



2023 Infringement Report

As recorded by the Linewatch members

2023 Linewatch Infringement Data

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2023 Linewatch Infringement Data

Executive Summary

Linewatch encourages its members to promptly report any infringement or near-miss into the Linewatch Infringement Database (LIDB). This information is used to identify any patterns and trends that will assist Linewatch in reducing the number of serious incidents taking place across the UK. This analysis is based on infringement data recorded by 13 of the 22 Linewatch members for the calendar year 2023.

Those members who recorded infringements for 2023.

• BPA	• Manchester Jetline
• CATS	• Mainline Pipelines
• Essar	• PRAX
• Esso	• SABIC
• Exolum	• Shell
• Ineos	• Star Energy
• Ineos FPS	

The remaining nine members reported 'Nil' infringements or 'No Report' for the year.

• Conoco Phillips	• National Gas
• Eon	• Oikos Storage
• EP Langage	• Petroineos
• Humbly Grove Energy	• Uniper
• Marchwood Power	

National Gas do not currently input data into the Linewatch infringement database, but instead reports its data directly to UKOPA on an annual basis.

There was a 15% decrease in the overall number of infringements reported with 268 events recorded in 2023 down from 316 the previous year.

'**Landowners**' remain the main source of risk to pipeline integrity in terms of the number of infringements. This is a concern given the activities undertaken by Landowners under 'normal agricultural practice' have changed considerably over the past few years, as have the capabilities of the machinery used to undertake it. Sub-soiling, mole ploughing, and fencing are among those practices. With landowners and farmers now turning to metal fence posts to replace the more traditional wooden posts, the risk to pipelines has increased.

The number of events involving other infringers, including '**Highways**', '**Developers**' and '**Local Authorities**' have seen slight reductions. However, '**Utility**' works have seen a gradual increase across 2023. This will form the direction of proactive Linewatch Safety Awareness Briefings for the forthcoming year.

2023 Linewatch Infringement Data

Key elements for Linewatch Members during 2024 include.

- To make better use of the Linewatch Infringement Database
- To maintain the shift in cultural change and report all 'Low' and 'Near Miss' events
- To standardise and improve the quality of investigation and reporting.
- Offer safety awareness briefings to infringers as part of their follow-up process.
- To encourage other operators to join the collaborative group of Members within Linewatch.

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How it works

Linewatch members are encouraged to report any pipeline infringement or near-miss to help identify trends. Linewatch then uses this data to target those areas and reducing the number of similar incidents from happening in the future. All analysis within this report is based on data recorded by Linewatch members in 2023.

The Linewatch categories are computed from two elements as determined from the following matrix:

Consequence				
HIGH	LOW	HIGH	HIGH	
MEDIUM	LOW	MEDIUM	HIGH	
LOW	LOW	LOW	MEDIUM	
	LOW	MEDIUM	HIGH	Likelihood

Where:

Consequence

HIGH = Densely populated residential areas, sensitive development (schools etc.), major infrastructure (airports etc.) and hazardous areas

MEDIUM = Light industrial, low population, water courses/environmentally sensitive, major roads and railways

LOW = Agricultural or other land

Likelihood

HIGH = Works had high potential to cause damage (e.g. Deep excavations, unaware of pipeline, dangerous practices)

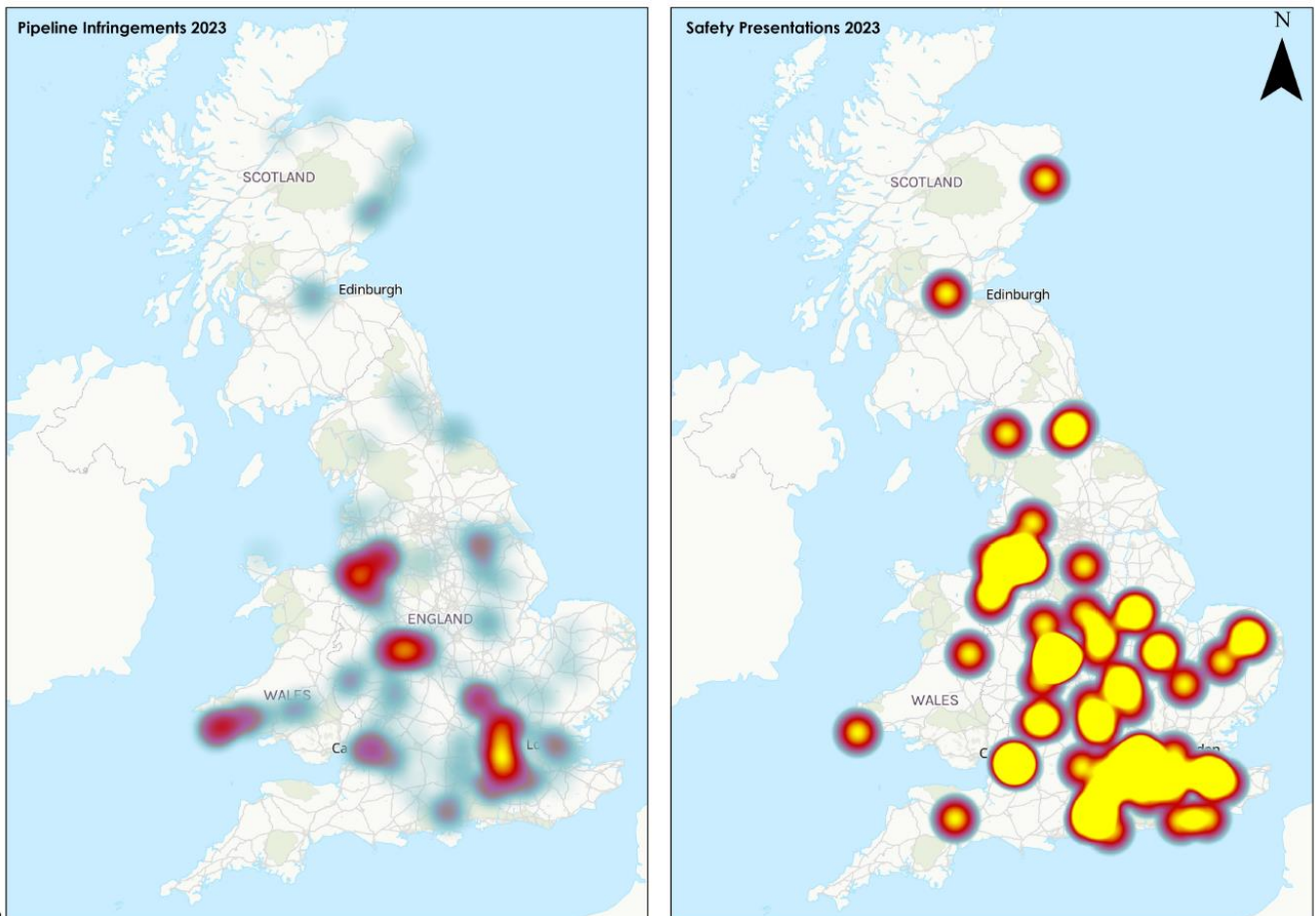
MEDIUM = Works could have caused damage under different circumstances (e.g. Service trenches, excavations at shallower depth than pipe invert)

