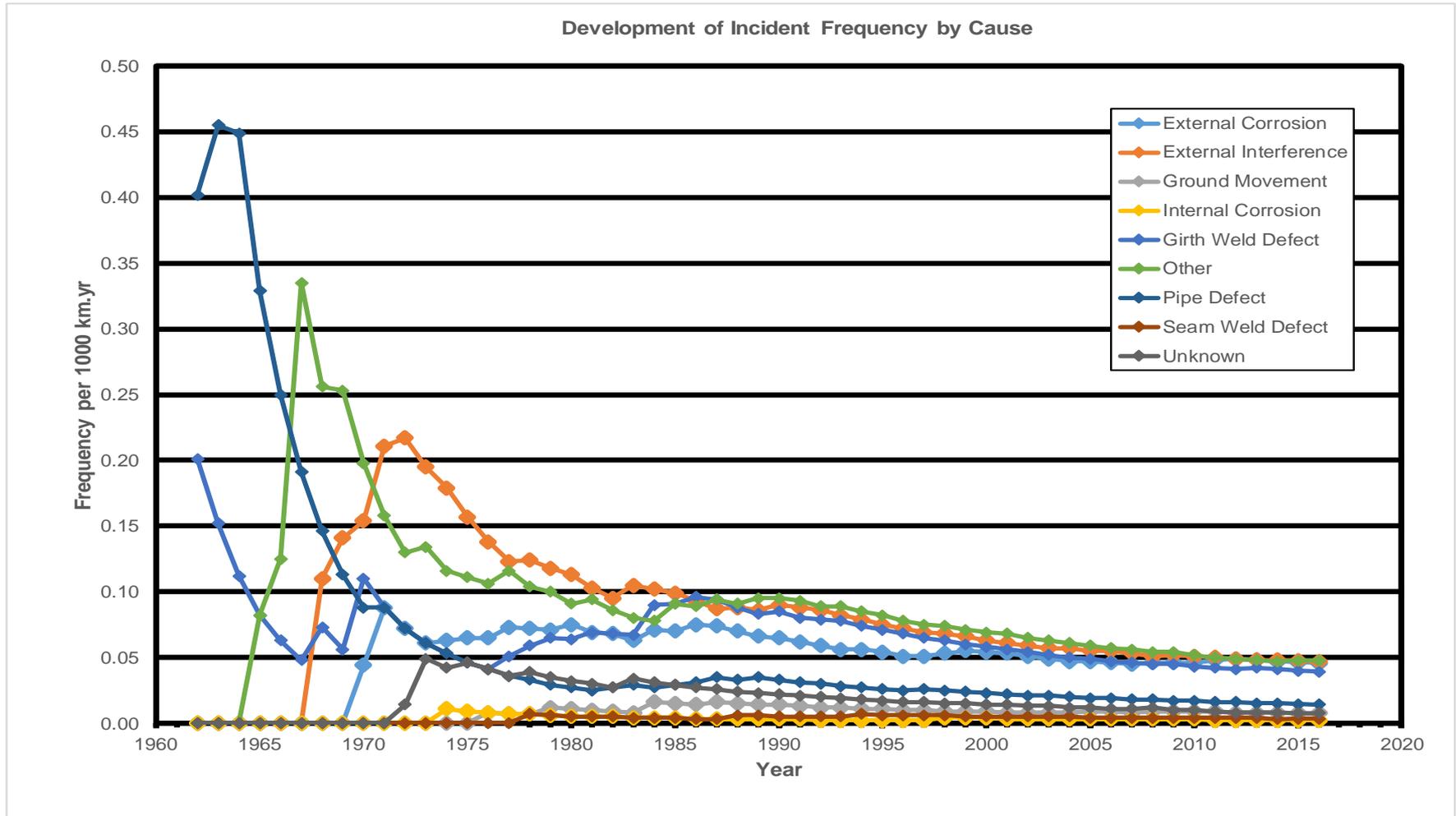
- ❑ Overall leak rate (1962 – 2016) = 0.212×10^{-3} per km yr
- ❑ 20 year leak rate (1997 – 2016) = 0.084×10^{-3} per km yr
- ❑ 5 yearly leak rate (2012 – 2016) = 0.087×10^{-3} per km yr

