

Cruise : MGL1106

To: Office of Marine Operations
Cc: Reports Group
Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

CRISP 3D – Pacific Coast, Costa Rica
R/V Marcus G. Langseth

1. PRODUCTION SUMMARY

Transit – No Production

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis **2011-04-06**

Transit	0:00
Engines	0:00
Weather	0:00
Streamer Deployment	0:00
Source Deployment	0:00
Maneuvering	0:00
Other	0:00
Port Call	0:00
Fueling	0:00
At anchor	24:00
Total:	24.00

UTC Midnight (24:00) Position / Heading:

POS: 9 57.6301 N 84 51.1626 W
HDT: 255.93 Speed: 0.1 kts
Wind: 10.9 kts Seas: 0-1m

3. TIME SUMMARY

Time Z	Description / Comments
00:00 24:00	Anchored offshore at Puntarenas, Costa Rica

4. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello,

Science Party on board:

None.

Contractors on Board

Martello, Murphy

Marine Mammal Observer Staff on board:

None

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

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Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

5. Daily Summary:

The Vessel spent all day on anchor offshore Puntarenas, Costa Rica, continuing Maintenance Work on the vessel and science systems.

1. During the Day the Science Staff installed 6 new sections in the Streamer, 4 in Streamer 2 and 2 in Streamer 1, to bring both these streamers up to the 6km mark.
2. Tail Stretches were also installed on the tails of Streamer 2 and 4.
3. All 4 Streamer were completely powered up and tested.
4. 4 other sections were transferred over to the Spare Streamer Winch for Storage.
5. All 4 Tailbuoy and 4 Source GPS Pods were checked out and are operational.
6. DigiCourse Configuration was check
7. Steamer Layout Sheets were updated
8. DigiShot was brought online and confirmed that all 4 Source Sub-Arrays were Operational.
9. PI were assisted in Getting their Computer Equipment setup to commutate with the MGL's network and secured for getting underway.
10. Observer and Nav Logs were update
11. Science Standing Orders were Update.
12. Spectra, Reflex, and Sprint Configuration Continued.

Tomorrow:

Continue anchored offshore Puntarenas, Costa Rica and Maintenance Work on the vessel and science systems. Below is a brief summary of task for tomorrow.

1. Spectra, Reflex, and Sprint Configuration
2. Acoustic Pod Configuration and Testing
3. Loading of more Spare Streamer Sections on Spares Reel
4. Inspection of Stubby Section for installation in Streamer Cable.
5. Streamer Tension Unit (STU) configuration
6. SRD Rebuild
7. Science Party Safety Briefing
8. Inspection of Chase Boat
9. Scout out Gravity Tie Point in Puntarenas, Costa Rica.

Regards,
Robert J Steinhaus

Cruise : MGL1106

To: Office of Marine Operations
Cc: Reports Group
Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

CRISP 3D – Pacific Coast, Costa Rica
R/V Marcus G. Langseth

1. PRODUCTION SUMMARY

Transit – No Production

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis **2011-04-07**

Transit	0:00
Engines	0:00
Weather	0:00
Streamer Deployment	0:00
Source Deployment	0:00
Maneuvering	0:00
Other	0:00
Port Call	0:00
Fueling	0:00
At anchor	24:00
Total:	24.00

UTC Midnight (24:00) Position / Heading:

POS: 9 57.6301 N 84 51.1626 W
HDT: 255.93 Speed: 0.1 kts
Wind: 10.9 kts Seas: 0-1m

3. TIME SUMMARY

Time Z	Description / Comments
00:00 24:00	Anchored offshore at Puntarenas, Costa Rica

4. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello,

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Cameselle, McIntosh, Nunez, Ranero, Silver

Contractors on Board

Martello, Murphy

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

5. Daily Summary:

The Vessel spent all day on anchor offshore Puntarenas, Costa Rica, continuing Maintenance Work on the vessel and science systems.

1. Continue Loading Spare Sections on Spares Reel
2. Changed out two Sections on the Tail of Streamer 3
3. Re-Terminated Wide Tow Ropes.
4. Trouble Shooting of GCM Failures on Sub-Arrays 1 & 2
5. Continued with Spectra, Reflex, and Sprint Configuration
6. Inspection of Stubby Section for installation in Streamer Cable.
7. Inspection of Chase Boat
8. Scout out Gravity Tie Point in Puntarenas, Costa Rica.

Tomorrow:

Continue anchored offshore Puntarenas, Costa Rica and Maintenance Work on the vessel and science systems. Mid-day it is planned for the vessel to move to Puerto Caldera, Costa Rica to take on water and conduct pier side gravity tie. Once Loading of water and Gravity tie are completed the vessel will get underway for the survey area. Below is a brief summary of task for tomorrow.

1. Spectra, Reflex, and Sprint Configuration
2. Acoustic Pod Configuration and Testing
3. Streamer Tension Unit (STU) configuration
4. SRD Rebuild
5. Science Party Safety Briefing
6. Gravity Tie in Puntarenas, Costa Rica.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

Transit – No Production

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis **2011-04-08**

Transit	2:08
Engines	0:00
Weather	0:00
Streamer Deployment	0:00
Source Deployment	0:00
Maneuvering	0:00
Other	0:00
Port Call	0:45
Fueling	0:00
At anchor	21:07
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 9 54.7528 N 84 43.1900 W

HDT: 076 Speed: 0.1 kts

Wind: ENE 5-10 kts Seas: 0-1m

3. TIME SUMMARY

Time Z	Description / Comments
00:00 21:07	Anchored offshore at Puntarenas, Costa Rica
21:07 23:15	Transit to Puerto Caldera, Costa Rica
23:15 24:00	Port Call Puerto Caldera, Costa Rica.

4. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello,

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Cameselle, McIntosh, Nunez, Ranero, Silver

Contractors on Board

Martello, Murphy

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

5. Daily Summary:

The Vessel spent the majority of the day on anchor offshore Puntarenas, Costa Rica, continuing Maintenance Work on the vessel and science systems.

1. Spectra, Reflex, and Sprint Configuration
2. Acoustic Pod Configuration and Testing
3. Streamer Tension Unit (STU) configuration
4. SRD Rebuild
5. Science Party Safety Briefing
6. Gravity Tie in Puerto Caldera & Puntarenas, Costa Rica
7. Stocked Streamer Deck for upcoming Deployment
8. PSO Tower Re-rig
9. Wide Tow Rope Re-Terminations

At ~21:07 GMT the vessel got underway for Puerto Caldera, Costa Rica. At ~23:15 the vessel was secured alongside Puerto Caldera to take on water and undertake the pier side gravity tie, which continue through the end of the day. We are standing by for sailing order from LDEO.

Tomorrow:

At the start of the day we will continue alongside Puerto Caldera taking on water and undertake the pier side gravity tie. When we have topped off with water and completed the Gravity Tie if the sailing orders have not been received the vessel will retune to anchor outside Puntarenas, Costa Rica. If the Sailing Orders have been received the vessel will get under for the Multibeam Calibration Location and once completed with that will begin deployment of the towed MCS Equipment.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

Transit – No Production

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis 2011-04-09

Transit	6:32
Engines	0:00
Weather	0:00
Streamer Deployment	11:35
Source Deployment	0:00
Maneuvering	0:00
Multibeam Cal	3:20
Port Call	2:33
Fueling	0:00
At anchor	21:07
Total:	24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 35.0210 N 84 18.4299 W

HDT: 029 Deg Speed: 4.4 kts

Wind: ESE 5-10 kts Seas: 1-3 ft.

3. TIME SUMMARY

Time Z	Description / Comments
00:00 02:33	Port Call Puerto Caldera, Costa Rica.
02:33 09:05	Transit to Multibeam Cal Site
09:05 12:25	EM122 Patch Test
12:25 21:42	Deploying Streamer #4
21:42 22:48	Checking Trim of Streamer #4
22:48 23:14	Deploying Streamer #4 out on Port Deflector
23:14 24:00	Deploying Streamer #1.

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

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Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello,

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Contractors on Board

Martello, Murphy

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

5. Daily Summary:

At the start of the day the vessel was alongside Puerto Caldera taking on fresh water and doing a pier side gravity tie. At ~02:33 GMT the vessel got underway for CRISP 3D survey area. On the way to the survey area a location had been chosen to conduct a PATCH test for the EM-122 to verify is Calibration. The vessel arrived onsite at ~09:05 GMT and the EM-122 Calibration began at that time. The calibration was completed with good results at ~12:25 GMT and Deployment of the Streamer #4 was started. After trouble shooting some issues with the streamer it was fully deployed directly behind the vessel at 21:42 GMT and we did some trim test. Once those tests were complete at ~22:48 streamer 4 was retrieved to the tow point and attached the Port Deflector and deployed to ~200m off the port side of the ship. This was complete at ~23:14 GMT and Streamer #1's deployment began.

Tomorrow:

At the start of day we will continue with the deployment of Streamer #1. Streamer #1's main tow point will need some repairs before it can be deployed out on the Stbd Deflector. On completion of Streamer #1's deployment, Streamer #2 will be deployed followed by Streamer #3 which would continue into the next day.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

Transit – No Production

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis **2011-04-10**

Transit	0:00
Engines	0:00
Weather	0:00
Streamer Deployment	24:00
Source Deployment	0:00
Maneuvering	0:00
Multibeam Cal	0:00
Port Call	0:00
Fueling	0:00
At anchor	0:00
Total:	24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 17.4562 N 84 22.2287 W
HDT: 020 Deg Speed: 4.3 kts
Wind: Calm Seas: 1-3 ft.

3. TIME SUMMARY

Time Z	Description / Comments
00:00 09:54	Deploying Streamer #1
09:54 22:08	Deploying Streamer #3
22:08 24:00	Deploying Streamer #2

4. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello,

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Contractors on Board

Martello, Murphy

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

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Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

5. Daily Summary:

The entire day was spent deploying Streamer. At the end of the day Streamer 1, 3, & 4 were completely deployed and Streamer 2's deployment was underway.

Tomorrow:

We will continue deployment of Streamer 2. Once it is out we will start deploying the source and working on the Final Geometry of the towed equipment and begin heading towards line MGL11061001.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

Transit – No Production

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis **2011-04-10**

Transit	0:00
Engines	0:00
Weather	0:00
Streamer	22:34
Source	0:28
Maneuvering	1:08
Multibeam Cal	0:00
Port Call	0:00
Fueling	0:00
At anchor	0:00
Total:	24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 43.1545 N 84 22.4238 W

HDT: 024 Deg Speed: 4.1kts

Wind: S 5-10 Kts Seas: 1-3 ft.

