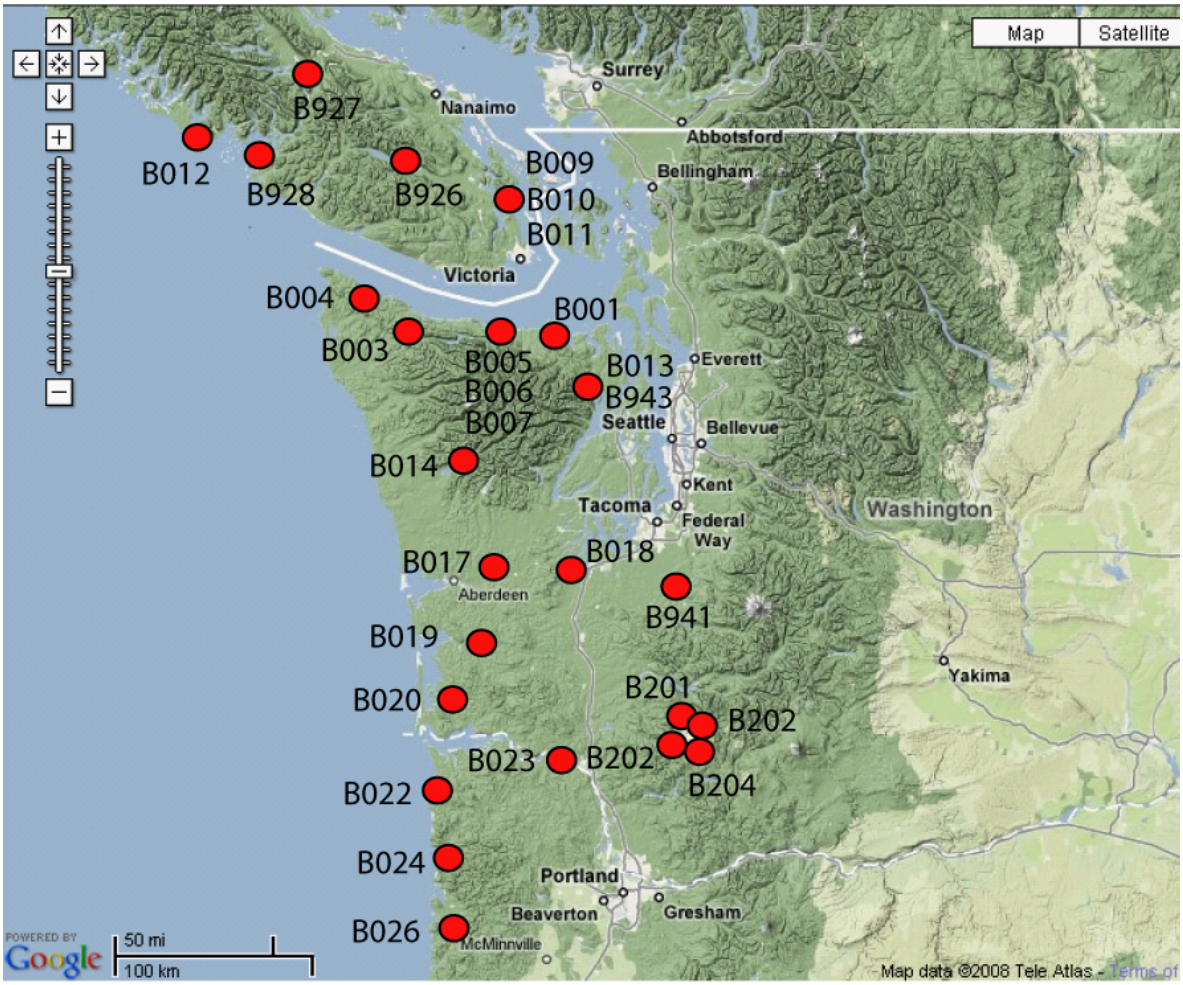
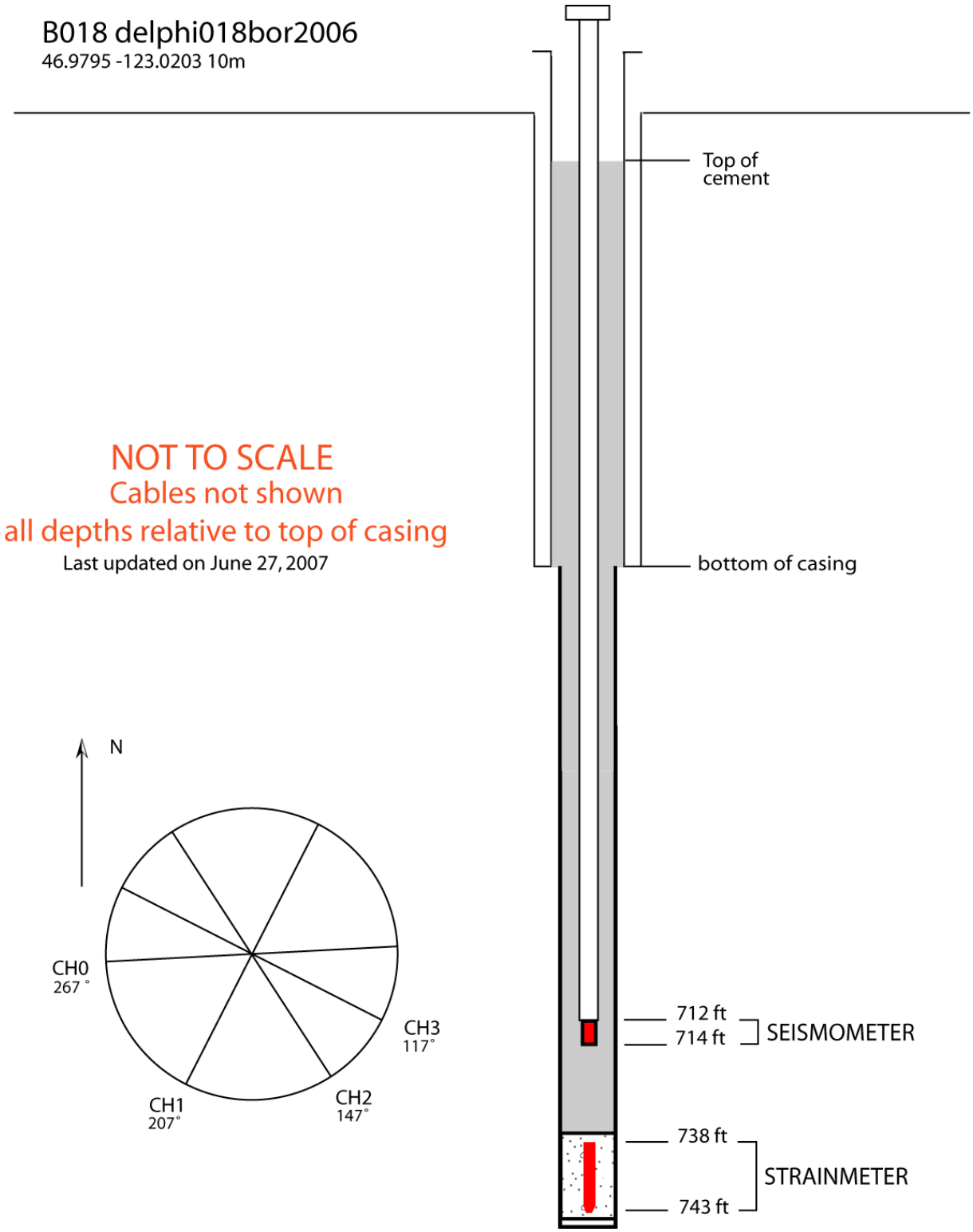
Station Notes for B018, Delphi, delphi018bor2006