- ❑ *2016 leak rate* = 0.046×10^{-3} per km yr

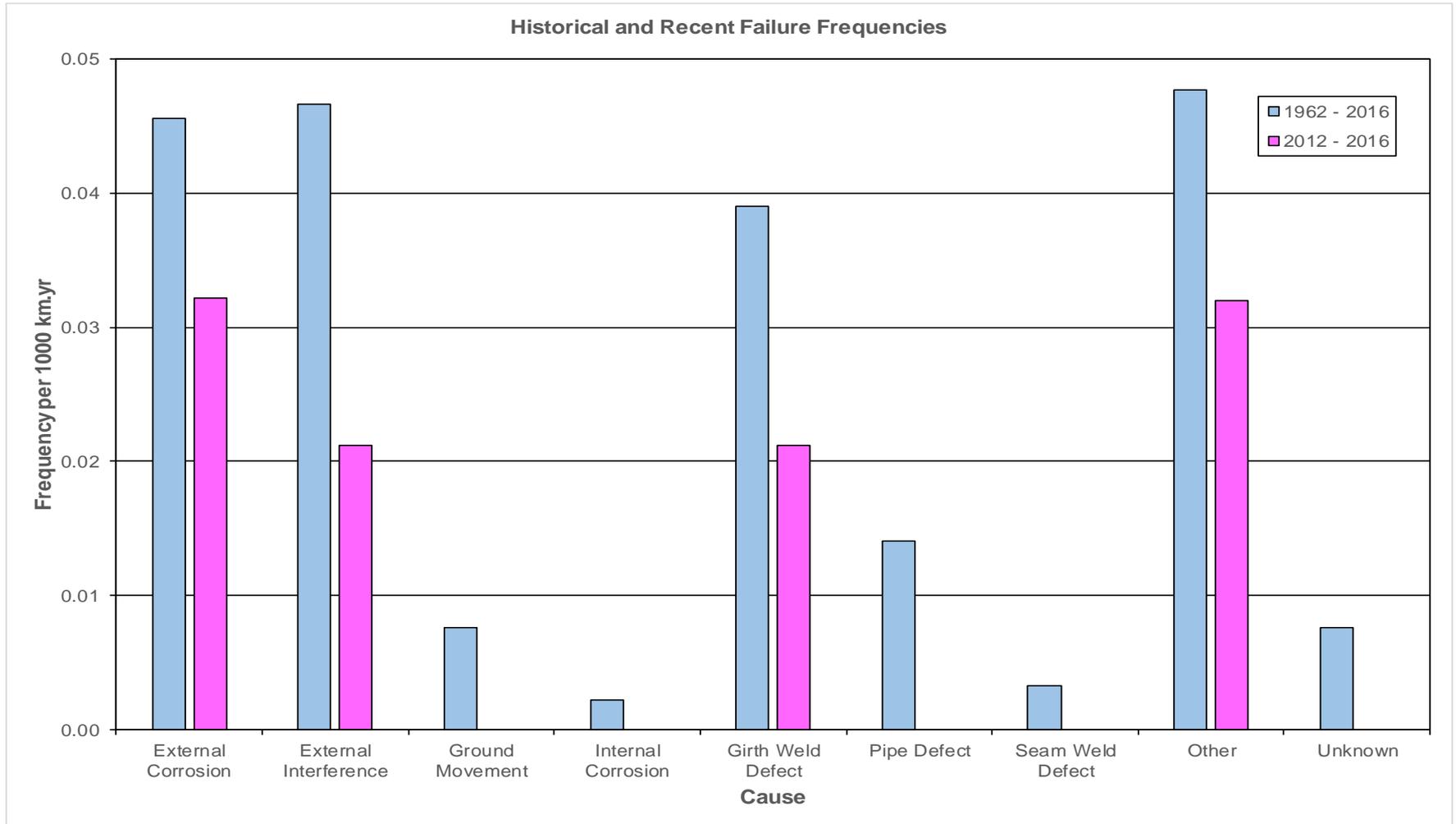
Overall Product Loss