



# 2018 Infringement Report

As recorded by Linewatch members

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# 2018 Linewatch Infringement Data

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# 2018 Linewatch Infringement Data

## **Executive Summary**

Linewatch encourages its members to promptly report any infringement or near-miss into the database (LIDB) to identify any trends that will assist in reducing the number of serious incidents. This analysis is based upon data input by 11 Linewatch members for the calendar year 2018. Although not all the members recorded infringement data, 3 have submitted "nil infringements". No response was recorded from Conoco-Phillips, E.On, IGas, MJL, Marchwood, Uniper, Wingas and National Grid.

There was a small increase in overall numbers of infringements reported to a total of 303 events in 2018 (281 in 2017). This is consistent with the reports from 2016 with only a 5% variance.

Data evaluation confirms that "Landowners" remain the main source of risk to pipeline integrity in terms of numbers of infringements. This is also of concern when the methods used for what is termed "normal agricultural practice" have changed considerably over the past few years. Sub-soiling, mole ploughing, and fencing are among those practices.

The equivalent numbers of events involving other infringers, including utilities, shows a general and continued easing except for Developers where the events increase to 18 in 2018 (8 in 2017).

Key elements for Linewatch Members during 2019 include;

- To encourage member use of the Linewatch Infringement Database (LIDB)
- To encourage the shift in cultural change and report all 'Low' and 'Near Miss' events
- To improve the quality of investigation and reporting details
- Proactive achievable identification of target audiences of infringers
- To encourage other operators to become members of Linewatch

# 2018 Linewatch Infringement Data

## Preamble

Linewatch encourages its members to report any infringement or near-miss to identify any trends that will inform the target of reducing the number of incidents. This analysis is based upon data by the 20 (10 operators provided input) Linewatch members for the calendar year 2018.

The Linewatch categories are computed from 2 elements as determined from the following matrix:

<b>Consequence</b>				
HIGH	LOW	HIGH	HIGH	
MEDIUM	LOW	MEDIUM	HIGH	
LOW	LOW	LOW	MEDIUM	
	LOW	MEDIUM	HIGH	<b>Likelihood</b>

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 potential to cause serious damage (e.g. Deep excavations, unaware of pipeline, dangerous practices)

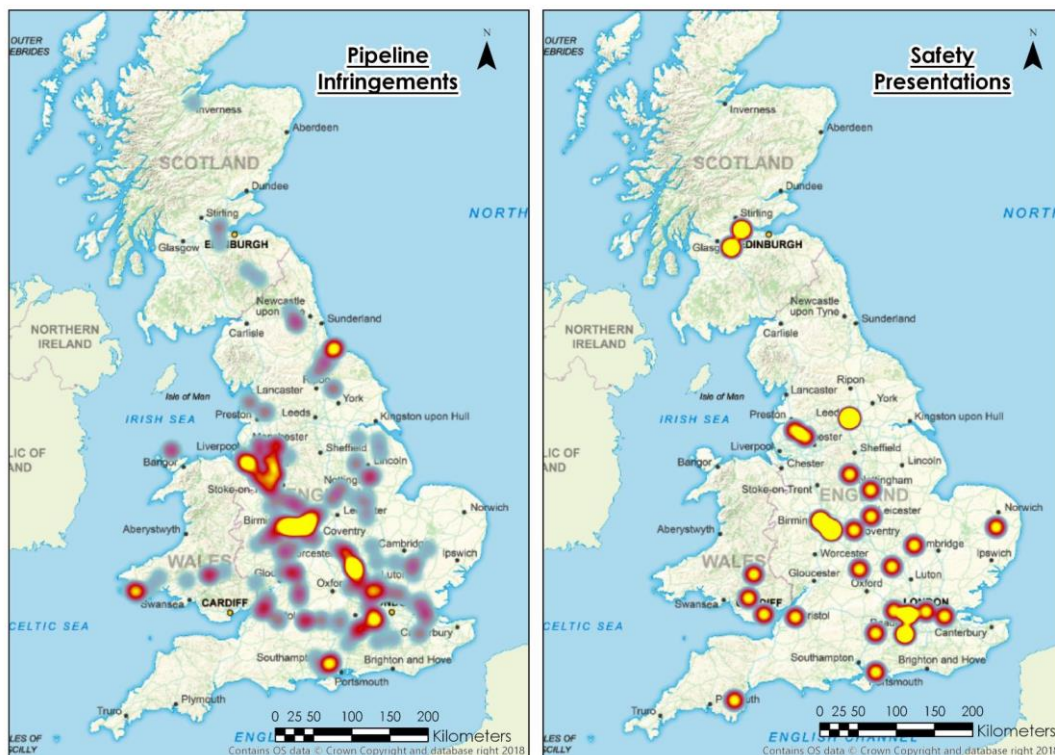
**MEDIUM** = Works could possibly have caused minor damage under different circumstances (e.g. Service trenches, excavations at shallower depth than pipe invert)

**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 to 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.

# 2018 Linewatch Infringement Data

## Overview of Infringements and 2018 Safety Presentations.



Representative Heatmaps

The heatmaps shown above 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](http://www.linewatch.org.uk) or by contacting Linewatch directly on [Linewatch@fisherman.co.uk](mailto:Linewatch@fisherman.co.uk). The Linewatch members are encouraged to offer these SAB presentations when following up infringements with utility contractors, developers or other organisations.

