

Healy 0102 Sample Stations

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D1	85° 30.1 N	16° 45.85 E	3359	N face of S rift valley wall	dredge lost
RC1	85° 33.83 N	15° 58.68 E	4794	local high in axial valley	20 mg basalt glass fragments; sponge spicules; MAPR LSS peak at 3200 m (2700-3300 m).
D2	85° 5.49 N	9° 43.67 E	4680-4524	saddle of rift valley	seperentinite breccia, mud; sponges; MAPR LSS peak similar to that in RC1 but larger
D3	85° 3.55 N	9° 58.00 E	4038-3574	SE wall of axial rift	diabase and assorted gabbro; amphipod body; MAPR LSS peak similar to RC1 and D2 but with more structure and indication of a shallower peak at about 2800 m
D4	84° 49.27 N	4° 42.45 E	4294-3567	N wall of rift near axial offset	300 kg assorted peridotite and breccia; MAPR similar to RC1, D2 & D3 but smaller, and dominates on downcast. Includes temperature.
D5	84° 26.47 N	2° 9.64 E	4084-4113	E slope of 150 m volcanic ridge	palagonitized pillow basalt; sponges; MAPR similar to earlier casts but with an additional large LSS spike in the downcast centered at 2996 m, with corresponding 0.006 °C temperature anomaly
RC2	84° 6.973 N	0° 34.085 E	3480	small cone in center of circular volcanic structure	sediment + basaltic glass fragments, hardened polychaete tubes; MAPR: no anomalies
D6	84° 7.71 N	0° 27.86 E	3700-3535	NW flank of small volcano	weathered pillow basalt, lava buds, glass fragments; shrimp sp. A; MAPR ill defined increase in light scattering below 2700 m
RC3	84° 9.53 N	0° 38.47 E	3728	rim of circular depression	sediment + basalt glass fragments; MAPR large LSS peak with flat top and bottom 1500 to 2200 m, upcast only.

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D7	83° 35.61 N	3° 3.80 W	3420-3080	rift between 2 lineaments	serpentine and glass fragments; 1 jellyfish sp. A ; MAPR LSS plume 2200-2900 m, small and noisy
D8	82° 53.35 N	6° 15.53 W	4102-3982	400 m high volcano just north of intersection w/Lena Trough	hydrothermal sulfides, glassy pillow basalt and lava tubes; sponges, empty limpet shells; MAPR LSS plume 2200-3300 m, larger on upcast, includes T signal.
D9	82° 54.10 N	5° 33.33 W	3077-2314	E wall of Gakkel Ridge intersection w/Lena Trough	mud balls; empty polychaete tube; MAPR increase in light scattering below 1800 m on downcast, not very plume-like
D10	82°55.81 N	5° 29.36 W	3400	W-E rajectory of a steep wall	dredge lost
RC4	82° 55.09 N	6° 5.14 W	3982	small knob NE of D8	sediment, no MAPR data (bad battery?)
D11	82° 59.94 N	6° 19.09 W	4004-3987	small volcanic feature	old pillow basalt w/glass rind; sponges; MAPR very noisy below 1500 m, multiple LSS peaks, some similarities below 3000 m to D08.
D12	83° 20.38 N	4° 59.87 W	3028-2986	S extension of volcanic ridge	basalt pillows w/ glass and glass fragments; empty serpulid shells; MAPR LSS increase below 2200 m and starts to decrease to bottom, no temperature data (MAPR#13)
D13	83° 20.18 N	5° 42.97 W	3292-3097	N rift valley wall S of midpoint of magmatic center	old pillow basalt; no MAPR deployed
D14	83° 25.53 N	4° 26.28 W	3249-3053	N nose of axial volcanic ridge in center of rift valley	4 kg fresh glassy lava tubes and glass fragments; MAPR no clear anomaly
D15	83° 27.58 N	4° 22.09 W	3206-3141	Northern most nose of axial rift segment going over a local volcanic high	glassy pillow basalt; hardened polychaete tubes on basalt; MAPR no clear anomaly
RC5	83° 30.23 N	4° 29.51 W	3776	NE end of volcanic ridge in axial rift	basalt glass chips; no MAPR deployed