LOW = Works within easement/wayleave but no potential for damage (e.g. pipeline protected, hand excavation)

The additional category of '**Near Miss**' expands the depth of reporting. Whereas the judgement of whether, or not, to report a Near Miss can be somewhat subjective, these records provide insight into preventing future encroachments. In general terms, a Near Miss will be an event that was identified as occurring outside of the easement but would have been an infringement if it had occurred within the easement.

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Overview of infringements and safety presentations.



Representative Heatmaps

The heatmaps compare the location of recorded infringements with the delivery of Linewatch Pipeline Safety Awareness Briefings (SAB). These SAB presentations are delivered to anyone who is involved in the planning or undertaking of work close to one of our members pipelines. The presentations can be organised through the Linewatch Website www.linewatch.org.uk or by contacting Linewatch directly on Linewatch@fishergerman.co.uk Linewatch members are encouraged to offer these SAB presentations when following up on infringements with utility contractors, developers, or other organisations.

During 2023 there were 110 SAB sessions delivered to various organisations around the country with 1,752 attendees receiving a presentation.

51 of these SAB presentations were arranged as a result of an infringement investigation which helps explain some of the alignment between the two maps.

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Engagement campaigns to reduce damages

Along with the Safety Awareness Briefings the Linewatch group has been involved in the production of a new fencing safety video. It has also continued to raise awareness through its LinkedIn and Instagram platforms, as well as the publication of several thought-leadership safety features in key industry publications.

Our latest safety video can be found here

<https://www.youtube.com/watch?v=Cwm7J1GkW1E>

The eLearning module 'An introduction to Safe Digging' which was produced in collaboration with LSBUD has continued to grow in number of enrolments through 2023, with over 6,000 people now having undertaken the training.

The module is designed for anyone involved in planning, designing, and undertaking excavation works in the UK.

The free to use platform can be accessed here: -

<https://www.safe-digging.co.uk/>

Linewatch also held exhibition stands at several regional and national industry and agricultural shows around the UK. These are attended to raise awareness of the members pipeline networks and to promote safe working practice.

Shows attended were: -

- LAMMA 2023
- The Royal Highland Show
- The AFI and APF Fencing best practice days.
- LSBUD Damage Prevention Day
- HAUC National Convention

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Infringements reported by date