3. TIME SUMMARY

Time Z	Description / Comments
00:00 07:10	Deploying Streamer #2
07:10 08:18	Maneuvering
08:18 10:40	Evaluating Str 3 Telemetry Issues
10:40 10:55	Deploying Source Array 1
10:55 11:08	Recovering Source Array 1
11:08 11:50	Evaluating Str 3 Telemetry Issues
11:50 12:40	Recovering Str 3 Front end to Trouble Shoot Telemetry Issues
12:40 16:40	Trouble shooting Str 3 Front end Telemetry issues
16:40 21:45	Recovering Str 3 to Tail to Trouble Shoot Tail End Telemetry issues
21:45 24:00	All Telemetry issues repaired deploying Str 2.

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello,

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Contractors on Board

Martello, Murphy

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

5. Daily Summary:

We complete deploying streamer 2 and during this operations streamer 3 developed some telemetry issues which started out as intermittent and became a hard fault as time went on. The decision was made to retrieve streamer 3 to begin fault finding of the telemetry issues. It took a while to find the issues at the front of the streamer, once these were fixed it was clear that there was another issues at the tail of the cable. We retrieved the entire cable to fix this problem. Once complete with the repair re-deployment of the streamer began.

Tomorrow:

We will continue deployment of Streamer 3. Once it is out we will start deploying the source and working on the Final Geometry of the towed equipment and begin heading towards line MGL11061001.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-12	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	67.952	543.400
Infill	0.00	0.000
Reshoot	0.00	0.000
	Total: 67.925	543.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis **2011-04-12**

Recording	8:10
Line Change	2:22
Weather	0:00
Instrument	0:00
Hydraulics	0:00
Source	3:57
Streamer	3:36
Seismic Air Compressor	0.00
Cetaceans – PAM	1:16
Transit	0:00
Ship Repair	0:00
Maneuvering	4:39
Port Call	0:00
Medical Transfer	24:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 54.150 N 84 3.163 W
HDG: 197 Deg Speed: 4.3kts
Wind: SW 5-10 Kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello,

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Contractors on Board

Martello, Murphy

Marine Mammal Observer Staff on board:

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

Antochiw, Dubuque, Milne, Palacios, Piercy

4. TIME SUMMARY

Time GMT		Description / Comments
0:00	3:36	Deploying Streamer 3
3:36	4:30	Deploying PAM Streamer
4:30	8:27	Deploying Source
8:27	13:06	Maneuvering to Line MGL11061004
13:06	14:11	Prime Production MGL11061004
14:11	14:16	Power Down for Turtle
14:16	14:58	Prime Production MGL11061004
14:58	15:01	Power Down for Turtle
15:01	16:19	Prime Production MGL11061004
16:19	16:25	Power Down for Turtle
16:25	18:52	Prime Production MGL11061004
18:52	19:00	Power Down for Turtle
19:00	20:49	Prime Production MGL11061004
20:49	23:11	Line Change to MGL11061156
23:11	0:00	Prime Production MGL11061156

5. Daily Summary:

The day started out continuing with the deployment of Streamer 3. After completion of Streamer 3 sometime was take to insure the PAM Streamer was deployed in a safe manner so it would not get tangled in the Source. As soon as this was complete the Source was deployed out and the vessel began maneuvering towards MGL11061004. Production on Line MGL11061004 went well other than the four power downs for Turtles. At completion of Line MGL11061004 was complete the vessel made a normal line change onto Line MGL11061156 and production continued throughout the rest of the day.

Tomorrow:

We will continue production on MGL11061156, once complete we will make a normal line change to MGL11061012. On completion of MGL11061012 will make another normal line change on to MGL11061164 which should take us through the end of the day.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-13	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	144.700	1157.600
Infill	0.00	0.000
Reshoot	0.00	0.000
Total:	144.700	1157.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-13
Recording	17:21
Line Change	3:22
Weather	0:00
Instrument	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Cetaceans – PAM	3:17
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Medical Transfer	24:00
Total:	24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 31 58.625 N 84 14 02.13 W

HDG: 197 Deg Speed: 4.4kts

Wind: Calm Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT	Description / Comments
0:00 6:22	Prime Production MGL11061156
6:22 7:58	Line Change to MGL11061012
7:58 11:32	Prime Production MGL11061012
11:32 11:37	Source Power Down for MMO Sighting
11:37 13:49	Prime Production MGL11061012
13:49 15:31	Source Power Down for MMO Sighting
15:31 17:17	Line Change to MGL11061164
17:17 17:41	Ramping up Source MGL11061164
17:41 17:56	Prime Production MGL11061164
17:56 18:45	Source Power Down for MMO Sighting
18:45 19:53	Prime Production MGL11061164
19:53 20:00	Source Power Down for MMO Sighting
20:00 20:27	Prime Production MGL11061164
20:27 20:33	Source Power Down for MMO Sighting
20:33 22:04	Prime Production MGL11061164

5. Daily Summary:

The vessel was in production all day. There were numerous sightings of Turtles today that cause us to have either power down or shutdown the source. The worst of the sighting caused the loose of the last 1:42 min of Line MGL11061012, which will need to be reshot during the infill program.

During the day the science crew/party began the cleanup after the recent streamer deployment and moved ~15 actives to either the spares reel or on to wooden shipment reels to be offload during our next port call in the USA.

Tomorrow:

We will continue production tomorrow and hope to have less turtle sightings. The Science crew/party will also continue one the cleanup and storage of active sections.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-13	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	143.000	1144.000
Infill	0.00	0.000
Reshoot	0.00	0.000
Total:	143.000	1144.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-14
Recording	17:52
Line Change	5:06
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:16
Hydraulics	0:00
Source	0:41
Streamer	0:00
Seismic Air Compressor	0:00
Cetaceans – PAM	3:17
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Medical Transfer	24:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 37 28.799 N 84 14 22.227 W

HDG: 25.9 Deg Speed: 4.4kts

Wind: Calm Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:47	Prime Production MGL11061164	1138	873	265	6.6250
0:47	2:27	Line Change				
2:27	9:52	Prime Production MGL11061020	893	3351	2458	61.4500
9:52	11:38	Line Change				
11:38	12:20	Prime Production MGL11061172	3377	3153	224	5.6000
12:20	12:36	Spectra Logging Issues	3152	3064		
12:36	15:36	Prime Production MGL11061172	3063	2165	898	22.4500
15:36	15:41	Power Down for Turtle	2164	2136		
15:41	19:46	Prime Production MGL11061172	2137	873	1264	31.6000
19:46	21:26	Line Change				
		Line Change extended due to Source				
21:26	22:07	Maintenance				
22:07	0:00	Prime Production MGL11061028	881	1492	611	15.2750

5. Daily Summary:

The vessel continued in production throughout the day. It was a very slow day for turtle sighting Vs the previous days with only one sighting. There was one Spectra Logging Lockup during ling MGL11061172, which lasted ~89 shot. Also Throughout the day we passed many trees floating in the water and for the larger ones the chase boat was utilized to tow them out of the path of the MCS gear. Later in the day we extended a Line change to do some maintenance on Source Sub-Array 2 & 4. The Science crew/party finished up the cleanup and storage of active sections.

Doing some rough math the science crew/party moved (by hand) ~87 (13km) active sections around the back deck of the vessel with all the maintenance done on streamers during the Mobilization and streamer deployment for this mission..

Tomorrow:

We will continue production tomorrow and hope to have less turtle sightings. The Science crew/party will start repairing the DigiCourse 5011 Cable Levelers that were found faulty during the deployment.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-13	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	143.000	1144.000
Infill	0.00	0.000
Reshoot	0.00	0.000
Total:	143.000	1144.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis **2011-04-14**

Recording	17:52
Line Change	5:06
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:16
Hydraulics	0:00
Source	0:41
Streamer	0:00
Seismic Air Compressor	0:00
Cetaceans – PAM	0:05
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Medical Transfer	24:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 37 28.799 N 84 14 22.227 W

HDG: 25.9 Deg Speed: 4.4kts

Wind: Calm Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:47	Prime Production MGL11061164	1138	873	265	6.6250
0:47	2:27	Line Change				
2:27	9:52	Prime Production MGL11061020	893	3351	2458	61.4500
9:52	11:38	Line Change				
11:38	12:20	Prime Production MGL11061172	3377	3153	224	5.6000
12:20	12:36	Spectra Logging Issues	3152	3064		
12:36	15:36	Prime Production MGL11061172	3063	2165	898	22.4500
15:36	15:41	Power Down for Turtle	2164	2136		
15:41	19:46	Prime Production MGL11061172	2137	873	1264	31.6000
19:46	21:26	Line Change				
		Line Change extended due to Source				
21:26	22:07	Maintenance				
22:07	0:00	Prime Production MGL11061028	881	1492	611	15.2750

5. Daily Summary:

The vessel continued in production throughout the day. It was a very slow day for turtle sighting Vs the previous days with only one sighting. There was one Spectra Logging Lockup during ling MGL11061172, which lasted ~89 shot. Also Throughout the day we passed many trees floating in the water and for the larger ones the chase boat was utilized to tow them out of the path of the MCS gear. Later in the day we extended a Line change to do some maintenance on Source Sub-Array 2 & 4. The Science crew/party finished up the cleanup and storage of active sections.

Doing some rough math the science crew/party moved (by hand) ~87 (13km) active sections around the back deck of the vessel with all the maintenance done on streamers during the Mobilization and streamer deployment for this mission..

Tomorrow:

We will continue production tomorrow and hope to have less turtle sightings. The Science crew/party will start repairing the DigiCourse 5011 Cable Levelers that were found faulty during the deployment.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-13	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	139.375	1115.000
Infill	0.00	0.000
Reshoot	0.00	0.000
Total:	139.375	1115.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-14
Recording	17:26
Line Change	3:16
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	3:18
Streamer	0:00
Seismic Air Compressor	0:00
Cetaceans – PAM	0:00
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Medical Transfer	24:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 45 03.052 N 84 10 27.724 W

HDG: 37.4 Deg Speed: 4.4 kts

Wind: W @ 5-10 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments	FSP	LSP	Total	Sail Line KM
		Prime Production				
0:00	5:37	MGL1106_1028	1493	3352	1859	46.4750
5:37	7:13	Line Change				
		Prime Production				
7:13	15:04	MGL1106_1180	3402	873	2529	63.2250
15:04	16:44	Line Change				
16:44	17:10	Line Change extended due to Source Maintenance				
		Circle Due to Source S3G2 broken				
17:10	20:02	Chamber				
		Prime Production				
20:02	0:00	MGL1106_1036	915	2102	1187	29.6750

5. Daily Summary:

The Vessel started the day in production on MGL1106-1028. Once completed of this line a normal line change on to Line MGL1106-1180 was made. Just after the end of MGL1106-1180 an air leak was noticed coming from Source Sub-Array 3. The Sub Array was retrieved to find the source of the leak. During inspection it was discovered that the Chamber on that Gun 2 (S3G2) had a crack around the connection flange between the chamber and the body. Repairing S3G2 was started but due to the time it takes to change out a chamber we were not able to make the start of line MGL1106-1036. The vessel aborted the run into line and began circling around. During the Circle the repairs to S3G2 were completed and the Sub-array was returned to service and on completion of the Circle MGL1106-1036 was started normally. During the Circle the RPS PAM streamer became intermittent and finally quit working all together. The Science Technical Staff did some trouble shooting and found that the PAM streamer had a break ~210m from the ship which was ~40m from the tail. On retrieval it was noticed that there is a splice ~40m from the tail. This RPS PAM steamer was removed from service and replaced by the Spare, which has been operating normally since.

