UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
GULF OF AMERICA REGION

ACCIDENT INVESTIGATION REPORT

1. OCCURRED
   DATE: **15-JAN-2025** TIME: **1000** HOURS

2. OPERATOR: **Anadarko Petroleum Corporation**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR:
   REPRESENTATIVE:
   TELEPHONE:

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR ON SITE AT TIME OF INCIDENT:

4. LEASE: **G18402**
   AREA: **GC** LATITUDE:
   BLOCK: **608** LONGITUDE:

5. PLATFORM: **A (Marco Polo)**
   RIG NAME:

6. ACTIVITY:
   - [ ] EXPLORATION(POE)
   - [X] DEVELOPMENT/PRODUCTION(DOCD/POD)
   - [ ] DECOMMISSIONING

7. TYPE:
   INJURIES:
   - [ ] HISTORIC INJURY

	OPERATOR	CONTRACTOR
[ ] REQUIRED EVACUATION		
[ ] LTA (1-3 days)		
[ ] LTA (>3 days)		
[ ] RW/JT (1-3 days)		
[ ] RW/JT (>3 days)		
[ ] FATALITY		
[ ] Other Injury		

   - [X] POLLUTION
   - [ ] FIRE
   - [ ] EXPLOSION

   LWC
   - [ ] HISTORIC BLOWOUT
   - [ ] UNDERGROUND
   - [ ] SURFACE
   - [ ] DEVERTER
   - [ ] SURFACE EQUIPMENT FAILURE OR PROCEDURES

   COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K

- [ ] STRUCTURAL DAMAGE
- [ ] CRANE
- [ ] OTHER LIFTING
- [ ] DAMAGED/DISABLED SAFETY SYS.
- [X] INCIDENT >$25K **$280,000**
- [ ] H2S/15MIN./20PPM
- [ ] REQUIRED MUSTER
- [ ] SHUTDOWN FROM GAS RELEASE
- [ ] OTHER

8. OPERATION:
   - [ ] PRODUCTION
   - [ ] DRILLING
   - [ ] WORKOVER
   - [ ] COMPLETION
   - [ ] HELICOPTER
   - [ ] MOTOR VESSEL
   - [ ] PIPELINE SEGMENT NO.
   - [X] OTHER **Integrity testing subsea**
   - [ ] TEMP ABAND
   - [ ] PERM ABAND
   - [ ] DECOM PIPELINE
   - [ ] DECOM FACILITY
   - [ ] SITE CLEARANCE

9. CAUSE:
   - [X] EQUIPMENT FAILURE
   - [X] HUMAN ERROR
   - [ ] EXTERNAL DAMAGE
   - [ ] SLIP/TRIP/FALL
   - [X] WEATHER RELATED
   - [ ] LEAK
   - [ ] UPSET H2O TREATING
   - [ ] OVERBOARD DRILLING FLUID
   - [ ] OTHER _____

10. WATER DEPTH: **4300** FT.

11. DISTANCE FROM SHORE: **144** MI.

12. WIND DIRECTION:
    SPEED: M.P.H.

13. CURRENT DIRECTION:
    SPEED: M.P.H.

14. SEA STATE: FT.

15. PICTURES TAKEN:

16. STATEMENT TAKEN:

Incident:
On January 15 and 19 of 2025, two pollution incidents occurred resulting in damages greater than $25,000 on the Marco Polo tension leg platform operated by Anadarko Petroleum Corporation in Green Canyon Block 608 in the Gulf of America. On January 15, operators were pressure testing a well jumper subsea in the Green Canyon (GC) 562 South field with xylene. Well 562 #2 jumper was in the process of being decommissioned. At approximately 10:00 a.m., the ROV standing by identified bubbles coming out of the Subsea Umbilical Termination Assembly (SUTA). It was determined that a leak was emitting from the logic cap on the SUTA. An estimated 1,200 to 2,300 gallons of xylene were released into the Gulf. On January 19, 2025, xylene was being pumped subsea in an attempt bring Well GC-562 #8 back online. At approximately 1:15 a.m., operators noticed the xylene pressure was unable to hold the Surface Controlled Sub-Surface Safety Valve (SCSSV) open in the wellbore. At this time, it was discovered that the logic cap for the SUTA had not been replaced as planned. Operators were not notified of the issue and proceeded with the plans of opening the well to flow status. Another 250 gallons of xylene were released into the Gulf during this event. Pumping operations were ceased and the valves used were isolated and locked out.