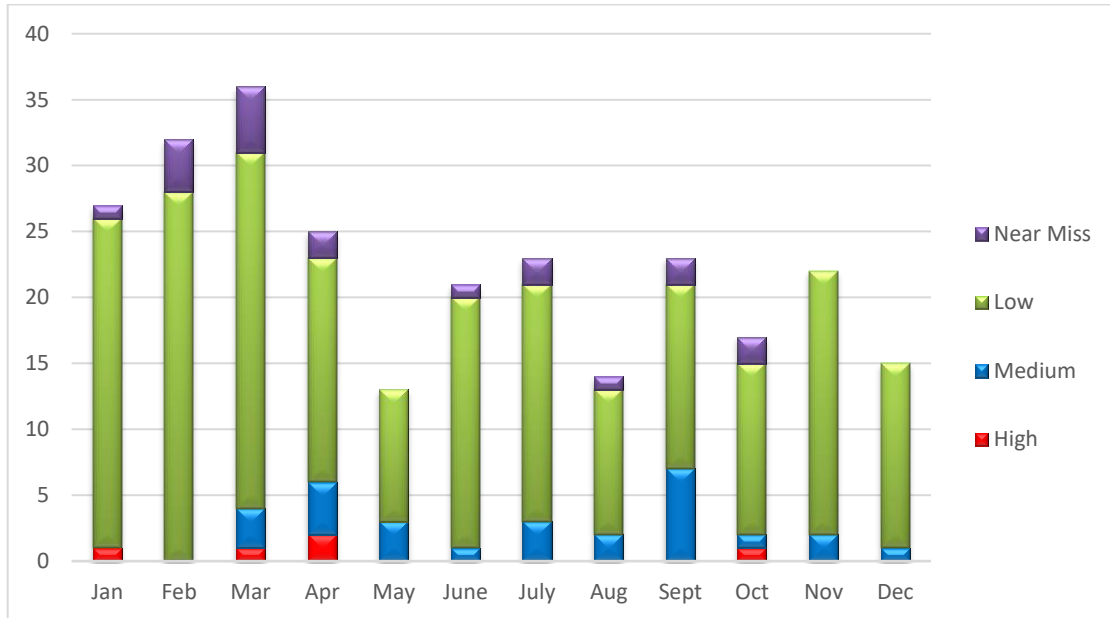


Figure 1: Infringements by Date (subdivided into Linewatch risk)

	High	Medium	Low	Near Miss
Jan	1	0	25	1
Feb	0	0	28	4
Mar	1	3	27	5
Apr	2	4	17	2
May	0	3	10	0
June	0	1	19	1
July	0	3	18	2
Aug	0	2	11	1
Sept	0	7	14	2
Oct	1	1	13	2
Nov	0	2	20	0
Dec	0	1	14	0

Overall total = 268

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Discounting the 1 record of '**Malicious Damage**' the Linewatch members recorded four '**High**' category infringements throughout 2023. These infringements cover a variety of activities and are detailed in the table below.

3 rd Party	Working for	Location	Pre-notified?	Damage prevented?	Location type	Notified /found by	Activity type
Utility	Waterway Owner	Swaffham	Unknown	Yes	Development Land	Notification Other	Installation
Utility	Utility	Penn	Unknown	Yes	Farmland	Ground Patrol	Borehole Drilling
Utility	Local Authority	Southampton	Yes	Yes	Pathway	Road Patrol	Installation of Poles
Landowner	Landowner	Sheffield	Unknown	Yes	Farmland	Road Patrol	Ditching

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Infringement by year 2018 - present

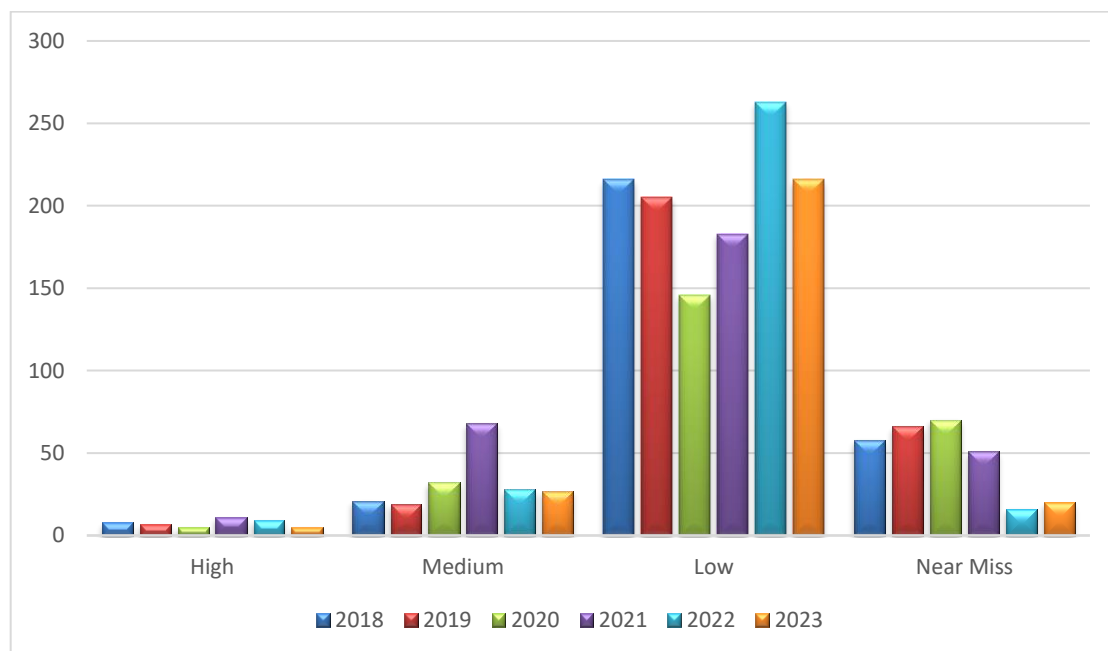


Figure 2: 6-year comparison to 2023

The above graph figure² and below table compare categorised data over the past six years, 2018 to 2023. The data from 2023 shows reductions in all risk categories apart from 'Near Miss' which saw a slight increase.

	High	Medium	Low	Near Miss	Totals
2023	5	27	216	20	268
2022	9	28	263	16	316
2021	12	68	183	51	313
2020	5	32	146	70	253
2019	7	19	205	66	297
2018	8	21	216	58	303

The changes in the category reports are discussed in greater detail within the analysis.

