

CALIFORNIA PUBLIC UTILITIES COMMISSION

Safety and Enforcement Division Gas Safety and Reliability Branch

Incident Investigation Report

Report Date: 12/06/2023

Investigator: Kai Cheung

Incident Number: G 20230106-3477

Utility: Pacific Gas & Electric Company (PG&E)

Date and Time of the Incident: 01/05/2023, 0622 hours

Location of the Incident: [REDACTED] Rollingwood Dr, San Pablo
County: Contra Costa

Summary of Incident:

On January 5, 2023, at 0622 hours, earth movement due to extensive rainfall caused a rupture of a four-inch steel main at [REDACTED] Rollingwood Drive, San Pablo. Based on the information gathered, SED did not find any apparent violation of 49 CFR Part 192 or GO 112-F committed by PG&E.

Casualties: *Fatalities:* 0 *Injuries:* 0

Property Damage: \$46,315.00

Utility Facilities involved:

Pipe Material = Steel Pipe Size = 4 (inches)
MAOP = 60 (psi) Operating Pressure = 54 (psi)

Witnesses:

Name

Title

Phone

Evidence:

Source

Description

- | | | |
|---|-------------------|--|
| 1 | PG&E | 420 Reports - Initial and Final |
| 2 | PG&E | PHMSA Incident Report Form 7100.1 |
| 3 | PG&E | Leak Survey Record - Most Recent Prior to Incident |
| 4 | PG&E | Leak Survey Record - Post-Incident |
| 5 | Acuren Inspection | Metallurgical Evaluation Report |

Gas Engineering and Compliance Section

Observations and Findings:

On January 5, 2023 at 0622 hours, the local Fire Department reported to Pacific Gas and Electric Co. (PG&E) a rupture of a four-inch steel main occurred at [REDACTED] Rollingwood Drive, San Pablo, resulting in an unintentional release of gas. There were no injuries, fatalities, or ignition associated with this incident. At 0644 hours, PG&E's repair crew reported to the scene and determined that the pipe rupture was caused by natural force, earth movement, damage due to heavy rain. The San Pablo Police Department and Fire Department were already on site evacuating three nearby homes. At 0852 hours, PG&E stopped the flow of gas and restored customers' gas service. The outage affected eight (8) customers for two and a half (2.5) hours.

SED reviewed PG&E's data request response, the 30-day letter, final 420 report, post-incident photographs, the most recent leak survey conducted prior to the incident, post-incident leak survey, the third-party's Metallurgical Evaluation Report, and PHMSA Incident Report Form 7100.1. Post-incident photographs show that the sidewalk pavement was cracked and the soil underneath was saturated with water, which is an indication of earth movement. The saturated soil around the main lost its strength, displaced, and applied a lateral shear on the pipe causing the rupture. The round and smooth fracture surface without any metal elongation strongly suggests a brittle failure at the girth weld.

The metallurgical evaluation conducted by Acuren Inspection, Inc., a third-party testing lab hired by PG&E, confirmed the failure type and further investigated the failure mechanism. The fracture initiated at one of the weld defects, probably a porosity or incomplete fusion zone, and propagated circumferentially. Also, Acuren does not deem corrosion causal to the failure.

The main was installed in 1943, according to PG&E. Acuren verified by testing that the steel grade is API 5L Grade B, seamless.

Since the section of main crosses the Hayward Fault, PG&E also reviewed the fault movement and leak repair histories in this area. The result does not indicate any correlation between the fault and leak.

Preliminary Statement of Pertinent General Order, Public Utilities Code Requirements, and/or Federal Requirements:

None

Conclusion:

SED's investigation found that the gas release was caused by natural force: earth movement due to extensive rain. The pipe fractured at the girth probably due to poor quality weld. However, the main was installed in 1943. Based on the information

gathered, SED did not find any apparent violation of 49 CFR Part 192 or GO 112-F committed by PG&E.