Daily Science Report

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sat 02 Jan

The Vessel started the day at anchorage just outside Porto Grande, Cape Verde Island. At 08:46 UTC the vessel picked up anchor and made its way into the port and was all fast alongside at 09:32 The vessel remained alongside continued mobilizing for MGL1601 throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Sat 02 Jan

The vessel will remain alongside continued mobilizing for MGL1601 throughout the day. Will work on worklist items and preform Science Party Safety Orientation in the afternoon.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
At Anchor	MB_AA	Sat 2. Jan 00:00	Sat 2. Jan 08:46	8.767
Mobilising, vessel at anchor outside Porto Grande, Cape Verde Islands waiting on Berth to open up.				
Transit	SB_TRT	Sat 2. Jan 08:46	Sat 2. Jan 09:40	0.900
Chargeable standby Transiting from the anchorage to dock in Porto Grande, Cape Verde Islands.				
Mob Ashore	MB_MA	Sat 2. Jan 09:40	Sat 2. Jan 24:00	14.333
Mobilising Ashore for MGL1601. - Vessel alongside at Porto Grande, Cape Verde.				

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**23.100**	**96.250**
At Anchor	8.767	36.528
Mob Ashore	14.333	59.722
Chargeable Standby	**0.900**	**3.750**
Transit	0.900	3.750
Total	24.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 02 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
Stbd Tailbuoy Boom is none operational. Broken Drive Gear.

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sat 02 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth

None on board at this time

Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sun 03 Jan

The vessel will remain alongside continued mobilizing for MGL1601 throughout the day. Will work on worklist items and preform Science Party Safety Orientation in the afternoon.

Daily Comment Summaries - Plan for Tomorrow

Sun 03 Jan

The vessel will remain alongside continued mobilizing for MGL1601 throughout the day. Will work on worklist items and preform Science Party Safety Orientation in the afternoon.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Mob Ashore	MB_MA	Sun 3. Jan 00:00	Sun 3. Jan 24:00	24.000
Mobilising Ashore for MGL1601. - Vessel alongside at Porto Grande, Cape Verde.				

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**47.100**	**98.125**
At Anchor	8.767	18.264
Mob Ashore	38.333	79.861
Chargeable Standby	**0.900**	**1.875**
Transit	0.900	1.875
Total	48.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 03 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
Stbd Tailbuoy Boom is none operational. Broken Drive Gear.

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sun 03 Jan

Technical Staff Onboard the Langseth

Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth

Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth

1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Mon 04 Jan

The vessel will continue alongside Porto Grande, Cape Verde mobilizing for MGL1601 until 14:30 UTC. At which time it got under way for the Prospect Area via Praia Cape Verde to recovery Ships Spares before continuing on to the prospect area.

Daily Comment Summaries - Plan for Tomorrow

Mon 04 Jan

The vessel will start the day transiting to the Prospect Area via Praia Cape Verde to recovery Ships Spares before continuing on to the prospect Area. It is planned for the vessel to be offshore Praia at ~09:00 UTC to recovery the spares.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Mob Ashore	MB_MA	Mon 4. Jan 00:00	Mon 4. Jan 14:30	14.500
Mobilising Ashore for MGL1601. - Vessel alongside at Porto Grande, Cape Verde.				
Transit to Prospect	MB_TT	Mon 4. Jan 14:30	Mon 4. Jan 24:00	9.500
In transit to prospect, via Piraia, Cape Verde Island to pickup Ships spares.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

4-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Mob Ashore	14.500	60.417
Transit to Prospect	9.500	39.583
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**71.100**	**98.750**
At Anchor	8.767	12.176
Mob Ashore	52.833	73.380
Transit to Prospect	9.500	13.194
Chargeable Standby	**0.900**	**1.250**
Transit	0.900	1.250
Total	72.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Mon 04 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
Gear was found on board and Boom drive motor was re-installed..

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Mon 04 Jan

Technical Staff Onboard the Langseth

Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth

Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth

1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

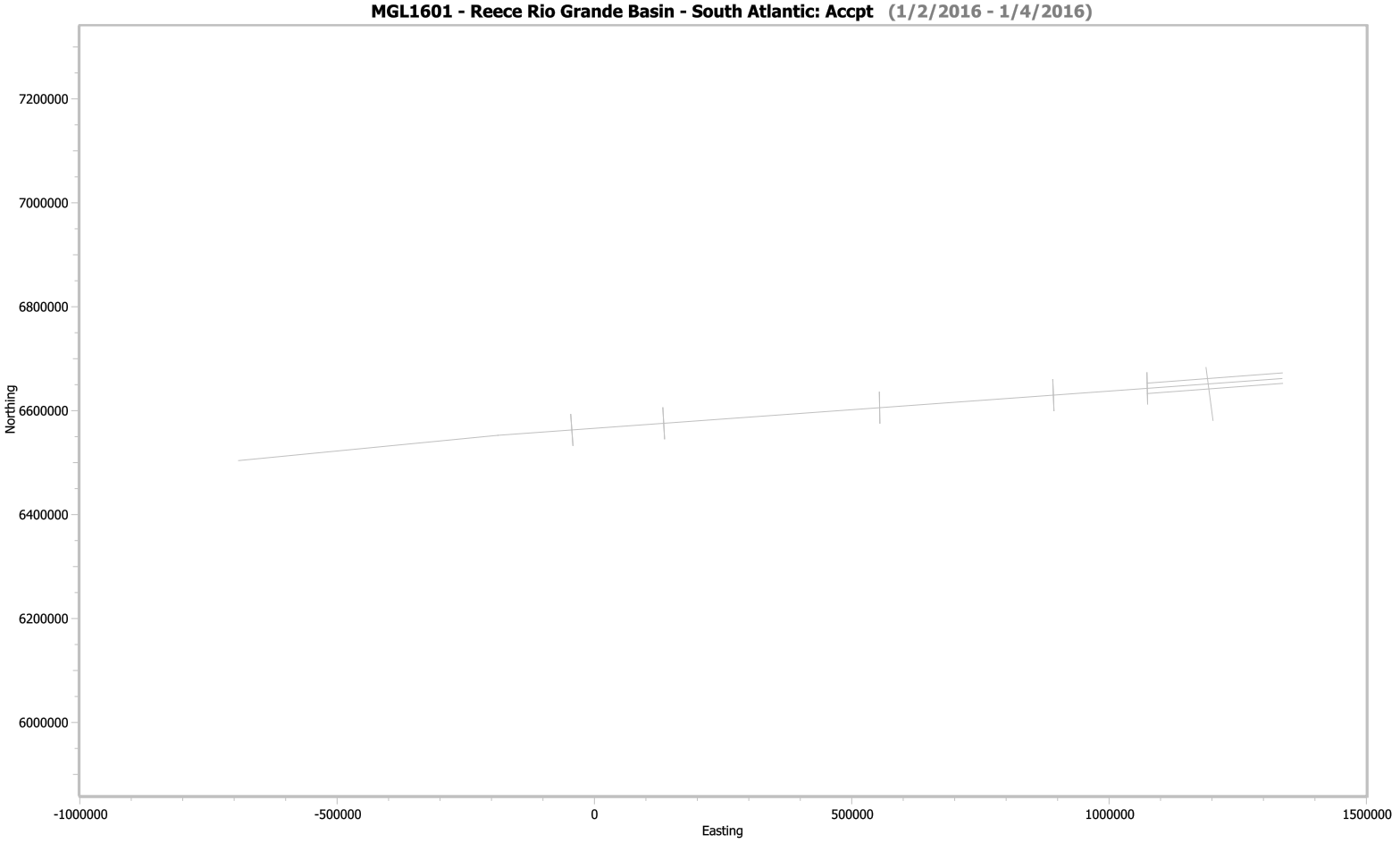
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 6653.10 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/4/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Tue 05 Jan

The vessel started the day transiting to the Prospect Area via Praia, Cape Verde to recovery Ships Spares before continuing on to the prospect Area. The vessel arrived offshore Praia, Cape Verde at 08:50 UTC. The Small boats deployed to recovery ships spares from Shore. MOB Deployed from 09:25 - 10:48 Science Workboat Deployed from 09:43 - 11:00. At 11:03 The vessel was fully underway for the mission area and first OBS deployment location OBS101.

The MOB had engine issues related to Fuel Contamination, thus the reason for the Science Work Boat being launch. Science Work Boat was used to bring Agent, Customs, and Immigration officials to and from the vessel, before towing the MOB back to the vessel to be recovered on board.

Daily Comment Summaries - Plan for Tomorrow

Tue 05 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Tue 5. Jan 00:00	Tue 5. Jan 08:50	8.833
In transit to prospect, for mobilising deployment.				
Vessel	DT_VE	Tue 5. Jan 08:50	Tue 5. Jan 09:25	0.583
Downtime due to standing by Ships Spares				
Vessel	DT_VE	Tue 5. Jan 09:25	Tue 5. Jan 11:03	1.633
Small boats deployed to recovery ships spares from Shore. MOB Deployed from 09:25 - 10:48 Science Workboat Deployed from 09:43 - 11:00 The MOB had engine issues related to Fuel Contamination, thus the reason for the Science Workboat being launch. Science workboat was used to bring Agent, Customs, and Immigration officials to and from the vessel, before towing the MOB back to the vessel to be recovered on board.				
Transit to Prospect	MB_TT	Tue 5. Jan 11:03	Tue 5. Jan 24:00	12.950
In transit to prospect, for mobilising deployment.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

5-Jan	Hours	% Percent
DownTime	**2.217**	**9.236**
Vessel	2.217	9.236
Mobilisation	**21.783**	**90.764**
Transit to Prospect	21.783	90.764
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**92.883**	**96.753**
At Anchor	8.767	9.132
Mob Ashore	52.833	55.035
Transit to Prospect	31.283	32.587
Chargeable Standby	**0.900**	**0.938**
Transit	0.900	0.938
DownTime	**2.217**	**2.309**
Vessel	2.217	2.309
Total	96.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Tue 05 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Tue 05 Jan

Technical Staff Onboard the Langseth

Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth

Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth

1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

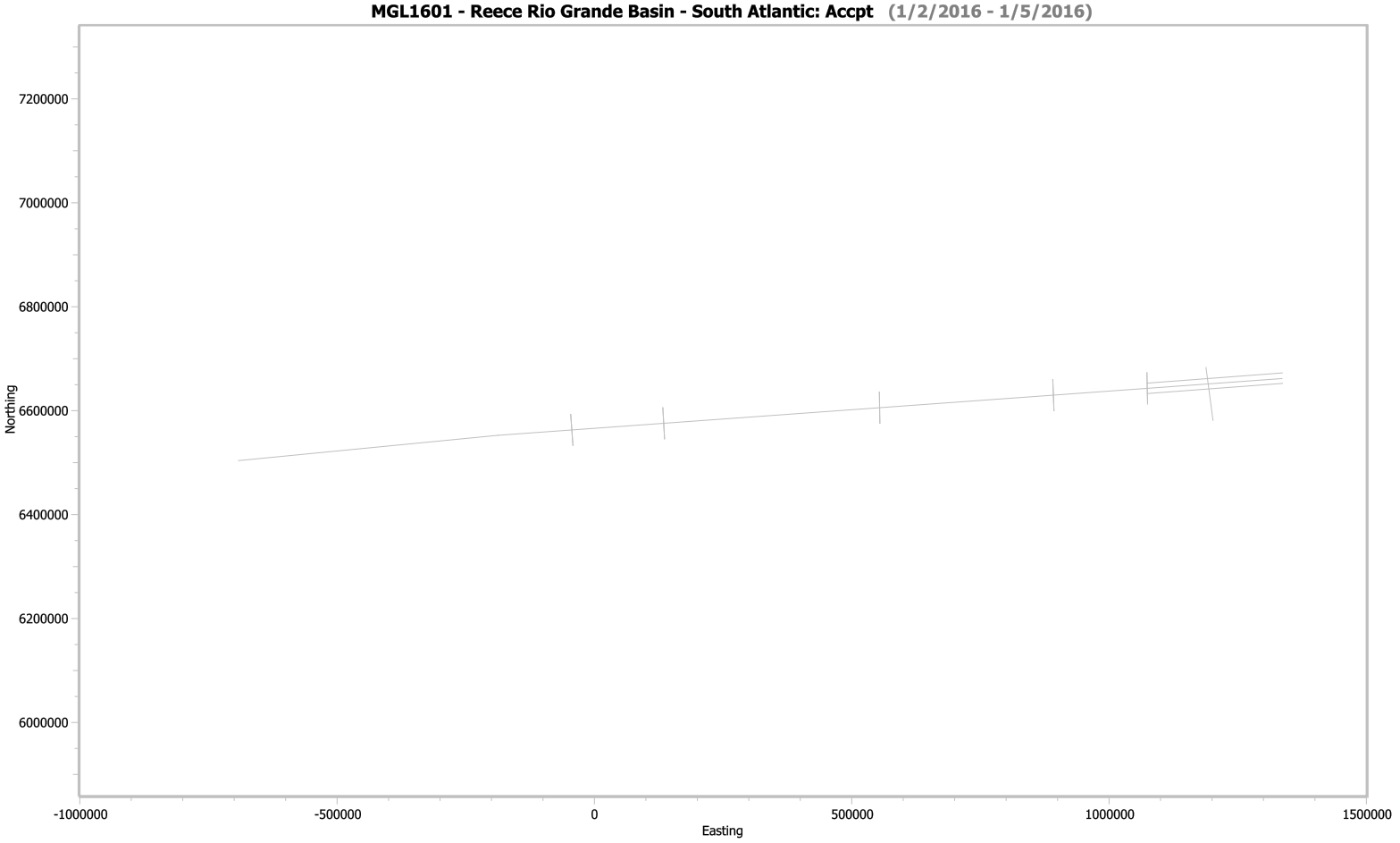
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 6653.10 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/5/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Wed 06 Jan

The vessel started the day continuing the transit to OBS101's deployment location. During the day the New SeisNet and Seal integration / testing took place. Trouble shooting and replacement of Sub-Array #4's GCM's took place. SSCU troubleshooting / testing continued without much luck. Write up of Start and EOL procedures for SEAL and SeisNet, as well as some DigiSHOT training. All repairs to Stbd Tailbuoy boom drive gear Complete, continue to work on hydraulic stops. Re-installing windows XP on a older laptop so Bird/Acoustic Check can be installed for use in the Bird Lab.

Daily Comment Summaries - Plan for Tomorrow

Wed 06 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Wed 6. Jan 00:00	Wed 6. Jan 24:00	24.000
In transit to prospect, for mobilising deployment.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

6-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**116.883**	**97.403**
At Anchor	8.767	7.306
Mob Ashore	52.833	44.028
Transit to Prospect	55.283	46.069
Chargeable Standby	**0.900**	**0.750**
Transit	0.900	0.750
DownTime	**2.217**	**1.847**
Vessel	2.217	1.847
Total	120.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 06 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
SSCU testing and trouble shooting taking place. Currently not able to get any bird/acoustic comms aft of SSCU's unless the are in bypass mode.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Wed 06 Jan

Technical Staff Onboard the Langseth

Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth

Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth

1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

0%

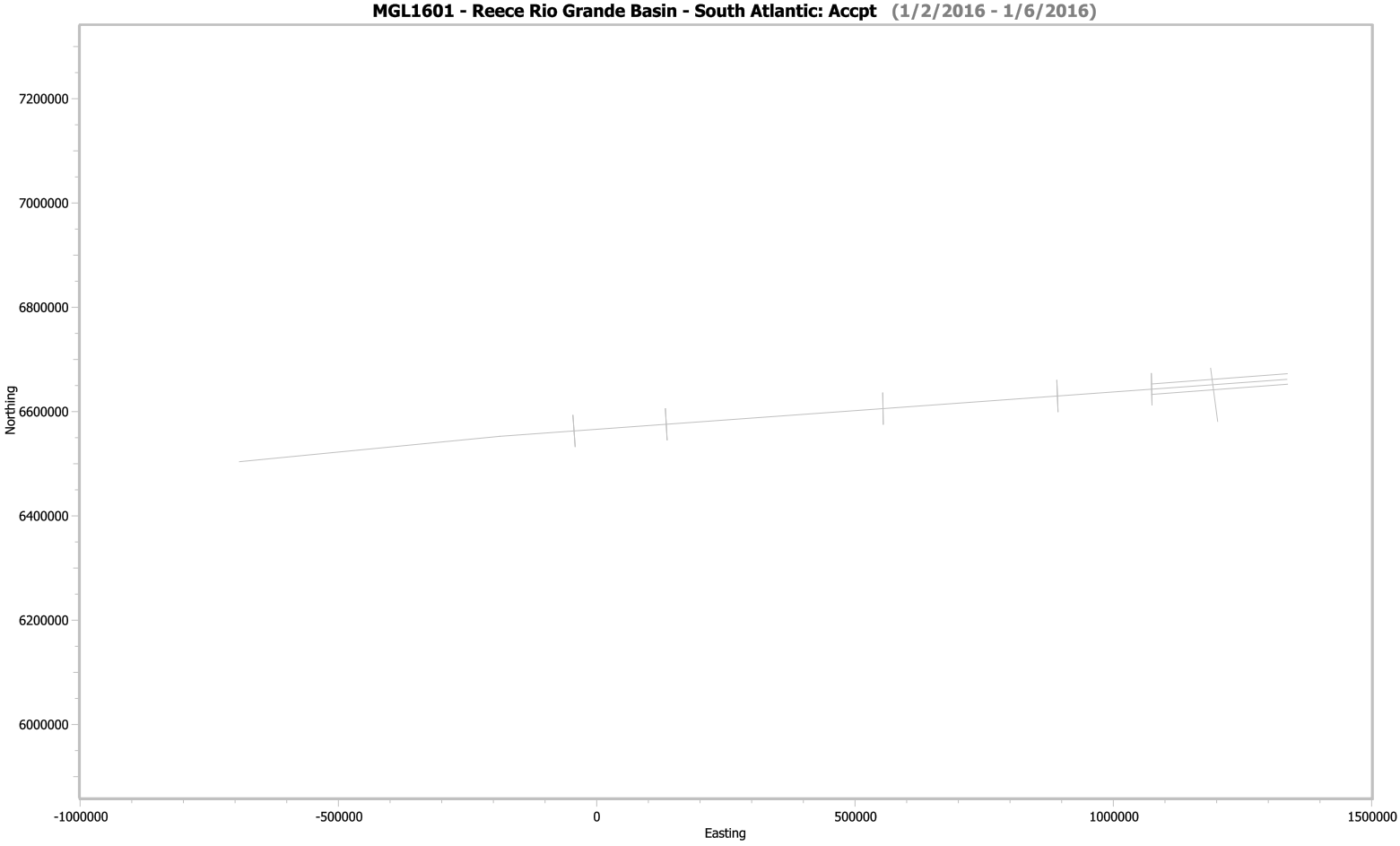
Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 6653.10 km

Percentages Charged	
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/6/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 07 Jan

The vessel started the day continuing the transit to OBS101's deployment location. Worklist Items:
1. SSCU troubleshooting / testing continued.
2. Re-installing windows XP on a older laptop to be used for Bird/Acoustic Check Software.
3. Processing of MGL1521 Crete Line with Sprint
4. Constructed Work Bench holder for DigiCourse Acoustic Pod
5. Re-ran SurvOPT Simulations for MGL1601 to confirm KM and Timing.
6. Completed Setup of ECR E-Mail account.
7. Completed Setup of 1st Engineer's Account in NS5 (View Only).
8. General House Keeping on Network and Internet Connection
9. Continued to Download CMS archive to the vessel.

Daily Comment Summaries - Plan for Tomorrow

Thu 07 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Thu 7. Jan 00:00	Thu 7. Jan 23:00	23.000
In transit to prospect, for mobilising deployment.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

7-Jan	Hours	% Percent
Mobilisation	**23.000**	**95.833**
Transit to Prospect	23.000	95.833
Day's Total	**23.000**	**95.833**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**139.883**	**97.821**
At Anchor	8.767	6.131
Mob Ashore	52.833	36.946
Transit to Prospect	78.283	54.744
Chargeable Standby	**0.900**	**0.629**
Transit	0.900	0.629
DownTime	**2.217**	**1.550**
Vessel	2.217	1.550
Total	143.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 07 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
SSCU testing and trouble shooting taking place. Currently not able to get any bird/acoustic comms aft of SSCU's to communicate unless the are in bypass mode.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Thu 07 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

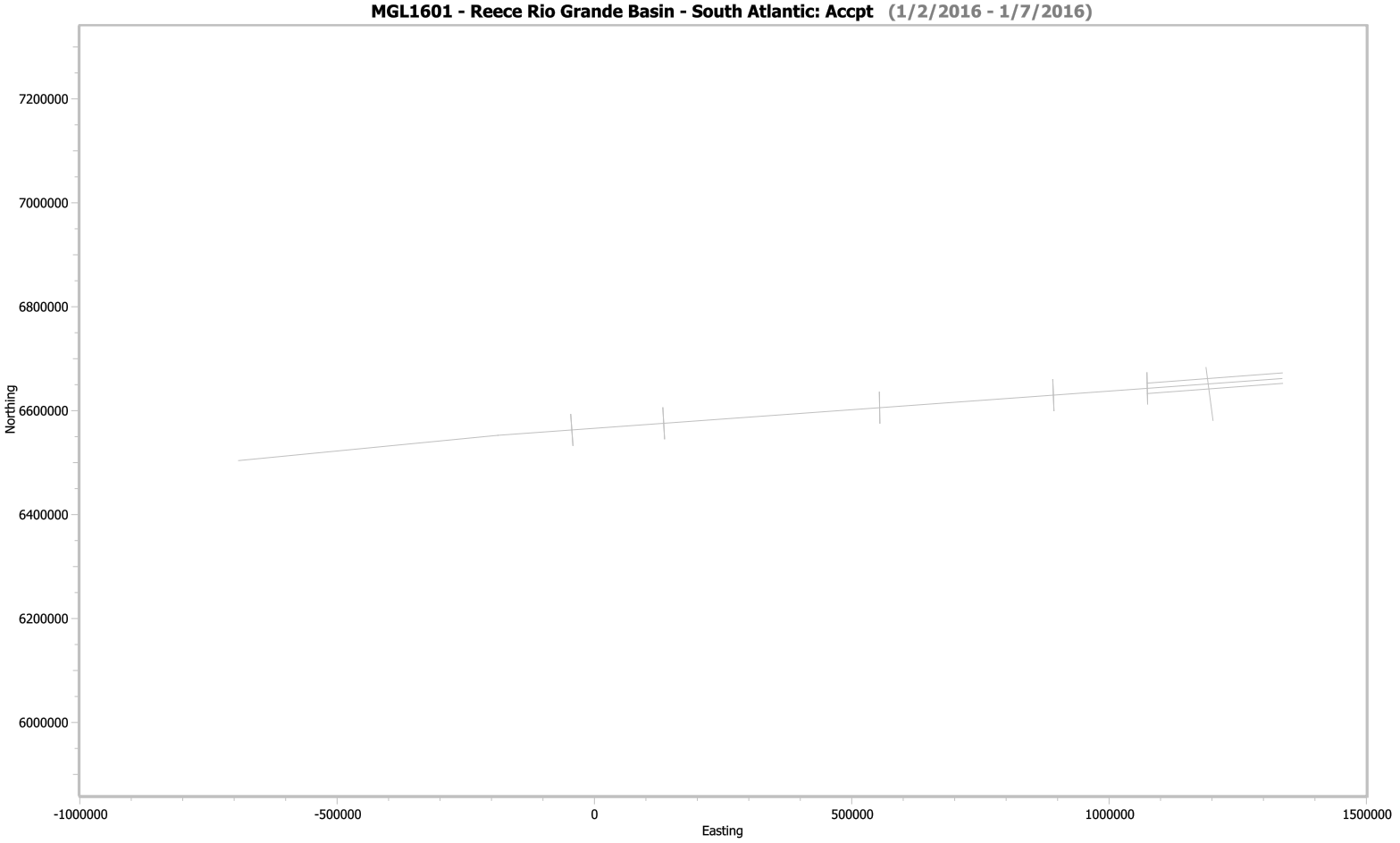
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/7/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 07 Jan

The vessel started the day continuing the transit to OBS101's deployment location. Worklist Items:
1. SSCU troubleshooting / testing continued.
2. Re-installing windows XP on a older laptop to be used for Bird/Acoustic Check Software.
3. Processing of MGL1521 Crete Line with Sprint
4. Constructed Work Bench holder for DigiCourse Acoustic Pod
5. Re-ran SurvOPT Simulations for MGL1601 to confirm KM and Timing.
6. Completed Setup of ECR E-Mail account.
7. Completed Setup of 1st Engineer's Account in NS5 (View Only).
8. General House Keeping on Network and Internet Connection
9. Continued to Download CMS archive to the vessel.