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How infringements were reported

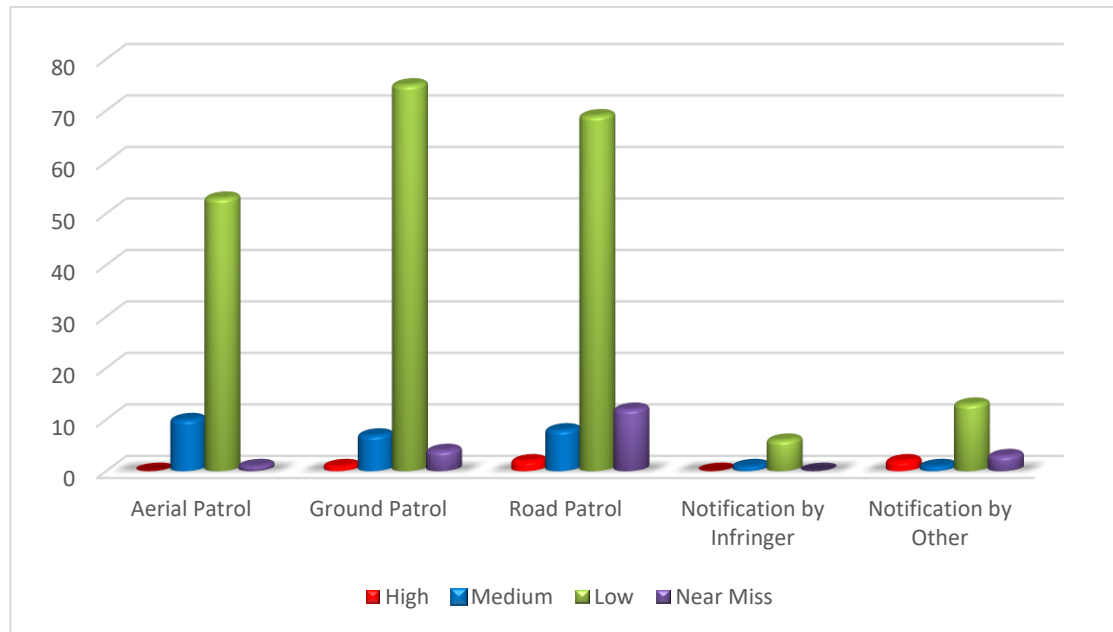


Figure 3: How found

In 2023 it is clear to see, like in previous years, that ground patrols undertaken by operators are the most effective means of 'finding' infringements.

	High	Medium	Low	Near Miss
Aerial Patrol	0	10	53	1
Ground Patrol	1	7	75	4
Road Patrol	2	8	69	12
Notification by Infringer	0	1	6	0
Notification by Other	2	1	13	3

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Infringements by Location type

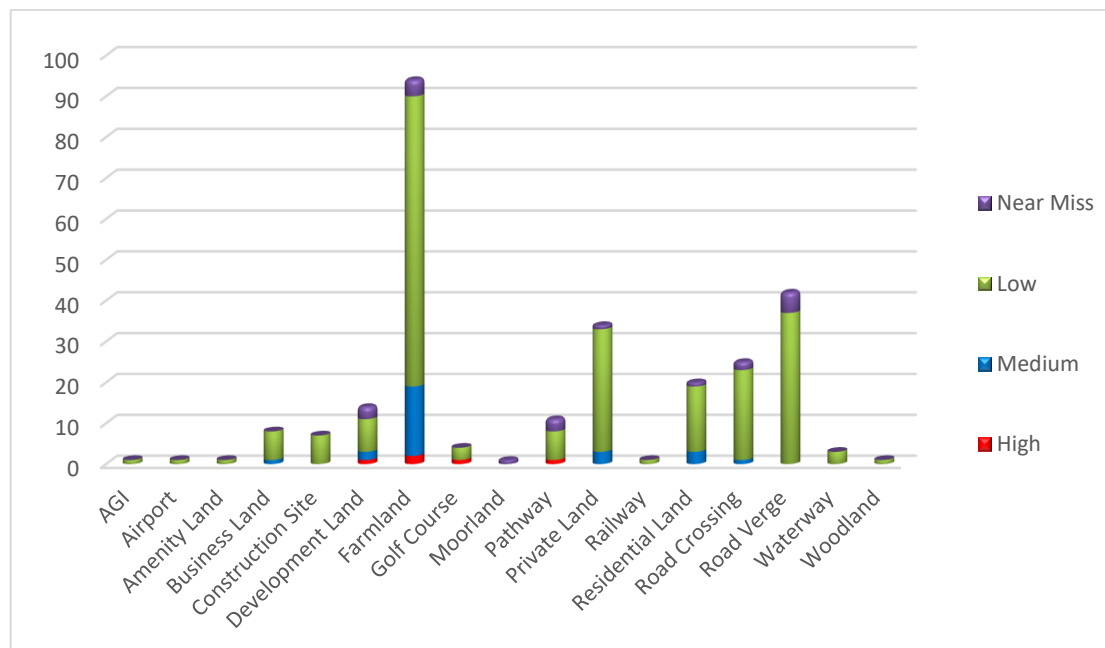


Figure 4: Location Type

	High	Medium	Low	Near Miss	Totals
AGI	0	0	1	0	1
Airport	0	0	1	0	1
Amenity Land	0	0	1	0	1
Business Land	0	1	7	0	8
Construction Site	0	0	7	0	7
Development Land	1	2	8	3	14
Farmland	2	17	71	4	94
Golf Course	1	0	3	0	4
Moorland	0	0	0	1	1
Pathway	1	0	7	3	11
Private Land	0	3	30	1	34
Railway	0	0	1	0	1
Residential Land	0	3	16	1	20
Road Crossing	0	1	22	2	25
Road Verge	0	0	37	5	42
Waterway	0	0	3	0	3
Woodland	0	0	1	0	1

