HAWAII UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT MISSION NO. P5-025

MISSION STATUS

Location: Loihi Seamount, Hawaii

Mission Date: 8/29/87

Maximum Depth: 3540 ft.

Project Title: "Geology, Geochemistry & Microbiology of Hydrothermal Systems, Loihi..."

Project Leader: Dr. Alexander Malahoff

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Observer: Dr. G. McMurtry, Dr. A. Malahoff

Address: MSB 325 MSB 319

Scientific Data Acquired : Prepare an abstract outlining your objectives, techniques, findings, etc.

Pele's vent field is a multi-vent low temperature (30 degrees C) hydrothermanl water seepage field located on the eastern slopes of a talus and pillow cone. The active vent field estends over an area of about 2500 square meters and is surrounded by a low temperature hydrothermal precipitate field of nontronite. Water samples and bottom photographs were taken.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

Some "teething" problems with the bow camera. Water samplers worked well.

Recommendations for corrective action or improvement:

In your opinion, did the mission essentially achieve its purpose? Compare actual work accomplished with the work that was expected to be accomplished.

Yes. Mission fully completed.

List specimens or samples collected on the mission.

One water sample and plate retrieved.

DATA RELEASE

Data may be retained by the project leader for up to 2 years after the mission date with the following exception. NOAA may request to use photos for publication or publicity purposes at any time.

Fill in the appropriate statement below and sign this form.

I hereby release the data archived by HURL for public consumption following mission "Geology, Geochemistry & Microbiology of Hydrothermal Systems, Loihi..." (project title) held on 8/29/87 (date) in the following way:

a. CTD data by _____(date)

b. voice transcripts, video, and still camera film by _____(date)

c. other _____(date)

d. I will give my written consent to individuals wishing to use these data prior to the above dates depending on the nature of the request(s).

_____

Project Leader

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VOICE TRANSCRIPT FOR HAWAII UNDERSEA RESEARCH LABORATORY MISSION

Dive Number: P5-025

Location: Loihi, Hawaii

Date of Dive: August 29, 1987

Project Leader: A. Malahoff
University of Hawaii
Marine Science Building 319
Honolulu, HI 96822

Observers: A. Malahoff
G. McMurtry

Pilot: T. Kerby

TAPE 1, SIDE 1

Kerby: It's recording...Testing, testing, 1,2,1,2,1,2. Here is PISCES on the bottom in 1,075 m deep.

Malahoff: How does it look Gary?

McMurtry: This is PISCES lucky dive number 13. We are on the summit of Loihi.

Kerby: It may not be 13.

McMurtry: This is dive 25-184. The date is August 29, 1987, Saturday.

Malahoff: Yeah, we're lifting up Gary.

McMurtry: We're on the bottom at 1535 hours. We are very close to our objective based on the amount of particulate matter in the water. We are landing on a talus slope.

Kerby: Go ahead, over.

McMurtry: We are pretty close to our objective based on the amount of particulate matter; in particular, we see the small 1-2 cm diameter flocks of bacterial mats mostly white; there is some orangeish tinge to it, due to the iron oxide also present. There are some very large clumps of it floating along the bottom. It looks like we are in the vicinity of the hydrothermal vent field, but we are probably not right in it. No other life forms other than just the bacterial mat and also the precipitate that we see on the talus looks like a very thin coating of precipitate.

McMurtry: Picture number one taken at our first station, our landing station.

Malahoff: The best thing is just to look around; it may be behind this vent.

Kerby: There's lots of stuff right here. I wish the data camera was working.

McMurtry: What a bummer.

Malahoff: The video is working right?

Kerby: No. The video is not working.

Malahoff: I mean our video.

McMurtry: The Osprey is not working.

Kerby: Our video is not on board. We just have the Betacam. It's hard to really pick up what we're doing.

McMurtry: Would you like to say that again?

Kerby: Get some light out there. Going for a third. Picture number three of a rock. Can't really tell what we're getting here, see Alex. See the rock and see the stuff in the water. Alright let me lift up and move around to 055 and see what that does for us.

McMurtry: Basically it's going to be upslope Terry. It's at the very top of of this...of where this feature is. All this stuff is probably coming down from the top.

Malahoff: Oh boy, this camera is beautiful.

Discussion of rusty basket.

McMurtry: OK, we're underway. Heading is what - 055?

Kerby: Yeah. You can turn it in.

McMurtry: Heading 055 - heading at 350 or 1550 hrs.

Kerby: Still heading.

