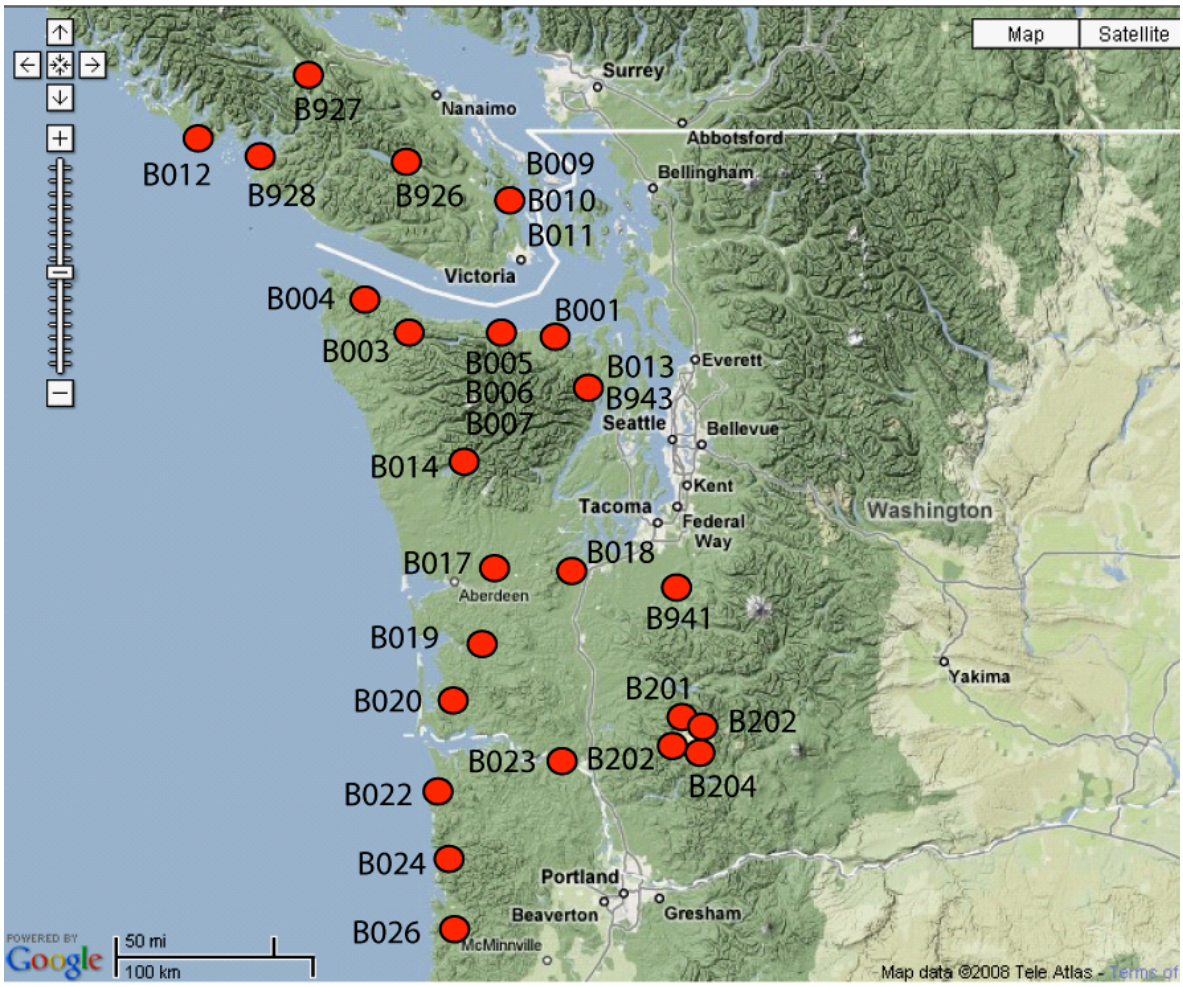
Station Notes for B201, coldwt201bwa2007