During 2018 there were 49 presentations delivered to various organisations around the country with 551 attendees covered.

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 2018 @ NEC, Birmingham

The Highway Authorities and Utilities Committee (HAUC) Exhibitions at Manchester, Harrogate, London and Wolverhampton.

The Linewatch group have also begun developing a series of short animation videos outlining the dangers of undertaking works near to one of our pipelines. The videos highlight the importance of correct planning and the benefits of communication with the pipeline operator.

# 2018 Linewatch Infringement Data

## Presentation of 2018 reports by Date

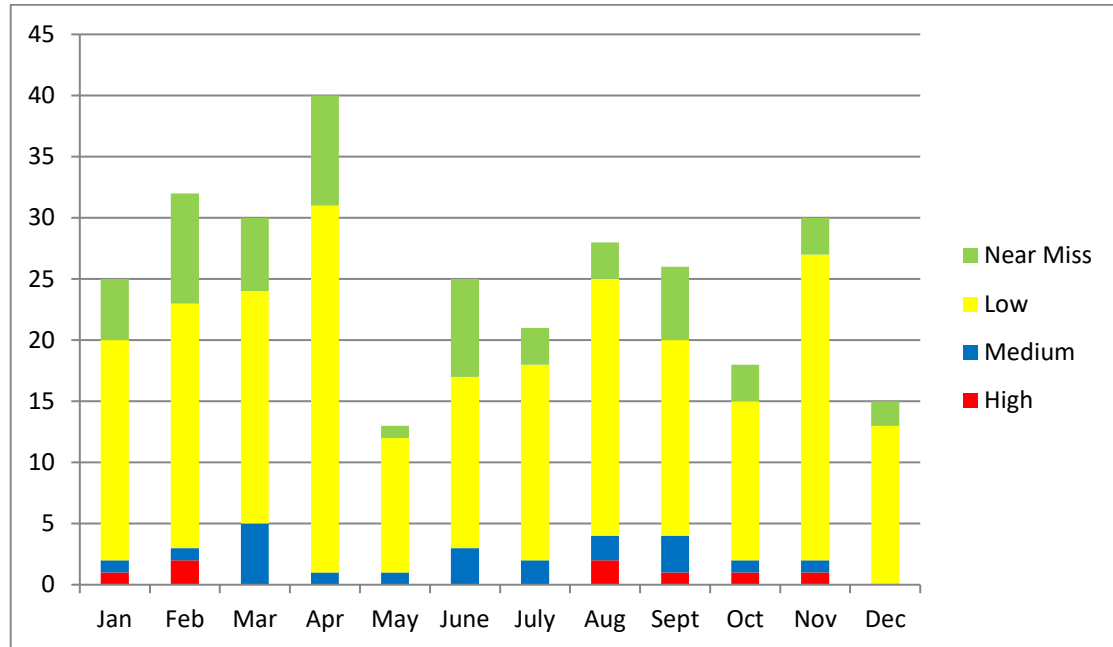


Figure 1: Infringements by Date (subdivided into Linewatch risk)

2018	High	Medium	Low	Near Miss	Total
Jan	1	1	18	5	25
Feb	2	1	20	9	32
Mar	0	5	19	6	30
Apr	0	1	30	9	40
May	0	1	11	1	13
Jun	0	3	14	8	25
Jul	0	2	16	3	21
Aug	2	2	21	3	28
Sep	1	3	16	6	26
Oct	1	1	13	3	18
Nov	1	1	25	3	30
Dec	0	0	13	2	15

Overall total = 303.

## 2018 Linewatch Infringement Data

The 8 High category infringements cover a variety of activities and are detailed as follows;

3 <sup>rd</sup> Party	Working for	Location	Pre-notified	Damage prevented	Location type	Notified /found by	Activity type
Landowner	Landowner	Scopwick	No	No	Farmland	Road Patrol	Fencing
Landowner	Landowner	Worcester	No	No	Business Land	Road Patrol	Earthmoving
Landowner	Landowner	Walton-on-Thames	No	No	Residential Land	Aerial Patrol	Installation of structure
Landowner	Landowner	Belvoir Estate	Yes	No	Farmland	Road Patrol	Fencing
Contractor	Landowner	Saffron Walden	No	Yes	Farmland	Aerial Patrol	Sub-soiling
Landowner	Landowner	Buccleuch Estate	No	Yes	Farmland	Ground Patrol	Fencing
Landowner	Landowner	Teesside Grange	Yes	Yes	Farmland	Road Patrol	Cable laying
Unknown	Unknown	Newport, Staffs.	No	No	Development Land	Aerial Patrol	Excavation