Incident Frequency



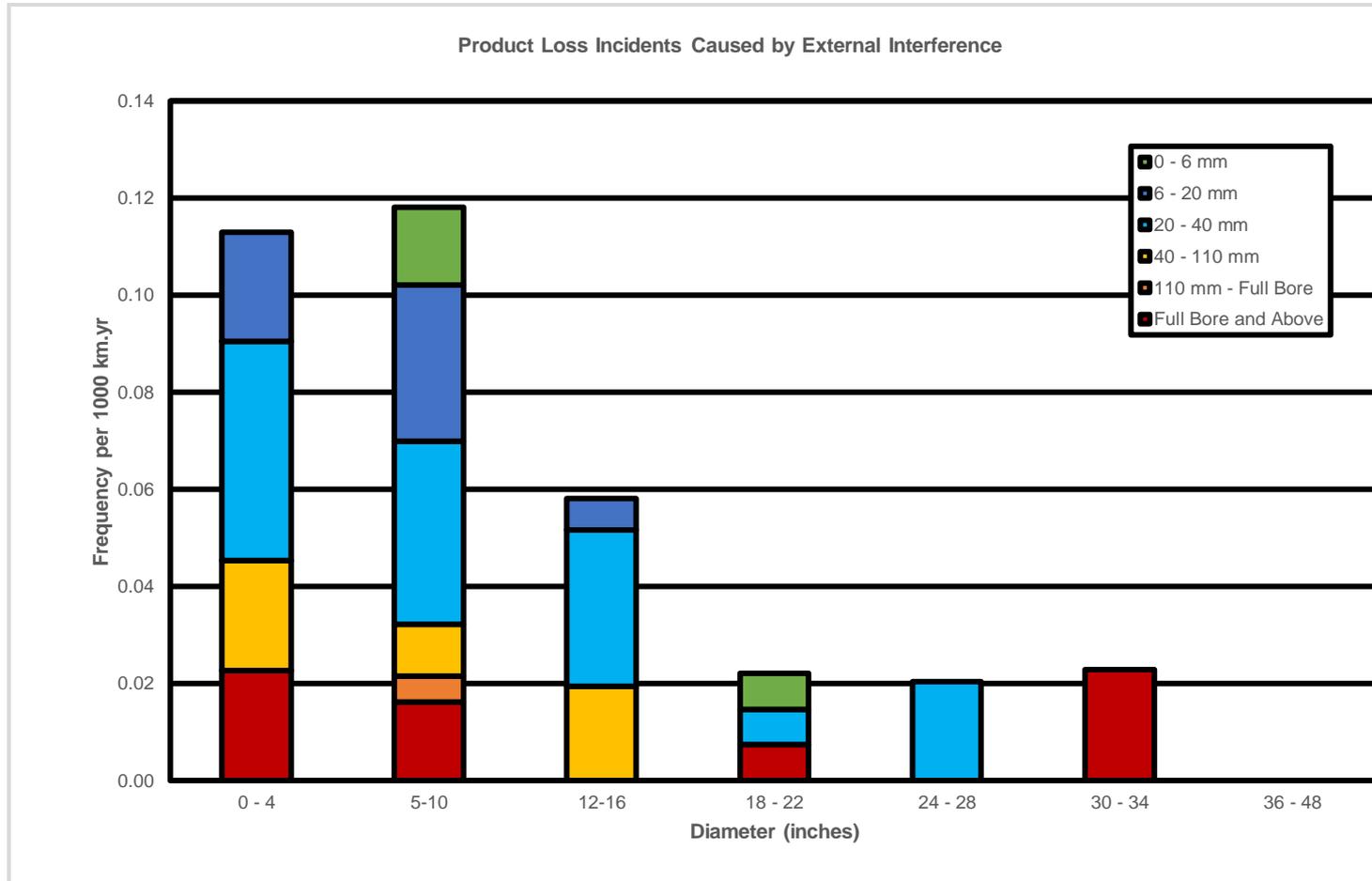
Product Loss Incident Frequency by Cause



