

Analysis of 2008 Infringement Data

As recorded by Linewatch members

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Analysis of 2008 Infringement Data

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Linewatch Infringement Database

2008 Data Analysis

Linewatch encourages its members to report any infringement or near-miss in order to identify any trends that will inform the target of reducing the number of incidents. This analysis is based upon data input by members for the calendar year 2008.

A total of 128 infringements and near-misses were recorded by members in 2008.

Infringement categories:

The Linewatch categories are computed from 2 elements:
The first is Risk and this is 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 potential to cause serious damage (eg. Deep excavations, unaware of pipeline, dangerous practices)

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

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

A further category of Near Miss was introduced to expand the depth of reporting. Whereas the judgement of whether, or not, to report is rather subjective, it was felt that capturing near-miss potentials would add to the depth of analysis.

Risk:

Category	Risk
H	High
M	Medium
L	Low
NM	Near Miss

4 have been categorised as High risk and 10 as Medium

The UKOPA categories are computed from 2 elements.

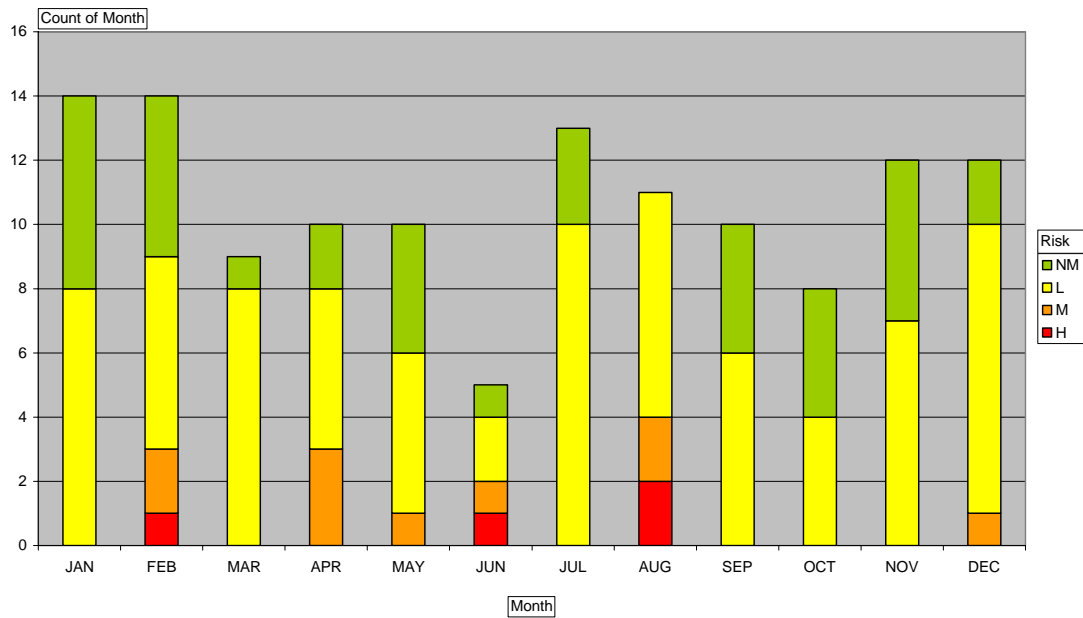
Infringement Category	Infringement Type	Infringement Description
A	Pipeline Damage or Leak	Includes damage to wrap or protective sleeve
B	Serious Potential for Damage	Methods or equipment used could have resulted in significant damage had excavation taken place at pipeline
C	Limited Potential for Damage	Methods or equipment would not have resulted in serious damage

Location Category	Location Description
1	Within the pipeline wayleave or easement. Typically, this is the zone within which the pipeline operator has legal rights, including a requirement by the landowner to notify planned work (although may be different for non-Pipelines Act lines laid by Statutory Undertakers).
2	Within the pipeline operators zone of interest, but outside the pipeline wayleave or easement. It is the area within which the operator would have reasonably expected a competent third party to have given notification in the prevailing circumstances.