McMurtry: A lot of bacterial flock in the water. See fair amount of nontronite depositing between cracks of very small talus. Talus was actually...largest pieces are only about a foot, foot and a half in diameter.

Kerby: I've got to find another landing place and try and get rid of some more weight....

McMurtry: Well, we're at the edge...base of a talus slope.

McMurtry: I'm telling you it looks just like Mars.

McMurtry: Can I take a still photo? Still number 4 of a talus slope.

McMurtry: It's now almost 1600 hours and we're heading upslope to try to find the vent. McMurtry here on the starboard side. Just noticed a big hunk of something down here. Could be an outcrop. There's our drop weight.

Kerby: Where? Just ahead. By God - you're right. Possibly a school of _____. Look at all the fresh stuff it knocked out. Take a picture of it. Oh well...

Kerby: Oh yes - this is bad news to say the camera's not working. We could take care of all the stuff now.

Kerby: No I tried _____. There's just not power getting to the Betacam at all.

McMurtry: It's probably a short or something in there.

Kerby: It could be one of the fuses in there. We blew a fuse once before; that could be what it is.

Malahoff: Please observe Gary, I'm going to look at _____.

McMurtry: Noticing quite a few more larger boulders now in the talus field here. Whole slope is covered with talus...and kind of surprising we're not picking up thicker bacterial mats but maybe that's because they are more localized than I envisioned they would be based on previous accounts.

Kerby: _____ thick here..

McMurtry: No, not at all.

Kerby: We're getting into the thick part. There's stuff moving closer to the bottom.

McMurtry: Yeah.

Kerby: I think we're just too far off the bottom.

McMurtry: Yeah, I think that's probably it. We've gotten way off the bottom. But I think if we go up higher on that tack, we're bound to run into it.

McMurtry: It appears that the talus boulders are getting larger when we go up higher, which is kind of an odd _____. We would expect the opposite, I think. But when you get to see the source area it might not be so illogical. They're on the order of about 4 ft in diameter up here, very large. They're very broken; they look like they might be broken pillow fragments.

McMurtry: _____...Yeah...fluffy bacteria and/or nontronite material. Nothing that's pristine unless you disturb it. We're still seeing quite a bit of bacterial mat in the water.

McMurtry: Now coming up to smaller talus field now - smaller sized talus field. Still quite extensive.

McMurtry: It's on now Alex? Can we get a picture now?

McMurtry: Hot dog.

Kerby: Well I had it on, but it just wasn't getting power.

Malahoff: No there's a tiny little switch that switches power as well.

Kerby: Oh really?

McMurtry: This over here.

Kerby: Pull the switch over. This is our color.

McMurtry: We just landed again. We still don't have our Betacam system on and boy did we ever disturb a lot of bacterial mat when we hit the bottom. It's not a continuous mat. It looks like its globular debris. It's just coalescing _____ out in the current ...from the current field onto the bottom, and then when we come along and hit it we resuspend it. I don't believe this is a source area but we're close.

McMurtry: Everywhere where we hit...

McMurtry: OK, this is at time 1610 hours and we've come up a bit. Know what our water depth is here, Alex?

McMurtry: I can't read that water depth.

McMurtry: Found some very steep scarps. Now, notice how much even redder it is here Terry?

McMurtry: Look at the crust. OK. We're... Terry if you want to play with the manipulator you'll have to drop the _____ because the _____.

Multiple voices; cannot decipher.

Kerby: Here's the peak right up here.

McMurtry: The deposits are a lot thicker up here and I see I think these are nontronite deposits here. Oh there's a vent. OK we're in a vent field. I don't see currently active vent, but I can see little pinnacles, little fingers sticking up. Looks like it might _____, a little sulphur. See them there... on the ridge? Oh yeah, they're all over on this side Alex. These are little guys; they're only about a few centimeters long.

Kerby: Yeah, I see them.

McMurtry: Sticking up. They don't look like they're active. I don't see any shimmering water but these are hydrothermal features. There's no doubt about that.

Kerby: On the bottom. Its amazing.

McMurtry: Kind of a whitish cast, not as red as some of the other areas we've seen. It looks like around the edge are really steep scarps or something. It really drops off real dramatically.

Malahoff: On the edge of the caldera.

McMurtry: I don't know. Can we be that far off? What's our heading right now, Terry?

Kerby: The heading is 298.

McMurtry: 0298.

Kerby: When we turned around and moved upslope.

McMurtry: 298.

Kerby: So we're heading almost...we're heading northeast.

McMurtry: Yeah. _____ the caldera. You're right.

Kerby: Get another picture to show the edge here.

