

**Docket No. SA-534**

**Exhibit No. 2-DX**

**NATIONAL TRANSPORTATION SAFETY BOARD**

**Washington, D.C.**

TIMELINE OF EVENTS FOR SEPTEMBER 9, 2010 (PREPARED BY NTSB)

(14 Pages)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	14:46	Gas control technician (Oscar Martinez) reports to Gas Control that work was taking place on clearance MIL-10-09. Mentioned that Siemens controllers were already switched to mini-UPS power and that chromatograph and PLC were going to be transferred next resulting in a loss of communication for 10 minutes.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	15:05	Gas control tech (Oscar Martinez) reports to Gas Control that the installation of new Uninterruptable Power Source (UPS) at Milpitas Terminal should not impact the Milpitas Station during the clearance.	PG&E Gas Control Instant Message Log (NTSB_003-002 s1)
	15:36	Gas control tech (Oscar Martinez) contacts Gas Control from the Milpitas Station and discussed transferring the PLC to mini UPS. The technician questioned the regulating valves were fail close valves, and decided to lock the control valves temporarily in an open position on Lines 300A and 300B.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	16:03	Gas Control Technician (Oscar Martinez) reports to Gas Control that he was getting ready to do the swich over and power is going to be disrupted for the PLC genius blocks and the Daniels flow computer. The technician explained that the control valves will be put in manual during the work and the set points will be recorded so that when the control valves are placed back in auto control they can verify that hte station is operating correctly.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	16:20	Scheduled clearance at Milpitas for Uninterruptible Power Supply work - SCADA data lost at Milpitas at 4:20 p.m.	PG&E Gas Transmission Timeline/Facts. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	16:20	Supervisor Control and Data Acquisition (SCADA) detects many Low and Low-Low alarms at Milpitas between 16:20 and 16:32	PG&E Alarm Log (NTSB_003-002)
	16:32	Alarms cleared at Milpitas Station and alarms returned to normal.	PG&E Alarm Log (NTSB_003-002)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	16:38	Gas control technician (Oscar Martinez) notifies Gas Control to expect communication errors as they move into their next phase of work.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	16:38	Mitchell to Martinez - It looks good hear at Milpitas. Work will continue causing COMM Alarms.	Extracted from VOX Logger. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	16:46	Gas control technician (Oscar Martinez) contacts Gas Control and reports "we are getting ready to kill the comms and transfer over, it should be pretty quick."	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	17:01	Alarm logs indicated controller errors at Milpitas Station between 5:01 and 5:12 pm.	PH Exhibit 2I, SCADA Alarms 9-9-2010.
	17:20	Gas Control realized downstream pressure had increased to 386 psig on L132 at Martin Station.	PG&E Gas Transmission Timeline/Facts. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	17:21	SCADA alarm indicates monitor valve not open at Milpitas Station .	PH Exhibit 2I, SCADA Alarms 9-9-2010.
	17:22	SCADA alarms indicate pressure out of range at Milpitas.	PH Exhibit 2I, SCADA Alarms 9-9-2010.
