2023 Communications Meeting

Michigan Public Service Commission

Gas Safety & Operations Division

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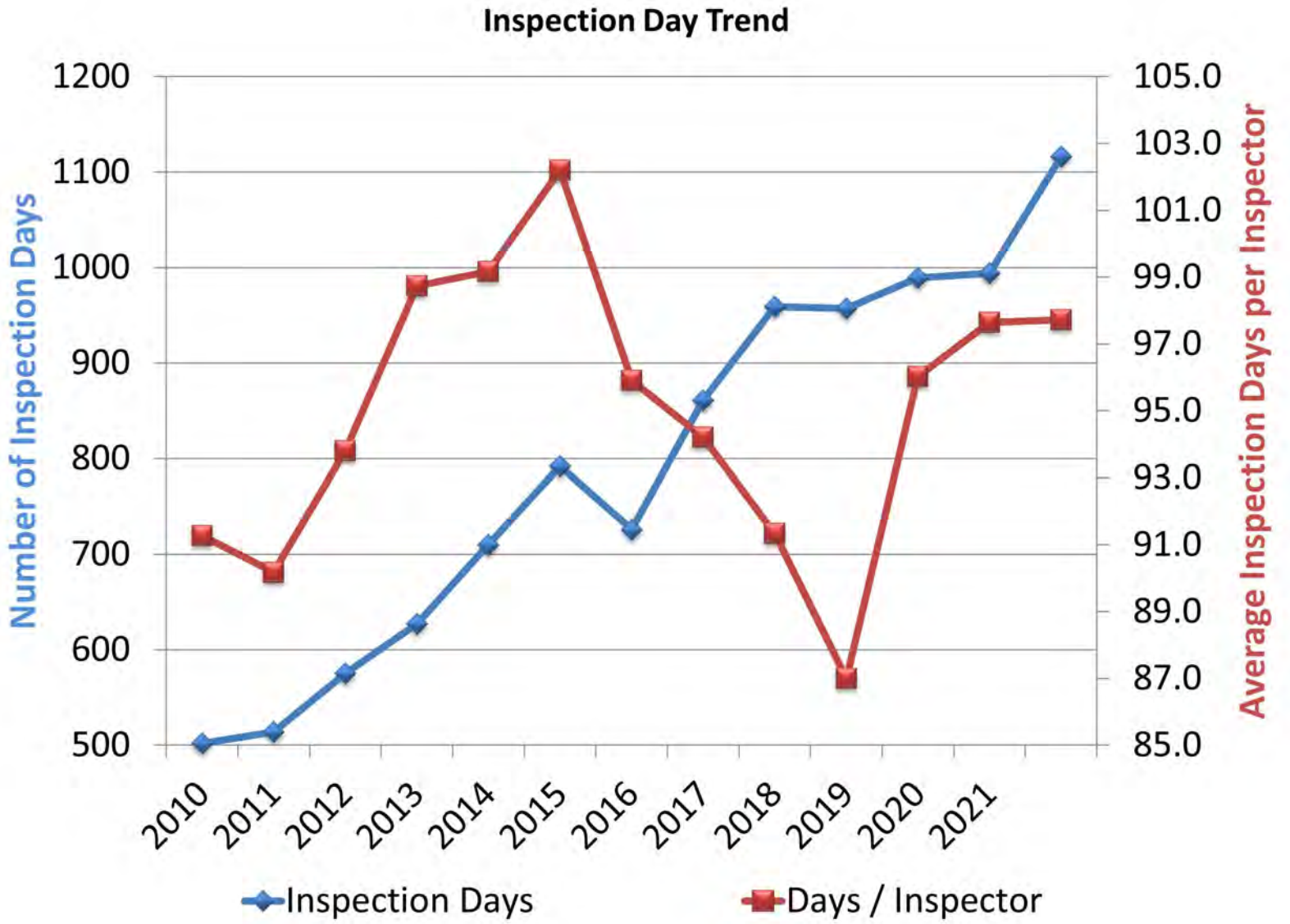
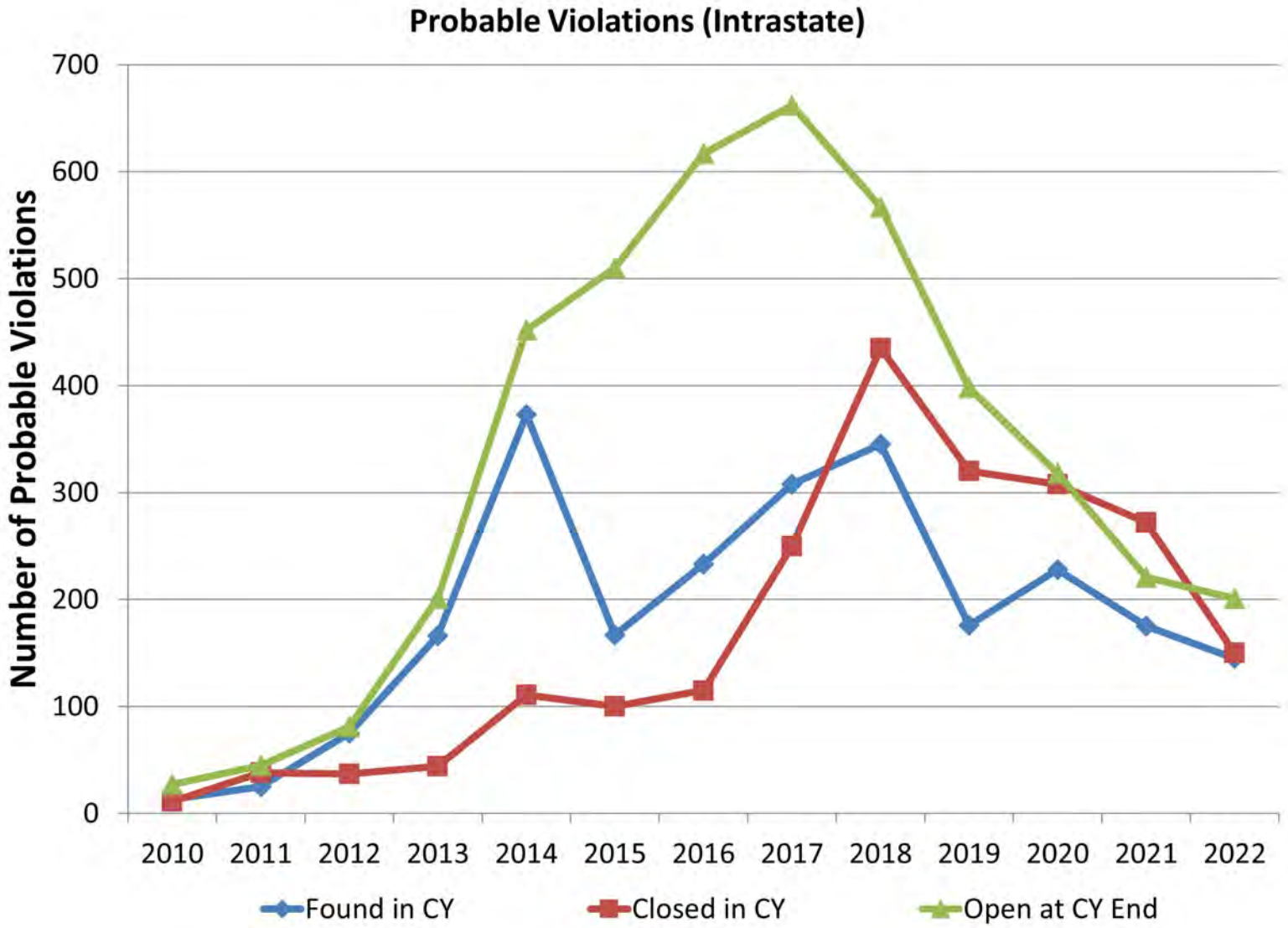
Gas Safety Program Statistics