# 2018 Linewatch Infringement Data

## Presentation of 2018 data back through to 2012

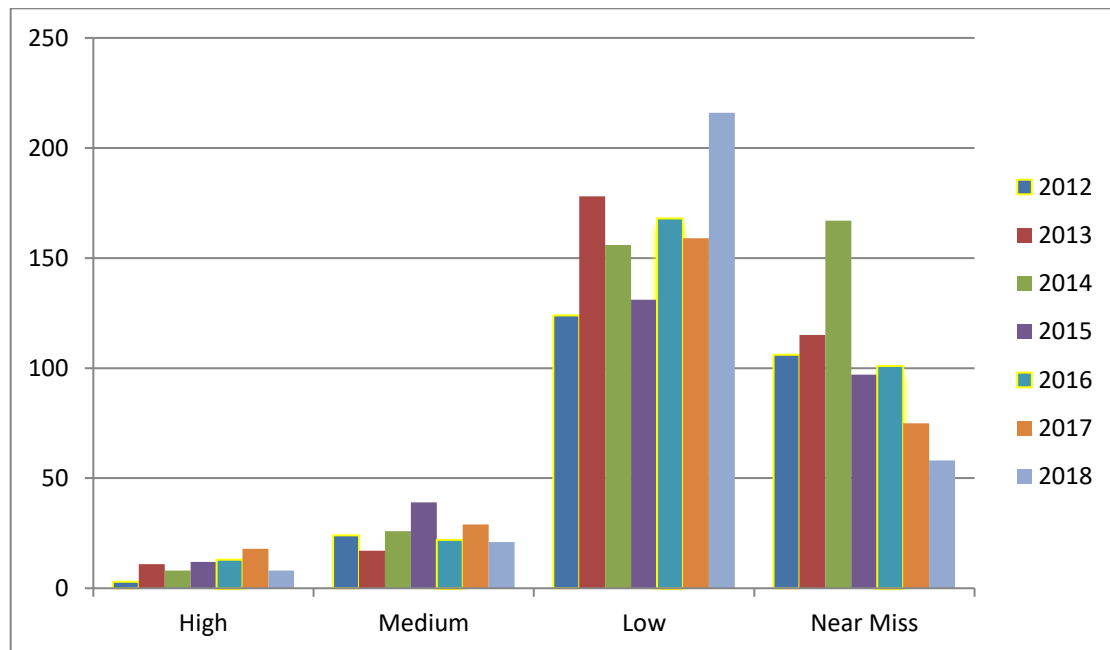


Figure 2: 7-year comparison to 2018

An unexpected further decrease in the reporting of Near Miss encroachments has been noted. This, however, is balanced by an increase in the Low Risk events occurring within the easement.

	High	Medium	Low	Near Miss
2018	8	21	216	58
2017	18	29	159	75
2016	13	22	168	101
2015	12	39	131	97
2014	8	26	156	167
2013	11	17	178	115
2012	3	24	124	106