Latitude:	46.3033 (WGS 84)
Longitude:	-122.2648 (WGS 84)
Elevation:	990 m / 3248 ft
Install Depth:[1]	242.9 m / 797 ft
Orientations:[2]	CH0=18, CH1=318, CH2=258, CH3=228
Install Date:	September 12, 2007
GTSM Technologies #:	US52
Executive Process Software:	Version 1.14
Logger Software:	Version 2.02.2
Home Page:	http://pbo.unavco.org/station/overview/B201
Notes Last Updated:	Sep 18, 2018

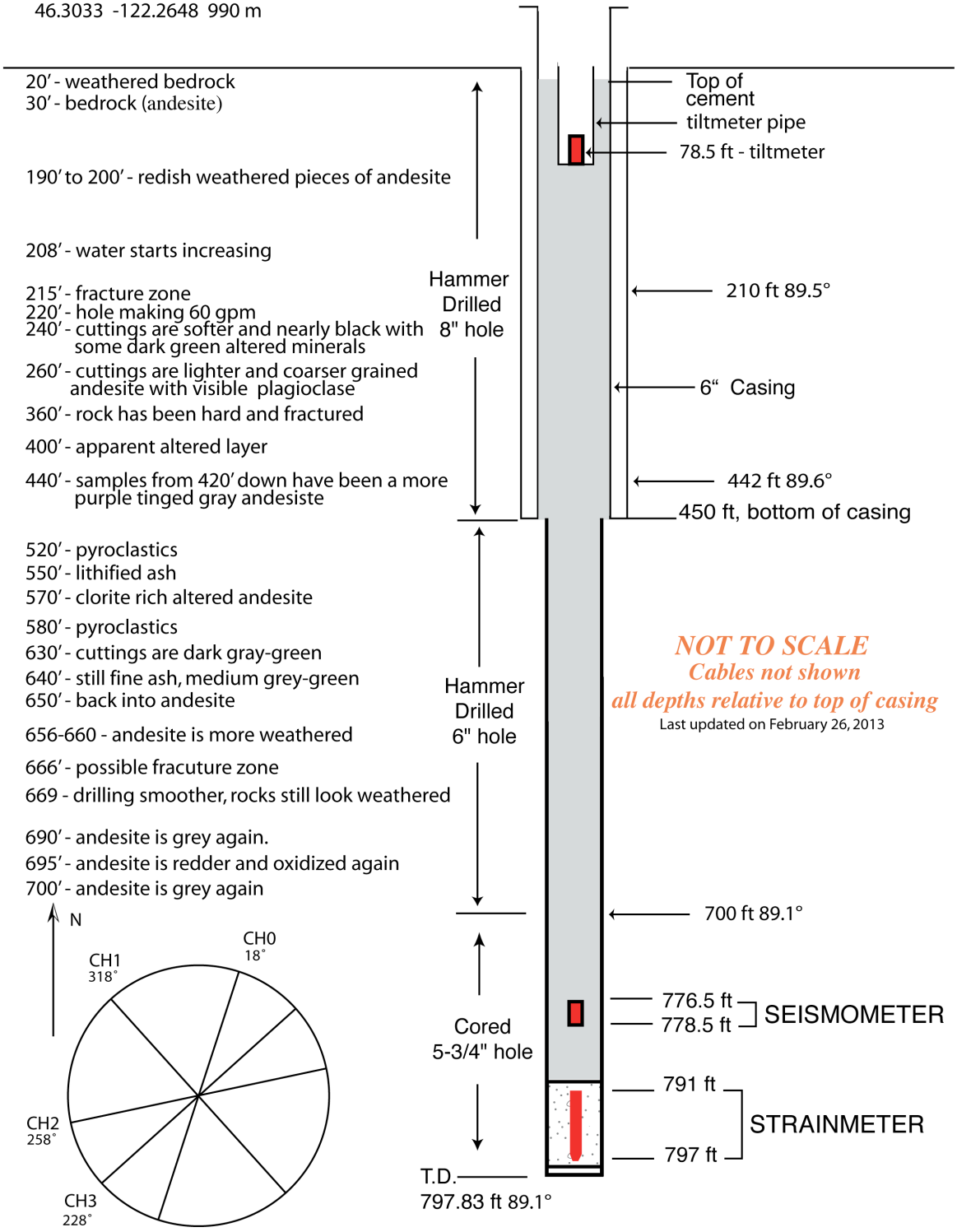
[1]Install depth is from the top of the casing to the bottom of the strainmeter.
[2]Orientations are in degrees East of North.



