Pipeline Association for Public Awareness 2018—Excavator Survey Research Report

Prepared for Pipeline Association for Public Awareness
By Culver Company, LLC
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Table of Contents

INTRODUCTION

This report was commissioned by the Pipeline Association for Public Awareness and conducted by Culver Company. The purpose of the study was to measure knowledge among Excavators about issues relating to pipelines, pipeline safety and related matters, and to compare these data with those found in similar studies conducted in 2007, 2010 and 2014. The information contained in this report is based on 500 in-depth interviews conducted from January to February 2018.

SURVEY METHODOLOGY:

All surveys are completed using the pure random sample methodology by experienced executive interviewers using Computer-Assisted Telephone Interviewing (CATI) software. The CATI software selects the sample and leads the interviewer through the questionnaire. It automatically adjusts for "skip patterns," and reduces the possibility of interviewer error.

The sample universe was comprised of stakeholders included on the mailing list for the previous year's communication program. Every stakeholder on the list has an equal chance of being interviewed. The complete list of states, counties and stakeholder organizations included in the mailing is available from the program documentation folder on the web site. The total number of stakeholders in this database was approximately 450,000.

When reviewing the results from this survey, it should be kept in mind that all surveys are subject to sampling error. Sampling error, simply stated, is the difference between the results obtained from a sample and those that would be obtained by surveying the entire population under consideration. The overall sampling error for this survey is approximately +/-4.5% at a 95% confidence interval.

HOMOGENEOUS NATURE OF STAKEHOLDER AUDIENCES:

This stakeholder audience is determined to be homogeneous because 84% of the respondents replied "yes" to the question, "*In general, do you feel the information on pipeline safety you have received would be relevant and applicable if you relocated to another part of the country for the same kind of work?*" and the information communicated through the program is widely applicable to all geographic areas and pipeline systems. Additional supporting factors include:

- Within specific product categories (e.g., natural gas, hazardous liquids, highly volatile liquids, etc.), the products transported by individual member pipelines have similar characteristics and will behave in a similar manner when released,
- The program materials contain messages applicable to the specific product categories and the products transported by the individual member pipelines,
- The required messages are general in nature and contain basic information that is intended to be widely understood across each audience,
- The laws and regulations governing the operation of pipelines, excavation activities, emergency response and other governmental services are consistent enough from state to state such that the expectations of the audiences are uniform with respect to

the subject matter contained in the programs and the level of detail required in the messaging.

APPLICABILITY:

This study should only be used to evaluate the collaborative program conducted by the Pipeline Association for Public Awareness and should not be classified as an “industry” or “trade association” survey. Segmentation of the survey results by operator, state or other separation would reduce the accuracy of the results and not provide any additional information necessary to adequately evaluate the program’s effectiveness. The basic principles of research theory can be applied because the sampling method is purely random and the audience is homogenous. The results are valid for all participating members where the content of the materials adequately address their specific products.

CULVER COMPANY

STUDY FINDINGS

Awareness of "One Call"

More than 8 in 10 (84%) respondents are aware of the "One Call" free notification service in their state.

TABLE 1

"Are you aware of a free notification service provided in your state called 'One Call,' sometimes known as 8-1-1?"

Year	Percent "Yes"
2007	73
2010	87
2014	92
2018	84

TABLE 2

"When did you first become aware of the notification service provided by your local or state 'One Call' center?"

Response	Percent of Respondents			
	2007	2010	2014	2018
Before I become involved with excavating	37	40	51	50
When I was first involved with excavating	22	27	34	27
After I became involved with excavating	24	24	8	12
From PAPA	3	3	4	4
Can't recall	14	6	3	7

Most (83%) respondents say they have been aware of One Call for six or more years.

TABLE 3

"And how long ago was that (you became aware of 'One Call')?"