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D16	83° 36.55 N	4° 14.07 W	3389	base of N wall of rift valley	thumb size peridotite cobbles; no MAPR deployed
D17	83° 37.91 N	4° 19.68 W	2584-2324	top of NW wall of rift valley	60 kg of drop stones of granite, basalt, shale, sandstone; 1 1/2 shrimp sp. A, 1 shrimp sp. B; no MAPR deployed
D18	83° 41.84 N	2° 54.43 W	3860-3957	W slope of volcanic ridge in center of rift valley	pillow basalt and lava tubes with thick, palagonitized glass rinds; sponges; MAPR small LSS and temperature signals at ~2400 m
D19	83° 45.47 N	2° 31.64 W	3530-3540	NW slope of axial volcanic ridge	DREDGE info? MAPR no anomaly
RC6	83° 45.87 N	2° 20.42 W	3098	summit of axial volcanic ridge	50 g basalt glass fragments, MAPR very similar to D18
D20	83° 51.53 N	1° 39.46 W	2986	SE flank of axial volcanic ridge	empty dredge; MAPR LSS peak at 2700 m, with possible temperature signal.
D21	83° 51.60 N	1° 56.80 W	3162-2989	SW flank of center of axial volcanic ridge	1-2 kg of glassy pillow basalt; MAPR classic plume (LSS and T) 2400 –2700 m
RC7	83° 52.47 N	1° 45.90 W	2864	summit of axial volcanic ridge	20-30 g fresh basalt glass; MAPR LSS peak at 2700 m (which is near the bottom here)
D22	83° 54.92 N	1° 17.19 W	3281-3132	NE of shallowest point on axial volcanic ridge	~5 kg glassy basalt; 1 shrimp sp. A, 1 shrimp sp. B; MAPR no clear signal
D23	84° 0.60 N	0° 51.90 W	3533-3437	N end of axial volcanic ridge	numerous glassy pillow basalt and flow tops; MAPR no clear signal
CTD4	83° 51.56 N	2° 0.63 W	3283-3218	near dredge 21	water samples between 3250-2150 m water depth, clear plume signals in MAPR and CTD (T, S, and transmissometer) data
D24	84° 5.51 W	1° 39.36 W	3090-2891	base of rift valley NW wall	pillow basalt and 1 thumb-size cobble of peridotite; 1 empty gastropod shell, 1/2 bivalve shell sp. A, 1/2 bivalve shell sp. B, MAPR no anomaly
D25	84° 23.71 N	2° 5.15 E	3705-3690	small volcanic feature in rift valley	old pillow basalt; MAPR no anomaly

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D26	84° 27.60 N	2° 33.61 E	4249-4089	S wall of axial rift deep	10 kg old pillow basalt and numerous chunks of fresh glassy rock, some popping; sponges. MAPR LSS peak with two maxima at ca. 2800 and 3200 m.
D27	84° 29.17 N	2° 43.71 E	4331-4033	300 m high volcanic cone in axial rift	15 kg of fresh, glassy plagioclase-phyric lava tubes, one ~2 feet long intact; sponges. MAPR double LSS peak as in D26.
D28	84° 29.82 N	2° 42.16 E	4292-3858	NW wall near N end of axial deep	basalt pillows, hyaloclastites; and sponges. MAPR double LSS peak as in D26 & D27.
RC8	84° 31.19 N	2° 36.32 E	3745	volcanic cone N of D28	sediment containing fresh, highly vesicular glass; foraminifera and ice-rafted debris MAPR double LSS peak as in D26 – D28.
D29	84° 39.02 N	2° 47.53 E	4526-4309	base of rift valley N wall	30 lbs fresh peridotite, some cpx-rich; sponges. MAPR similar to previous four stations but much larger and sharper, also includes temperature peak corresponding with large LSS spike at 2900 m on upcast.
D30	84° 39.97 N	3° 0.16 E	4470-4058	mid-section of N wall of axial deep	25 lbs peridotite and peridotite breccia; sponges. MAPR same double peak in LSS
D31	84° 45.17 N	3° 51.24 E	4271-3977	NW axial valley wall	empty dredge. MAPR double peak 2850 and 3100 m, small T signal on upcast.
D32	84° 53.76 N	6° 21.42 E	4614-4305	N wall of axial deep	peridotite, sediment; sponges, 1/2 bivalve shell sp. C. MAPR same structure, with T and LSS spikes at 2800 – 2850 m.
D33	85° 1.19 N	7° 26.83 E	3486-3256	small knob atop N wall of axial deep	several peridotite cobbles. MAPR similar to above with very large LSS and T spike at 2700 –2800 m on downcast.
D34	85° 1.17 N	8° 16.90 E	4482-3575	N wall of axial deep	peridotite, sediment. MAPR LSS peak ca. 3200 m, maybe a second shallower peak as above