Daily Comment Summaries - Plan for Tomorrow

Thu 07 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Thu 7. Jan 00:00	Thu 7. Jan 24:00	24.000
In transit to prospect, for mobilising deployment.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

7-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**140.883**	**97.836**
At Anchor	8.767	6.088
Mob Ashore	52.833	36.690
Transit to Prospect	79.283	55.058
Chargeable Standby	**0.900**	**0.625**
Transit	0.900	0.625
DownTime	**2.217**	**1.539**
Vessel	2.217	1.539
Total	144.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 07 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
SSCU testing and trouble shooting taking place. Currently not able to get any bird/acoustic comms aft of SSCU's to communicate unless the are in bypass mode.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Thu 07 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic

Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

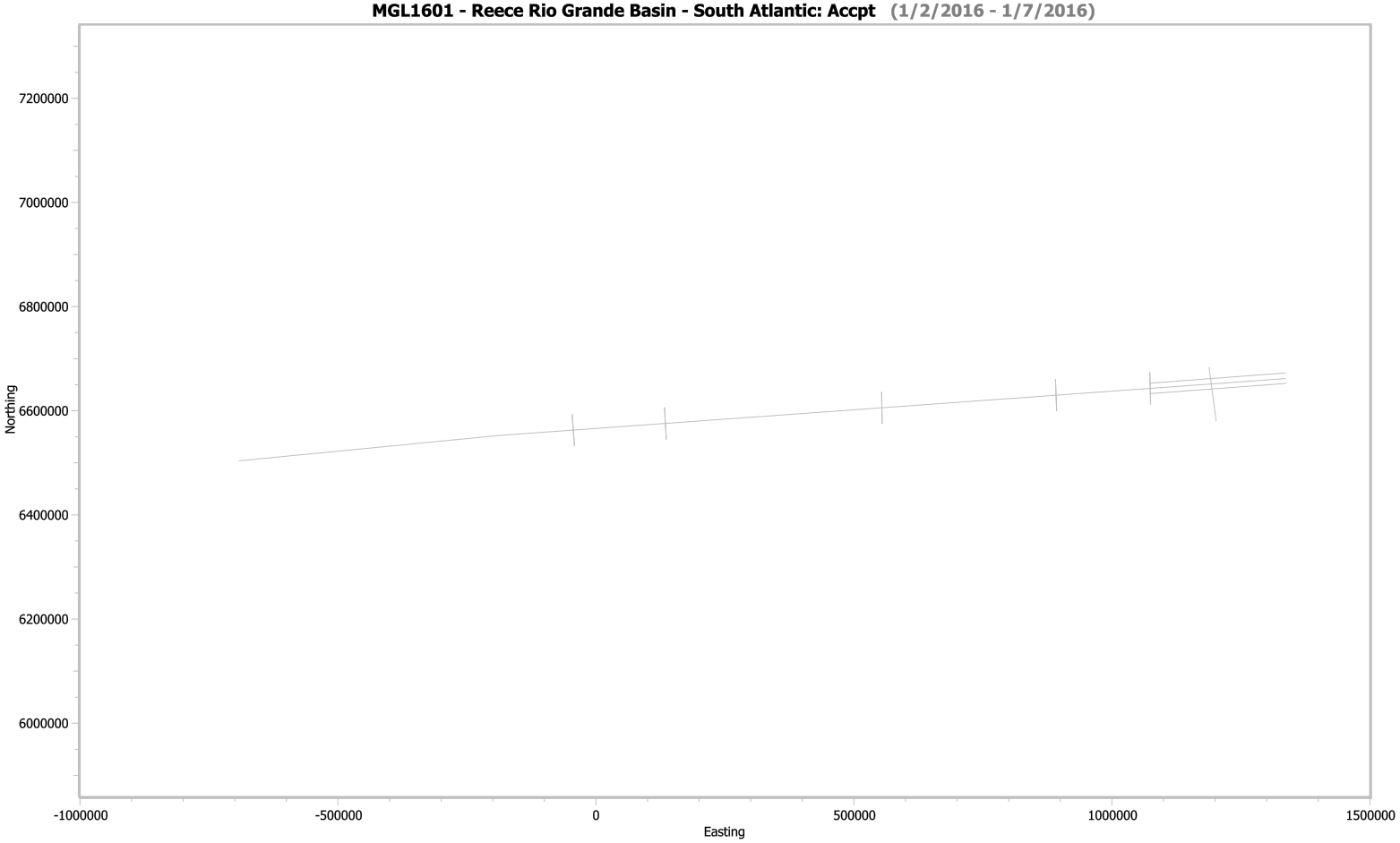
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/7/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Fri 08 Jan

The vessel started the day continuing the transit to OBS101's deployment location. Worklist Items:
1. SSCU troubleshooting / testing continued.
2.Testing of laptop with new Bird/Acoustic Check Software to be used in the Bird Lab and Streamer Deck.
3. Trouble shooting of RTCM correction from CNAV 2000 to Seapath. Now receiving corrections into CNAV 2000 but not outputting to Seapath
4. Trouble shooting of Mail Lab Scanner interface and software for it operation.
5. General House Keeping on Network and Internet Connection
6. Continued to Download CMS archive to the vessel.
7. Started Testing of DigiCourse Acoustic Units

Daily Comment Summaries - Plan for Tomorrow

Fri 08 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Fri 8. Jan 00:00	Fri 8. Jan 24:00	24.000
In transit to prospect, for mobilising deployment.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

8-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**164.883**	**98.145**
At Anchor	8.767	5.218
Mob Ashore	52.833	31.448
Transit to Prospect	103.283	61.478
Chargeable Standby	**0.900**	**0.536**
Transit	0.900	0.536
DownTime	**2.217**	**1.319**
Vessel	2.217	1.319
Total	168.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Fri 08 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
SSCU testing and trouble shooting taking place. Currently not able to get any bird/acoustic comms aft of SSCU's to communicate unless the are in bypass mode.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Fri 08 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

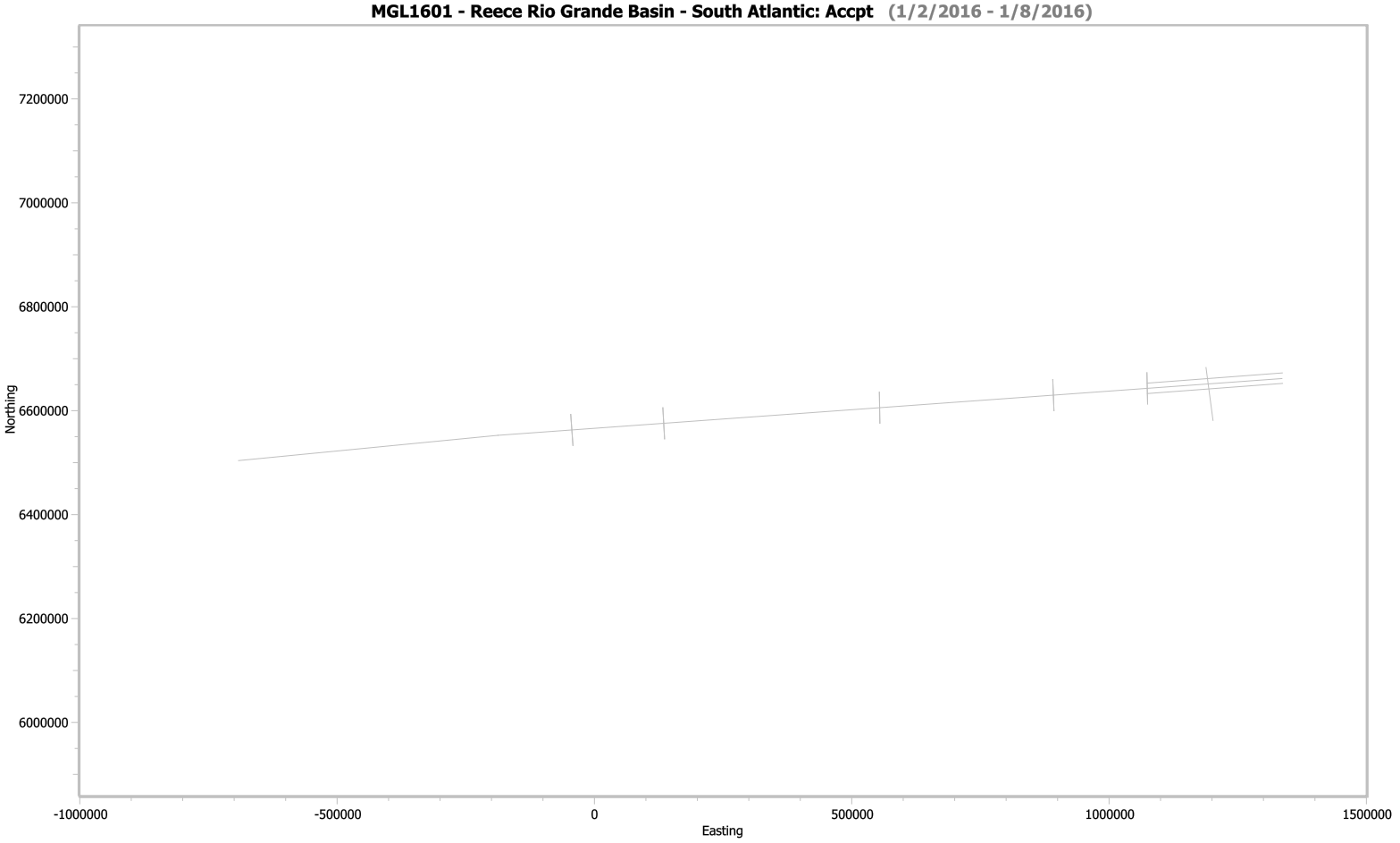
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/8/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sat 09 Jan

The vessel started the day continuing the transit to OBS101's deployment location. Worklist Items:
1. SSCU troubleshooting / testing continued. Testing today with streamer 3 we where able to get communication with Birds Aft of SSCU. Will Continue to trouble shooting with Streamers 1 and 2 again tomorrow.
2.Testing Bird/Acoustic using DigiCourse Check Software in the Bird Lab
3. Continue Trouble shooting of RTCM correction from CNAV 2000 to Seapath. Now receiving corrections into CNAV 2000 but seeing them on Seapath
4. General House Keeping on Network and Internet Connection
5. Finished Continued to Download CMS archive to the vessel.
6. Ran Daily BIST on EM122
7. Preformed daily function Test of Knudsen and EM122. Ran each for 20min to confirm quality of the data.
8. Re-Processing of Nav Data for MGL0807 taking place.

Crossed the Equator at 01:49 UTC at Position 0 0.00N/S 020 45.8757W

Daily Comment Summaries - Plan for Tomorrow

Sat 09 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Sat 9. Jan 00:00	Sat 9. Jan 24:00	24.000
In transit to prospect, Heading for OBS101 on Line MGL1601OBS01				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

9-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**188.883**	**98.377**
At Anchor	8.767	4.566
Mob Ashore	52.833	27.517
Transit to Prospect	127.283	66.293
Chargeable Standby	**0.900**	**0.469**
Transit	0.900	0.469
DownTime	**2.217**	**1.155**
Vessel	2.217	1.155
Total	192.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 09 Jan

Navigation:
No Major Issues to Report

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
SSCU testing and trouble shooting continues to take place. Was able to get bird/acoustic comms aft of SSCU's to communicate both in Bypass and Repeat modes when using streamer #3.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sat 09 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Thompson, Alan - Marine Tech (Nav)
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

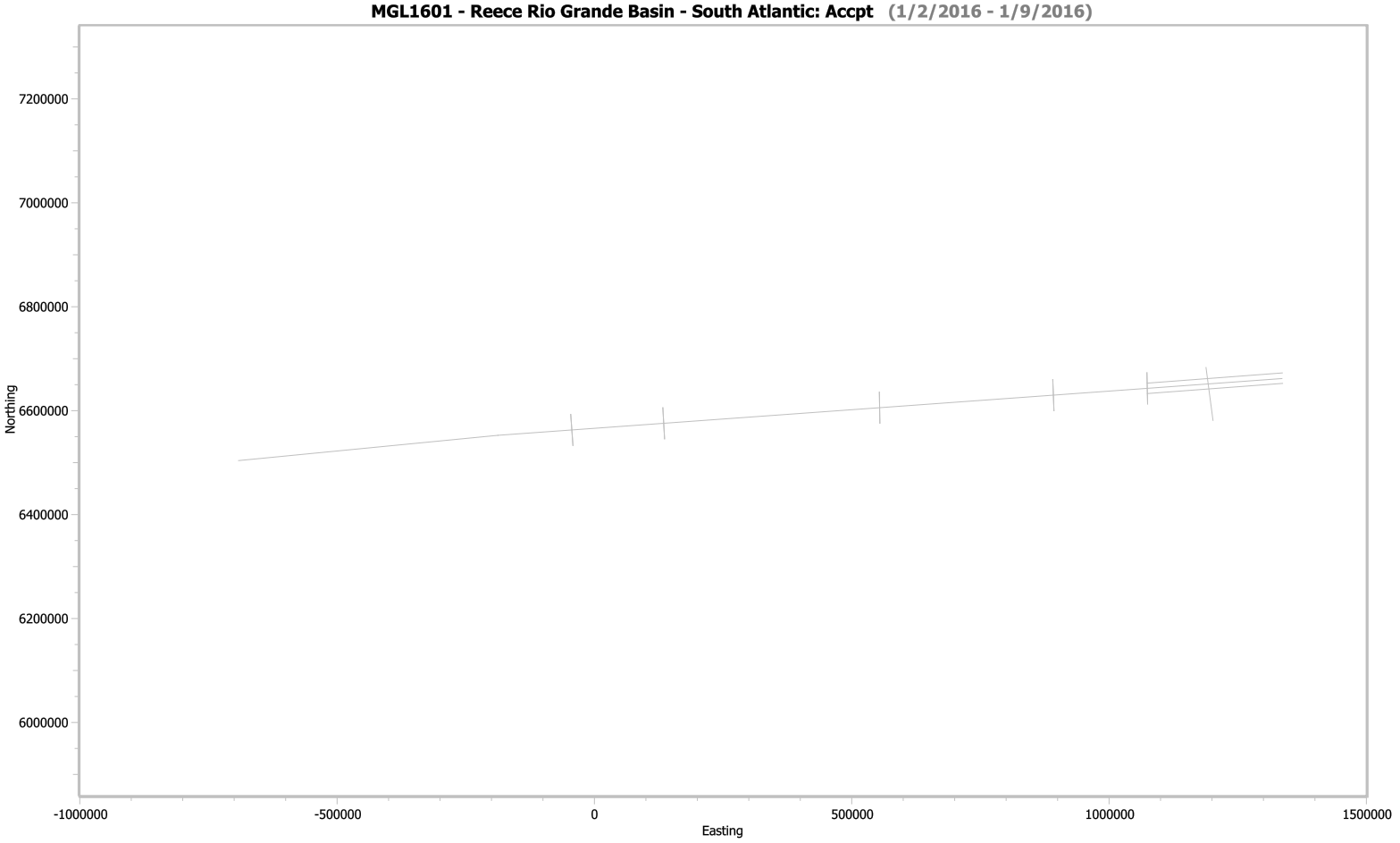
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/9/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sun 10 Jan

The vessel started the day continuing the transit to OBS101's deployment location. Worklist Items:
1. SSCU troubleshooting / testing continued. Testing with all three streamers took place. Streamer 3 we where able to get communication with Birds Aft of SSCU as we did yesterday. With streamer 1 and 2 bird comms worked in Bypass, but not in repeat mode. The conclusion is that Streamers 1 and 2 are to long 7km, for the SSCU to talk back to the DigiCourse LIU. Since streamer 3 is only about 5km, which is what is recommended in the manual the SSCU's work fine.
2 Continue.Testing Bird/Acoustic using DigiCourse Check Software in the Bird Lab
3. Continue Trouble shooting of RTCM correction from CNAV 2000 to Seapath. Now receiving corrections into CNAV 2000 but seeing them on Seapath
4. General House Keeping on Network and Internet Connection
6. Ran Daily BIST on EM122
7. Preformed daily function Test of Knudsen and EM122. Ran each for 20min to confirm quality of the data.

Daily Comment Summaries - Plan for Tomorrow

Sun 10 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Sun 10. Jan 00:00	Sun 10. Jan 24:00	24.000
In transit to prospect, Heading for OBS101 on Line MGL1601OBS01				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

10-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**212.883**	**98.557**
At Anchor	8.767	4.059
Mob Ashore	52.833	24.460
Transit to Prospect	151.283	70.039
Chargeable Standby	**0.900**	**0.417**
Transit	0.900	0.417
DownTime	**2.217**	**1.026**
Vessel	2.217	1.026
Total	216.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 10 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath., continue with trouble shooting today.

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
Testing with all three streamers took place. Streamer 3 we where able to get communication with Birds Aft of SSCU as we did yesterday. With streamer 1 and 2 bird comms worked in Bypass, but not in repeat mode. The conclusion is that Streamers 1 and 2 are to long 7km, for the SSCU to talk back to the DigiCourse LIU. Since streamer 3 is only about 5km, which is what is recommended in the manual the SSCU's work fine.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sun 10 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)

Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

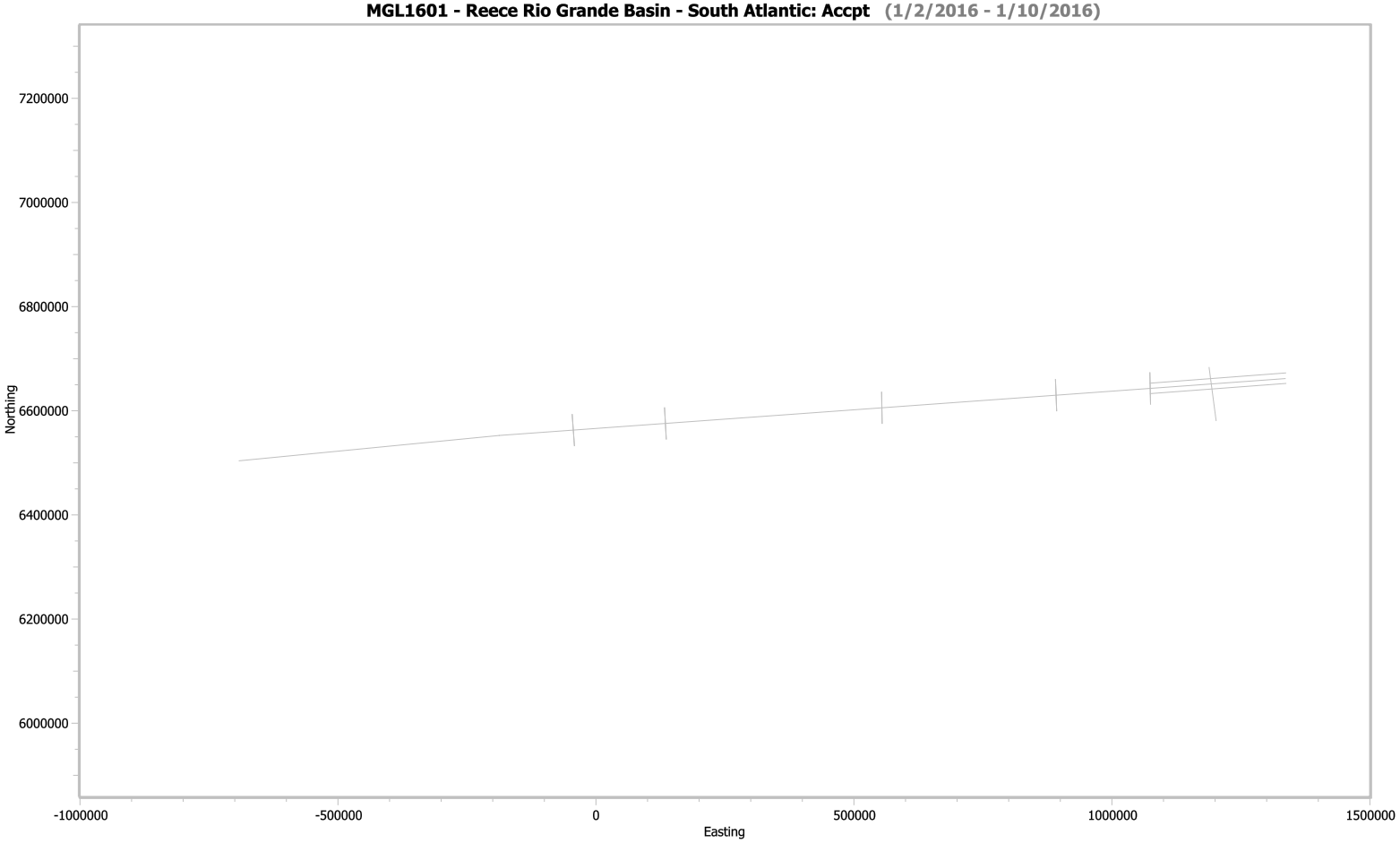
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/10/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Mon 11 Jan

The vessel started the day continuing the transit to OBS101's deployment location. Worklist Items:
1. Continue.Testing Bird/Acoustic using DigiCourse Check Software in the Bird Lab. Testing completed on all Devices being deployed, now starting on Spares.
2. General House Keeping on Network and Internet Connection
3. Ran Daily BIST on EM122
4. Preformed daily function Test of Knudsen and EM122. Ran each for 20min to confirm quality of the data.
5. Tested PAM Steamer and Moved Tow Point from 60m to 120m
6. IT Maintenance on PROC 1 and PROC 2 Machines

Daily Comment Summaries - Plan for Tomorrow

Mon 11 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Mon 11. Jan 00:00	Mon 11. Jan 24:00	24.000
In transit to prospect, Heading for OBS101 on Line MGL1601OBS01				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

11-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**236.883**	**98.701**
At Anchor	8.767	3.653
Mob Ashore	52.833	22.014
Transit to Prospect	175.283	73.035
Chargeable Standby	**0.900**	**0.375**
Transit	0.900	0.375
DownTime	**2.217**	**0.924**
Vessel	2.217	0.924
Total	240.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Mon 11 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Mon 11 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

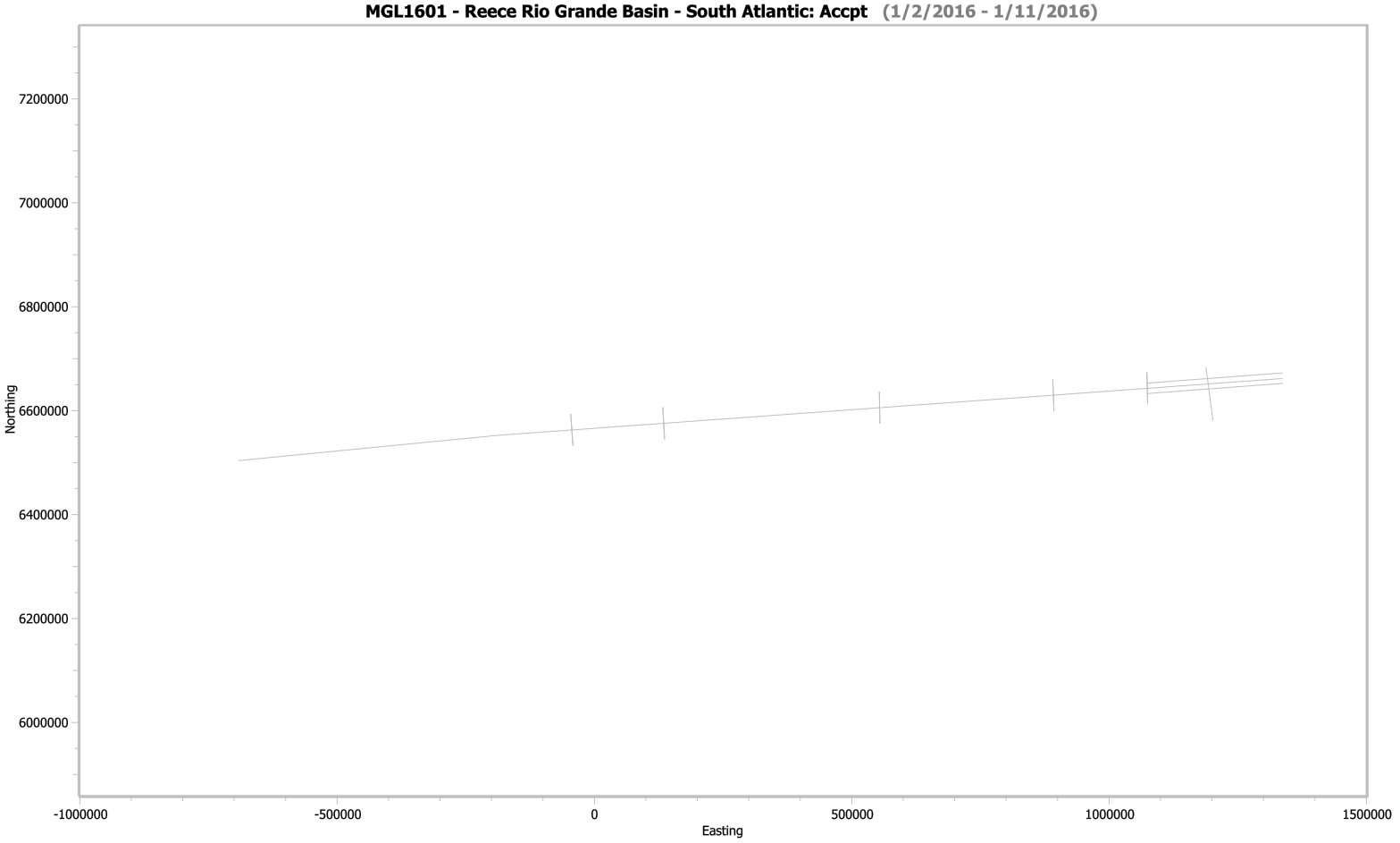
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/11/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Tue 12 Jan

The vessel started the day continuing the transit to OBS101's deployment location. Worklist Items:
1. Continue.Testing Bird/Acoustic using DigiCourse Check Software in the Bird Lab. Continue Testing Spare birds and acoustics.
2. General House Keeping on Network and Internet Connection
3. Ran Daily BIST on EM122
4. Preformed daily function Test of Knudsen and EM122. Ran each for 20min to confirm quality of the data.
5. Tested Maggie newly re-terminated Maggie Tow leader.
6. Assisted Science party with issues they where having on PROC1 and PROC2 with processing flows.
7. Worked on RQN for items required for completing future missions.