Response	Percent of Respondents			
	2007	2010	2014	2018
Within past 12 months	5	2	2	2
2 to 3 years ago	8	3	5	5
4 to 5 years ago	6	7	2	7
6 to 10 years ago	21	18	11	22
11 plus years ago	55	65	78	61
Not sure	5	5	2	3

And finally, among those aware of the One Call notification system, we asked what was the required time to wait after notifying One Call of an excavation project before excavating. Responses varied, perhaps a reflection of differentiating requirements in the various states.

TABLE 4

"After notifying the One Call system in your state, what is the required time to wait before excavating?"

Response	Percent of Respondents			
	2007	2010	2014	2018
No wait; can start immediately	2	2	1	2
24 hours	2	1	*	0
48 hours	41	37	52	36
Two business days	19	16	12	14
Two business days plus the day of notification	0	5	5	4
Three business days	24	32	26	30
Not sure	12	7	4	14

*Indicates less than half of 1%

Confidence in Recognizing and Using Temporary Facility Markings

Most excavation safety personnel are confident that they are well trained to both recognize temporary facility markers and to use them appropriately. The table below shows mean response scores by year, using a 0-to-10 scale, where 0 means “not at all confident” and 10 means “completely confident.”

TABLE 5

“Using any number on a 0-to-10 scale, where 0 means you are not at all confident and 10 means you are completely confident, how confident are you with each of the following?”

Year	“Recognize” Temporary Facility Markings	“Use” Temporary Facility Markings
2007	8.6	8.5
2010	8.2	8.1
2014	8.8	8.8
2018	8.0	8.0

Visual Checks for Buried Facilities

4 in 10 (40%) excavators say they nearly always use hand tools or vacuum equipment on their jobs to visually determine the exact location of buried facilities prior to excavating. Another 7% do so half of the time or more. 16% do so on less than half of their jobs, and about 1 in 4 indicate such use is not applicable to them.

TABLE 6

"How often are hand tools or vacuum equipment used on your jobs to visually determine the exact location of buried facilities prior to excavating?"

Response	Percent of Respondents			
	2007	2010	2014	2018
Almost always	46	55	61	40
More than 50% of the time	11	9	7	7
About 50% of the time	0	9	7	8
Less than half the time	22	17	21	16
Not sure	4	3	1	5
Not applicable to me	17	7	3	24

Awareness of Hazards

Excavators interviewed in this study appear less sure of serious hazards resulting from pipeline leaks than those interviewed in the 2014 study, indicating that increased emphasis on these hazards in future communications may be called for.

TABLE 7

"Next, to the best of your knowledge, do the following hazards definitely, probably or probably not result from a pipeline leak?"

2018

Pipeline Leak Hazard	Percent of Respondents			
	Definitely	Probably	Probably Not	Not Sure
Gasses or liquids can ignite and burn	63	27	7	3
Water supplies can become contaminated	61	26	8	5
Serious skin irritations are possible	42	40	12	6
The soil becomes wet	44	40	8	8
Oxygen can be displaced	48	33	8	11

2014

Pipeline Leak Hazard	Percent of Respondents			
	Definitely	Probably	Probably Not	Not Sure
Gasses or liquids can ignite and burn	80	15	4	1
Water supplies can become contaminated	68	21	9	2
Serious skin irritations are possible	63	22	11	4
The soil becomes wet	54	33	9	4
Oxygen can be displaced	57	26	11	6

TABLE 7 (CONTINUED)

2010

Pipeline Leak Hazard	Percent of Respondents			
	Definitely	Probably	Probably Not	Not Sure
Gasses or liquids can ignite and burn	67	24	5	4
Water supplies can become contaminated	57	28	11	4
Serious skin irritations are possible	42	35	16	7
The soil becomes wet	39	39	13	9
Oxygen can be displaced	48	27	11	14

2007

Pipeline Leak Hazard	Percent of Respondents			
	Definitely	Probably	Probably Not	Not Sure
Gasses or liquids can ignite and burn	56	34	7	3
Water supplies can become contaminated	41	40	15	4
Serious skin irritations are possible	37	44	15	4
The soil becomes wet	35	38	20	7
Oxygen can be displaced	29	38	18	15

Recognizing Signs of Leaks

Respondents in this study were presented a more comprehensive and descriptive list of conditions that may indicate a gas leak than in previous studies.