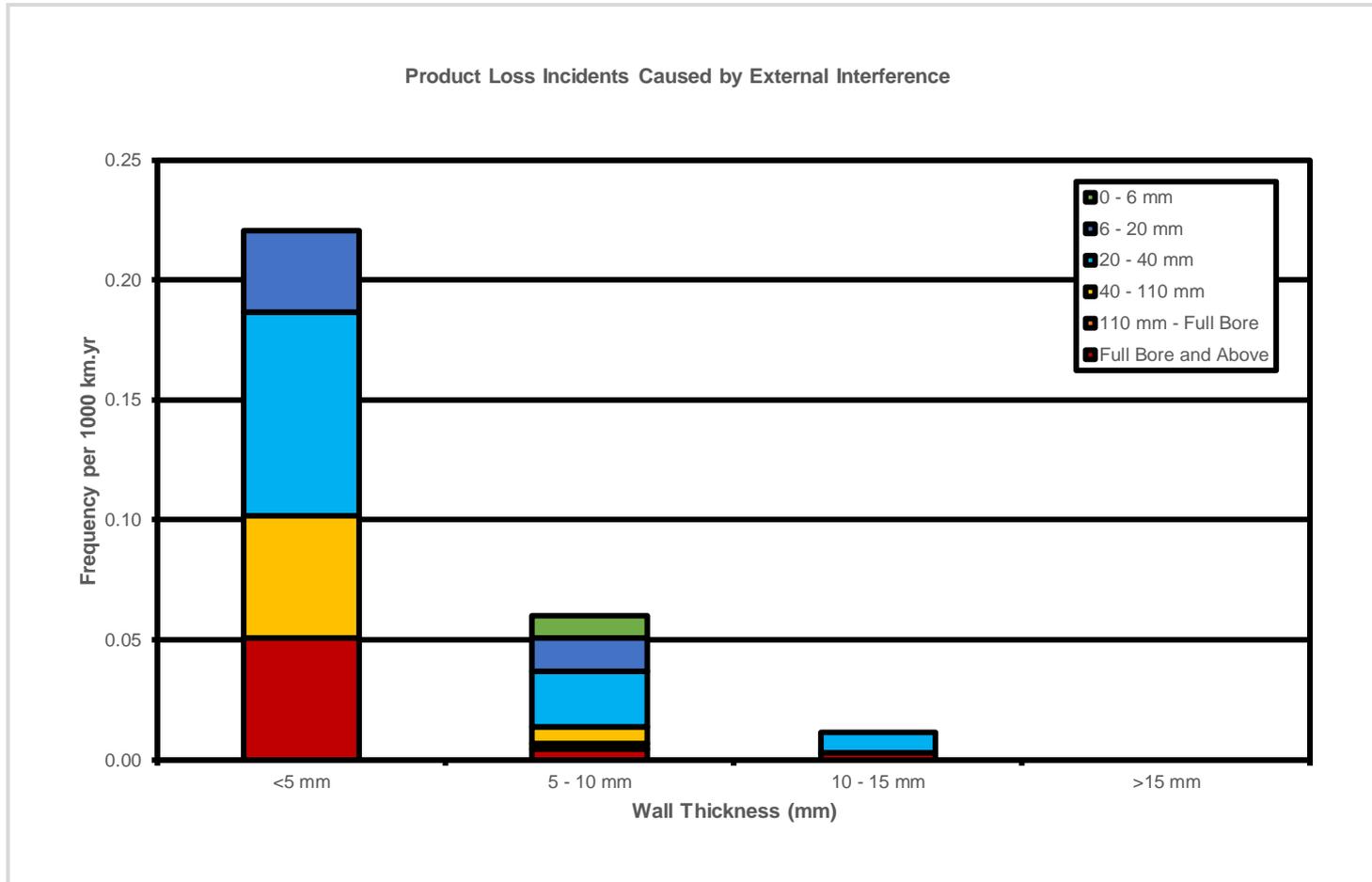
Historical & Recent Product Loss Incident Frequency by Cause



