

OASES 2013
Dive Plan for Nereus 055

Prime Objective: Sampling at Von Damm

1. Dive direct to East Summit of Von Damm spire (226°C Fluids site) at ~2300m.
[X = 1982, Y = 1103; depth = 2291m]
2. Collect up to 100 shrimp using slurp suction sampler (if that many fit in chamber) for Max & Cindy.
3. Find/create good vent orifice, record temperatures (target >200°C) and take 2 x IGT fluid samples (Jeff).
4. Collect complementary microbio (SUPR) sample for Julie at same location.
5. Collect high quality video footage before leaving top of Spire (Chris).
6. Drive south in mid-water off the top of the Von Damm mound in the direction of Marker X-18 (tube-worm and whale bone site) [X = 2041, Y = 892; depth = 2376m]
7. Inspect whale-bone experiment for evidence of Osedax colonization (Cindy).
8. Head short distance (10m?) north & east to "Shrimp Hole" site for microbio (SUPR) sample for Julie (IGT temperature in 2012 was 21°C)
[Jason 2012 Coordinates: X = 2039, Y = 892; depth = 2374m]
9. Continue uphill (NNW approx.) toward Old Man Tree, as time allows to:
 - a) Check temperatures using IGT probes at other diffuse flow sites including:-
 - Hot Cracks #1 & #2 [X = 2028-35, Y = 915-918; depth = 2372m]
 - Old Man Tree [X = 2011, Y = 914; depth = 2373m]
 - b) Collect additional microbio samples for Julie, as required, based on T° readings
10. Continue NNE from Old Man Tree toward targets from Nereus 053 photo-survey to
 - a) Search for and collect live mussels if we can find any.
 - b) Visit/inspect sites with dense tube-worm colonies.
11. If time/power allows, continue north, up the southern face of the Von Damm cone to return to the central Von Damm spire; collect additional video and end dive.

OASES 2013
Dive Plan for Nereus 056

Prime Objective: Sampling at Von Damm

1. Dive direct to East Summit of Von Damm spire (226°C Fluids site) at ~2300m.
[X = 1982, Y = 1103; depth = 2291m]
2. Find/create good vent orifice (target >200°C) and take 2 x IGT fluid samples (Jeff).
3. Drive south in mid-water off the top of the Von Damm mound in the direction of Marker X-18 (tube-worm and whale bone site) [X = 2041, Y = 892; depth = 2376m]
4. Inspect whale-bone experiment for evidence of Osedax colonization (Cindy).
5. Head short distance (10m?) north & east to “Shrimp Hole” site for microbio (SUPR) sample for Julie (IGT temperature in 2012 was 21°C)
[Jason 2012 Coordinates: X = 2039, Y = 892; depth = 2374m]
6. Slurp for up to 100 “sparse” shrimp anywhere along this transect
7. Continue uphill (NNW approx.) toward Old Man Tree, and:
 - a) Check temperatures using IGT probes at other diffuse flow sites including:-
 - Hot Cracks #1 & #2 [X = 2028-35, Y = 915-918; depth = 2372m]
 - Old Man Tree [X = 2011, Y = 914; depth = 2373m]
 - b) Collect additional microbio samples for Julie, as required, based on T° readings
8. Continue NNE from Old Man Tree toward targets from Nereus 053 photo-survey to
 - a) Search for and collect live mussels if we can find any.
 - b) Visit/inspect sites with dense tube-worm colonies and collect good video.
9. If time/power allows, continue north, up the southern face of the Von Damm cone to return to the central Von Damm spire; collect additional video and end dive.

**OASES 2013
Dive Plan for Nereus 058**

High Temperature Sampling at Beebe Vents

1. Approach bottom to North of Piccard Hydrothermal Field
2. Head to Beebe Vent #1
[X=3357, Y=5163; Depth = 4958m]
3. Collect 2 x Hi-T end-members using IGTs from Beebe Vent #1
[Best to sample from E or NE: Nereus on Heading 225-270]
4. Conduct SUPR Plume Sampling above Beebe Vent #1 [Chip]
5. Proceed ESE to Shrimp Gulley (Beebe Sea Mound)
[X=3413, Y=5154; Depth = 4940m]
6. Collect up to 100 shrimp via Slurp for Max & Cindy
7. Check feasibility of taking SUPR samples from Shrimp Gulley (length of SUPR wand)
8. Conduct kick-ass photography at Shrimp Gulley
9. If you didn't break everything else yet, drive to Beebe Woods and image that.
[X=3369, Y=5111; Depth = 4965m]

**OASES 2013
Dive Plan for Nereus 059**

**Low Temperature Sampling at Piccard
& IGT-5 / Glassy Basalt sampling**

1. Approach bottom to North of Piccard Hydrothermal Field
2. Head to Hot Chimlets area
[Jason 2012 coordinates: X=3359, Y=5221; Depth = 4988m]
3. Collect 2 x IGTs fluid samples (Jeff)
4. Collect 3 or 4 x SUPR-microbiology samples (Julie)
5. Head West to search for IGT-5 left behind in 2009 (Jeff)
[Nereus 2009 coordinates: 18.55027390°N, 81.72196198°W]
6. Recover any Oases markers found on seafloor (Chris)
[Nereus 2009 coordinates: 18.54692841°N, 81.72389221°W]
7. Keep a look out for fresh glassy basalt (Max)