McMurtry: Oh it is steep. We're doing OK. Patches of nontronite and stuff.

Kerby: ...Forgot to turn the strobe on when you took those pictures?

McMurtry: Oh, yeah, I thought it was kind of...You should hear a blinding strobe flash, but we didn't see it.

Malahoff: We're going downhill?

Kerby: We've just come to the edge here.

McMurtry: Yeah, I guess we did.

Malahoff: Little chimneys here.

McMurtry: There goes the strobe.

Kerby: Picture number eight is actually the start of our pictures?

McMurtry: Yeah, the start of the ones that are going to come out anyway.

Malahoff: What I suggest is that _____ cross to the bottom to take a picture.

McMurtry: Anything off your way Alex?

Kerby: No, just goes downhill.

McMurtry: This is certainly not the same place that...

Kerby: Drops straight down, that is straight down.

Malahoff: Look at the altimeter.

McMurtry: Yeah. I tell you its steep.

Malahoff: Anything beyond there Terry?

McMurtry: Wow it's an abyss.

Kerby: We're going to turn around here.

Malahoff: We'll stop and we'll follow the edge to _____... Let me look at the map.

McMurtry: Yeah. Here you go.

Kerby: We could land up here and give the surface a call.

McMurtry: That might be a real good idea.

Kerby: And see if they can give us a new direction. There's a spot to land right over there.

Malahoff: Yeah, I think we're too far to the north of the vent.

McMurtry: The time now is 16:14.

Malahoff: The vent is behind us.

McMurtry: I think you're right. I think we passed it.

Malahoff: Right here. We're on the _____.

McMurtry: We passed it didn't we? I think you're right. I think we're at the edge of the pit fields. We're probably at the edge of that very deep fissure that's working its way west of the large eastern pit crater.

McMurtry: OK, we're heading out on a course of 130. That's kind of going back where we were a little bit. Time now is 1627. We're heading out now on a course of 130 to find the target, the vents.

McMurtry: We are at the edge. Found a...

McMurtry: We've seen our first fish, about a foot and a half long eel fish.

McMurtry: We seem to be skirting this large, very steep crater; we're probably _____. Whole terrain is covered by these nontronite and bacterial mat substrate.

Kerby: It should be the high point Gary, we should be at the high point. We should be at 90 meters; that's where that thing is located.

Malahoff: 90 meters.

McMurtry: Yeah. Tell the high point on Loihi.

Kerby: This is ___ the abyss and that's 130.

Kerby: What we need to do is park in front of a vent.

McMurtry: 1640 hours and we're heading up the slope at 130 and 114. Still a lot of mats in the water and still looking for Pele's vents. The bottom characteristics are basically the same as before, but we seem to be finding a lot of ridges, very steep steep scarp ridges.

Malahoff: Which way are the ridges running, Terry?

Kerby: We're running about 100 right now. Look at this; see the darker stuff on there.

McMurtry: Looks like we might be near a very recently active if not currently active vent area right now.

Kerby: _____ fissure is?

Kerby: Whole ridge is cracked...

McMurtry: Yeah, those fissures are what we want to check out.

Kerby: That's where all that dark area is.

McMurtry: What's that darker material is what the question is.

McMurtry: ...a closeup of it.

Multiple voices - cannot decipher.

McMurtry: I don't see anything ____ but I think they must have been very recently active.

Kerby: Your tape is up Alex.

Malahoff: Get as much out of it as you can.

Kerby: OK.

Malahoff: Numbers in sequence, Terry?

McMurtry: Terry, let's get a picture of this. It's not working right now. You can see the holes _____ and there's bacterial flocks all over the place. Big _____ of it too. We're so close. Is that a still?

Kerby: Picture 10-11, yes.

McMurtry: Alright. That's our water jet here.

Kerby: Water depth is now is at 1040.

McMurtry: 1040?

Kerby: Yeah.

McMurtry: 1040 meters. Time now is 1445, sorry, 1645 is the correct time. Continuing to move up slow.

Malahoff: Hey Gary see that?

McMurtry: It looks very similar to the stuff that we've seen on those Mariana volcanoes. Crisscrossing fissures full on nontronite. We're still climbing looks like. That's good. I bet we're going to find it.

McMurtry: The stuff is a lot thicker _____. See it's thinning out again.

Malahoff: We're climbing Terry?

Kerby: Yeah. It's _____ and sort of level here now. It drops off and we're skirting the ridge again. It drops off to our right and then run all the way to the ridge.

McMurtry: OK, it looks like... I don't know if they're mound structures or talus sticking up there. See that Alex? Right below you.