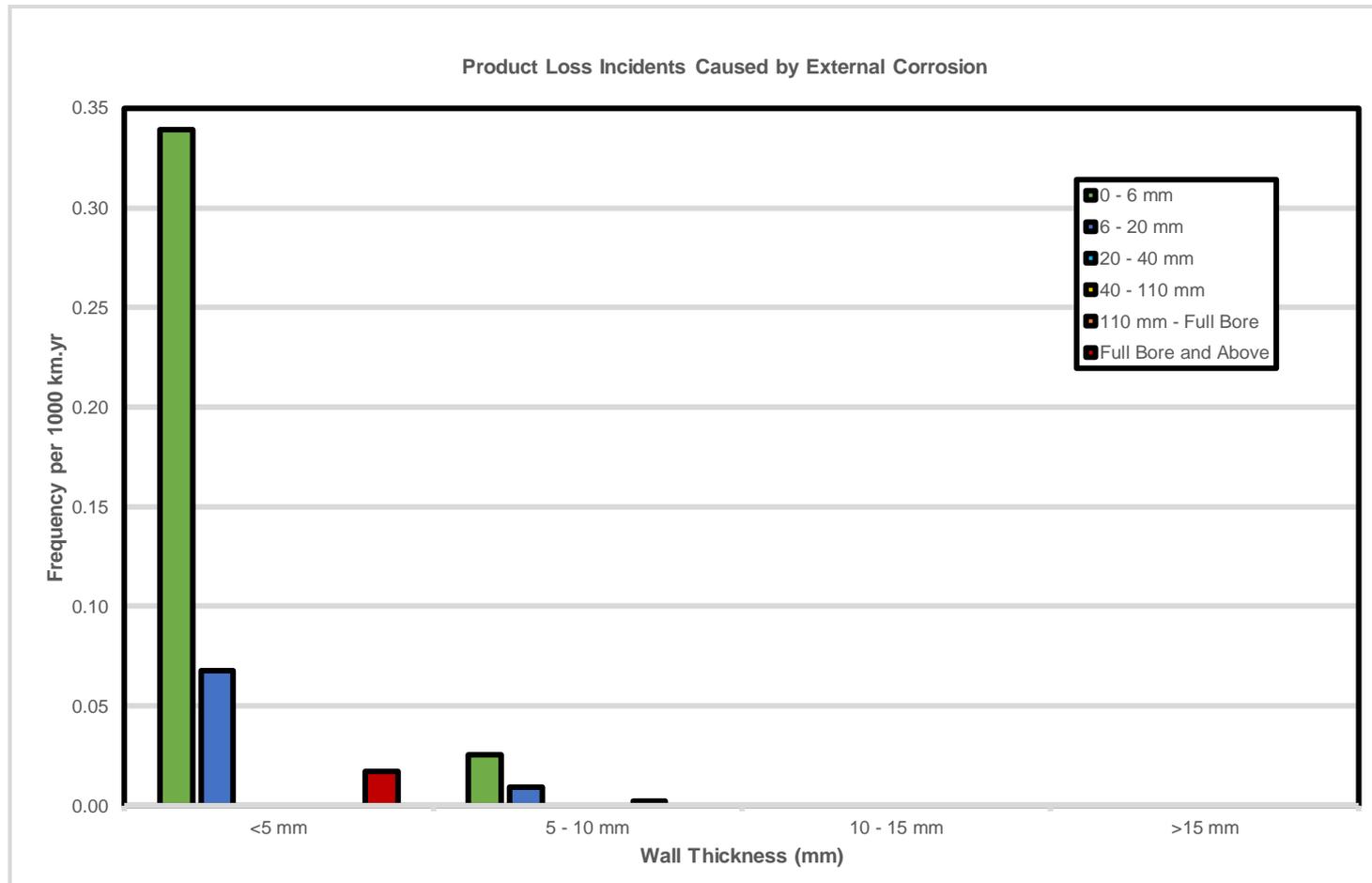
External Interference Incidents - by diameter