Latitude:	46.9795 (WGS 84)
Longitude:	-123.0203 (WGS 84)
Elevation:	10 m / 33 ft
Install Depth:[1]	226.4 m / 743 ft
Orientations:[2]	CH0=267.0, CH1=207.0, CH2=147.0, CH3=117.0
Install Date:	21 January 2006
GTSM Technologies #:	US13
Executive Process Software:	Version 1.14
Logger Software:	Version 2.02.2
Home Page:	www.unavco.org/instrumentation/networks/status/nota/overview/B018
Notes Last Updated:	December 3, 2018

[1]Install depth is from the top of the casing to the bottom of the strainmeter.
[2]Orientations are in degrees East of North.



Pacific Northwest PBO strainmeter network, April 23, 2008


B018 delphi018bor2006
46.9795 -123.0203 10m
Top of cement
bottom of casing
NOT TO SCALE
Cables not shown
all depths relative to top of casing
Last updated on June 27, 2007
N
CH0 267°
CH1 207°
CH2 147°
CH3 117°
712 ft
714 ft
SEISMOMETER
738 ft
743 ft
STRAINMETER

Instrumentation at Strainmeter

Instrument	Units	Bottle/ASCII Scale Factor	Seed Scale Factor
Pore Pressure	Hecto Pascals	N/A (not installed yet)	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	1.0	1.42925E-04

1. General Information

- September 18, 2006 - 2B data updated to the 1 September, 2006. During the 2b processing it was found that the gauge value used to generate linear strain for Gauge 3 was 4.9744826386573732e+07 not 4.9560781466162823e+07 as stated in the XML files generated before 17 September 2006. This is corrected in XML files generated after 17 September 2006. This does not affect the tidal or atmospheric corrections only the time at which the gauage 3 linearized data is zeroed.

- November 9, 2006 - Record amounts of rain fell on the Olympic Peninsula between the 1st and 9th November 2006.

- Environmental door opened on March 3, 2006

- Logger restarted February 1-2, 13-14, May 25, Aug 17, Dec 17 (2 times), 2006

- Pore pressure sensor will be installed in June 2007.

- Sensitivities of all EH channels corrected on March 4, 2010.

2. Strainmeter Maintenance

- January 21-26, 2006, March 14, April 7, 2006 – Engineers on site

- August 11, 2006 - Mike Hasting visited B018 and upgraded the RT and GPS. He notes the following" I upgraded B018, Delphi, on my way down to Portland yesterday. A few unusual things to note, the channel 1 LCD display was not working when I arrived. I went ahead and did the upgrade and it still was not working. After the upgrade it came back but the channel would only go to G0 and channel 3 would only go to G2. Channel 3 also was jumping all over the place on the oscilloscope and neither channel 1 or 3 would move when changing the adjustments. After some fiddling with the adjustments for those channels some and rebooting them a few times they started working. I was able to adjust them and they looked good when I left the site. The GPS upgrade when without problem and was tracking when I left."

- January 19, 2007 – Wade Johnson replaced the router and hopefully placed it in a location that will get dripped on less, it was full of water when he arrived. He also got the VPN up and site is back on line.

- January 31, 2007 – Michael Hasting visited the site. Water had gotten into the brick for the VSAT shorting out the A/C side and tripping the GFI. He put in a new brick, moved things around so they should not get wet, added weather stripping to the doors to prevent water from getting in. The power supply for the GTSM was configured to only put out 2amps. He reconfigured it to provide 4.5amps now so it will recover faster after a power outage. No data was lost during this power outage

- October 29, 2007 UTC – Steve Smith visited the site.

  This station has been offline since about Sept 5th. It appears the GFCI socket tripped. Steve also found a dead UPS (that supported the VSAT IDU and the Cisco). It's unclear if the UPS failure was related to the socket trip, but likely. He found all batteries discharged to 3-4 volts so the batteries were no good. The net side came back after resetting the GFCI socket, but the GTSM would not come back without some new batteries.

  This station is very wet. It is by far the wettest site Steve has visited to date. Water all over the floor and condensed water all over the gear.