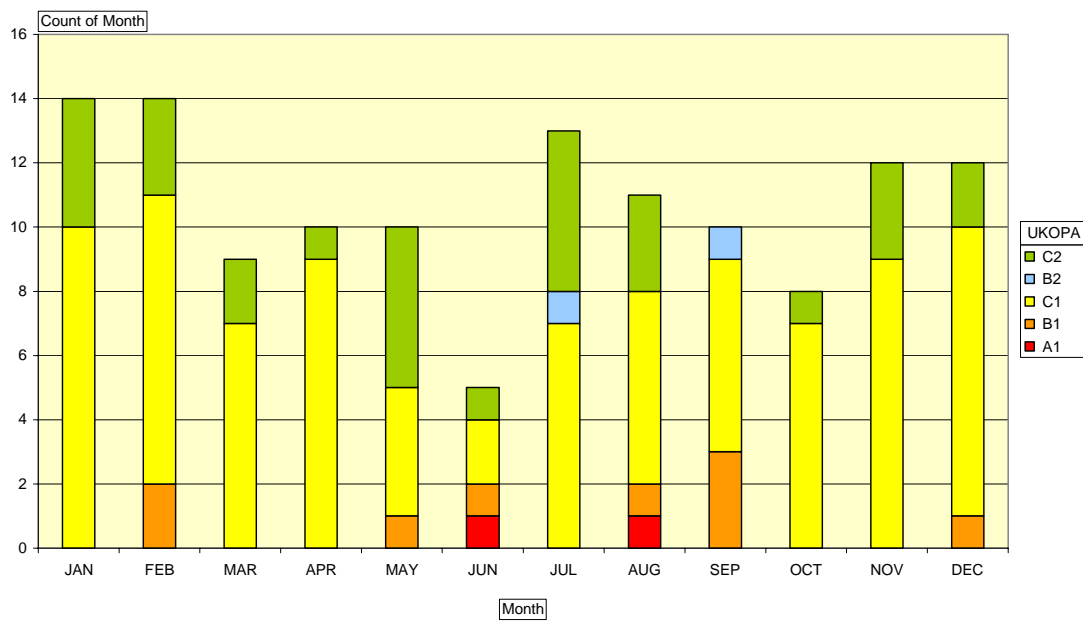
Of these, 2 were categorised as “Pipeline damage or leak” and 9 were categorised as “Serious Potential for Damage” using the UKOPA matrix.

Analysis of 2008 Infringement reports by Date

Infringements by Date (subdivided into Linewatch risk)



Infringements by Date (subdivided into UKOPA risk)



Analysis of the 2008 data when referenced against date shows no meaningful trend. Statistically, June was a low month (5). Against anecdotal evidence, March (9) was a relatively quiet month and July (13) and August (11) were somewhat busier. Perhaps surprisingly, the Winter months of November (12), December (12), January (14) and February (14) returned a total of 52 incidents which is some 40% of the total. The numbers in December and January may be surprisingly high given the short working period because of the Christmas/New Year hiatus. The numbers in July and August are surprisingly high as this is a normally quiet period due to this being the traditional period for holidays. Using the Linewatch categorisation, this was the worst two-month period of the year.

Linewatch categories

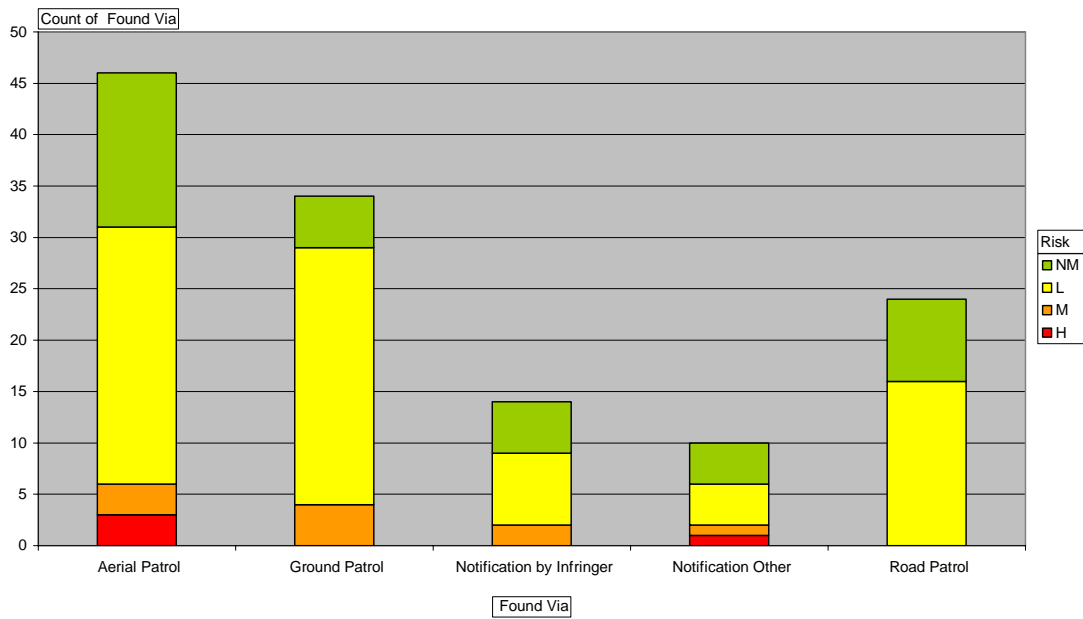
Month	H	L	M	NM	Grand Total	
JAN			8	6	14	
FEB	1		6	2	5	14
MAR			8	1	9	
APR			5	3	2	10
MAY			5	1	4	10
JUN	1		2	1	1	5
JUL			10		3	13
AUG	2		7	2		11
SEP			6		4	10
OCT			4		4	8
NOV			7		5	12
DEC			9	1	2	12
Grand Total	4		77	10	37	128

UKOPA categories

Month	A1	B1	B2	C1	C2	Grand Total	
JAN					10	4	14
FEB			2		9	3	14
MAR					7	2	9
APR					9	1	10
MAY			1		4	5	10
JUN	1		1		2	1	5
JUL				1	7	5	13
AUG	1		1		6	3	11
SEP			3	1	6		10
OCT					7	1	8
NOV					9	3	12
DEC			1		9	2	12
Grand Total		2	9	2	85	30	128