Tomorrow:

We will continue production tomorrow. The Science crew/party will continue repairing the DigiCourse 5011 Cable Levelers that were found faulty during the deployment. In addition on the end of the next North Bound line we will retrieve Source Sub-Array 1 to do some preventative maintenance.

Regards,
Robert J Steinhaus

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Cruise : MGL1106

To: Office of Marine Operations

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

CRISP 3D – Pacific Coast, Costa Rica

R/V Marcus G. Langseth

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-13	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	150.1250	1201.000
Infill	0.00	0.000
Reshoot	0.00	0.000
Total:	150.1250	1201.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis 2011-04-14

Recording	17:22
Line Change	1:46
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Cetaceans – PAM	0:08
Transit	0:00
Ship Repair	4:44
Maneuvering	0:00
Port Call	0:00
Medical Transfer	24:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 58 06.066 N 84 03 55.479 W

HDG: 29.6 Deg Speed: 5 kts

Wind: Calm Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments				Sail Line
			FSP	LSP	Total	KM
0:00	3:45	Prime Production MGL11061036	2103	3351	1248	31.2000
3:45	5:31	Line Change				
5:31	12:39	Prime Production MGL11061188	3352	1001	2351	58.7750
		Rejected Production				
12:39	12:41	MGL11061188 d/t Main Engine	1000	988		
12:41	17:23	Line Aborted due to Stbd Main Engine Shutdown				
17:23	23:52	Prime Production MGL11061044	746	3152	2406	60.1500
23:52	0:00	Power Down for PSO - Dolphins	3153	3195		

5. Daily Summary:

The Vessel started the day in production on MGL1106-1036. Once completed of this line a normal line change on to Line MGL1106-1188 was made. Just before the end of MGL1106-1188 it had to be aborted due to STBD engine shut down because of jacket water cooling leak. In order to reduce the load on the PORT engine, Source Sub-Arrays 1, 2, & 4 were, as well as the PAM and Maggie were brought onboard. The Speed through the water was also reduced as low as possible were streamer control could be maintained. After the repairs were made in the engine room the speed was brought back to normal operation speed and all gear was re-deployed as we headed towards line MGL11061044 which continued throughout the rest of the day. Shortly before day change a pod of Dolphins were spotted off the bow of the vessel requiring a power down, which continued into the new day.

On PI's request at the start of MGL11061044 the Seismic Record Length was reduced from 9 sec to 8 sec. This was to allow for fast acquisition of line in a effort gain more time for infill and reshot at the end of the survey.

Even with the unexpected down time we achieved a new production record for the vessel with 1201 CMP km acquired in a single day. This was 130 more CMP km more than the vessel shot with the same array as an industry vessel and was higher than any single day of production the vessel had on MGL0812 (EPR 2008)

Tomorrow:

We will continue production tomorrow and try to complete 3 lines tomorrow.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-13	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	146.100	1168.800
Infill	0.00	0.000
Reshoot	0.00	0.000
	Total: 146.100	1168.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-14
Recording	16:55
Line Change	1:46
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Cetaceans – PAM	0:35
Transit	0:00
Ship Repair	4:44
Maneuvering	0:00
Port Call	0:00
Medical Transfer	24:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 58 06.066 N 84 03 55.479 W

HDG: 29.6 Deg Speed: 5 kts

Wind: Calm Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments	FSP	LSP	Total	Sail Line KM
0:00	3:45	Prime Production MGL11061036	2103	3351	1248	31.2000
3:45	5:31	Line Change				
5:31	12:39	Prime Production MGL11061188	3352	1001	2351	58.7750
12:39	12:41	Rejected Production MGL11061188	1000	988		
12:41	17:23	Line Aborted due to Stbd Main Engine Shutdown				
17:23	18:40	Prime Production MGL11061044	746	1213	467	11.6750
18:40	18:44	Power Down for PSO - Turtle	1214	1240	26	
18:44	22:36	Prime Production MGL11061044	1241	2683	1442	36.0500
22:36	22:44	Power Down for PSO - Turtle	2684	2731	47	
22:44	22:52	Prime Production MGL11061044	2732	2786	54	1.3500
22:52	23:00	Power Down for PSO - Turtle	2787	2829	42	
23:00	23:26	Prime Production MGL11061044	2830	2991	161	4.0250
23:26	23:33	Power Down for PSO - Turtle	2992	3030	38	
23:33	23:52	Prime Production MGL11061044	3031	3152	121	3.0250
23:52	0:00	Power Down for PSO - Dolphins	3153	3196	43	

5. Daily Summary:

The Vessel started the day in production on MGL1106-1036. Once completed of this line a normal line change on to Line MGL1106-1188 was made. Just before the end of MGL1106-1188 it had to be aborted due to STBD engine shut down because of jacket water cooling leak. In order to reduce the load on the PORT engine, Source Sub-Arrays 1, 2, & 4 were, as well as the PAM and Maggie were brought onboard. The Speed through the water was also reduced as low as possible were streamer control could be maintained. After the repairs were made in the engine room the speed was brought back to normal operation speed and all gear was re-deployed as we headed towards line MGL11061044 which continued throughout the rest of the day. Shortly before day change a pod of Dolphins were spotted off the bow of the vessel requiring a power down, which continued into the new day.

On PI's request at the start of MGL11061044 the Seismic Record Length was reduced from 9 sec to 8 sec. This was to allow for fast acquisition of line in a effort gain more time for infill and reshot at the end of the survey.

Even with the unexpected down time we achieved a new production record for the vessel with 1168 CMP km acquired in a single day. This was 70 more CMP km more than the vessel shot with the same array as an industry vessel and was higher than any single day of production the vessel had on MGL0812 (EPR 2008)

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

Tomorrow:

We will continue production tomorrow and try to complete 3 lines tomorrow.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-17	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	165.900	1327.200
Infill	0.00	0.000
Reshoot	0.00	0.000
	Total: 165.900	1327.200

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-17
Recording	18:41
Line Change	4:35
Weather	0:00
Instrument Acquisition	0:13
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Cetaceans – PAM	0:31
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Medical Transfer	24:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 36 30.890 N 84 10 86.586 W

HDG: 205 Deg Speed: 4.4 kts

Wind: SW 5-10 Kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:24	MGL1106_1044 Power Down for PSO	3196	3351	155	
0:24	1:59	Line Change				
1:59	2:12	MGL11061196 - Seisnet Lockup	3346	3281	65	
2:12	9:12	Prime Production MGL1106_1196	3280	873	2407	60.1750
9:12	10:41	Line Change				
10:41	15:46	Prime Production MGL1106_1052	885	2728	1843	46.0750
15:46	15:53	Power Down for PSO - Turtle	2729	2774	45	
15:53	17:28	Prime Production MGL1106_1052	2775	3351	576	14.4000
17:28	18:59	Line Change				
18:59	0:00	Prime Production MGL1106_1204	3350	1540	1810	45.2500

5. Daily Summary:

The Vessel started the day in production on line MGL1106-1044 with the source powered down for Dolphins. This line was ended with the source powered down and we made a normal line change to Line MGL1106-1196. At the start of MGL1106-1196 we had a Seisnet Lockup which interned locked up the Syntrak recording system. A quick reboot was done and the line was continued normal. Once line MGL1106-1196 was completed the vessel made another normal line change to Line MGL1106-1052, on this line we had one source shut down for a turtle. On completion of the line we made a normal line change to MGL1106_1204 which was continued throughout the day.

Today was the best day of production the vessel has had during a 3D MCS survey with a total of 1327.20 CMP KM acquired.

Tomorrow:

We will continue production tomorrow and try to complete 3 lines tomorrow.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-18	Sailed Km	CMP KM
Prime	105.6250	845.000
Infill	0.8250	6.600
Reshoot	0.00	0.000
	Total: 106.450	851.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-18
Recording	12:41
Line Change	4:50
Weather	0:00
Instrument Acquisition	0:10
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Cetaceans – PAM	3:49
Transit	0:00
Ship Repair	0:14
Maneuvering	0:00
Port Call	0:00
Other	2:43

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 42.218 N 84 11.7700 W
HDG: 205 Deg Speed: 4 kts
Wind: Calm Seas: Calm.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments	FSP	LSP	Total SP	Sail Line KM
0:00	2:06	Prime Production MGL1106_1204	1539	873	666	16.6500
2:06	3:41	Line Change				
3:41	10:23	Prime Production MGL1106_1060	890	3351	2461	61.5250
10:23	11:58	Line Change				
11:58	12:14	Power Down for PSO - Turtles	3336	3252	84	
12:14	12:45	Prime Production MGL1106_1212	3251	3062	189	4.7250
12:45	12:52	Power Down for PSO - Turtle	3061	3024	37	
12:52	13:10	Prime Production MGL1106_1212	3023	2916	107	2.6750
13:10	14:28	Power Down for PSO - Turtles	2915	2474	441	
14:28	14:34	Prime Production MGL1106_1212	2473	2438	35	0.8750
14:34	15:47	Power Down for PSO - Turtles	2437	2022	415	
15:47	16:55	Prime Production MGL1106_1212	2021	1633	388	9.7000
16:55	17:41	Power Down for PSO - Turtles	1632	1366	266	
17:41	17:53	Prime Production MGL1106_1212	1365	1308	57	1.4250
17:53	17:56	Power Down for PSO - Turtles	1307	1289	18	
17:56	18:00	Prime Production MGL1106_1212	1288	1272	16	0.4000
18:00	18:10	DigiShot Lockup	1271	1215	56	
18:10	18:14	Prime Production MGL1106_1212	1214	1194	20	0.5000
18:14	18:17	Power Down for PSO - Turtles	1193	1175	18	
18:17	18:19	Prime Production MGL1106_1212	1174	1167	7	0.1750
18:19	18:22	Power Down for PSO - Turtles	1168	1153	15	
18:22	19:17	Prime Production MGL1106_1212	1152	873	279	6.9750
19:17	20:57	Line Change				
20:57	21:03	Infill Production MGL1106_1044I	912	945	33	0.8250
21:03	21:17	Loss all Power and Propulsion				
21:17	22:03	Maneuvering to get gear back in position				
22:03	23:12	FRB out to Remove SRD's from S1 & S2				
23:12	23:35	Evaluating Towed Equipment Status				
23:35	23:54	Deploying S1, S2, and Stbd Deflector out wider to Avoid tangling with S3 & S4				
23:54	0:00	Retrieving S3, S4, and Port Deflector				

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

5. Daily Summary:

Today was a very eventful day. We started the day continuing production on MGL1106-1204. On completion we made a normal line change to MGL1106-1060, which was acquired without incident. A normal line change to MGL1106-1212 was made. MGL1106-1212 had numerous source power/shut downs for PSO sightings. On the completion of MGL1106-1212 we made a normal line change to MGL1106-1044I. Shortly after the start of this line the vessel experienced a blackout and loose of propulsion for ~14 min. The vessel was head with the current and had the wind behind the vessel, which keep the towed equipment behind the vessel. Once Propulsion was restored the vessel was brought up slowly to towing speed and all gear slowly moved out to in normal locations. After a quick evaluation of the Streamer it was clear that SRD's numerous (S1-1, S2-4, & S4-5) had deployed. After talks with the Captain we decided to launch the FRB to remove the SRD's from Streamer 1 (S1) and Streamer 2 (S2). By doing this it would allow us to not have to pick up those streamers saving about 24 hours in operational time. Since it was so close to dark, it was also decided that the best course of action was to retrieve Streamer 4 (S4), which would allow us the chance to fix a couple of other issues with birds we were having on this streamer. S1, S2, and the Stbd Deflector were pushed out wider to the Stbd side and S3 from end was retrieved and put on a Soft Tow Point from the Stbd side of the vessel. This would allow for the retrieval of S4 in the new day.