Daily Comment Summaries - Plan for Tomorrow

Tue 12 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Tue 12. Jan 00:00	Tue 12. Jan 24:00	24.000
In transit to prospect, Heading for OBS101 on Line MGL1601OBS01				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

12-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**260.883**	**98.819**
At Anchor	8.767	3.321
Mob Ashore	52.833	20.013
Transit to Prospect	199.283	75.486
Chargeable Standby	**0.900**	**0.341**
Transit	0.900	0.341
DownTime	**2.217**	**0.840**
Vessel	2.217	0.840
Total	264.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Tue 12 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Tue 12 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

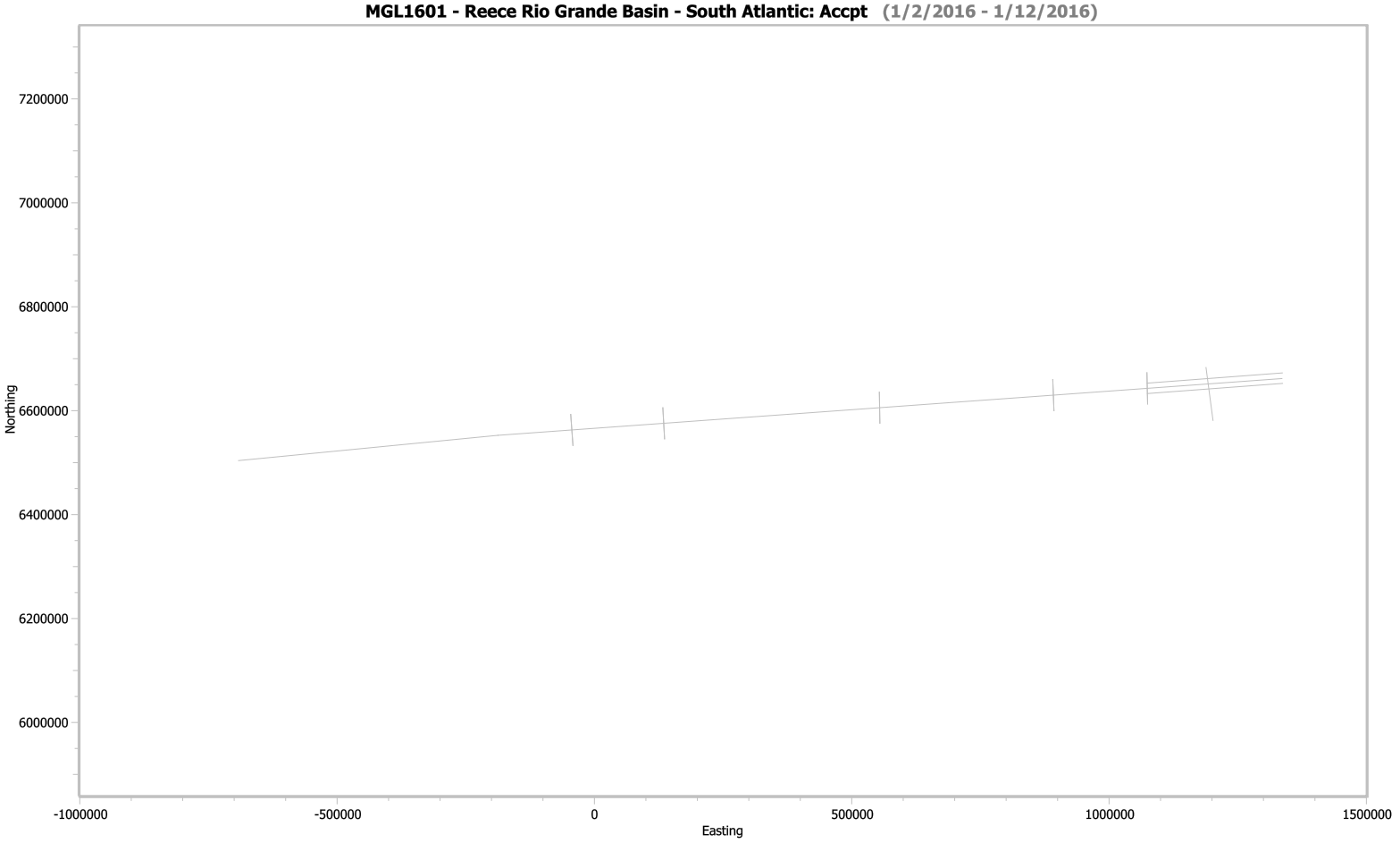
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/12/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Wed 13 Jan

The vessel started the day continuing the transit to OBS101's deployment location.

Work-list Items:
1. Complete.Testing Bird/Acoustic using DigiCourse Check Software in the Bird Lab. Continue Testing Spare birds and acoustics.
2. General House Keeping on Network and Internet Connection
3. Ran Daily BIST on EM122
4. Preformed daily function Test of Knudsen and EM122. Ran each for 20min to confirm quality of the data.
5. Continue working on Req;s for items required for completing future missions.
6. Work on End of Mission Travel Planning
7. Start CSO handover notes.

Daily Comment Summaries - Plan for Tomorrow

Wed 13 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Wed 13. Jan 00:00	Wed 13. Jan 24:00	24.000
In transit to prospect, Heading for OBS101 on Line MGL1601OBS01				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

13-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**284.883**	**98.918**
At Anchor	8.767	3.044
Mob Ashore	52.833	18.345
Transit to Prospect	223.283	77.529
Chargeable Standby	**0.900**	**0.312**
Transit	0.900	0.312
DownTime	**2.217**	**0.770**
Vessel	2.217	0.770
Total	288.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 13 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Wed 13 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

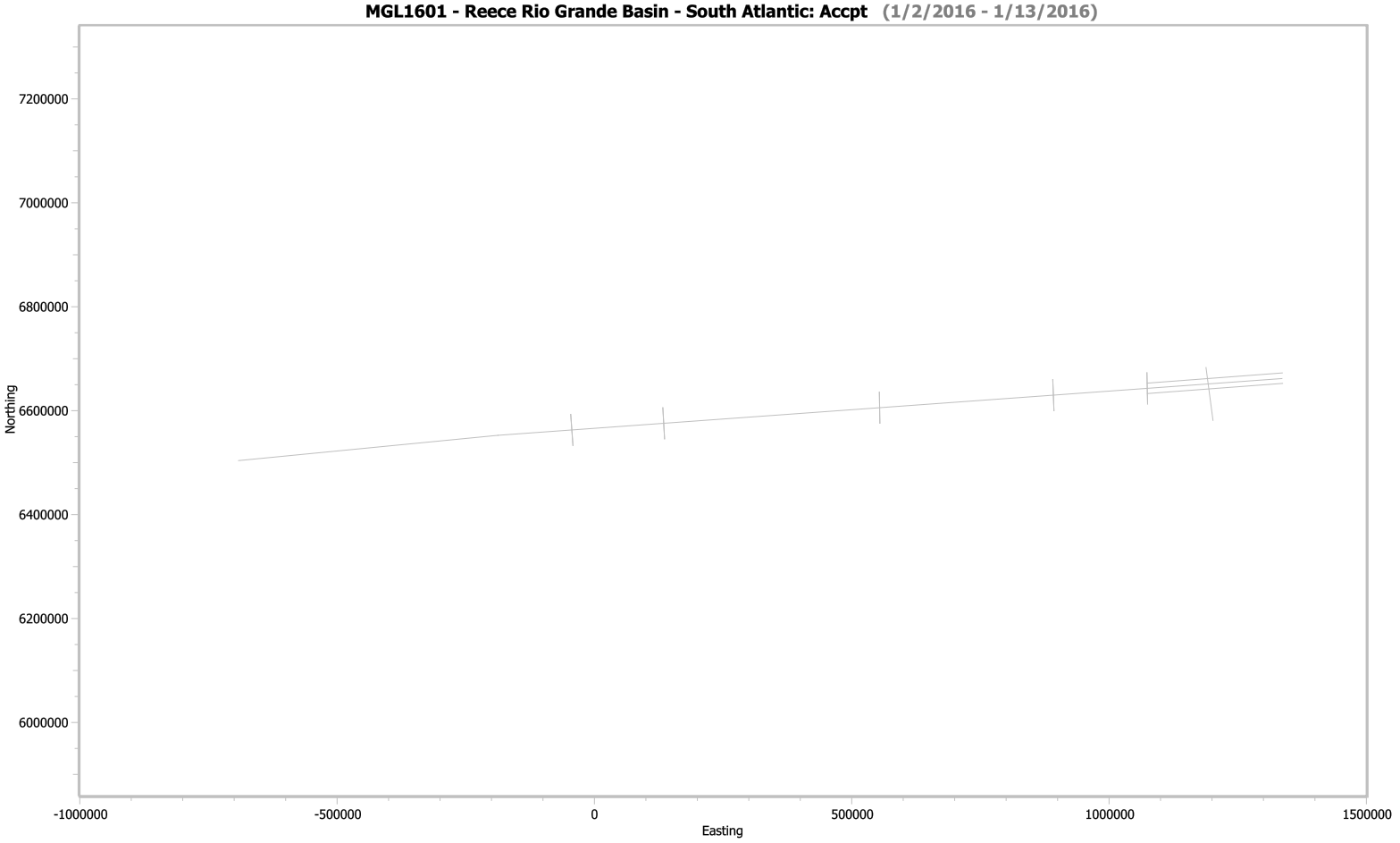
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/13/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 14 Jan

The vessel started the day continuing the transit to OBS101's deployment location.

Work-list Items:
1. Completed all Testing Bird/Acoustic using DigiCourse Check Software in the Bird Lab.
2. General House Keeping on Network and Internet Connection
3. Ran Daily BIST on EM122
4. Preformed daily function Test of Knudsen and EM122. Ran each for 20min to confirm quality of the data.
5. Continue working on Req;s.
6. Click tested All source Elements
6. Test/Repaired Streamer Tailbuoy
7. Continued Updating CSO handover notes.
8. Continued Re-Processed Navigation data from Previous Survey.
9. Trouble Shooting HSN Modem Failure

Daily Comment Summaries - Plan for Tomorrow

Thu 14 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101 an will remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Thu 14. Jan 00:00	Thu 14. Jan 24:00	24.000
In transit to prospect, Heading for OBS101 on Line MGL1601OBS01				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

14-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**308.883**	**99.001**
At Anchor	8.767	2.810
Mob Ashore	52.833	16.934
Transit to Prospect	247.283	79.257
Chargeable Standby	**0.900**	**0.288**
Transit	0.900	0.288
DownTime	**2.217**	**0.710**
Vessel	2.217	0.710
Total	312.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 14 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
HSN stopped transmitting or receiving data this evening about 19:30. After some onboard trouble shooting, HSN support at SIO was contacted for help. Trouble shooting continued throughout the rest of the day.

Daily Comment Summaries - Personnel Onboard

Thu 14 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

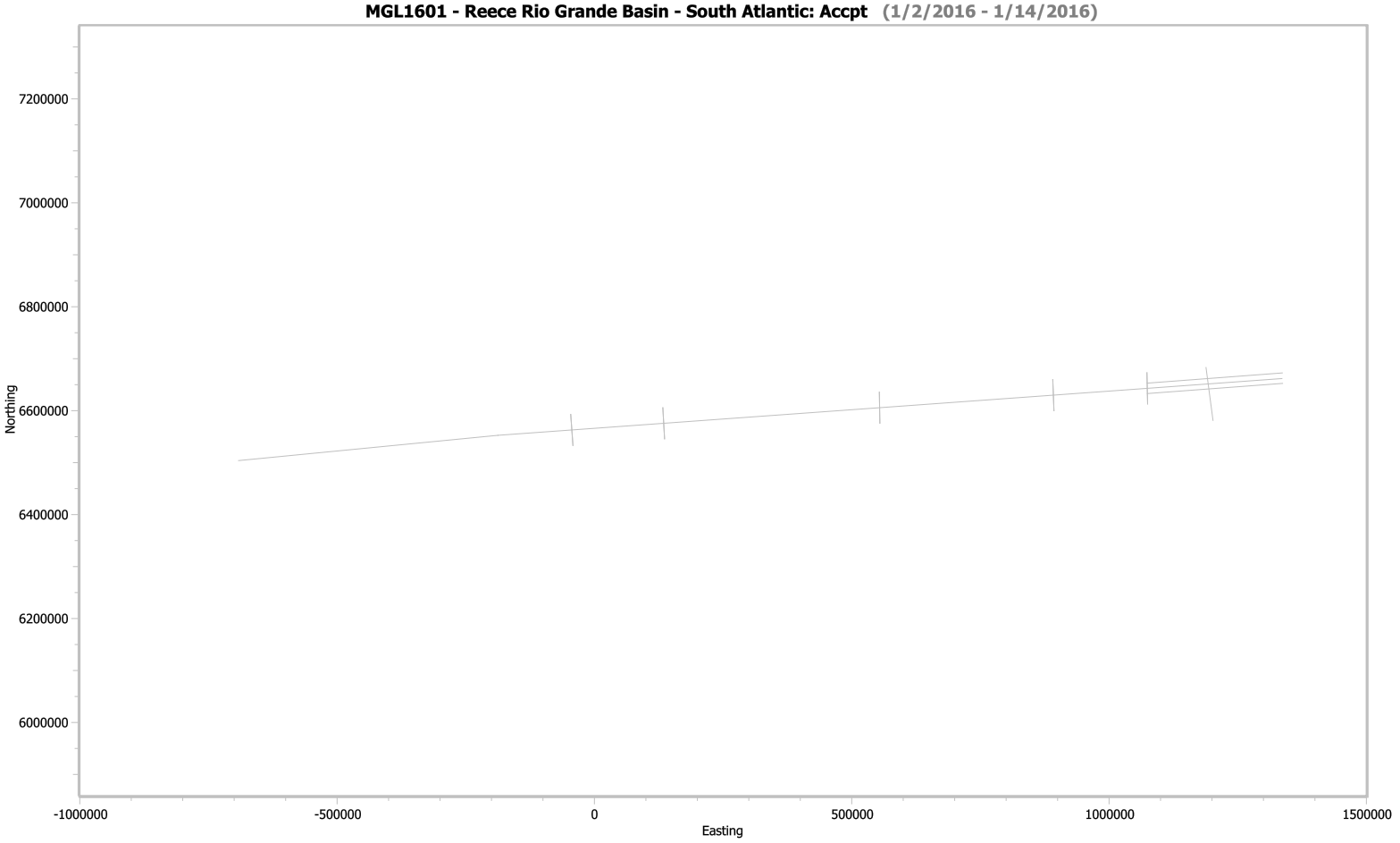
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/14/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Fri 15 Jan

The vessel started the day continuing the transit to OBS101's deployment location.

Work-list Items:
1. Continue General House Keeping on Network and Internet Connection
2. Continued Updating CSO handover notes.
3. Continued Trouble Shooting HSN Modem Failure. HSN Repaired after SIO HSN group correct Routing Tables in the modem from their end.
4. Deployed Port XBT Flume
5. Tested A-Frame and Remote control function in preparation for OBS deployment tomorrow.
6. Worked with LDEO IT and OMO to get New E-Mail Account operational for SO Todd Jensvold.

At 17:39 UTC the vessel entered the survey area and both EM122 and Knudsen Sonars where brought on-line.

Daily Comment Summaries - Plan for Tomorrow

Fri 15 Jan

The vessel will start the day transiting to the Prospect Area and first OBS deployment location OBS101, At ~09:45 UTC the Vessel will be on-site and start OBS deployment operations. OBS Deployment Operations should run until about 18:00 UTC at which time the source array will be deployed and production will commence on Line - OBS101

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Fri 15. Jan 00:00	Fri 15. Jan 24:00	24.000
In transit to prospect, Heading for OBS101 on Line MGL1601OBS01				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

15-Jan	Hours	% Percent
Mobilisation	**24.000**	**100.000**
Transit to Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**332.883**	**99.072**
At Anchor	8.767	2.609
Mob Ashore	52.833	15.724
Transit to Prospect	271.283	80.739
Chargeable Standby	**0.900**	**0.268**
Transit	0.900	0.268
DownTime	**2.217**	**0.660**
Vessel	2.217	0.660
Total	336.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Fri 15 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
HSN Trouble shooting continued through most of the day. HSN Repaired after SIO HSN group correct Routing Tables in the modem from their end.

Daily Comment Summaries - Personnel Onboard

Fri 15 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

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Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	0.00	0.00
Infill	0.00	0.00	0.00	0.00
Combined	**0.00**	**0.00**	**0.00**	**0.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

0%

Prime Lines Completed

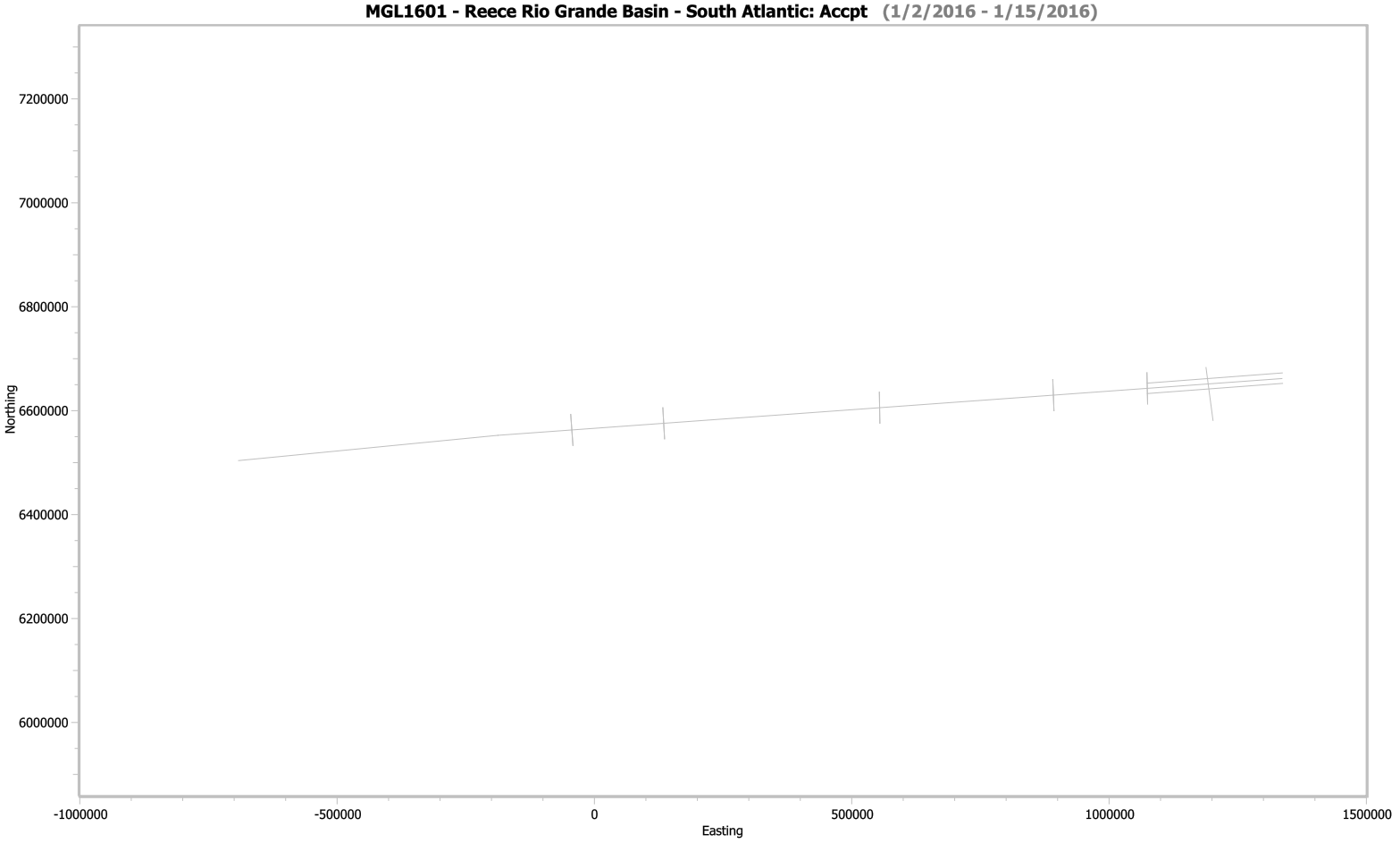
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	0	0

Percentages Charged	
Prime	0.00% of 3388.36 km
Infill	0.00% of Charged Prime km
	0.00% of Preplot km

Average Daily Production	
Average Accepted Daily Prime and Infill Production	0.00 km
Average Charged Daily Prime and Infill Production	0.00 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/15/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
Columbia University | Earth Institute

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sat 16 Jan

The vessel started day transiting to the Prospect Area and first OBS deployment location OBS101, At 10:40 UTC the Vessel arrived on-site and began OBS deployment operations. OBS Deployment Operations until 17:00 UTC at which time the source array was deployed and ramped up. Production commence on Line - MGL1601OBS01 at 19:58 UTC and the vessel continued in this mode throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Sat 16 Jan

The vessel started the day continuing production on Line MGL1601OBS01, which is expected to last until about 04:00 UTC. At that time the source recovery will begin, followed by OBS recovery operation. Once all the OBS's are onboard the vessel will transit to the Southern end of OBS02 and started Deploying OBS207.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit to Prospect	MB_TT	Sat 16. Jan 00:00	Sat 16. Jan 10:40	10.667
In transit to prospect, Heading for OBS101 on Line MGL1601OBS01				
Deployment	MB_DP	Sat 16. Jan 10:40	Sat 16. Jan 10:52	0.200
Deployment of OBS101				
Transit	SB_TRT	Sat 16. Jan 10:52	Sat 16. Jan 11:25	0.550
Transit to OBS102				
Deployment	MB_DP	Sat 16. Jan 11:25	Sat 16. Jan 11:52	0.450
Deployment of OBS102				
Transit	SB_TRT	Sat 16. Jan 11:52	Sat 16. Jan 12:27	0.583
Transit to OBS103				
Deployment	MB_DP	Sat 16. Jan 12:27	Sat 16. Jan 12:38	0.183
Deployment of OBS103				
Transit	SB_TRT	Sat 16. Jan 12:38	Sat 16. Jan 13:14	0.600
Transit to OBS104				
Deployment	MB_DP	Sat 16. Jan 13:14	Sat 16. Jan 14:02	0.800
Deployment of OBS104				
Transit	SB_TRT	Sat 16. Jan 14:02	Sat 16. Jan 14:56	0.900
Transit to OBS105				
Deployment	MB_DP	Sat 16. Jan 14:56	Sat 16. Jan 15:11	0.250
Deployment of OBS105				
Transit	SB_TRT	Sat 16. Jan 15:11	Sat 16. Jan 15:53	0.700
Transit to OBS106				
Deployment	MB_DP	Sat 16. Jan 15:53	Sat 16. Jan 16:11	0.300
Deployment of OBS106				
Transit	SB_TRT	Sat 16. Jan 16:11	Sat 16. Jan 16:54	0.717
Transit to OBS107				
Deployment	MB_DP	Sat 16. Jan 16:54	Sat 16. Jan 17:13	0.317
Deployment of OBS107				
Deployment	MB_DP	Sat 16. Jan 17:13	Sat 16. Jan 18:43	1.500
Deployment of Source, PAM, and Maggie				
Cetacean	SB_CT	Sat 16. Jan 18:43	Sat 16. Jan 19:23	0.667
Standing by for 30min for PSO to clear safety radius				
Cetacean	SB_CT	Sat 16. Jan 19:23	Sat 16. Jan 19:53	0.500
Ramping up Source				
Transit	SB_TRT	Sat 16. Jan 19:53	Sat 16. Jan 19:58	0.083
Testing Spare Source Elements				
Nav Systems Onboard	DT_NO	Sat 16. Jan 19:58	Sat 16. Jan 20:03	0.083
NTBP Seq 1 FSP=950 LSP=952 - Shotpoint Trigging in wrong location. Navigation offset corrected.				
Production Prime	AC_PP	Sat 16. Jan 20:03	Sat 16. Jan 24:00	3.950
SOL Seq 1 MGL1601OBS01 FGSP=953 FCSP=953 Hdg=358.8° Prime MSP Seq 1 MGL1601OBS01 LGSP=1807 LCSP=1807 Midnight SOL Feather=0° SOL Water Depth=3119m				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

16-Jan	Hours	% Percent
Acquisition	**3.950**	**16.458**
Production Prime	3.950	16.458
Chargeable Standby	**5.300**	**22.083**
Cetacean	1.167	4.861
Transit	4.133	17.222
DownTime	**0.083**	**0.347**
Nav Systems Onboard	0.083	0.347
Mobilisation	**14.667**	**61.111**
Deployment	4.000	16.667
Transit to Prospect	10.667	44.444
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**347.550**	**96.542**
At Anchor	8.767	2.435
Deployment	4.000	1.111
Mob Ashore	52.833	14.676
Transit to Prospect	281.950	78.319
Chargeable Standby	**6.200**	**1.722**
Cetacean	1.167	0.324
Transit	5.033	1.398
DownTime	**2.300**	**0.639**
Nav Systems Onboard	0.083	0.023
Vessel	2.217	0.616
Acquisition	**3.950**	**1.097**
Production Prime	3.950	1.097
Total	360.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 16 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sat 16 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sat 16 Jan	Marcus G Langseth	1	32.06
Total Production:			**32.06**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	32.06	32.06	32.06	32.06
Infill	0.00	0.00	0.00	0.00
Combined	**32.06**	**32.06**	**32.06**	**32.06**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
1	OBS01	358.8	953	1807	Prime	32.06	4.378	Part	Mdnight
NTBP: 950 - 952									
Total						**32.06**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