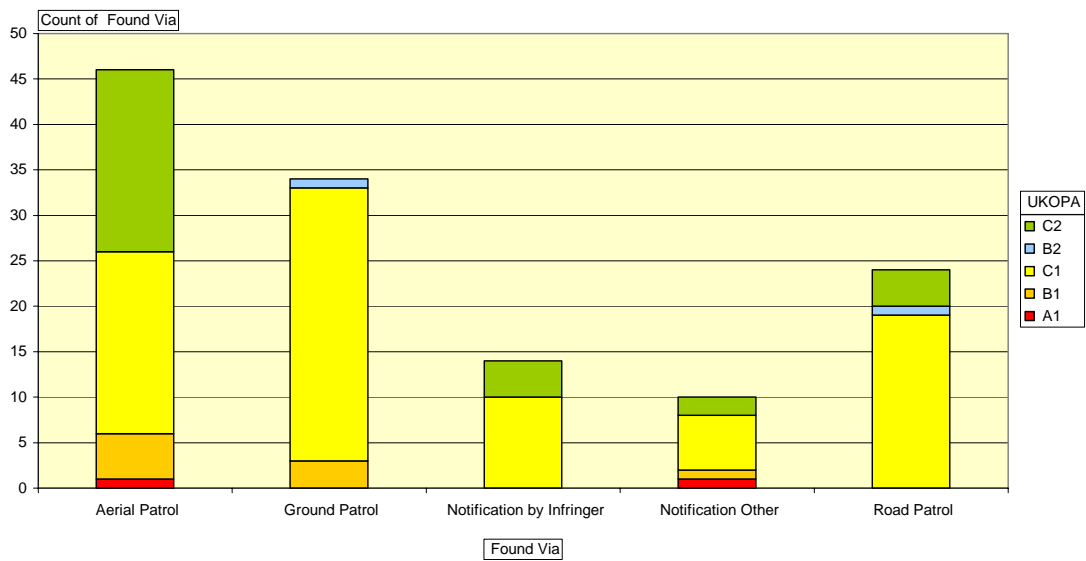
Analysis of 2008 Infringement reports by how found

Infringements by how found (subdivided into Linewatch risk)



Infringements by how found (subdivided into UKOPA risk)

2008 by Found By



The majority of the incidents (46) were discovered as a result of aerial surveys. This equates to some 36% of the total. It could be argued that these would have subsequently have been found by one of the other methods however, this may have resulted in a significant delay before discovery. Given the rather limited coverage of "Road Patrol", the number of incidents discovered is notable. It should be remembered that these patrols are carried out in areas of high activity.

Linewatch categories

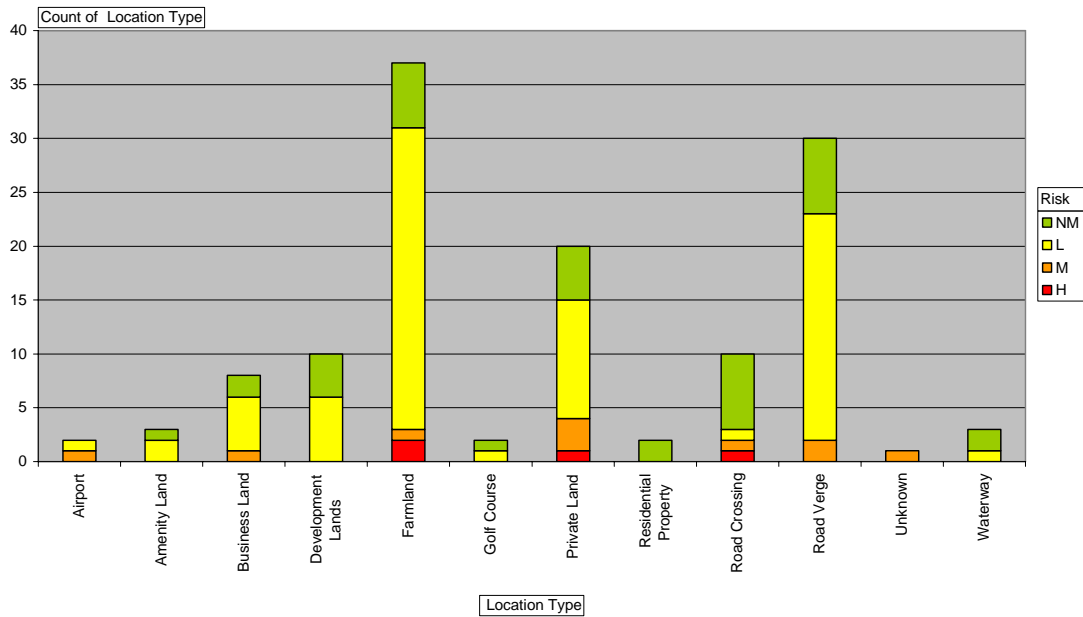
Found Via	H	L	M	NM	Grand Total
Aerial Patrol	3	25	3	15	46
Ground Patrol		25	4	5	34
Notification by Infringer		7	2	5	14
Notification Other	1	4	1	4	10
Road Patrol		16		8	24
Grand Total	4	77	10	37	128