Tomorrow:

We will pickup S4 removed the discharged SRD's and reinstall rebuild ones in their place and redeploy S4. Once S4 is out will continue to deploy the other towed Equipment and get back into production as soon as possible.

****Note: Other than the 9 Discharged SRD's all towed equipment looks to be in good working order.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-19	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	48.700	389.600
Reshoot	11.2750	90.200
	Total: 106.450	479.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-19
Recording	6:34
Line Change	0:00
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	1:06
Streamer	0:03
Seismic Air Compressor	0:00
Cetaceans – PAM	0:25
Transit	0:00
Ship Repair	0:00
Maneuvering	1:01
Port Call	0:00
Other	14:51

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 58.1738 N 084 00.9177 W

HDG: 205 Deg Speed: 4 kts

Wind: SW 5-10 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments	FSP	LSP	Total SP	Sail Line KM
0:00	2:15	Retrieving S3, S4, and Port Deflector				
2:15	3:41	Retrieving S4				
3:41	9:37	Deploying S4				
9:37	11:05	Deploying S3, S4, and Port Deflector				
11:05	12:03	Maneuvering towards Line MGL1106-1004J				
12:03	13:41	Deploying Source				
13:41	14:51	Maneuvering towards Line MGL1106-1004J				
14:51	15:33	Infill Production MGL1106-1044J	780	1031	251	6.2750
15:33	15:37	Power down for Turtle	1032	1059	27	
15:37	15:41	Infill Production MGL1106-1044J	1060	1083	23	0.5750
15:41	15:43	Power down for Turtle	1084	1092	8	
15:43	16:03	Infill Production MGL1106-1044J	1093	1213	120	3.0000
16:03	16:07	Reshot Production MGL1106-1044J	1214	1240	26	0.6500
16:07	16:18	Infill Production MGL1106-1044J	1241	1309	68	1.7000
16:18	16:22	Power down for Turtle	1310	1333	23	
16:22	18:30	Infill Production MGL1106-1044J	1334	2117	783	19.5750
18:30	18:35	Power down for Turtle	2118	2149	31	
18:35	19:06	Infill Production MGL1106-1044J	2150	2342	192	4.8000
19:06	19:11	Power down for Turtle	2342	2373	31	
19:11	19:17	Infill Production MGL1106-1044J	2374	2407	33	0.8250
19:17	19:22	Power down for Turtle	2408	2440	32	
19:22	20:01	Infill Production MGL1106-1044J	2441	2683	242	6.0500
20:01	20:09	Reshot Production MGL1106-1044J	2684	2731	47	1.1750
20:09	20:18	Infill Production MGL1106-1044J	2732	2786	54	1.3500
20:18	20:25	Reshot Production MGL1106-1044J	2787	2929	142	3.5500
20:25	20:51	Infill Production MGL1106-1044J	2930	2991	61	1.5250
20:51	20:57	Reshot Production MGL1106-1044J	2992	3030	38	0.9500
20:57	21:17	Infill Production MGL1106-1044J	3031	3152	121	3.0250
21:17	21:50	Reshot Production MGL1106-1044J	3153	3351	198	4.9500
21:50	22:56	Picking up Source				
22:56	23:57	Maneuvering to Pickup S2 for BB02 Malfunction				
23:57	0:00	Retrieving Stbd Deflector, S1 & S2				

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

5. Daily Summary:

We started the day still trying to recover from the Power/Propulsion loss of the previous day. We moved the towed equipment around so we could get at Streamer 4 to recover it and remove the 5 SRD's that had deployed. All towed gear was redeployed to its proper location by ~13:41 GMT and we began maneuvering towards MGL1106-1044J. On line up to this line Streamer 2 Bird 2 (BB02) had a motor malfunction. It was not bad enough at the time for us to not start the line and we tried to reset it but could not get it to function right. The decision was made to retrieve the front end of Streamer 2 to replace it at the end of MGL1106-1044J. On completion of the line we started retrieving the source and maneuvering to head back offshore to complete the work on the streamer. This operation continued through the end of the day.

Tomorrow:

We will start out the day by retrieving Streamer 2 to replace bird BB02. While we have the front end onboard we will go ahead and retrieve it to Bird 8 and replace the 4 SRD's that deployed the previous day. Once all the gear is out we will make our way back towards line and begin production.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-20	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	50.500	400.400
Infill	10.575	84.600
Reshoot	13.225	105.800
	Total: 73.850	590.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-20
Recording	7:46
Line Change	0:00
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	1:11
Streamer	7:57
Seismic Air Compressor	0.00
Cetaceans – PAM	0:06
Transit	0:00
Ship Repair	6:19
Maneuvering	0:41
Port Call	0:00
Other	0:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 37 15.489 N 084 10 27.326 W

HDG: 205 Deg Speed: 4.6 kts

Wind: SSW 5-10 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Steinhaus, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description / Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:40	Retrieving Stbd Deflector, S1 & S2				
0:40	3:55	Retrieving S2				
3:55	6:35	Deploying S2				
6:35	7:57	Deploying S3, S4, and Port Deflector				
7:57	9:08	Deploying Source				
9:08	9:49	Maneuvering towards Line MGL1106-1068				
9:49	14:18	Prime Production MGL1106-11068	835	2504	1669	41.7250
14:18	14:24	Power down for Turtle	2505	2541		
14:24	14:45	Prime Production MGL1106-11068	2542	2875	333	8.3250
14:45	17:02	Power and Compressor Failure	2876	3357		
17:02	20:37	Stand by for Compressor Repairs Infill Production MGL1106-1212R				
20:37	21:04	Compressor offline	2721	2573		
21:04	21:22	Reshoot Production MGL1106-1212R	2572	2474	98	2.4500
21:22	21:29	Infill Production MGL1106-1212R	2473	2438	35	0.8750
21:29	22:45	Reshoot Production MGL1106-1212R	2437	2022	415	10.3750
22:45	23:56	Infill Production MGL1106-1212R	2021	1633	388	9.7000
23:56	0:00	Reshoot Production MGL1106-1212R	1632	1616	16	0.4000

Cruise : MGL1106

To: Office of Marine Operations
Cc: Reports Group
Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

CRISP 3D – Pacific Coast, Costa Rica

R/V Marcus G. Langseth

5. Daily Summary:

Today was another eventful day. We began the day retrieving Streamer 2 because of Bird 02 Malfunction, but while we had the front end onboard we went ahead and pickup to Bird 8 to replace the SRD's that had deployed during the Propulsion Loss from two day before. Once the SRD's were reinstalled the streamer was redeployed back out wide. Once out the Source Sub-Arrays were redeployed and we began maneuvering towards Prime Line MGL1106-1068 which was started at ~09:49 GMT. At ~14:45 we experienced another black out of the ship, but did not lose propulsion. During the recovery from the blackout the STBD compressor shut down and did not allow us to resume production (Port Compressor was down for Maintenance). It was found that he Turbo Charger had failed on the Stbd Compressor drive engine. Repairs took a little while to complete and were able to resume production on Line MGL1106-1212R at ~21:22 which continued throughout the rest of the day.

During the day the Spare PAM cable was repaired and redeployed.

Tomorrow:

Continue production throughout the day. The Science Crew begin cleaning up and repairing what in water equipment they can that was replaced in the past two days.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-21	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	119.900	959.200
Infill	9.475	75.800
Reshoot	8.950	71.600
	Total: 138.325	1106.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-21
Recording	18:55
Line Change	4:21
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0.00
Mitigation/PAM	0:44
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 42.08415 N, 084 11.1017 W

HDG: 22.5 Deg Speed: 4.4 kts

Wind: W 5 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT	Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00 0:44	Reshoot Production MGL1106-1212R	1617	1366	251	6.275
0:44 0:53	Infill Production MGL1106-1212R	1365	1308	57	1.425
0:53 0:56	Reshoot Production MGL1106-1212R	1307	1289	18	0.450
0:56 0:59	Infill Production MGL1106-1212R	1288	1272	16	0.400
0:59 1:09	Reshoot Production MGL1106-1212R	1271	1215	56	1.400
1:09 1:13	Infill Production MGL1106-1212R	1214	1194	20	0.500
1:13 1:16	Reshoot Production MGL1106-1212R	1193	1175	18	0.450
1:16 1:18	Infill Production MGL1106-1212R	1174	1167	7	0.175
1:18 1:20	Reshoot Production MGL1106-1212R	1168	1153	15	0.375
1:20 2:08	Infill Production MGL1106-1212R	1152	873	279	6.975
2:08 3:30	Line change				
3:30 10:58	Prime Production MGL1106-1068	823	3351	2528	63.200
10:58 12:28	Line change				
12:28 13:30	Prime Production MGL1106-1220	3378	2990	388	9.700
13:30 14:14	Mitigation - Dolphins				
14:14 19:14	Prime Production MGL1106-1220	2715	1914	801	20.025
19:14 20:43	Line change				
20:43 0:00	Prime Production MGL1106-1076	824	1903	1079	26.975

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed and surveying line MGL11061212R/I. Completed Line 1212R/I, turned on to MGL11061068. Dolphin mitigation required a 41 minute powerdown/shutdown/rampup during line 1068. Completed line 1068, turned on to line MGL11061076. Ended day surveying line 1076.

Robert Steinhaus departed vessel for medical attention at 1100L/1500Z.

