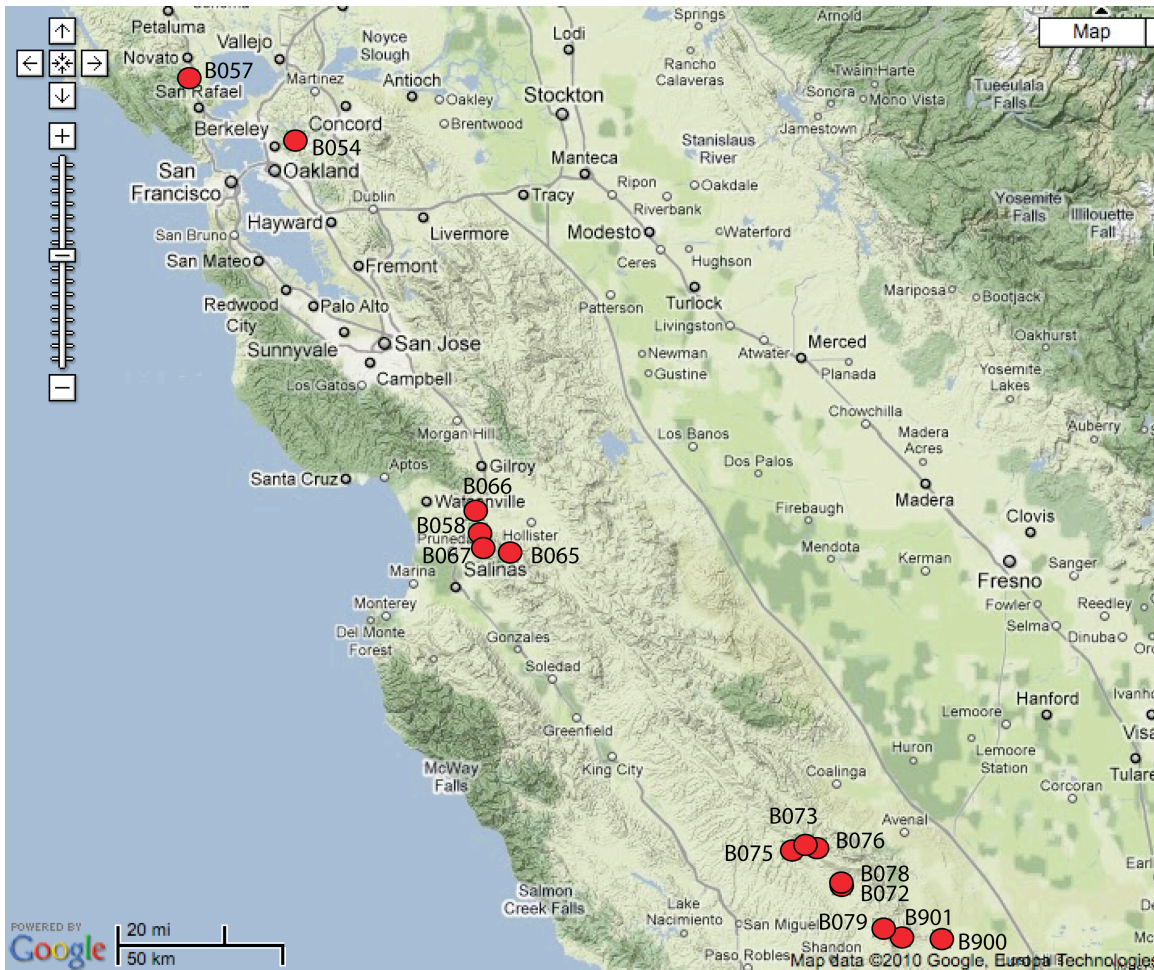


Station Notes for B058, sjgrad058bcn2007

Latitude: 36.7995 (WGS 84)
Longitude: -121.5808 (WGS 84)
Elevation: 114.2m / 374.7 ft
Install Depth: 166.7 m / 547 ft
Orientations: CH0=349.9, CH1=289.9, CH2=229.9, CH3=199.9
Install Date: May 17, 2007
GTSM Technologies #: US33
Executive Process Software: Version 1.14
Logger Software: Version 2.02.2
Home Page: www.unavco.org/instrumentation/networks/status/pbo/overview/B058
Notes Last Updated: January 23, 2020

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

Orientations are in degrees East of North.