UKOPA categories

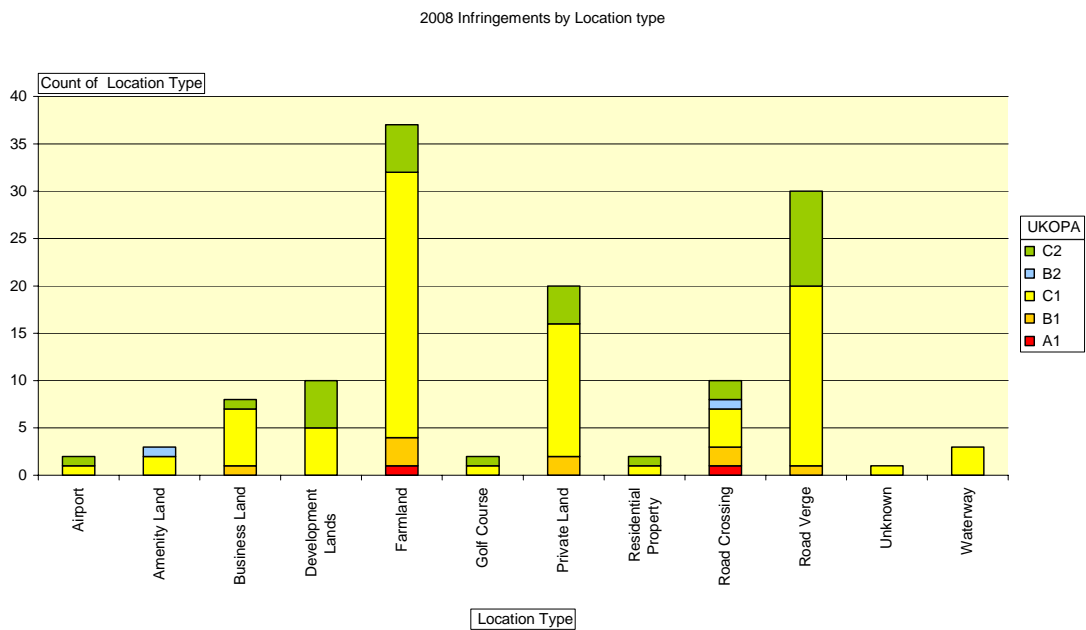
Found Via	A1	B1	B2	C1	C2	Grand Total	
Aerial Patrol		1	5		20	20	46
Ground Patrol			3	1	30		34
Notification by Infringer					10	4	14
Notification Other		1	1		6	2	10
Road Patrol				1	19	4	24
Grand Total		2	9	2	85	30	128

Analysis of 2008 Infringement reports by Location type

Infringements by Location (subdivided into Linewatch risk)



Infringements by Location (subdivided into UKOPA risk)



Analysis of the 2008 reports indicate that the highest number of incidents (37) occurred on “Farmland”. However, when the categories of “Road Crossing” and “Road Verge” are combined (i.e. all highway categories) the total number of infringements is higher (40). When “Farmland” and “Private Land” are combined the total number (57) indicates that the greater number of incidents occur away from the highway. This is not surprising given that, as a percentage, the greater length of pipeline routing is not in the highway.

Analysis of Infringements by Location type when referenced against the Linewatch “Risk” matrix indicate that of the 4 “High” risk infringements, 3 occurred on farmland/private land against 1 in the highway. Similarly with the 10 “Medium” risk infringements, 4 took place on farmland/private land against 3 in the highway (a further 3 infringements were recorded against other types of location).