Tomorrow:

Continue production throughout the day: complete line 1076, continue on to line 1220I – a catch up line, then on to 1084.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-22	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	101.350	810.800
Infill	63.175	505.400
Reshoot	0.000	0.000
	Total: 138.325	1106.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

Time Activity Analysis **2011-04-22**

Recording	19:54
Line Change	4:00
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:06
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00

Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 57 08.379 N, 084 00 02.505 W

HDG: 212.3 Deg Speed: 5.0 kts

Wind: S 5-10 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	4:31	Prime Production MGL1106-1076	1903	3351	1448	36.200
4:31	5:52	Line change				
5:52	12:45	Infill Production MGL1106-1220I	3399	872	2527	63.175
12:45	14:10	Line change				
14:10	19:56	Prime Production MGL1106-1084	845	2661	1816	45.400
19:56	20:02	Mitigation -- Turtle				
20:02	22:09	Prime Production MGL1106-1084	2693	3351	658	16.450
22:09	23:23	Line change				
23:23	0:00	Prime Production MGL1106-1228	3391	3259	132	3.300

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed and surveying line MGL11061076. Completed Line 1076, turned on to MGL11061220I – a catch-up line. Completed 1220I, next turned on to 1084. Turtle mitigation required a 4-minute powerdown during line 1084. Completed line 1084, turned on to line MGL11061228. Ended day surveying line 1228.

Tomorrow:

Continue production throughout the day: complete line 1228, continue on to line 1092, then on to line 1236.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-23	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	175.100	1400.800
Infill	0.000	0.000
Reshoot	0.000	0.000
	Total: 175.100	1400.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-23
Recording	20:22
Line Change	2:54
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:07
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:37
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 30 29.785 N, 84 13 14.384 W

HDG: 205.2 Deg Speed: 5.0 kts

Wind: SW 10 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	6:26	Prime Production MGL1106-1228	3259	873	2386	59.650
6:26	7:55	Line change				
7:55	8:32	Prime Production MGL1106-1092	828	1005	177	4.425
8:32	8:39	Equipment				
8:39	12:02	Prime Production MGL1106-1092	1037	2085	1048	26.200
12:02	12:07	Mitigation -- Turtle				
12:07	12:26	Prime Production MGL1106-1092	2114	2214	100	2.500
12:26	12:31	Mitigation -- Turtle				
12:31	13:06	Prime Production MGL1106-1092	2238	2416	178	4.450
13:06	13:11	Mitigation -- Turtle				
13:11	13:51	Prime Production MGL1106-1092	2441	2643	202	5.050
13:51	13:56	Mitigation -- Turtle				
13:56	14:07	Prime Production MGL1106-1092	2667	2719	52	1.300
14:07	14:12	Mitigation -- Turtle				
14:12	16:14	Prime Production MGL1106-1092	2746	3351	605	15.125
16:14	17:39	Line change				
17:39	17:59	Prime Production MGL1106-1236	3530	3414	116	2.900
17:59	18:06	Mitigation -- Turtle				
18:06	19:22	Prime Production MGL1106-1236	3367	2900	467	11.675
19:22	19:27	Mitigation -- Turtle				
19:27	0:00	Prime Production MGL1106-1236	2868	1195	1673	41.825

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed and surveying line MGL11061228. Completed Line 1228, turned on to MGL11061092. Numerous power/shutdowns for mitigation during 1092. Complete 1092, turned on to 1236. Ended day surveying line 1236.

Tomorrow:

Continue production throughout the day: complete line 1236, continue on to line 1100, then on to line 1244, then on to line 1108.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-24	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	137.375	1099.000
Infill	0.000	0.000
Reshoot	0.000	0.000
	Total: 137.375	1099.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-24
Recording	17:34
Line Change	4:44
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:06
Hydraulics	0:00
Source	0:00
Streamer	1:29
Seismic Air Compressor	0:00
Mitigation/PAM	0:07
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 38.1086 N, 84 12.2123 W

HDG: 27.3 Deg Speed: 2.9 kts

Wind: SW 10 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:31	Prime Production MGL1106-1236	1195	1001	194	4.850
0:31	2:02	Line change				
2:02	4:07	Prime Production MGL1106-1100	862	1460	598	14.950
4:07	4:13	Equipment				
4:13	10:55	Prime Production MGL1106-1100	1489	3351	1862	46.550
10:55	12:37	Line change				
12:37	13:13	Prime Production MGL1106-1244	3355	3132	223	5.575
13:13	13:20	Mitigation -- Turtle				
13:20	19:21	Prime Production MGL1106-1244	3089	873	2216	55.400
19:21	20:52	Line change				
20:52	22:31	Prime Production MGL1106-1108	836	1238	402	10.050
22:31	0:00	Equipment -- Streamer				

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed and surveying line MGL11061236. Completed Line 1236, turned on to MGL11061100. Complete line 1100, turn on to line 1244. SP3089-2716 of 1244 shot with only one source due to wildlife mitigation. Complete 1244, turned on to 1108. Streamer 1 failure at 22:31, SP 836. Shifted streamer 2 to the port side of the vessel and began picking up streamer 1 for maintenance.

Tomorrow:

Complete maintenance, resume production on line 1108.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-25	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.975	7.800
Infill	0.000	0.000
Reshoot	0.000	0.000
	Total: 0.975	7.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-25
Recording	0:10
Line Change	0:00
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	1:35
Streamer	18:23
Seismic Air Compressor	0.00
Mitigation/PAM	0:13
Transit	0:00
Ship Repair	0:00
Maneuvering	3:39
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 40 25.43 N, 84 11 15.59 W

HDG: 20.2 Deg Speed: 3.3 kts

Wind: Var. 0-5 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT	Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:30				
0:30	2:05				
2:05	2:20				
2:20	3:53				
3:53	9:29				
9:29	10:23				
10:23	12:27				
12:27	17:43				
17:43	20:20				
20:20	22:19				
22:19	22:32				
22:32	23:37				
23:37	23:50				
23:50	0:00	1749	1788	39	0.975

5. Daily Summary:

At start of day source retrieval underway swap out a failed module was underway. All streamers deployed, PAM and Maggie on board, source strings 1 and 4 deployed. Source string 3 on board, source string 2 recovery in progress.

Shifted streamer 2 to the port side of the vessel, picked up Stbd deflector, and began recovery of streamer 1 for maintenance. Discovered outer layer of PMI rod on streamer 1 tow point had shifted. Recovered S1 to module 12, replaced module 12. Continued recovery to bird 18 to replace bird. Faulty coil determined to be the issue, bird 18 moved forward 150m. Commenced deployment of streamer. Replaced two noisy sections during deployment at Chief Scientist request. Repaired PMI rods at streamer 1 tow point. Redeployed S1/S2/Stbd deflector. Redeployed source. Resumed survey on line 1108R.

Tomorrow:

Complete 1108R, continue on to 1252, then on to 1116.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-26	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	122.100	976.800
Infill	0.000	0.000
Reshoot	39.050	312.400
	Total: 161.150	1289.200

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-26
Recording	20:54
Line Change	3:06
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:00
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 57 20.814 N, 84 02 41.977 W

HDG: 16.9 Deg Speed: 3.8 kts

Wind: NE 5-10 kts Seas: 2-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	5:42	Reshoot Production MGL1106-1108R	1789	3351	1562	39.050
5:42	7:11	Line change			0	0.000
7:11	12:52	Prime Production MGL1106-1252	3398	1274	2124	53.100
12:52	12:52	Power cycle source string 1	1273	1273	0	0.000
12:52	12:54	Prime Production MGL1106-1252	1271	1264	7	0.175
12:54	12:54	Power cycle source string 1	1262	1262	0	0.000
12:54	13:56	Prime Production MGL1106-1252	1261	873	388	9.700
13:56	15:33	Line change			0	0.000
15:33	0:00	Prime Production MGL1106-1116	821	3186	2365	59.125

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed and surveying line MGL11061108R. Completed 1108R, turned on to 1252. Completed 1252, turned on to 1116. Source maintenance during turn. Surveying line 1116 at UTC midnight.

Tomorrow:

Complete line 1116. Survey line 1260, continue on to 1124, continue on to 1268.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-27	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	120.075	960.600
Infill	0.000	0.000
Reshoot	0.000	0.000
	Total: 120.075	960.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-27
Recording	14:40
Line Change	5:14
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:10
Streamer	0:00
Seismic Air Compressor	1.43
Mitigation/PAM	2:13
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 47.4405 N, 84 04.1066 W

HDG: 212.78 Deg Speed: 5.5 kts

Wind: SE 5 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:33	Prime Production MGL1106-1116	3187	3351	164	4.100
0:33	2:28	Line change				
2:28	8:44	Prime Production MGL1106-1260	3254	873	2381	59.525
8:44	10:14	Line change				
10:14	13:46	Prime Production MGL1106-1124	812	1774	962	24.050
13:46	15:18	Compressor				
15:18	15:46	Ramp-up				
15:46	17:36	Prime Production MGL1106-1124	2183	2707	524	13.100
17:36	17:41	Mitigation -- turtle				
17:41	18:49	Prime Production MGL1106-1124	2734	3057	323	8.075
18:49	19:10	Mitigation -- dolphins				
19:10	19:35	Ramp-up				
19:35	19:52	Prime Production MGL1106-1124	3269	3351	82	2.050
19:52	21:41	Line change				
21:41	22:41	Prime Production MGL1106-1268	3308	2964	344	8.600
22:41	22:55	Mitigation -- turtles				
22:55	23:20	Ramp-up				
23:20	23:24	Prime Production MGL1106-1268	2727	2704	23	0.575
23:24	23:35	Compressor				
23:35	23:45	Source -- air leak				
23:45	0:00	Ramp-up				

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed and surveying line MGL11061116. Completed 1116, turned on to 1260. Completed 1260, turned on to 1124. Several interruptions during 1124 for compressor failures and protected species mitigation. Complete 1124, turn on to 1268. Mitigation and compressor interruptions. Surveying line 1268 at UTC midnight.

Tomorrow:

Complete line 1116. Survey line 1260, continue on to 1124, continue on to 1268.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-28	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	38.350	306.800
Infill	124.225	993.800
Reshoot	0.000	0.000
	Total: 162.575	1300.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-28
Recording	19:10
Line Change	3:29
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	1:21
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 25.8670 N, 84 14.9137 W

HDG: 242 Deg Speed: 5.1 kts

Wind: SW 5 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:11	Ramp-up				
0:11	4:15	Prime Production MGL1106-1268A	2407	873	1534	38.350
4:15	5:43	Line change				
5:43	11:48	Prime Production MGL1106-1124I	825	2493	1668	41.700
11:48	11:53	Mitigation -- turtle				
11:53	12:56	Prime Production MGL1106-1124I	2519	2803	284	7.100
12:56	13:24	Mitigation -- dolphins				
13:24	13:54	Ramp-up				
13:54	15:03	Prime Production MGL1106-1124I	3025	3551	526	13.150
15:03	16:36	Line change				
16:36	16:44	Prime Production MGL1106-1268I	3402	3360	42	1.050
16:44	16:51	Mitigation -- turtle				
16:51	23:32	Prime Production MGL1106-1268I	3322	873	2449	61.225
23:32	0:00	Line change				

5. Daily Summary:

Ramping up source at start of day with four streamers, four source strings, PAM and Maggie deployed. Complete ramp up, begin surveying line MGL11061268A, a continuation of 1268. Completed 1268A, turned on to 1124I – a catch-up line. Completed 1124I, turned on to 1268I – another catch-up line. Surveying line 1268I at UTC midnight.