Sequence of Events:
The Marco Polo facility was in the process of commissioning a new well identified as 562 #9. The field in the Green Canyon 562 block is known as K2. In order for this well to be erected subsea, the jumper for Well 562 #2 needed to be decommissioned and removed. A well jumper is a section of umbilical consisting of hydraulics, chemicals, and power supply connecting the Christmas tree hub to the North Fault Block (NFB) East Pipeline End Manifold (PLEM). The 562 #2 jumper needed to be flushed of residual hydrocarbons before removal. The procedure to flush the jumper consists of a xylene flush, followed by MeOH (methanol), and lastly nitrogen to remove all fluid. The jumper will then be removed, and the xylene line will be recommissioned to displace nitrogen through the well flowline.
At approximately 6:30 p.m. on January 14, 2025, the Subsea Commissioning Team was conducting leak testing using the xylene circuit for the K2 Field umbilical/subsea distribution lines to the new GC-562 #9 well. The entire field shares the same service distribution line. The NA1 port valve on the tie-in was isolated and valves BA1 and BA2 on the Topside Umbilical Termination Assembly (TUTA) were aligned to commence injecting xylene. At approximately 10:00 a.m. on January 15, 2025, the Remote Operated Vehicle (ROV) arrived on location at the Warrior SUTA (connected to Warrior drill center) for future installation activities and identified clear bubbles originating from the Warrior infield umbilical SUTA. Upon further inspection, it was discovered that the leak was on a removable Inline Logic Cap (ILC), located on the SUTA. Marco Polo operators shut down the xylene pumps, allowed pressure to bleed down, and closed TUTA valves BA1 and BA2. The ROV removed the damaged ILC and a replacement was ordered to be sent offshore the next day.
On January 19, 2025, Marco Polo Control Room Operators (CRO) were instructed to return the GC-562 #8 well back to flowing status. Earlier that day, the MV Harvey Intervention ROV vessel arrived on location with a spare ILC and was in operation to replace it. However, at approximately 2:00 a.m., the vessel left the field to return to shore due to inclement weather and could not complete the ILC replacement. Meetings were held between the two crews for shift change at 6:00 p.m. No mention of the ILC replacement delay was stated. The crew going on night shift was under the impression that the ILC was replaced. They attempted to re-open the well by realigning the BA1 and BA2 valves for Xylene pressure up on the 562 #8 SCSSV. At approximately 3:00 a.m., pumping operations had just begun when the CRO was made aware that the ILC had not been replaced, and was currently pumping xylene into the gulf through the missing ILC port. Approximately 250 gallons were spilled. The CRO called an immediate All-Stop, bled the pressure off the TUTA, and isolated, locked and tagged out the facility xylene system until the ILC was replaced.

BSEE Investigation:
On the afternoon of January 16, 2025, BSEE investigators received an NRC Report stating that 2300 gallons of xylene had been released into the Gulf of America during umbilical pressure testing. Investigators reached out to the primary Anadarko contact to obtain more information on the incident. Based on the information received from the initial phone call, as well as the nature of the incident, BSEE investigators determined that an incident follow-up offshore was not necessary. An onsite investigation would have been extremely limited, given that the incident occurred subsea and the only reliable sources of information were documentation and virtual trends.

Anadarko Investigation:
After retrieval of the ILC, Anadarko sent the ILC to the manufacturer for a failure analysis. The report states that the tungsten-carbide seal rings, which seal the spring housing and the pressure containing area of the regulator, showed severe damage. This damage contributed to an improper seal which resulted in the leak. The failure analysis explains that this regulator was designed and qualified for hydraulic control liquid service. The analysis stated that the manufacturer did not test nor rate the ILC for service with chemicals such as xylene. The failure analysis concluded that the probable cause of this incident was the failure of the seals within the ILC, due to improper service use of the equipment.

Conclusion:
After all the evidence gathered during the phone calls and initial communications following the incident, BSEE concludes that the direct cause of the incident that occurred on January 15 was the failure of the seals in the ILC, due to the ILC being used for incorrect service. The ILC was rated for service with liquids consistent with hydraulic fluid. It was not rated for Class 1 chemicals such as xylene, nor was it tested with it. A contributing cause of this incident relates to human performance error, as Anadarko failed to notice or adhere to the manufacturer's recommendations. Had this occurred, another logic cap rated for such service could have been sourced and used instead. A direct cause that BSEE identified for the incident that occurred on January 19 was a failure in communication. Anadarko had multiple meetings with both crews during shift change, yet no word of the ILC still pending replacement was communicated. Therefore, the night crew was under the impression that the ILC had been replaced, and operations would proceed as normal. Had they been properly briefed on the situation, they would have delayed opening 562 #8 or ran the fluid through a different path. A contributing cause of this incident was also weather conditions. Due to rough seas, the intervention vessel tasked with replacing the ILC had to return to shore. If conditions been favorable, the ILC could have been replaced.
Several corrective actions were implemented by Anadarko due to this incident occurring. One action was sending the ILC to the manufacturer for investigation. Once the results were received, Anadarko installed a more appropriate ILC onto the SUTA that is properly rated for such medium being utilized. Anadarko also made the decision to revise their procedures for subsea isolation. The revisions that were added will present a more detailed description of the valve closure steps. Another corrective measure implemented by Anadarko was to retrain all the personnel who were involved in the closing of the BA1 and BA2 valves on the January 19 incident. These personnel will be retrained in the proper Lockout/Tagout procedures as well as Anadarko's subsea isolation procedures.

18. LIST THE PROBABLE CAUSE(S) OF ACCIDENT:

Equipment Failure (Inadequate/Improper tools or equipment used): The logic cap that was installed was improperly rated for the service being utilized. As a result, the logic cap seals failed causing pollution to the environment.

19. LIST THE CONTRIBUTING CAUSE(S) OF ACCIDENT:

Work Environment (Weather Influences): A vessel was on location to reinstall the new logic cap. However, inclement weather moved into the area and the vessel was unable to reinstall the logic cap before returning to shore.

Human Performance Error (Inadequate knowldge of equipment operation): Anadarko failed to adhere to the maufacturer's recommendations of service used for the logic cap, resulting in the incorrect logic cap being installed.

Supervision (Inadequate pre-job safety and operation meeting): Anadarko held the proper meetings during shift change, however, no word was mentioned of the logic cap still pending replacement.

20. LIST THE ADDITIONAL INFORMATION:

N/A

21. PROPERTY DAMAGED:

Inline Logic Cap

NATURE OF DAMAGE:

Material Degredation

ESTIMATED AMOUNT (TOTAL): **$280,000**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

N/A

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **NO**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

N/A

25. DATE OF ONSITE INVESTIGATION:

28. ACCIDENT CLASSIFICATION:

26. Investigation Team Members/Panel Members:

29. ACCIDENT INVESTIGATION PANEL FORMED: **NO**

27. OPERATOR REPORT ON FILE:

OCS REPORT:

30. DISTRICT SUPERVISOR:

Amy Gresham

APPROVED DATE: **28-MAY-2026**