In general, respondents appear more cautious in describing the conditions as “definite” signs of a leak than has been the case in past studies; but, overall, they display a high level of awareness.

TABLE 8

“To the best of your knowledge, do each of the following conditions definitely, probably or probably not indicate a pipeline leak?”

2018

Pipeline Leak Indication	Percent of Respondents			
	Definitely Do	Probably Do	Probably Not	Unsure
Fire coming out of or on top of the ground	71	23	3	3
An odor like petroleum liquids or gasoline	57	35	5	3
An odor like rotten eggs or a burnt match	56	37	4	3
A loud roaring sound like a jet engine	56	32	6	6
Dirt blowing from a hole in the ground	56	35	5	4
An irritating and pungent odor	49	43	4	4
A hissing or whistling noise	47	42	5	6
A white vapor cloud that may look like smoke	46	40	7	7
An area of frozen ground in the summer	42	40	8	10
Bubbling in pools of water	40	47	6	7
The pooling of liquid on the ground	38	47	8	7
An unusual area of melted snow in the winter	38	48	5	9
A sheen on the surface of water	37	46	9	8
An area of dead vegetation	32	51	8	9

TABLE 8 (CONTINUED)

2014

Pipeline Leak Indication	Percent of Respondents		
	Definitely Does	Probably Does	Probably Not/ Unsure
A hissing sound	83	15	2
A strange odor	76	21	3
A vapor cloud	70	22	8
Bubbles in standing water	74	21	5
A pipeline warning sign sticking out of the ground	62	15	23
A pool of strange liquid	62	32	6
Dead plants or vegetation	56	33	11
Dirt blowing	63	29	8
Ice or frozen soil next to a pipeline	46	35	19

2010

Pipeline Leak Indication	Percent of Respondents		
	Definitely Does	Probably Does	Probably Not/ Unsure
A hissing sound	64	32	4
A strange odor	58	38	4
A vapor cloud	56	32	12
Bubbles in standing water	55	39	6
A pipeline warning sign sticking out of the ground	40	24	36
A pool of strange liquid	45	45	10
Dead plants or vegetation	35	48	17
Dirt blowing	56	29	15
Ice or frozen soil next to a pipeline	29	41	30

TABLE 8 (CONTINUED)

2007

Pipeline Leak Indication	Percent of Respondents		
	Definitely Does	Probably Does	Probably Not/ Unsure
A hissing sound	48	47	5
A strange odor	45	47	8
A vapor cloud	41	48	11
Bubbles in standing water	40	49	11
A pipeline warning sign sticking out of the ground	40	37	23
A pool of strange liquid	36	50	14
Dead plants or vegetation	34	44	22
Dirt blowing	34	41	25
Ice or frozen soil next to a pipeline	24	47	29

Recognizing and Responding to Leaks

Excavator safety personnel express high levels of confidence in their ability to recognize and respond to pipeline leaks. The table below shows mean response scores by year, using a 0-to-10 scale, where 0 means “not at all confident” and 10 means “completely confident.”

TABLE 9

“Using any number on a 0-to-10 scale, where 0 means you are not at all confident and 10 means you are completely confident, how confident are you...”

Year	Recognize a Pipeline Leak	Respond to a Pipeline Leak
2007	8.4	8.7
2010	8.0	8.7
2014	8.6	9.0
2018	7.9	8.1

Actions to Take in the Event of Pipeline Leak

Respondents were read a list of actions they might take in the event of a pipeline leak that differs in some significant ways from lists used in previous studies. Overall, excavators are aware of actions to take and, as importantly, actions to avoid.

TABLE 10

"In the event of a pipeline leak, should you definitely, probably or probably not take the following actions?"