Tomorrow:

Complete line 1268I. Survey line 1132, continue on to 1276, continue on to 1140.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-28	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	38.350	306.800
Infill	124.225	993.800
Reshoot	0.000	0.000
	Total: 162.575	1300.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-28
Recording	19:10
Line Change	3:29
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	1:21
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 25.8670 N, 84 14.9137 W

HDG: 242 Deg Speed: 5.1 kts

Wind: SW 5 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:11	Ramp-up				
0:11	4:15	Prime Production MGL1106-1268A	2407	873	1534	38.350
4:15	5:43	Line change				
5:43	11:48	Prime Production MGL1106-1124I	825	2493	1668	41.700
11:48	11:53	Mitigation -- turtle				
11:53	12:56	Prime Production MGL1106-1124I	2519	2803	284	7.100
12:56	13:24	Mitigation -- dolphins				
13:24	13:54	Ramp-up				
13:54	15:03	Prime Production MGL1106-1124I	3025	3551	526	13.150
15:03	16:36	Line change				
16:36	16:44	Prime Production MGL1106-1268I	3402	3360	42	1.050
16:44	16:51	Mitigation -- turtle				
16:51	23:32	Prime Production MGL1106-1268I	3322	873	2449	61.225
23:32	0:00	Line change				

5. Daily Summary:

Ramping up source at start of day with four streamers, four source strings, PAM and Maggie deployed. Complete ramp up, begin surveying line MGL11061268A, a continuation of 1268. Completed 1268A, turned on to 1124I – a catch-up line. Completed 1124I, turned on to 1268I – another catch-up line. Surveying line 1268I at UTC midnight.

Tomorrow:

Complete line 1268I. Survey line 1132, continue on to 1276, continue on to 1140.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-29	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	148.700	1198.600
Infill	0.000	0.000
Reshoot	0.000	0.000
Total:	148.700	1198.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-29
Recording	19:38
Line Change	4:10
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:12
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
Total:	24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 40' 21.201 N, 84 10' 26.616 W

HDG: 024 Deg Speed: 3.6 kts

Wind: Var 0-5 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	1:01	Line change				
1:01	10:16	Prime Production MGL1106-1132	818	3352	2534	63.350
10:16	11:53	Line change				
11:53	13:51	Prime Production MGL1106-1276	3394	2754	640	16.000
13:51	13:56	Mitigation -- turtle				
13:56	18:21	Prime Production MGL1106-1276	2724	1106	1618	40.450
18:21	18:24	Mitigation -- turtle				
18:24	19:00	Prime Production MGL1106-1276	1086	873	213	5.325
19:00	20:32	Line change				
20:32	22:43	Prime Production MGL1106-1140	850	1466	616	15.400
22:43	22:47	Mitigation -- turtle				
22:47	0:00	Prime Production MGL1106-1140	1483	1810	327	8.175

5. Daily Summary:

Line change at start of day. Four streamers, four source strings, PAM and Maggie deployed. Complete line change, begin surveying line MGL11061132. Turned on to 1276. Surveyed 1276, launched FRC to swap out S4 bird 13 at EOL. Completed 1276, turned on to 1140. Surveying line 1140 at UTC midnight.

Tomorrow:

Complete line 1140. Survey line 1284, continue on to 1148, continue on to 1292.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-04-30	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	144.600	1156.800
Infill	0.000	0.000
Reshoot	0.000	0.000
	Total: 144.600	1156.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-04-30
Recording	19:38
Line Change	3:06
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	1:16
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 52.9881 N 84 04.1064 W

HDG: 011 Deg Speed: 3.3 kts

Wind: NE 5 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Cameselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT	Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00 5:53	Prime Production MGL1106-1140	1810	3351	1541	38.525
5:53 7:33	Line change				
7:33 13:59	Prime Production MGL1106-1284	3410	1176	2234	55.850
13:59 14:03	Mitigation -- turtle				
14:03 14:04	Prime Production MGL1106-1284	1144	1143	1	0.025
14:04 14:08	Mitigation -- turtle				
14:08 14:19	Prime Production MGL1106-1284	1120	1052	68	1.700
14:19 14:29	Mitigation -- turtle				
14:29 14:50	Prime Production MGL1106-1284	1025	873	152	3.800
14:50 16:16	Line change				
16:16 16:22	Prime Production MGL1106-1148	802	828	26	0.650
16:22 16:25	Mitigation -- turtle				
16:25 17:11	Prime Production MGL1106-1148	848	1057	209	5.225
17:11 17:14	Mitigation -- turtle				
17:14 17:46	Prime Production MGL1106-1148	1076	1229	153	3.825
17:46 17:53	Mitigation -- turtle				
17:53 19:14	Prime Production MGL1106-1148	1263	1653	390	9.750
19:14 19:18	Mitigation -- turtle				
19:18 19:32	Prime Production MGL1106-1148	1671	1734	63	1.575
19:32 19:35	Mitigation -- turtle				
19:35 22:09	Prime Production MGL1106-1148	1748	2402	654	16.350
22:09 22:15	Mitigation -- turtle				
22:15 23:28	Prime Production MGL1106-1148	2428	2721	293	7.325
23:28 23:47	Mitigation -- dolphins				
23:47 0:00	Ramp-up				

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed, surveying line MGL11061140. Complete 1140, turned on to 1284. Several mitigation incidents along 1284. Complete 1284, turn on to line 1148. Numerous mitigation incidents along 1148. Ramping up after mitigation at UTC midnight, along line 1148.

Tomorrow:

Complete line 1148. Line 1148 completes prime coverage. Survey line 1292, continue on to 1108S, continue on to 1276R.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-01	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	73.575	588.600
Infill	44.825	358.600
Reshoot	9.700	77.600
	Total: 128.100	1024.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-01
Recording	16:41
Line Change	5:36
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	1:42
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 56 37.580 N 83 59 11.095W

HDG: 213 Deg Speed: 4.2 kts

Wind: SW 0-5 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:12	Ramp-up				
0:12	1:52	Prime Production MGL1106-1148	2904	3351	447	11.175
1:52	3:40	Line change				
3:40	3:56	Prime Production MGL1106-1292	3376	3301	75	1.875
3:56	3:57	Equipment -- Navigation				
3:57	10:51	Prime Production MGL1106-1292	3294	873	2421	60.525
10:51	12:35	Line change				
12:35	13:41	Infill Production MGL1106-1108S	814	1115	301	7.525
13:41	13:45	Mitigation -- turtle				
13:45	14:04	Infill Production MGL1106-1108S	1136	1223	87	2.175
14:04	14:19	Reshoot Production MGL1106-1108S	1224	1141	83	2.075
14:19	14:26	Mitigation -- turtle				
14:26	14:31	Reshoot Production MGL1106-1108S	1333	1352	19	0.475
14:31	14:38	Mitigation -- turtle				
14:38	14:43	Reshoot Production MGL1106-1108S	1387	1411	24	0.600
14:43	14:54	Mitigation -- turtle				
14:54	15:01	Ramp-up				
15:01	15:05	Mitigation -- turtle				
15:05	15:25	Ramp-up				
15:25	15:48	Reshoot production MGL1106-1108S	1606	1717	111	2.775
15:48	15:53	Mitigation -- turtle				
15:53	15:55	Reshoot production MGL1106-1108S	1740	1749	9	0.225
15:55	16:17	Infill production MGL1106-1108S	1750	1851	101	2.525
16:17	16:23	Mitigation -- turtle				
16:23	16:54	Infill production MGL1106-1108S	1882	2025	143	3.575
16:54	16:58	Mitigation -- turtle				
16:58	17:02	Infill production MGL1106-1108S	2046	2064	18	0.450
17:02	17:15	Reshoot production MGL1106-1108S	2065	2119	54	1.350
17:15	17:31	Infill production MGL1106-1108S	2120	2193	73	1.825
17:31	17:42	Reshoot production MGL1106-1108S	2194	2240	46	1.150
17:42	17:44	Infill production MGL1106-1108S	2241	2252	11	0.275
17:44	17:49	Mitigation -- turtle				
17:49	18:16	Infill production MGL1106-1108S	2274	2395	121	3.025
18:16	18:27	Reshoot production MGL1106-1108S	2396	2444	48	1.200
18:27	19:07	Infill production MGL1106-1108S	2445	2617	172	4.300
19:07	19:09	Mitigation -- turtle				
19:09	19:12	Mitigation -- turtle				
19:12	19:18	Reshoot production MGL1106-1108S	2641	2670	29	0.725
19:18	19:19	Infill production MGL1106-1108S	2671	2675	4	0.100
19:19	19:24	Mitigation -- turtle				
19:24	19:25	Infill production MGL1106-1108S	2696	2701	5	0.125
19:25	19:36	Reshoot production MGL1106-1108S	2702	2750	48	1.200

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

19:36	21:42	Infill production MGL1106-1108S	2751	3351	600	15.000
21:42	23:46	Line change				
23:46	0:00	Infill production MGL1106-1276R	3327	3253	74	1.850

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed, ramping up along line MGL11061148. Complete line 1148. Begin survey line 1292. Line 1292 completes prime coverage. Begin survey line 1108S. Numerous mitigation incidents along 1108S. Complete 1108S, turn on to line 1276R. Surveying line 1276R at UTC midnight.