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



# 2018 Linewatch Infringement Data

## Presentation of 2018 reports by “how found”

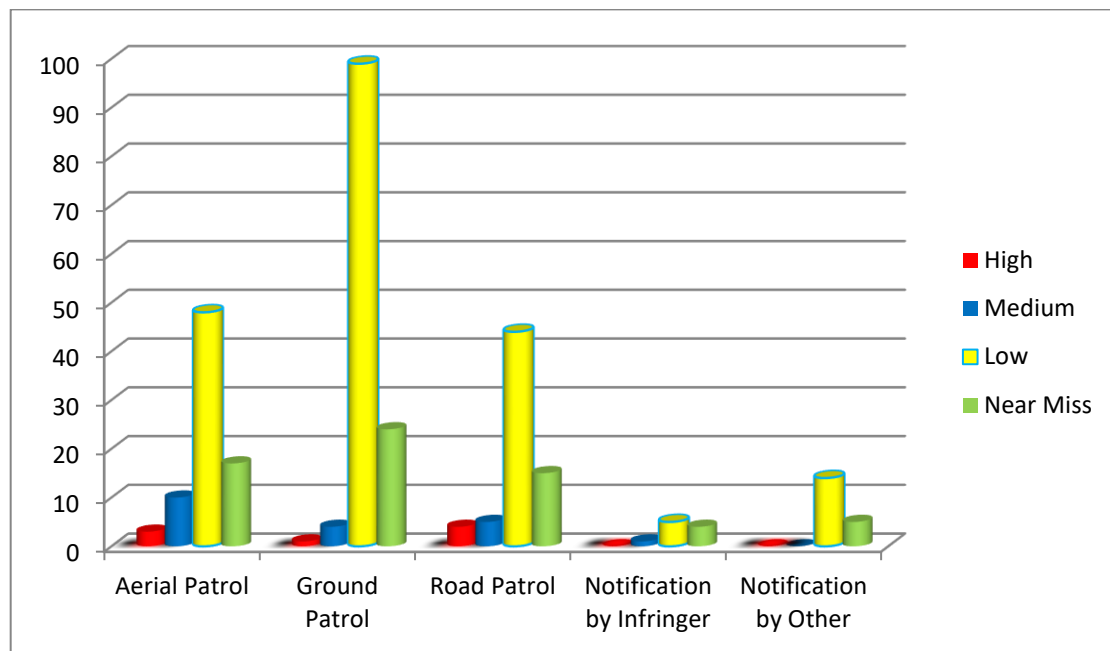


Figure 3: How found

The results for 2018 present a distribution that echoes the 2017 records which were weighed by the high volume of ground patrols where the frequency had been increased following the “hot-tap” events of previous years.

	High	Medium	Low	Near Miss	Total
Aerial Patrol	3	10	48	17	78
Ground Patrol	1	4	99	24	128
Road Patrol	4	5	44	15	68
Notification by Infringer	0	1	45	4	10
Notification by Other	0	0	14	5	19

# 2018 Linewatch Infringement Data

## Presentation of reports by Location type 2018

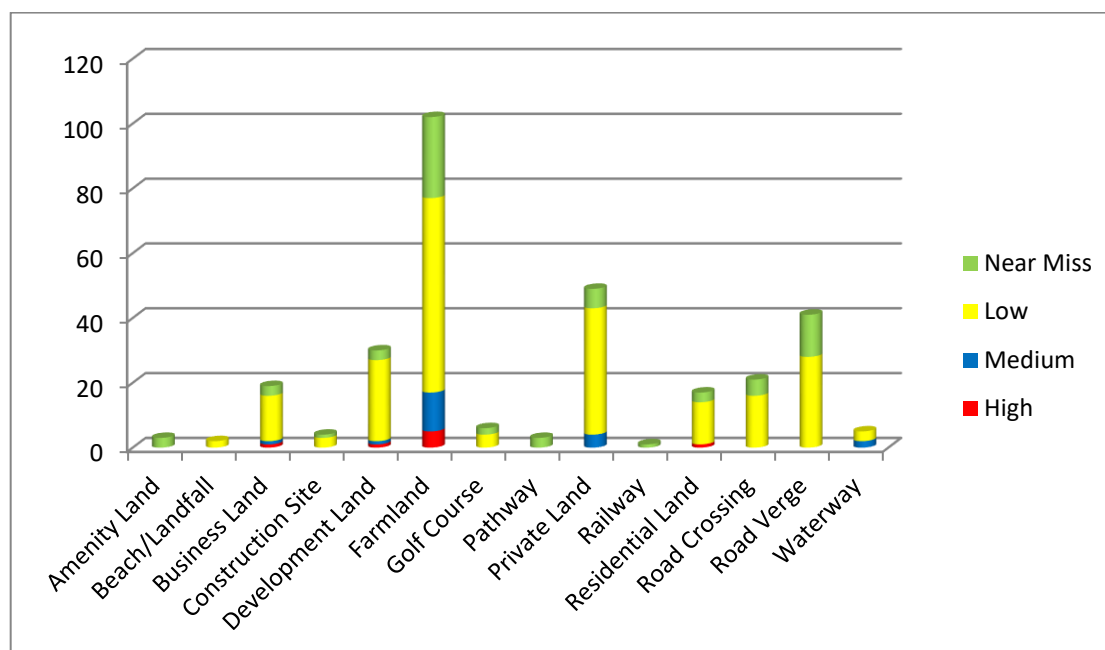


Figure 4: Location Type

	High	Medium	Low	Near Miss	Total
Amenity Land				3	3
Beach/Landfall			2		2
Business Land	1	1	14	3	19
Construction Site			3	1	4
Development land	1	1	25	3	30
Farmland	5	12	60	25	102
Golf Course			4	2	6
Pathway				3	3
Private land	4	12	35	8	59
Railway				1	1
Residential Property	1		13	3	17
Road Crossing			16	5	21
Road Verge	1		28	13	41
Waterway		2	3		5