Incidents recorded in '**Farmland**' are once again the highest within the 'location type' data set. This is consistent with previous reports and relates

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directly to 'Landowners' and their 'Contractors' being the greatest risk to pipeline integrity.

Linewatch will continue to work within the agricultural sector raising awareness through its social media, educational messaging in thought-leadership content, exhibiting at agricultural shows, and by engaging with organisations such as the National Farmers Union and the National Association of Agricultural Contractors. Encouraging workers in this sector to contact the pipeline operator during the planning stages of their work will be crucial in reducing these incidents.

Infringements by infringer type

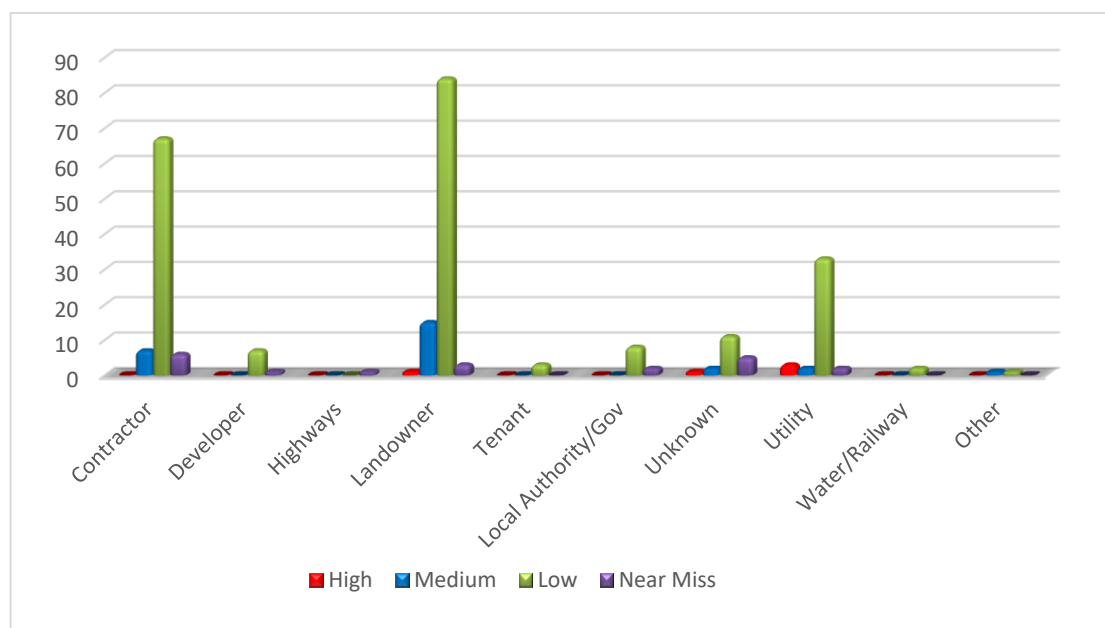


Figure 5: Infringer Type

	High	Medium	Low	Near Miss	Totals
Contractor	0	7	67	6	80
Developer	0	0	7	1	8
Highways	0	0	0	1	1
Landowner	1	15	84	3	103
Tenant	0	0	3	0	3
Local Authority/Gov	0	0	8	2	10
Unknown	1	2	11	5	19
Utility	3	2	33	2	40
Water/Railway	0	0	2	0	2
Other	0	1	1	0	2

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Contractor Working for

The contractor breakdown can be demonstrated further by developing the analysis into the sponsor or the entity who had engaged the contractor.