Gas Safety Program Statistics



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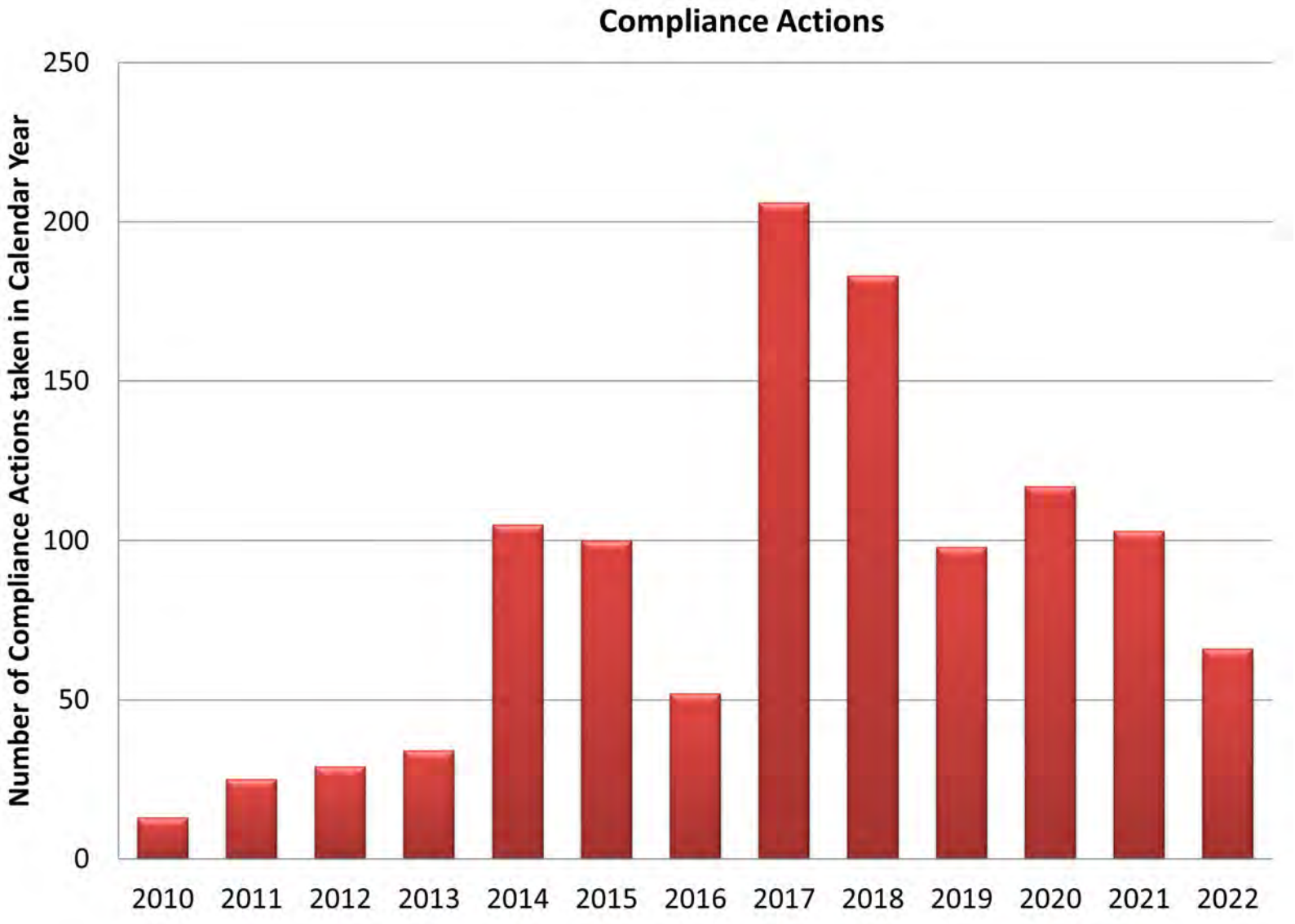
Gas Safety Program Statistics



Underground Natural Gas Storage Program - Updates

Michigan Public Service Commission

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Kevin Spence

- Area of Responsibility:
  - IntRAstate storage fields
- Cell: 517-643-7795
- Email: spencek@michigan.gov

Underground Natural Gas Storage Inspection Program

- In 2022, MPSC and EGLE conducted 9 inspections covering 5 operators:
  - Program inspections for 5 operators
  - Records and observations for 5 storage fields
  - Inspections for construction-related activities for 6 storage fields
  - Inspections for observed UNGS tabletop exercises for 2 operators

Underground Natural Gas Storage Inspection Program

- Non-Compliances
  - 5 Probable Violations of 49 CFR 192.12 related to:
    - ERPs not required to be accessible where work is performed
    - O&M manuals not required to be accessible where work is performed
    - Unable to produce records demonstrating that safety valves were reopened manually
    - Unable to produce records demonstrating compliance with applicable fire codes
    - Semi-annual actual pressures not converted from max/min pressures at the casing seat to max/min wellhead pressure

Underground Natural Gas Storage Inspection Program

- Recommendations
  - 20 Recommendations related to:
    - Finalizing draft procedures to the published version(s)
    - Setting frequencies for integrity demonstrations, verifications, and monitoring tasks or activities
    - Reviewing ERPs for potential updates
    - Revise procedures to include a frequency for reaching out to 3rd Party well operators
    - Installing physical barriers/flagging at wells where needed