# 2018 Linewatch Infringement Data

## Presentation of reports by Infringer type 2018

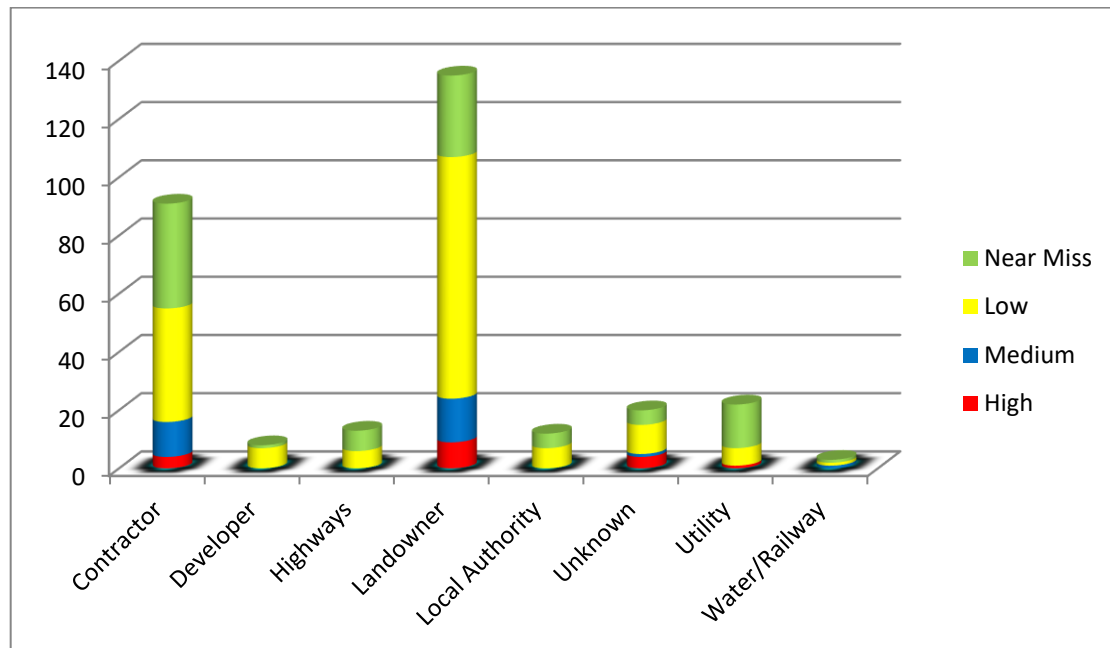


Figure 5: Infringer Type

	High	Medium	Low	Near Miss	Total
Contractor	1	1	61	21	84
Developer		2	15	1	18
Highways			13	1	14
Landowner	6	13	88	26	133
Local Authority			4	3	7
Unknown	1	1	11	3	16
Utility		2	4	9	15
Water/Railway		1	9	1	11

The contractor breakdown is further demonstrated by the following pie chart, figure 6, through developing the analysis into the sponsor or the entity who had engaged the contractor.

# 2018 Linewatch Infringement Data

## Contractor Working for

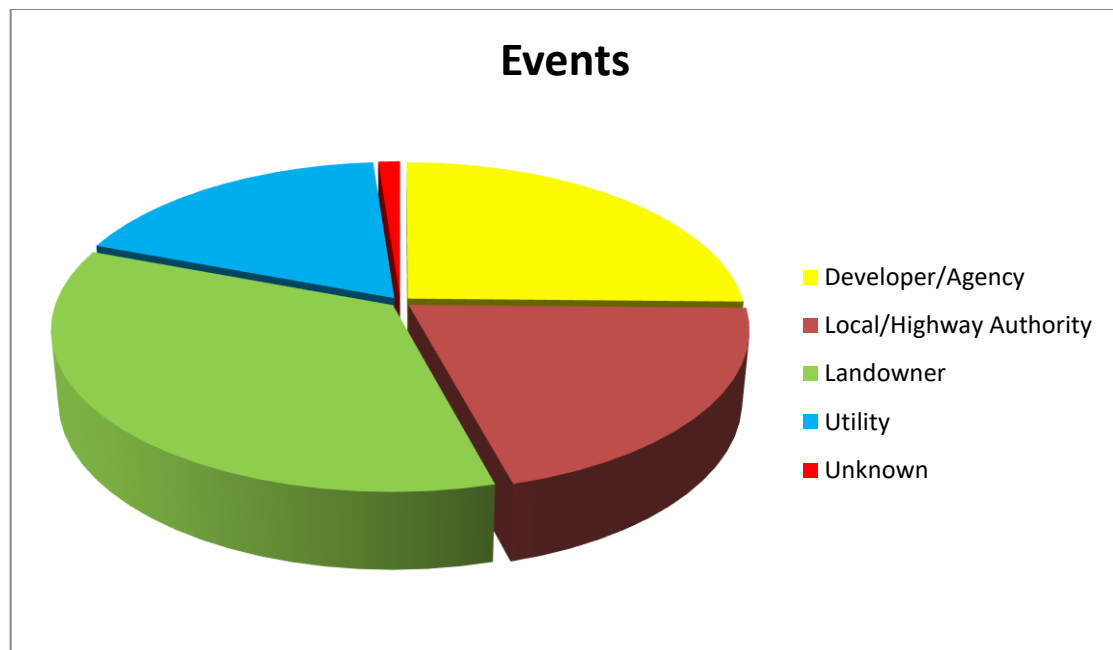


Figure 6: Contractor split

Developer/Agency	21	25%
Local/Highway Authority	17	20%
Landowner	29	35%
Utility	15	18%
Unknown	2	2%
<b>Totals</b>	<b>84</b>	<b>100%</b>