	17:23	SCADA shows many High-High pressure alarms in Milpitas and along L-101-L-109 and L-132.	PG&E Alarm Log (NTSB_003-002)
	17:24	SCADA shows both sides of Sierra Vista Crosstie (L-109 to L-132) in Mountain View, CA exceeds 375 psig.	SCADA Logs Pressure Data (NTSB_001-013 S1)
	17:25	Valenti to Crew - We have Hi Hi alarms on the system and they look real.	Extracted from VOX Logger. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	17:25	Gas Control calls Milpitas Station to discuss High-High alarms. Milpitas Gas Control Tech confirms there will be action needed to address the High-High alarms.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	17:26	SCADA showed HI HI pressure alarms from L-100 (Silver Creek Station, Abhorn & White, and Tully Road Stations)	PG&E Control Center Investigaiton (NTSB_003-002 S1)
	17:28	Gas Control contacted gas control technician (Oscar Martinez) reporting the high pressure alarms coming into the console from downstream at Silver Creek, Tully Road, Aborn and White, Irvington, and North Rengstorff. "Something has opened up coming out of Milpitas." The technician realizes that the regulating valves had opened at the station. Gas Control Center console indicates zero pressures at the Milpitas Terminal with all valves closed.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	17:29	SCADA showed H HI alarms from Sierra Vista Crossover (Lines 109 and 132)	PG&E Control Center Investigaiton (NTSB_003-002 S1)
	17:30	Gas Control conversation with Gas Control Tech (Oscar Martinez), reports that controller can see 458 psi coming into the mixer from the Hollister side - B is feeding, but he cannot see any downstream pressures. The Gas Control operator determined that the station bypass valves (valves 29 and 62) had opened up during a loss of power to hte pressure transmitters. Gas Control directs to close the mixer bypass. The technician mentioned that he transferred everything to mini-UPS power and had killed the panel, but there must have been some other unknown device on the breaker.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	17:36	Gas control technician (Oscar Martinez) contacted Gas Control to report that the mixer bypass valve (valve 29) has been closed. The technician confirmed that regulating valves 27 and 27R were operating.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	17:42	Gas control technician (Oscar Martinez) contacted Gas Control to report that control valves 7 and 7R had swung wide open. A second gas system operator at Gas Control comments that the valves should be controlling. Gas Control reports that they are unable to see accurate pressures or valve positions on their console. Gas Control directed the technician to reduce the local set point of the pneumatic controller at the monitor valves to 370 psig and try to bring the line out of Hi Hi alarm.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	17:45	San Carlos L-147 Crosstie had Hi Hi alarm between L-101 and Lines 109 and 132.	PG&E Control Center Investigaiton (NTSB_003-002 S1)
	17:45	SCADA shows L-132 Martin Station upstream pressure exceeds 375 psig.	SCADA Logs Pressure Data (NTSB_001-013 S1)
	17:48	Gas Control receives a call from Alternate Gas Control Center questioning Hi Hi alarms at Irvington. They determined this was a result of the loss of control at Milpitas.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	17:49	SCADA shows HI HI alarms at Half Moon Bay (L-132) and Burlingame (L101).	PG&E Control Center Investigaiton (NTSB_003-002 S1)
	17:50	SCADA shows Hi Hi alarm at Martin Station (L132).	PG&E Control Center Investigaiton (NTSB_003-002 S1)
	17:51	Gas Control changes three regulation set points PLS-7A and PLS-7B (L-300), and Sheridan Road (L-131) to 370 psig. 17:51 to 17:52	PG&E Alarm Log (NTSB_003-002)
	17:52	Gas Control lowered pressure at PLS 7 and Sheridan Road to 375 psig.	PG&E Gas Transmission Timeline/Facts. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	17:54	SCADA shows HI HI alarms at Lomita Park (L-101 and Sullivan Ave. (L109).	PG&E Control Center Investigaiton (NTSB_003-002 S1)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	17:55	Gas control technician (Oscar Martinez) contacts Gas Control and reports that station bypass valve 62 is closed and in manual and monitor valve 5 is closed. The gas system operator responds that it should stay closed since he was showing almost 500 psig downstream. The gas system operator asked the technician to place a pressure gauge downstream of the mixer at station valves 48 or 49 to get a reading of the station discharge pressure.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	17:58	SCADA shows L-132 (~MP 39.28) reaches a high of ~386 psig . 17:58 - 18:07.	SCADA Logs Pressure Data (NTSB_001-013 S1)
	18:04	Gas Control operator explained to a gas control technician supervisor that the control center had reduced the discharge set points at the PLS-7 and Sheridan Road Station to 370 psig to lower the incoming pressure at Milpitas Station. At the same time, the gas control technician at Milpitas contacted Gas Control to report that he obtained a pressure of 396 psig downstream of valve 49 (downstream of the regulator on Line 132)	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	18:06	Milpitas Terminal out-going lines all went into Hi Hi alarms. The pressure value indicated was 623 psig - believed by PG&E to be false.	PG&E Control Center Investigaiton (NTSB_003-002 S1)
	18:11	Martin Station (L132) went into Hi Hi alarm at 386 psig.	PG&E Control Center Investigaiton (NTSB_003-002 S1)
	18:11	<b>Pipeline 132 Rupture. First 911 call.</b>	Survival Factors Group Chairman's Report
	18:11	First San Bruno Police Department resources dispatched.	Survival Factors Group Chairman's Report
	18:12	First San Bruno Police Department first unit arrives on-scene.	Survival Factors Group Chairman's Report
	18:12	SCADA shows upstream pressure at Martin Station on L-132 decreased from 361.4 psig to 289.9 psig	SCADA Logs Pressure Data (NTSB_001-013 S1)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	18:12	San Bruno Fire Department alarm time: 18:12:28.	San Bruno Fire Department Incident Report. PH Exhibit 4C.