  20:30 - Onsite.
  20:38 - At hut.
  21:43 - Site powered off, GFI tripped.
  21:53 - Reset, does not trip, equipment powers up.
  21:56 - Net batteries @ 4.1V
  GTSM batteries @ 3.08V
  22:00 - UPS dead, removing.
  22:04 - UPS removed, powering on VSAT & Cisco.
  22:10 - Powered off net side to steal a battery.
  22:24 - Can't get GTSM to power on, must need a good battery.
  22:40 - Buttoning up site, going to look for car battery, and standard outlet.
  22:52 - Offsite.
  October 30, 2007 UTC
  00:06 - Onsite.
  00:14 - Old GFCI socket removed.
  00:50 - New socket installed, with cover, breaker back on, and tested.
  00:59 - New Marine battery in place. GTSM power box on.
  01:00 - All online.
  01:21 - Checked in with Warren.
  Appears F/O switch is broken.
  Connectivity not so good, VSAT probably downloading files from Hughes.
  01:23 - Verified black F/O Switch is bad. He will check capacitor later. Swapped out F/O switch.
  01:34 - Connectivity is now good. VPN up, pinging fine.
  01:35 - Started USB stick download.
  01:45 - Data download completed.
  01:48 - Offsite.

- October 31, 2007 UTC – Steve Smith visited the site.

  Steve replaced the marine battery and dead MK he had used as a shunt with 2 batteries on the net side, and 2 batteries on the GTSM side. He also put in the new dessiccant.

  23:42 - Onsite.
  23:43 - Doors open. Replacing the Net side batteries.
  23:52 - Done.
  23:56 - Start replacing GTSM side, shut down GTSM (time is approximate).
  November 1, 2007 UTC
  00:02 - GTSM side done, GTSM powered back on (time is approximate).
  00:09 - Doors closed.
  00:12 - Offsite.

- May 13, 2008 – Wade and Heidi got the new radio/cable connection up and running. There is also a new Marmot at the site that needs to be set up.

- March 17, 2009 - Logger was upgraded to 2.02.2 from 1.16.1.

- July 28, 2009 - RT upgrade to 1.20. US13RT1 board has a burnt out LCD, and US13RT3 was stuck in G0. Korey adjusted the quadrature, but it went back to G0. Reinstalled Firmware 1.20 and adjusted the quadrature, went back to G0. Installed Firmware 1.18 and adjusted the quadrature, went back to G0. Reinstalled Firmware 1.20 and swapped US13RT2 with US13RT3, both boards went to G3. Replaced Strainmeter power box with SP313 (UNID 27128), and removed Vsat dish.

- May 16, 2010 – From 14:05 – 15:10 PST the old hut and electronics were removed and a new hut and electronics were installed, and the rain gauge remounted. Marmot did not reboot properly, and wouldn't respond while Mike was onsite. It was working again the next morning. The lab power supply was removed.

- May 27, 2010 - Both fiber optic data ports were replaced.

- September 9, 2010 – Replaced GTSM GPS antenna and sent Coldstart command. This fixed the timing error. There were 5 satellites being tracked after change. Set quadrature, chop on GTSM.

- August 15, 2011 – The GTSM was turned off and the power box was replaced. The GTSM was turned back on.

- September 15, 2011 – The nature of the pressure data recorded by the GTSM21 barometer had changed since the power box was replaced. Liz opened the power box and shut off the GTSM. She scrapped the white paint off the power box where the top makes contact and drilled 4 very small holes in the power box.

- September 29, 2011 – All of the strainmeter boards were on, but there was no data flow. The strainmeter was turned off and back on. Data flow resumed, but only for a few hours.

- October 7, 2011 – The power box, GTSM cable that goes from the power box to the GTSM environmental box, and cable that goes from the power box to the GTSM battery bank were

all replaced. The new power box also has the white coating. To ensure that the seal is not to tight to allow barometric readings, the screws were loosened so to break the seal and allow airflow. The power surge protector strip was replaced with the BSM site standard surge protector for AC sites.