Whilst there is some distortion of the recorded numbers from a varying interpretation of who was the actual sponsor, the duty of care responsibility spreads evenly across the survey set. There is an easing of the Local Authority/Highway and Utilities reports but an increase in those contractors working for Landowners. The Landowner figure is back to those levels of an evenly balanced split shown in 2016. The greatest shift relates to Developers which are up from only 8% in 2017 to 25% of the total in 2018.

It is noted that, although the records of "unknown" are small (16 recorded in 2018), the quality could be improved still further by more rigorous investigation and by updating the records database by corrected reporting.

# 2018 Linewatch Infringement Data

## Presentation of reports by Activity Type 2018

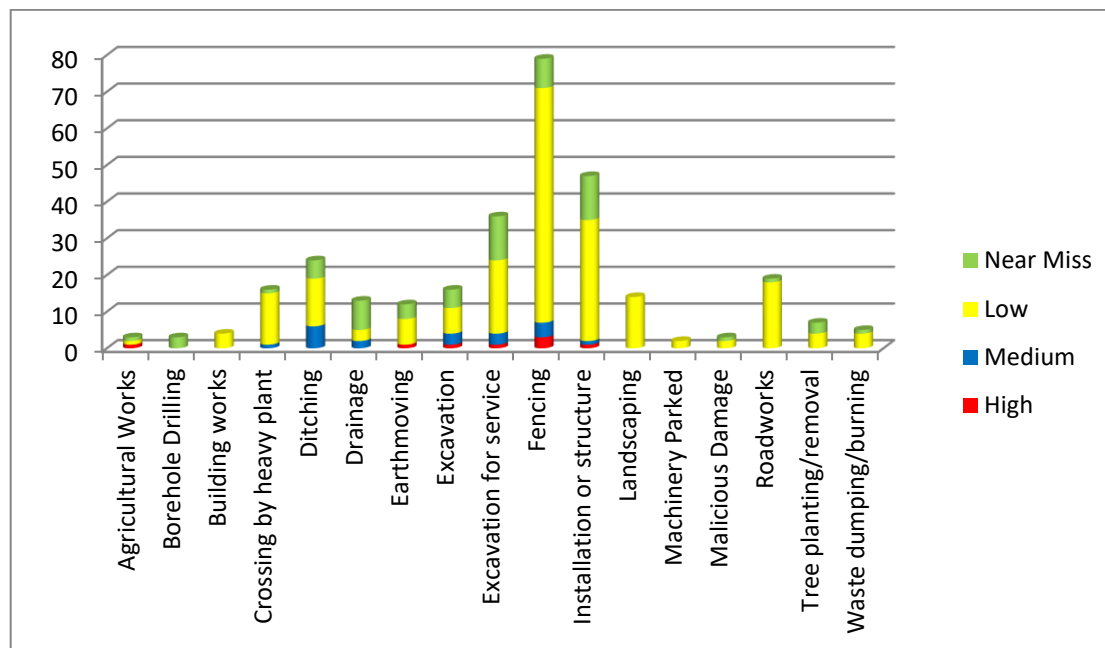


Figure 7

	High	Medium	Low	Near Miss
Agricultural works	1		1	1
Borehole Drilling				3
Building works			4	
Crossing by heavy plant		1	14	1
Ditching		6	13	5
Drainage		2	3	8
Earthmoving	1		7	4
Excavation	1	3	7	5
Excavation for service	1	3	20	12
Fencing	3	4	64	8
Installation or structure	1	1	33	12
Landscaping			14	
Machinery Parked			2	
Malicious Damage			2	1
Roadworks			18	1
Tree/Veg planting/removal			4	3
Waste dumping/burning			4	1

Critical analysis shows 66 fencing events were directly attributed to Landowners or their contractor out of a total of 79.

# 2018 Linewatch Infringement Data

## **Analysis and Discussion**

A total of 303 (was 281 in 2017) infringements and near-misses were recorded by members in 2018, figure <sup>1</sup>. The small increase in overall reported events is largely due to the higher numbers within the Low risk category although Ground and Road Patrols, as inspection activities, did identify an increase in Landowner related activities. These include fencing, installation of structure and ditching which are known to be difficult to observe and interpret by aerial patrol alone. The decrease in “High” risk events does correlate to the general Landowner/Developer works throughout the UK and indicates that a greater emphasis on monitoring planned works could possibly be of benefit. It should also be noted that only 2 of the “High” risk events had been pre-notified.