Tomorrow:

Complete line 1276R. Continue on to 1148I, continue on to 1268R.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-02	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	99.575	796.600
Reshoot	22.450	179.600
	Total: 128.100	1024.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-02
Recording	17:05
Line Change	3:23
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	1:31
Mitigation/PAM	2:01
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 38.1271 N 84 08.5333 W

HDG: 209 Deg Speed: 5.1 kts

Wind: SW 0-5 kts Seas: 2-4 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	1:31	Infill production MGL1106-1276R	3253	2754		
1:31	1:45	Reshoot production MGL1106-1276R	2753	2725	28	0.700
1:45	5:44	Infill production MGL1106-1276R	2724	1190	1534	38.350
5:44	5:49	Reshoot production MGL1106-1276R	1189	1162	27	0.675
5:49	5:57	Infill production MGL1106-1276R	1161	1106	55	1.375
5:57	6:00	Reshoot production MGL1106-1276R	1105	1087	18	0.450
6:00	6:34	Infill production MGL1106-1276R	1086	873	213	5.325
6:34	8:03	Line change				
8:03	8:09	Infill production MGL1106-1148I	802	828	26	0.650
8:09	8:13	Reshoot production MGL1106-1148I	829	847	18	0.450
8:13	9:02	Infill production MGL1106-1148I	848	1057	209	5.225
9:02	9:06	Reshoot production MGL1106-1148I	1058	1075	17	0.425
9:06	9:40	Infill production MGL1106-1148I	1076	1229	153	3.825
9:40	9:47	Reshoot production MGL1106-1148I	1230	1262	32	0.800
9:47	11:16	Infill production MGL1106-1148I	1263	1653	390	9.750
11:16	11:20	Reshoot production MGL1106-1148I	1654	1670	16	0.400
11:20	11:35	Infill production MGL1106-1148I	1671	1734	63	1.575
11:35	11:38	Reshoot production MGL1106-1148I	1735	1742	7	0.175
11:38	11:42	Infill production MGL1106-1148I	1743	1764	21	0.525
11:42	11:45	Mitigation -- turtle				
11:45	12:47	Infill production MGL1106-1148I	1781	2051	270	6.750
12:47	12:57	Mitigation -- turtle				
12:57	13:30	Ramp up				
13:30	14:04	Infill production MGL1106-1148I	2242	2402	160	4.000
14:04	14:10	Reshoot production MGL1106-1148I	2403	2427	24	0.600
14:10	15:14	Infill production MGL1106-1148I	2428	2721	293	7.325
15:14	15:54	Reshoot production MGL1106-1148I	2722	2903	181	4.525
15:54	16:50	Infill production MGL1106-1148I	2904	3169	265	6.625
16:50	17:00	Mitigation -- turtle				
17:00	17:14	Ramp up				
17:14	17:21	Mitigation -- turtle				
17:21	17:24	Ramp up				
17:24	17:27	Mitigation -- dolphins				
17:27	19:21	Line change				
19:21	19:32	Ramp up				
19:32	19:39	Mitigation -- turtle				
19:39	19:59	Ramp up				
19:59	20:32	Infill production MGL1106-1268R	3145	2964	181	4.525
20:32	21:13	Reshoot production MGL1106-1268R	2963	2728	235	5.875
21:13	21:17	Infill production MGL1106-1268R	2727	2704	23	0.575
21:17	22:08	Reshoot production MGL1106-1268R	2703	2408	295	7.375
22:08	22:29	Infill production MGL1106-1268R	2407	2280	127	3.175
22:29	0:00	Compressors				

Cruise : MGL1106

To: Office of Marine Operations

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

CRISP 3D – Pacific Coast, Costa Rica

R/V Marcus G. Langseth

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed, surveying along MGL11061276R. Complete line 1276, begin survey line 1148I. Numerous mitigation power/shutdowns on 1148I. Complete 1148I, begin survey along 1268R. Suspend acquisition on 1278R for compressor maintenance. Compressor maintenance continues at UTC midnight.

Tomorrow:

Complete line 1268R. 1124R, continue on to 1252I.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-03	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	85.950	687.600
Reshoot	16.275	130.200
	Total: 102.225	817.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-03
Recording	14:03
Line Change	5:20
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	3:45
Mitigation/PAM	0:52
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 26.8513 N 84 17.9257 W
HDG: 209 Deg Speed: 5.1 kts
Wind: var. 0-5 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT	Description/Comments	FSP	LSP	Total SP	Sail Line KM	
0:00	1:44	Compressors				
1:44	1:45	Reshoot production MGL1106-1268R	1095	1086	9	0.225
1:45	2:18	Infill production MGL1106-1268R				
2:18	4:03	Line change				
4:03	5:35	Compressors				
5:35	6:02	Ramp-up				
6:02	6:31	Infill production MGL1106-1124R	1644	1774	130	3.250
6:31	7:56	Reshoot production MGL1106-1124R	1775	2182	407	10.175
7:56	9:52	Infill production MGL1106-1124R	2183	2707	524	13.100
9:52	9:58	Reshoot production MGL1106-1124R	2708	2733	25	0.625
9:58	11:06	Infill production MGL1106-1124R	2734	3057	323	8.075
11:06	11:46	Reshoot production MGL1106-1124R	3058	3268	210	5.250
11:46	12:02	Infill production MGL1106-1124R	3269	3351	82	2.050
12:02	13:52	Line Change				
13:52	14:28	Infill production MGL1106-1252I	3378	3221	157	3.925
14:28	14:35	Mitigation -- turtle				
14:35	15:21	Infill production MGL1106-1252I	3188	2971	217	5.425
15:21	15:28	Mitigation -- turtle				
15:28	15:33	Infill production MGL1106-1252I	2935	2909	26	0.650
15:33	15:41	Mitigation -- turtle				
15:41	19:15	Infill production MGL1106-1252I	2870	1689	1181	29.525
19:15	19:18	Mitigation -- turtle				
19:18	21:46	Infill production MGL1106-1252I	1671	873	798	19.950
21:46	23:31	Line change				
23:31	0:00	Compressors				

5. Daily Summary:

Compressor maintenance at start of day with four streamers, four source strings, PAM and Maggie deployed. Compressor maintenance completed; resume line MGL11061268R. Complete line 1268R. Compressor maintenance during extended line change. Begin infill/reshoot survey on 1124R. Complete 1124R, begin infill survey along 1252I. Complete 1252I, begin compressor maintenance during line change. Compressor maintenance continues at UTC midnight.

Tomorrow:

Compressor maintenance. Resume survey on 1108T or 1244R.

Regards,
Anthony Johnson

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Cruise : MGL1106

To: Office of Marine Operations

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

CRISP 3D – Pacific Coast, Costa Rica

R/V Marcus G. Langseth

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-04	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	85.950	687.600
Reshoot	16.275	130.200
	Total: 102.225	817.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-04
Recording	1:48
Line Change	0:00
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	21:20
Mitigation/PAM	0:52
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 37 45.56 N 84 08 53.45 W
HDG: 214 Deg Speed: 4.4 kts
Wind: SW. 5 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	21:20	Compressors				
21:20	21:30	Mitigation				
21:30	22:02	Ramp-up				
22:02	23:14	Infill Production MGL1106-1244R	2271	1926	345	8.625
23:14	23:19	Mitigation -- turtle				
23:19	23:39	Infill Production MGL1106-1244R	1899	1796	103	2.575
23:39	23:44	Mitigation -- turtle				
23:44	0:00	Infill production MGL1106-1124R	1768	1689	79	1.975

5. Daily Summary:

Compressor maintenance at start of day with four streamers, four source strings, PAM and Maggie deployed. Down for compressor maintenance most of the day. Compressor maintenance completed 21:20; begin survey on MGL1106-1244R. Surveying line 1244R at UTC midnight.

Tomorrow:

Complete survey line 1244R, continue on to 1108T, continue on to 1244S.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-04	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	13.175	105.400
Reshoot	0.000	0.000
	Total: 13.175	105.400

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-04
Recording	1:48
Line Change	0:00
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	21:20
Mitigation/PAM	0:52
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 37 45.56 N 84 08 53.45 W
HDG: 214 Deg Speed: 4.4 kts
Wind: SW. 5 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	21:20	Compressors				
21:20	21:30	Mitigation				
21:30	22:02	Ramp-up				
22:02	23:14	Infill Production MGL1106-1244R	2271	1926	345	8.625
23:14	23:19	Mitigation -- turtle				
23:19	23:39	Infill Production MGL1106-1244R	1899	1796	103	2.575
23:39	23:44	Mitigation -- turtle				
23:44	0:00	Infill production MGL1106-1124R	1768	1689	79	1.975

5. Daily Summary:

Compressor maintenance at start of day with four streamers, four source strings, PAM and Maggie deployed. Down for compressor maintenance most of the day. Compressor maintenance completed 21:20; begin survey on MGL1106-1244R. Surveying line 1244R at UTC midnight.

Tomorrow:

Complete survey line 1244R, continue on to 1108T, continue on to 1244S.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-05	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	118.900	951.200
Reshoot	19.100	152.800
	Total: 138.000	1104.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-05
Recording	19:06
Line Change	3:49
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	1:05
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 8 30'10.278 N, 84 17'20.443 W

HDG: 018 Deg Speed: 4.3 kts

Wind: SW. 8 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	2:30	Infill production MGL1106-1124R	1689	873	816	20.400
2:30	4:25	Line change				
4:25	5:43	Infill production MGL1106-1108T	878	1238	360	9.000
5:43	7:38	Reshoot production MGL1106-1108T	1239	1748	509	12.725
7:38	10:43	Infill production MGL1106-1108T	1749	2595	846	21.150
10:43	11:33	Infill production MGL1106-1108T - port source only	2596	2844	248	6.200
11:33	11:40	Mitigation -- turtle				
11:40	11:49	Infill production MGL1106-1108T - port source only	2882	2920	38	0.950
11:49	11:57	Mitigation -- turtle				
11:57	12:01	Infill production MGL1106-1108T - port source only	2962	2986	24	0.600
12:01	13:17	Infill production MGL1106-1108T - both sources	2987	3351	364	9.100
13:17	15:11	Line change				
15:11	16:18	Infill production MGL1106-1244S	3427	3132	295	7.375
16:18	16:58	Reshoot production MGL1106-1244S	3131	2959	172	4.300
16:58	17:15	Mitigation -- dolphin				
17:15	17:28	Ramp up				
17:28	17:34	Mitigation -- turtle				
17:34	17:48	Ramp up				
17:48	17:51	Reshoot production MGL1106-1244S	2732	2717	15	0.375
17:51	21:42	Infill production MGL1106-1244S	2716	1571	1145	28.625
21:42	21:56	Reshoot production MGL1106-1244S	1570	1502	68	1.700
21:56	0:00	Infill production MGL1106-1244S	1501	881	620	15.500

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed, surveying line MGL1106-1244R. Complete 1124R, turn on to 1108T. Source maintenance required online during 1108T. Complete 1108T, turn on to 1244S. Surveying 1244S at UTC midnight.

Tomorrow:

Complete survey line 1244S, continue on to 1068I, continue on to 1212R.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-06	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	99.900	799.200
Reshoot	20.525	164.200
	Total: 120.425	963.400

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-06
Recording	17:53
Line Change	5:23
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:44
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 27.9062 N 84 18.2560 W

HDG: 010 Deg Speed: 4.1 kts

Wind: NW 6 kts Seas: 4-6 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT		Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00	0:01	Infill production MGL1106-1244S	880	873	7	0.175
0:01	2:01	Line change				
2:01	2:10	Ramp-up				
2:10	9:27	Infill production MGL1106-1068R	912	2876	1964	49.100
9:27	11:10	Reshoot production MGL1106-1068R	2877	3351	474	11.850
11:10	13:11	Line change				
13:11	13:57	Infill production MGL1106-1212S	3406	3187	219	5.475
13:57	14:07	Mitigation -- dolphins				
14:07	14:32	Ramp-up				
14:32	14:34	Reshoot production MGL1106-1212S	3029	3024	5	0.125
14:34	14:59	Infill production MGL1106-1212S	3023	2916	107	2.675
14:59	16:21	Reshoot production MGL1106-1212S	2915	2573	342	8.550
16:21	22:38	Infill production MGL1106-1212S	2572	873	1699	42.475
22:38	0:00	Line change				

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed, surveying line MGL1106-1244S. Complete 1244S, turn on to 1068R. Complete 1068R, turn on to 1212S. Complete 1212S. In line change and performing source maintenance at UTC midnight.