Linewatch categories

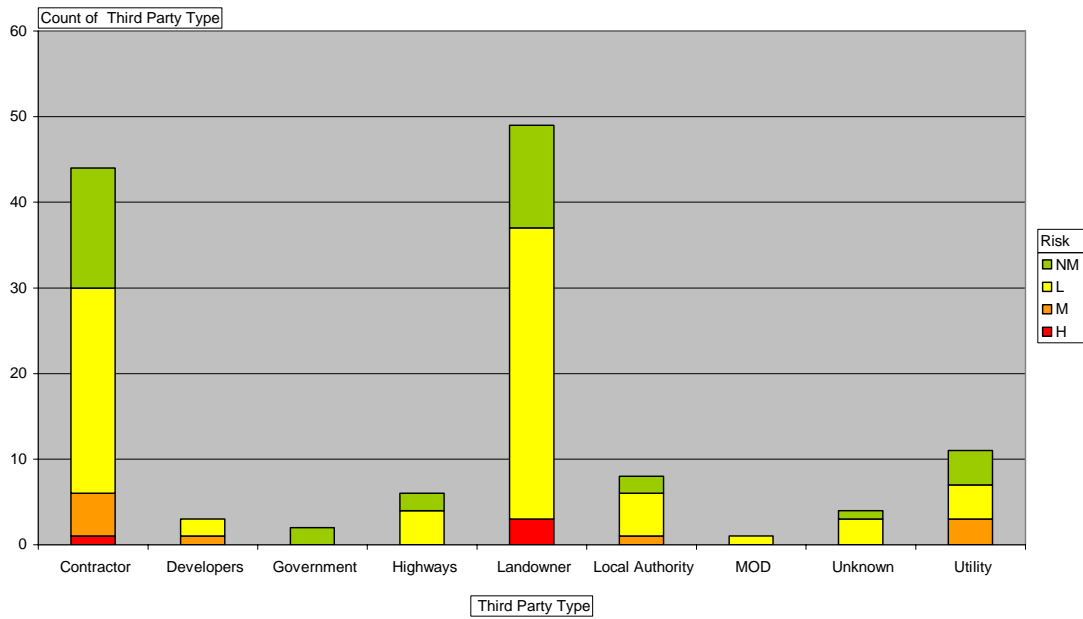
Location Type	H	L	M	NM	Grand Total
Airport			1	1	2
Amenity Land			2	1	3
Business Land			5	2	8
Development Lands			6	4	10
Farmland	2	28	1	6	37
Golf Course		1		1	2
Private Land	1	11	3	5	20
Residential Property				2	2
Road Crossing	1	1	1	7	10
Road Verge		21	2	7	30
Unknown			1		1
Waterway		1		2	3
Grand Total	4	77	10	37	128

UKOPA categories

Location Type	A1	B1	B2	C1	C2	Grand Total	
Airport					1	1	2
Amenity Land				1	2		3
Business Land			1		6	1	8
Development Lands					5	5	10
Farmland		1	3		28	5	37
Golf Course					1	1	2
Private Land			2		14	4	20
Residential Property					1	1	2
Road Crossing		1	2	1	4	2	10
Road Verge			1		19	10	30
Unknown					1		1
Waterway					3		3
Grand Total		2	9	2	85	30	128

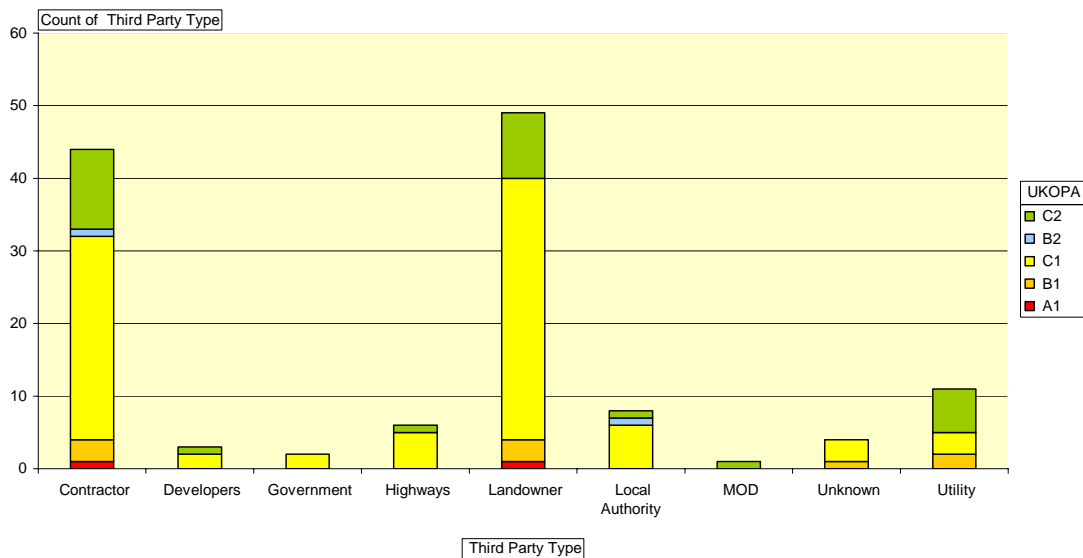
Analysis of 2008 Infringement reports by Infringer type

Infringements by Infringer (subdivided into Linewatch risk)



Infringements by Infringer (subdivided into UKOPA risk)

2008 by Infringer type



Analysis of the data for 2008 clearly shows “Landowners” as being the biggest, single category (49) of infringers. It should be noted that at least 3 of the recorded infringements in the “Contractor” category were initiated by landowners thereby increasing their total to 52. “Contractor” is second placed which would accord to the findings that highway works are second placed in the location category – (most highway works being carried out by contract labour). 10 of the 44 contractor infringements were on behalf of Local Authorities with 8 infringements directly attributable to Local Authorities.

