

ACCIDENT INVESTIGATION REPORT

1. OCCURRED

DATE: **26-NOV-2025** TIME: **1239** HOURS

2. OPERATOR: **Cantium, LLC**

REPRESENTATIVE:
TELEPHONE:
CONTRACTOR:
REPRESENTATIVE:
TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER

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

4. LEASE: **G01317**

AREA: **MP** LATITUDE: **29.263732**
BLOCK: **300** LONGITUDE: **-88.781657**

5. PLATFORM: **B**
RIG NAME:

6. ACTIVITY: EXPLORATION (POE)
 DEVELOPMENT/PRODUCTION (DOCD/POD)
 DECOMMISSIONING

7. TYPE:

INJURIES:

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

- POLLUTION
- FIRE
- EXPLOSION

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

COLLISION HISTORIC >\$25K <=\$25K

8. OPERATION:

- PRODUCTION
 - DRILLING
 - WORKOVER
 - COMPLETION
 - HELICOPTER
 - MOTOR VESSEL
 - PIPELINE SEGMENT NO.
 - OTHER
- TEMP ABAND
 - PERM ABAND
 - DECOM PIPELINE
 - DECOM FACILITY
 - SITE CLEARANCE

9. CAUSE:

- EQUIPMENT FAILURE
- HUMAN ERROR
- EXTERNAL DAMAGE
- SLIP/TRIP/FALL
- WEATHER RELATED
- LEAK
- UPSET H2O TREATING
- OVERBOARD DRILLING FLUID
- OTHER **Management Systems**

10. WATER DEPTH: **210** FT.

11. DISTANCE FROM SHORE: **14** MI.

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

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

14. SEA STATE: FT.

15. PICTURES TAKEN:

16. STATEMENT TAKEN:

INCIDENT SUMMARY:

On 26 November 2025, an incident occurred at Main Pass (MP) 300 B platform. MP 300 B is a fixed leg platform located in the Gulf of America and is owned and operated by Cantium, LLC (Cantium). During the incident, a fire occurred on the PBA-1206 Lease Automatic Custody Transfer (LACT) Charge Pump (LACT pump) skid when the coupling between the LACT pump and electric motor failed. Due to the failure of the coupling, along with oil present on the skid, it is believed that a spark or heat caused the hydrocarbon to ignite resulting in a fire. The personnel on the platform at the time of the incident were able to extinguish the fire quickly. There were no injuries due to the incident. There was damage to the PBA-1206 LACT Pump, electric motor and coupling due to the incident. There was a small amount of hydrocarbon released due to the incident. Most of the hydrocarbon released was contained by the drain skid. An estimated .001 gallons were released into the Gulf of America which was reported to National Response Center (NRC).

SEQUENCE OF EVENTS:

On 26 November 2025, at approximately 1239 hours, the PBA-1206 LACT Pump/Motor coupling suffered a mechanical failure that resulted in a fire on MP 300 B platform. At the time of the incident, the Person in Charge (PIC) of the platform was walking to the office when the incident occurred. The PIC recalled hearing a loud noise and then saw smoke coming from the area of the PBA-1206 LACT skid. After observing the smoke, the PIC called over the Public Address (PA) system to alert the other personnel on the platform of the event. The PIC then utilized a 30-pound dry-chemical fire extinguisher to fight the fire. A platform mechanic that heard the call over the PA system and platform alarms was in the process of putting up groceries when he heard the call. He stopped what he was doing and came out of the laundry room and saw the smoke. The mechanic then grabbed a 30-pound dry-chemical fire extinguisher and headed to the fire as well. When the mechanic arrived at the scene, he assisted the PIC in extinguishing the fire. By the time the mechanic arrived at the scene, the PIC had already expelled the 30-pound extinguisher. However, the fire was still growing. The PIC then used a fire hose reel to continue extinguishing the fire along with the fire extinguisher the mechanic was using. It took approximately three minutes to extinguish the fire. During this event, the Temperature Safety Element (TSE) / Emergency Shut Down (ESD) system activated and shut in the platform production as designed. The PIC also manually initiated ESD from a nearby manual ESD station.

While the PIC was still soaking the area with the fire hose reel, the platform mechanic was able to close the inlet valve going to the charge pump to eliminate the flow of hydrocarbons to the pump. The PIC then continued to soak the area with the fire hose reel to prevent any re-flash of the fire. After the fire was extinguished and the inlet valve was closed, the platform personnel then proceeded to perform energy isolation of the equipment which was detailed in the Energy Isolation Lock-Out-Tag-Out (LOTO) Permit from 26 November 2025. The LACT pump was double-blocked and locked out.