1%

Prime Lines Completed

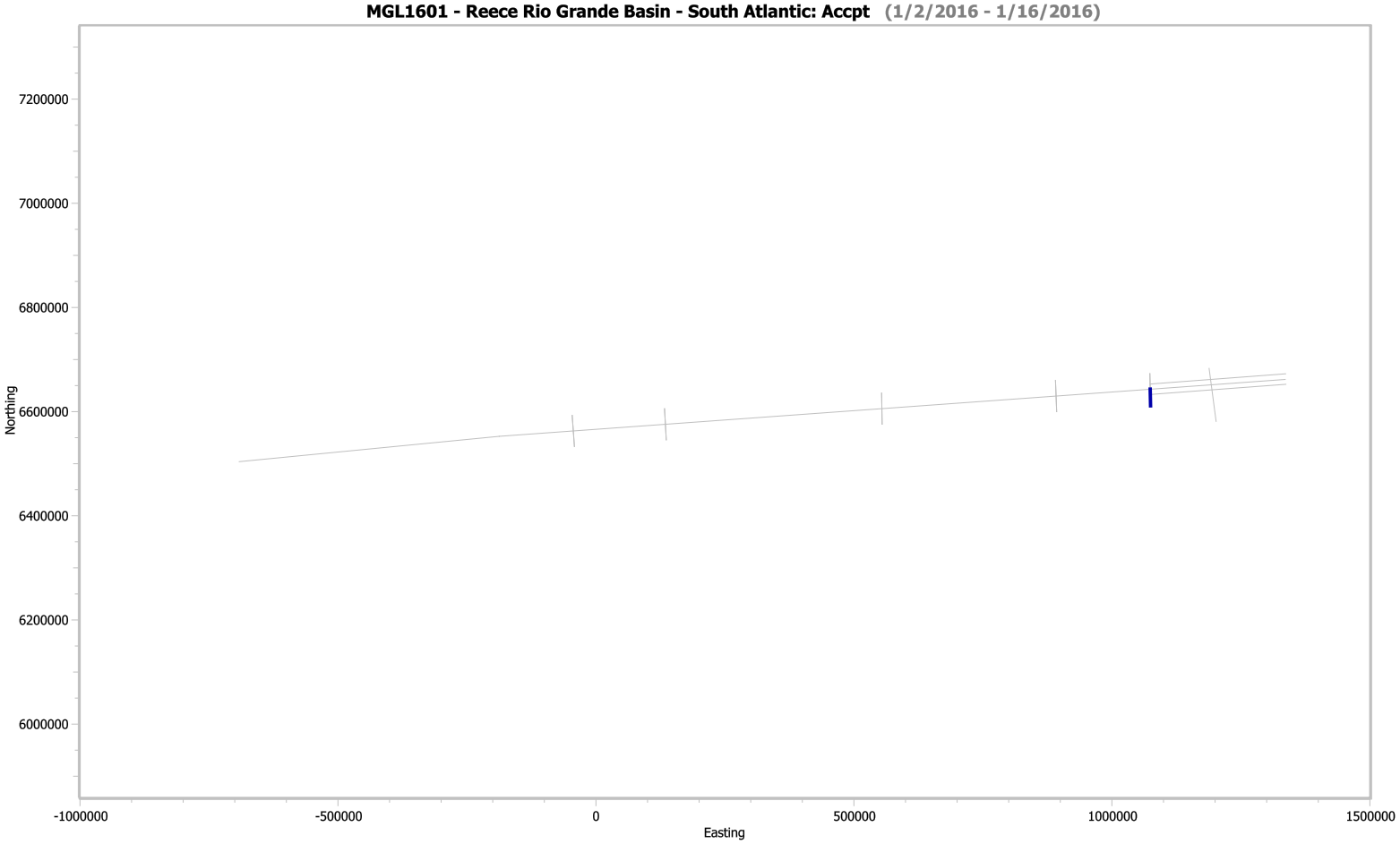
0%

Preplot Lines	Complete	Incomplete	Pending
20	0	1	0

Percentages Charged	
Prime	0.95% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	32.06 km
Average Charged Daily Prime and Infill Production	32.06 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/16/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sun 17 Jan

The vessel started the day continuing production on Line MGL1601OBS01, which was completed 04:14 UTC. At that time the source recovery will begin, and OBS recovery operation began at 05:31 UTC. The last OBS (107) was recovered at OBS207. at 19:06 and the vessel started transiting to OBS207 to begin deployment operations on Line MGL1601OBS02. The vessel remained transiting throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Sun 17 Jan

The vessel started the day transit to OBS207 to begin deployment operations from South to North. Once all OBS are out the vessel will deploy the source and begin production on Line MGL1601OBS02 and once complete, the source will be recovered and OBS recovery operation will begin and the vessel should remain in this mode throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Sun 17. Jan 00:00	Sun 17. Jan 04:14	4.233
SOL Seq 1 MGL1601OBS01 FGSP=1808 FCSP=1808 Hdg=358.8° Prime EOL Seq 1 MGL1601OBS01 LGSP=2741 LCSP=2741 Complete EOL Feather=0° EOL Water Depth=3658m				
Recovery	DM_RC	Sun 17. Jan 04:14	Sun 17. Jan 05:31	1.283
Recover guns.				
Transit	SB_TRT	Sun 17. Jan 05:31	Sun 17. Jan 05:53	0.367
Transit to recover OBS 101				
Recovery	DM_RC	Sun 17. Jan 05:53	Sun 17. Jan 07:23	1.500
Recovering OBS 101				
Transit	SB_TRT	Sun 17. Jan 07:23	Sun 17. Jan 08:04	0.683
Transit to recover OBS 102				
Recovery	DM_RC	Sun 17. Jan 08:04	Sun 17. Jan 09:28	1.400
Recovering OBS 102				
Transit	SB_TRT	Sun 17. Jan 09:28	Sun 17. Jan 10:20	0.867
Transit to recover OBS 103				
Recovery	DM_RC	Sun 17. Jan 10:20	Sun 17. Jan 11:36	1.267
Recovering OBS 103				
Transit	SB_TRT	Sun 17. Jan 11:36	Sun 17. Jan 12:22	0.767
Transit to recover OBS104				
Recovery	DM_RC	Sun 17. Jan 12:22	Sun 17. Jan 13:48	1.433
Recovery OBS104				
Transit	SB_TRT	Sun 17. Jan 13:48	Sun 17. Jan 14:19	0.517
Transit to OBS 105				
Recovery	DM_RC	Sun 17. Jan 14:19	Sun 17. Jan 15:28	1.150
Recovery OBS105				
Transit	SB_TRT	Sun 17. Jan 15:28	Sun 17. Jan 15:59	0.517
Transit to OBS106				
Recovery	DM_RC	Sun 17. Jan 15:59	Sun 17. Jan 17:14	1.250
Recovery of OBS106				
Transit	SB_TRT	Sun 17. Jan 17:14	Sun 17. Jan 17:51	0.617
Chargeable standby d/t being in Transit				
Recovery	DM_RC	Sun 17. Jan 17:51	Sun 17. Jan 19:06	1.250
Recovery of OBS107				
Transit	SB_TRT	Sun 17. Jan 19:06	Sun 17. Jan 24:00	4.900
Transiting to OBS207				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

17-Jan	Hours	% Percent
Acquisition	**4.233**	**17.639**
Production Prime	4.233	17.639
Chargeable Standby	**9.233**	**38.472**
Transit	9.233	38.472
Demobilisation	**10.533**	**43.889**
Recovery	10.533	43.889
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**347.550**	**90.508**
At Anchor	8.767	2.283
Deployment	4.000	1.042
Mob Ashore	52.833	13.759
Transit to Prospect	281.950	73.424
Chargeable Standby	**15.433**	**4.019**
Cetacean	1.167	0.304
Transit	14.267	3.715
DownTime	**2.300**	**0.599**
Nav Systems Onboard	0.083	0.022
Vessel	2.217	0.577
Acquisition	**8.183**	**2.131**
Production Prime	8.183	2.131
Demobilisation	**10.533**	**2.743**
Recovery	10.533	2.743
Total	384.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 17 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sun 17 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sun 17 Jan	Marcus G Langseth	1	35.02
Total Production:			**35.02**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	35.02	67.09	67.09	67.09
Infill	0.00	0.00	0.00	0.00
Combined	**35.02**	**67.09**	**67.09**	**67.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
1	OBS01	358.8	1808	2741	Prime	35.02	4.463	Complete	Complete
Total						**35.02**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

2%

Prime Lines Completed

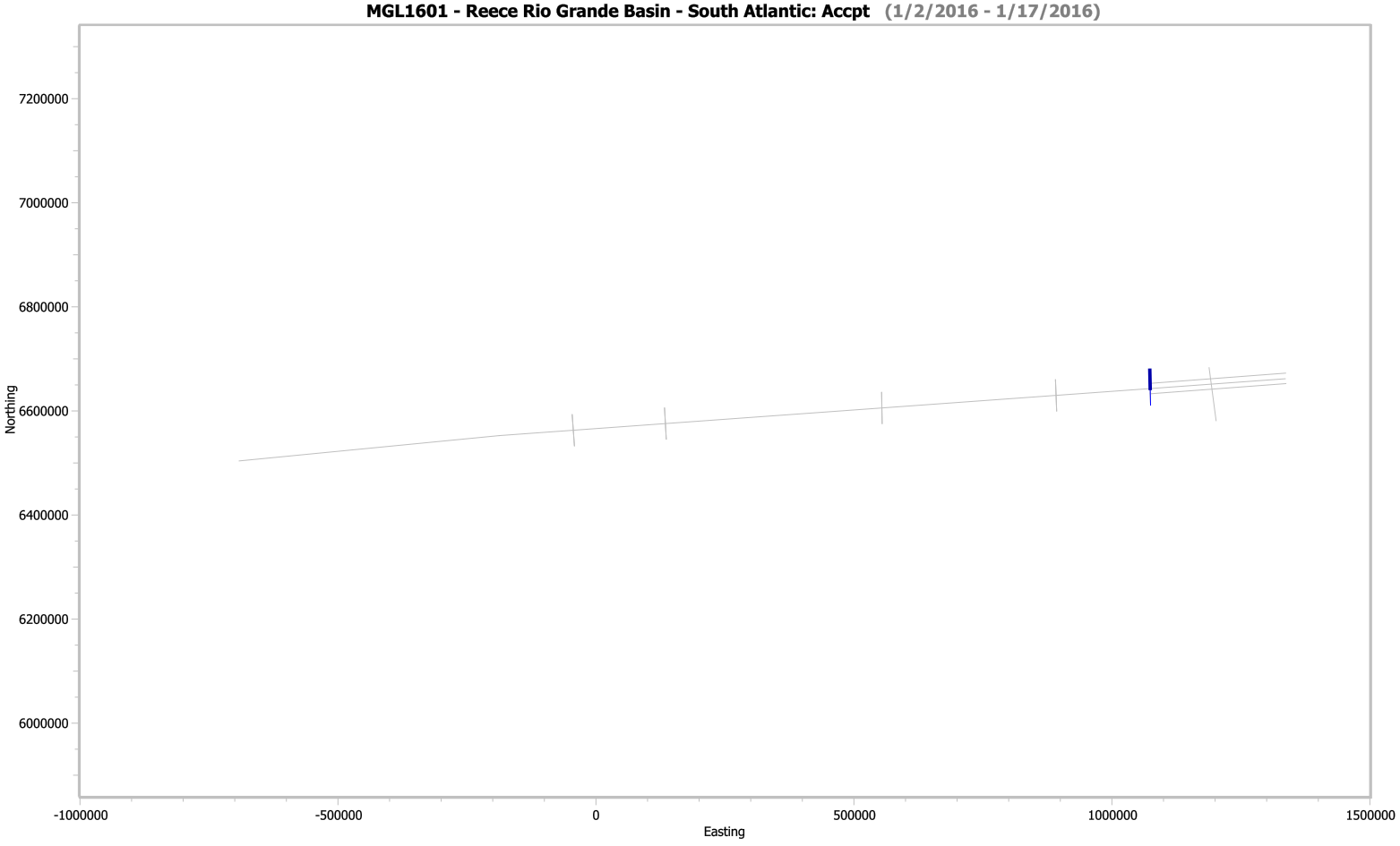
5%

Preplot Lines	Complete	Incomplete	Pending
20	1	0	0

Percentages Charged	
Prime	1.98% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	33.54 km
Average Charged Daily Prime and Infill Production	33.54 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/17/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Mon 18 Jan

The vessel started the day continuing the transit from Line OBS01 to Line OBS02 and at 05:30 UTC started OBS deployment operations on Line OBS02. OBS deployment Operations Continued until 11:15 UTC. At that time the PAM, Maggie, and the Source was deployed. At 12:46 Ramp-up of the Source started and was completed at 13:16 UTC. While on Run-in to the at 14:14 UTC an Air-leak on Sub-Arrays 1 was detected and the string was recovered to make repairs. Sub-Array 2 jumped over Sub-Array 3's Hose bundle and took sometime to uncross. Shortly after Sub-Array 1 was redeployed Element #8 started Auto-Firing. Line MGL1601OBS02 was aborted shortly after beginning and the vessel circled around while repairs where made. Sub-Array 1 was redeployed and production on line MGL1601OBS02R began at 18:14 an continued throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Mon 18 Jan

The vessel started the day transit in production on MGL1601OBS02R until about 01:37. At which time PAM, Maggie, and Source will be recovered. Shortly after all towed equipment is on-board OBS recovery Operations will commence with OBS207. This should take about 10 Hours to recovery all OBS, before the vessel begins transiting to Line OBS03. It should remain transiting throughout the remainder of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit	SB_TRT	Mon 18. Jan 00:00	Mon 18. Jan 05:30	5.500
Transit to deploy OBS 207				
Deployment	MB_DP	Mon 18. Jan 05:30	Mon 18. Jan 05:40	0.167
Deploy OBS 207				
Transit	SB_TRT	Mon 18. Jan 05:40	Mon 18. Jan 06:25	0.750
Transit to deploy OBS 206				
Deployment	MB_DP	Mon 18. Jan 06:25	Mon 18. Jan 06:33	0.133
Deploy OBS 206				
Transit	SB_TRT	Mon 18. Jan 06:33	Mon 18. Jan 07:18	0.750
Transit to deploy OBS 205				
Deployment	MB_DP	Mon 18. Jan 07:18	Mon 18. Jan 07:26	0.133
Deploy OBS 205				
Transit	SB_TRT	Mon 18. Jan 07:26	Mon 18. Jan 08:08	0.700
Transit to deploy OBS 204				
Deployment	MB_DP	Mon 18. Jan 08:08	Mon 18. Jan 08:15	0.117
Deploy OBS 204				
Transit	SB_TRT	Mon 18. Jan 08:15	Mon 18. Jan 09:13	0.967
Transit to deploy OBS 203				
Deployment	MB_DP	Mon 18. Jan 09:13	Mon 18. Jan 09:19	0.100
Deploy OBS 203				
Transit	SB_TRT	Mon 18. Jan 09:19	Mon 18. Jan 10:08	0.817
Transit to deploy OBS 202				
Deployment	MB_DP	Mon 18. Jan 10:08	Mon 18. Jan 10:16	0.133
Deploy OBS 202				
Transit	SB_TRT	Mon 18. Jan 10:16	Mon 18. Jan 11:10	0.900
Transit to deploy OBS 201				
Deployment	MB_DP	Mon 18. Jan 11:10	Mon 18. Jan 11:15	0.083
Deploy OBS 201				
Deployment	MB_DP	Mon 18. Jan 11:15	Mon 18. Jan 12:46	1.517
Deployment of Source, PAM, and Maggie.				
Cetacean	SB_CT	Mon 18. Jan 12:46	Mon 18. Jan 13:06	0.333
Ramp Up of Source				
Transit	SB_TRT	Mon 18. Jan 13:06	Mon 18. Jan 14:14	1.133
Transit to Start of Line MGL1601OBS02				
Source	DT_SC	Mon 18. Jan 14:14	Mon 18. Jan 16:36	2.367
NTBP Seq 2 FSP=2995 LSP=2567				
Source	DT_SC	Mon 18. Jan 16:36	Mon 18. Jan 18:14	1.633
Air Leak on String 1 Element 4 and Auto Fire on String 1 Element 8				
Production Prime	AC_PP	Mon 18. Jan 18:14	Mon 18. Jan 18:32	0.300
SOL Seq 3 MGL1601OBS02R FGSP=2635 FCSP=2635 Hdg=179.1° Prime EOL Seq 3 MGL1601OBS02R LGSP=2567 LCSP=2567 Complete SOL Feather=0° SOL Water Depth=3477m EOL Feather=0°				

Category	Code	Start	End	Duration
Production Prime	AC_PP	Mon 18. Jan 18:32	Mon 18. Jan 24:00	5.467
SOL Seq 3 MGL1601OBS02R FGSP=2566 FCSP=2566 Hdg=177.8° Prime MSP Seq 3 MGL1601OBS02R LGSP=1359 LCSP=1359 Midnight SOL Feather=0°				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

18-Jan	Hours	% Percent
Acquisition	**5.767**	**24.028**
Production Prime	5.767	24.028
Chargeable Standby	**11.850**	**49.375**
Cetacean	0.333	1.389
Transit	11.517	47.986
DownTime	**4.000**	**16.667**
Source	4.000	16.667
Mobilisation	**2.383**	**9.931**
Deployment	2.383	9.931
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**349.933**	**85.768**
At Anchor	8.767	2.149
Deployment	6.383	1.565
Mob Ashore	52.833	12.949
Transit to Prospect	281.950	69.105
Chargeable Standby	**27.283**	**6.687**
Cetacean	1.500	0.368
Transit	25.783	6.319
DownTime	**6.300**	**1.544**
Nav Systems Onboard	0.083	0.020
Source	4.000	0.980
Vessel	2.217	0.543
Acquisition	**13.950**	**3.419**
Production Prime	13.950	3.419
Demobilisation	**10.533**	**2.582**
Recovery	10.533	2.582
Total	408.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Mon 18 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
Multiple issues with the Source Today. Air-leak on Sub-Arrays 1 and 3, Sub-Array 1 Element 6 no Fire, and Sub-Array 1 Element 8 Auto Fire. In the middle of repairing the Air-Leak on Sub-Array 1 - Sub-Array 2 jumped over Sub-Array 3's Hose bundle and took sometime to uncross.

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Mon 18 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Mon 18 Jan	Marcus G Langseth	3 - 3	47.89
Total Production:			**47.89**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	45.30	45.30	112.39	112.39
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	2.59	2.59	2.59	2.59
Combined	**47.89**	**47.89**	**114.98**	**114.98**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
2	OBS02	177.8	N/A	N/A	Prime	0.00	N/A	NTBP	NTBP
NTBP: 2995 - 2567									
3	OBS02R	179.1	2635	2567	Prime, Reshoot	2.59	4.590	Complete	Complete
3	OBS02R	177.8	2566	1359	Prime	45.30	4.471	Part	Midnight
Total						**47.89**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

3%

Prime Lines Completed

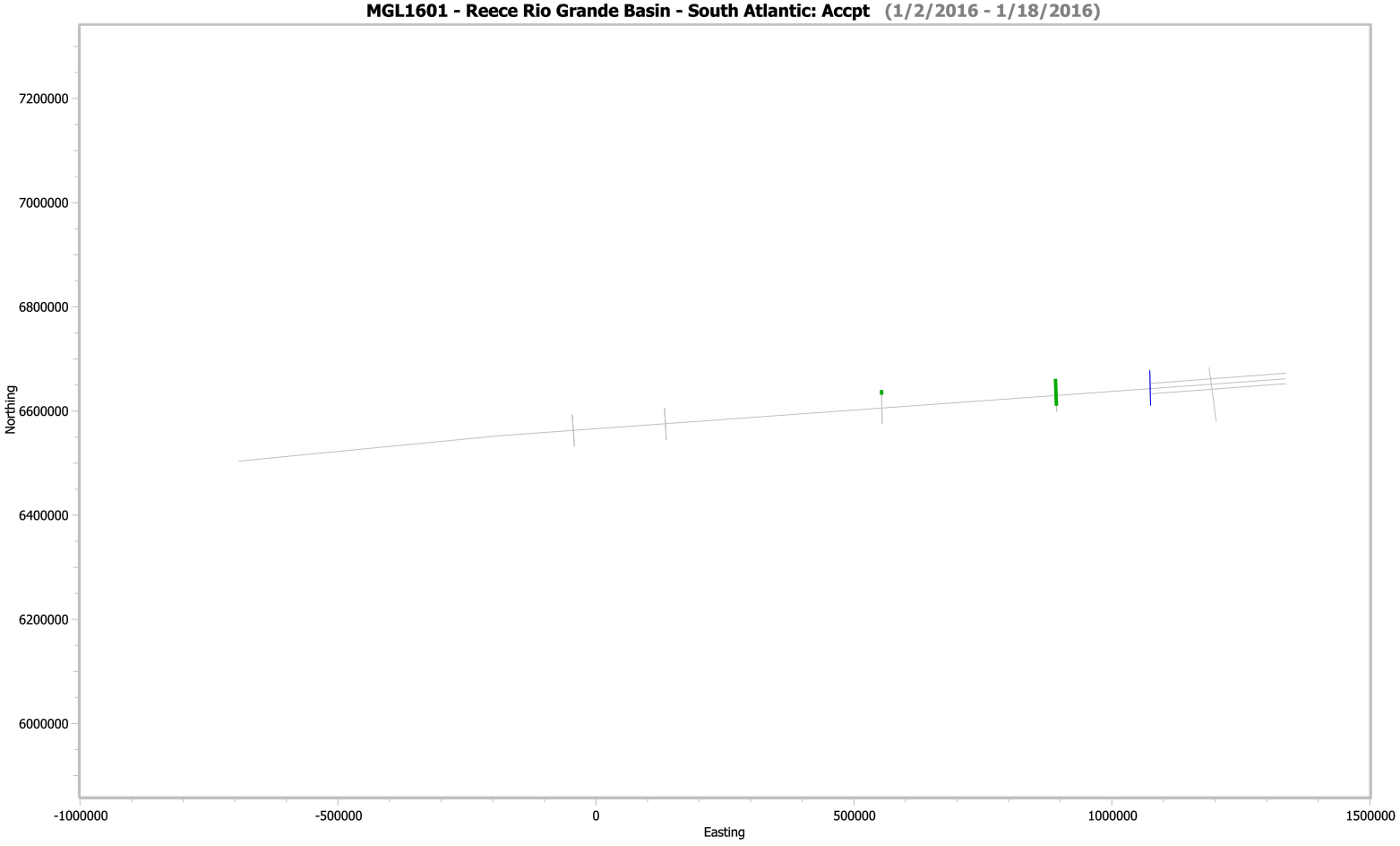
10%

Preplot Lines	Complete	Incomplete	Pending
20	2	1	0

Percentages Charged	
Prime	3.39% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	38.32 km
Average Charged Daily Prime and Infill Production	38.32 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/18/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Tue 19 Jan

Vessel started the day in production on Line MGL1601OBS02R, which concluded at 01:37 UTC. At that time all towed equipment (Source, PAM, and Maggie) where recovered and the vessel moved into OBS recovery Operations, which continued throughout the rest of the day.

We have had no response from OBS203 and it is presumed to have been "Lost at Sea". The vessel spent ~6.5 hours site. The OBS Tech's got one response from the instrument, directly after then sent the enable command as soon as we where on site and nothing after. Normally there is something in the first 5min but no comms. after sending release command at different location around the site from right on top of the instrument, to 300m off, to up to a mile all round the instrument. After the 6.5 hours and numerous attempts to surface the instrument it has been decided to leave it on the sea floor.

Additional there was issues with OBS202 not responding, however instead of spending a lot of time here, the vessel moved on to OBS201, recovered it and then returned to OBS202's site to continue recovery attempts. At the End of the Day OBS201, 204, 205, 206, and 207 where on-board an further attempts to recover OBS 202 and 203 are planed.

Daily Comment Summaries - Plan for Tomorrow

Tue 19 Jan

The Vessel started the day transiting back to OBS202 to give it a second try. OBS202 was recovered at 02:14 UTC and the vessel Transited back to Site OBS203 to give that one, one last try. OBS203 was released and at 04:47 UTC all instruments where on-board and the vessel began transiting to the site that OBS deployment site (OBS301). It is expected that the vessel will arrive on location between 23:00 and 24:00 UTC.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Tue 19. Jan 00:00	Tue 19. Jan 01:37	1.617
SOL Seq 3 MGL1601OBS02R FGSP=1358 FCSP=1358 Hdg=177.8° Prime EOL Seq 3 MGL1601OBS02R LGSP=999 LCSP=999 Complete EOL Feather=0° EOL Water Depth=3625m				
Recovery	DM_RC	Tue 19. Jan 01:37	Tue 19. Jan 02:44	1.117
Recovery of Source, PAM, and Maggie.				
Transit	SB_TRT	Tue 19. Jan 02:44	Tue 19. Jan 03:54	1.167
Transit to OBS207				
Recovery	DM_RC	Tue 19. Jan 03:54	Tue 19. Jan 05:18	1.400
Recover OBS207				
Transit	SB_TRT	Tue 19. Jan 05:18	Tue 19. Jan 06:01	0.717
Transit to OBS206				
Recovery	DM_RC	Tue 19. Jan 06:01	Tue 19. Jan 07:24	1.383
Recover OBS206				
Transit	SB_TRT	Tue 19. Jan 07:24	Tue 19. Jan 08:00	0.600
Transit to OBS205				
Recovery	DM_RC	Tue 19. Jan 08:00	Tue 19. Jan 09:32	1.533
Recover OBS205				
Transit	SB_TRT	Tue 19. Jan 09:32	Tue 19. Jan 10:21	0.817
Transit to OBS204				
Recovery	DM_RC	Tue 19. Jan 10:21	Tue 19. Jan 11:45	1.400
Recover OBS204				
Transit	SB_TRT	Tue 19. Jan 11:45	Tue 19. Jan 12:29	0.733
Transit to OBS 203				
Recovery	DM_RC	Tue 19. Jan 12:29	Tue 19. Jan 14:00	1.517
Recovery of OBS203 - No Comm's from unit.				
Contractor Request	DT_CR	Tue 19. Jan 14:00	Tue 19. Jan 18:58	4.967
Downtime due no responce from OBS203 — Trying different Locations around site 203 to try and connect with it.				
Transit	SB_TRT	Tue 19. Jan 18:58	Tue 19. Jan 19:36	0.633
Transit to OBS202				
Recovery	DM_RC	Tue 19. Jan 19:36	Tue 19. Jan 20:43	1.117
Recovery of OBS202 unsuccessful - No Comm's from unit.—Moving to OBS201				
Transit	SB_TRT	Tue 19. Jan 20:43	Tue 19. Jan 21:30	0.783
Transit to OBS 201				
Recovery	DM_RC	Tue 19. Jan 21:30	Tue 19. Jan 23:51	2.350
Recover OBS201				
Contractor Request	DT_CR	Tue 19. Jan 23:51	Tue 19. Jan 24:00	0.150
Transit back to OBS202				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

19-Jan	Hours	% Percent
Acquisition	**1.617**	**6.736**
Production Prime	1.617	6.736
Chargeable Standby	**5.450**	**22.708**
Transit	5.450	22.708
Demobilisation	**11.817**	**49.236**
Recovery	11.817	49.236
DownTime	**5.117**	**21.319**
Contractor Request	5.117	21.319
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**349.933**	**81.003**
At Anchor	8.767	2.029
Deployment	6.383	1.478
Mob Ashore	52.833	12.230
Transit to Prospect	281.950	65.266
Chargeable Standby	**32.733**	**7.577**
Cetacean	1.500	0.347
Transit	31.233	7.230
DownTime	**11.417**	**2.643**
Contractor Request	5.117	1.184
Nav Systems Onboard	0.083	0.019
Source	4.000	0.926
Vessel	2.217	0.513
Acquisition	**15.567**	**3.603**
Production Prime	15.567	3.603
Demobilisation	**22.350**	**5.174**
Recovery	22.350	5.174
Total	432.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Tue 19 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Tue 19 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Tue 19 Jan	Marcus G Langseth	3	13.50
Total Production:			**13.50**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	13.50	58.80	125.89	125.89
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	2.59	2.59	2.59
Combined	**13.50**	**61.39**	**128.47**	**128.47**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
3	OBS02R	177.8	1358	999	Prime	13.50	4.496	Complete	Complete
Total						**13.50**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