	18:13	Fire department dispatcher contacts Battalion 9, Command 31, indicates received over 20 calls about loud explosion and flames, West San Bruno Avenue and Skyline, or at El Camino and South Spruce. Battalion 9 reports they can observe fire from the station. Dispatcher receives a report of a plane crash.	PH Exhibit 4B: Transcript of Fire Department Radio Communications.
	18:15	SCADA Low-Low Alarm at Martin Station on L-132 at 186 psig and then within same minute in to Low-Low alarm at 144 psig.	PG&E Alarm Log (NTSB_003-002) and PG&E Control Center Investigaiton (NTSB_003-002 S1)
	18:17	San Bruno Fire Department first unit on-scene arrival.	San Bruno Fire Department Incident Report. PH Exhibit 4C.
	18:18	Concord Dispatch notified by off duty PG&E employee (former Gas Service Representative [GSR]), Curtis Meredith of fire in San Bruno. Reported: "it's something huge, I'm a block a way, I can see it through the trees, I thought a jet crashed." The dispatcher said he would notify a supervisor.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	18:21	An off-duty GSR (Mike Mentzer) calls into Concord Dispatch alerting them that there is a fire in San Bruno that appears to be gas fed because has the sound of a jet engine. Dispatcher responded that he would send a GSR to investigate.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	18:23	Off duty Peninsula On-Call Supervisor (Scott Robinson) calls back into dispatch, confirms flames and notifies dispatch that he is heading to site.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	18:23	Concord Dispatch calls GSR (Jareau Breiz) working in San Bruno area and instructs him to go to Sneath and Skyline in San Bruno to investigate the reported explosion.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	18:24	Concord Dispatch receives "Immediate Response" tag and call from PG&E Call Center regarding fire in San Bruno (generated by customer call to PG&E Call Center). This is the first customer call related to the rupture.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	18:25	Concord Dispatch calls Peninsula Division On-Call Supervisor (Chris Baur) and reports flames couple of hundred feet high at Sneath and Skyline Drive and that GSR is responding. Supervisor states: "I'm probably on my way."	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	18:27	Concord Dispatch calls Gas Control and inquires if they noticed a loss of pressure in San Bruno. Dispatcher advises that he received calls about flames shooting in air and sounds like jet engine in San Bruno. Advises that supervisor and GSR responding to find out what is going on. Asked Gas Control if they had any information whether it was PG&E line, responded that Gas Control has not received any calls yet.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3) and PG&E Gas Control recorded phone calls (NTSB_003-002 S3)
	18:28	Gas Control operator observed the Low-Low pressure alarm at Martin Station and discussed this with other operators. The operator associated the reports of the fire at San Bruno with the pressure drop at Martin Station.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	18:29	Gas Control contacts Alternate Gas Control to notify about a line break in San Bruno with flames and Martin Station pressures "are dropping like a rock." He stated that L 132 pressure was up at 396 psig and now it is down to 56 psig and they had overpressured the line at Milpitas.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	18:30	Concord Dispatch calls to check-in with GSR (Jareau Breiz), who has been dispatched to site. GSR advises that he can see flames but is in traffic. Dispatcher states just got a report: "sounds like it is a gas station blew up, but it destroyed a couple of houses too." Advises that a supervisor is also enroute.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)



## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	18:31	Gas Control returns call to Concord Dispatch letting them know the San Bruno incident may involve PG&E's gas transmission line in the area. Concord Dispatch reports that they just received a report (heard on the radio) that a gasoline station blew up and took a couple of houses with it. Gas Control reports: "I've got a major pressure drop" and speculates that gas main may be involved in gasoline station incident.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3) and PG&E Gas Control recorded phone calls (NTSB_003-002 S3)