On 26 November 2025, Cantium made verbal notification of the incident to the Bureau of Safety and Environmental Enforcement (BSEE). The field foreman instructed the platform personnel to secure the area and preserve the area for an investigation. The field foreman explained that no items or equipment should be tampered with until the onsite investigation was completed and BSEE approval was obtained to remove the equipment from the location and begin repairs.

Cantium then sent a follow-up email to BSEE on 26 November 2025 at 1815 hours with further details concerning the incident. Cantium requested and received approval from

BSEE on 27 November 2025 to utilize the PBA-1205 alternate LACT charge pump, while the damaged PBA-1206 LACT unit remained isolated until repaired. On 02 December 2025, Cantium submitted an electronic report of the incident to the BSEE.

BSEE INVESTIGATIONS:

On 02 December 2025, the fire incident that occurred at MP 300 B on 26 November 2025 was assigned to a BSEE Accident Investigator (AI). After being assigned to the incident, the AI performed an on-site investigation on 03 December 2025. During the initial on-site investigation, the AI collected witness statements, energy isolation documentation, took photographs, examined the incident area and talked to individuals on the platform about the incident. The AI also requested to perform interviews with platform personnel who were involved with the incident and who had worked on the equipment previously. These interview requests were agreed upon by Cantium and the personnel who were interviewed. The interview requests were later documented through emails with Cantium.

While conducting the on-site investigation, the AI observed that the mounting bolts on the electric motor for the PBA-1206 LACT pump were not properly secured. There were four mounting bolts on the electric motor, none of which were secure at the time of the on-site investigation. The AI also observed that only one of the four mounting feet for the electric motor had shims installed between the motor and mounting surface. The bolts for the LACT pump casing housing were also found extremely loose with one bolt found laying on the skid under the pump housing casing. It is suspected that due to vibrations caused by potential misalignment, the casing bolts became loose, which allowed oil to escape and contributed to the fire occurring. There was also a grounding wire that was found to not be installed which is normally connected to the motor housing. The AI also noted that the LACT pump shaft was bent and that the coupling connecting the motor to the pump had been severely damaged. The LACT pump hub was still connected to the coupling, and the electric motor hub was still connected to the motor. All these observations were documented through photographs taken at the time of the initial on-site investigation.

Photographs were also taken of the PBA-1205 alternate LACT pump unit that was next to the affected PBA-1206 unit. When taking photographs of the PBA-1205 unit, the AI observed that the bolts on the electric motor looked secure and that there were shims under all the mounting feet for the motor. Additionally, the grounding wire that was not connected to the PBA-1206 unit was installed and secured on the PBA-1205 electric motor.

While collecting documents during the investigation, it was revealed that there was prior maintenance performed on the PBA-1206 LACT pump electric motor on 06 November 2025, twenty days before the coupling suffered failure and the fire occurred. The maintenance required the replacement of the PBA-1206 LACT pump motor and installing a new coupling that connects the LACT pump to the motor. After the motor replacement on 06 November 2025, the unit ran ten days with no abnormal conditions observed during daily rounds. During this process, both an electrician and mechanic took part in the work. The electrician's work required the wiring of the new motor and testing the motor briefly to ensure the rotation on the motor was correct. According to the electrician during an interview, this requires just a quick startup and then shutting the motor back down once the proper rotation is verified. During the interview, the electrician stated that he was not present for the alignment of motor. The mechanic's responsibilities during the maintenance were to remove the old motor, set the new motor in place, perform an alignment to ensure the motor and pump are aligned correctly, install the new coupling and make sure the motor and pump are secure to the mounting surface. It also required the startup of the unit to verify there were no issues after installation was completed.

During an interview with the mechanic that installed the electric motor on 06 November 2025, the mechanic stated that there was no written procedure available to follow when performing alignments. The mechanic also stated that there was no torque wrench used when securing the mounting bolts for the electric motor. Mechanic states that there is not enough room to get a torque wrench on the bolt heads to provide proper torque on the electric motor mounting bolts. The mechanic stated that when installing the new motor for the PBA-1206 LACT pump, there were shims under all mounting feet, and the mounting bolts were tightened during installation. Upon the initial on-site investigation, the AI observed there were only shims under one mounting foot and none of the mounting bolts were in a tightened position. During the interview it was also noted that the mechanic began the project on 05 November 2025, which was the first day of his hitch. He explained that he had very minimal sleep the night before due to traveling to the dock and had only slept about an hour and a half before arriving at the platform and starting the electric motor swap on PBA-1206 LACT pump unit. He also stated that the alignment was not performed on his first day out, but it was performed on 06 November 2025 due to having to wait on correct electrical parts for the electrician. Mechanic did state that he had a good night's sleep prior to performing the alignment of the unit on 06 November 2025. When asked if he knew of any past issues with the PBA-1206 or PBA-1205 LACT pumps, he could not recall having issues in the past. Mechanic said that he remembered working on the PBA-1206 unit approximately 2 years prior to 05/06 November 2025.