4%

Prime Lines Completed

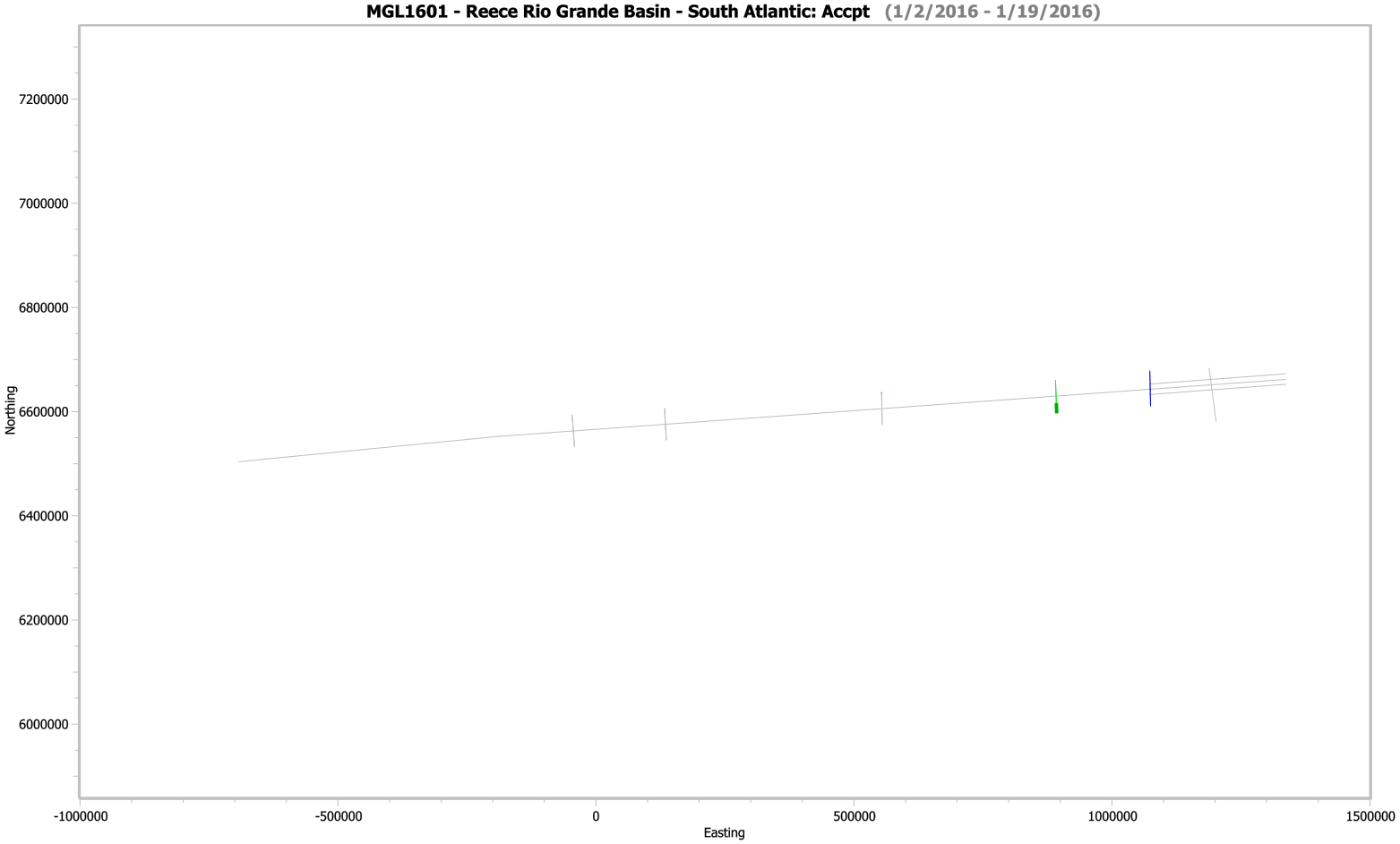
15%

Preplot Lines	Complete	Incomplete	Pending
20	3	0	0

Percentages Charged	
Prime	3.79% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	32.12 km
Average Charged Daily Prime and Infill Production	32.12 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/19/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Wed 20 Jan

The Vessel started the day transiting back to OBS202 to give it a second try. OBS202 was recovered at 02:14 UTC and the vessel Transited back to Site OBS203 to give that one, one last try. OBS203 was released and at 04:47 UTC all instruments where on-board and the vessel began transiting to the site that OBS deployment site (OBS301). At 18:45 UTC the vessel stopped to conducted some communication test with 3 OBS's at a depth of 1000m using the CTD winch. Testing was completed at 21:26 an the vessel resumed it transit to OBS301's Deployment Site.

During the Testing all three instruments had nominal communication via the Dunk (Portable) transducer. There was no comms via the in Hull (Knudsen) 12 kHz Transducer. Trouble shooting will continue tomorrow on the Knudsen transducer where by it will be reconnected to the Knudsen to check it status.

Daily Comment Summaries - Plan for Tomorrow

Wed 20 Jan

The Vessel will start the day transiting to OBS301's deployment site. OBS deployment operations are expected to commence at 01:36 UTC and continue until ~07:30 UTC, at which time the source will be deployed and production on Line MGL1601OBS03 will start at ~11:30 UTC. The Line is expected to be completed at ~19:00 UTC, at which time the source will be recovered and OBS recovery operations will begin.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Contractor Request	DT_CR	Wed 20. Jan 00:00	Wed 20. Jan 00:39	0.650
Transit back to OBS202				
Contractor Request	DT_CR	Wed 20. Jan 00:39	Wed 20. Jan 02:21	1.700
Recovered OBS202. Multiple burn commands were sent without confirmation from the unit. OBS202 surfaced at 02:14.				
Contractor Request	DT_CR	Wed 20. Jan 02:21	Wed 20. Jan 03:00	0.650
Transit back to OBS203				
Contractor Request	DT_CR	Wed 20. Jan 03:00	Wed 20. Jan 04:50	1.833
Recovered OBS203. Multiple burn commands were sent without confirmation from the unit. OBS203 surfaced at 04:36.				
Transit	SB_TRT	Wed 20. Jan 04:50	Wed 20. Jan 18:45	13.917
Transit to OBS301				
Contractor Request	DT_CR	Wed 20. Jan 18:45	Wed 20. Jan 21:16	2.517
Testing 3 OBS's at 1000m using CTD Winch				
Transit	SB_TRT	Wed 20. Jan 21:16	Wed 20. Jan 24:00	2.733
Resume transit to OBS301				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

20-Jan	Hours	% Percent
Chargeable Standby	**16.650**	**69.375**
Transit	16.650	69.375
DownTime	**7.350**	**30.625**
Contractor Request	7.350	30.625
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**349.933**	**76.740**
At Anchor	8.767	1.923
Deployment	6.383	1.400
Mob Ashore	52.833	11.586
Transit to Prospect	281.950	61.831
Chargeable Standby	**49.383**	**10.830**
Cetacean	1.500	0.329
Transit	47.883	10.501
DownTime	**18.767**	**4.115**
Contractor Request	12.467	2.734
Nav Systems Onboard	0.083	0.018
Source	4.000	0.877
Vessel	2.217	0.486
Acquisition	**15.567**	**3.414**
Production Prime	15.567	3.414
Demobilisation	**22.350**	**4.901**
Recovery	22.350	4.901
Total	456.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 20 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
Not able to communicate to OBS using the Knudsen Transducers.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Wed 20 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	58.80	125.89	125.89
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	2.59	2.59	2.59
Combined	**0.00**	**61.39**	**128.47**	**128.47**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

4%

Prime Lines Completed

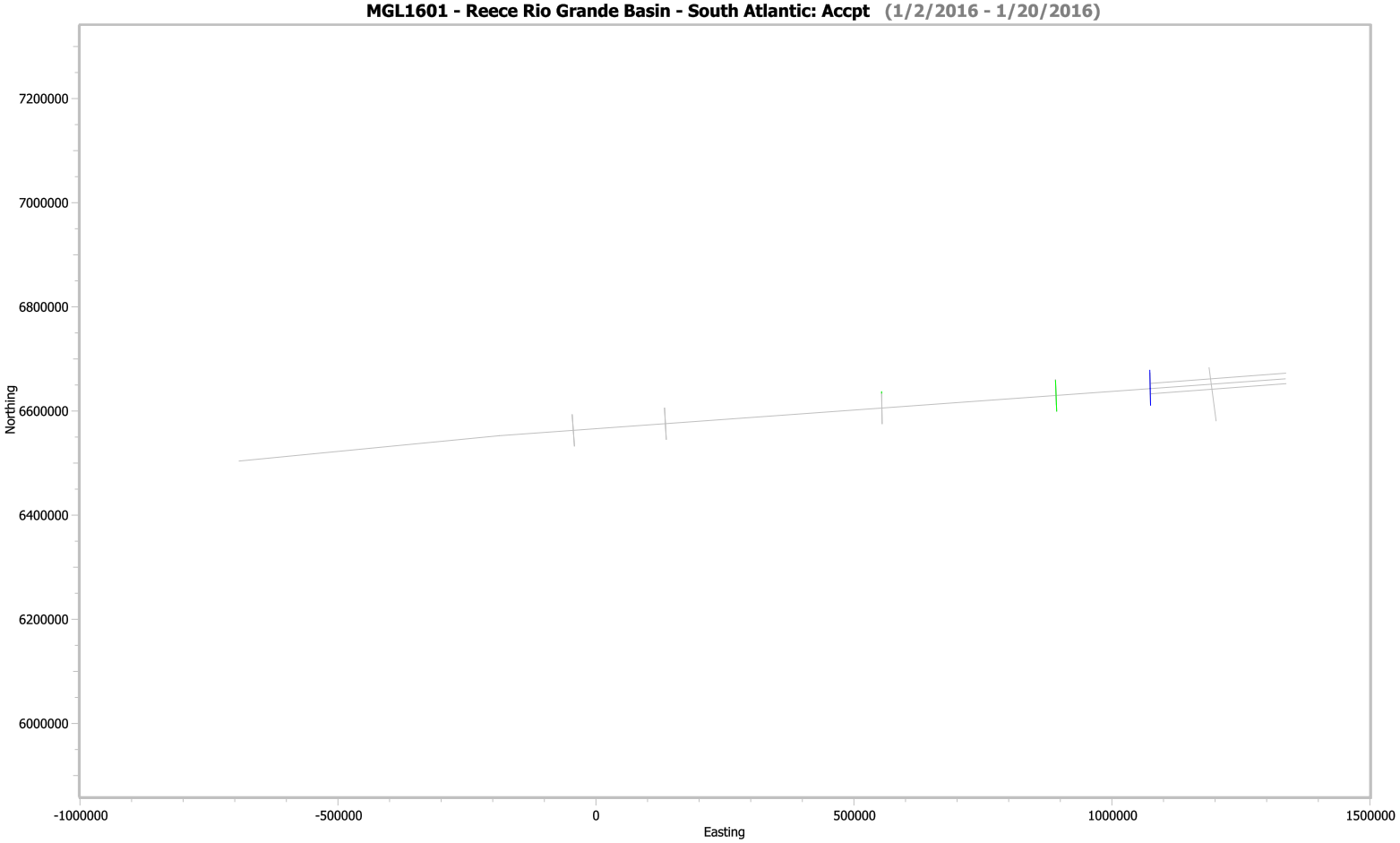
15%

Preplot Lines	Complete	Incomplete	Pending
20	3	0	0

Percentages Charged	
Prime	3.79% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	25.70 km
Average Charged Daily Prime and Infill Production	25.70 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/20/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 21 Jan

The vessel started the day transiting to OBS301's Deployment Site. OBS deployment operation commenced at 01:36 UTC and continued until 06:52 UTC. At that time PAM, Maggie, and the source were deployed and the source ramped up. Production on Line MGL1601OBS03 started at 09:18 UTC an was completed at 18:14 UTC. The Source, PAM, and Maggie where then recovered and OBS recovery Operations began with OBS301. This OBS was no responding and sometime was spent getting it to release, at 23:56 UTC OBS301 was recovered on-board and at the end of the day the vessel was transiting to OBS302's site.

Daily Comment Summaries - Plan for Tomorrow

Thu 21 Jan

The Vessel will start the day conducting OBS recovery operations. Once all OBS are safely on-board the vessel will begin transiting to OBS407's Deployment site on Line MGL1601OBS04. The Transit will continue throughout the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit	SB_TRT	Thu 21. Jan 00:00	Thu 21. Jan 01:36	1.600
Transit to OBS301				
Deployment	MB_DP	Thu 21. Jan 01:36	Thu 21. Jan 01:48	0.200
Deploy OBS301				
Transit	SB_TRT	Thu 21. Jan 01:48	Thu 21. Jan 02:27	0.650
Transit to OBS302				
Deployment	MB_DP	Thu 21. Jan 02:27	Thu 21. Jan 02:36	0.150
Deploy OBS302				
Transit	SB_TRT	Thu 21. Jan 02:36	Thu 21. Jan 03:10	0.567
Transit to OBS303				
Deployment	MB_DP	Thu 21. Jan 03:10	Thu 21. Jan 03:24	0.233
Deploy OBS303				
Transit	SB_TRT	Thu 21. Jan 03:24	Thu 21. Jan 03:59	0.583
Transit to OBS304				
Deployment	MB_DP	Thu 21. Jan 03:59	Thu 21. Jan 04:08	0.150
Deploy OBS304				
Transit	SB_TRT	Thu 21. Jan 04:08	Thu 21. Jan 04:45	0.617
Transit to OBS305				
Deployment	MB_DP	Thu 21. Jan 04:45	Thu 21. Jan 04:52	0.117
Deploy OBS305				
Transit	SB_TRT	Thu 21. Jan 04:52	Thu 21. Jan 05:40	0.800
Transit to OBS306				
Deployment	MB_DP	Thu 21. Jan 05:40	Thu 21. Jan 06:01	0.350
Deploy OBS306				
Transit	SB_TRT	Thu 21. Jan 06:01	Thu 21. Jan 06:40	0.650
Transit to OBS307				
Deployment	MB_DP	Thu 21. Jan 06:40	Thu 21. Jan 06:52	0.200
Deploy OBS307				
Deployment	MB_DP	Thu 21. Jan 06:52	Thu 21. Jan 08:40	1.800
Deployment of Source, PAM, and Maggie.				
Cetacean	SB_CT	Thu 21. Jan 08:40	Thu 21. Jan 09:10	0.500
Ramp up of Source				
Transit	SB_TRT	Thu 21. Jan 09:10	Thu 21. Jan 09:18	0.133
Transit to SOL of MGL1610OBS03				
Production Prime	AC_PP	Thu 21. Jan 09:18	Thu 21. Jan 18:14	8.933
SOL Seq 4 MGL1601OBS03 FGSP=629 FCSP=629 Hdg=359.1° Prime EOL Seq 4 MGL1601OBS03 LGSP=2602 LCSP=2602 Complete SOL Feather=0° SOL Water Depth=4327m EOL Feather=0° EOL Water Depth=4130m				
Recovery	DM_RC	Thu 21. Jan 18:14	Thu 21. Jan 19:15	1.017
Completed Line MGL1601OBS03 - Recovered Source, PAM, and Maggie				
Transit	SB_TRT	Thu 21. Jan 19:15	Thu 21. Jan 20:00	0.750

Category	Code	Start	End	Duration
Transit to OBS301				
Recovery	DM_RC	Thu 21. Jan 20:00	Thu 21. Jan 22:30	2.500
Recovery of OBS301				
Contractor Request	DT_CR	Thu 21. Jan 22:30	Thu 21. Jan 23:56	1.433
Downtime due no response from OBS301 — Trying different Locations around site 301 to try and connect with it. OBS recovered.				
Transit	SB_TRT	Thu 21. Jan 23:56	Thu 21. Jan 24:00	0.067
Transit to OBS302				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

21-Jan	Hours	% Percent
Acquisition	**8.933**	**37.222**
Production Prime	8.933	37.222
Chargeable Standby	**6.917**	**28.819**
Cetacean	0.500	2.083
Transit	6.417	26.736
Demobilisation	**3.517**	**14.653**
Recovery	3.517	14.653
DownTime	**1.433**	**5.972**
Contractor Request	1.433	5.972
Mobilisation	**3.200**	**13.333**
Deployment	3.200	13.333
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**353.133**	**73.569**
At Anchor	8.767	1.826
Deployment	9.583	1.997
Mob Ashore	52.833	11.007
Transit to Prospect	281.950	58.740
Chargeable Standby	**56.300**	**11.729**
Cetacean	2.000	0.417
Transit	54.300	11.312
DownTime	**20.200**	**4.208**
Contractor Request	13.900	2.896
Nav Systems Onboard	0.083	0.017
Source	4.000	0.833
Vessel	2.217	0.462
Acquisition	**24.500**	**5.104**
Production Prime	24.500	5.104
Demobilisation	**25.867**	**5.389**
Recovery	25.867	5.389
Total	480.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 21 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Thu 21 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Thu 21 Jan	Marcus G Langseth	4	74.02
Total Production:			**74.02**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	74.02	132.82	199.91	199.91
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	2.59	2.59	2.59
Combined	**74.02**	**135.41**	**202.50**	**202.50**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
4	OBS03	359.1	629	2602	Prime	74.02	4.472	Complete	Complete
Total						**74.02**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

6%

Prime Lines Completed

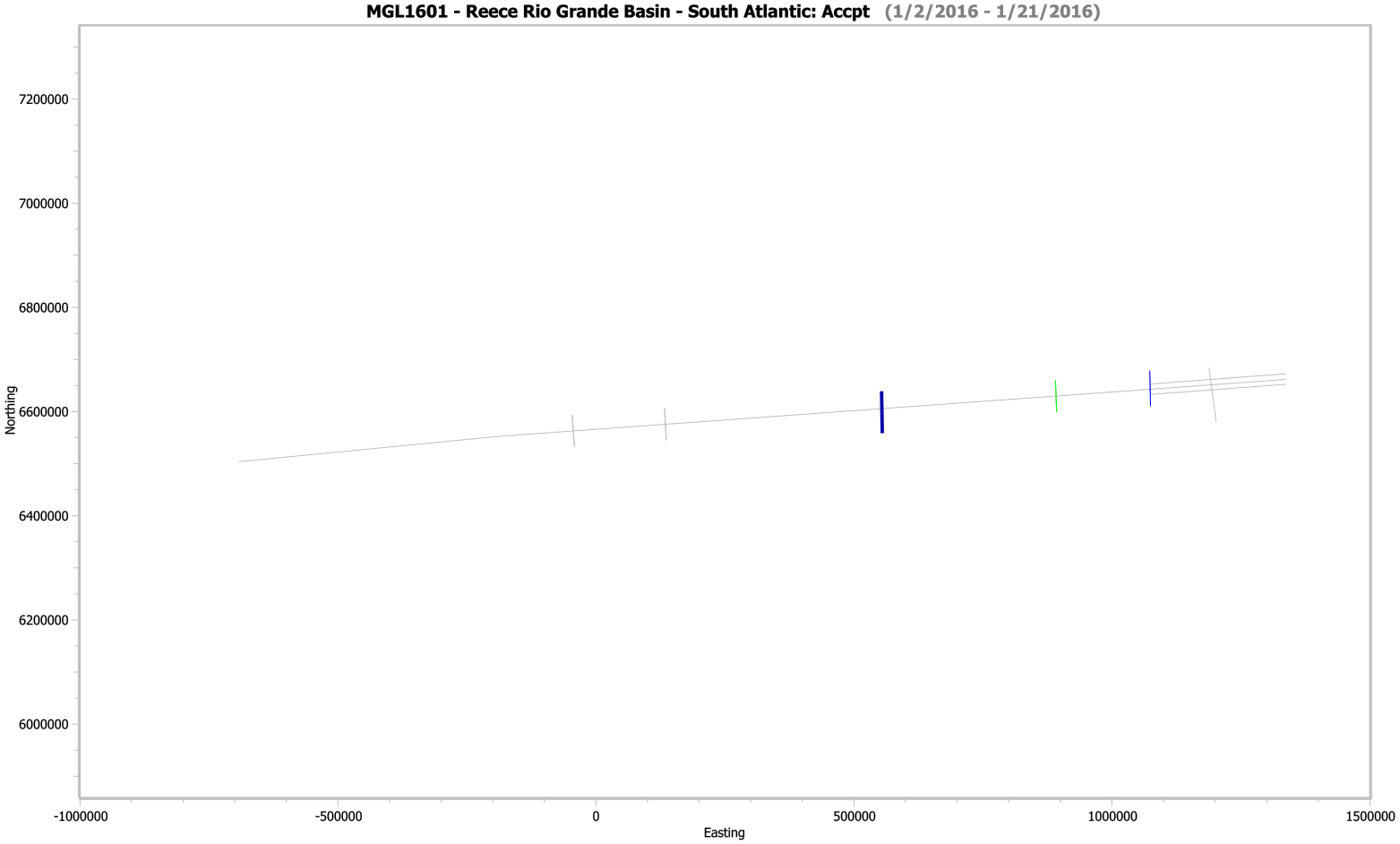
15%

Preplot Lines	Complete	Incomplete	Pending
20	3	0	0

Percentages Charged	
Prime	5.98% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	33.75 km
Average Charged Daily Prime and Infill Production	33.75 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/21/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Fri 22 Jan

The Vessel started the day conducting OBS recovery operations. At 14:53 UTC all OBS where onboard and the vessel started transiting to OBS407's Deployment site on Line MGL1601OBS04. The Transit continued throughout the day.

Daily Comment Summaries - Plan for Tomorrow

Fri 22 Jan

The Vessel will start the day transiting to OBS407's Deployment site on Line MGL1601OBS04 and is expected to arrive at ~13:27 UTC. OBS deployment operations are expect to be concluded at ~19:00 UTC, at which time the source will be deployed and it is hoped that a mitigation element can be brought on-line before darkness sets in.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit	SB_TRT	Fri 22. Jan 00:00	Fri 22. Jan 00:44	0.733
Transit to OBS302				
Recovery	DM_RC	Fri 22. Jan 00:44	Fri 22. Jan 03:02	2.300
Recover OBS302				
Transit	SB_TRT	Fri 22. Jan 03:02	Fri 22. Jan 03:40	0.633
Transit to OBS303				
Recovery	DM_RC	Fri 22. Jan 03:40	Fri 22. Jan 05:20	1.667
Recover OBS303				
Transit	SB_TRT	Fri 22. Jan 05:20	Fri 22. Jan 06:00	0.667
Transit to OBS304				
Recovery	DM_RC	Fri 22. Jan 06:00	Fri 22. Jan 07:36	1.600
Recover OBS304				
Transit	SB_TRT	Fri 22. Jan 07:36	Fri 22. Jan 08:15	0.650
Transit to OBS305				
Recovery	DM_RC	Fri 22. Jan 08:15	Fri 22. Jan 09:54	1.650
Recover OBS305				
Transit	SB_TRT	Fri 22. Jan 09:54	Fri 22. Jan 10:36	0.700
Transit to OBS306				
Recovery	DM_RC	Fri 22. Jan 10:36	Fri 22. Jan 12:24	1.800
Recovery of OBS306				
Transit	SB_TRT	Fri 22. Jan 12:24	Fri 22. Jan 13:09	0.750
Transit to OBS307				
Recovery	DM_RC	Fri 22. Jan 13:09	Fri 22. Jan 14:53	1.733
Recovery of OBS307				
Transit	SB_TRT	Fri 22. Jan 14:53	Fri 22. Jan 24:00	9.117
Transit to Deployment OBS407				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

22-Jan	Hours	% Percent
Chargeable Standby	**13.250**	**55.208**
Transit	13.250	55.208
Demobilisation	**10.750**	**44.792**
Recovery	10.750	44.792
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**353.133**	**70.066**
At Anchor	8.767	1.739
Deployment	9.583	1.901
Mob Ashore	52.833	10.483
Transit to Prospect	281.950	55.942
Chargeable Standby	**69.550**	**13.800**
Cetacean	2.000	0.397
Transit	67.550	13.403
DownTime	**20.200**	**4.008**
Contractor Request	13.900	2.758
Nav Systems Onboard	0.083	0.017

Category	Hours	% Percent
Source	4.000	0.794
Vessel	2.217	0.440
Acquisition	**24.500**	**4.861**
Production Prime	24.500	4.861
Demobilisation	**36.617**	**7.265**
Recovery	36.617	7.265
Total	504.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Fri 22 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
Knudsen 12 kHz transducer which was being used by the OBS group to communicate with their instruments on the sea floor at the being of this mission has indeed failed. After testing today, it is clear that it only receives an no longer transmits.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Fri 22 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	132.82	199.91	199.91
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	2.59	2.59	2.59
Combined	**0.00**	**135.41**	**202.50**	**202.50**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