	18:32	Gas Control left a message for San Francisco Division Transmission and Regulation (SF T&R) Supervisor (Chuck Martinez) because of Low-Low Alarm at Martin Station. Gas Control stated: "we've got pressure dropping like a rock at Martin Station, we did have issues with clearance at Milpitas where lines were being overpressured leaving the Milpitas station, and it's possible that a seam broke somewhere because we just got another call in San Bruno of a leak. Martin Station is the only one showing a pressure drop right now."	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	18:35	Measurement and Control (M&C) Mechanic (Mike Hickey) calls Concord Dispatch about fire (can see fire from house). Concord Dispatch informs that incident is believed from news reports to be a gas station that blew and incinerated 2 houses. Hickey responds: "our transmission line runs right through there - you know that - right in the area." Hickey states: "the flame that is coming out is consistent with a transmission line." The dispatcher responded: "we know there is a drop in pressure." PG&E reports that Hickey responds to PG&E's Colma Yard.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	18:36	SF T&R Supervisor (Chuck Martinez) returned Gas Control call about Low-Low Alarm at Martin Station, reviewed SCADA data and told Gas Control to contact Peninsula Division T&R Supervisor. Gas control operator comments that he received reports of a gas station explosion, flames and the sound of a jet engine roaring, a corresponding loss of pressure at Martin Station to 54 or 64 psi, and "a flow of 5.5 to 6 million per hour, and it never feeds that heavily." Martinez offers to contact T&R Department Supervisor Steve Poulo for response to Martin Station.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	18:36	John Corona to Cenicerros (Gas Control) - I'm gathering a crew to head to San Bruno.	Original notes taken during event. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	18:38	Gas Control contacts "Dave" and reports that Martin Station is showing a pressure drop from 380 down to 50 psi, and there are conflicting reports about flames in San Bruno area with noise like a roaring get plane. Gas control operator states that there could be a line break, but he is not sure why the pressure has dropped. Requests that "Dave' have personnel respond to the Martin Station, but "Dave" replies that there is only one gas control technician available (Oscar Martinez), but would try to contact an alternate technician to respond..	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	18:40	Peninsula Division On-Call Supervisor (Chris Baur) calls M&C Mechanic (Mike Hickey) after leaving message for Peninsula Division T&R Supervisor (Steve Poulo), and tells M&C Mechanic to report to the Colma yard. Mechanic was already driving to the yard when he received the phone call. On-call Supervisor (Baur) asks M&C Mechanic (Mike Hickey) to call 2nd M&C Mechanic (Ed Sickinger).	PG&E cell phone records PG&E Timeline (PH Exhibit 2B)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	18:41	GSR (Jareau Breiz) and off duty Peninsula On-Call Supervisor (Scott Robinson) are confirmed to be on-site based on call to Dispatch. GSR states that supervisor is checking with the fire department but does not know the cause of the flames yet. GSR indicates there are a couple of gas transmission lines in the area. Dispatcher conveys that a jet may have struck a gasoline station and then caused the gas line to blow with it.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	18:53	SF T&R Supervisor (Chuck Martinez) communicated to Gas Control that San Carlos has crews responding, but did not know whether they were heading to Martin Station. Gas control operator states that he is seeing a pressure drop on the inlet at Martin Station to about 60 psi. Gas control operator and T&R supervisor believe the break is on Line 132.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	18:50	Approximate time first M&C Mechanic (Mike Hickey) arrives at PG&E Colma Yard.	PG&E Timeline (PH Exhibit 2B)