Linewatch categories

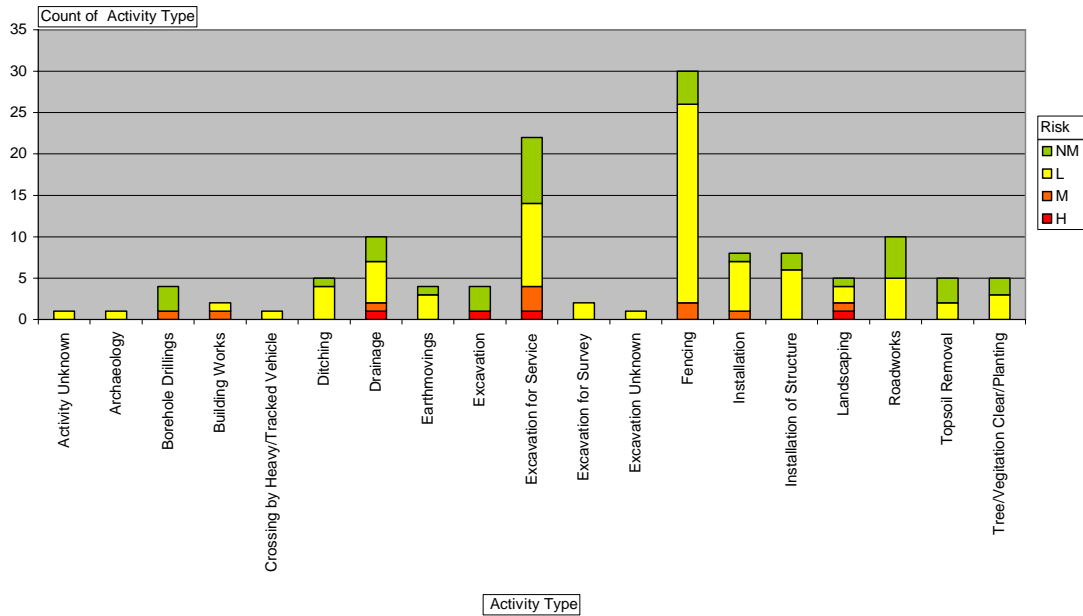
Third Party Type	H	L	M	NM	Grand Total	
Contractor		1	24	5	14	44
Developers			2	1		3
Government					2	2
Highways			4		2	6
Landowner	3		34		12	49
Local Authority			5	1	2	8
MOD			1			1
Unknown			3		1	4
Utility			4	3	4	11
Grand Total	4		77	10	37	128

UKOPA categories

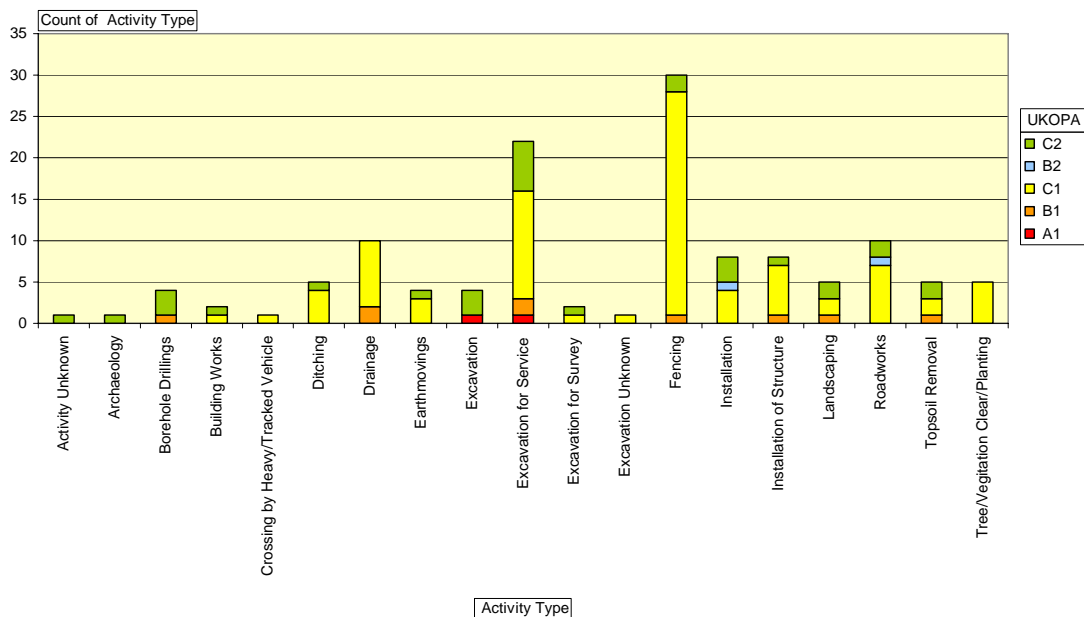
Third Party Type	A1	B1	B2	C1	C2	Grand Total	
Contractor		1	3	1	28	11	44
Developers					2	1	3
Government					2		2
Highways					5	1	6
Landowner		1	3		36	9	49
Local Authority				1	6	1	8
MOD						1	1
Unknown			1		3		4
Utility			2		3	6	11
Grand Total		2	9	2	85	30	128

Analysis of 2008 Infringement reports by Activity type

Infringements by Activity (subdivided into Linewatch risk)



Infringements by Activity (subdivided into UKOPA risk)



Whereas analysis of the data shows a wide range of activity types, the two categories that are predominant are “Excavation” and “Fencing”. Fencing works were recorded as the primary activity in the majority (30) of incidents and reflects the fact that landowners were the major infringer type. However, fencing works are generally seen to be of a low risk due to the, relatively, shallow penetration of the works – only 2 of the recorded incidents were classified more serious than “Low risk”. “Excavation for Service” was the second highest (22) category but, when all excavation types were aggregated this number rises to 29 and accounts for 2 of the 4 “High” risk incidents using the Linewatch categorisation as well as both UKOPA A1 incidents (i.e. actual damage). Of the remaining excavation categories, drainage (10) (especially when combined with ditching (15)) and roadworks (10) are significant. Drainage (and most ditching activities) are landowner initiated works and reinforce the argument that landowners are an increasing threat. 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.