The date or chronological distribution through the year remains relatively even and associated largely with the number of working days per month. A more detailed review of the records showed an increased number of “Low” risk records. The general effect of a “dry” weather year appears to have had little change in the date related events. The distribution being similar to 2017.

The rationale’ for the decrease in High Risk events though is not clear. All 8 events being directly associated with Landowner sponsored activities.

As in the previous reporting years, analysis of the data clearly shows “Landowner” and “Contractor” as being the two largest and increasing infringer categories, figure <sup>5</sup>.

The categories are evenly and generally distributed.

The decrease in recorded “unknown” infringers suggests a focus in the “root cause” investigations could be improved. None of the “unknown” resulting from “malicious damage” or unauthorised hot-tap connections are recorded in 2018.

There remains a general reluctance for land users, tenant or others, to suitably plan, contact and consistently agree works in a fully safe mode with the operators. The most common method of Landowner/Farmer contacting the operators remains by telephone which could be reinforced by a greater emphasis on Landowner liaison and other regular communications.

Taking the data from the extended “Contractor” pie-chart, figure <sup>6</sup>, it is notable how those contractors sponsored by Developers increased out of previous proportions. This trend was identified throughout 2018 and discussed within the quarterly meetings with the offer of early, preventative, Briefings through the project life as the site staff changed.

It should also be noted that 30 (was 17 in 2017) of the infringements occurred following some planned notification. Further detail shows these included a large proportion of Landowner/Private Land and rural locations although they are recorded against some Water and Gas Utilities. Housing developers accounted for 7 of the 30 events and could be targeted for more frequent monitoring and more stringent attention when agreeing the workscope.

## 2018 Linewatch Infringement Data

From 2013 there is a marked increase in those infringements recorded by Ground or walked Patrol. This does tend to suggest that a great many additional Low Category and Near Miss events would have been recorded during the line-walking, as expected. It may also be expected since the increase in ground patrols as part of the “hot-tap” investigations would have put more local inspection on the ground.

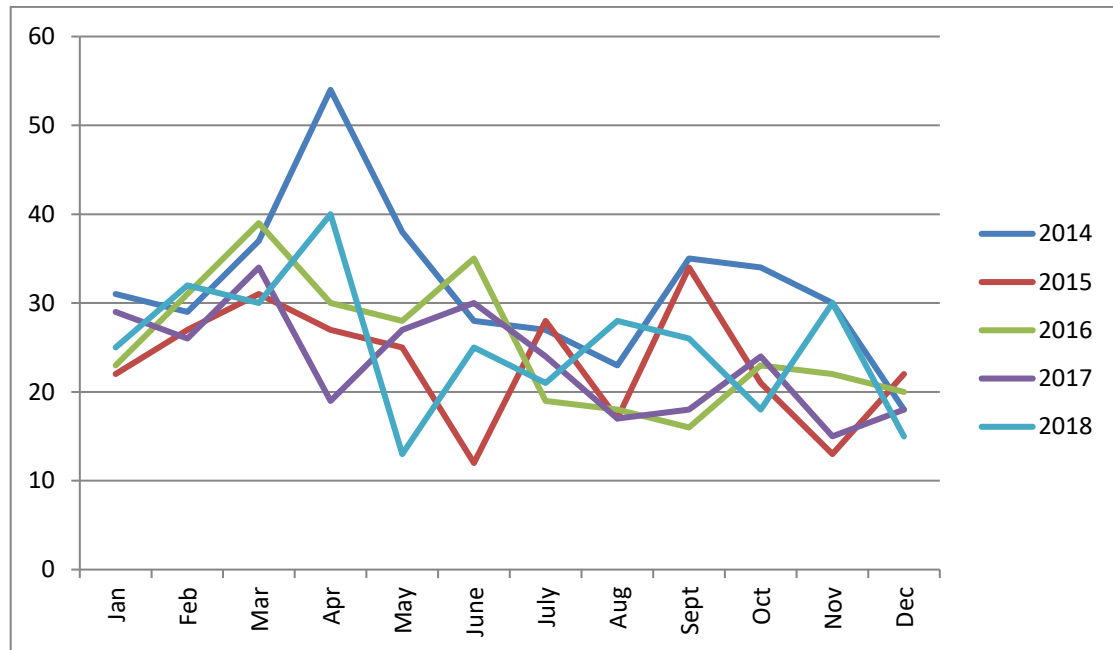


Figure 8: 5 Year trend by month

In the presentation pages the data for comparing year on year infringements by risk has been extended to allow a five-year view. Figure<sup>8</sup> above, is that five year focussed view produced within the Linewatch database displayed in a trend line format.

On balance, the overall numbers do mirror those for previous with defining Medium or Low being an academic exercise of interpretation by the reporting Operator. There is also little correlation with the number of LSBUD enquiries either as a “lagged” event or during the same month.