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D35	85° 15.43 N	10° 44.08 E	4045-3790	N wall of rift valley	sediment flows containing chunks of fresh, aphyric basaltic rock and vesicular glass. MAPR LSS peak 3000-3200 m.
RC9	85° 12.81 N	10° 41.41 E	4675	60 m-high circular feature in rift valley	sediment. MAPR LSS peak 3000-3200 m
RC10	85° 15.53 N	12° 30.60 E	4169	slope of volcanic plateau SE of axial deep	small amount of basalt glass. MAPR LSS peak 3000-3200 m
D36	85° 15.52 N	12° 19.90 E	4456-4355	W side of volcanic ridge in axial deep	40 kg old pillow basalt and glassy basalt fragments; sponges. MAPR LSS peak 3000-3200 m
D37	85° 17.55 N	11° 29.52 E	4553-3950	N wall of axial deep	old pillow basalt and young glassy basalt intruded into sediment; sponges. MAPR LSS peak 3000-3200 m plus T signal
D38	85° 18.98 N	12° 42.34 E	4764-4588	cliff of volcanic ridge in axial deep (reflective sidescan zone)	40 kg old pillow basalt and fresh basalt glass chunks; sponges. MAPR LSS peak 3000-3200 m
RC11	85° 22.41 N	13° 55.63 E	4673	small constructional (?) feature on N side of axial valley	sediment. MAPR LSS peak 3000-3200 m, shallower spike on upcast plus T signal
D39	85° 24.30 N	13° 36.26 E	4077-3819	wall 2 miles N of RC11	peridotite; 1 jellyfish sp. A, 1 ctenophore sp. A. MAPR LSS peak 3000-3200 m (maybe shallower too), also T signal
D40	85° 26.84 N	14° 33.77 E	4508-4392	N edge of axial deep	150 kg peridotite, peridotite breccias and sandstone, 2 umber fragments, 2 basalt fragments; nermertean worm fragments, few sponge fragments. MAPR LSS peak 3000-3200 m
D41	85° 41.12 N	17° 50.19 E	4001-3962	volcanic ridge in center of axial valley	15 kg plagioclase-phyric basalt flow tops w/Mn encrustation; sponges present. MAPR LSS peak 3000-3200 m

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D42	85° 43.11 N	18° 1.23 E	3738-3465	mid-section of N wall of rift valley	100 kg weathered pillow basalt with thin glass rinds; smaller, thicker glass fragments; sponges, MAPR small signal in LSS and T on downcast
D43	86° 2.57 N	24° 41.13 E	4329-3777	mid-section of N wall of axial rift <3900 m	5 lbs of cobbles of gabbro, basalt, serpentinized dunite; 1 shrimp sp. A, MAPR small LSS peak 3300-3400 m.
D44	86° 2.49 N	24° 40.02 E	4300-3874	same as D43	10-15 lb of altered basalt, hand-size dropstone of quartzite, several smaller ones; 1 shrimp sp. A in very poor condition, sponges, MAPR small LSS peak at 3300 m
D45	86° 1.13 N	25° 1.27 E	4746-4498	headwall of deep basin at end of segment	~30 lbs of old weathered basalt (some pillows) w/some embedded glass chunks MAPR LSS peak 3300-3400 m, larger than D43 and D44.
D46	86° 2.48 N	30° 4.83 E	4531-	N wall of rift valley	~1000 lbs of greenstone and old basalt gravel, quartzite; sponges; MAPR small LSS peak ~3400 m.
D47	86° 2.34 N	31° 3.37 E	4051-3984	fissure between 2 volcanic ridges atop saddle in axis	small chips of weathered basalt glass; Nermertean worm, MAPR small LSS peak ~3200 m
D48	86° 3.21 N	31° 30.54 E	4098-3940	S volcanic ridge atop saddle in axis	2-3 lbs of plagioclase-phyric glassy basalt flow tops; sponges; MAPR small LSS peak ~3200 m
D49	86° 3.43 N	31° 57.50 E	4171-4082	N flank of axial volcanic ridge	1 lb of mildly plagioclase-phyric glassy basalt flow tops; sponges; MAPR small LSS peak ~3100-3200 m.
RC12	86° 3.79 N	32° 36.74 E	4092	top of axial volcanic cone at N end of idge segment	50 g of coated basalt glass fragments, MAPR small LSS peak at 3150 m.
RC13	86° 17.94 N	37° 14.90 E	4380	volcanic plateau in rift valley	sand; MAPR shows the barest hint of an LSS peak at 3200 m