Underground Natural Gas Storage Inspection Program

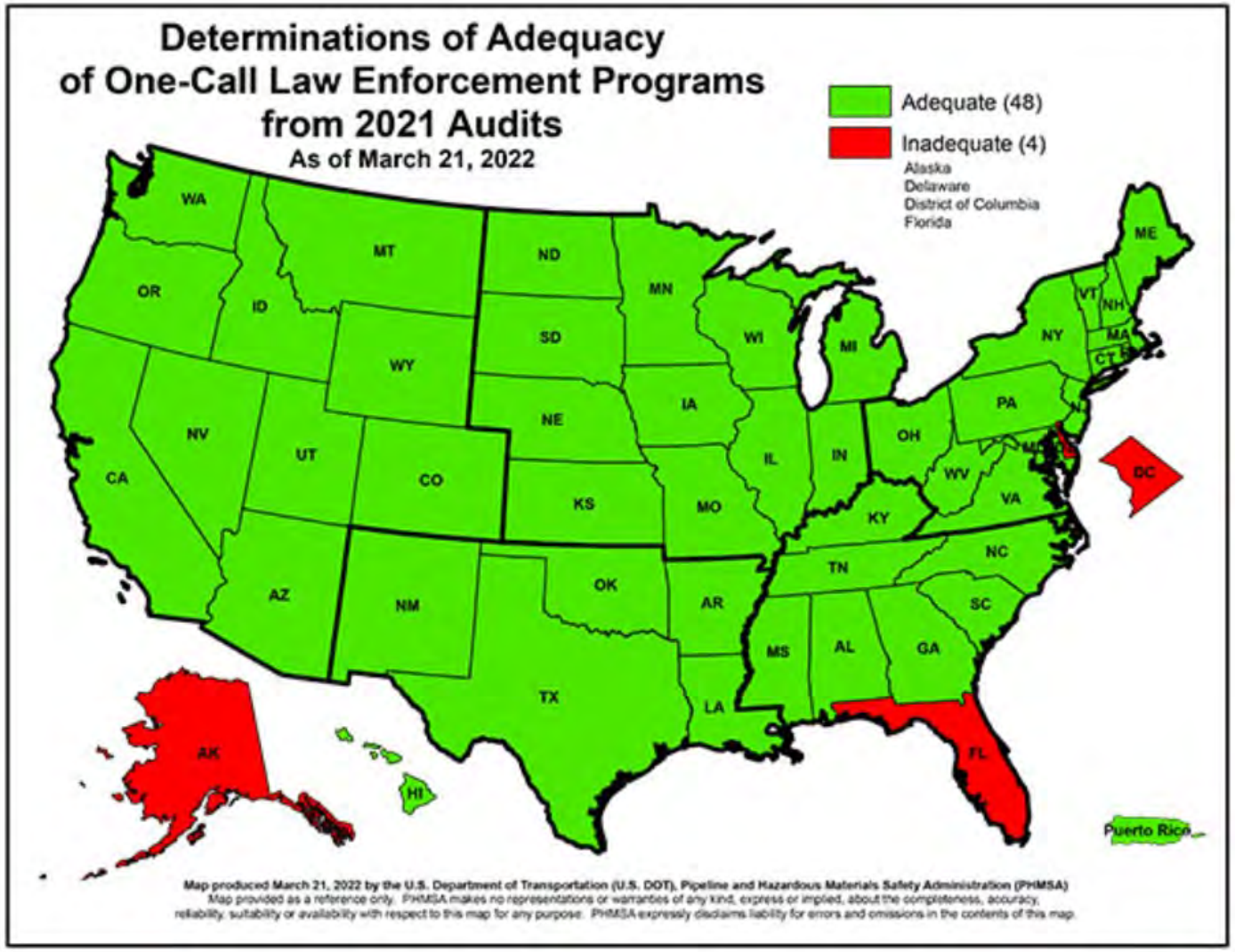
- 2023 Planned Program Activity
  - Program level inspection for 1 operator, including records and observations for 6 storage fields
  - Continuation of construction inspections for new well drilling, maintenance, abandonment activities, etc. for all operators
  - Continued observation of UNGS tabletop exercise for all operators
  - Participation in pipeline safety Drug & Alcohol inspections for operators with UNGS units

Damage Prevention Program - Updates

Michigan Public Service Commission

Gas Safety & Operations Division

PHMSA Audit



Source: https://www.phmsa.dot.gov/pipeline/excavator-final-rule/determinations-adequacy