6%

Prime Lines Completed

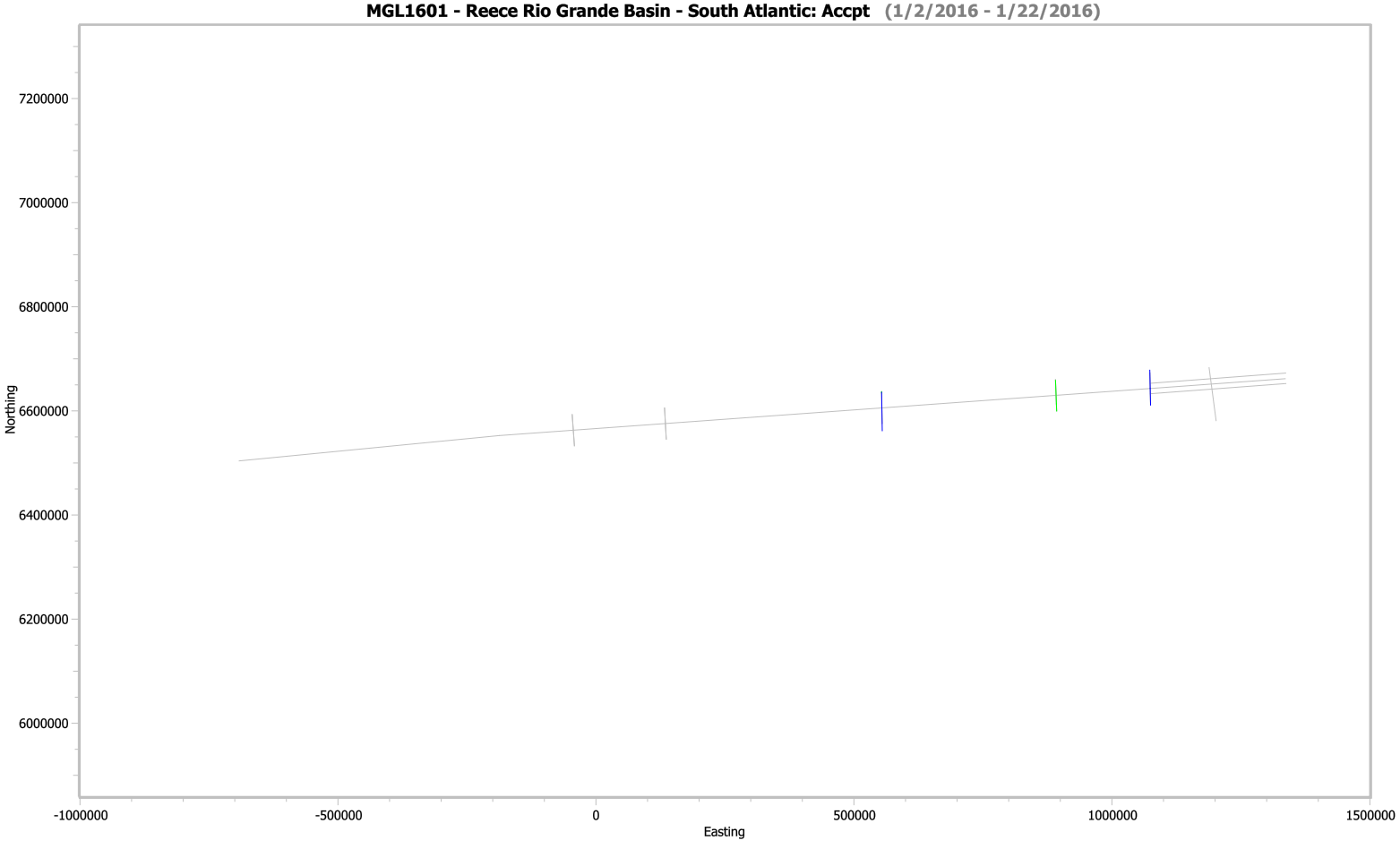
15%

Preplot Lines	Complete	Incomplete	Pending
20	3	0	0

Percentages Charged	
Prime	5.98% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	28.93 km
Average Charged Daily Prime and Infill Production	28.93 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/22/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sat 23 Jan

The Vessel started transiting to OBS407's Deployment site on Line MGL1601OBS04. At 12:41 UTC arrived on site and began OBS deployment operations. At 16:57 UTC all OBS where deployed, the source. PAM, and Maggie where deployed and at 19:19 UTC the vessel began production on line MGL1601OBS04, which continued throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Sat 23 Jan

The Vessel will begin continuing production on MGL1601OBS04. This line is expected to be completed at ~04:20 UTC. At that time the Source, PAM, and Maggie will be recovered. Shortly after that OBS Recovery Operations will begin. Once all OBS are on-board the vessel will start transiting to OBS deployment site 501, on Line MGL1601OBS05.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit	SB_TRT	Sat 23. Jan 00:00	Sat 23. Jan 12:41	12.683
Transit to OBS407				
Deployment	MB_DP	Sat 23. Jan 12:41	Sat 23. Jan 12:51	0.167
Deploy OBS407				
Transit	SB_TRT	Sat 23. Jan 12:51	Sat 23. Jan 13:23	0.533
Transit to OBS406				
Deployment	MB_DP	Sat 23. Jan 13:23	Sat 23. Jan 13:33	0.167
Deploy OBS406				
Transit	SB_TRT	Sat 23. Jan 13:33	Sat 23. Jan 14:11	0.633
Transit to OBS405				
Deployment	MB_DP	Sat 23. Jan 14:11	Sat 23. Jan 14:15	0.067
Deploy OBS405				
Transit	SB_TRT	Sat 23. Jan 14:15	Sat 23. Jan 14:50	0.583
Transit to OBS404				
Deployment	MB_DP	Sat 23. Jan 14:50	Sat 23. Jan 14:56	0.100
Deploy OBS404				
Transit	SB_TRT	Sat 23. Jan 14:56	Sat 23. Jan 15:29	0.550
Transit to OBS403				
Deployment	MB_DP	Sat 23. Jan 15:29	Sat 23. Jan 15:34	0.083
Deploy OBS403				
Transit	SB_TRT	Sat 23. Jan 15:34	Sat 23. Jan 16:10	0.600
Transit to OBS402				
Deployment	MB_DP	Sat 23. Jan 16:10	Sat 23. Jan 16:14	0.067
Deploy OBS402				
Transit	SB_TRT	Sat 23. Jan 16:14	Sat 23. Jan 16:49	0.583
Transit to OBS401				
Deployment	MB_DP	Sat 23. Jan 16:49	Sat 23. Jan 16:57	0.133
Deploy OBS401				
Deployment	MB_DP	Sat 23. Jan 16:57	Sat 23. Jan 18:46	1.817
Deployment of Source, PAM, and Maggie.				
Cetacean	SB_CT	Sat 23. Jan 18:46	Sat 23. Jan 19:16	0.500
Ramp up of Source				
Transit	SB_TRT	Sat 23. Jan 19:16	Sat 23. Jan 19:19	0.050
Transit to SOL of MGL1610OBS04				
Production Prime	AC_PP	Sat 23. Jan 19:19	Sat 23. Jan 24:00	4.683
SOL Seq 5 MGL1601OBS04 FGSP=2974 FCSP=2974 Hdg=176.8° Prime MSP Seq 5 MGL1601OBS04 LGSP=1950 LCSP=1950 Midnight SOL Feather=0°				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

23-Jan	Hours	% Percent
Acquisition	**4.683**	**19.514**
Production Prime	4.683	19.514
Chargeable Standby	**16.717**	**69.653**
Cetacean	0.500	2.083
Transit	16.217	67.569
Mobilisation	**2.600**	**10.833**

23-Jan	Hours	% Percent
Deployment	2.600	10.833
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**355.733**	**67.374**
At Anchor	8.767	1.660
Deployment	12.183	2.307
Mob Ashore	52.833	10.006
Transit to Prospect	281.950	53.400
Chargeable Standby	**86.267**	**16.338**
Cetacean	2.500	0.473
Transit	83.767	15.865
DownTime	**20.200**	**3.826**
Contractor Request	13.900	2.633
Nav Systems Onboard	0.083	0.016
Source	4.000	0.758
Vessel	2.217	0.420
Acquisition	**29.183**	**5.527**
Production Prime	29.183	5.527
Demobilisation	**36.617**	**6.935**
Recovery	36.617	6.935
Total	528.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 23 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
Knudsen 12 kHz transducer which was being used by the OBS group to communicate with their instruments on the sea floor at the being of this mission has failed. It will receive but not transmit.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sat 23 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
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Malizia, Heidi Kristine - PSO

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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sat 23 Jan	Marcus G Langseth	5	38.44
Total Production:			**38.44**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	38.44	171.26	238.35	238.35
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	2.59	2.59	2.59
Combined	**38.44**	**173.85**	**240.94**	**240.94**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
5	OBS04	176.8	2974	1950	Prime	38.44	4.427	Part	Mdnight
Total						**38.44**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

7%

Prime Lines Completed

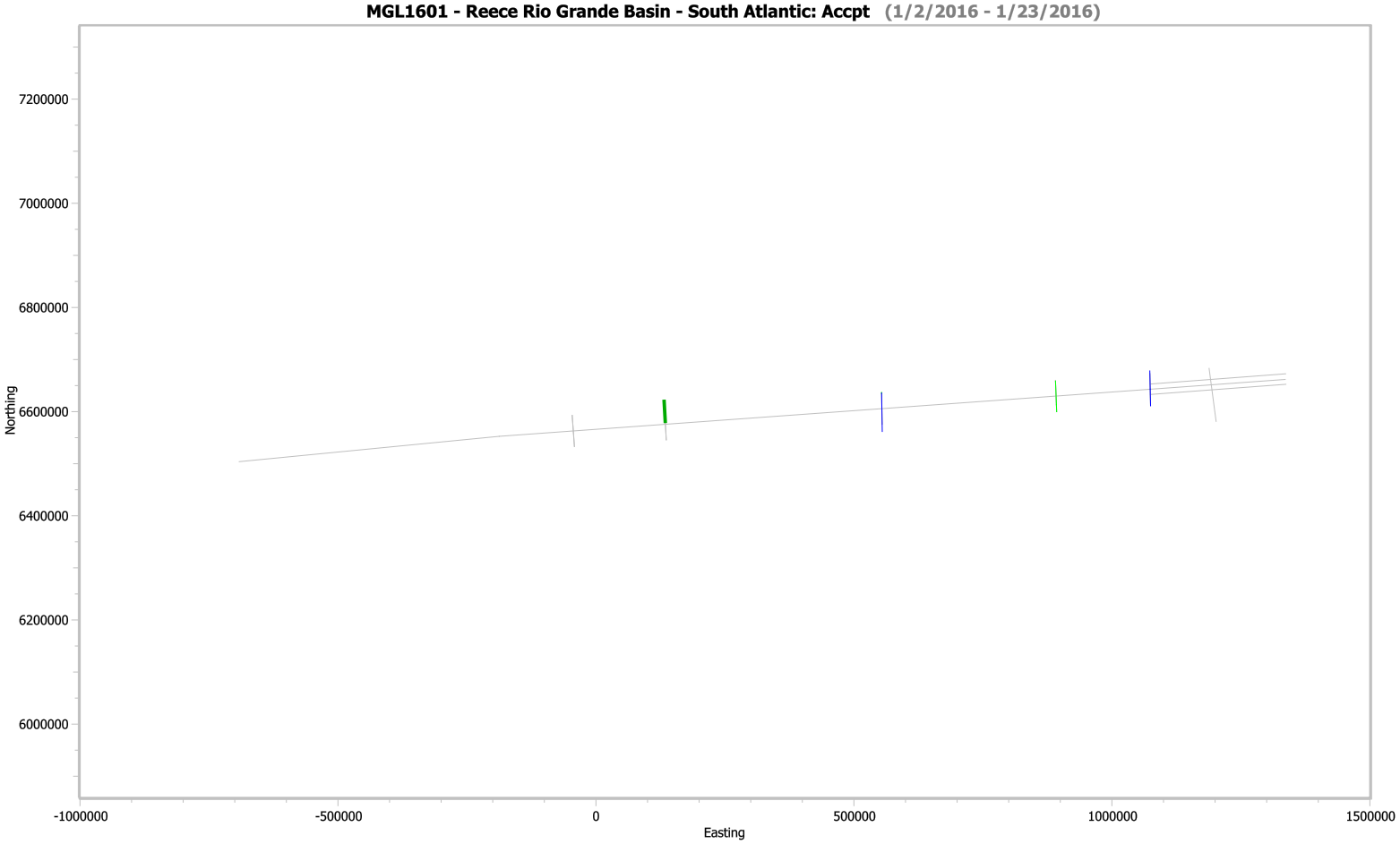
15%

Preplot Lines	Complete	Incomplete	Pending
20	3	1	0

Percentages Charged	
Prime	7.11% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	30.12 km
Average Charged Daily Prime and Infill Production	30.12 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/23/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sun 24 Jan

The Vessel began continuing production on MGL1601OBS04. The Line was completed at 04:20 UTC, at which time the Source, PAM, and Maggie were recovered. OBS Recovery Operations began at 05:51 UTC and continued until ??:?? UTC. At that time the vessel began transiting to OBS Site 501. The vessel continued in this mode throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Sun 24 Jan

The Vessel will start the day transiting to OBS Deployment Site 501. Once on site OBS deployment operations will began and as soon as the last OBS is deployed the source, PAM, and Maggie will also be deployed before starting production on Line MGL1601OBS05. Once this line is concluded all towed equipment will be recovered and the vessel will begin OBS recovery Operations.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Sun 24. Jan 00:00	Sun 24. Jan 04:20	4.333
SOL Seq 5 MGL1601OBS04 FGSP=1949 FCSP=1949 Hdg=176.8° Prime EOL Seq 5 MGL1601OBS04 LGSP=994 LCSP=994 Complete				
Recovery	DM_RC	Sun 24. Jan 04:20	Sun 24. Jan 05:22	1.033
Recovering Source, PAM, and Maggie				
Transit	SB_TRT	Sun 24. Jan 05:22	Sun 24. Jan 05:51	0.483
Transit to OBS407				
Recovery	DM_RC	Sun 24. Jan 05:51	Sun 24. Jan 07:40	1.817
Recovery of OBS407				
Transit	SB_TRT	Sun 24. Jan 07:40	Sun 24. Jan 08:18	0.633
Transit to OBS406				
Recovery	DM_RC	Sun 24. Jan 08:18	Sun 24. Jan 10:05	1.783
Recovery of OBS406				
Transit	SB_TRT	Sun 24. Jan 10:05	Sun 24. Jan 10:42	0.617
Transit to OBS405				
Recovery	DM_RC	Sun 24. Jan 10:42	Sun 24. Jan 12:22	1.667
Recovery of OBS405				
Transit	SB_TRT	Sun 24. Jan 12:22	Sun 24. Jan 12:58	0.600
Transit to OBS404				
Recovery	DM_RC	Sun 24. Jan 12:58	Sun 24. Jan 14:36	1.633
Recovery of OBS404				
Transit	SB_TRT	Sun 24. Jan 14:36	Sun 24. Jan 15:12	0.600
Transit to OBS403				
Recovery	DM_RC	Sun 24. Jan 15:12	Sun 24. Jan 16:45	1.550
Recovery of OBS403				
Transit	SB_TRT	Sun 24. Jan 16:45	Sun 24. Jan 17:20	0.583
Transit to OBS402				
Recovery	DM_RC	Sun 24. Jan 17:20	Sun 24. Jan 18:56	1.600
Recovery of OBS402				
Transit	SB_TRT	Sun 24. Jan 18:56	Sun 24. Jan 19:35	0.650
Transit to OBS401				
Recovery	DM_RC	Sun 24. Jan 19:35	Sun 24. Jan 21:45	2.167
Recovery of OBS401				
Transit	SB_TRT	Sun 24. Jan 21:45	Sun 24. Jan 24:00	2.250
Transit to OBS501				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

24-Jan	Hours	% Percent
Acquisition	**4.333**	**18.056**
Production Prime	4.333	18.056
Chargeable Standby	**6.417**	**26.736**
Transit	6.417	26.736
Demobilisation	**13.250**	**55.208**
Recovery	13.250	55.208
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**355.733**	**64.444**
At Anchor	8.767	1.588
Deployment	12.183	2.207
Mob Ashore	52.833	9.571
Transit to Prospect	281.950	51.078
Chargeable Standby	**92.683**	**16.790**
Cetacean	2.500	0.453
Transit	90.183	16.338
DownTime	**20.200**	**3.659**
Contractor Request	13.900	2.518
Nav Systems Onboard	0.083	0.015
Source	4.000	0.725
Vessel	2.217	0.402
Acquisition	**33.517**	**6.072**
Production Prime	33.517	6.072
Demobilisation	**49.867**	**9.034**
Recovery	49.867	9.034
Total	552.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 24 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
Knudsen 12 kHz transducer which was being used by the OBS group to communicate with their instruments on the sea floor at the being of this mission has failed. It will receive but not transmit.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sun 24 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

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Dubuque, Amanda Ella - Lead PSO
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Frey, Cassandra Ashley - PSO
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Malizia, Heidi Kristine - PSO

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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sun 24 Jan	Marcus G Langseth	5	35.85
Total Production:			**35.85**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	35.85	207.11	274.20	274.20
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	2.59	2.59	2.59
Combined	**35.85**	**209.70**	**276.79**	**276.79**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
5	OBS04	176.8	1949	994	Prime	35.85	4.462	Complete	Complete
Total						**35.85**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

8%

Prime Lines Completed

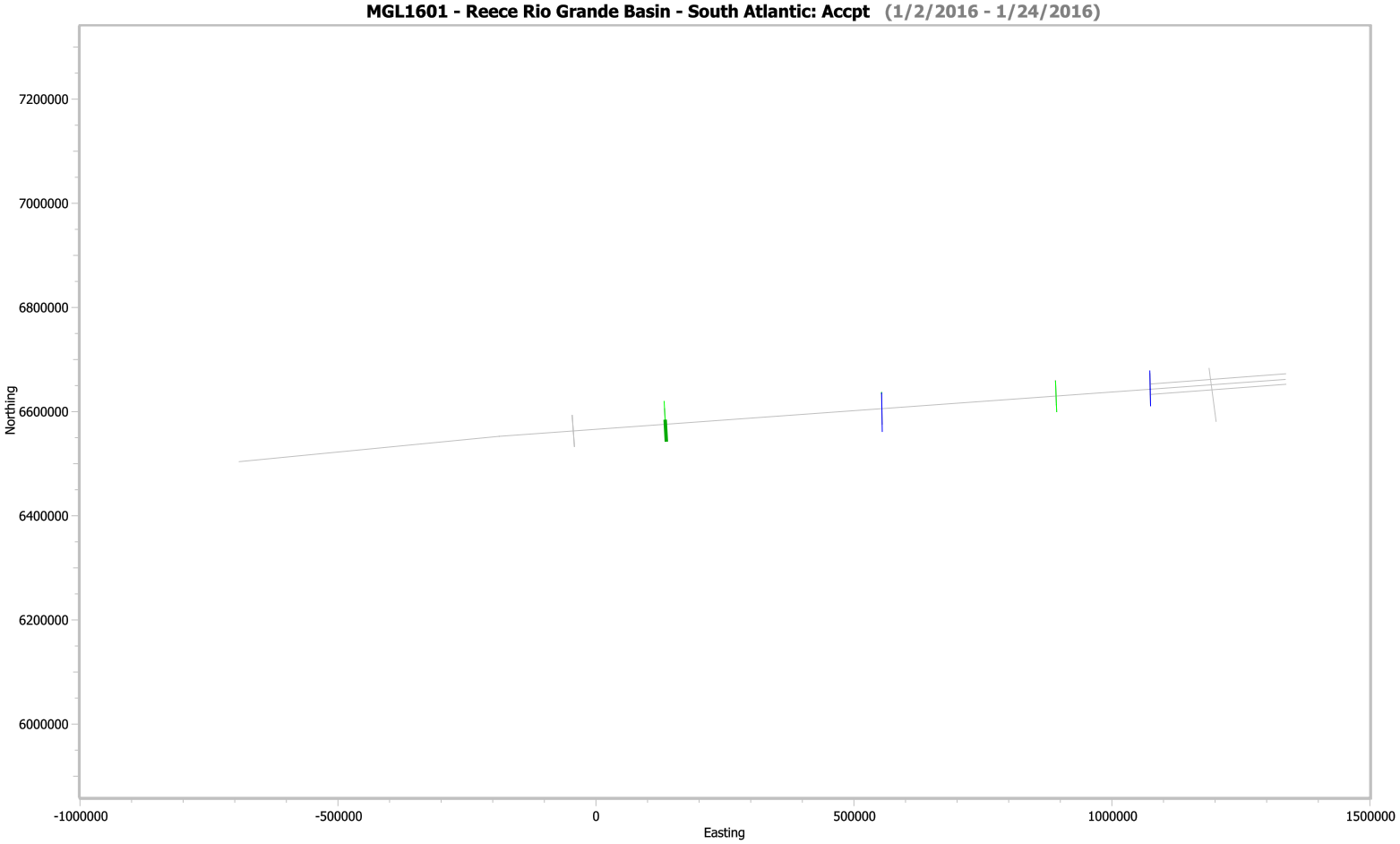
20%

Preplot Lines	Complete	Incomplete	Pending
20	4	0	0

Percentages Charged	
Prime	8.17% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	30.75 km
Average Charged Daily Prime and Infill Production	30.75 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/24/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Mon 25 Jan

The Vessel started the day transiting to OBS Deployment Site 501 and at 07:08 UTC OBS deployment operations began. At 12:03 UTC all OBS where deployed an the Source, PAM, and Maggie will also be deployed. Production on Line MGL1601OBS05 began at 14:41 UTC and continued until 23:30 UTC. At which time the Source, PAM, and Maggie where recovered so as to begin OBS recovery Operations.

Daily Comment Summaries - Plan for Tomorrow

Mon 25 Jan

The Vessel will begin the day finish up the recovery of PAM, Maggie, and Source. OBS recovery operations are expected to begin at 01:20 UTC and continue through ~14:00 UTC. After OBS operations are completed the vessel will begin transiting (Full Speed) towards the starting point of Line MGL1601MCS1A. After transiting for about 3 hours the vessel will be slowed to ~4 kts, so as to begin streamer deployment on the run-in to the line. Streamer Deployment operation is expected to continue throughout the remainder of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit	SB_TRT	Mon 25. Jan 00:00	Mon 25. Jan 07:07	7.117
Transit to OBS501				
Deployment	MB_DP	Mon 25. Jan 07:07	Mon 25. Jan 07:23	0.267
Deploy OBS501				
Transit	SB_TRT	Mon 25. Jan 07:23	Mon 25. Jan 07:59	0.600
Transit to OBS502				
Deployment	MB_DP	Mon 25. Jan 07:59	Mon 25. Jan 08:07	0.133
Deploy OBS502				
Transit	SB_TRT	Mon 25. Jan 08:07	Mon 25. Jan 08:47	0.667
Transit to OBS503				
Deployment	MB_DP	Mon 25. Jan 08:47	Mon 25. Jan 08:54	0.117
Deploy OBS503				
Transit	SB_TRT	Mon 25. Jan 08:54	Mon 25. Jan 09:34	0.667
Transit to OBS504				
Deployment	MB_DP	Mon 25. Jan 09:34	Mon 25. Jan 09:42	0.133
Deploy OBS504				
Transit	SB_TRT	Mon 25. Jan 09:42	Mon 25. Jan 10:23	0.683
Transit to OBS505				
Deployment	MB_DP	Mon 25. Jan 10:23	Mon 25. Jan 10:32	0.150
Deploy OBS505				
Transit	SB_TRT	Mon 25. Jan 10:32	Mon 25. Jan 11:11	0.650
Transit to OBS506				
Deployment	MB_DP	Mon 25. Jan 11:11	Mon 25. Jan 11:20	0.150
Deploying OBS506				
Transit	SB_TRT	Mon 25. Jan 11:20	Mon 25. Jan 11:57	0.617
Transit to OBS507				
Deployment	MB_DP	Mon 25. Jan 11:57	Mon 25. Jan 12:03	0.100
Deploying OBS507				
Deployment	MB_DP	Mon 25. Jan 12:03	Mon 25. Jan 13:01	0.967
Deploying Source, PAM and Maggie.				
Transit	SB_TRT	Mon 25. Jan 13:01	Mon 25. Jan 14:41	1.667
Transiting back to start Line MGL1601OBS05				
Production Prime	AC_PP	Mon 25. Jan 14:41	Mon 25. Jan 23:30	8.817
SOL Seq 6 MGL1601OBS05 FGSP=657 FCSP=657 Hdg=355.8° Prime EOL Seq 6 MGL1601OBS05 LGSP=2597 LCSP=2597 Complete SOL Feather=0° SOL Water Depth=4573m EOL Feather=0° EOL Water Depth=4999m				
Recovery	DM_RC	Mon 25. Jan 23:30	Mon 25. Jan 24:00	0.500
Recovering Source, PAM, and Maggie				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

25-Jan	Hours	% Percent
Acquisition	**8.817**	**36.736**
Production Prime	8.817	36.736

25-Jan	Hours	% Percent
Chargeable Standby	**12.667**	**52.778**
Transit	12.667	52.778
Demobilisation	**0.500**	**2.083**
Recovery	0.500	2.083
Mobilisation	**2.017**	**8.403**
Deployment	2.017	8.403
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**357.750**	**62.109**
At Anchor	8.767	1.522
Deployment	14.200	2.465
Mob Ashore	52.833	9.172
Transit to Prospect	281.950	48.950
Chargeable Standby	**105.350**	**18.290**
Cetacean	2.500	0.434
Transit	102.850	17.856
DownTime	**20.200**	**3.507**
Contractor Request	13.900	2.413
Nav Systems Onboard	0.083	0.014
Source	4.000	0.694
Vessel	2.217	0.385
Acquisition	**42.333**	**7.350**
Production Prime	42.333	7.350
Demobilisation	**50.367**	**8.744**
Recovery	50.367	8.744
Total	576.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Mon 25 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
Knudsen 12 kHz transducer which was being used by the OBS group to communicate with their instruments on the sea floor at the being of this mission has failed. It will receive but not transmit.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Mon 25 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Mon 25 Jan	Marcus G Langseth	6	72.79
Total Production:			**72.79**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	72.79	72.79	346.99	346.99
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	2.59	2.59
Combined	**72.79**	**72.79**	**349.57**	**349.57**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
6	OBS05	355.8	657	2597	Prime	72.79	4.455	Complete	Complete
Total						**72.79**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