After conducting the interview with the electrician on-site at MP 142 C on 06 January 2026, the AI along with two BSEE Inspectors performed a brief investigation of the coupling that was severely damaged during the incident on 26 November 2025. During the inspection of the damaged coupling, BSEE inspectors noticed a portion of an additional coupling in the Field Foreman's office that at the time, the Field Foreman was unable to verify where it came from. When asking questions about where the additional portion of the unidentified coupling came from, the Field Foreman then let the AI know that on 30 November 2025, four days after the fire incident occurred on the PBA-1206 LACT pump/motor, the PBA-1205 LACT pump/motor coupling experienced failure as well. This was not mentioned to BSEE prior to inquiring about the additional coupling that was found. After inquiring into the PBA-1205 LACT pump/motor failure, the Field Foreman explained that the coupling for the PBA-1205 pump/motor had sheared similarly to the PBA-1206 unit but did not suffer the extent of damage as the PBA-1206 unit. When the coupling sheared on the PBA-1205 pump/motor, it sheared as designed. The PBA-1205 pump/motor was previously photographed as having all shims under the motor feet and all mounting bolts appeared secure during the AI's initial on-site investigation. Cantium explained that they did not think the PBA-1205 coupling shearing was relevant to the investigation, due to being a separate unit than the PBA-1206 pump/motor that suffered mechanical failure and caught fire.

A final interview was performed with the mechanic who worked the opposite hitch as the mechanic that performed the maintenance on PBA-1206 on 05/06 November 2025. The last mechanic interviewed was also the mechanic who was on site at the time of the fire incident and helped extinguish the fire. He also performed the repairs on the PBA-1205 pump/motor on 30 November 2025 that was brought up later once discovering the unaccounted-for coupling. The mechanic said upon discovering the failed coupling on the PBA-1205 pump/motor, he also found three broken electric motor mounting bolts while replacing the failed coupling. He stated that after discovering the broken bolts, he installed the new coupling, installed proper shims under the motor mounting feet, performed an alignment and properly secured the electric motor mounting bolts. Evidence from the AIs on-site visit confirms that there were shims under the motor mounting feet and the bolts looked properly secure. The mechanic did state that he also did not use a torque wrench to tighten the mounting bolts for the motor. He also said that there is not enough room to get a torque wrench on the bolt's heads. This aligns with the statement that the other mechanic gave concerning using a torque wrench to tighten the mounting bolts. The final mechanic that was interviewed stated

that he has a great amount of experience working around these couplings and to his knowledge these coupling failures are not very common.

During the investigation process, the AI was made aware that the PBA-1206 pump and motor had been sent to Third-party Pump and Services to inspect the units for better understanding of what might have occurred. While the third-party vendor was on-site to install the new PBA-1206 components, Cantium requested that they inspect the PBA-1205 LACT pump/motor. While inspecting the PBA-1205 unit, it was found to be out of alignment but still within the coupling tolerance. Cantium decided to replace the PBA-1205 pump/motor as well to make sure that all components are new and have the third-party professionals replace both the PBA-1206/1205 pump, motor, coupling and performing alignment.

The AI was provided with an email from Third-party Pumps that was sent to Cantium on 12 December 2025 concerning the inspection of the PBA-1206 pump and motor that were involved in the fire incident to Cantium. In the email, the third-party inspection indicated that the most likely reason for the failure was high vibration and misalignment of the components. The email also indicated there were bolts on the back of the electric motor that were found loose on the fan guards and bolts on the rear end bell housing that had started to back out which indicated vibration on the motor. It also stated that there were some signs of cavitation of the pump and acid attack on the casing and back plate but is not believed to be a contributing factor to the incident that occurred. The third-party inspection did not find any major discrepancies of the PBA-1206 LACT pump. The email states "with vibration and coupling misalignment as well as the motor turning at thirty-six hundred RPMs, this coupling just wiped out everything in its way due to unbalance of shafts with coupling and spacer element attached." According to Cantium's Root Cause Analysis Report (RCA), it was noted that although there was an alignment performed on 05/06 November 2025 and a straight edge was used to verify the vertical and horizontal offset, there was no angular alignment performed. It also notes that the coupling bolts were tightened by hand and had no torque values applied or documented. There was also no torque value applied to the electric motor mounting bolts which was stated by the mechanic who installed the electric motor. There were no alignment measurements, torque records, vibration readings or photographs documented during the installation.

