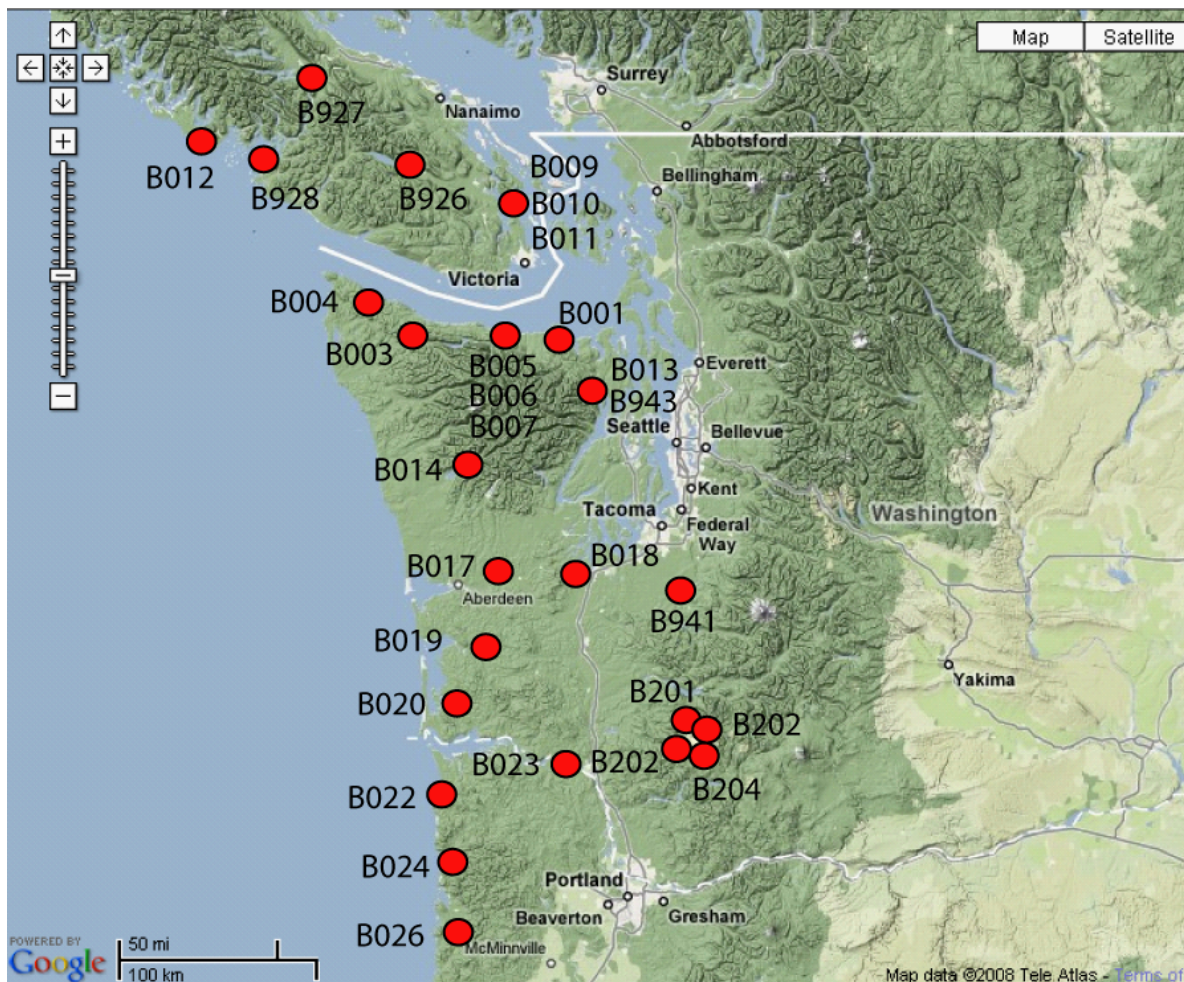


Station Notes for B019, waldrf019bwa2008

Latitude:	46.6527 (WGS 84)
Longitude:	-123.6518 (WGS 84)
Elevation:	9 m / 30 ft
Install Depth: ¹	160.6 m / 527 ft
Orientations: ²	CH0=245.1, CH1=185.1, CH2=125.1, CH3=95.1
Install Date:	May 12, 2008
GTSM Technologies #:	US56
Executive Process Software:	Version 1.14
Logger Software:	Version 2.02.2
Home Page:	www.unavco.org/instrumentation/networks/status/pbo/overview/B019
Notes Last Updated:	November 8, 2019