2018

Action	Percent of Respondents			
	Definitely Should	Probably Should	Probably Not	Unsure
Stay away and let emergency pipeline personnel do their jobs	89	10	1	0
Call 911 and then the facility owner	87	11	1	1
Avoid any actions that could create a spark or flame	84	14	1	1
Evacuate the area	81	16	2	1
Secure the area by keeping others away	79	18	2	1
Turn off the machinery and equipment	76	18	4	2
Leave the area on foot and walk upwind and/or uphill a safe distance	72	24	2	2
Stop the leak before it gets worse	21	23	51	5
Attempt to operate pipeline valves	9	11	76	4

TABLE 10 (CONTINUED)

2014

Action	Percent of Respondents			
	Definitely Should	Probably Should	Probably Not	Unsure
Avoid actions that could create a spark or flame	93	6	1	0
Secure area by keeping others away	91	8	1	*
Turn off machinery and equipment	85	11	4	*
Call 911 and then the facility owner	89	9	2	*
Leave area and walk upwind to a safe distance	88	11	1	*
Evacuate the area	88	10	2	*
Close pipeline valves	43	19	36	2
Assist emergency and pipeline personnel	44	29	27	*
Stop the leak before it gets worse	27	19	52	2

*Indicates less than half of 1%

TABLE 10 (CONTINUED)

2010

Action	Percent of Respondents			
	Definitely Should	Probably Should	Probably Not	Unsure
Avoid actions that could create a spark or flame	92	6	1	1
Secure area by keeping others away	90	9	*	1
Turn off machinery and equipment	85	10	3	2
Call 911 and then the facility owner	81	15	3	1
Leave area and walk upwind to a safe distance	77	20	2	1
Evacuate the area	77	18	3	2
Close pipeline valves	33	19	42	6
Assist emergency and pipeline personnel	42	24	31	3
Stop the leak before it gets worse	20	16	58	6

*Indicates less than half of 1%

TABLE 10 (Continued)

2007

Action	Percent of Respondents			
	Definitely Should	Probably Should	Probably Not	Unsure
Avoid actions that could create a spark or flame	82	15	2	1
Secure area by keeping others away	76	22	1	1
Turn off machinery and equipment	74	23	2	1
Call 911 and then the facility owner	73	24	2	1
Leave area and walk upwind to a safe distance	72	25	2	1
Evacuate the area	69	27	2	2
Close pipeline valves	35	37	24	4
Assist emergency and pipeline personnel	34	41	23	2
Stop the leak before it gets worse	22	31	42	5

Recent Receipt of Information

About 2 in 3 respondents said they have, within the past 12 months, received one or more information advisories on how to recognize pipeline leaks or emergencies. The same is true with respect to receiving recent information on how to respond to a pipeline leak or emergency. Both findings have improved since 2014.

TABLE 11

"In the past 12 months, how many times, if any, have you seen or heard information about the following subjects?"

Number of Times	Percent of Respondents by Year							
	Recognize Pipeline Leak or Emergency				Respond to Pipeline Leak or Emergency			
	2007	2010	2014	2018	2007	2010	2014	2018
Once	13	15	18	22	15	19	17	24
2 to 3 times	18	23	23	19	17	21	24	17
4 or more times	10	17	20	26	12	15	20	24
None/can't recall	59	45	39	33	56	45	39	35

Preferred Information Sources

Excavating company safety personnel identify a cluster of source preferences for receiving information about pipeline safety. Most favor communication via the internet, email and direct mail. Mass media sources are generally not preferred.

TABLE 12

"Next, I will read you eight ways in which pipeline safety information could be made available to you. After I read the list, please tell me from which two you prefer to receive pipeline safety information?"