External Interference Incidents – by wall thickness

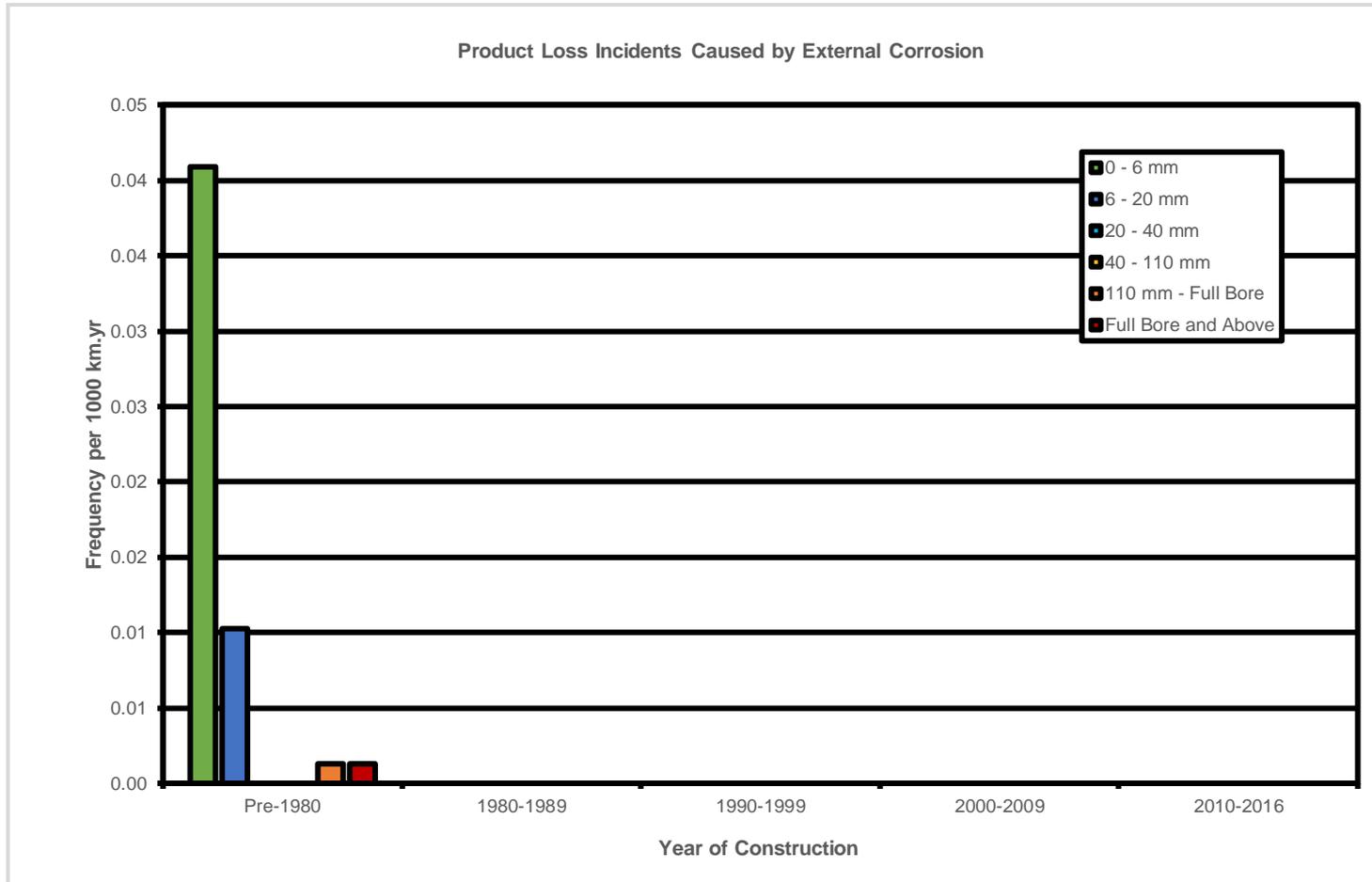


External Corrosion - by wall thickness