Malahoff: Yeah.

McMurtry: Wondering if it might be _____, they don't look like rocks.

Kerby: Looks like we're dropping off again. Couldn't just be another shallow depression.

McMurtry: Now's when we wish we had that extra half hour back there.

McMurtry: There are some really interesting _____ now.

Kerby: Oh look at these.

McMurtry: Broken up globs of basalt flows and real large boulders here. I see alot of nontronite in the cracks. Just keep going right on up. It's getting real steep. To the right. We found it. Typical. I'll bet you this is it. Just keep going up Terry. Keep going up. That's it. And if you don't find it on this side, go around the other side. It might be on the other side.

Kerby: Come straight up.

McMurtry: This is it. We found it. Geez, we've got about ten minutes. Eight minutes.

McMurtry: Plenty of bacterial mats all over the place now. Big chunks of it.

McMurtry: What do you think Alex? I think we ought to drop the transponder here. Then we'll have it located.

Malahoff: Well let's get the _____ spot, oh sure.

McMurtry: Sure, I mean as soon as we find the shimmering water.

Kerby: Look that is just coming straight up.

McMurtry: Ah the mats are getting thicker, look at that, see that Alex?

Kerby: Get more altitude here.

McMurtry: This is definitely _____; we see some very large like toothpaste flows here. Let's get a run on that.

Malahoff: I think these are just pillows.

McMurtry: Yeah, very long lobate-type pillows. It's going to be up, I think ...

Malahoff: Let's show the mat now.

McMurtry: To your left now Terry.

Kerby: Up and left.

Malahoff: Do you see that stuff Terry? It looks like bacterial mat.

McMurtry: Yeah that's what it is.

Malahoff: Is that a worm?

Kerby: Yes, it is; worms hanging out there.

Malahoff: There is the vent right here.

McMurtry: You found one?

Malahoff: Yeah. Just below us.

McMurtry: Shimmering water?

Kerby: I see the hole with the ..... Looks like there's stuff coming out of there.

Malahoff: Is it shimmering? Stuff coming out of there, can you see if it's shimmering?

Kerby: I can just see some of the bacteria coming up out of there.

McMurtry: I can't tell....

Kerby: Maybe we can get a shot of that.

McMurtry: Maybe we can go higher, Alex.

Malahoff: Let's go higher, Terry.

McMurtry: Keep going up. See right there, Alex?

Malahoff: Yes.

Kerby: Get a shot of that?

Malahoff: Get a shot of that?

Kerby: Yes that's one. That looks like a vent. See there's stuff all around it.

McMurtry: Yeah I see it. It's up here. It's probably to my left and I can't see it.

Kerby: It's to your right.

Malahoff: Let's keep an eye out on shimmering water now.

Kerby: ...come across it right there...see right here?

Malahoff: Oh look, stuff is coming out between the rocks.

McMurtry: Yeah. Its probably a very small dilute type vent. Let's go for the big stuff.

Kerby: Running out of time.

McMurtry: You see nothing yet, Terry.

Malahoff: Look at the bacterial mats Gary.

McMurtry: I know. We're gonna run out of time here.

Malahoff: That's OK.

Kerby: We'll find the shimmering when it comes up.

McMurtry: You got to go to the top Terry; that's where the action is.

Malahoff: Go for it Terry.

Kerby: This is really interesting.

McMurtry: A lot of very large blocks. Big pillows on the order of meters in diameter. Lots of bacterial mat.

McMurtry: Still haven't found the top yet, huh?

Kerby: ...moving up went back down. 1025 now?

McMurtry: 1025 m.? OK, keep going. Ten more metres up. I still think most of this stuff we're seeing bacterial mats coming from above.

Kerby: Go straight up now.

Malahoff: No Gary I didn't see bacterial mats coming out of the vent. Coming straight out of the vent.

Kerby: I'm going to make some noise here for a minute.

McMurtry: Three thick _____. Bacterial mat here close to the summit. We're still rising and the water depth ...

Malahoff: We're at 1005. Make 1000 meters.

McMurtry: That was 1000 meters right there. We're at 1000 meters now?

Kerby: Look at the way it drops right off?

McMurtry: Look at all this great stuff. Its very steep but it keeps going up Terry. We're at 1000 m. exactly. A lot of talus.

Kerby: We have five minutes left on the tape.

Malahoff: OK.

Kerby: I wish we had another hour.

McMurtry: We'd nail it down real good if we had another hour.

Malahoff: Still going up?