Communication Channel	Percent of Respondents			
	2007	2010	2014	2018
Internet or email	46	43	52	63
Direct mail	32	42	43	55
Industry trade publications	27	31	21	11
Television	20	19	20	8
Industry trade show seminars in my city	24	24	19	16
Newspaper	10	8	14	8
Safety classes at my place of work	20	20	12	19
Radio	7	8	10	8
None of these	3	2	2	3

Applicability of Safety Information Nationally

More than 8 in 10 (84%) respondents feel the pipeline safety information they have received would be relevant and applicable in any area of the country.

TABLE 13

"In general, do you feel the information on pipeline safety you have received would be relevant and applicable if you relocated to another part of the country for the same kind of work?"

Response	Percent of Respondents
Yes	84
No	6
Not sure	10

Suggestions for Improving Communications on Pipeline Safety

At the conclusion of the interview, respondents were offered an opportunity to make suggestions regarding how future communications on pipeline safety to people such as themselves could be improved. More than 8 in 10 (83%) have no suggestions, and the verbatim responses from those who do are shown below.

TABLE 14

"Now, considering all that we have just talked about, are there any suggestions you would make about how to improve future communications about pipeline safety information to people such as yourself?"

Response	Percent of Respondents			
	2007	2010	2014	2018
No suggestions	78	76	78	83

Verbatim Responses

A lot of training

Facility owner awareness and education

Have recently experienced a free seminar with live demonstrations and free lunch—very helpful

Information will stay with me for life. If more such seminars were available on a smaller scale it would be very helpful previous seminar

Hold more safety classes at work

Hold seminars

Holding safety information sessions

I think education classes for the community for everybody

I think there should be a mandated that they go to a seminar or training class

I'd like to go to more seminars if they hold them

More safety classes

More safety classes

More safety classes would really help

More seminars

Pipeline safety meetings we attend every year reinforces the safety aspects we need to know what

To look for and how to respond

Possibly more safety classes

(Continued)

Probably safety classes locally within a tri-town area

Provide more training opportunities

Yes, just a little more training and brochures for underground lines

Advocate pipeline safety information on multiple platforms

Communicate more to the public to call before they dig

Contact our industry professional associations

Create pamphlets and send them in the mailbox

Direct contact to local service provider

Direct mail and seminars to the individual

Email and letters

Ensure public meetings are held so people are aware

Everyone should be educated about pipeline safety not just companies. it's important to have this

Knowledge so we can recognize it

Find someone with a brain that makes up these surveys

Get the information out there

Get the word out to the residents not just the workers that are involved

Give out more information

Hand out information to public

Have more emergency numbers. nobody helps/comes up at emergency number

Have some sort of warning signs in the areas that people should be cautious

Hold public sessions to raise awareness

I have many options. there are pipeline shows I’m invited to. Education is there for contractors there

Isn't any for the average person to understand this

I help write building codes. before anyone should get their contractor license any contractor on

The job site should be forced to take some course about problems related to what to do

Because some people have no idea what to do that I’ve seen.

I know of a few accidents, because they didn't follow procedures. Making the younger generation aware of this stuff

I think that the one call platform is lagging. Dig notice failed to do within 48 hours. They do not seem like they have enough people. I do not think that is acceptable. Find more people and quality trained. In general, One Call does not do a good job

(Continued)

I think they need to communicate this information to land developers building contractors and home owners; they should be told earlier before or it’s too late

I would call people who actually do that kind of work so I can get an accurate survey

I would suggest more information on trade publications

I wouldn't call during the day when people are working

I'd just like more general information about pipeline safety

Identify the pipeline and underground piping

Iowa pipeline issue from Dakota and it infested the water

It needs to be part of the safety protocols for the facility. safety meetings are held once a month - at least two or three should involve pipeline safety issues

It would be nice to know how deep pipelines are—more obvious signage/indicators. Installers are using vibrating plows—incidents of hitting pipes have occurred

It's dangerous; people should have proper info about pipeline emergencies

Job site visits

Just be persistent

Just send more stuff out. more mailers magnetic things for your vehicle

Keep continuing to inform the contractors of the information you just said

Keep making people aware of it

Keep public updated

Keep putting information out

Keep putting it out make it available

Keep the public aware

Keep us aware

Make a certification or get a certain license

Make sure they mark it right. Get a shovel out and spot it if they can't locate it. A lot of times they just put paint out and don't know what they are marking.