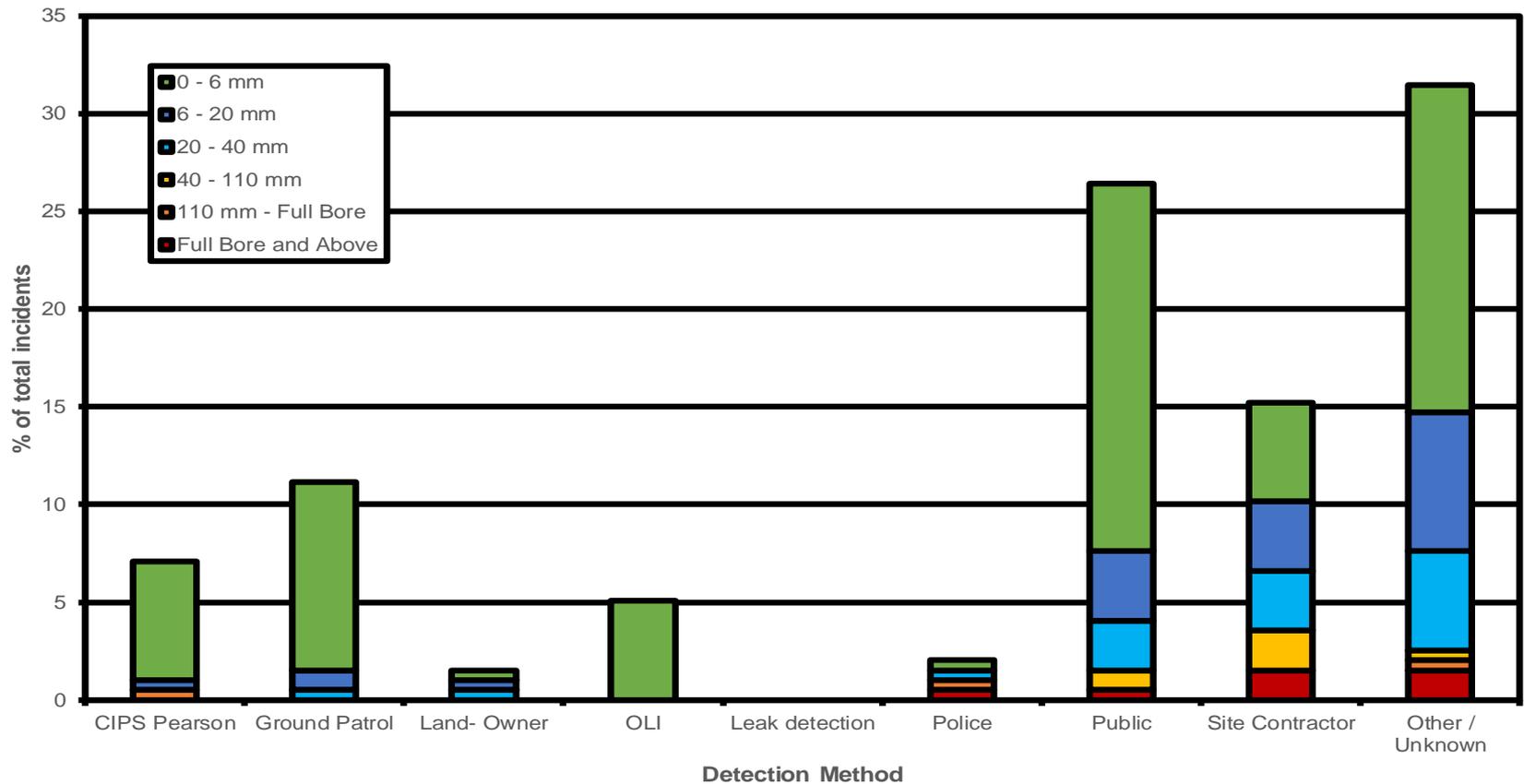
External Corrosion

- by year of construction



How Product Loss Incidents are Discovered (1962 – 2016)

