ALISO CANYON GAS LEAK

CASPER Initial Findings

APRIL 8, 2016

Reports of continuing or recurrent symptoms from residents of Porter Ranch and surrounding communities after the Aliso Canyon Well SS-25 was sealed in late February prompted the County of Los Angeles Department of Public Health (DPH) to perform a Community Assessment for Public Health Emergency Response (CASPER). During March 10-12, 2016, in collaboration with the California Department of Public Health, DPH conducted the CASPER using a representative sample of 210 households within three miles of the well.

STUDY FINDINGS

During the month after the gas leak was sealed, 63% of sampled households reported health symptoms believed to be related to the leak. This means about 4,800 households in the surrounding communities may be experiencing symptoms after the well was sealed. These findings indicate only a modest improvement from 81% of sampled households reporting any symptoms during the gas leak from October 23, 2015 – February 11, 2016. Several weeks after sealing well SS-25, the majority of households in the community had at least one household member experiencing illness.

The most commonly reported symptoms were eye, nose, and/or throat irritation (59%), headache/migraine (52%), and respiratory symptoms (51%). These symptoms were also the most commonly reported during the leak. Other symptoms, by decreasing frequency, included nausea/vomiting, dizziness/light headedness, skin rash/irritated skin, and nosebleeds. Reports for each symptom decreased between the time period of the leak, and the time after the well was sealed. After the well was sealed, 61% of households with symptoms believed to be related to the gas leak sought medical care, primarily in family medical provider and urgent care settings.

During the month after the well was sealed, 41% of sampled households reported smelling "gas-like" odors: 26% inside their home, 44% outside their home or in the neighborhood, and 31% both inside and outside. About 40% of households reported the appearance of an oily residue on outdoor surfaces at home or in the neighborhood since the leak.

When asked about the household's greatest current need, 26% indicated no need, but others reported home and property cleaning (13%), solutions to the decline in property values (11%), assurance that the gas leak and similar incidents will not happen again (10%), testing for pollutants inside homes (9%), follow-up for health risks in the future (8%), recovery from current health symptoms (6%), air purifiers or weather stripping from Southern California Gas Company (6%), honest information about the gas leak (5%), clean air (4%), reimbursement for relocation expenses (4%), the return to "normal life" after relocation, particularly for local schools (3%), and safe water in swimming pools and for drinking (3%).

ONGOING AND PROPOSED ACTION

After the well was sealed, outdoor air quality monitoring demonstrated that methane and other air contaminants of concern had returned to background levels; however, the CASPER showed that reports of health symptoms and odors persist. DPH continues to work towards meeting the needs expressed by the affected communities. DPH is presently leading a comprehensive indoor environmental study in collaboration with several state, local, and academic experts to assess indoor air quality in residences closest to the sealed well.

Table 1: Households reporting that a member of the household experienced any of the following health symptoms believed to be caused by or related to the gas leak, CASPER study, CA, March 2016.

	During the active gas leak			After the leaking well was sealed		
	Number of households (n=210)	Projected number of households (n=7,755)	Weighted % of households (95% CI)	Number of households (n=210)	Projected number of households (n=7,755)	Weighted % of households (95% CI)
Any symptom(s)	170	6,278	81.3 (75.5 – 87.2)	130	4,801	62.5 (56.3 – 68.7)
Specific symptom(s)*						
Eye, nose and/or throat irritation	153	5,650	73.9 (67.2 – 80.6)	123	4,542	59.1 (52.6 – 65.7)
Nosebleed(s)	97	3,582	46.9 (40.2 – 53.6)	64	2,363	30.9 (24.4 – 37.4)
Skin rash/irritated skin	95	3,508	46.1 (38.6 – 53.6)	76	2,807	37.3 (31.0 – 43.5)
Respiratory complaint†	138	5,096	67.0 (60.6 – 73.3)	105	3,878	50.7 (44.1 – 57.4)
Headache/migraine	148	5,465	71.8 (65.3 – 78.4)	108	3,988	51.9 (45.0 – 58.9)
Nausea/vomiting	112	4,136	54.4 (48.2 – 60.5)	83	3,065	40.7 (34.3 – 47.0)
Dizziness/light headedness	121	4,468	59.9 (53.1 – 66.7)	81	2,991	39.9 (33.5 – 46.3)

* Households may select more than one symptom; therefore, the sum of these numbers exceed the total number of households that experienced any symptom(s) (n=170 during the active gas leak and n=130 after the leaking well was sealed).

† Includes symptoms such as shortness of breath/difficulty breathing, chest tightness or heaviness, cough, wheezing, worsening of asthma or worsening of emphysema/chronic obstructive pulmonary disease (known as COPD).

Table 2: Medical care sought by households reporting symptoms in the month after the leak was sealed, CASPER study, CA, March 2016.

	Number of households (n=130)	Projected number of households (n=4,801)	Weighted % of households (95% CI)
During the past month, did you or any member of your household seek medical care for symptoms related to the gas leak?*			
Yes	79	2,917	60.8 (53.1 – 68.5)
No	48	1,773	36.9 (28.7 – 45.1)
Don't know	3	---	---
If yes, where did you seek care?†			
Emergency room or hospital	14	517	17.7 (7.2 – 28.3)
Family doctor or urgent care	71	2,622	89.9 (82.7 – 97.1)
Specialist or other type of care	23	849	29.1 (19.4 – 38.8)

* Among households that reported any household member experienced any symptoms in the past month thought to be caused by or related to the gas leak (n=130)

--- Data based on small numbers (n<10) may be unstable; therefore, weighted estimates are not presented.

† Households may select more than one place where they sought care; therefore, the sum of these numbers exceed the total number of households that sought care (n=79).

Table 3: Odors and oily residue reported by households in the month after the leak was sealed, CASPER study, CA, March 2016.

	Number of households (n=210)	Projected number of households (n=7,755)	Weighted % of households (95% CI)
During the past month, did you or any member of your household smell "gas-like" odors?			
Yes	85	3,139	40.5 (34.2 – 46.8)
No	116	4,284	55.2 (49.3 – 61.1)
Don't know	9	---	---
If yes, where did you smell "gas-like" odors?*			
Inside home only	22	812	25.9 (15.6 – 36.2)
Outside (home or in neighborhood) only	37	1,366	43.5 (33.7 – 53.4)
Both inside and outside	26	960	30.6 (21.5 – 39.7)
Oily residue noticed during or after gas leak	73	2,696	39.7 (30.3 – 49.0)

--- Data based on small numbers (n<10) may be unstable; therefore, weighted estimates are not presented.

* Among households that reported smelling a "gas-like" odor during the past month (n=85).