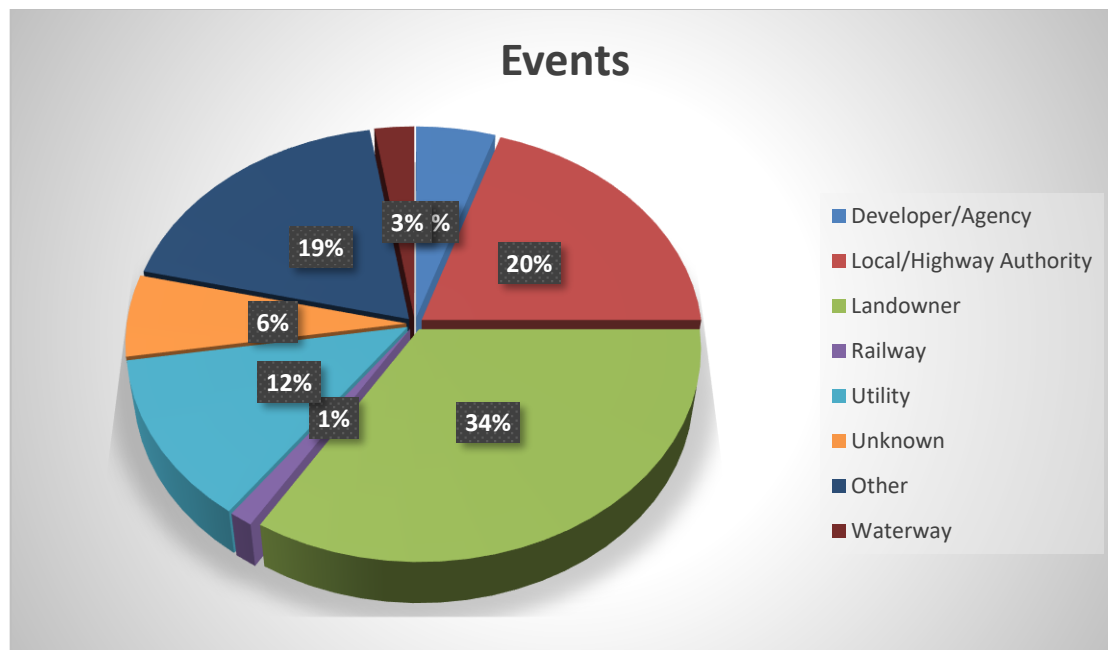


Figure 6: Contractor split

Developer/Agency	4	5%
Local/Highway Authority	16	20%
Landowner	27	34%
Railway	1	1%
Utility	10	12%
Unknown	5	6%
Waterways	2	3%
Other	15	19%
Totals	80	100%

Whilst there is some distortion of the recorded numbers depending on the interpretation of who was the work sponsor, the duty of care and responsibility spreads evenly across the survey set. 2023 saw a 29% reduction in all '**Contractor**' related infringements with an easing in the '**Local/Highways Authority**', '**Landowner**', and '**Utility**' records.

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Infringements by Activity Type

