



MEMORANDUM

DATE: DECEMBER 13, 2021

TO: Pacific Coast Energy Company LP Lease File

FROM: Joseph Athanasious, Engineering Geologist

SUBJECT: Surface Expression, Pacific Coast Energy Company LP, 9151 West Pico Boulevard, Los Angeles, CA 90035

Joseph

Athanasious

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Joseph Athanasious
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Background

On Saturday, December 11, 2021 a leak of approximately 15 gallons of gross fluid was observed in the Northern alley adjacent to the West Pico Drillsite (Well Side Building). The fluid was extruding at low pressure from a joint located where the northernly side of the building wall and asphalt alley surface meet (Figure 1). The fluid was reported as mostly water with some oil. The source of the leak was determined to be a pipeline that was no longer in service, isolated through use of a "slip blind" (Figure 11-13) that failed. This pipeline was "isolated but not separated". The cause of the underground point of failure was not determined as the pipeline end is buried. Information was provided by Pat Vigeant, Senior Production Foreman of the Pacific Coast Energy Company LP.

Field inspection

On Monday, December 13, 2021 I arrived on site at 1100 to meet Pat Vigeant. He showed me the alley (Figures 1-5) affected while explaining the circumstances of the leak. I observed the source location of the fluid release (Figures 3, 7&8) and production facility with the failed slip blind (Figures 11-13). Mr. Vigeant used a rag and put his full body weight on the stained asphalt to show that no fluid that was released was present. I then observed the rag as dry (Figures 9&10).

We then entered the production facility where the failed slip blind and out of service portion of the pipeline that was determined to be the source of the leak was located (Figures 11-13). Inside the production facility, I observed the pipeline as having sections of pipe removed and ends capped to prevent further future releases (Figure 12).

During my visit, Mr. Vigeant stated that he does not have knowledge of the buried segment of pipe, how it was abandoned or what caused the buried segment of pipe to fail. The facts as I understand them from this visit are as follows:

- The out of service pipeline was still physically connected to the in-service, pressurized pipeline system at the time of the incident.
- The out of service pipeline was isolated by use of “slip blinds” .
- The slip blind was removed and had visible corrosion and full failure of structural integrity.
- The failure of the out of service buried line, buried below the surface expression of the leak was not determined at the time of my visit.

Timeline of events

Saturday (12/11):

- At 2000 leak was discovered and clean up began immediately. Cleanup continued until 0100 on Sunday (12/12/21) and included absorbent material and steam cleaning.
- At 2100 facility was completely shut down for liquid operations.

Sunday (12/12)

- At 0700 crew began to isolate line.
- Removed sections of pipe to airgap pipeline.
- Added caps to the disconnected portions of the line.
- At 1300 resumed operations.

Monday (12/12)

- I arrived on site at 1115 and inspected the alley and production facility.



Figure 1. Map of Drill site and facility compounds. Drill site is the right most building centered in map, facility compound is leftmost building centered in map.



Figure 2. This photo shows the area affected by the leaked fluid. The fluid pooled in the center of the alley and travelled west down the alley. It was reported that the fluid was removed with absorbent material and the ground was steam cleaned. At the time of the photo, there was no oil present. What is seen here is staining. There are no sewer or drainage systems affected. Visual staining was present on the alley surface.



Figure 3. Staining shows point source with most discharge as well as lateral extent into the alley



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Figure 4. Shows areal extent of leaked fluid migration



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Figure 5. shows leaked fluid migration extent



Figure 6. The fluid was extruded through the joint where the building wall met with the asphalt alley. The area shown here was the main location of leaking with minor leaks further east and west in the photo. The area which had leaks was approximately 10 feet in length.



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Figure 7. *The leaks were in between these four vines pictured.*



Figure 8. *This photo was taken before the rag was stepped on to show that there was no longer any leaked liquid present.*



Figure 9. *The rag was examined by J. Athanasious and did not show any evidence of liquid absorption.*



Figure 10. This photo shows the out of service lines entering the cement to run underground to the production facility. The two 6-inch lines were still connected to the pressurized pipeline system but isolated with a "slip blind" that failed.



Figure 11. The photo shows the out of service pipelines with red caps having been disconnected from the horizontal pipelines that are still under pressure. At the time of the leak, these two ends were connected and the out of service segment was isolated from pressure with the use of a "blind slip" that was found to be corroded to the point of leaking.



Figure 12. This picture shows the corroded blind slip that was the root cause of fluid entering the out of service pipeline that is buried near surface expression of the leak in the alley.