Upon reviewing the Cantium RCA, and the Supervisory Control and Data Acquisition (SCADA) system, it was noted that there were multiple process upsets that occurred on the platform around the time of the incident. At approximately 1234 hours on 26 November 2025, the SCADA system recorded a high vibration alarm on the pipeline pump PAX-1201 (Pump #2), which was not running at the time. According to SCADA history, the alarm was acknowledged and treated as an instrumentation or logic anomaly due to the pump being idle. This did however coincide with the beginning of the upset on the LACT skid. At approximately 1235 hours on 26 November 2025, a high vibration alarm occurred on the running pipeline pump PAX-1200. A LACT meter #2 Flow Alarm Low (FAL) was acknowledged in the same timeframe. The SCADA sequence is consistent with the developing mechanical failure of the PBA-1206 resulting in a loss of charge pump performance, loss of suction stability at PAX-1200 and an increase in PAX-1200 vibration due to cavitation. It is during this period that the fire is believed to have developed at the LACT pump/motor assembly.

IN CONCLUSION:

Through investigations performed by the AI, Cantium Investigation Team, and Third-Party vendor, evidence suggests that the root cause of the incident was due to a progressive mechanical failure of the LACT Charge Pump PBA-1206 due to the motor-to-pump misalignment following the 05/06 November 2025 electric motor replacement. The misalignment between the two components led to excessive vibration, coupling failure, loosening of pump casing fasteners, loss of containment, and subsequently the ignition

of hydrocarbons on the LACT skid.

Due to the improper installation and alignment techniques performed, it allowed for excessive vibrations to damage the PBA-1206 charge pump, loosening the pump casing bolts which led to the release of crude oil and the destruction of the motor-to-pump coupling. It is suspected that due to the excessive vibrations, the electric motor mounting bolts also became loose due to not having the proper torque value applied to them. This created an unstable condition for the charge pump, electric motor and the coupling. It was determined that the most likely ignition sources include contact with hot motor surface areas/or heat or electric degradation associated with the damaged motor input wiring and/or sparks associated with metal-to-metal contact of coupling, motor, pump, skid plate. The fuel/ignition pathway was identified during the breakdown analysis performed by third-party inspection.

Due to the incident, Cantium has implemented an initial Pump/Motor Alignment Inspection Checklist along with a fifteen-day Post-Installation Pump/Motor Alignment Inspection Checklist. These efforts are to prevent a similar incident from occurring in the future. Cantium is also implementing alignment and torque verification requirements aligned with OEM guidance, as well as require documentation of alignment, torque, and post-startup verification. Cantium also performed an RCA that was distributed throughout the field and relevant offices to raise awareness throughout the company of the incident. Cantium is currently conducting an internal audit of existing LACT/Pipeline pumps throughout the three fields to ensure that alignment issues are not systemic across Cantium.

The fire incident that occurred at MP-300 B on 26 November 2025 could have resulted in a far worse outcome if not for the immediate actions taken by the platform PIC and mechanic. Due to the quick response by personnel, the fire that occurred was able to be extinguished quickly and prevented the fire from spreading to nearby equipment which could have resulted in greater damage to the platform or caused harm to personnel.

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

Equipment Failure: Inadequate equipment repair- PBA-1206 Electric Pump and coupling were not properly aligned during installation. This caused excessive vibration which led to the mechanical failure of the PBA-1206 LACT Charge Pump, coupling, and electric motor.

Human Error: Not following OEM recommendations- During installation of the PBA-1206 electric motor and coupling, OEM recommendations were not followed pertaining to proper alignment practices and torque procedures.

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

Management Systems: Inadequate written procedures- Lack of documentation provided for installation procedures for the electric motor and coupling by operator.

Communication: Inadequate job instructions provided- Operator failed to provide the mechanic with the proper documentation to perform and document the installation properly.

Equipment Failure: Improper/ Lack of tools used- Torque wrench was not used to apply proper torque to multiple components during installation of the electric motor or coupling.

