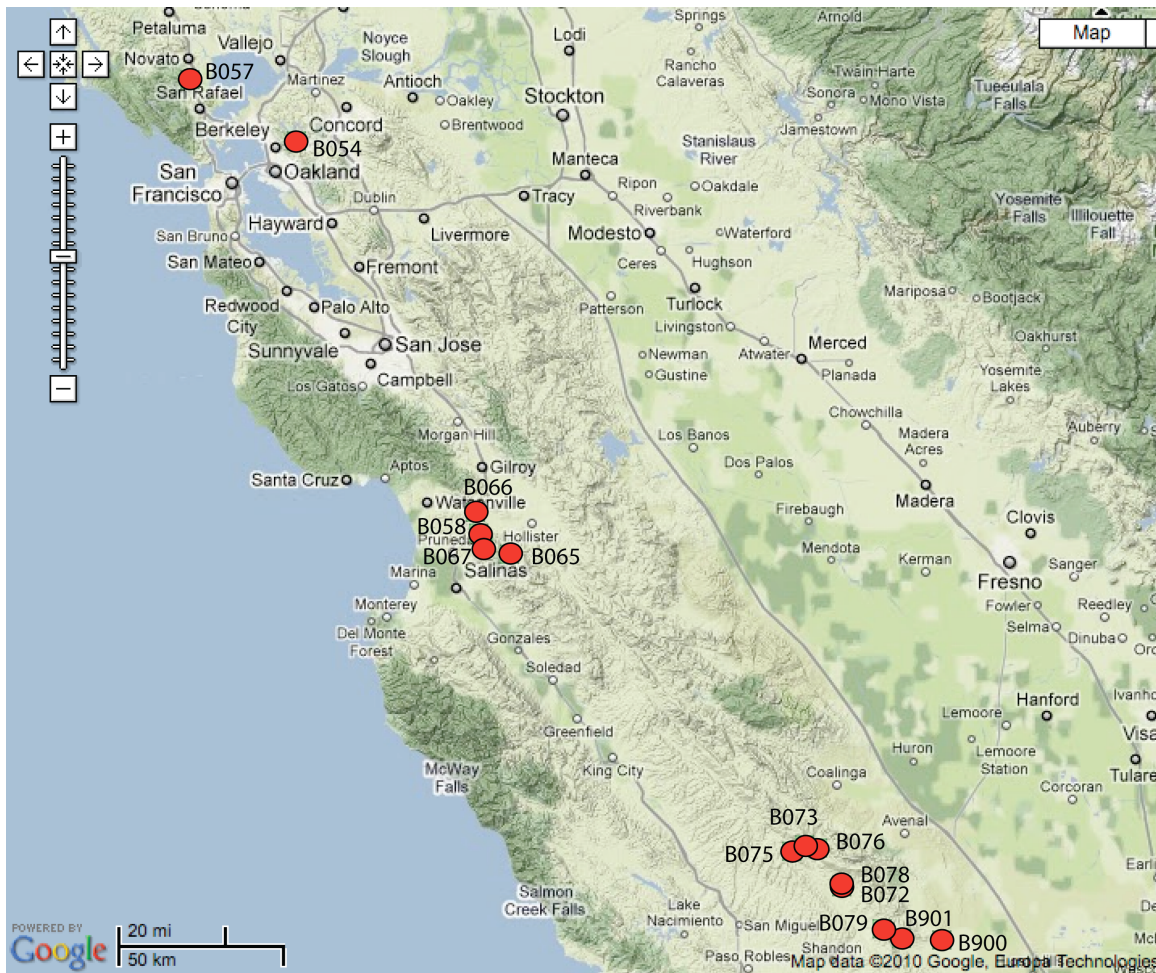


Station Notes for B067, stoney067bcn2007

Latitude: 36.765 (WGS 84)
Longitude: -121.5655 (WGS 84)
Elevation: 126.2 m / 414 ft
Install Depth: 159.1 m / 522 ft
Orientations: CH0 = 311.6, CH1 = 251.6, CH2 = 251.6, CH3 = 251.6
Install Date: June 12, 2007
GTSM Technologies #: US40
Executive Process Software: Version 1.14
Logger Software: Version 2.02.2
Home Page: www.unavco.org/instrumentation/networks/status/pbo/overview/B067
Notes Last Updated: July 26, 2019

Install depth is from the top of the casing to the bottom of the strainmeter.