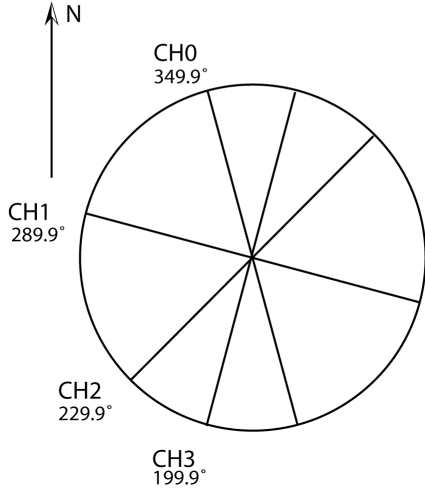


San Francisco, San Juan Bautista, and Parkfield strainmeter network as of September 24, 2010

B058 sjgrad058bcn2007

36.7995 -121.5808 114.2 m

Lithology: Grano-diorite



NOT TO SCALE

Cables not shown

all depths relative to top of casing

Last Updated 13 January 2012

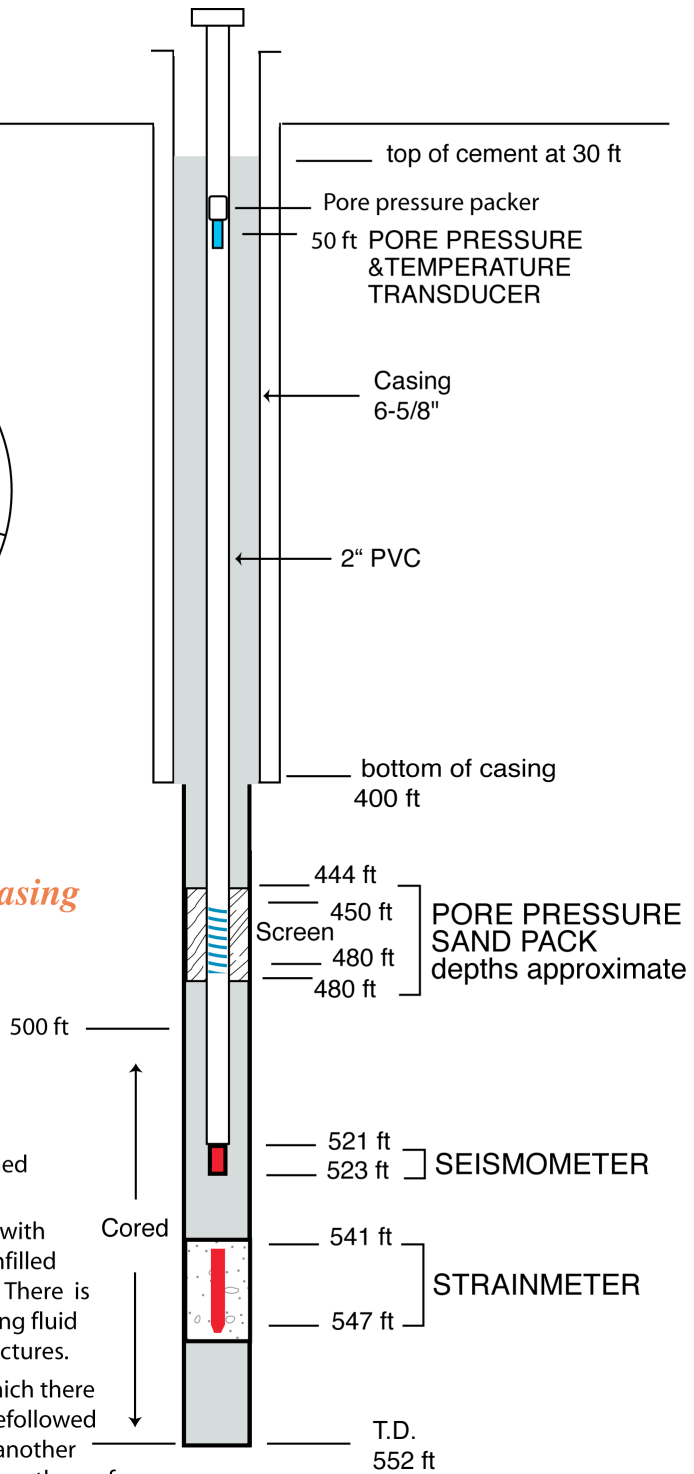
505 to 520 ft - Hydrothermal alterations of grano-diorite along fractures

520 to 535 ft - Fractures

536 ft - Fracture infilled with a fine-grained sandy clay, green in color.