- February 3, 2012 – Liz arrived 15 minutes before the Comcast appointment to meet with Shane, the contact for the site. When she drove by, the Comcast crew was already working on repairing the cable. By the time Shane and Liz arrived they were finished. Shane opened the Delphi Community center and set up the ladder and lighting for the bell tower (where the router and radio are located). Shane, Liz, and the Comcast repair person climbed up to make sure the router was working properly. Liz then called Wade for a site check. DSL communications are restored. Liz cleaned out the rain gauge, which was clogged with pine needles. Shane clears out the rain gauge every time he visits the Delphi community building.

- June 18, 2012 – Six batteries were added, but not wired into the system to relieve the truck of some battery weight.

- June 21, 2012 – The batteries were wired into two sets of four batteries, making a main bank of 8 batteries. The site was photographed. There are two batteries going to the GTSM, totaling 10 batteries for the site.

- January 18, 2013 – Chad visited the site to reset the Comcast modem.

- February 5, 2013 – Liz cleaned out the rain gauge.

- November 28, 2013 – Local contact power cycled the router and modem to restore dataflow.

- March 255, 2014 – CH2 was at Gain 2. The RT board was just turned off and back on. This fixed the issue for now. Liz adjusted chops and quads and cleaned out rain gauge. This site was a hut upgrade site and the sides had large gaps, allowing ants, lizards, and moisture in. Liz sealed the space between the enclosure and cement pad with expansive foam. Used the shop vacuum to remove the ant nest and ants, and added a thin layer of diatomaceous earth where they were getting into the GTSM environmental box.

- November 17, 2014 – Site and modem were power cycled.

- December 10, 2014 – Power cycled cable modem.

- October 22, 2015 – Adjusted quads and chops. Checked rain gauge, site contact cleans it regularly.

- March 21, 2016 – Site contact power cycled router and modem in the attic.

- September 26, 2016 – Tested data flow failure back to the GTSM. Reseated and power cycled logger board. Turned off GTSM and documented resistance and capacitance of downhole instrument. Cleaned pine needles out of rain gauge. GTSM was only online briefly.

- September 29, 2016 – Logger board logger light was solid green and stuck in standby. There were no data files for the days the logger was offline. Swapped out logger board to see if data flow was restored. GTSM went off-line not long after leaving site. Will return and swap out power box and reinstall old logger board.

- October 6, 2016 – Tried swapping out power box. Power box swap did not resolve issue. Swapped out 1-port FODP, which did not resolve issue. Played with swapping old logger board back in, no change. Left new logger board in site. Logged onto logger board left at site through serial port. Day files were created. Could reach GTSM when at site, but goes off-line an hour after each visit. Next visit bring: 4-port FODP, new fiber optic cable and another spare logger board.

- October 25, 2016 – GTSM FODP fault light was on. Swapped out fiber optic cable and FODPs. Power wire to battery bank was corroded, replaced wire. Updated GTSM battery bank with heavy duty all weather jumpers. Could ping GTSM from site, but not remotely. Swapped network and gateway IP. Could reach site remotely. Put old logger board in to download data. No data had been created after Sept 9, confirming a bad logger board. Put new logger board back in. Swapped old power box back into site.

- December 7, 2018 – Site comms are located in the attic, and site comms go off-line during the spring and fall during storms. The site contact mentioned that they could hear something buzzing when they are asked to remotely power cycle the equipment. They mentioned it was the power strip/surge protector. LIz mailed them a new one and they kindly replaced the comms power strip. As a note the power to the old school was upgraded with the exception to the power going into the attic. This may be part of the issue.

- November 19, 2018 – Could only reach external IP of cisco. Tunnel would not come up. After looking at the config file on the cisco, noticed that it had reverted back to an old version using the concentrator instead of the ASA. This site was migrated last year to ASA and had been working since then. Unclear how the old config ended up back on there. Corrected and re-uploaded the config file using the ASA instead of the old Concentrator. This allowed the tunnel to come back up.

- October 15, 2020 – Cleared out rain gauge.Adjsuted GTSM chops and quads. CH2 would not move completely in phase.