Linewatch categories

Activity Type	H	L	M	NM	Grand Total
Activity Unknown			1		1
Archaeology			1		1
Borehole Drillings				1 3	4
Building Works			1	1	2
Crossing by Heavy/Tracked Vehicle			1		1
Ditching			4	1	5
Drainage	1	5	1	3	10
Earthmovings			3	1	4
Excavation	1			3	4
Excavation for Service	1	10	3	8	22
Excavation for Survey			2		2
Excavation Unknown			1		1
Fencing			24	2 4	30
Installation			6	1 1	8
Installation of Structure			6	2	8
Landscaping	1	2	1	1	5
Roadworks			5	5	10
Topsoil Removal			2	3	5
Tree/Vegetation Clear/Planting			3	2	5
Grand Total	4	77	10	37	128

UKOPA categories

Activity Type	A1	B1	B2	C1	C2	Grand Total
Activity Unknown					1	1
Archaeology					1	1
Borehole Drillings		1			3	4
Building Works				1	1	2
Crossing by Heavy/Tracked Vehicle				1		1
Ditching				4	1	5
Drainage		2		8		10
Earthmovings				3	1	4
Excavation	1				3	4
Excavation for Service	1	2		13	6	22
Excavation for Survey				1	1	2
Excavation Unknown				1		1
Fencing		1		27	2	30
Installation			1	4	3	8
Installation of Structure		1		6	1	8
Landscaping		1		2	2	5
Roadworks			1	7	2	10
Topsoil Removal		1		2	2	5
Tree/Vegetation Clear/Planting				5		5
Grand Total	2	9	2	85	30	128

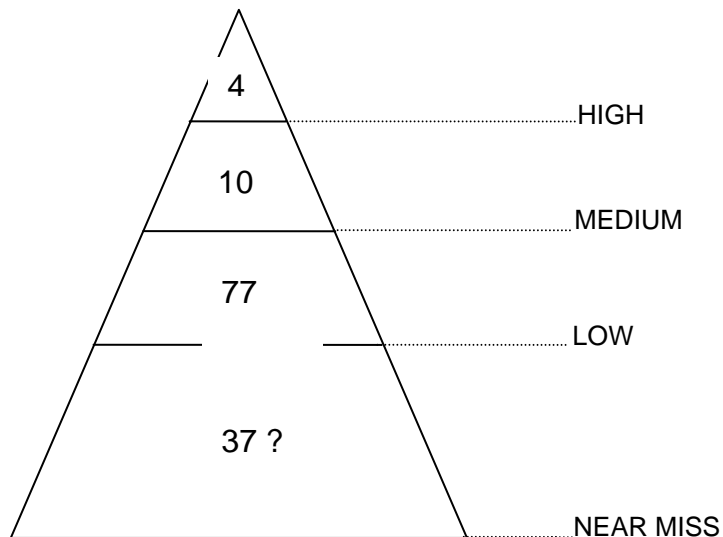
Summary

Recorded incidents were slightly down on 2007 (134) and there were fewer “High” category incidents recorded in 2008 than the previous year (4 v 9). “Medium” risk categories are broadly the same (10 v 11) and “Low” risk incidents were lower (77 v 86).

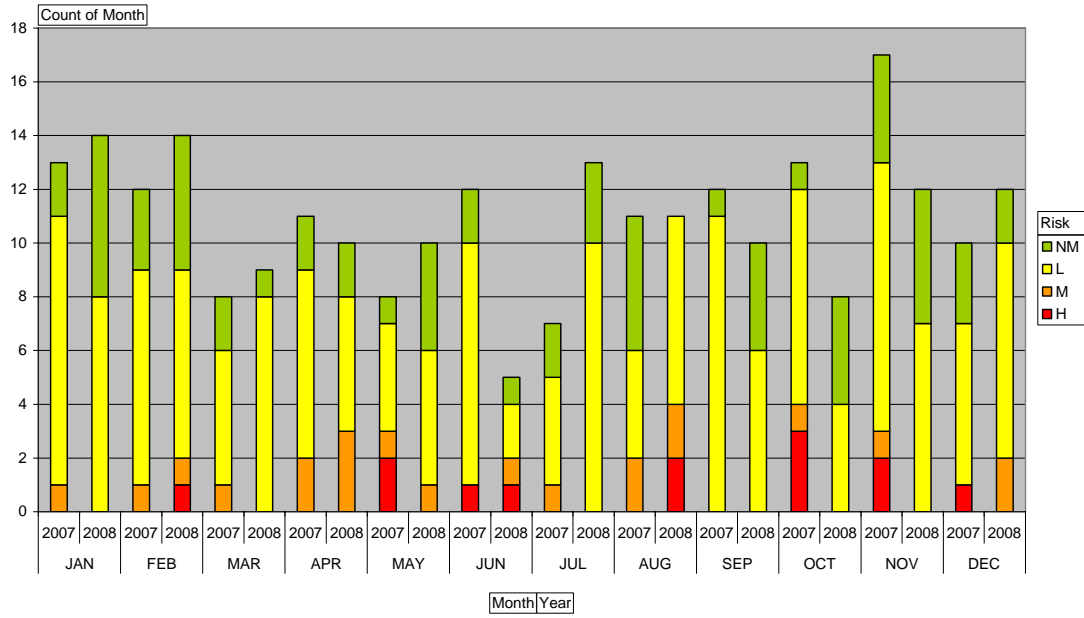
“Landowners” have overtaken “Contractors” as the main risk to pipeline integrity. This may, in part, be due to the success of targeting some of the worst offenders in previous years and will inform the direction of Linewatch presentations for the forthcoming year. The number of incidents either involving or initiated by Local Authorities would appear to be increasing.