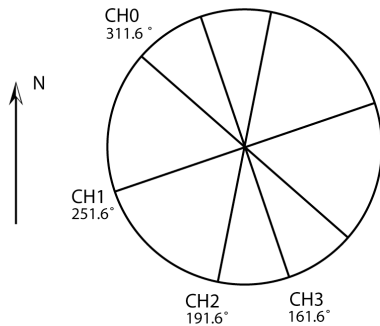
Orientations are in degrees East of North.



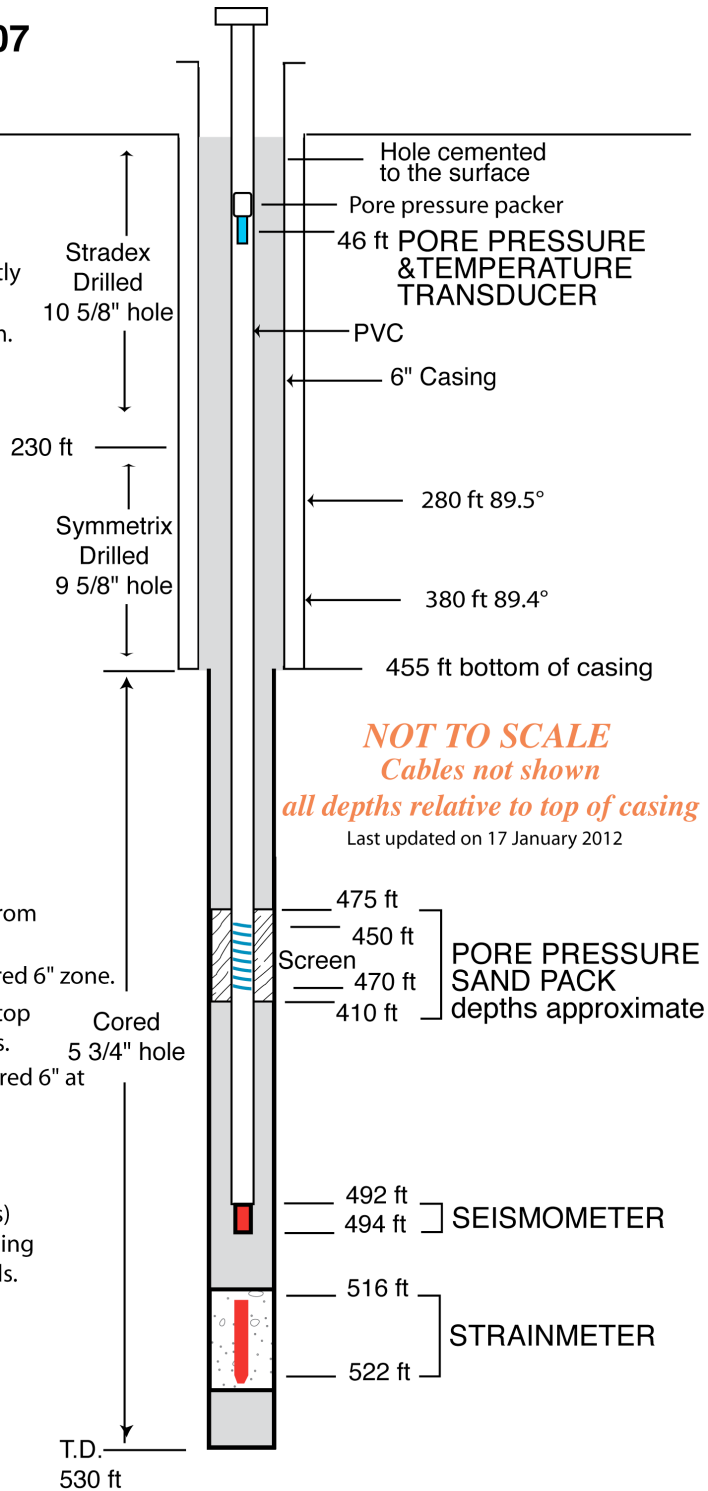
San Francisco, San Juan Bautista, and Parkfield strainmeter network as of September 24, 2010

B067 stoney067bcn2007
 36.765 -121.5655 126.2 m

- 50' - Weathered granite.
 80' - Granite.
 110' - Fractured? Large rock chunks (unconsolidated). Making approximately 20 gal/min water.
 120' - Rock more consolidated and uniform.
 227' - Hole making 20 gal/min airlift, but could possibly make 200 gal/min.
 235' - Making lots of water.