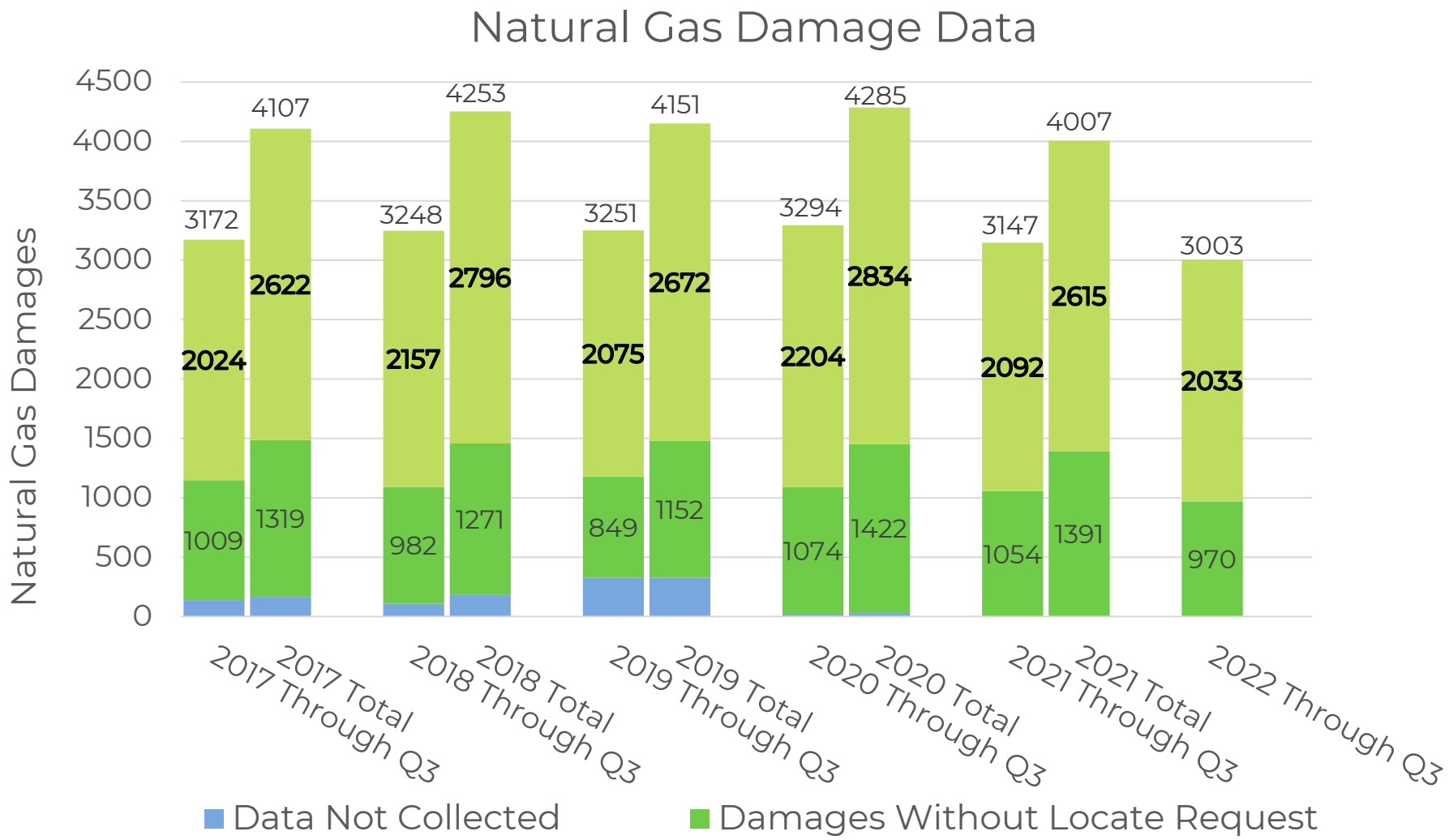
PHMSA Audit

- Areas to focus on:
  - Hand digging and soft excavation damages.
  - Making enforcement actions publicly available.
  - Locator performance.
    - Mismarking
    - Late marking
  - 1st and 2nd party damages.
  - Data quality.
    - Unknown/Other

Damage Reporting

- Current reporting submittals:
  - Utilizes the Operations email account (LARA-MPSC-Operations@michigan.gov).
    - Replies to database emails should contain the case reference (e.g., “ref:_00Dr08vPn._500r04lQ1o:ref”), which will direct to the appropriate database case.
  - Quarterly damage data submittals automatically generate a case.
- Future reporting submittals:
  - Community portal.
  - Facility Owners will submit directly either via upload of a CSV file or inputting directly.
  - Important for FOO to update their data collection to meet the submittal requirements.

Damage Prevention Statistics



Source: MPSC Damage Data

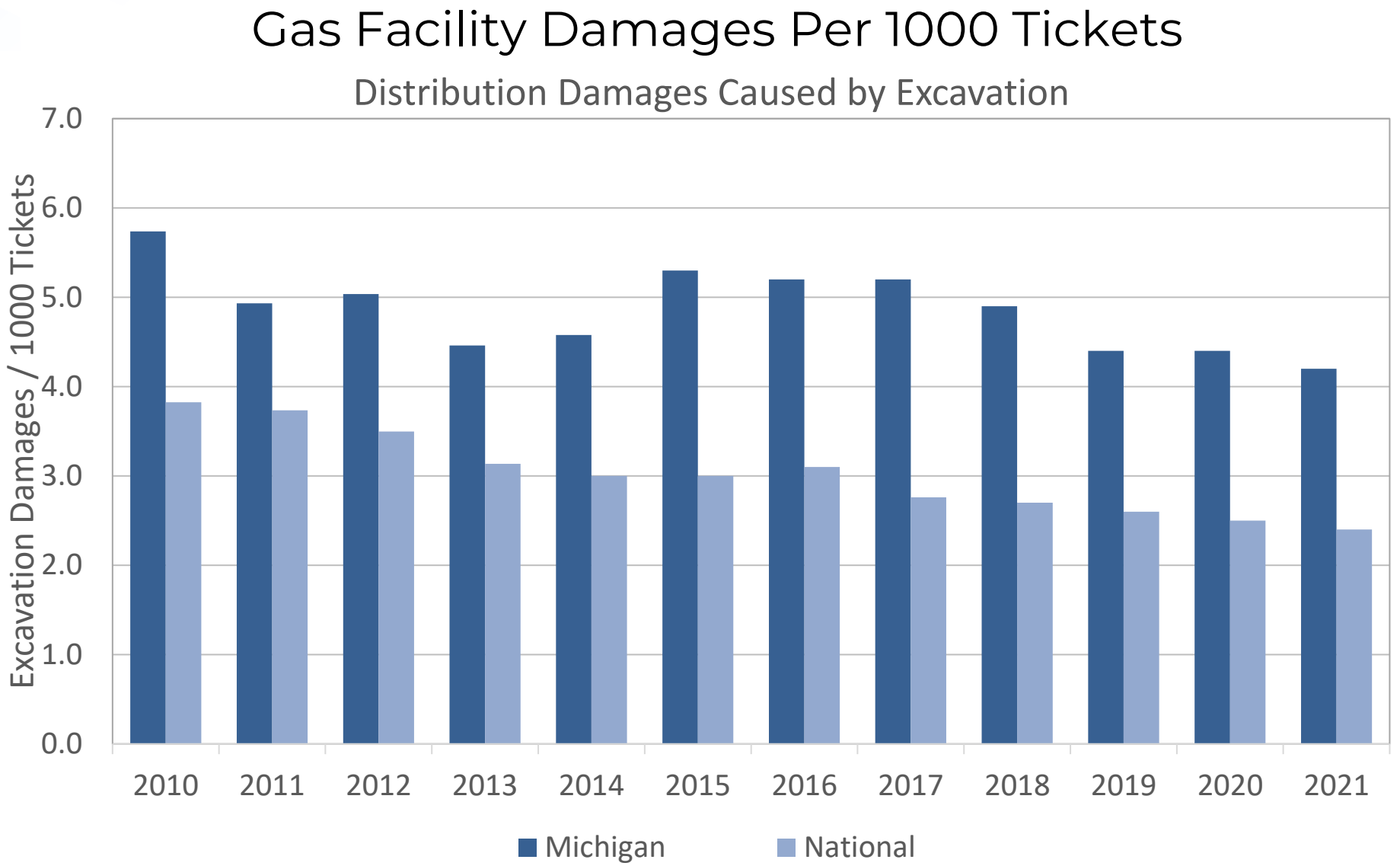
Damages – Gas Distribution

Michigan	2020	2021
Total Excavation Damages	4,359	4,106
Total Excavation Tickets	1,000,022	970,256
Excavation Damages / 1000 Tickets	4.4	4.2