OASES 2013
Dive Plan for Nereus 060

Prime Objective: Low-Temperature Sampling at Von Damm

1. Dive to Marker X-18 to the south of the Von Damm spire (tube-worm and whale bone site) [Jason 2012 coordinates: X = 2041, Y = 892; depth = 2376m]
2. Inspect whale-bone experiment for evidence of Osedax colonization (Cindy).
3. Deploy "Infinity Project" planet (Chris) and photograph it.
4. Locate diffuse flow site with "seep" microbes at X-18 and sample again for Julie. [Jason 2012 Coordinates: X = 2044, Y = 893; depth = 2376m]
5. Swing by "Shrimp Hole" (IGT temperature in 2012 was 21°C) [Jason 2012 Coordinates: X = 2039, Y = 892; depth = 2374m]
6. Slurp for up to 100 "sparse" shrimp anywhere along this transect
7. Continue uphill (NNW approx.) toward Old Man Tree, and:
 - a) Check temperatures using SUPR: T-probe at other diffuse flow sites including:-
 - Hot Cracks #1 & #2 [J2012: X = 2028-35, Y = 915-918; depth = 2372m]
 - Old Man Tree [J2012: X = 2011, Y = 914; depth = 2373m]
 - b) Collect additional microbio samples for Julie, as required, based on T° readings
 - c) Collect 2 x IGT samples at some point along the way (or later)
8. Continue NNE from Old Man Tree toward targets from Nereus 053 photo-survey to
 - a) Search for and collect live mussels if we can find any.
 - b) Visit/inspect sites with dense tube-worm colonies and collect good video.
9. As time/power allows, continue north, up the eastern face of the Von Damm cone to reconnoitre other potential sampling sites for Dive 061 and test using SUPR T-probe.
 - a) Ravelin #2 [J2012: X = 2068, Y = 941, Z = 2387m]
 - b) Ravelin #1 [J2012: X = 2048, Y = 949, Z = 2383m]
 - c) Arrow Loop #1 [J2012: X = 1983, Y = 1103, Z = 2308m]
 - d) Ginger Castle [J2012: X = 1981, Y = 1135, Z = 2308m]
 - e) White Castle [J2012: X = 1972, Y = 1138, Z = 2306m]
10. Finally, circle around to the south, still climbing upward, to the central Von Damm spire & collect additional video to end the dive.

OASES 2013
Dive Plan for Nereus 061

Prime Objective: Cleaning Up at Von Damm

1. Dive to the northern side of Von Damm spire.
2. Take 2 x IGT samples (Jeff) at one of:
 - a) White Castle [J2012: X = 1972, Y = 1138, Z = 2306m]
 - b) Ginger Castle [J2012: X = 1981, Y = 1135, Z = 2308m]
3. Check with Julie if she would like SUPR-Micro samples at this site
4. Spiral out to East then South around EastFlank of Von Damm Spire to reach Hot Cracks sites #1 and #2 to sample for SUPR Micro for Julie.
5. Proceed to Target 17 on DVL Nav to slurp for 10 or more “sparse” shrimp for Max.
6. Check for mussels for Cindy near
 - a) Ravelin #2 [J2012: X = 2068, Y = 941: **Depth = 2387m, HDG = 104° / T = 115°C**]
 - b) Ravelin #1 [J2012: X = 2048, Y = 949; **Depth = 2383m, HDG = 330° / T = 145°C**]Slurp sample if required.
7. Continue up-slope from Ravelin #1 to unsampled site on spur, NW from Old Man Tree to check whether Julie wants to sample.
8. Head back to “Best Bet for Mussels” site to sample with Slurp for Cindy.
9. Proceed north to site just East of Von Damm spire (Arrow Loops) to check whether Julie wants to sample.
10. If Julie didn't fill SUPR yet, return to
 - a) Ginger Castle [J2012: X = 1981, Y = 1135, Z = 2308m / **T = 125°C**]
 - b) White Castle [J2012: X = 1972, Y = 1138, Z = 2306m / **T = 151°C**]
11. If time allows, return to summit for Brennan Philips.

OASES 2013
Dive Plan for Nereus 062

Prime Objective: Low-T Sampling at Piccard

1. Dive to the northern side of Piccard Hydrothermal Field
2. Proceed to Hot Chimlet site and place Planet in situ on metalliferous hard ground (orange).
3. Contour to right / downhill slightly to locate additional sites (target 80°C)
4. Collect complementary SUPR Micro samples for Julie.
5. If that didn't work, progress uphill to South over abundant diffuse flow sites.
6. Find somewhere else good for IGTs.
7. Find multiple other sites for Julie.
8. Proceed to Beebe Woods to collect sparse shrimp from base of chimneys.
9. Collect pretty imagery of Beebe Woods vent-site
 - sparse shrimp at base of chimneys
 - images of the chimneys themselves
10. Video transect for Brennan Phillips above Beebe Woods to come home.

**OASES 2013
Dive Plan for Nereus 063**

Cleaning Up at Piccard

1. Dive to the northern side of Piccard Hydrothermal Field
2. Pass by Hot Chimlet unless Jeff shouts "Stop"
3. Pick up a furry rock and place in BioBox
4. Proceed to Beebe Vents and conduct Chip's SUPR sampling in plume.
5. Proceed to Beebe Woods to collect sparse shrimp from base of chimneys (Max).
6. Collect pretty imagery of Beebe Woods vent-site (Chris)
 - sparse shrimp at base of chimneys
 - images of the chimneys themselves
7. Continue to Beebe Sea mound to collect 2 x IGT fluid samples.