McMurtry: This is it, Alex. I'm pretty sure this is the one. There's no other pinnacle rock.

Malahoff: It's not covered as much with...

McMurtry: Maybe the other side; you know one side is ... as I recall one side is more covered than the other ... it might not be the side. In fact our heading is such that this would be the upcurrent side.

Malahoff: Now _____ more dense; there's more reddish material on there.

McMurtry: We've got to find the top of this damned thing.

McMurtry: We're about 990 now.

Kerby: Yeah, it branches off here.

Malahoff: There's another little _____ back there.

Malahoff: Keep an eye out for some of the ____.

McMurtry: We're at 990 right now.

Kerby: It's real steep here.

McMurtry: Where's the top of this thing? We're supposed to come to the top at about 980.

Malahoff: There's a vent down there amongst those worm colonies.

Kerby: I think its time to change the tape, Alex.

Malahoff: OK, I'll do that Terry.

Kerby: Actually, I think when those two lights are flashing, we have a little bit of time left. There's supposed to be a warning when it goes out. Should hear a little alarm. I haven't heard that yet though.

Malahoff: No, I'm keeping an eye on that.

Kerby: I think when the ____ flashes, there's three minutes left. When just the green is flashing - I think it's five. Still climbing.

McMurtry: It's sort of on our way home, so its not too much out of the way is it?

Kerby: We are going up it's true.

Kerby: Fascinating; look at these.

McMurtry: Yeah, interesting lava forms. They are large, very large blocks. _____ in this bacterial nontronite mat mixture. We'll have to start calling it nontrabat.

Malahoff: What's the depth now?

Kerby: About 975.

Malahoff: Still going up, Terry?

McMurtry: 975? What's going on, Alex. Supposed to be shallower.

McMurtry: Could the map be wrong again?

Kerby: There's shimmering water.

Malahoff: Oh, got it! Super.

Kerby: Just ahead of us. Look at it. That's pretty thick.

McMurtry: That's where I told you it would be. At the very top, at the very, very top, the pretty top.

McMurtry: That's where some...there's another one of those fish too.

Malahoff: Oh, I can see the vent. See the large vent ahead?

Kerby: Oh yeah, shall we put a tape in and go get it?

McMurtry: What is it? Some sort of rule says you always find these things at the last minute.

McMurtry: This is how Alex found his black smoker in Axial caldera too, at the very last part of the dive.

McMurtry: Look at that fish - its posing! He's posing.

Kerby: Yeah...right in on us.

McMurtry: Practically nailed him.

Kerby: We're going right into the shimmering water.

McMurtry: Yeah, There it is, there it is.

Malahoff: Is that shimmering water?

McMurtry: Yeah. Is that what it is? It looks like it. That's hot water alright.

McMurtry: Yeah. Sure enough.

McMurtry: Can you drop that a little bit, Terry?

Kerby: Yeah, I'm just getting her settled a little bit you know.

McMurtry: Oh alright - the whole area is being bathed in this stuff.

Malahoff: And up in there you can see the white bacterial, the chimneys. What chimneys? the vents.

McMurtry: Wow - are we getting this on video?

Malahoff: Yes.

McMurtry: I'd like to get a little closer and see it best.

Kerby: See it this way...

McMurtry: Yeah, OK.

Kerby: That's a little too much isn't it?

McMurtry: Yeah a little too much. Whoa, we're talking mucho shimmering water here. A lot of hot water. And it's going - hey, the current direction must be opposite.

Kerby: We're running right into the current.

McMurtry: Must be running right into it. What's our heading? 095. Yeah, its kinda like its dragging over the surfaces of these rocks here. OK you know what we should do, Terry? It involves dropping that transponder but we need to... Let me tell you it would be great.

Kerby: Put the transponder in the basket if we don't want to leave it here.

McMurtry: It will be really great since have niskins. OK. If you could power into this. Let me tell you quick so we don't have to worry.

Kerby: ...transponder there?

McMurtry: Could yeah. OK now look. We want to power into this stuff as we go into the current so that the water, the hot water flushes through those tubes and then fire them. Then we'll get a good sample.

Kerby: Alright, what we may have to do is deposit the... Deposit the pinger. We need to deposit somewhere where we can pick it up again.

McMurtry: There's the white elemental sulphur there Alex.

Malahoff: The what?

McMurtry: There's the white elemental sulphur. See how white it is - it's really white. So if that is the origin of the vents, those are the vent orifices right there.

Malahoff: That's right.

McMurtry: So that's where the stuff's coming from. That would be the place to set down and try to get a water sample.