Make surveys shorter

Make the local numbers more available to the public

Make the question more distinct and applicable to the person you are questioning

Maybe door-handle flyers at work and at home

Media distribution: radio and television, radio in particular catches a lot of people

More commercial internet advertisement

More emailing on updates

More improvements for home owners doing a good job with the commercials I see on TV

(Continued)

More information on the internet and emails

More literature in general

More markers on the pipeline themselves would be helpful few more markers

No. Distinguishing, I deal with water and pipeline and sewage. Was not totally ware what it was about until half way through the survey.

No. I personally don't work outdoors

No. I think we get enough stuff about it

No. I think you are doing a pretty good job. There is an annual class that the guys can go to in our area.

No. It's a decent system use vacuum to expose utility

No. It's okay the way it is.

No. It’s pretty good availability and information

No. It’s pretty much covered

No. Just make sure the pipelines are labeled well—had an incident with wrong information regarding depth of line.

No. They are doing a good job

No. They are doing a great job

No better ideas

No. I think just probably more in publications and on the TV for general public

No. Information needs to get out there

None that I can think of. Post information on Facebook and other social media.

Not really. Most places have training.

Not really. There is a lot of information out there

Not really. Well as long the federal government does it not the pipeline companies. The pipeline companies have lied to us about the protection and coverage pipeline. Coding through Lake Michigan And Lake Huron. Didn't tell us the coding was missing

Probably commercials make pipeline commercials to show how they are important

Public awareness

Put it in the local media more

Put the safety detail out there. Make it known.

Radio and television ads

Re-invent the hydrogen engine and quit using fossil fuels

Send out more publications; put it out there as much as possible

(Continued)

Send out representatives to my business (place of work).

Spread the word about precautions in neighborhoods

Surveys like this one are very good. Annual brochures by mail.

The annual meeting the people holds is the best way

They are doing a good job

True avenue that will notify the public. As media is not always truthful

TV or radio

Use social media to get the information out

Watching some of the horror stories of people who accidently hit pipelines and disappeared and in

We got enough safety and environmental people to keep us up with this

Websites should be emailed so people know where to go online to look for information

Well there needs to be a standard on how pipelines are marked at road crossings

Yes, internet

Yes, they should have a standard YouTube video on pipeline safety that you can view the video

APPENDIX

- Respondent Profile
- Questionnaire

Respondent Profile

Years in Excavating	Number of Respondents
Less than one year	4
1–3 years	8
4–10 years	29
More than 10 years	206
Not directly involved with excavating	253
Total	**500**

Position in Company	Number of Respondents
Owner/manager/executive	271
Field manager/supervisor/foreman	40
Office staff not working in the field	120
Safety personnel	58
Other	11
Total	**500**

Questionnaire

CULVER COMPANY
(602) 614-2331

PROJECT 11123

EXCAVATORS STUDY
Pipeline Association for Public Awareness
2018

Hello, may I speak with the person in charge of safety issues and training in your company? (WHEN ON LINE CONTINUE)

(WHEN ON LINE) Hello, My name is _____and I am calling on behalf of the Pipeline Association for Public Awareness and we are conducting a brief survey of excavators around the country. The interview takes only a few minutes and will help with safety education and training programs.