Pacific Northwest PBO strainmeter network, April, 2008

B201 coldwt201bwa2007

46.3033 -122.2648 990 m



Instrumentation at Strainmeter

Instrument	Units	Bottle/ASCII Scale Factor	Seed Scale Factor
Pore Pressure	Hecto Pascals	None Installed	---
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	None Installed	

1. Installation notes

September 11, 2007
Put US57 on test, and finish logging hole. Sound bottom of hole at 803' 8", then lift the bottom using one bag of thick Portland cement. Clean up drillers mess.

September 12, 2007, UTC
15:30 - Onsite. Begin setting up for install.
18:15 - Sound hole. Bottom is at 797' 10".
18:47 - Perform compass test. There was a large transformer in the parking lot. They got as far away from it as practical calibrate the compass.
19:05 - Safety meeting.
19:16 - Begin mixing grout.
19:18 - Last bag of grout added.
19:20 - 15.3 gallons of water added to grout.
19:21 - Add 0.2 gallons of water.
19:28 - Begin filling dump bailer.
19:32 - Dump bailer full. Start down the hole.
19:45 - On the bottom.
19:50 - Out of the grout.
19:55 - Out of the hole.
19:56 - GTSM in the hole.
20:14 - GTSM at 797'.
20:42 - Called good, begin cleanup.
21:00 - Begin digging trench for power and communications
21:30 - WCJ off site for meeting.
21:59 - Everyone else leaves site.

September 13, 2007, UTC
15:13 - Onsite
15:25 - GTSM turned off to move trailer.
15:40 - GTSM back on.
17:15 - Lower the seismometer on coated steel cable.
18:08 - Hang the seismometer 4' above the bottom.
18:10 - Lower tremmy pipe.
18:20 - Program IPs in GTSM21.
18:35 - Shut down logger to set temperature, but could only could get TP to .647v.
18:40 - Logger back online.
19:07 - Tremmy on the bottom. Depth is 782.5 feet. Cement truck onsite, begin pumping. Tremmy pipe breaks at about 200 feet down hole. Add 250 feet more pipe, then pump in 5.5

yards of cement.
21:15 - Stop pumping.
22:00 - Shut down GTSM21, bury cable, and pour pad.
September 14, 2007, UTC
00:30 - Turn on GTSM21.

September 14, 2007, UTC
15:30 - Onsite. Shut down GTSM21 to set up enclosure. Set up electronics and comms.
~18:00 - Turn on the GTSM21.
22:00 - Leave site.

2. General Information

- No pore pressure infrastructure is installed at this site.

- Since the site came back up on January 16, 2008 it has not been able to receive valid GPS time. Dave Mencin does not think the station will be able to get a valid GPS sync until the snow melts. The site may need to be reworked once the snow melts.

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

3. Strainmeter Maintenance

- October 24, 2007 – A college of Mike Lisowski from CVO was at the coldwater facility checking on some of their equipment. While there Warren spoke with him on the phone. They looked at the system and he found that there was no AC power at the outlet in the hut (using a voltmeter). They located the circuit breaker inside the service building and determined that it was not tripped. The site contact was not around and they were not prepared to do further ac mains evaluation. This station needs a site visit by UNAVCO employees to restore power. The site will likely need batteries for the GTSM.