- 454' 6" - Started coring. Healed fractures throughout all core and a magma injection of a mafic composition from 455 - 475 ft.
 461' 5" - 466' 4" - Two fractures, one weathered 6" zone.
 466' 5" - 471' 3" - Weathered zone near the top and at 468' 6" two fractures.
 471' 5" - 475' 7" - 1/2cm fracture and weathered 6" at the top.
 475' 7" - 479' 4" - One fracture.
 482' 1" - 487' 1" - Two fractures.
 492' 3" - 497' 3" - Two high angle (85 degrees) mechanical fractures revealing weathered and soft minerals.
 497' 3" - 502' 3" - One fracture.
 502' 3" - 506' 7" - Two fractures.
 516' 2" - 521' 2" - One fracture.
 524' 6" - 527' - Fracture at the top.



Instrumentation at Strainmeter

Instrument	Units	Bottle/ASCII Scale Factor	SEED Scale Factor
Pore Pressure	Hecto Pascals	1.0	N/A
GTSM Barometer	Kilopascals	1.0	0.0001
Rain Gauge	Millimeters/hour	1.0	0.252
Down hole Temperature Sensor	Degrees Celsius	1.0	0.0001
Logger Temperature Sensor	Degrees Celsius	1.0	0.0001
Setra Barometer	Hecto Pascals	N/A	

1. Installation notes

The site is located in an east-west valley. The rock is gabilan type granodiorite.

June 12, 2007. US40 was installed at B067 at a depth of 522 feet.

June 13, 2007. At 13:45 PST the seismometer was installed at 494 feet. The pore pressure screen section was placed between 470 and 450 feet.

June 14, 2007. At 10:30 – 11:00 PST tagged cement and added sand/bentonite. At 12:15 – 13:15 PST the hole was cemented up the surface with 3 yards of cement.

June 15, 2007. The cable was buried and a pad poured.

2. General Information

- Sensitivities of all EH channels corrected on March 4, 2010.
- The pore pressure sensor is installed at 46 feet with the packer inflated directly above the sensor.

3. Strainmeter Maintenance

- September 19, 2008 - Warren Gallaher upgraded the GTSM logger software from version 1.15 to 2.02.2. The site was offline from about 22:00 until about 22:30 UTC.
- March 19, 2009 – Logger software upgraded from 2.02.2 to the correct version of 2.02.2 that matches the compact flash size.
- May 1, 2009 – A blue Marmot was added to the site. The NetRS was removed and the pore pressure was switched over to the Q330.
- July 26, 2009 – All seismometer wiring was pulled and neatly placed back in power panel, and both modems were replaced.
- July 31, 2009 – All RT board firmware was upgraded to version 1.20, and the quadratures were checked and adjusted.
- June 30, 2010 – The Q330 and all cables were replaced, and the solar panels were cleaned.
- July 1, 2010 - After leaving the site it was noted the pore pressure data was no longer flowing. On returning Liz checked all cable connections, which were fine. She then re attached everything and re-wired the pore pressure in the power block. She then rebooted the Q330. Still no data flow. She reloaded the install files on the Q330 for B067, but after

rebooting the Q330 the pore pressure data was still not there. Site will need to be visited again for further testing.

- July 18, 2010 – Liz VanBoskirk visited the Site. She determined that the site needs a new solar panel (only half the panel works) on the lower right side from the front of the array and new batteries to replace the main battery bank. The battery bank is not being fully charged due to bad batteries. After connecting to the Pore Pressure, the downhole instrument is sending data. A new Serial cord was connected to the Q330 and Pore Pressure. The BOD rate and other settings were checked and corrected on the Q330 but no pore pressure data came in on Serial Port 1 or 2. The Q330 firmware was upgraded to 1.137. The Pore Pressure data now is retrieved through Serial 2. Serial 1 still would not retrieve data after the firmware upgrade.
- September 21, 2010 – Liz and Tim were onsite from 12:30 to 14:30 Pacific time. They replaced all of the batteries, seven in the main bank and the three strainmeter batteries were replaced with 4 batteries. One solar panel was also replaced.
- November 15, 2010 – The GTSM environmental box was completely off. The power connections through the power box were unplugged and plugged back in, and strainmeter was turned back on. The GTSM batteries were receiving the correct amount of current and charging. If the GTSM loses power again the site most likely will need a new power box. The battery banks were rewired so that each bank has the positive from the panel enter the bank on one side and the negative attached to the bank on the other side. This was completed for both the main bank and GTSM.
- December 17, 2010 – Chad Pyatt visited the site. He deployed a broadband seismometer and collected Birddog data. He also checked the GTSM, which was completely off. He replaced the old powerbox with a new one, checked the power cables from the environmental box to the GTSM. After reconnecting everything the GTSM came back online. The GTSM batteries were receiving the correct amount of current and charging. The GTSM was on during subsequent visits to the site on 12/18/10 and 12/19/10.
- February 3, 2011 – On arrival the GTSM (all boards) was off. The GTSM batteries had over 14 volts. The Power Box was not the source of the issue, so the original Power Box was added to the site. The GTSM logger board was replaced. The boards were turned on. However when the logger board was first turned on, the whole system (all boards) shut off almost immediately. During the second attempt Liz waited for all RT boards to finish calibration, then the logger board remained on. The logger board was configured (station name and IP addresses). The rain gauge was clogged with insects and was cleaned.
- February 28, 2011 – A broadband seismometer, marmot and Q330 were temporarily deployed at the site. The seismometer will be used to orient the borehole seismometer.
- April 13, 2011 – When Mike Gottlieb arrived onsite the power box and all boards appeared off, although batteries were recording 14 volts. Mike unplugged the battery lead from the power box and confirmed there was voltage coming through both the power and sense wires. When Mike plugged the lead back into the power box, the instrument turned on. He did not replace any parts at this time. It looks like neither the power box or LG are the problems, perhaps it is a cabling or backplane issue.
- May 26, 2011 – Chad Pyatt was onsite from 10:30 to 11:00 local time. There was no power to the uphole BSM electronics. Voltages on all strainmeter batteries were nominal (>14V). All other electronics were on. He disconnected and reconnected all power cabling to the strainmeter. After jiggling wires inside environmental box the