1. How long have you been involved with excavating?

Less than one year...1
1 to 3 years ...2
4 to 10 years....3
More than ten years...4
I am not directly involved with excavating...5

2. Next I will read a list of work that some companies do. For each that I read, please tell me if it is the type of work your company does primarily. (READ EACH, CHECK ALL THAT APPLY)

Construction of pipelines for hazardous liquids such as petroleum or natural gas ...1
Other buried utility construction...2
Above ground utility construction...3
Highway / road / street construction...4
Commercial /industrial construction...5
Land development...6
Residential construction...7
Landscaping / fencing...8

(DO NOT READ) (PLEASE SPECIFY)
Other_____..9

3. Which of the following best describes your position with the company? (READ EACH AND CHECK FIRST MENTION)

Company owner, manager or executive...1
Field manager, supervisor or foreman...2
Office staff not working in the field...3
Safety personnel...4
Equipment operator...5
Craft or tradesman...6
Other (PLEASE SPECIFY)_____7

4. Are you aware of a free notification service provided in your state called "One Call," sometimes known as 8-1-1?

(CONTINUE) Yes...1
(GO TO Q8) No/unsure...2

5. When did you first become aware of the notification service provided by your local or state "One Call" center? (READ EACH, CHECK ONLY ONE)

Before I became involved with excavating...1
When I first became involved in excavating...2
Sometime after I became involved with excavating...3
After receiving information from the Pipeline Association...4
(DO NOT READ) Can't recall ..5

6. And how long ago was that? (READ CATEGORIES)

Within past 12 months...1
2 to 3 years ago...2
4 to 5 years ago...3
6 to ten years ago...4
Eleven or more years ago...5

(DO NOT READ) Do not recall...6

7. After notifying the One Call system in your state, what is the required time to wait before excavating? (READ LIST)

Three business days...1
Two business days plus the day of notification...2
Two business days...3
48 hours...4
No wait needed once they have been notified...5
Other (DO NOT READ PLEASE SPECIFY)_____...6
(DO NOT READ) Not sure....7

8. Using any number on a zero to ten scale, where zero means you are not at all confident and ten means you are completely confident, how confident are you with each of the following ...

a. ... in your ability to recognize temporary facility markings?

Rating_____
(DO NOT READ) ...not applicable, I neither excavate nor supervise excavators...11

b. ... in your ability to use temporary facility markings?

Rating_____
(DO NOT READ) ...not applicable, I neither excavate nor supervise excavators...11

9. How often are hand tools or vacuum equipment used on your jobs to visually determine the exact location of buried facilities prior to excavating?" (READ EACH)

Almost always...1
More than 50%...2
About 50% of the time...3
Much less than 50% of the time...4
Not very often...5
(DO NOT READ) Not applicable to me...6
Not sure... 7

10. Next, to the best of your knowledge, do the following hazards definitely, probably or probably not result from a pipeline leak? (ROTATE SEQUENCE)

	Definitely Can	Probably Can	Probably Not	Unsure
a. The soil becomes wet	1	2	3	4
b. Gasses or liquids can ignite and burn	1	2	3	4
c. Oxygen can be displaced	1	2	3	4
d. Serious skin irritations are possible	1	2	3	4
e. Water supplies can become contaminated	1	2	3	4

11. To the best of your knowledge, do each of the following conditions, definitely, probably or probably not indicate a pipeline leak? (ROTATE SEQUENCE)

	Definitely Do	Probably Do	Probably Not	Unsure
A. An odor like rotten eggs or a burnt match	1	2	3	4
B. A loud roaring sound like a jet engine	1	2	3	4
C. A white vapor cloud that may look like smoke	1	2	3	4
D. A hissing or whistling noise	1	2	3	4
E. The pooling of liquid on the ground	1	2	3	4
F. An odor like petroleum liquids or gasoline	1	2	3	4
G. Fire coming out of or on top of the ground	1	2	3	4
H. Dirt blowing from a hole in the ground	1	2	3	4
I. A sheen on the surface of water	1	2	3	4
J. An area of frozen ground in the summer	1	2	3	4
K. An unusual area of melted snow in the winter	1	2	3	4
L. An area of dead vegetation	1	2	3	4
M. Bubbling in pools of water	1	2	3	4
N. An irritating and pungent odor	1	2	3	4