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D50	86° 20.11 N	37° 4.70 E	3971-3580	summit area of volcanic ridge (magnetic high) in center of rift valley	75 lbs of older basalt, some younger basalt with glass. MAPR beautiful double layered plume with peaks at 3100 m (larger on upcast) and 3400 m (larger on downcast). maximum LSS ~80 mV.
RC14	86° 22.13 N	37° 20.22 E	3807	E section of axial volcanic ridge	empty core; MAPR very sharp plume, both LSS and temperature, between 3200 and 3300 m
D51	86° 33.45 N	43° 29.11 E	3795-3383	saddle between axial volcanic ridge and satellite cone	100 lbs of old and young pillow basalt w/glass rinds, and fresh glass fragments; 1 jellyfish sp. A, 1 shrimp sp. A; MAPR no plume.
D52	86° 31.34 N	42° 7.03 E	4020-3624	W end of axial volcanic ridge	plagioclase-phyric pillow basalt w/glass rinds and fresh glass fragments; ctenophore sp. B; MAPR very small LSS peak ~3300 m.
D53	86° 41.24 N	49° 3.68 E	4694-4131	lava flow emanating from S wall of axial rift	15 lbs of pillow basalt w/weathered glass; sponges; MAPR no plume
D54	86° 39.00 N	48° 42.14 E	4042-3538	S wall of axial rift valley	150 lbs of weathered pillow basalt and a few dropstones, diabase?, MAPR no plume.
D55	87° 1.75 N	59° 23.08 E	4345-4002	small volcano in axial valley	Basalt; MAPR no data (possible connector problem in battery board)
D56	87° 57.68 N	61° 28.41 E	3474-3085	top of slop of volcano on S wall of axial rift	greenstone, diabase, basalt breccia; MAPR very tiny hint of LSS and temp peaks at 2300-2600 m
D57	86° 33.11 N	67° 34.74 E	2939-2634	volcanic cone on w side of large axial volcano	500 lbs of fresh, glassy pillow basalt; MAPR strong LSS signal 2200 m to bottom, with temperature signal corresponding to a deeper peak between 2500 and 2800 m as dredge was being dragged up hill