536 to 541 ft - Four fractures, three lines with hydrothermally altered minerals. One infilled with 1/10 cm of white clay-like material. There is also a 10 inch segment of minerals infilling fluid paths, rock did not break along these fractures.

541 - 551 ft - Fractures have zones in which there is a fracture with a smooth green surface followed by 1" of shattered rock, and then below another fracture with smooth green mineralized on the surface.



Instrumentation at Strainmeter

Instrument	Units	Bottle/ASCII Scale Factor	SEED Scale Factor
Pore Pressure	Hecto Pascals	1.0	0.001
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	1.0	1.42925E-04

1. Installation notes

The borehole is located just off of San Juan Grade Road in San Juan Bautista, CA. The site has a very good sky view and is in a granite/grano-diorite which is approx 18" from surface.

May 16, 2007. Raised the bottom of the hole by 5 ft.

May 17, 2007. Installed the strainmeter at a depth of 547 ft. The 1341 grout was mixed for 14 minutes using 1.7 gallons of water per sack. A 4 section dump bailer was used. US33 was then lowered into the grout and was on the bottom 45 minutes after the start of mixing. While being lowered, the instrument caught some sort of lip at ~490 ft. A small lift by J. Stair got it moving again.

May 18, 2007. Installed the seismometer at a depth of 523 ft.

May 19, 2007. Sanded well from 480-444 ft (screen 479-449 ft). The hole was cemented up to within 30 ft of the surface using ~3 cubic yards of neat cement. The excess cable was buried and the concrete pad was poured.

2. General Information

- Pore pressure monitor has not been installed yet.
- Setra barometer has not been installed yet.
- The GPS station P787 is co-located with this strainmeter.
- Sensitivities of all EH channels corrected in the dataless on March 4, 2010.
- The pore pressure sensor is installed at 50 feet with the packer inflated directly above the sensor.

3. Strainmeter Maintenance

- June 6, 2007 – Warren Gallaher and Wade Johnson went to B058 to check out the VSAT. When they logged onto the VSAT it showed a signal strength of 25 (very weak). The IDU was also very slow when they were checking its status. They rebooted the system several times and eventually got it to lock onto the IA8. They also noticed a bad connector on one of the coax cables. They will replace this connector.

- October 24, 2007 UTC – Mick Gladwin visited the site.
21:10 – Onsite.
The solar regulator was found to be causing radiated noise on the GTSM system of 80 mV at Amp Out. As a temporary solution one set of solar panels was hooked directly to the GTSM power box, and the wires were re-routed to provide physical separation. This resulted in some improvement to approx 200 mV. There were also loose battery connections. He added one battery to the GTSM bank, to remain within float charge tolerances. Verified Boost on at 13.53, boost off at 13.9, float off at 14.15. Instrument performance is all normal (pulse noise aside). Layout looked good.
22:15 – Offsite.
- December 16, 2007 – Mike Gottlieb visited the site to check on potential power problems. He arrived on site at 18:07 UTC. The GTSM was running directly off 1 bank of 3 solar panels, with 6 panels powering the rest of the uphole electronics. SOH data showed daily cycle of 3 GTSM batteries charging to close to 14 V, then dropping almost to 12 V overnight. Voltmeter readings were consistent with this data, with GTSM batteries at 13.41 V and charging, and the other banks both showing 13.59 V. All electronics were powered on at time of visit. Mike did not rewire anything, merely took notes, but it is evident that 3 solar panels are not providing sufficient power to keep the GTSM online 24 hrs a day.
- August 27, 2008
GPS station P787 was co-located at this site today and yesterday. They share the existing VSAT and Cisco routers with the BSM site.
- September 19, 2008 – Warren Gallaher upgraded the GTSM logger software from version 1.15 to 2.02.2. The site was offline from about 20:30 until about 21:30 UTC.
- March 18, 2009 – Firmware upgraded from 2.02.2 to the correct version of 2.02.2 that matches the compact flash size.
- April 30, 2010 – Setra installed.
- May 6, 2009 – Liz VonBoskirk turned the logger board back on.
- July 29, 2009 – Liz VonBoskirk replaced the 4-port modem.
- July 31, 2009 – RT board firmware upgraded to version 1.20. Quadratures were also checked and adjusted.
- October 13 - 14, 2009 – Liz VanBoskirk visited the site. Broken solar panel replaced. Rain gauge was turned off from 11:20 (PT) on October 13th and back on around 2:30 October 14th. She noted this because it rained to down poured during this time.
- December 9, 2010 – The solar power system was reviewed. All solar panels and the GTSM battery bank were good. The main battery bank was composed of a bank of 4 and a bank of 3. The bank of four had a bad battery and the whole bank was replaced. The bank of three was good. A battery will be added to make the BSM site standard. The rain gauge was clogged and cleaned.