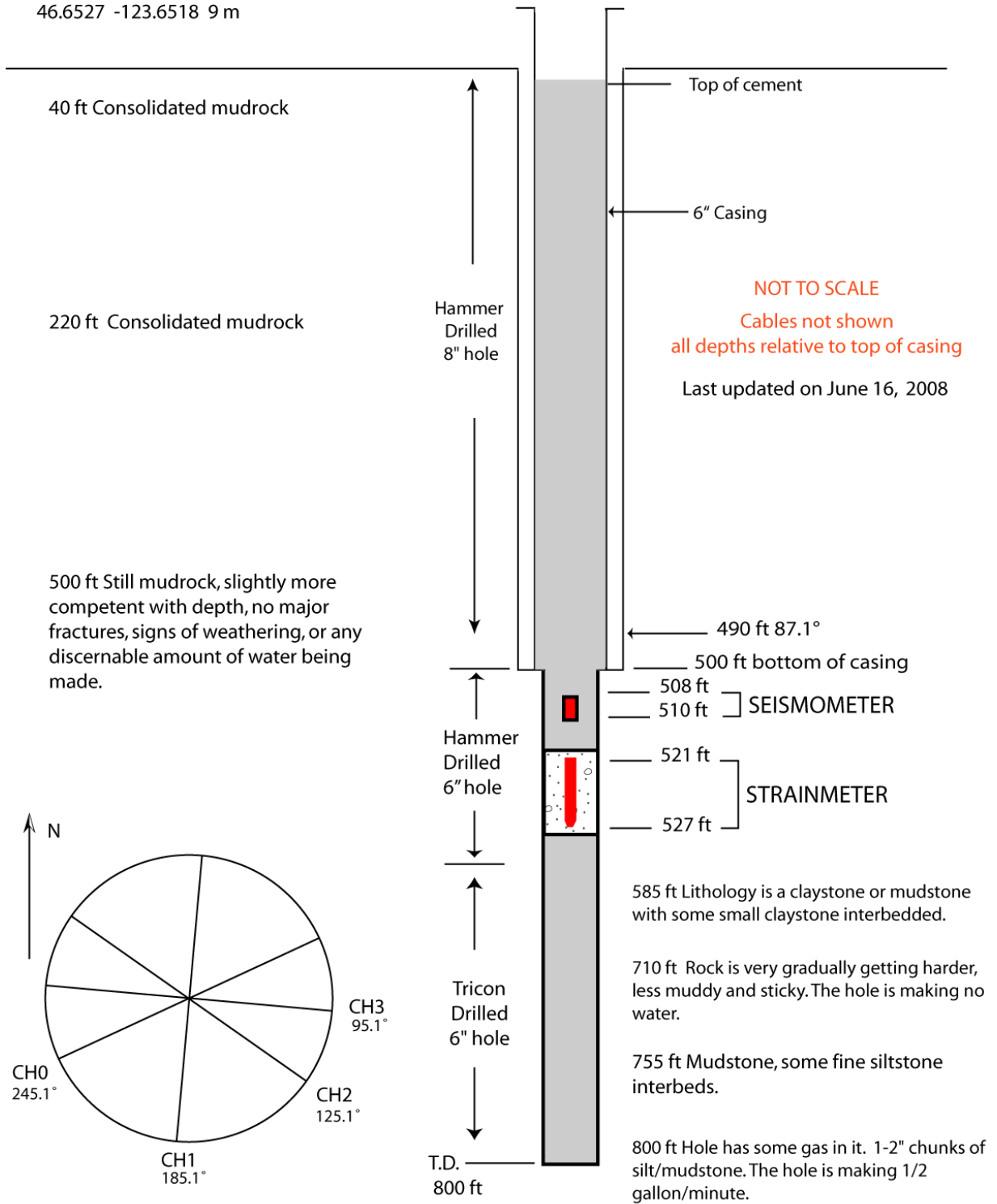
¹Install depth is from the top of the casing to the bottom of the strainmeter.