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D58	86° 31.45 N	69° 55.73 E	3220-2985	S side of eastern ridge extending from axial volcano	300 lbs of fresh and weathered glassy pillow basalt; MAPR LSS peak 2100-2500 m, with temperature.
D59	86° 27.35 N	70° 59.04 E	3599-3298	S slope of small isolated volcanic ridge eastward of axial volcano	500 lbs of fresh and weathered glassy pillow basalt and basalt fragments; MAPR LSS and temperature peaks 2200-2600 m.
D60	86° 16.3 N	71° 53.9 E	3543-3488	oblong ridge along S wall of axial valley	500 lbs of moderately weathered glassy basalt; MAPR LSS and temperature signals 2100-2600 m.
D61	85° 37.95 N	84° 59.69 E	3967-3772	SW flank of volcanic ridge in axial valley, site of 199 seismic event	~50 kg fresh glassy pillow basalt and glass fragments: large, 1000 m thick plume in MAPR LSS (>100 mV) and T, centered at 2500 m
D62	85° 36.80 N	85° 2.05 E	4163-3981	S headwall of cleft between 2 volcanic ridges	~5 kg very fresh glassy lava tubes and glass fragments; MAPR same plume as D61
D63	85° 37.93 N	84° 30.70 E	4077-3800	SW slope of SE volcanic ridge	Young and older basalts with glass; 1 shrimp sp. B, MAPR same plume, narrower (~2200 –2800 m), LSS ~70 mV and T
D64	85° 38.72 N	84° 16.80 E	4089-3964	axial volcanic field NW of split volcanic ridge	15 kg glassy basalt; red sediment; MAPR same plume but smaller, plus an additional plume in LSS and T ~3300 m on downcast only
RC15	85° 38.35 N	84° 51.79 E	3940	saddle in cleft between 2 volcanic ridges	glass fragments; MAPR very large plume in LSS (~90 mV) and T, double layered but broadening
RC16	85° 38.24 N	84° 45.1 E	3781	S summit of cleft volcanic ridge in axial valley	glass and sediment; MAPR one big thick plume in LSS and T 2200-2700 m, plus a smaller (~55 mV LSS, also T) one between 3250 and 3350 m

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D65	85° 39.56 N	84° 45.39 E	3969-3874	NW flank of cleft volcanic ridge	Sharp and double-layered (2300 and 2530 m) plume in LSS and T, smaller on downcast
CTD5	85° 38.59 N	84° 55.92 E	3929-3965	cleft between 2 axial volcanic ridges	water samples between 3965-100 m water depth, clear plume signals in MAPR and CTD (T, S, and transmissometer) data
D66	85° 32.12 N	84° 37.70 E	3423-2659	N face of large volcano along S wall of axial valley	50 kg of old pillow basalt; 1 shrimp sp. A, hardened polychaete tubes, MAPR large multilayered plume in LSS and T
D67	86° 23.90 N	72° 41.50 E	3954	E end of volcanic ridge extending from 69°E	50 kg very fresh glassy sheet flow tops, lava buds and basalt glass fragments; MAPR same plume as D57-60 in LSS and T
D68	86° 34.80 N	71° 34.89 E	4057-3870	base of N wall of axial valley	300 kg lithified and partially lithified mudstone, several pillow basalt fragments w/glass, few glass fragments
RC17	86° 39.66 N	67° 28.48 E	4126	volcanic ridge extension of axial volcano centered at 69°E	5 g basalt glass fragments + sediment, small bivalve shell fragments
D69	86° 48.76 N	67° 43.44 E	4198-3872	N wall of axial valley	Variable indurated mud, gray with brown streaks, some enigmatic curvilinear shapes, a few blocks of black shiny pieces that may be maganese oxide; 1 unknown shrimp sp. (not retained)l
D70	86° 45.35 N	64° 47.74 E	4328-3929	upper section of S wall of axial valley	150 kg peridotite, peridotite and basalt breccia, and 2 small pillow basalt fragments; blue (hydrothermal?) sediment; sponge fragments
D71	86° 47.40 N	64° 27.86 E	4772-4155	lower section of S wall of axial valley	a single 20 kg, plagioclase-phyric basalt pillow and a few small basalt fragments (chain bag broke)