National	2020	2021
Excavation Damages / 1000 Tickets	2.5	2.4

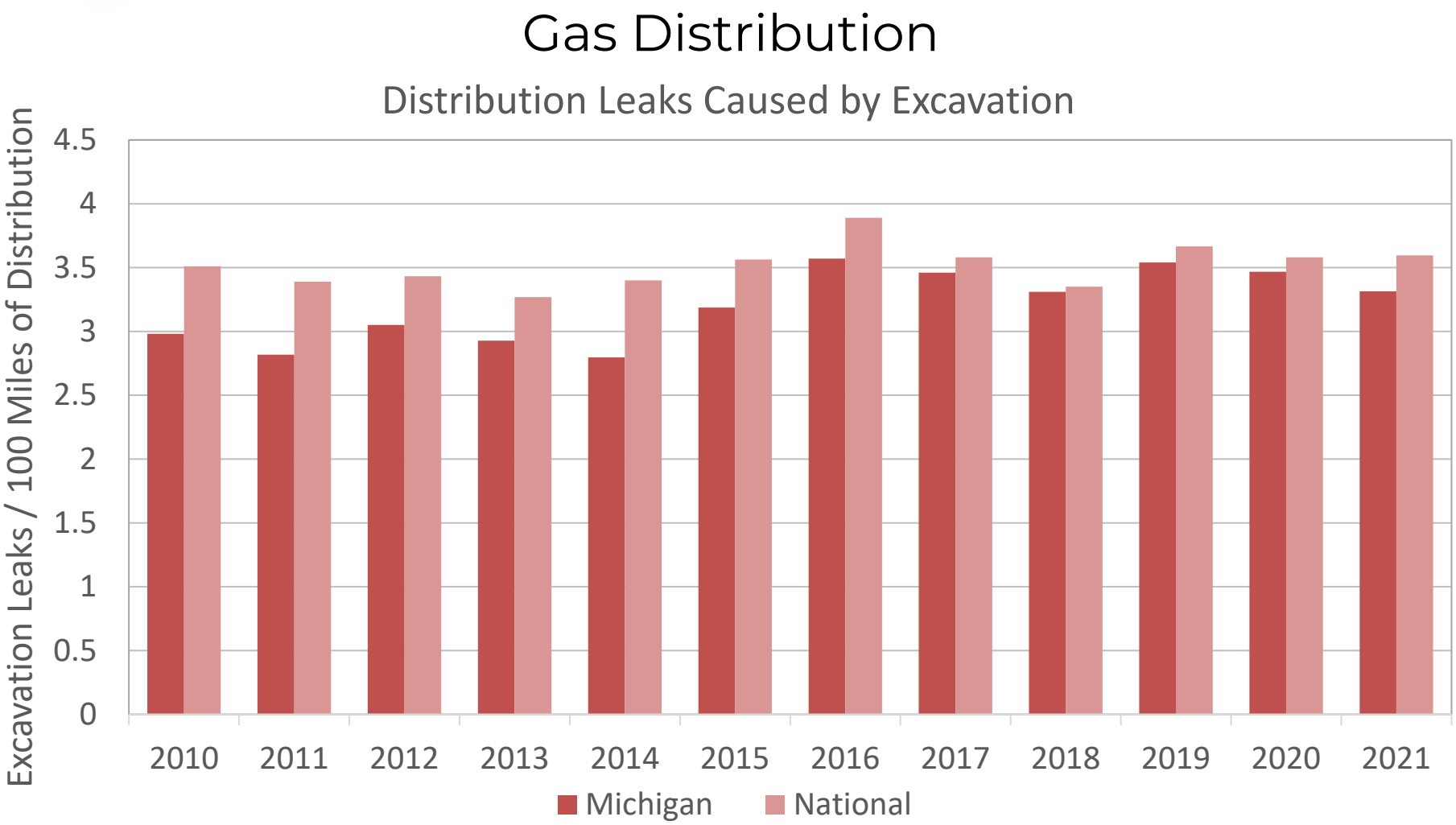
Source: 2020 & 2021 Annual Distribution Reports. Form PHMSA F7100.1-1

Damage Prevention Statistics



Source: 2010-2021 Annual Distribution Reports. Form PHMSA F7100.1-1

Damage Prevention Statistics



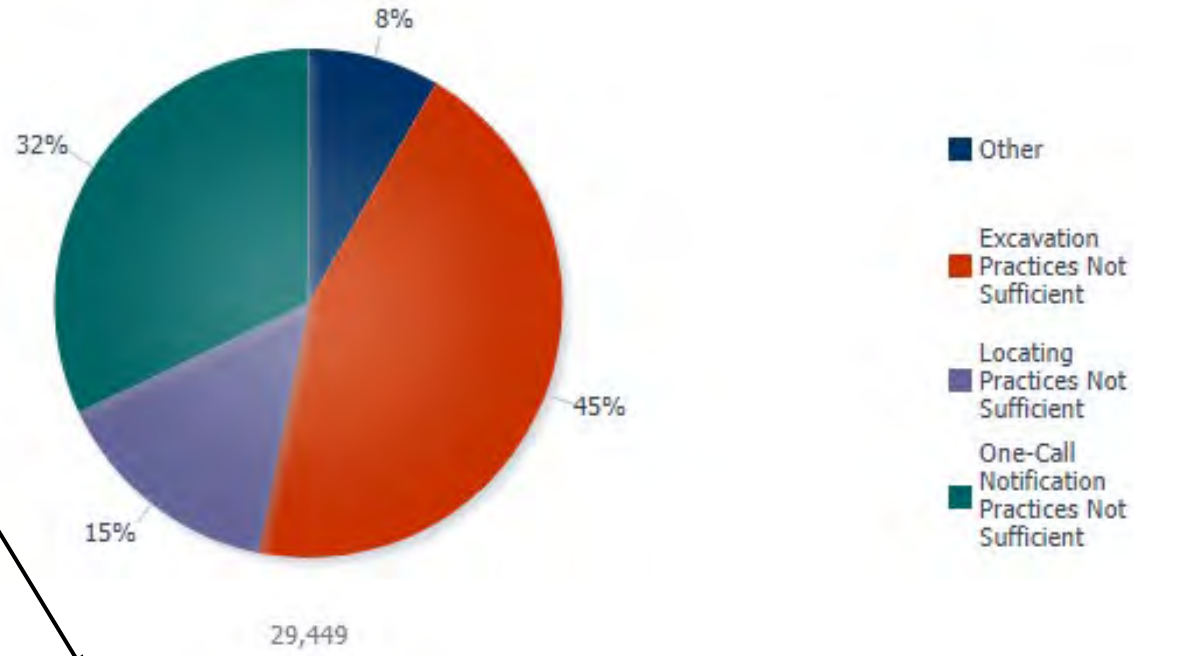
Source: 2010-2021 Annual Distribution Reports. Form PHMSA F7100.1-1