	18:54	San Bruno Police calls Concord Dispatch requesting gas support. Dispatcher responds: "we know, they're out there already."	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	18:54	Concord Dispatch operator contacts Troublemens Supervisor "Pete" and advises: "we are being told that a plane has crashed into a gas station and took out some houses in San Bruno." They have houses burning and want gas and electric utilities turned off. Pete responded that he was calling troublemen (electric crews) to respond.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	18:54	Martinez to Mitchell - San Carlos crew is rolling. Steve Poulo and Dyson were notified.	Original notes taken during event. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	18:57	Mitchell Kirk to Valenti (Gas Control) - activated the OEC in San Carlos and supplied contact number.	Original notes taken during event. PG&E Control Center Investigaiton (NTSB_003-002 S1)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	19:02	San Matteo County Sherrif contacts Concord Dispatch to find out if PG&E is shutting all of the power in the area of San Bruno. Dispatcher advises Sherrif that PG&E representative would call them back. The Sherrif asks if PG&E was aware of the "plane crash" - the dispatcher responded: "we didn't know it was a plane crash - I'll go ahead and relay that message."	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	19:06	M&C Mechanic (Mike Hickey) calls his temporary Supervisor (Steve Poulo), letting his supervisor know he is going to isolate the rupture. Supervisor ok's plan.	PG&E cell phone records PG&E Timeline (PH Exhibit 2B)
	19:06	Approximate time two M&C Mechanics (Mike Hickey and Ed Sickinger) leave Colma Yard	PG&E Timeline (PH Exhibit 2B)
	19:12	Ceniceros (Gas Control) to Trista Berkovitz (GSO Director) - updated on event. Directed Ciniceros to contact Todd Hogenson to open the GRC.	Original notes taken during event. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	19:16	Concord Dispatch call to Joe per Pete DeMartini we have a mandatory call out - everybody needs to report to the yard.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	19:20	Approximate time M&C crew (Mike Hickey and Ed Sickinger) and SF T&R Supervisor (Chuck Martinez) arrive at first valve location (V-38.49).	PG&E Timeline (PH Exhibit 2B)
	19:22	Ed Salas (Sr. VP) to Genera (Gas Control) - Genera explains that incident is likely to be a L-132 break from all indications, although nothing has been confirmed from information Gas Control has received.	Original notes taken during event. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	19:22	On-call supervisor (Scott Robinson) contacts Concord Dispatch notifies he is on-scene in San Bruno with Superintendent (John Corona) "it's unconfirmed," but it looks like gas is involved. Corona wanted to make sure the incident was declared "reportable" and the Load Center is notified.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
<b>9/9/2010</b>	19:22	Unknown caller to Concord Dispatch Center requests to know if GSR's are being sent to San Bruno. The dispatch operator responds: "we haven't heard anything yet."	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	19:23	Scott (indecernable) GSR contacts Concord Dispatch and requests to know if "guys" are being sent to San Bruno. The dispatcher responds: "they haven't said anything yet."	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	19:25	Concord Dispatch informs Gas Control that SF Superintendent (John Corona) is on the scene of the fire and confirms that the San Bruno incident is a gas fire and it is a "reportable." Gas Control confirms that transmission Line 132 is the involved line. The Dispatch operator did not know the specific location of the line break.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3) and PG&E Gas Control recorded phone calls (NTSB_003-002 S3)
	19:27	SF T&R Supervisor (Chuck Martinez) requests that Gas Control lower the pressure set points as low as possible (for V-10 & V-13) at Martin Station to isolate L-132 at Martin Station. "When my guys get there they'll secure it."	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y) and PG&E Timeline (PH Exhibit 2B)