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
D72	86° 44.80 N	61° 23.48 E	149-631	summit region of large off-axis volcanic feature	~10 kg aphyric basalt fragments and altered plagioclase-phyric basalt; 1/2 dredge bag full of sponge spicule-foram mat, 2-3 species of sponges, bivalve and gastropod shells, hard corals, polychaete worm tubes
D73	86° 57.64 N	57° 23.94 E	4132-3942	N side of axial volcanic ridge east of mid-point	25 kg moderately weathered pillow basalt: lava buds with weathered glass, anemone
D74	86° 59.10 N	55° 23.62 E	3944-3829		30 kg weathered pillow basalt; laminated red sediments
D75	86° 58.35 N	53° 59.72 E	4182-4163	E nose of volcanic ridge in axial valley center	10 kg old basalt w/brown weathered glass; chaetognath
CTD6	86° 58.03 N	54° 56.34 E	4020-3944	along small volcanic saddle in axial valley	water samples between 3950-1500 m water depth
D76	86° 53.76 N	54° 7.58 E	4756-4183	small ridge S of main axial volcanic ridge	25 kg moderately weathered pillow basalt; lava buds w/weathered glass, sponges
D77	86° 52.55 N	51° 15.08 E	5029-4661	N wall of rift valley	15 kg old pillow basalt
D78	86° 49.52 N	51° 40.14 E	5097-5042	S face of circular volcano in axial rift	5 kg weathered basalt pieces and lava buds w/glass rinds
D79	86° 49.63 N	49° 41.04 E	4866-4460	Base of N wall of rift valley	25 kg moderately weathered basalt w/glass rinds; older pillow basalt and lava buds, sponges
D80	86° 42.00 N	48° 19.10 E	4954-4464	upper section of S wall of rift valley	75 kg old weathered basalt, sponges
D81	86° 38.77 N	46° 29.42 E	4948-4837	base of S wall of rift valley	serpentinite, altered diabase, basalt breccia
D82	86° 37.01 N	44° 47.86 E	4880-4900	small volcanic cone in rift valley	basalt glass fragments, hydrothermally altered basalt; sponges present
RC18	86° 32.06 N	43° 15.31 E	2853	summit of volcanic ridge in axial valley	glass fragments
RC19	86° 32.81 N	43° 11.65 E	3320	flank of volcanic ridge in axial valley	50 g basalt glass
CTD7	86° 32.065 N	43° 13.75 E	2812-998	summit of volcano in rift valley	water samples between 2923-998 m water

Stn	Latitude	Longitude	Depth (m)	Site	Recovery/Observations
					depth
D83	86° 30.06 N	42° 21.58 E	3518-3294	NW face of volcanic ridge	10 kg old pillow basalt and basalt fragments bivalve shell
D84	86° 26.62 N	39° 54.12 E	5140-5198	small circular cone in center of rift valley, at mid-point between 2 segment volcanic highs	100 kg basalt flows w/fresh glass
D85	86° 22.81 N	40° 8.05 E	4387-3854	mid-section of S wall of rift valley	500 kg peridotite, gabbro, basalt
D86	86° 20.90 N	39° 3.03 E	5077-4748	lower section of S wall of rift valley	100 kg pillow basalt, minor peridotite
D87	86° 20.29 N	39° 2.46 E	4688-4496	mid-section of S rift valley wall	75 kg peridotite, sponge fragments
D88	86° 23.23 N	39° 7.69 E	4958-4774	small volcanic cone in axial deep	25 kg basalt sheet flow w/scoriaceous texture and glassy top, shrimp sp. A, sponge fragments
D89	86° 18.90 N	38° 23.90 E	4734	mid-section of S rift valley wall	5 kg old basalt fragments and breccia, sponge
CTD8	86° 21.00 N	37° 2.44 E	3665-3601	summit area of axial volcanic ridge near MAPR anomaly of D50	water samples between 3666-1498 m water depth
D90	86° 16.72 N	35° 24.00 E	5127-4916	small circular cone at end of volcanic ridge in axial deep	25 kg sheet flow w/ very thin glass rind
D91	86° 19.35 N	35° 38.11 E	4875-4275	base of N wall of rift valley W of axial volcanic high	500 kg pillow basalt, sponge fragment
RC20	86° 16.61 N	35° 2.65 E	5134	flank of small volcanic cone in axial deep	<1 g glass + sediment
D92	86° 15.71 N	34° 45.20 E	4876-4428	base to mid-section of headwall of septum between ridge sections	150 kg peridotite, serpentinite and breccia
D93	86° 6.56 N	33° 31.50 E	4335-3905	NE headwall of axial saddle	empty dredge
D94	86° 4.43 N	33° 10.69 E	4425-4370	small cone at W end of axial volcanic ridge	5 kg very fresh, plagioclase-phyric glassy basalt and flow tops; sponge fragments