Damage Prevention Statistics

Michigan Gas Distribution Pipeline Excavation Damages by Root Cause

One Call
Down: 43
Locating
Down: 98
Excavation
Down: 48
Other
Down: 67

Total: 4106
Down: 256



Calendar Year	Number of Excavation Tickets	Number of Excavation Damages	Damages per Thousand Tickets	One-Call Notification Practices Not Sufficient	Locating Practices Not Sufficient	Excavation Practices Not Sufficient	Other	One-Call Notification Practices Not Sufficient	Locating Practices Not Sufficient	Excavation Practices Not Sufficient	Other
2021	970,256	4,106	4.2	1,403	664	1,893	146	34%	16%	46%	4%
2020	1,000,022	4,362	4.4	1,446	762	1,941	213	33%	17%	44%	5%
2019	928,529	4,117	4.4	1,362	716	1,556	483	33%	17%	38%	12%
2018	819,538	4,054	4.9	1,177	633	1,954	290	29%	16%	48%	7%
2017	822,578	4,271	5.2	1,238	636	2,108	289	29%	15%	49%	7%
2016	827,516	4,272	5.2	1,361	466	1,999	446	32%	11%	47%	10%
2015	796,641	4,267	5.4	1,451	481	1,727	608	34%	11%	40%	14%

Source: US DOT Pipeline and Hazardous Materials Safety Administration

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2022 Enforcement

- Complaints
  - 55 formal complaints filed.
  - 29 filed by excavator regarding locating issues.
- Staff-Initiated
  - 19 inspections.
- Penalties Related to Enforcement

	All DP Violations	Staff-Initiated Inspections	Complaints
Facility Owner & Operators	$511,000	$496,000	$5,000
Excavators	$12,500	$1,000	$11,500

2022 Enforcement - Complaints

- PA 174 complaints filed
  - A total of $16,500 in penalties were assessed in 2022.

Year	Complaints Received	Issued NOPV with Penalty	Issued NOPV	Warning
2019	47	4	1	2
2020	90	14	8	2
2021	34	17	2	4
2022	55	5	0	1

2022 Enforcement – Reportable Incidents

- In 2022, 28 reportable pipeline safety incident cases involving damage prevention were opened.
  - A total of $37,000 in penalties were assessed in 2022.

Type of Letter	Excavator	Facility Operator
NOPV with Penalty	6	5
NOPV	1	3

2022 Enforcement – Staff Initiated

- In 2022, Staff-Initiated damage prevention inspections leading to enforcement actions.
  - A total of $497,000 in penalties were assessed.

Type of Letter	Excavator	Facility Operator
NOPV with Penalty	2	25
NOPV	3	
Warning		2

Gas Safety Program Updates

Michigan Public Service Commission

Gas Safety & Operations Division

Hunter Andrews

- Area of Responsibility:
  - Northeast Michigan
- Cell: 517-290-9241
- Email: andrewsh2@michigan.gov

Significant Incident – 7559

- Third Party Damage
- Characteristics:
  - 4” Steel distribution.
  - 375 psig MAOP.
  - $253,138 damages, 0.31 Mmcf loss, 1400+ customers impacted.
- Description:
  - Third party contractor completely severed pipeline while installing drain tile in a farm field.
  - No MISS DIG ticket.
  - Gas was shut off by closing valves at regulation station and city gate resulting in 1400+ customers being lost.

Karen Krueger

- Area of Responsibility:
  - South/Central Michigan
  - Operator Qualifications
- Cell: 517-582-8619
- Email: KruegerK1@michigan.gov