Encouragement is given to report “Near-miss” situations as well as actual infringements. Anecdotal evidence would suggest that we should be recording more “near-miss” incidents than “Low” category incidents.

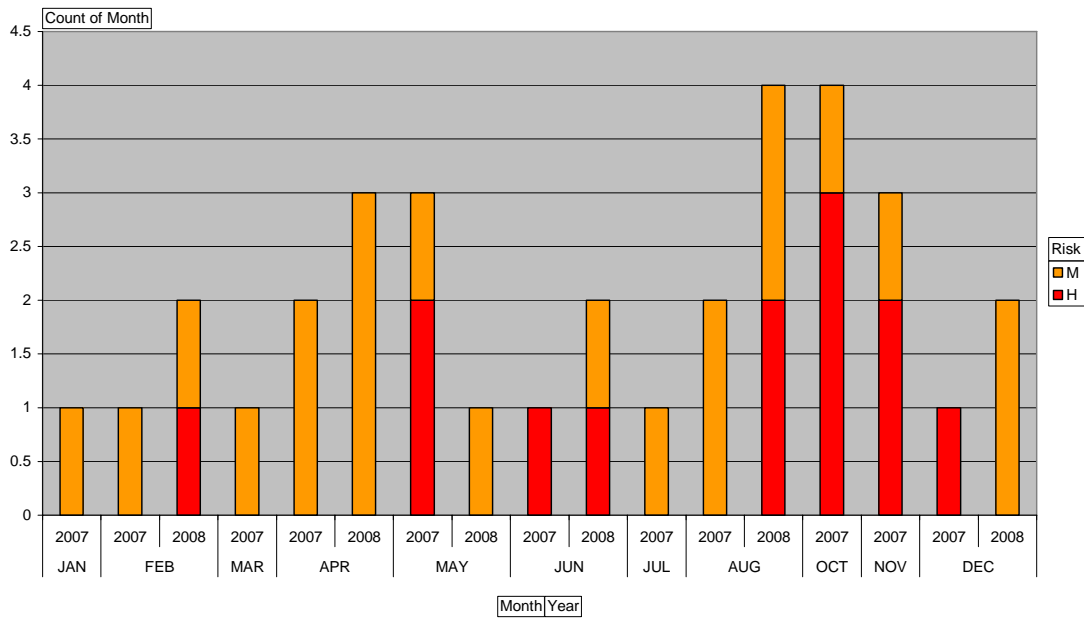
2008 incidents



Comparison by risk for 2007 & 2008



Comparison of High & Medium risk for 2007 & 2008



2007 v 2008 by Linewatch risk category

Month	Year	H	L	M	NM	Grand Total
JAN	2007		10	1	2	13
	2008		8		6	14
JAN Total			18	1	8	27
FEB	2007		8	1	3	12
	2008	1	7	1	5	14
FEB Total		1	15	2	8	26
MAR	2007		5	1	2	8
	2008		8		1	9
MAR Total			13	1	3	17
APR	2007		7	2	2	11
	2008		5	3	2	10
APR Total			12	5	4	21
MAY	2007	2	4	1	1	8
	2008		5	1	4	10
MAY Total		2	9	2	5	18
JUN	2007	1	9		2	12
	2008	1	2	1	1	5
JUN Total		2	11	1	3	17
JUL	2007		4	1	2	7
	2008		10		3	13
JUL Total			14	1	5	20
AUG	2007		4	2	5	11
	2008	2	7	2		11
AUG Total		2	11	4	5	22
SEP	2007		11		1	12
	2008		6		4	10
SEP Total			17		5	22
OCT	2007	3	8	1	1	13
	2008		4		4	8
OCT Total		3	12	1	5	21
NOV	2007	2	10	1	4	17
	2008		7		5	12
NOV Total		2	17	1	9	29
DEC	2007	1	6		3	10
	2008		8	2	2	12
DEC Total		1	14	2	5	22
Grand Total		13	163	21	65	262