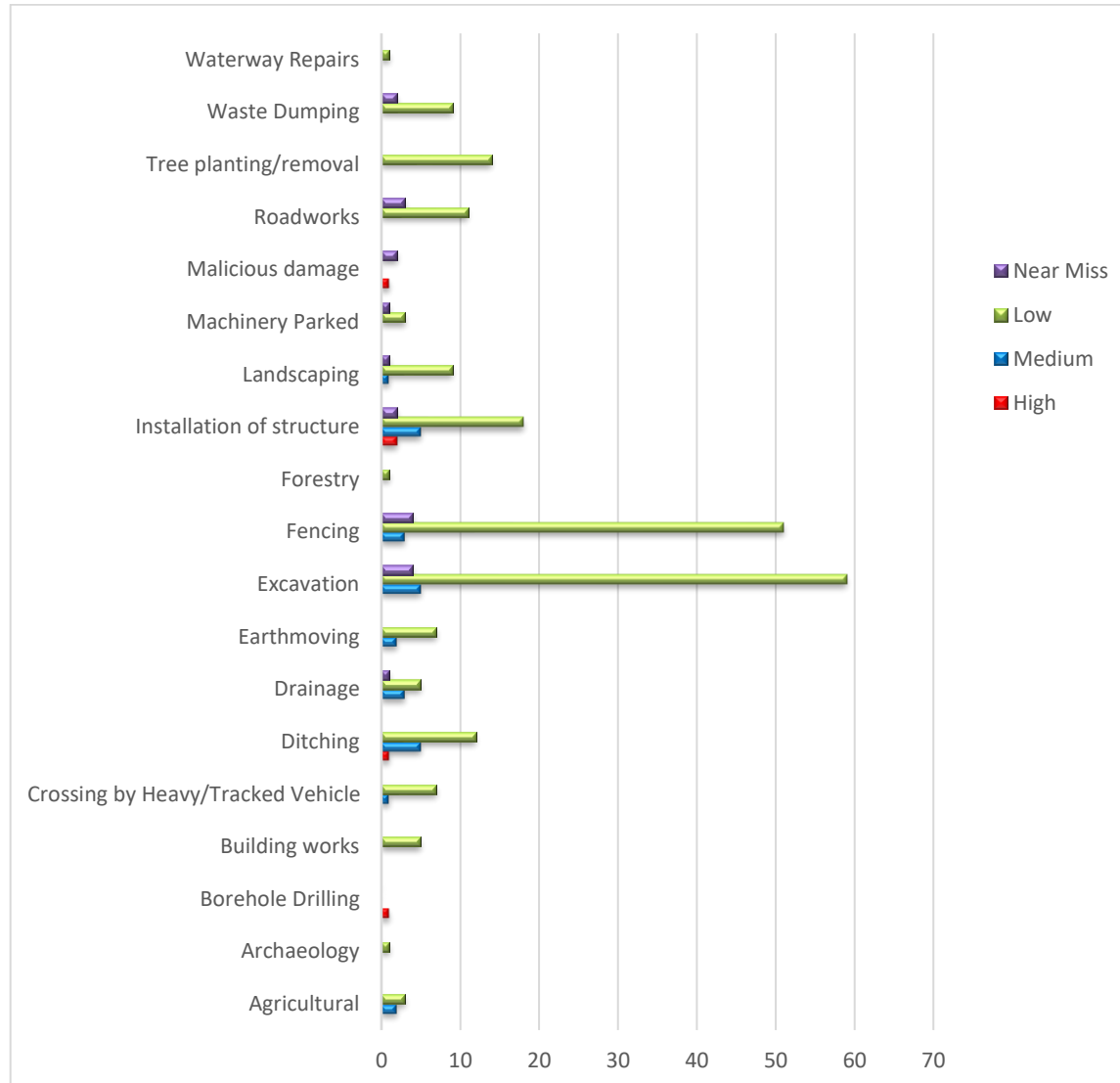


Figure 7

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	High	Medium	Low	Near Miss	Totals
Agricultural	0	2	3	0	5
Archaeology	0	0	1	0	1
Borehole Drilling	1	0	0	0	1
Building works	0	0	5	0	5
Crossing by Heavy/Tracked Vehicle	0	1	7	0	8
Ditching	1	5	12	0	18
Drainage	0	3	5	1	9
Earthmoving	0	2	7	0	9
Excavation	0	5	59	4	68
Fencing	0	3	51	4	58
Forestry	0	0	1	0	1
Installation of structure	2	5	18	2	27
Landscaping	0	1	9	1	11
Machinery Parked	0	0	3	1	4
Malicious damage	1	0	0	2	3
Roadworks	0	0	11	3	14
Tree planting/removal	0	0	14	0	14
Waste Dumping	0	0	9	2	11
Waterway Repairs	0	0	1	0	1
Totals	5	27	216	20	268

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Analysis and discussion

A total of 268 infringements and near-misses were recorded by Linewatch members in 2023, figure 1. This is a 15% reduction compared to the number recorded in 2022 (316).

Ground and road patrols, as inspection activities continue to be the most effective way to spot infringements including fencing and the installation of structures which are both known to be difficult to observe and interpret by aerial patrol alone. There was a reduction in all **'High'**, **'Medium'**, and **'Low'** reports throughout 2023 offset by a slight increase in **'Near Miss'** records. All **'High'** risk events are discussed within the quarterly Linewatch meetings and, where possible, safety awareness presentations are offered to the third parties involved.

Since 2013 there has been a continued increase in those infringements recorded by ground or walked patrols. This does suggest that many additional Low Category and Near Miss events would have been recorded during line-walking and street patrol activities, as expected.

As in the previous years, analysis of the data clearly shows **'Landowner'** and **'Contractor'** as being the two largest infringer categories, figure 5. These categories are evenly and generally distributed throughout the different activity types.

The increase in recorded **'Unknown'** infringers has been noted and highlights a need for improved investigations and reporting methods.

It should also be noted that 139 of all the infringements recorded, occurred with the infringer being aware of the pipeline's existence. Further detail of these infringements shows that landowners, tenants, and their contractors accounted for 80 of the total records. It should also be noted that only one of the four **'High'** risk infringements occurred with the infringer being aware of the pipeline's presence.

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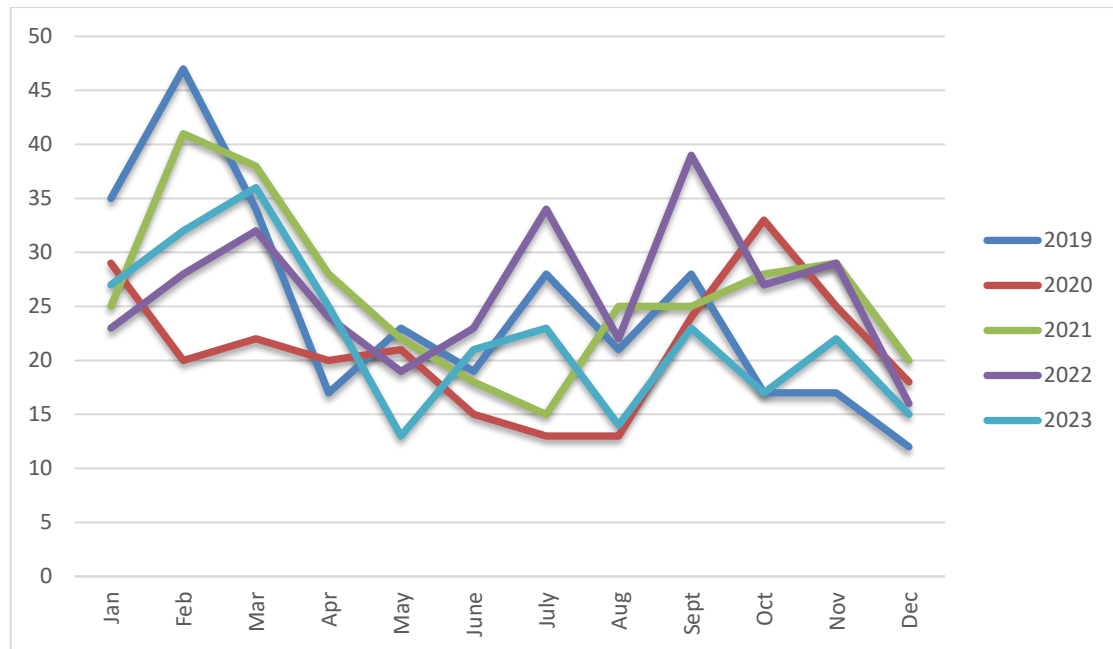


Figure 8: 5 Year trend by month

The data for comparing year-on-year infringements by risk has been extended to allow a five-year view. Figure⁸ above, is that five-year focussed view produced within the Linewatch database displayed in a trend line format.