- December 11, 2010 – The battery main bank was rewired so that the positive and negative feed into either end of the bank. There are now two banks consisting of four batteries each. This was a continuation of work from Dec. 9, 2010.
- December 16, 2012 – A broadband seismometer, marmot and Q330 were temporarily deployed at the site. The seismometer will be used to orient the borehole seismometer.
- August 15, 2011 – Chad Pyatt was onsite to check why the site was offline. Site had been vandalized and stripped of most electronic equipment. The GTSM cable appeared to be intact, but the GPS and seismometer cables were cut. All other cables in the enclosure were also cut. The site will need to be completely rebuilt.
- October 10, 2011 – Prepped the site for rebuild work, cleaned out the enclosure, and installed and wired 12 new batteries.
- October 11, 2011 – Assembled solar array framework. Added 9 solar panels, and secured with tamper-resistant screws. Ran power cables from panels into enclosure.
- October 12, 2011 – Installed a Q330, Marmot, oscillator, data logger, 4 RT boards, power box, 1-port fiber modem auxiliary power board, and quad box,
- October 13, 2011 – Added dlink networked camera to the site.
- January 26, 2012 – Rewired power and data communication cable from pore pressure sensor to Q330.
- January 9, 2013 – Chad visited the site. The rain gauge was not clogged. Checked cabling, which was intact. Checked connection at power box, which appeared tight. Logged into GTSM, ran status report, toggled tipper bucket a couple of times, then rechecked status. Still no activity. Checked voltages at RG while toggling tipper: small change as tipper is toggled. Checked voltages at GTSM connection: no change. Disconnected cable and checked continuity between cable connector and terminal at RG; white lead is continuous, black is open. Re-soldered connection at cable connector, and soldered cable splice. Replaced terminal connection at rain gauge. Black lead is continuous. Reconnected and checked voltage at GTSM as tipper is toggled: -4.9 V -> 0 -> -4.9 V as tipper was moved from end to center to end. Rain gauge is now collecting rainfall data.
- March 5, 2014 – Site loses comms at night, even during periods of good weather, which was affecting real time seismic data. LVD settings were changed to mimic Mojave sites. LVD2 OFF @ 11.98, LVD2 ON @ 12.61
- March 20, 2014 – GTSM shows a consistent 13 A solar input, +/- 3 A on the SOH chart. 170 W surplus was not possible, configuration error. Edited the strain-logger.conf file to enable the coil current sensor. Adjusted quads and chop for all channels.
- March 21, 2014 – Power box was replaced.

- August 26, 2014 – Rain gauge wires were damaged by cows chewing on the wires. The Rain gauge was moved to the top of the enclosure and wiring was re-routed. Solar panels were cleaned off.
- December 9, 2015 – Swapped in 12 new batteries. Station comms switched from VSAT to CDMA. Cisco router was removed.
- January 5, 2016 – Data flow failure. Could ping all equipment, but files were not being written to compact flash card. Swapped failed logger board and configured. Power box pressure offset: 84.08.
- June 19, 2017 – Cell modem was hung. Power-cycled LS300 cell modem. Verified VPN after reboot and remotely checked in site.
- April 12, 2018 – CH0-CH2 looked good. CH3 was in G1, lots of quadrature. Adjusting resistor started to reduce, but maxed out resistor with 4V of quadrature remaining (G2). Candidate to try a larger resistor to see if it can remove all quadrature. Left CH3 in G1.
- July 13, 2019 - Removed LS300/900 Mhz yagi, added RV50 with wilson antenna RSRP -94. Cleared weeds, sprayed roundup, removed old VSAT dish, can cleaned solar panels.
- December 19, 2019 – Replaced bad fiber optic modem and cleared rain gauge. Added earthquake straps.