12. Using any number on a zero to ten scale, where zero means you are not at all confident and ten means you are completely confident, how confident are you...

a. ..in your ability to recognize a pipeline leak? Rating_____
(DO NOT READ) not applicable, I neither excavate nor supervise excavators... 11

b. ...in knowing how to respond to a pipeline leak? Rating_____
(DO NOT READ) not applicable, I neither excavate nor supervise excavators... 11

13. In the event of a pipeline leak, should you definitely, probably or probably not take the following actions? (ROTATE SEQUENCE)

	Definitely Should	Probably Should	Probably Not	Unsure
a. Stop the leak before it gets worse	1	2	3	4
b. Avoid any actions that could create a spark or flame	1	2	3	4
c. Turn off the machinery and equipment	1	2	3	4
d. Evacuate the area	1	2	3	4
e. Leave the area on foot and walk upwind and/or uphill a safe distance	1	2	3	4
f. Secure the area by keeping others away	1	2	3	4
g. Call 911 and then the facility owner	1	2	3	4
h. Stay away and let emergency and pipeline personnel do their jobs	1	2	3	4
i. Attempt to operate pipeline valves	1	2	3	4

14. In the past 12 months, how many times, if any,have you seen or heard information about the following subjects:

a. Information on how to recognize a pipeline leak or emergency.
Once...1
Twice...2
Three times...3
Four or more times...4
Never/none...5
Not sure...6

b. Information on how to respond to a pipeline leak or emergency.
Once...1
Twice...2
Three times...3
Four or more times...4
Never/none...5
Not sure...6

15. Next I will read you eight ways in which pipeline safety information could be made available to you. After I read the list, please tell me from which two you prefer to receive pipeline safety information? (READ ENTIRE LIST ...RECORD FIRST TWO RESPONSES IN THE ORDER THEY ARE MENTIONED) (ROTATE SEQUENCE)

		FIRST MENTION	SECOND MENTION
a.	Television	1	1
b.	Radio	2	2
c.	Newspaper	3	3
d.	Industry Trade Publication	4	4
e.	Internet or E-mail	5	5
f.	Direct Mail	6	6
g.	Safety Classes at my place of work	7	7
h.	Industry trade show seminars in my city	8	8
i.	(DO NOT READ) None of these	9	9

17. In general, do you feel the information on pipeline safety you have received would be relevant and applicable if you relocated to another part of the country for the same kind of work?
Yes...1
No...2
Don't know/Refused...3

16. Now, considering all that we have just talked about, are there any suggestions you would make about how to improve future communications about pipeline safety information to people such as yourself? (RECORD VERBATIM RESPONSES)

_____
_____
_____

And, now finally before we finish, I need a few pieces of information about yourself for classification purposes.

A. First, in what state do you work most of the time? (COMPUTER ALPHA SEQUENCE LIST OF CHANGES) /__/__/

B. And approximately how many persons are employed by your company? **(READ EACH)**
10 or less...1
11 to 19...2
20 to 50...3
51 to 100...4
101 plus...5
(DO NOT READ) Not sure..99

C. If information were sent to you would you prefer to receive it in English or Spanish?
English...1
Spanish...2
Other (PLEASE SPECIFY)_____...3

D. Respondent gender: (OBSERVE FROM VOICE)
Male...1
Female...2

Thank you very much. This completes the survey and on behalf of the Pipeline Public Awareness Association, I would like to thank you for your time. My supervisor may want to call to confirm I conducted this interview. May I have your name so that she can ask to speak to the right person..

RESPONDENT NAME:

Thanks, and now just let me confirm that your phone number is: (READ NUMBER AND CHECK IF CORRECT OR ENTER NEW NUMBER IF DIFFERENT)

TELEPHONE NUMBER:
IF RESPONDENT ASKS FOR INFORMATION ON THE PIPELINE ASSOCIATION REFER THEM TO:WWW.PIPELINEAWARENESS.ORG