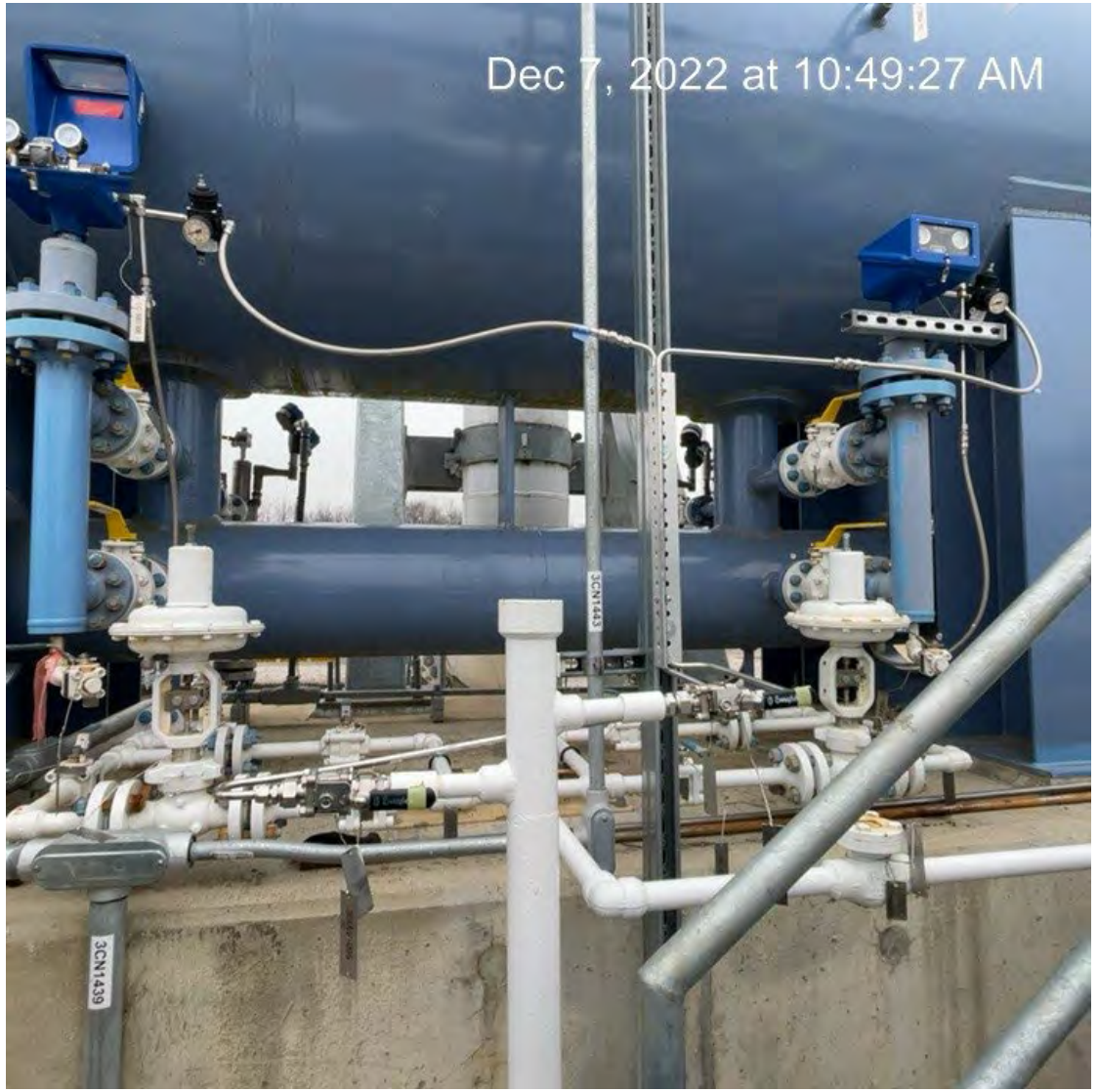
Significant Incident – 6564

- Third Party Damage
- Characteristics:
  - 4” Plastic Distribution Main in a business district.
  - 3.42 Mmcf Gas Lost.
- Description:
  - A third party-contractor damaged a plastic main during the pull-back of a boring operation under a roadway.
  - Operator Violations: 192.614 (c)(5) for not staking and for digging outside the scope of emergency ticket.
  - Contractor Violation: MCL 460.725 (5) for failing to maintain clearance.
  - Utility Owners: MCL 460.727(1) for failing to mark facilities.

Significant Incident – 7802

- Compressor Station Valve Malfunction
- Characteristics:
  - Automatic dump valve from the filter/separator to the condensate tank.
  - 3.56 Mmcf Gas Lost.
- Description:
  - The valve remained open after the condensate dump operation. Gas continued to flow freely and vent to atmosphere from condensate tank for more than 24 hours.
  - No SCADA on this valve.
  - Ongoing investigation.

Significant Incident – 7802 continued



Significant Non-Compliances

- 192.227(a)– Qualification of welders in accordance with API 1104:
  - Section 5.6.3.1 (Figure 5) the external weld reinforcement on coupons should not be notched (this is only allowed for automatic or semiautomatic welding).
  - Section 6.5.1 states “The specimens shall be air cooled to ambient temperature prior to testing.”

Significant Non-Compliances

- 192.614 (c)(6)– Provide inspection of pipelines that an operator has reason to believe could be damaged by excavation activities as frequently as necessary during and after the activities to verify the integrity of the pipeline.

Significant Non-Compliances

- Excavator did not soft excavate and tickets were expired.
- After hitting the gas service line, the employee turned off the trenching machine, which backfired and ignited the gas.

Tim Dombrowski

- Area of Responsibility:
  - Upper Peninsula
  - Forms
  - Section 114, emissions
- Cell: 517-281-2142
- Email: dombrowskit@michigan.gov

Significant Incident – 6837

- Equipment failure – Malfunction of Control/Relief Equipment – Ice accumulation contributed to valve failure.
- Characteristics:
  - Transmission compressor (1960's, 1990's)
  - 36" steel, 974 psig MAOP.
  - Gas lost = 40.7 Mmcf.
- Description:
  - ESD system triggered.
  - An automatic isolation valve failed to close resulting in release of gas to atmosphere through vent stack.

Significant Incident – 6837

- Station isolated, but upstream line pack reversed flow, and vented through open valves at compressor site.
- Ongoing investigation.

Significant Incident – 6856/7239

- Apartment Explosion
- Characteristics:
  - 1966 2” steel gas main (60 psig MAOP).
  - Estimated property damage >$611k.
  - No injuries or fatalities.
  - 18 outages, 6 evacuations due to gas spread.
- Description:
  - Unreported excavation damage from 2008.
  - Unreported damage to main made it more susceptible to failure from external forces.
  - Ongoing investigation.

Significant Incident – 6856/7239

Significant Incident – 6856/7239

Significant Incident – 7357

- Material Failure of Pipe or Weld – Girth Weld Leak
- Characteristics:
  - 16” steel transmission.
  - 945 psig MAOP, 1965.
  - Repair costs > $200k.
- Description:
  - Grade 3 leak was indicated from aerial instrumented leak survey.
  - Excavation found a girth weld leak in Class 1 location downstream of an existing stopple fitting.
  - Multiple leaks in same vicinity since 2017.
  - Ongoing investigation.

Significant Incident – 7357

Section 114 – Natural Gas Emissions

- Most operators were found to be in compliance.
- Four operators were issued warning letters for 192.605(a) – Failure to prepare and follow procedures.
- Best practices:
  - Picarro/additional instrumented leak surveys,
  - Reduction of pressure/reuse of gas,
  - Flaring/portable flaring, portable compression,
  - Infrared imaging at stations.
- Additional and innovative solutions should be considered by operators, including best available technologies and long-term cost savings.
- PHMSA is planning pilot field inspections in 2023.

Best Practices

- Tracer wire covered by 1/2” PE at riser to meter, to protect from weed whackers, etc.
- CP P/S “wells” made using 2-inch PE at Gate Stations when entire yard is graveled.
- Gloves or package with One-call info inside: given or thrown from aerial patrol.
- Plastic pipe ring on meters to denote EFV is present.
- Canisters on/at gate/regulation stations for set point/MAOP, to protect from weather.
- 811/One-call info on individual meter sets.

Mohammad Giasuddin

- Area of Responsibility:
  - Detroit Metro/ East Michigan
- Cell: 517-914-7901
- Email: giasuddinm@michigan.gov

Significant Incident – 6667

- Compressor Station Relief Valve Malfunction
- Equipment – Lubricant accumulation and a failed O-ring contributed to valve failure.
- Characteristics:
  - OPP Relief valve of Scrubber (1966's)
  - 1800 psig MAOP, 2011
  - Gas lost = 5.617 Mmcf.
- Description:
  - Relief Valve activated well below its setpoint.
  - Excessive wear, age, and deterioration of O-ring, resulting in a leak bypassing the O ring.

Significant Incident – 7571

- Third Party Damage
- Characteristics:
  - 6” Steel Distribution Main (1953’s)
  - 400 psig MAOP, 1994.
  - 6.068 Mmcf Gas Lost.
  - One-way feed with no isolation valves.

- Description:
  - Mechanical puncture of 1.20” x 18.80” by the third-party contractor while installing edge drain.
  - No injuries or fatalities.
  - 20 outages, 12 evacuations due to gas spread.