Detection of Product Loss Incidents

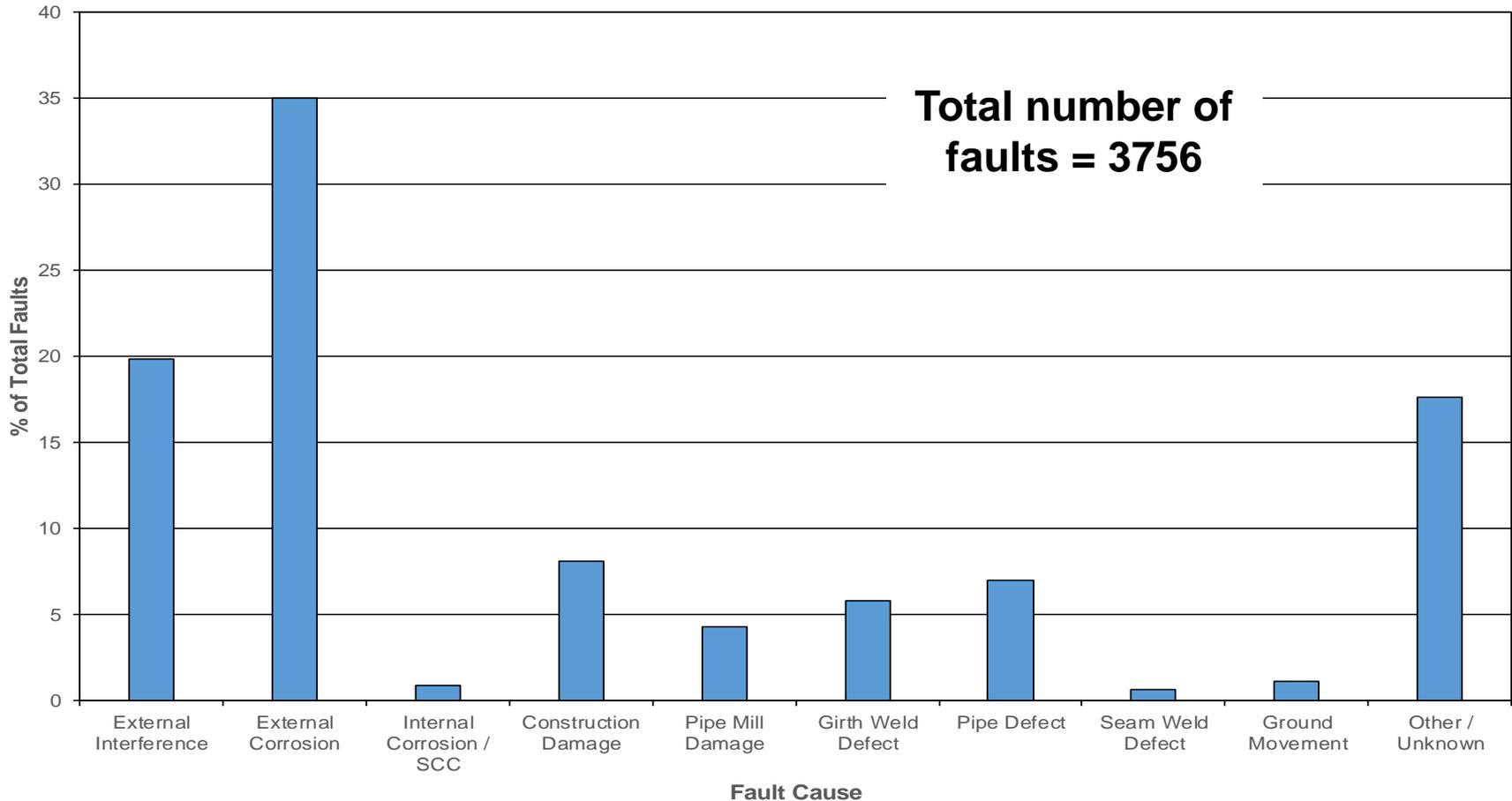


UKOPA Database (1962 – 2016)

Cause	Faults	Product Loss
External Corrosion	1315	42
External Interference	746	43
Ground Movement	40	7
Internal Corrosion / SCC	33	2
Girth Weld Defect	217	36
Material Defect (pipe, mill damage, seam weld)	443	16
No fault	47	0
Other	755	44
Unknown	160	7
TOTAL	3756	197

Fault Causes (1962 – 2016)

Fault Cause Classification



MAHP Database Issues

- ❑ Operator pipeline data is becoming more complex and difficult to check and update
 - ❑ Trial of use of Access to convert data from operator format to UKOPA database format successful

- ❑ Leak & Fault data includes
 - ❑ Some inconsistencies within individual records
 - ❑ e.g. cause = unknown but defect is a gouge on top of line...
 - ❑ Some records missing key fields

- ❑ Consequently, annual product loss report needs a lot of manual intervention to generate data
 - ❑ Propose to undertake a review of existing leak data and all new data
 - ❑ Will allow much simpler data analysis for annual report

Other database progress

- Liquid hydrocarbon database development ongoing
 - Some data received (BPA)

- LUP Case Database
 - Location and development details
 - Local pipeline details and LUP inner, middle and outer zones
 - Advice provided by the HSL LUP Pre-planning advice service
 - Additional QRA details
 - Further advice from HSE

- PIWG Weld Quality Database
 - PIWG considering what information to be included in UKOPA database
 - Details of weld quality from inspections
 - FR/3 form?