McMurtry: Hey we can really take advantage of this...

Kerby: Try to do is find an area ... Be careful with these switches.

Kerby: We can put this pinger down where we can grab it again.

McMurtry: Wow, look at that water! It's a whole layer...looks like the whole bottom here is covered with a layer of hot water. I guess its because it's coming up and the current's pulling it to the opposite direction.

Kerby: Shall we set down in this area?

McMurtry: Should be OK. Shouldn't be more than about 30 or 40 degrees centigrade.

Kerby: Looks like this area is relatively smooth and I can always lift off and let the current set us back.

McMurtry: I don't think you'll fall into anything. I thought maybe you were concerned about the temperature.

Kerby: I'm concerned about finding an area to set the pinger on where we can land and take off again.

McMurtry: Fine, good enough.

Kerby: Looks like the shimmering water is coming from all over the place.

McMurtry: Yeah. The whole top of this thing is hot.

Kerby: We're out of time. You guys know that don't you?

McMurtry: Course we do.

McMurtry: Multiple voices. Yeah man, it's everywhere.

McMurtry: Can you drop this basket down real low?

Kerby: Better pick it up now because it's going to get wiped out.

McMurtry: Yeah. Let's not break it. Yeah, that looks great.

Malahoff: Can we bring it up Terry?

McMurtry: I wonder how ___ it is Terry.

Kerby: Really something.

McMurtry: This is a stop.

Malahoff: If you can set us down with film.

McMurtry: Alex, let's shoot some stills of this too while we're at it.

Malahoff: That's what I'm doing.

Kerby: These are right in the middle of all that. There's a little hillock right here. Looks like a good place for a pinger. This pinger is going to get overheated here.

McMurtry: It probably won't like it.

McMurtry: Well, its only about 5 degrees centigrade warmer than ambient. It's used to up to 25 C.

Kerby: OK, we'll just set it right here.

Malahoff: There's a fishing line to your left, Terry. A wire to the left.

Kerby: Oh yes, I see it.

Malahoff: What a fantastic video shot. My goodness!

Kerby: Look at the way you can really see the shimmering.

McMurtry: Yeah, it shows up really well on video. I prefer the live view myself.

Malahoff: Is that a wide-angled lens?

Kerby: Let's see. Open it up.

McMurtry: This is great. You can see it coming right out of the ground here. See how you _____.

Malahoff: What is that interference across there Terry?

Kerby: tThat's the ... thrusters. OK sure this is where we want it?

McMurtry: It's a good spot.

Kerby: Move it over just a little bit.

McMurtry: How much did that cost?

Kerby: Alright, this is going to be a tricky spot to find unless we get right on the side of the slope where we can pick that up again. OK, you both agree this is where you want the pinger? Pinger's away. Pinger's on the bottom.

McMurtry: Now we have an open .... check and make sure the pinger's working.

Kerby: Is it working?

Kerby: This video really picks up the shimmering.

McMurtry: Finally have an open manipulator. How about grabbing one of those rocks and putting them in the basket?

Malahoff: And the Niskin.

Kerby: We've got to... oh look at that. That's beautiful.

Malahoff: The _____ of the vent.

McMurtry: It would be nice, Alex, if we took the water samples before we took the rocks samples.

Malahoff: Yeah. Let's take the water sample.

McMurtry: I'm afraid we're going to make a mess when we start trying to pick up rocks.

Kerby: OK. You want a water sample here showing ...

McMurtry: Well, remember I said earlier it would be nice if you can get areas...

Kerby: Area's honeycombed.

McMurtry: If you can kind of get as low as you can and if you can see a little crevice, you know, like one of these mini valleys here. If you can get into that and fire ...

Kerby: What I'm going to do is turn ...

Kerby: We're really going to have to leave the bottom in about five minutes.

McMurtry: OK well if you could turn it into the current to where the shivering water is coming through the tube and then fire it, and get as low as you can.

Kerby: We'll try and get this thing into position. I'm going to try and turn around and face right into it.

McMurtry: Yeah, face right into it and if you could just sort of sit there for a precious minute. Oh yeah, looks like its really thick right over here isn't it? This would be a good spot to turn around in.

Kerby: Set the nose down. Here she comes. OK, how does that look?

McMurtry: I don't know why. Is it all around us?

Kerby: Looks like its all around us.

McMurtry: Are you heading into the current now? You seem to be going askew here a little bit.

McMurtry: You're right over...

Kerby: Right in the yellow stuff.

McMurtry: I'd say a little forward, but maybe I'm wrong.

Malahoff: We're right in the middle of it now.