strainmeter restarted. Strainmeter is back online, but need to replace environmental box.

- July 20, 2011 – Reconfigured Cisco for new VSAT IP. Replaced GTSM environmental box.
- August 16, 2011 – Upgraded power system. Replaced 10AWG battery jumpers with 4AWG battery jumpers. Replaced solar controller with upgraded unit.
- January 24, 2012 – Swapped out 7 batteries with 8 new batteries.
- July 21, 2012 – A temporary broadband seismometer was deployed at the site.
- August 15, 2013 – Chad reviewed the power system performance. The site was generating an average of 1861W daily, and that the average minimum voltage was 11.99. The current power system will be retained. CH2 RT board was swapped and quad/chop adjusted.
- March 5, 2014 – Site was losing comms, even during times of good weather, which was affecting real time seismic data flow. LVD settings were changed to mimic Mojave BSM sites. LVD2 OFF @ 11.99, LVD2 ON @ 12.61
- June 30, 2014 – There was an apparent nearby lightning strike on June 26, 2014. Chad rebooted the logger and CH1 and CH2 have significantly improved.
- August 7, 2014 – Swapped the CH2 RT board and upgraded the firmware to 1.20 on all RT boards.
- March 13, 2018 – Added Setra barometric sensor and configured Q330.
- September 10, 2018 – Swapped failed logger. Installed new compact flash card and configured.
- September 13, 2018 – The board that was swapped in previously immediately failed. It was not logging data, or receiving DC offsets/tap steps. Most likely the issue was with the compact flash card, but the entire board was replaced as a precaution.
- November 6, 2018 – Adjusted GTSM barometer offset to match setra data, subtracted 1.23 kpa.
- January 2, 2019 - Station has been suffering from low power and nightly outages. Bottom 3 panels were getting shade from fence. Could add a fence panel and make a pentagon to reduce shading. Looked at solar data. 65 W x 24 hrs / 12 V would be 130 Ah daily load. Average PV input shows about 100-150 Ah also. Batteries going from 14.7 down to 10.8 V daily. 8 batteries (2016) should have 800 Ah if discharged 100% (11.8V open circuit is fully discharged and we are going below 11) yet we are only getting 100-130 Ah somehow. These 2 year old batteries appear to have been damaged and should be replaced. Found un-even charging between battery banks as well (2A to one bank and 0.4 A to the other). Wired all 8 batteries together as a single bank to help even out power flow. Dips were correct on TriStar controller. Unclear what caused battery failure after such a short time, possibly overcharging from controller? Set chops and quads. No satellites were in view. Applied coldstart command, then had 4 satellites. Cleaned clog in rain gauge and cleaned lichen growing on hut.

- July 13, 2019 – Batteries showed very little capacity, dropping to 10V every night. Replaced batteries, now dropping to 12.3-12.6V. Replaced MPPT charge controller to see if that's what was killing the batteries. Cleaned off dirty solar panels. Added a fence panel to reduce shading on solar panels. Replaced VSAT feedhorn. Coms outage was due to cisco failure, replaced cisco and fixed coms.