It is likely that this is due to an increased level in awareness of the personnel undertaking the surveillance patrols coupled with a greater appreciation of the infringer to look for marker posts etc. In both cases it is a trend to be encouraged even if this does result in a greater number of phoned-in enquiries.

## 2018 Linewatch Infringement Data

There is, though, a clear cultural step change throughout the Linewatch members to report the "Near Miss" events. For those who contribute there is now a strong basis for identifying areas for focus of 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, a great many Low Risk or Near Miss events have remained unreported and handled locally as being resolved before the activity became an issue. This includes engaging with Councils and Highways authorities to assist in pre-alerting the Linewatch members of proposed works even though these may be "allowable" under any easement rights.

There are still some Linewatch members who do not appear to use the LIDB to record any infringements but are known to have experienced reportable events. The reporting of all infringements should be one of the prime KPI targets for each Operator and that by that reporting we can develop systems and plans that proactively prevent rather than reactively handle. Whilst there may be still room for improvement in the quality of the "Near Miss" reporting the trend to collate and share this information should be encouraged. All "High" risk events are discussed, and details shared within the quarterly Linewatch meetings.

These records also indicate that the number of "unknowns", either for the identity of the Third-Party Type or Sponsor has been generally reducing. The inference is that a greater effort is being made by the patrols and thus providing a more thorough investigation process. This should be encouraged, and each member may consider that all events should be identified against a specific name or location and not just remain as an "unknown".

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 are "Installation" together with the consistent high event "Fencing". The majority of sponsors relate directly to Landowners or their contractor. Excavation, as a category, is shown to have increased for service investigations which are generally associated with utilities or leakage repairs. This may have been adversely affected by the dry weather of 2018 and should be monitored for any further change in trend.

Fencing works were recorded as the most common activity and most incidents. This can be shown to be affected by the fact that landowners were the major infringer type. However, in general, fencing works are seen to be of a low risk due to the, relatively, shallow penetration of the works. In 2018, however, there were 3 High Risk events recorded as fencing. It is clear though, that the techniques and equipment employed for modern fencing do involve the use of more mechanised methods thus could be tending towards an increased risk of damage. Operators should remain vigilant for fencing operations and the associated movement of vehicles/equipment in that vicinity.



## 2018 Linewatch Infringement Data

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

There were no "High" or "Medium" risk events recorded as Road or Verge and those recorded as "Low" or Near Miss show a reduction on 2017 although those recorded probably could be improved further by increase LA/Highway liaison.

Significant awareness presentations have been directed at Highways related organisations during 2017/2018 including County/Local Councils and their main contractors. This suggests also that the involvement in trade shows and HAUC conferences does provide forums with good feedback being received.

## 2018 Linewatch Infringement Data

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 the previous four 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. Note: a similar weighting scheme was applied within the UKOPA report for the Contractors and Sponsors only.

<b>Infringer code</b>	<b>Number of “H” records and (total events)</b>	<b>Weighted Total</b>
Landowners	3(138)	300+
Unknown	1(16)	40
Contractors	1(84)	150+
Developer A	0(7)	14
Highways A	0(6)	12
Utility A	0(4)	11
Utility B	0(5)	11

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

The identity of the coded infringer is held securely by the Linewatch Manager.

# 2018 Linewatch Infringement Data

## Summary

There was a 5% increase in overall numbers of infringements reported to a total of 303 events in 2018.

“Landowners” remain the main risk to pipeline integrity in terms of overall numbers of infringements. This is also of concern when the methods used for what is termed “normal agricultural practice” have changed considerably over the past few years. This is of additional concern when few “Landowners” use the formal LSBUD notification system although more regular direct contact does indicate an increase of “phoned in” notifications for planned works.

The equivalent numbers of events involving other infringers shows a general and continued easing. This may, in part, be due to the success of targeting some of the worst offenders in previous years. The greatest change was an increase in those events recorded directly against Developers (and their Contractors) which probably is indicative of the general UK increase in that area of activity. The number of incidents either involving or initiated by Highways Authorities and Water utilities appear to be decreasing on the previous high in 2011.

There is a suggestion that only some of the Linewatch members are robustly reporting all infringements, largely Near Miss reports, and that the guidance of Linewatch categories is not being strictly followed by all.

It is possible with some extra guidance from the Linewatch manager and with a little encouragement from the other members that recording of infringements and the quality of data input into the infringement database could be improved overall.

It would be expected that even those operators with relatively short pipeline lengths or have largely remote sections would have identified some infringements.

Encouragement is given to report “Near-miss” situations as well as actual infringements and recording the “Pre-aware” category correctly.

Whereas this report gives some comfort from the fact that the quality of infringement reports has increased, the group should continue to encourage all the members to contribute even the Near-Miss events.