Tomorrow:

Survey line 1052R, continue on to 1220, continue on to 1012R.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-07	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	138.525	1108.200
Reshoot	7.075	56.600
	Total: 145.600	1164.800

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-07
Recording	18:30
Line Change	4:55
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:06
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:29
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 33 56.98 N 84 16 43.25 W

HDG: 031 Deg Speed: 3.6 kts

Wind: NW 5 kts Seas: 4-6 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT	Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00 0:32	Line change				
0:32 3:45	Infill production MGL1106-1052R	898	1807	909	22.725
3:45 3:51	Equipment -- Spectra				
3:51 7:09	Infill production MGL1106-1052R1	1838	2728	890	22.250
7:09 7:19	Reshoot production MGL1106-1052R1	2729	2774	45	1.125
7:19 9:17	Infill production MGL1106-1052R1	2775	3351	576	14.400
9:17 11:14	Line change				
11:14 12:38	Infill production MGL1106-1220R	3395	2990	405	10.125
12:38 12:56	Reshoot production MGL1106-1220R	2989	2906	83	2.075
12:56 13:02	Mitigation -- turtle				
13:02 13:36	Reshoot production MGL1106-1220R	2871	2716	155	3.875
13:36 19:01	Infill production MGL1106-1220R	2715	1243	1472	36.800
19:01 19:05	Mitigation -- turtle				
19:05 19:09	Infill production MGL1106-1220R	1225	1204	21	0.525
19:09 19:15	Mitigation -- turtle				
19:15 19:18	Infill production MGL1106-1220R	1178	1918	740	18.500
19:18 19:24	Mitigation -- turtle				
19:24 19:27	Infill production MGL1106-1220R	1135	1120	15	0.375
19:27 19:34	Mitigation -- turtle				
19:34 20:20	Infill production MGL1106-1220R	1087	873	214	5.350
20:20 22:46	Line change/transit between lines				
22:46 0:00	Infill production MGL1106-1012R	883	1182	299	7.475

5. Daily Summary:

In line change at start of day with four streamers, four source strings, PAM and Maggie deployed. Begin survey line MGL1106-1052R. Complete 1052R, turn on to 1220R. Complete 1220R, turn on to 1012R. Surveying line 1012R at UTC midnight.

Tomorrow:

Complete line 1012R, continue on to 1164R, continue on to 1036R.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-08	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	105.400	843.200
Reshoot	28.225	225.800
	Total: 133.625	1069.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-08
Recording	19:57
Line Change	3:54
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:06
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:09
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 38 20.56 N 84 14 09.51 W

HDG: 015 Deg Speed: 4.0 kts

Wind: NW 5 kts Seas: 4-6 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Anthony Johnson – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time GMT	Description/Comments	FSP	LSP	Total SP	Sail Line KM
0:00 3:04	Infill production MGL1106-1012R	1182	2050	868	21.700
3:04 3:10	Reshoot production MGL1106-1012R	2051	2082	31	0.775
3:10 5:45	Infill production MGL1106-1012R	2083	2809	726	18.150
5:45 7:39	Reshoot production MGL1106-1012R	2810	3351	541	13.525
7:39 9:25	Line change				
9:25 10:11	Reshoot production MGL1106-1164R	3418	3213	205	5.125
10:11 10:30	Infill production MGL1106-1164R	3212	3131	81	2.025
10:30 11:31	Reshoot production MGL1106-1164R	3130	2860	270	6.750
11:31 13:01	Infill production MGL1106-1164R	2858	2486	372	9.300
13:01 13:10	Reshoot production MGL1106-1164R	2485	2452	33	0.825
13:10 13:47	Infill production MGL1106-1164R	2450	2301	149	3.725
13:47 13:54	Reshoot production MGL1106-1164R	2300	2269	31	0.775
13:54 15:49	Infill production MGL1106-1164R	2268	1787	481	12.025
15:49 15:52	Reshoot production MGL1106-1164R	1786	1774	12	0.300
15:52 15:56	Mitigation -- turtle				
15:56 15:57	Reshoot production MGL1106-1164R	1754	1748	6	0.150
15:57 16:45	Infill production MGL1106-1164R	1747	1534	213	5.325
16:45 16:50	Mitigation -- turtle				
16:50 19:21	Infill production MGL1106-1164R	1511	873	638	15.950
19:21 21:29	Line change				
21:29 0:00	Infill production MGL1106-1036R	868	1556	688	17.200

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed, surveying line MGL1106-1012R. Complete 1012R, turn on to 1164R. Complete 1164R, turn on to 1036R. Surveying line 1036R at UTC midnight.

Tomorrow:

Complete line 1036R, continue on to 1172I, continue on to 1100I.

Regards,
Anthony Johnson

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-09	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	122.150	977.200
Reshoot	0.000	0.000
	Total: 122.150	977.200

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-09
Recording	18:18
Line Change	4:56
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:46
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 45 12.885 N 084 09 35.951 W

HDG: 343.2 Deg Speed: 3.8 kts

Wind: W 12 kts Seas: 1-3 ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Steinhaus, Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

			FSP	LSP	Total	Sail Line KM
0:00	5:58	Infill production MGL1106-1036R	1557	3351	1794	44.850
5:58	7:59	Line change				
7:59	11:32	Infill production MGL1106-1172R	3394	2529	865	21.625
11:32	12:10	Mitigation -- turtle				
12:10	12:16	Infill production MGL1106-1172R	2370	2355	15	0.375
12:16	12:24	Mitigation -- turtle				
12:24	17:58	Infill production MGL1106-1172R	2322	1003	1319	32.975
17:58	20:53	Line change				
20:53	0:00	Infill production MGL1106-1100I	892	1785	893	22.325

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed, surveying line MGL1106-1036R. Complete 1036R, turn on to 1172R. Complete 1172R, turn on to 1100I. Surveying line 1100R at UTC midnight. Robert Steinhaus rejoined the vessel today after an extended completing his medical treatment in the USA.

Tomorrow:

Complete line 1100I, continue on to 1012I, continue on to 1236I, continue on to 1140I.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-10	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	106.075	848.600
Reshoot	0.000	0.000
	Total: 106.075	848.600

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-10
Recording	16:25
Line Change	6:55
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	0:00
Streamer	0:00
Seismic Air Compressor	0:00
Mitigation/PAM	0:40
Transit	0:00
Ship Repair	0:00
Maneuvering	0:00
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 39 28.189 N 084 11 37.736 W

HDG: 070 Deg Speed: 3.5 kts

Wind: Calm Seas: Calm

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Steinhaus, Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

Time		Event	FSP	LSP	Total	Sail Line KM
0:00	1:07	Infill production MGL1106-1100I	1786	2159	373	9.325
1:07	2:21	Line change				
2:21	5:18	Infill production MGL1106-1012I	2470	3351	881	22.025
5:18	7:40	Line change				
7:40	13:37	Infill production MGL1106-1220J	3374	2009	1365	34.125
13:37	13:44	Mitigation -- turtle				
13:44	16:46	Infill production MGL1106-1220J	1980	1255	725	18.125
16:46	16:51	Mitigation -- turtle				
16:51	17:41	Infill production MGL1106-1220J	1232	1039	193	4.825
17:41	21:00	Line change				
21:00	23:32	Infill production MGL1106-1140I	894	1600	706	17.650
23:32	0:00	Mitigation -- turtle				

5. Daily Summary:

In production at start of day with four streamers, four source strings, PAM and Maggie deployed, surveying line MGL1106-1100I. Complete 1100I, turn on to 1012I. Complete 1012I, turn on to 1220I. Complete 1220I, turn on to 1140I. Surveying line 1140I at UTC midnight.

Tomorrow:

Complete line 1140I. As soon a line 1140I is completed we will make a normal line change to the east and south before beginning recovery of all towed equipment. The Retrieval of the towed equipment will be continued throughout the rest of the day.

Regards,
Robert J Steinhaus

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

1. PRODUCTION SUMMARY

2011-05-11	<u>Sailed Km</u>	<u>CMP KM</u>
Prime	0.000	0.000
Infill	38.375	307.000
Reshoot	0.000	0.000
	Total: 38.375	307.000

2. STATISTICAL ANALYSIS (DECIMAL HOURS)

<u>Time Activity Analysis</u>	2011-05-11
Recording	5:24
Line Change	0:00
Weather	0:00
Instrument Acquisition	0:00
Instrument Navigation	0:00
Hydraulics	0:00
Source	1:04
Streamer	16:05
Seismic Air Compressor	0:00
Mitigation/PAM	0:09
Transit	0:21
Ship Repair	0:00
Maneuvering	0:57
Port Call	0:00
Other	0:00
	Total: 24.00

UTC Midnight (24:00) Position / Heading:

POS: 08 42.569 N 084 27.856 W
HDG: 338 Deg Speed: 5.8 kts
Wind: NW 5-10 kts Seas: 1-3 Ft.

3. Comments

Local vessel time is UTC-6 (MST).

Science Technical staff on board:

Steinhaus, Gutierrez, Ng, Johnson, Martinson, McKiernan, Eaton, Tatro, Martello, Murphy

Science Party on board:

Bangs, Baracco, Cavanaugh, Damm, Graf, Kluesner, Comeselle, McIntosh, Nunez, Ranero, Silver

Marine Mammal Observer Staff on board:

Antochiw, Dubuque, Milne, Palacios, Piercy

Cruise : MGL1106

CRISP 3D – Pacific Coast, Costa Rica

To: Office of Marine Operations

R/V Marcus G. Langseth

Cc: Reports Group

Fm: Robert J Steinhaus – Chief Science Officer (LDEO)

4. TIME SUMMARY

	Time	Event	FSP	LSP	Total	Sail Line KM
0:00	0:09	Mitigation -- turtle				
0:09	5:33	Infill production MGL1106-1140I	1765	3300	1535	38.375
5:33	6:30	Maneuvering to retrieve Tow Equipment				
6:30	7:34	Recovering Source				
7:34	23:39	Recovering Steamers				
23:39	0:00	Enroute to Puntarenas, Costa Rica				

5. Daily Summary:

In production at start of day with four streamers, four source strings, Maggie deployed, surveying line MGL1106-1140I. Completed 1140 and began maneuvering to retrieve the towed equipment. At 06:30 GMT we began recover of towed equipment this operation was complete at 23:39 all gear was onboard and the vessel was in transit to Puntarenas, Costa Rica.

Tomorrow:

Continue the transit to Puntarenas, Costa Rica. At ~08:00 we will expect to arrive in Puntarenas, Costa Rica and Anchor out in the harbor. We will continue demobilizing for MGL1106 and getting vessel ready for MGL1107 transit to San Diego, CA , USA.

Regards,
Robert J Steinhaus