Derrick Schimming

- Area of Responsibility:
  - Southwest Michigan
  - Control Room
- Cell: 517-282-5989
- Email: schimmingd@michigan.gov

Significant Incident – Case 7568

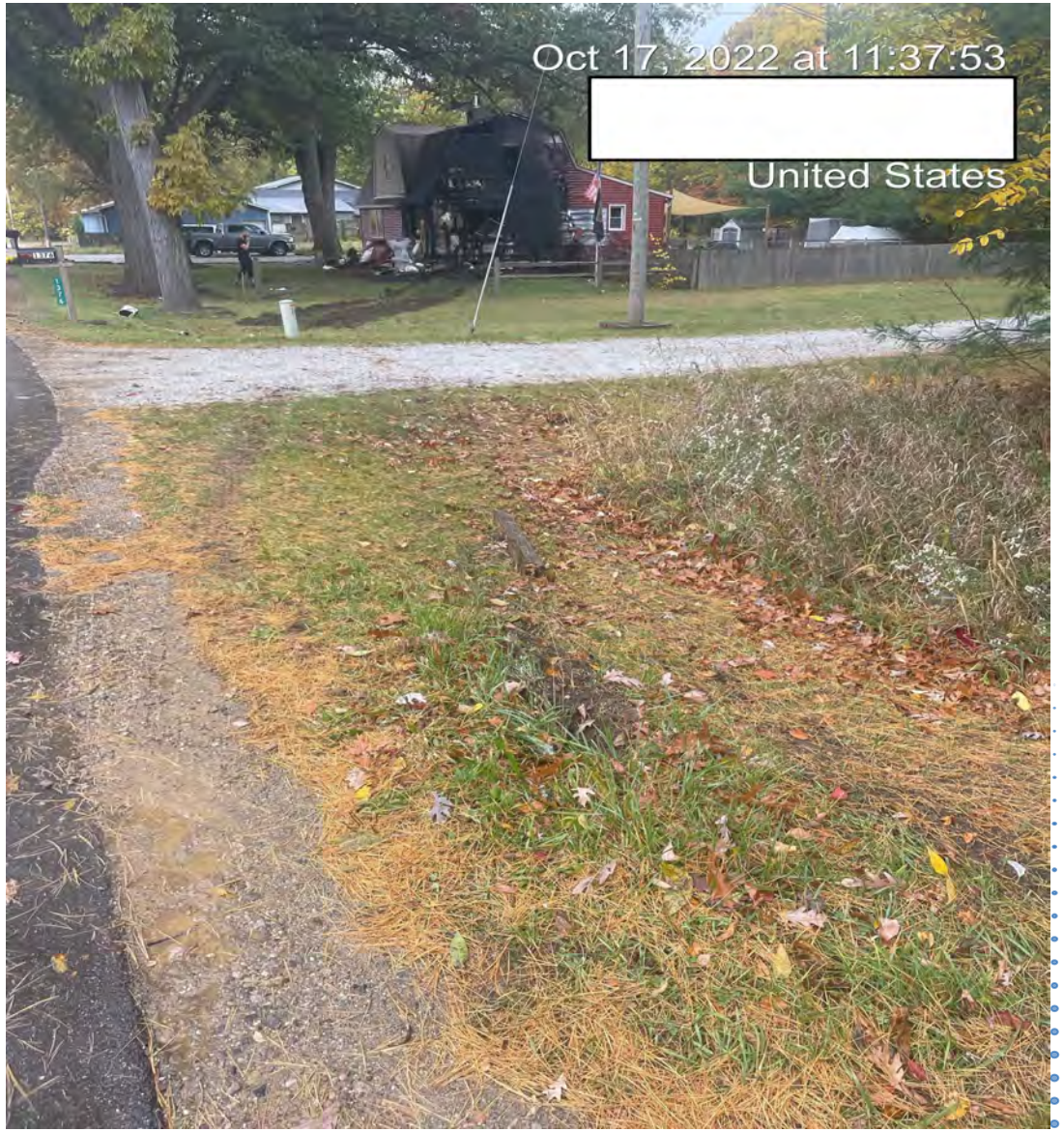
- Second Party Damage
- Characteristics:
  - Four-inch Plastic Gas main
  - 60 PSIG MAOP
- Description:
  - During a bore pullback, the reamer damaged an existing pipeline.
  - Two employees received minor burns.
  - Estimated property damage $526,000.
  - 315 Mcf Gas loss.
  - Under Investigation

Significant Incident – Case 7568

Significant Incident – Case 7674

- Outside Force Damage – Car Accident
- Characteristics:
  - Residential meter and house.
  - Total Damages $203,230.
- Description:
  - Vehicle left the road and hit meter on the corner of the residence.
  - Under Investigation.

Significant Incident – Case 7674



Devon Davis

- Area of Responsibility:
  - Central Michigan
- Cell: 517-914-7890
- Email: davisd71@michigan.gov

Significant Incident – 6884

- Rupture During ILI Operations.
- Characteristics
  - 24-inch Transmission Line operating at 644 PSIG (1952).
  - 730 PSIG MAOP.
  - 283.4 Mmcf Gas Lost.
- Description
  - During ILI, a pigging operation caused a dynamic overstress on the pipe resulting in the pipe rupturing.
  - Resulted in a temporary shutdown of US Highway 23.

Significant Incident – Case 6884

Significant Incident – 7743

- Third Party Damage.
- Characteristics
  - 6-inch steel installed in 2022.
  - 60 PSIG MAOP.
  - Operating at 53 PSIG.
  - 3.5 Mmcf Gas Lost.
- Description
  - During a road construction project while attempting to remove a storm drain and excavator struck and damaged the 6-inch steel main.
  - The area was not adequately marked.

Significant Incident – Case 7743

Kristen Kenyon

- Area of Responsibility:
  - Central Michigan
  - Damage Prevention
- Cell: 517-331-6554
- Email: kenyonk3@michigan.gov

Significant Incident – 6600

- Malfunction of Isolation Valves during ESD event.
- Characteristics
  - Compressor Station plant (1959-1960).
  - Two 20” ESD isolation valves did not fully close during ESD.
  - Operating at 511 psig.
  - 35.5 Mmcf Gas Lost.
- Description
  - Technician initiated plant ESD due to gas leak identified in plant. Hydraulic system on ESD isolation valves failed to perform due to cold conditions (18° F).
  - Ongoing investigation.

Significant Incident – 6880

- ESD Blowdown Valve Malfunction
- Characteristics
  - Compressor Station plant (2010).
  - 30-inch suction operating at 644 psig.
  - Six-inch blowdown valve.
  - 8.1 Mmcf Gas Lost.
- Description
  - An ESD valve failed open for 19 minutes. Electrical fault caused by moisture in the valve actuator box caused solenoid to fail and operate valve.
  - Ongoing investigation.

Significant Incident – 6880 continued

Questions?