- November 16, 2007 – Wade Johnson visited the site to get the station online. He also replaced 2 GTSM batteries.

- January 16, 2008 UTC – Wade Johnson visited the site to get it back online. The site went down due to a bad GFI and the GTSM was off line. The site was encased in a 5ft snow drift and it took a bit of work to get the site open. They replaced the GFI plug with a standard AC outlet and replaced the two GTSM batteries. Over all, the site was in very good shape. The VSAT and GPS radio antennas looked like they were in good shape.
  22:00 - Onsite. Find enclosure in snow.
  23:30 - Get enclosure open.
  23:50 - Replaced plug, mains back up.
  00:15 - Replaced GTSM21 Batteries.
  00:40 - Leave site.

- June 29, 2008

  Logger board fails. Subdirectories in the data directory deleted. Remote reboot failed.

- July 7, 2008. Reason for site visit: GTSM logger board has failed

  1445 (local) Mike Gottlieb on site. Confirmed logger board failure (data folder still empty) Board will also not go into standby.
  1500 pull board (US52LG) and replace with US45LG
  1508 New board programmed and rebooted
  1515 Confirm can talk to board through F/O modem and data folder contains subfolders and files.
  1545 off site

- September 25, 2008 – Wade Johnson visited the site to install a tiltmeter. There is 80 ft of tiltmeter pipe in the hole, with 1" of water at the bottom. The top of the pipe is 2.5" above the casing. X+ 316 degrees magnetic north.

- March 18, 2009 - The logger was upgrade from version 1.15 to 2.02.2.

- May 15, 2009 – Mike Gottlieb visited the site. When he arrived on site the transmit and system lights were off on the IDU. He power cycled the IDU and the connection was restored. After a few minutes the connection failed again, claiming a TCP acceleration error. A second restart seems to resolved that issue, and the connection remained stable for the next 1.5 hrs he was on site. This is an A/C vsat and does not currently have a timer. If problems continue it may be worth finding a suitable A/C timer. Mike also installed a Setra pressure sensor, and switched the jumpers to OFF on the AP board. He also swapped the powerbox. The clock was ~15 minutes slow before swap, but caught up and was tracking 7 satellites when Mike left the site.

- May 25, 2009 – Switched jumpers to OFF on the AP board.

- August 17, 2009 – Replaced 4 port modem.

- March 1, 2010 – Mike visited the site to look at the Q330. It was tracking 4-7 satellites and had 100% clock while he was there.

- March 15, 2010 – Mike Gottlieb replaced Q330 at 13:30 PST. He did not see any reception while onsite, but by 3/16/10 it appears to have a fairly consistent lock. The clock is reading 100% now, although the signal is still fairly weak. Warren is looking into higher gain antennas.

- March 19, 2012 – The GTSM clock is slow. A remote coldstart command was sent. The station now has GPS time.

- September 19, 2012 – Mike moved the comms from VSAT to the MSH N network.

- January 23, 2014 – Liz applied the cold start command to fix the invalid GPS time.

- March 25, 2014 – Marmot was replaced.

- July 20, 2014 – An active seismic experiment was scheduledd for the nights of July 22, July 23 and July 30, 2014. http://imush.org/blog/2014/07/20/realtime-recordings-of-the-active-shots

- September 15, 2014 – Replaced the 6 original batteries with 10 new ones. 1x2 GTSM and 2x4 mains.

- May 19, 2015 – Tiltmeter averaging rate was increased to 360 samples at 16:21 UTC to reduce noise. Data rate remains 1 sps.

- July 13, 2018 – Clock slow. Last time set was December 2017. No GPS_Pulse in status report, Showed 4 satellites though. Coldstart gave bytes read = 0. Replaced power box. Timing fixed, GPS pulse present now. Left original antenna. Adjusted chops and quads as scheduled maintenance. All channels adjust well.