²Orientations are in degrees East of North.



Pacific Northwest PBO strainmeter network, April 23, 2008

B019 waldrf019bwa2008
46.6527 -123.6518 9 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	1.0	1.42925E-04

1. Installation notes

May 12, 2008

On site, sound hole at 528'4". Install zone is 527'-520'. Decide to try and install if new Penn Grout mixture looks good.

Flow Cone Test for New Penn Grout (batch AM805)

20 minute mix of 3 bags at 5 quarts of water per bag.

S.G. - 2.21

2 minute flow: 20 s

20 min: 22 s

30 min: 24 s

40 min: 24 s

50 min: 30 s (some breaking of flow at 27 s)

60 min: 30 s (some breaking of flow at 28 s)

Grout testing looks good, decide to go ahead with install of US56 at 527'.

Mix 10 bags of grout (AM805) for 20 minutes at 5 quarts of water per bag. Mix very fluid.

S.G. 2.17

Dump grout at the bottom of the hole at T=8 minutes after mixing.

Bailer out of hole at T=13 minutes.

SM going in hole T= 15 minutes.

Strainmeter at 527' at T=25 minutes. Felt slight resistance in grout, but very smooth penetration.

Instrument responsive, at G3 at T=40 minutes.

Rename as B019 at 23:00 UTC.

May 14, 2008 UTC

15:00 - On site.

Testing seismometer #123. Seismometer is acting funny, decide not to use it. Tests later in the day come back normal, probably some combination of cold and wet conditions was the cause of the earlier results. End up using seismometer #125.

Com - infinite resistance

V - 2.36 kOhm

H1 - 2.345 kOhm

H2 - 2.355 kOhm

16:00 - Lowering seismometer to depth of 510'.

16:30 - 17:15 - Trip in, tag grout at 514.5' (14' of grout).

17:15 - 19:00 - Pumping 3.5 yards of cement, get return to surface.

19:30 - Dig pit to bury excess strainmeter cable.
19:37 - Strainmeter off.
21:10 - Finnish pouring pad.
22:00 - Installing fence.
22:55 - Strainmeter back on.
00:00 - Off site.

May 15, 2008

The electrician was at the site during the afternoon and probably shut down the power to the site while he was putting in the circuit.

2. General Information

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

3. Strainmeter Maintenance

- May 30, 2008 – Excessive noise noted on the CH1 channel. The noise is visible in the 1-sps data and in the spectrograms.
- March 23, 2009 – Logger software upgraded to 2.02.2
- July 27, 2009 – RT upgrade to 1.20, and adjusted quadrature. Setra barometer installed.
- February 8, 2011 – Temporary broadband seismometer deployed, and borehole seismometer metadata collected with the Birddog.
- July 3-7, 2012 – Mike Gottlieb deployed a broadband seismometer. The broadband was oriented to 129 degrees magnetic. Equipment was left onsite until July 6, 2012.
- March 28, 2013 – The GSP time was showing as invalid. Liz remotely applied the commands for the GPS cold start. The site has a valid GPS time again.
- April 15, 2014 – Quads were out of phase and were adjusted, chops did not need to be adjusted. Refreshed desiccants and filled VSAT mount with expansive foam.
- September 16, 2015 – Annual site visit. Adjust GTSM chops and quads.
- July 20, 2016 – Visited site to swap the batteries.
- September 24, 2019 – RV50 powered up but site offline. Likely APN issue. Couldn't log on, it would not take any of the likely passwords. Tried rebooting, didn't help. Replaced RV50. Added straps for earthquake protection to environmental box.