ASHES
Medium-Power (MP) JBox

Location: 45.9°N, 130.0°W
Depth of Water Column: 1540 m

ASHES is a hydrothermal study site at the base of the western caldera wall

Instrument Name/Description	Data Products	Relative Depth
Short-period seismometer for regional/local seismic activity*	Short period ground velocity measuring ground motion velocity in 3 orthogonal directions for regional/local seismicity	Bottom
Diffuse Vent Fluid 3-D Temperature Array	Temperature array in spatial grid measuring seafloor diffuse flow temperature and temperature gradients	Bottom
Water sampler, osmosis-based	Physical water samples of diffuse flow and seep fluids from seafloor for major/trace element chemistry	Bottom

*Note: Two Short-period seismometers will be deployed at this station.

Disclaimer: All data are subject to revision without notice; exact locations of mooring sites are not yet finalized; exact depths of sensors will be determined at the time of deployment.

ASHES-HD Camera

Location: 45.9°N, 130.0°W
Depth of Water Column: 1540 m

Inferno-Mushroom: Adjacent high-temperature hydrothermal vents
Interface box that supports 10Gbps, 375V cable connection to HD Camera

Instrument Name/Description	Data Products	Relative Depth
HD Camera with Strobes, Pan, and Tilt	High Definition (HD) video imagery of vents, diffuse flow, seeps, and macrofauna	Bottom

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Eastern Summit
Medium-Power (MP) JBox

Location: 45.9°N, 130.0°W
Depth of Water Column: 1516 m

Secondary node to support geophysical instruments on the Eastern Summit Flank

Instrument Name/Description	Data Products	Relative Depth
Short-period seismometer for regional/local seismicity*	Short-period ground velocity measuring ground motion velocity in 3 orthogonal directions for regional/local seismicity	Bottom
Low Frequency Broadband (Passive) Acoustic Receiver (Hydrophone) on seafloor	Frequency; Acoustic pressure waves. Measures wind, rain, and seismic t-phases	Bottom
Broadband seismometer for global/regional seismic activity	Broadband ground velocity and acceleration measuring ground acceleration in 3 orthogonal directions. Used to measure global/regional seismic events and harmonic tremors	Bottom

*Note: Two Short-period seismometers will be deployed at this station.

Disclaimer: All data are subject to revision without notice; exact locations of mooring sites are not yet finalized; exact depths of sensors will be determined at the time of deployment.

Central Caldera
Medium-Power (MP) JBox

Location: 45.9°N, 130.0°W
Depth of Water Column: 1526 m

Secondary node to support geophysical instruments in the center of the caldera

Instrument Name/Description	Data Products	Relative Depth
Short-period seismometer for regional/local seismicity	Short-period ground velocity measuring ground motion velocity in 3 orthogonal directions for regional/local seismicity	Bottom
Pressure Bottom tilt	X tilt, Y tilt; Pressure; Orientation; Seafloor uplift and deflation due to magmatic processes	Bottom
Low Frequency Broadband (Passive) Acoustic Receiver (Hydrophone) on seafloor	Frequency; Acoustic pressure waves. Measures wind, rain, and seismic t-phases	Bottom
Broadband seismometer for global/regional seismic activity	Broadband ground velocity and acceleration measuring ground acceleration in 3 orthogonal directions. Used to measure global/regional seismic events and harmonic tremors	Bottom

Disclaimer: All data are subject to revision without notice; exact locations of mooring sites are not yet finalized; exact depths of sensors will be determined at the time of deployment.

International District I
Medium-Power (MP) JBox

Location: 45.9°N, 130.0°W
Depth of Water Column: 1520 m

Secondary node to support high-temperature hydrothermal fluid instruments

Instrument Name/Description	Data Products	Relative Depth
Black Smoker Fluid Chemistry Sampler	Vent fluid temperature, Hydrogen concentration, Sulfate concentration, Hydrogen sulfide concentration, pH	Bottom
Temperature-Resistivity	Black Smoker vent fluid temperature, Hydrogen and Chloride concentration, Eh (redox state), and Resistivity	Bottom

Disclaimer: All data are subject to revision without notice; exact locations of mooring sites are not yet finalized; exact depths of sensors will be determined at the time of deployment.

International District 2
Medium-Power (MP) JBox

Location: 45.9°N x 130.0°W
Depth of Water Column: 1527 m

Secondary node to support geophysical and low-temperature hydrothermal fluid instruments

Instrument Name/Description	Data Products	Relative Depth
Mass Spectrometer	Dissolved gas concentration in diffuse flow and seep fluids	Bottom
Water Sampler	Physical vent fluid sample. Used for measuring major/trace element chemistry, temperature, H_2S, pH	Bottom
Particulate DNA Sampler	16s rRNA sequence of filtered physical sample. Used measure microbial community	Bottom
Ethernet Camera with Strobes	Digital still images of water column biology, vents, diffuse flow, seeps, macrofauna	Bottom
3-D Single Point Current Meter	Turbulent water velocity at a single point	Bottom
Short-period seismometer regional/local seismic activity	Short-period ground velocity measuring ground motion velocity in 3 orthogonal directions for regional/local seismicity	Bottom
Pressure Bottom, tilt	X tilt, Y tilt, Pressure, Seafloor uplift and deflation due to magmatic processes	Bottom

Disclaimer: All data are subject to revision without notice; exact locations of mooring sites are not yet finalized; exact depths of sensors will be determined at the time of deployment.