10%

Prime Lines Completed

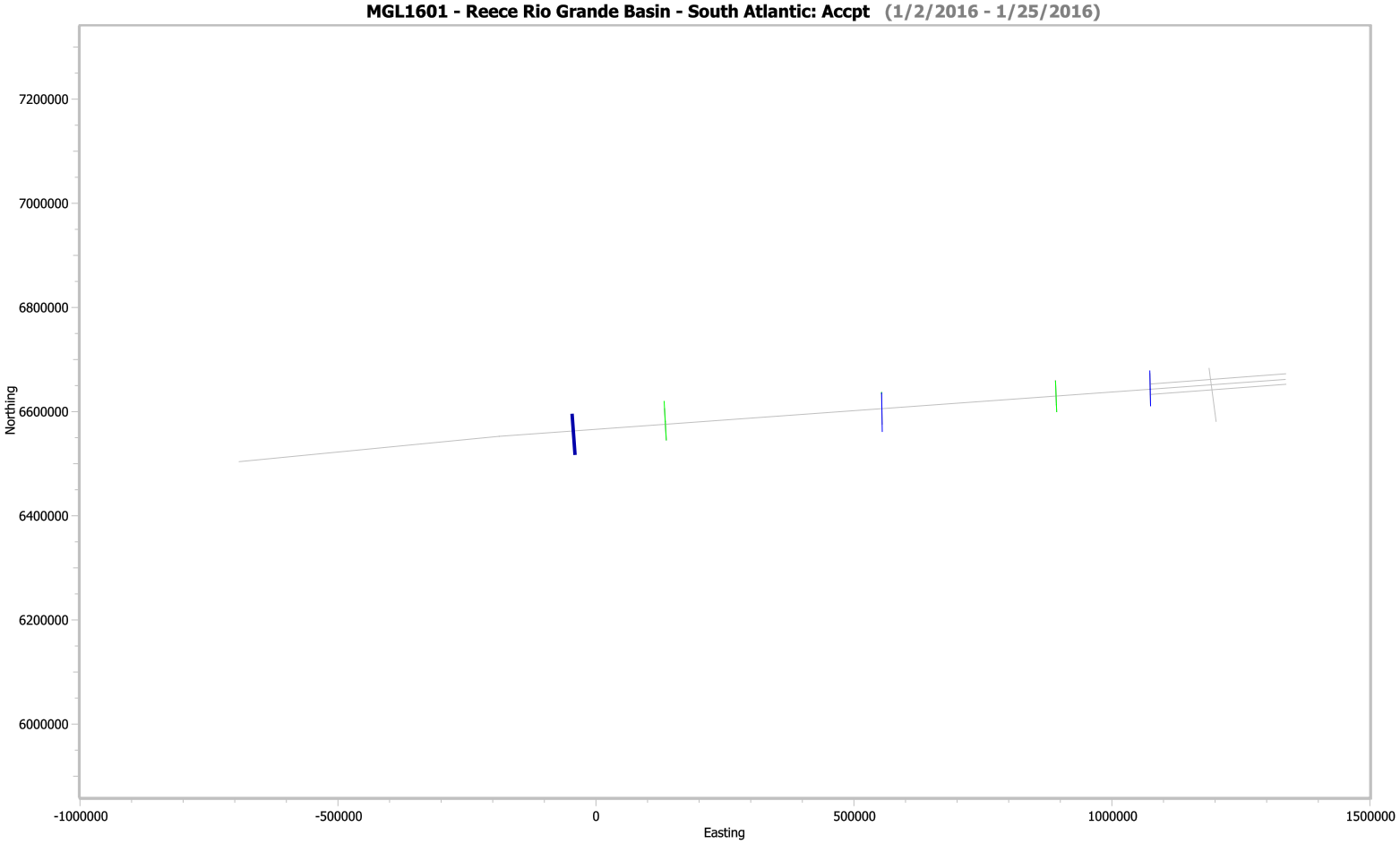
25%

Preplot Lines	Complete	Incomplete	Pending
20	5	0	0

Percentages Charged	
Prime	10.32% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	34.96 km
Average Charged Daily Prime and Infill Production	34.96 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/25/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
Columbia University | Earth Institute

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Tue 26 Jan

The Vessel will begin the day finish up the recovery of PAM, Maggie, and Source. OBS recovery operations are expected to begin at 01:20 UTC and continue through 17:47 UTC. After OBS operations are completed the vessel will begin transiting (Full Speed) towards the starting point of Line MGL1601MCS1A. After transiting for about 3 hours (21:00 UTC) the vessel slowed to ~4 kts, so as to begin streamer deployment on the run-in to the line. Streamer Deployment operation is expected to continue throughout the remainder of the day.

Daily Comment Summaries - Plan for Tomorrow

Tue 26 Jan

The Vessel will start the day continuing with Streamer deployment. Once complete the Source, PAM, and Maggie will be deployed an the vessel will start production on Line MGL1601MCS1A.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Recovery	DM_RC	Tue 26. Jan 00:00	Tue 26. Jan 00:36	0.600
Recovering Source, PAM, and Maggie				
Transit	SB_TRT	Tue 26. Jan 00:36	Tue 26. Jan 01:20	0.733
Transit to OBS501				
Recovery	DM_RC	Tue 26. Jan 01:20	Tue 26. Jan 03:01	1.683
Recover OBS501				
Transit	SB_TRT	Tue 26. Jan 03:01	Tue 26. Jan 03:42	0.683
Transit to OBS502				
Recovery	DM_RC	Tue 26. Jan 03:42	Tue 26. Jan 05:29	1.783
Recover OBS502				
Transit	SB_TRT	Tue 26. Jan 05:29	Tue 26. Jan 06:15	0.767
Transit to OBS503				
Recovery	DM_RC	Tue 26. Jan 06:15	Tue 26. Jan 08:03	1.800
Recovery of OBS503				
Transit	SB_TRT	Tue 26. Jan 08:03	Tue 26. Jan 08:44	0.683
Transit to OBS504				
Recovery	DM_RC	Tue 26. Jan 08:44	Tue 26. Jan 10:38	1.900
Recovery of OBS504				
Transit	SB_TRT	Tue 26. Jan 10:38	Tue 26. Jan 11:16	0.633
Transit to OBS505				
Recovery	DM_RC	Tue 26. Jan 11:16	Tue 26. Jan 12:46	1.500
Recovery of OBS505				
Transit	SB_TRT	Tue 26. Jan 12:46	Tue 26. Jan 13:49	1.050
Transit to OBS506				
Recovery	DM_RC	Tue 26. Jan 13:49	Tue 26. Jan 15:08	1.317
Recovery of OBS506.				
Transit	SB_TRT	Tue 26. Jan 15:08	Tue 26. Jan 15:48	0.667
Transit to OBS507				
Recovery	DM_RC	Tue 26. Jan 15:48	Tue 26. Jan 17:47	1.983
Recovery of OBS507				
Transit	SB_TRT	Tue 26. Jan 17:47	Tue 26. Jan 21:00	3.217
Transit to Streamer Deployment location				
Deployment	MB_DP	Tue 26. Jan 21:00	Tue 26. Jan 24:00	3.000
Deployment of Streamer				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

26-Jan	Hours	% Percent
Chargeable Standby	**8.433**	**35.139**
Transit	8.433	35.139
Demobilisation	**12.567**	**52.361**
Recovery	12.567	52.361
Mobilisation	**3.000**	**12.500**
Deployment	3.000	12.500
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**360.750**	**60.125**
At Anchor	8.767	1.461
Deployment	17.200	2.867
Mob Ashore	52.833	8.806
Transit to Prospect	281.950	46.992
Chargeable Standby	**113.783**	**18.964**
Cetacean	2.500	0.417
Transit	111.283	18.547
DownTime	**20.200**	**3.367**
Contractor Request	13.900	2.317
Nav Systems Onboard	0.083	0.014
Source	4.000	0.667
Vessel	2.217	0.369
Acquisition	**42.333**	**7.056**
Production Prime	42.333	7.056
Demobilisation	**62.933**	**10.489**
Recovery	62.933	10.489
Total	600.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Tue 26 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
Knudsen 12 kHz transducer which was being used by the OBS group to communicate with their instruments on the sea floor at the being of this mission has failed. It will receive but not transmit.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Tue 26 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
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Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	72.79	346.99	346.99
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	2.59	2.59
Combined	**0.00**	**72.79**	**349.57**	**349.57**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

10%

Prime Lines Completed

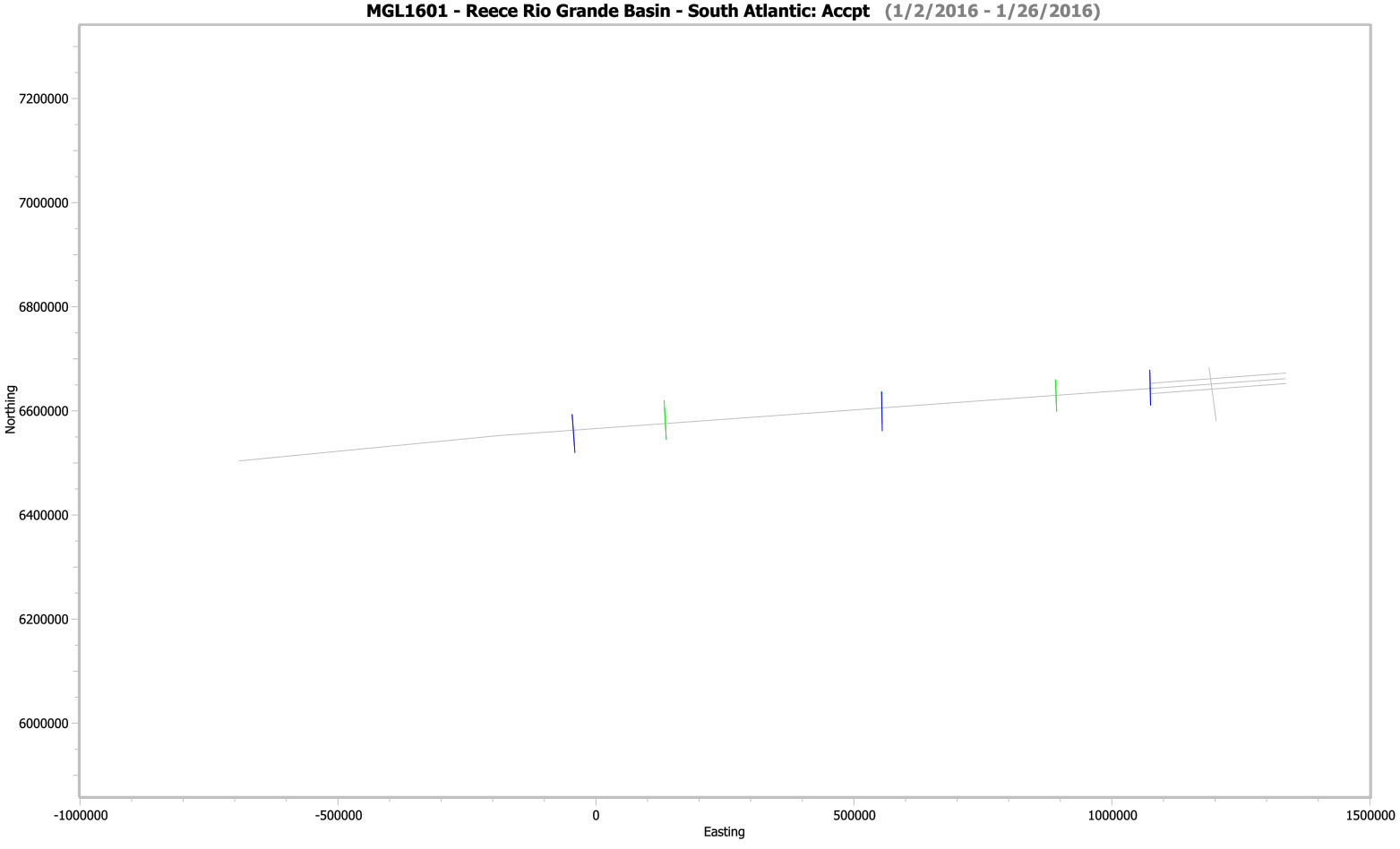
25%

Preplot Lines	Complete	Incomplete	Pending
20	5	0	0

Percentages Charged	
Prime	10.32% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	31.78 km
Average Charged Daily Prime and Infill Production	31.78 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/26/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Wed 27 Jan

The Vessel started the day continuing Streamer 1 deployment and at 12:10 UTC streamer 1 was deployed. The Source, PAM, and Maggie where deployed and at 14:32 the Source was ramped up, followed by A short approach to Line MGL1601MCS1A. The line was started at 15:25 however shortly after the start of the line Streamer 1 developed power line leakage issues. After some trouble shooting the line was abborted at 17:33 and recovery of source commenced. At 18:40 the source was on-board and the streamer recovery began to start trouble shooting. Trouble shooting of Power line Leak issue on streamer #1 continued throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Wed 27 Jan

The Vessel will continue trouble shooting streamer. Once Streamer is repaired the vessel once again attempt Line MGL1601MCS1A

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Deployment	MB_DP	Wed 27. Jan 00:00	Wed 27. Jan 04:30	4.500
Deploying Streamer #1				
Equipment Handling	DT_EH	Wed 27. Jan 04:30	Wed 27. Jan 09:15	4.750
Downtime due to equipment handling- Level winder streamer Reel #1 Failure. Lead Screw Carriage Threads failed.				
Deployment	MB_DP	Wed 27. Jan 09:15	Wed 27. Jan 12:10	2.917
Deploying Streamer #1				
Deployment	MB_DP	Wed 27. Jan 12:10	Wed 27. Jan 14:01	1.850
Deploying PAM, Maggie, and Source				
Cetacean	SB_CT	Wed 27. Jan 14:01	Wed 27. Jan 14:33	0.533
Ramping up Source				
Transit	SB_TRT	Wed 27. Jan 14:33	Wed 27. Jan 15:25	0.867
Transit to Line MGL1601MCS1A				
Streamers	DT_ST	Wed 27. Jan 15:25	Wed 27. Jan 17:37	2.200
NTBP Seq 7 SATL0b FSP=1001 LSP=5773				
Streamers	DT_ST	Wed 27. Jan 17:37	Wed 27. Jan 18:40	1.050
Downtime due to streamers - Recovering Source, PAM, Maggie				
Streamers	DT_ST	Wed 27. Jan 18:40	Wed 27. Jan 24:00	5.333
Downtime due to streamers - Power line Leak issues on Streamer 1.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

27-Jan	Hours	% Percent
Chargeable Standby	**1.400**	**5.833**
Cetacean	0.533	2.222
Transit	0.867	3.611
DownTime	**13.333**	**55.556**
Equipment Handling	4.750	19.792
Streamers	8.583	35.764
Mobilisation	**9.267**	**38.611**
Deployment	9.267	38.611
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**59.298**
At Anchor	8.767	1.405
Deployment	26.467	4.241
Mob Ashore	52.833	8.467
Transit to Prospect	281.950	45.184
Chargeable Standby	**115.183**	**18.459**
Cetacean	3.033	0.486
Transit	112.150	17.973
DownTime	**33.533**	**5.374**
Contractor Request	13.900	2.228
Equipment Handling	4.750	0.761
Nav Systems Onboard	0.083	0.013
Source	4.000	0.641
Streamers	8.583	1.376
Vessel	2.217	0.355

Category	Hours	% Percent
Acquisition	**42.333**	**6.784**
Production Prime	42.333	6.784
Demobilisation	**62.933**	**10.085**
Recovery	62.933	10.085
Total	624.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 27 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
Streamer #1 developed Power line Leakage issues.

Towing and Handling (Source):
Lead Screw Guide on Str 1's Level Winder failed. Guide was replaced with a spare..

General Purpose Science:
Knudsen 12 kHz transducer which was being used by the OBS group to communicate with their instruments on the sea floor at the being of this mission has failed. It will receive but not transmit.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Wed 27 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	72.79	346.99	346.99
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	2.59	2.59
Combined	**0.00**	**72.79**	**349.57**	**349.57**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
7	SATL0b	265.9	N/A	N/A	Prime	0.00	N/A	NTBP	NTBP
NTBP: 1001 - 5773									
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

10%

Prime Lines Completed

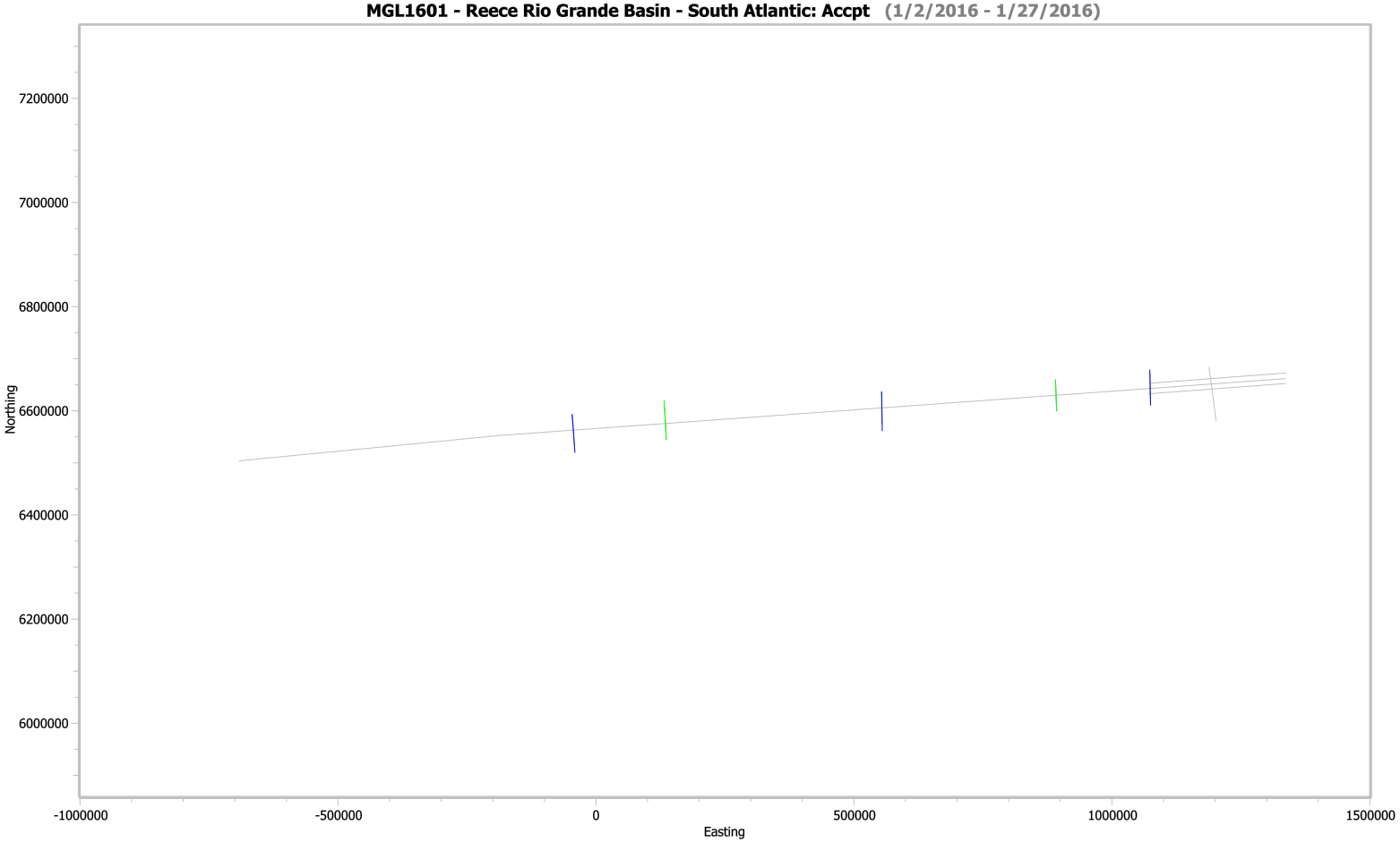
25%

Preplot Lines	Complete	Incomplete	Pending
20	5	0	0

Percentages Charged	
Prime	10.32% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	29.13 km
Average Charged Daily Prime and Infill Production	29.13 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/27/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 28 Jan

The entire day was spent troubleshooting multiple power line leakage issue on the streamer, as well as a telemetry error.

Daily Comment Summaries - Plan for Tomorrow

Thu 28 Jan

The Vessel will continue trouble shooting streamer. Once Streamer is repaired the vessel once again attempt Line MGL1601MCS1A

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Streamers	DT_ST	Thu 28. Jan 00:00	Thu 28. Jan 24:00	24.000
Downtime due to streamers - trouble shooting multiple power line leakage issues on the streamer.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

28-Jan	Hours	% Percent
DownTime	**24.000**	**100.000**
Streamers	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**57.101**
At Anchor	8.767	1.353
Deployment	26.467	4.084
Mob Ashore	52.833	8.153
Transit to Prospect	281.950	43.511
Chargeable Standby	**115.183**	**17.775**
Cetacean	3.033	0.468
Transit	112.150	17.307
DownTime	**57.533**	**8.879**
Contractor Request	13.900	2.145
Equipment Handling	4.750	0.733
Nav Systems Onboard	0.083	0.013
Source	4.000	0.617
Streamers	32.583	5.028
Vessel	2.217	0.342
Acquisition	**42.333**	**6.533**
Production Prime	42.333	6.533
Demobilisation	**62.933**	**9.712**
Recovery	62.933	9.712
Total	648.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 28 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
Streamer #1 continued to developed Power line Leakage issues. We would fix one and find that the streamer had something else in another location.

Towing and Handling (Source):
Lead Screw Guide on Str 1's Level Winder failed. Guide was replaced with a spare..

General Purpose Science:
Knudsen 12 kHz transducer which was being used by the OBS group to communicate with their instruments on the sea floor at the being of this mission has failed. It will receive but not transmit.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Thu 28 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	72.79	346.99	346.99
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	2.59	2.59
Combined	**0.00**	**72.79**	**349.57**	**349.57**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

10%

Prime Lines Completed

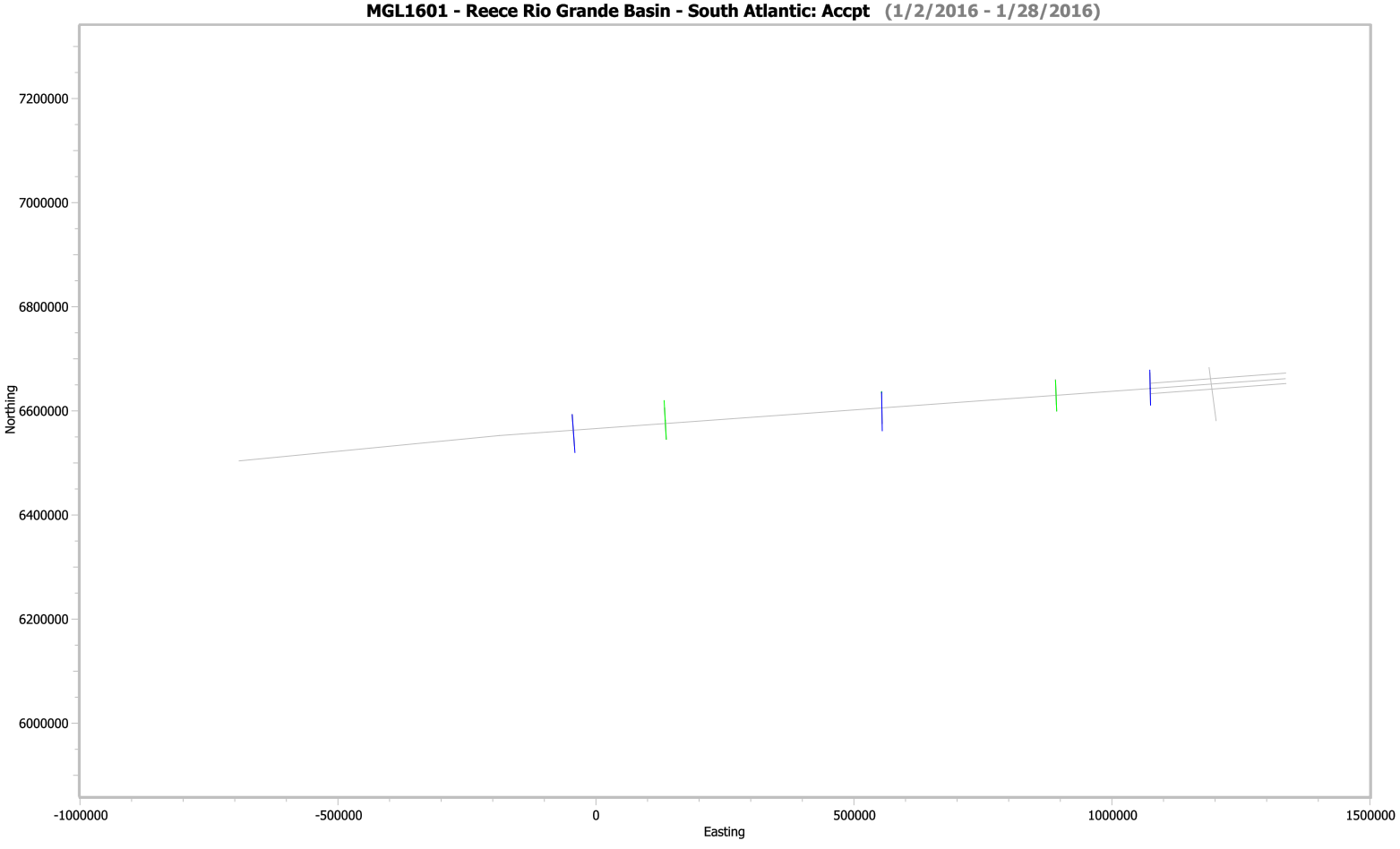
25%

Preplot Lines	Complete	Incomplete	Pending
20	5	0	0

Percentages Charged	
Prime	10.32% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	26.89 km
Average Charged Daily Prime and Infill Production	26.89 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/28/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Bobby Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Fri 29 Jan

The Vessel started off the day continuing trouble shooting of Streamer #1 Leakage/Telemetry issues. At 15:25 UTC the streamer was deployed and the deployment of the source began. At 16:21 UTC the Source was deployed and ramp up began. Ramp up was completed at 16:53 UTC an production on line MGL1601MCS1A started. The vessel remained in production for the remainder of the day.