McMurtry: If you could drop the basket down, you get that down on into it as much as you can. Now I can see it. That was good there for a second because you could definitely see that I mean everything should be distorted by the shimmering water, then you know that you're really in it.

Kerby: Let me see if I can get this.

Kerby: I'd say we're right in it.

McMurtry: Get that basket as low as you can Terry. I've just set it down, the lower the better. Closer to the orifice there of the vent.

Kerby: I can't drop it too much manipulator.

McMurtry: I understand. I understand. That's pretty good right there. That's even better. What you just did now is really good. Really good.

Kerby: Let's see if we can get it from there.

McMurtry: OK. Go ahead. Looks like you've got it. Fire!

McMurtry: Alright, OK. That was number ... that's the one. This is Niskin #2. Now how about the other one on the other side? Is that also .... Alex, can you see that other bottle?

Kerby: I can see it.

McMurtry: Is it like inundated with that stuff? Can you tell? Is there shimmering water running through?

Malahoff: Yeah. Yeah.

Kerby: Problem is we can't reach it.

McMurtry: You can't reach it?

Kerby: Might be able to reach it if I pick the basket up a little bit.

McMurtry: It's going the wrong way.

Kerby: No, that one is out of reach.

McMurtry: OK. Well, that makes our trip even shorter. You want to pick up a rock before we go?

Kerby: How about it, Alex? You want a rock?

McMurtry: Alex always wants rocks. That's a silly question.

McMurtry: There's one right there.

Kerby: I've just got to get around so I can reach something that's...

McMurtry: This should be pretty easy to pluck. It would be nice if we could get one with white and ____.

Kerby: The shimmering sort of distorts your vision a little bit.

McMurtry: Oh yeah. Too bad we couldn't find another one; I can see that we're definitely in it.

Kerby: Oh. What I thought was a rock crumbled into powder.

McMurtry: You pushed it too hard and broke it.

Kerby: That wasn't a rock at all. Yeah. That's pretty light stuff.

Malahoff: What a fantastic camera system here - you can just focus whatever you want zoom into it. Well you can just focus the whole picture.

McMurtry: And what about the zoom? Start turning to get zoom?

Malahoff: Yeah. See that?

Malahoff: ...Black smokers...

Malahoff: Are they going to take these tapes away from us, Terry? Or can we dub them to VHS?

Kerby: We'll have to ask Sam. I'm not sure what the plan is.

Malahoff: Isn't that a weird ____?

Kerby: It's just flying.

Malahoff: Oh look! My God! Right in front of us. _____. Disappeared on this side.

McMurtry: We've got to get that on camera. We've got to turn around and get to the other side.

Malahoff: Yeah. There it is.

McMurtry: It's right in front of us. That looks familiar. My God! I've seen that _____ before.

Malahoff: ...register, because I saw that in the TV.

McMurtry: It's got crap all over it now; this is great; it's our settling plate experiment. You can't see our signatures anymore on the back. Terry, do you think it would be possible to go down a foot?

Kerby: I think we've got to leave the bottom.

McMurtry: There it is; I mean we've got a time series point now because we definitely have another sample here. My God and the pinger's not very far away from this is it?

Kerby: No, the pinger's right behind us. Yeah, there's the plate right there.

Malahoff: Where is it?

McMurtry: Right there! It's the Pele's Vent plate.

Malahoff: Can you read it?

McMurtry: No, it's backwards; it faces the other side. The Pele's vent part faces the other side. But just looking at it it looks like it's in pretty good shape except it's got nontronite all over it. It doesn't look like it's rusted. Have you got that on video?

Malahoff: Yes.

McMurtry: I've got to get a picture of that too.

Malahoff: Looked like a _____, you know, I saw it sticking up.

McMurtry: That's the thing they used to pick it up with. How about that? Boy did we ever find it. _____ positive we ____ find it.

Malahoff: Right on top.

Kerby: We were going to leave a dropweight right next to it anyway.

McMurtry: The dropweight will last a long time. Probably a lot longer than that sign will.

McMurtry: Did you get the rock sample?

Kerby: I'm trying.

McMurtry: Oh, you're still trying. OK, I'm sorry.

Kerby: Yeah its still too ____.

McMurtry: Wouldn't that be odd that we would find that sign again.

Kerby: OK, what is it? Shall we grab it or what?

Malahoff: Yes, grab it.

McMurtry: We're going to bring it back though. That's the only __ which I'm agreeing with, otherwise I'd be protesting up. We've got to bring it back.

Malahoff: We'll bring it back...