	19:29	Gas Control remotely closes valves V-10 and V-13 at Martin Station, isolating the pipeline north of the rupture	PG&E Alarm Log (NTSB_003-002)
	19:30	SF T&R Supervisor (Chuck Martinez and 2-man M&C crew (Mike Hickey and Ed Sickinger) <b>close valve V-38.49 to isolate the rupture.</b>	PG&E T&R Mechanic's field notes (Mike Hickey) (NTSB_003-002 S1)
	19:31	Brian calls Concord Dispatch Center and requests to know if GSR's are needed for San Bruno fire. Dispatcher said at this point I haven't gotten any calls - "if they start calling out GSR's I've got tons of people calling us and letting us know they are willing to go out." Dispatcher comments that incident has nothing to do with a gasoline station or airplane incident - just a broken natural gas line.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	19:42	Martin Station L-132 isolated. Upstream pressure begins to rise.	PG&E Gas Transmission Timeline/Facts. PG&E Control Center Investigaiton (NTSB_003-002 S1)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	19:42	In field Superintendant (John Corona) contacts Gas Control to notify that the flames have diminished. All of a sudden the pressure are dimishing. Gas Control confirmed the only change they made was shutting the Martin Station. The reduced pressure has allowed firefighters to get closer to the break.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	19:44	Gas Control contacts Concord Dispatch to inform that Martin Station is shut down. SF is fed only by Line 109. Line 132 is the line that ruptured. Confirms that PG&E line was involved in the incident.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3) and PG&E Gas Control recorded phone calls (NTSB_003-002 S3)
	19:45	SF T&R Supervisor (Chuck Martinez) and 2-man M&C crew (Mike Hickey and Ed Sickinger) <b>close valve V-40.05</b> to maintain gas pressure in L-132 north of the rupture from MP 40.05 to Martin Station.	PG&E T&R Mechanic's field notes (Mike Hickey) (NTSB_003-002 S1)
	19:46	SF T&R Supervisor (Chuck Martinez) and 2-man M&C crew (Mike Hickey and Ed Sickinger) <b>close valve V-40.05-2.</b>	PG&E T&R Mechanic's field notes (Mike Hickey) (NTSB_003-002 S1)
	19:51	Dispatch contacting GSRs to advise Load Center needs GSR's to check line pressures from South San Francisco and San Francisco	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	19:52	SF T&R Supervisor (Chuck Martinez) and 2-man M&C crew (Mike Hickey and Ed Sickinger) <b>close valve to prevent back-feed from District Regulation Station 190</b> at Glenview Avenue and San Bruno Avenue into L-132.	PG&E T&R Mechanic's field notes (Mike Hickey) (NTSB_003-002 S1)
	19:55	Pressure stable at 125 - 137 psig.	PG&E Gas Transmission Timeline/Facts. PG&E Control Center Investigaiton (NTSB_003-002 S1)

## Incident Timeline

### San Bruno CA L132 Gas Transmission Line Rupture and Fire

Date	Time	Event	Source
9/9/2010	19:57	Drew Kelley contacts Gas Control to report the L-132 break is located at MP 39.33, and "the section is down to nothing right now." Reports the following valving operations: V40.04 closed at Healy Station, MLV 38.49 U/S of Healy Station closed. Crews opened cross-tie valves 1 & 4 at Healy Station between V109 and V132 to establish flow to Martin Station.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	19:59	County of San Mateo contacts Concord Dispatch to advise fire department command post is situated at San Bruno Ave and Skyline Drive. Confirmed that fire department has information the incident involved a gas line.	PG&E Concord Dispatch recorded phone calls (NTSB_003-002 S3)
	20:22	Jim Maguda contacts Gas Control to verify steps taken to isolate break for report to CPUC.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	20:28	Cinicerros (Gas Control) to Dave Clare - OEC, GRC & EOC open and team mobilized.	Original notes taken during event. PG&E Control Center Investigaiton (NTSB_003-002 S1)
	20:32	Gas Control notifies Sr. Vice President (Ed Salas) that the rupture was isolated and provides overview of incident. Pressure was operating at 385 psig, about 10 psi over MOP.	PG&E Gas Control recorded phone calls (NTSB_003-002 S3 and PH Exhibit 2Y)
	21:10	Pressure up to 137 - 140 psig.	PG&E Gas Transmission Timeline/Facts. PG&E Control Center Investigaiton (NTSB_003-002 S1)