The date or chronological distribution pattern throughout 2023 remains similar to previous years. The first quarter of 2023 saw a peak in infringement activity. This correlates with data drawn from LSBUD which shows a similar increase in search enquiries, with March having the highest number of enquiries per month and April reporting the highest average users per day.

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Over recent years there has been a clear cultural step change by Linewatch members to report all infringements, including **'Near Miss'** events. For those who contribute, there is now a strong basis for identifying areas for focus on preventing occurrence rather than reacting to an infringement.

It has been acknowledged that, statistically, records of **'Near Miss'** (and/or 'Low risk' events) should be much higher than those for **'High'** risk records. Previously, many **'Low'** Risk or **'Near Miss'** events have remained unreported, being resolved before the activity became an issue. This includes engaging with councils and highways authorities encouraging them to inform the Linewatch members of proposed works even though these may be "allowable" under any easement rights.

Given the high level of activity in the highway, the relatively low number of incidents attributed to **'Roadworks'** reflects the fact that the location of pipelines in the highway is relatively small. An estimate of less than 10% "in the highway" location has often been referred to.

There were no **'High'** and only one **'Medium'** risk events recorded as "Road Crossing" or "Road Verge" and those recorded as **'Low'** or **'Near Miss'** show a small decrease compared to 2022. Our increased interaction with local authority and highways departments throughout 2023, may have contributed to the improvement in these figures.

As in previous years, analysis of the "By Activity" data shows a wide range of activity types, figure 7. The two categories that are predominant in 2023 are **'Excavation'** together with the activity **'Fencing'**. Many of these events relate directly to landowners or their contractors.

'Excavation', as a category, is shown to have increased for service investigations which are generally associated with utilities or leakage repairs. **'Fencing'** works, although usually found to be the most common activity recorded annually, saw a 27% reduction in observations. This reduction is a huge improvement on previous years and highlights the work Linewatch and its members have done to improve awareness within the fencing industry throughout 2023. Continued engagement and exposure at relevant fencing industry exhibitions and a new presence on social media can hopefully help to reduce this figure further.

Over the past few years there has been a big drive by local councils to meet the housing needs of the UK. This has seen an increase in interactions with developments sites and operator's pipelines.

During 2023 there were eight recorded infringements associated with **Developers**, a reduction of 47%. Early engagement with developers and regular site visits and safety briefing during these projects has shown to help reduce infringements.

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With the change in numbers of '**Near Miss**' and even '**Low Risk**' reports there is a benefit to be gained from using an agreed form of weighting when applying the statistical analysis to the whole infringement data set. The simple structure below is adopted as consistent with previous years.

Risk Category	Weighting x
High	10
Medium	5
Low	2
Near Miss	1

Application of this amended weighting proved, as expected, a heavy focus on Landowners.

Infringer code	Number of "H" records and (total events)	Weighted Total
Landowners	1 (104)	276
Contractors	0(80)	175
Utility	3(41)	108
Developers	(8)	15
Local Authority	(10)	18
Unknown	(18)	37
Waterways/Rail	(2)	4
Utility A	(10)	26
Utility B	(5)	9

*Does not include the weighting for "malicious damage" events.

Several landowners and contractors were identified as recording a single High or Medium Risk event but are not listed separately.

The identity of the coded infringers identified as Utility A etc remains confidential and is held securely by the Linewatch Manager.

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Summary

There was a 15% decrease in the overall number of infringements reported to a total of 268 events in 2023. Records of **'High'**, **'Medium'** and **'Low'** reports all saw a reduction in numbers however, a slight increase in **'Near Miss'** incidents was reported.

As per figures seen in previous years, **'Landowners'** along with their contractors remain the main risk to pipeline integrity in terms of the overall numbers of infringements recorded. This is of concern when the methods used for what is termed "normal agricultural practice" continue to change considerably with larger machinery and more intrusive methods being used. In addition to this, landowners and smaller contracting companies are less likely to undertake secondary measures to locate underground services when on-site, such as CAT scanners etc.

There remains a general reluctance for landowners, tenants, or others, to suitably plan, contact and consistently agree works in a fully safe manner with pipeline operators. Currently, very few **'Landowners'** use the formal 'Linesearch Before you dig' (www.LSBUD.co.uk) enquiry system and the most common method of landowners and farmers contacting the operators remains by telephone.

All these concerns highlight the importance of regular landowner liaison and raising awareness of safe working practices amongst those contractors working in the agricultural sector.

2023 has seen a slight reduction in the number of Linewatch members reporting infringements from 15 to 13. It is possible with some extra guidance from the Linewatch Manager and with encouragement from other members that the recording of infringements and the quality of data input into the infringement database will continue to improve overall.

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Linewatch objectives for 2024

- Identify and actively engage with any new High-Risk and repeat infringers throughout 2024.
- Continue engagement with agricultural organisations to encourage safe working practices amongst their members and to look for new ways to raise awareness and educate land users.
- Continue to increase Linewatch exposure through the use of social and digital media.
- Collaborate with relevant agricultural and utility industry publications in raising awareness through newsletters and safety shares.
- Expand our eLearning platform to include a new 'Agricultural' version of our module.
- Contact all High-Risk and repeat offenders from previous years to continue raising awareness and improve procedures.
- Improve reporting within the infringement database to reduce 'unknown' infringer records.