McMurtry: We can take it back up and we can photograph it but we have to bring it back down.

Malahoff: We'll bring it back and put it in the same place.

McMurtry: We can do that because we know where the pinger is. Its real close to the pinger. Its been down how many months now?

Malahoff: February, March, April, May, June, July, August - seven months.

McMurtry: Oh the media guys will like that. ____ would go crazy if she heard that. Alright a rock!

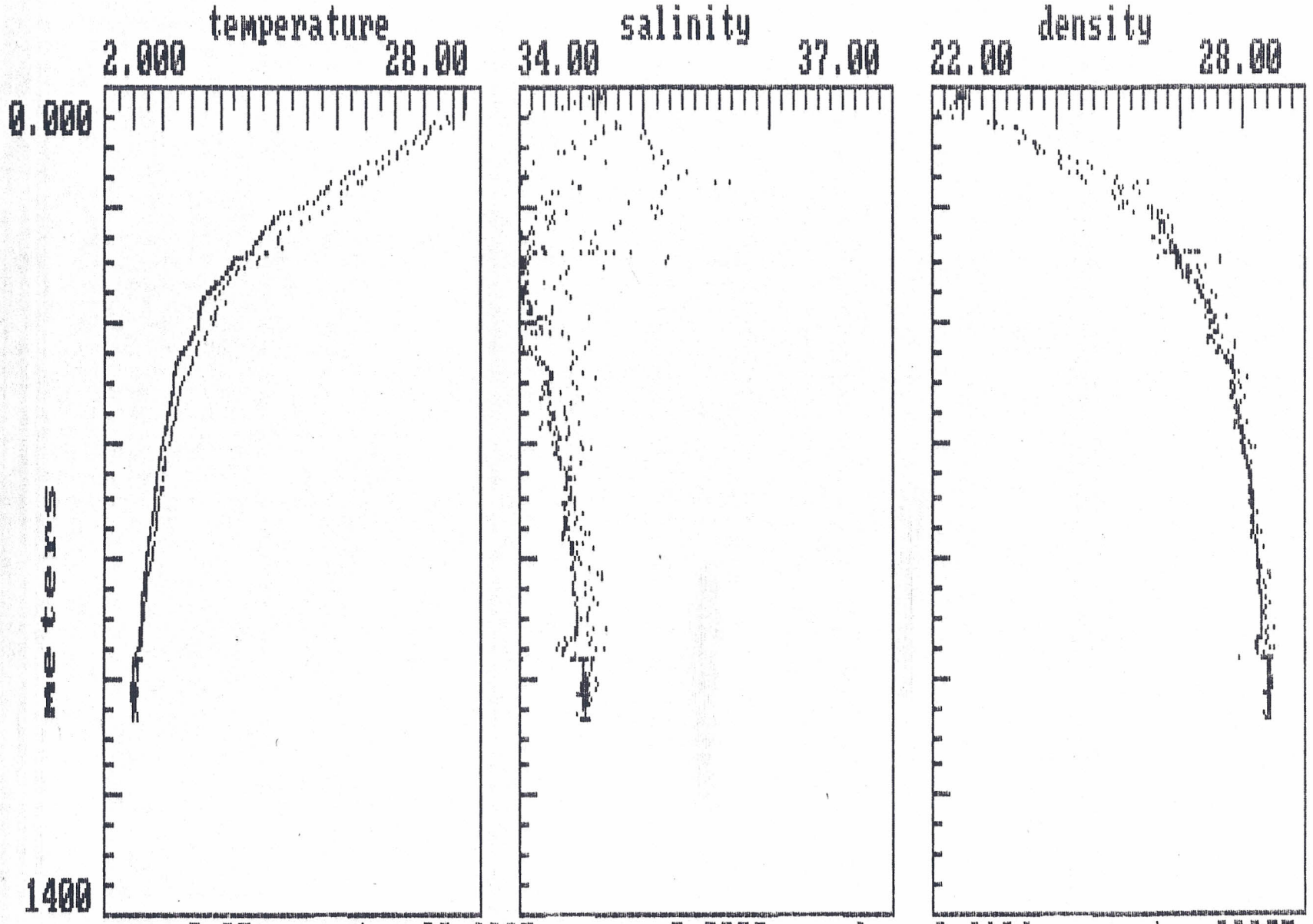
McMurtry: That's our water sample.

Kerby: ...get off the bottom.

McMurtry: That's not going to be very heavy. That sign's not very heavy either.

McMurtry: Covered with nontronite. OK oops it was a heavy one.

TIME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