Daily Comment Summaries - Plan for Tomorrow

Fri 29 Jan

The Vessel will remain in production on MGL1601MCS1A until ~12:40 UTC. At that time the vessel will make a line change to Line MGL1601MCS5 and is expected to remain on that line for the remainder of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Streamers	DT_ST	Fri 29. Jan 00:00	Fri 29. Jan 14:55	14.917
Downtime due to streamers - trouble shooting multiple power line leakage issues on the streamer.				
Streamers	DT_ST	Fri 29. Jan 14:55	Fri 29. Jan 16:21	1.433
Downtime due to streamers - trouble shooting multiple power line leakage issues on the streamer. - Deploying Source				
Streamers	DT_ST	Fri 29. Jan 16:21	Fri 29. Jan 16:53	0.533
Downtime due to streamers - trouble shooting multiple power line leakage issues on the streamer. - Ramping up Source				
Production Prime	AC_PP	Fri 29. Jan 16:53	Fri 29. Jan 18:25	1.533
SOL Seq 7 MGL1601MCS1A FGSP=5119 FCSP=5119 Hdg=85.9° Prime EOL Seq 7 MGL1601MCS1A LGSP=4784 LCSP=4784 Complete SOL Feather=-0.7° SOL Water Depth=4230m EOL Feather=-0.7°				
Production Prime	AC_PP	Fri 29. Jan 18:25	Fri 29. Jan 24:00	5.583
SOL Seq 7 MGL1601MCS1A FGSP=4783 FCSP=4783 Hdg=85.9° Prime MSP Seq 7 MGL1601MCS1A LGSP=3581 LCSP=3581 Mdnight SOL Feather=-0.7°				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

29-Jan	Hours	% Percent
Acquisition	**7.117**	**29.653**
Production Prime	7.117	29.653
DownTime	**16.883**	**70.347**
Streamers	16.883	70.347
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**55.062**
At Anchor	8.767	1.305
Deployment	26.467	3.938
Mob Ashore	52.833	7.862
Transit to Prospect	281.950	41.957
Chargeable Standby	**115.183**	**17.140**
Cetacean	3.033	0.451
Transit	112.150	16.689
DownTime	**74.417**	**11.074**
Contractor Request	13.900	2.068
Equipment Handling	4.750	0.707
Nav Systems Onboard	0.083	0.012
Source	4.000	0.595
Streamers	49.467	7.361
Vessel	2.217	0.330
Acquisition	**49.450**	**7.359**
Production Prime	49.450	7.359
Demobilisation	**62.933**	**9.365**
Recovery	62.933	9.365
Total	672.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Fri 29 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
During the evening hours one of active section was found to have sustained skin damage and had taken on Sea Water. This was the source of the leakage. This was replaced an allowed the streamer to power up and after some more trouble shooting of he telemetry issues, the decision was made to swap over and used the Front end (1.5km) of Streamer 2 to complete the 12.5km.

This has isolated the telemetry issue to the front end (1.5km) of Streamer 1 and trouble shooting on this will continue while the vessel is in production.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Fri 29 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Fri 29 Jan	Marcus G Langseth	7 - 7	57.71
Total Production:			**57.71**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	45.11	117.90	392.10	392.10
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	12.60	12.60	15.19	15.19
Combined	**57.71**	**130.50**	**407.29**	**407.29**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
7	MCS1A	85.9	5119	4784	Prime, Reshoot	12.60	4.424	Complete	Complete
7	MCS1A	85.9	4783	3581	Prime	45.11	4.359	Part	Midnight
Total						**57.71**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

12%

Prime Lines Completed

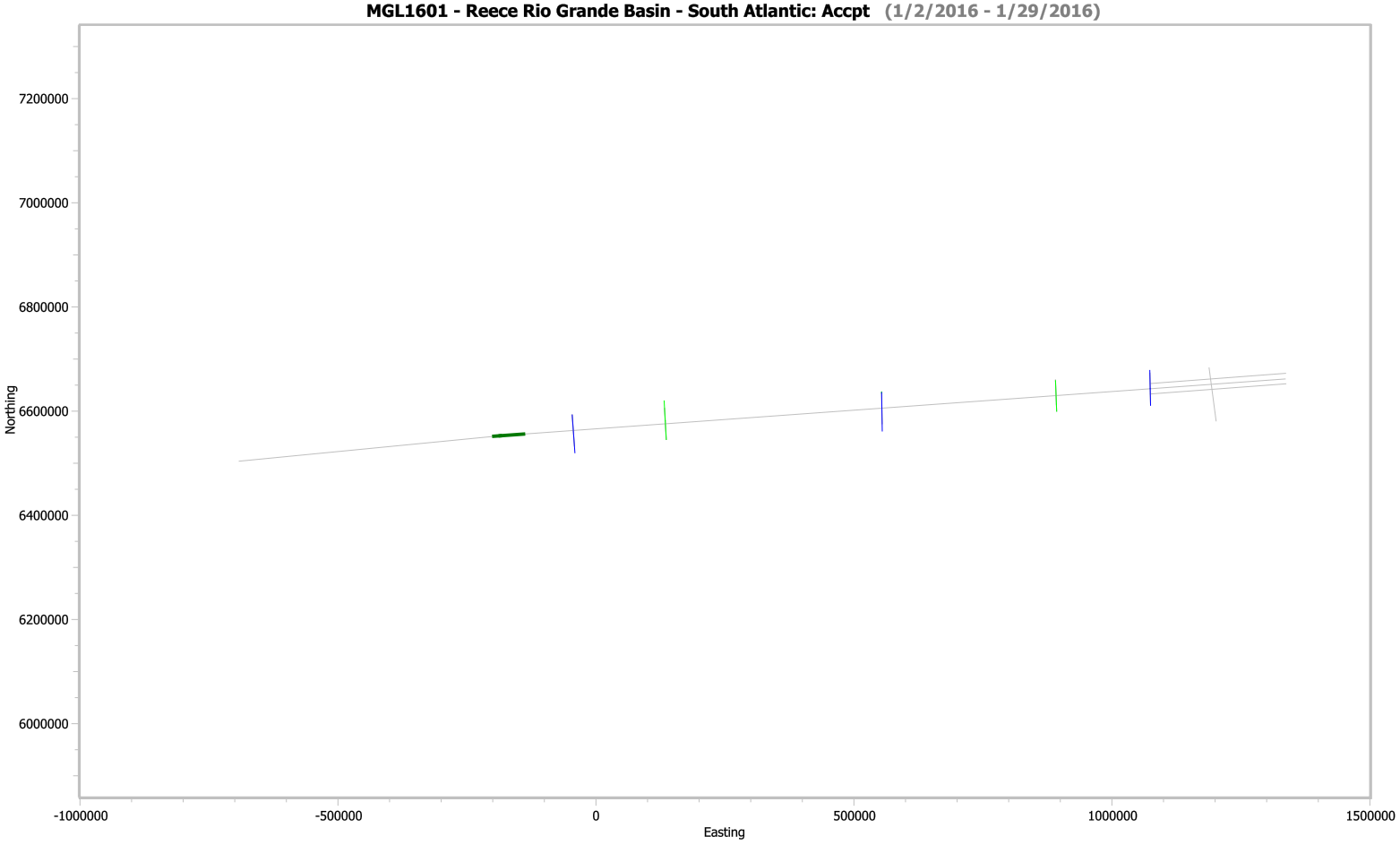
30%

Preplot Lines	Complete	Incomplete	Pending
20	6	0	0

Percentages Charged	
Prime	12.02% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	29.09 km
Average Charged Daily Prime and Infill Production	29.09 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/29/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:		**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:		**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Fri 29 Jan

The Vessel started off the day continuing trouble shooting of Streamer #1 Leakage/Telemetry issues. At 15:25 UTC the streamer was deployed and the deployment of the source began. At 16:21 UTC the Source was deployed and ramp up began. Ramp up was completed at 16:53 UTC an production on line MGL1601MCS1A started. The vessel remained in production for the remainder of the day.

Daily Comment Summaries - Plan for Tomorrow

Fri 29 Jan

The Vessel will remain in production on MGL1601MCS1A until ~12:40 UTC. At that time the vessel will make a line change to Line MGL1601MCS5 and is expected to remain on that line for the remainder of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Streamers	DT_ST	Fri 29. Jan 00:00	Fri 29. Jan 14:55	14.917
Downtime due to streamers - trouble shooting multiple power line leakage issues on the streamer.				
Streamers	DT_ST	Fri 29. Jan 14:55	Fri 29. Jan 16:21	1.433
Downtime due to streamers - trouble shooting multiple power line leakage issues on the streamer. - Deploying Source				
Streamers	DT_ST	Fri 29. Jan 16:21	Fri 29. Jan 16:53	0.533
Downtime due to streamers - trouble shooting multiple power line leakage issues on the streamer. - Ramping up Source				
Production Prime	AC_PP	Fri 29. Jan 16:53	Fri 29. Jan 18:09	1.267
NTBP Seq 7 FSP=5119 LSP=4841 - Approach (Run-in) Shot Points - Not Charged.				
Production Prime	AC_PP	Fri 29. Jan 18:09	Fri 29. Jan 18:25	0.267
SOL Seq 7 MGL1601MCS1A FGSP=4840 FCSP=4840 Hdg=85.9° Prime EOL Seq 7 MGL1601MCS1A LGSP=4784 LCSP=4784 Complete SOL Feather=-0.7° SOL Water Depth=4230m EOL Feather=-0.7°				
Production Prime	AC_PP	Fri 29. Jan 18:25	Fri 29. Jan 24:00	5.583
SOL Seq 7 MGL1601MCS1A FGSP=4783 FCSP=4783 Hdg=85.9° Prime MSP Seq 7 MGL1601MCS1A LGSP=3581 LCSP=3581 Mdnight SOL Feather=-0.7°				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

29-Jan	Hours	% Percent
Acquisition	**7.117**	**29.653**
Production Prime	7.117	29.653
DownTime	**16.883**	**70.347**
Streamers	16.883	70.347
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**55.062**
At Anchor	8.767	1.305
Deployment	26.467	3.938
Mob Ashore	52.833	7.862
Transit to Prospect	281.950	41.957
Chargeable Standby	**115.183**	**17.140**
Cetacean	3.033	0.451
Transit	112.150	16.689
DownTime	**74.417**	**11.074**
Contractor Request	13.900	2.068
Equipment Handling	4.750	0.707
Nav Systems Onboard	0.083	0.012
Source	4.000	0.595
Streamers	49.467	7.361
Vessel	2.217	0.330
Acquisition	**49.450**	**7.359**
Production Prime	49.450	7.359
Demobilisation	**62.933**	**9.365**
Recovery	62.933	9.365

Category	Hours	% Percent
Total	672.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Fri 29 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
During the evening hours one of active section was found to have sustained skin damage and had taken on Sea Water. This was the source of the leakage. This was replaced an allowed the streamer to power up and after some more trouble shooting of he telemetry issues, the decision was made to swap over and used the Front end (1.5km) of Streamer 2 to complete the 12.5km.

This has isolated the telemetry issue to the front end (1.5km) of Streamer 1 and trouble shooting on this will continue while the vessel is in production.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Fri 29 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
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Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

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Malizia, Heidi Kristine - PSO

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3. Stacey Lynn Worman
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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Fri 29 Jan	Marcus G Langseth	7 - 7	47.25
Total Production:			**47.25**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	45.11	117.90	392.10	392.10
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	2.14	2.14	4.72	4.72
Combined	**47.25**	**120.04**	**396.82**	**396.82**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
7	MCS1A	85.9	4840	4784	Prime, Reshoot	2.14	4.252	Complete	Complete
NTBP: 5119 - 4841									
7	MCS1A	85.9	4783	3581	Prime	45.11	4.359	Part	Midnight
NTBP: 5119 - 4841									
Total						**47.25**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

12%

Prime Lines Completed

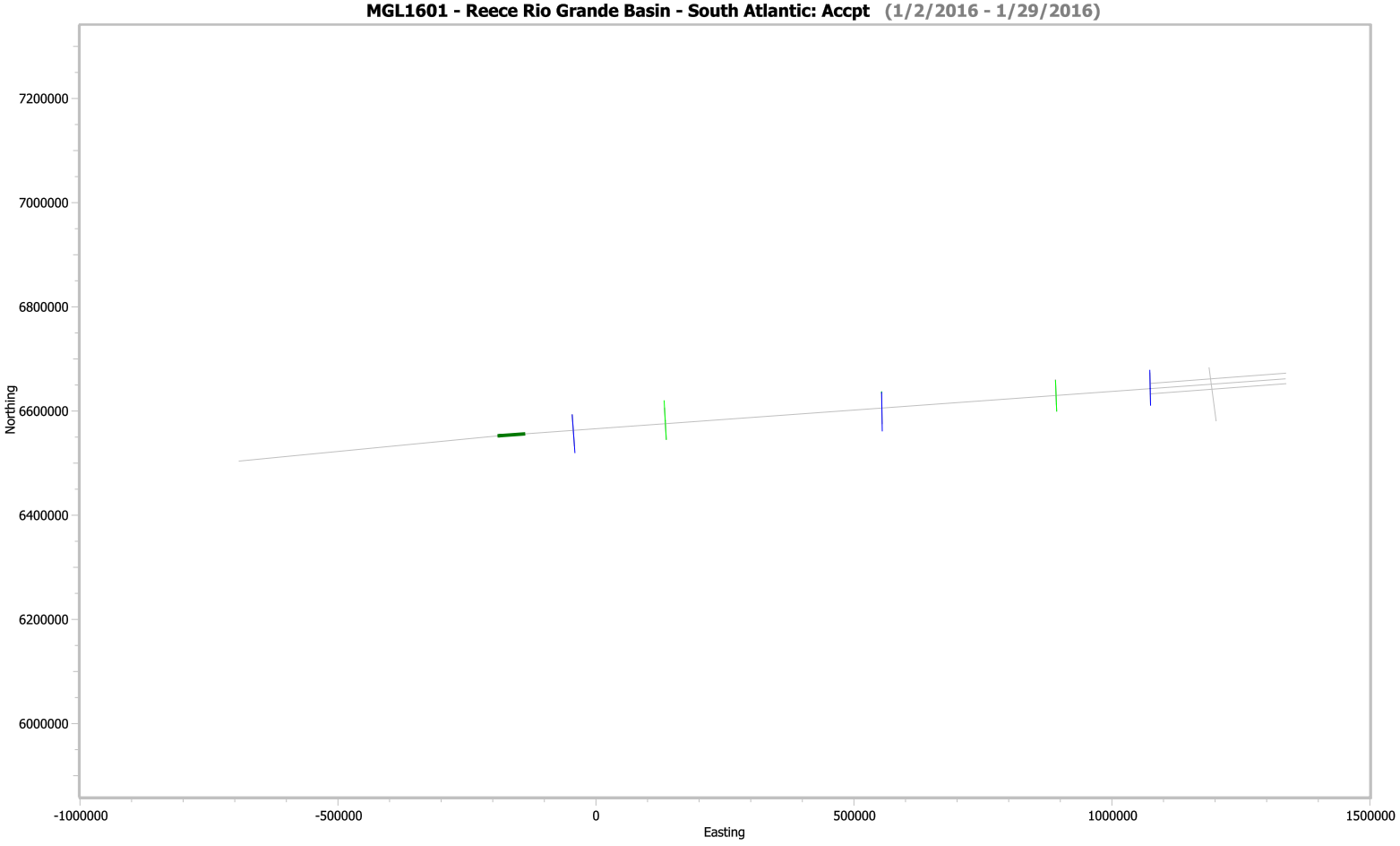
30%

Preplot Lines	Complete	Incomplete	Pending
20	6	0	0

Percentages Charged	
Prime	11.71% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	28.34 km
Average Charged Daily Prime and Infill Production	28.34 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/29/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:		**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:		**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sat 30 Jan

The vessel started the day in production on MGL1601MCS1A, which was completed at 12:32 UTC. A line change commenced during which time the vessel acquired data on MGL1601MCST0 on the way to Line MGL1601MCS05.. During the first part of the MGL1601MCST0 Line Sub-Array #2 was recovered for maintenance and then redeployed. At 17:56 the T0 line was stopped and the vessel continued on it's line change to MGL1601MCS05, which started at 19:04 UTC and continued throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Sat 30 Jan

The Vessel will start the day in production on line MGL1601MCS05 and at 05:05 UTC will complete this line. It will start a line Change back to MGL1601MCS1B, during which time will acquire data on MGL1601MCST1, MG1601MCS1B is expected to begin at ~13:00 UTC and continue throughout the rest of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Sat 30. Jan 00:00	Sat 30. Jan 12:32	12.533
SOL Seq 7 MGL1601MCS1A FGSP=3580 FCSP=3580 Hdg=85.9° Prime EOL Seq 7 MGL1601MCS1A LGSP=850 LCSP=850 Complete EOL Feather=0.2° EOL Water Depth=5015m				
Prime Line Change	AC_PLC	Sat 30. Jan 12:32	Sat 30. Jan 12:53	0.350
Nominal Prime line change.				
Production Prime	AC_PP	Sat 30. Jan 12:53	Sat 30. Jan 17:56	5.050
SOL Seq 8 MGL1601MCST0 FGSP=1817 FCSP=1817 Hdg=186° Prime EOL Seq 8 MGL1601MCST0 LGSP=2931 LCSP=2931 Complete EOL Feather=4.2° EOL Water Depth=4777m				
Prime Line Change	AC_PLC	Sat 30. Jan 17:56	Sat 30. Jan 19:04	1.133
Nominal Prime line change.				
Production Prime	AC_PP	Sat 30. Jan 19:04	Sat 30. Jan 20:38	1.567
NTBP Seq 9 FSP=668 LSP=1000 - Approach (Run-in) Shot Points - Not Charged.				
Production Prime	AC_PP	Sat 30. Jan 20:38	Sat 30. Jan 24:00	3.367
SOL Seq 9 MGL1601MCS05 FGSP=1001 FCSP=1001 Hdg=355.8° Prime MSP Seq 9 MGL1601MCS05 LGSP=1707 LCSP=1707 Mdnight				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

30-Jan	Hours	% Percent
Acquisition	**24.000**	**100.000**
Prime Line Change	1.483	6.181
Production Prime	22.517	93.819
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**53.163**
At Anchor	8.767	1.260
Deployment	26.467	3.803
Mob Ashore	52.833	7.591
Transit to Prospect	281.950	40.510
Chargeable Standby	**115.183**	**16.549**
Cetacean	3.033	0.436
Transit	112.150	16.114
DownTime	**74.417**	**10.692**
Contractor Request	13.900	1.997
Equipment Handling	4.750	0.682
Nav Systems Onboard	0.083	0.012
Source	4.000	0.575
Streamers	49.467	7.107
Vessel	2.217	0.318
Acquisition	**73.450**	**10.553**
Prime Line Change	1.483	0.213
Production Prime	71.967	10.340
Demobilisation	**62.933**	**9.042**
Recovery	62.933	9.042

Category	Hours	% Percent
Total	696.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 30 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sat 30 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

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Piko, Amy - Lead PAM Operator
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Malizia, Heidi Kristine - PSO

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7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sat 30 Jan	Marcus G Langseth	7 - 9	128.92
Total Production:			**128.92**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	128.92	246.82	521.02	521.02
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	2.14	4.72	4.72
Combined	**128.92**	**248.96**	**525.75**	**525.75**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
7	MCS1A	85.9	3580	850	Prime	102.41	4.410	Complete	Complete
9	MCS05	355.8	1001	1707	Prime	26.51	4.246	Part	Midnight
NTBP: 668 - 1000									
Total						**128.92**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

16%

Prime Lines Completed

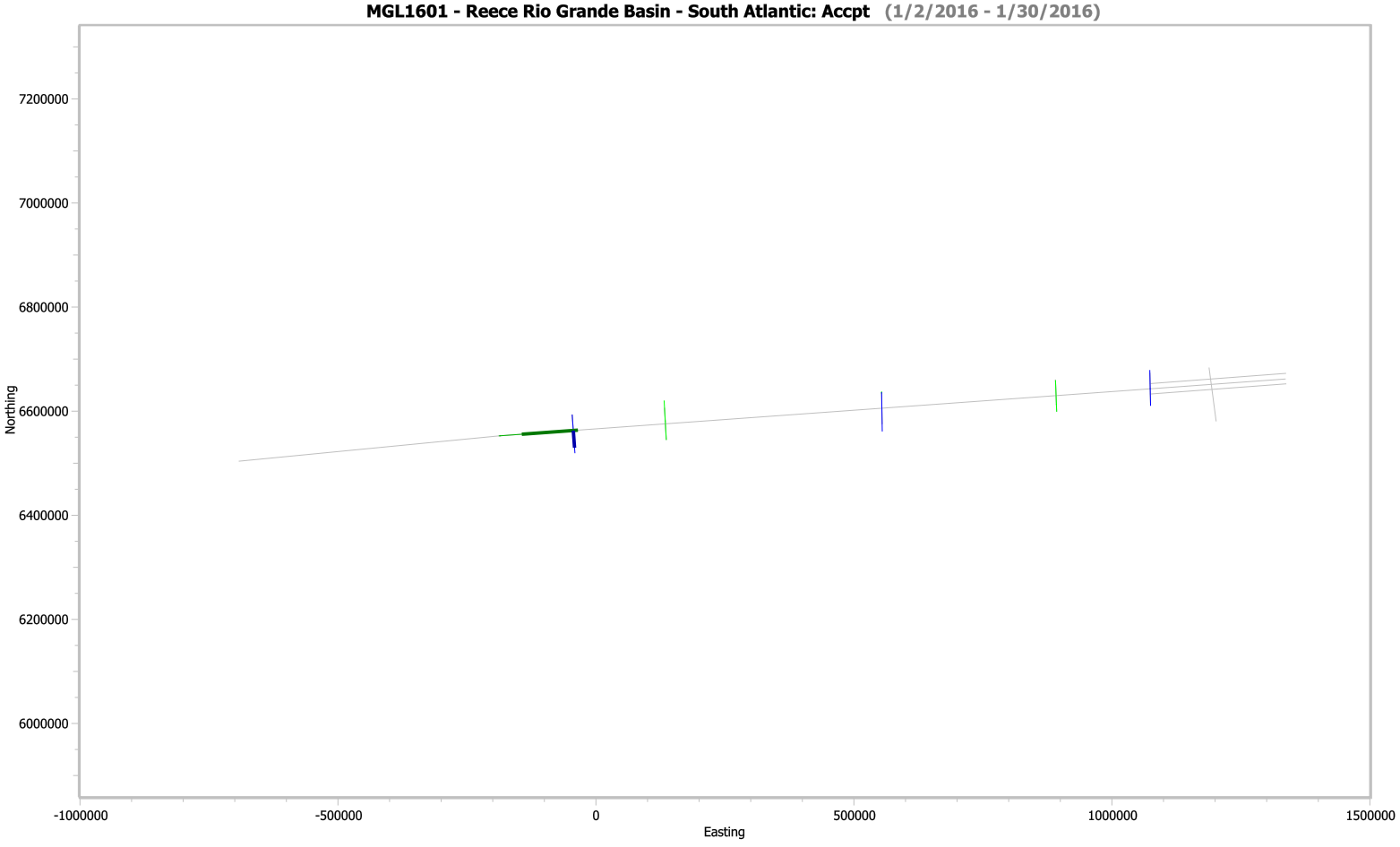
30%

Preplot Lines	Complete	Incomplete	Pending
20	6	1	0

Percentages Charged	
Prime	15.52% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	35.05 km
Average Charged Daily Prime and Infill Production	35.05 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/30/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sun 31 Jan

The vessel started the day in production on MGL1601MCS05, which was completed at 05:05 UTC. A line change commenced during which time the vessel acquired data on MGL1601MCST1 on the way to Line MGL1601MCS1B.. At 10:20 UTC the T1 line was stopped and the vessel continued on it's line change to MGL1601MCS1B, which started at 10:32 UTC and continued throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Sun 31 Jan

The Vessel will start the day in production on line MGL1601MCS1B and at ~10:30 UTC will complete this line. It will start a line Change back to MGL1601MCS04, during which time will acquire data on MGL1601MCST2, MG1601MCS04 is expected to begin at ~17:00 UTC and continue throughout the rest of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Sun 31. Jan 00:00	Sun 31. Jan 05:05	5.083
SOL Seq 9 MGL1601MCS05 FGSP=1708 FCSP=1708 Hdg=355.8° Prime EOL Seq 9 MGL1601MCS05 LGSP=2809 LCSP=2809 Complete				
Prime Line Change	AC_PLC	Sun 31. Jan 05:05	Sun 31. Jan 06:03	0.967
Nominal Prime line change.				
Production Prime	AC_PP	Sun 31. Jan 06:03	Sun 31. Jan 10:20	4.283
SOL Seq 10 MGL1601MCST1 FGSP=877 FCSP=877 Hdg=180° Prime EOL Seq 10 MGL1601MCST1 LGSP=1786 LCSP=1786 Complete SOL Feather=0° SOL Water Depth=5023m EOL Feather=-12.1° EOL Water Depth=4909m				
Prime Line Change	AC_PLC	Sun 31. Jan 10:20	Sun 31. Jan 10:32	0.200
Nominal Prime line change.				
Production Prime	AC_PP	Sun 31. Jan 10:32	Sun 31. Jan 12:12	1.667
NTBP Seq 11 FSP=6134 LSP=5774 - Approach (Run-in) Shot Points - Not Charged.				
Production Prime	AC_PP	Sun 31. Jan 12:12	Sun 31. Jan 24:00	11.800
SOL Seq 11 MGL1601MCS1B FGSP=5773 FCSP=5773 Hdg=85.9° Prime MSP Seq 11 MGL1601MCS1B LGSP=3179 LCSP=3179 Mdnight SOL Feather=0° SOL Water Depth=4885m				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

31-Jan	Hours	% Percent
Acquisition	**24.000**	**100.000**
Prime Line Change	1.167	4.861
Production Prime	22.833	95.139
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**51.391**
At Anchor	8.767	1.218
Deployment	26.467	3.676
Mob Ashore	52.833	7.338
Transit to Prospect	281.950	39.160
Chargeable Standby	**115.183**	**15.998**
Cetacean	3.033	0.421
Transit	112.150	15.576
DownTime	**74.417**	**10.336**
Contractor Request	13.900	1.931
Equipment Handling	4.750	0.660
Nav Systems Onboard	0.083	0.012
Source	4.000	0.556
Streamers	49.467	6.870
Vessel	2.217	0.308
Acquisition	**97.450**	**13.535**
Prime Line Change	2.650	0.368
Production Prime	94.800	13.167

Category	Hours	% Percent
Demobilisation	**62.933**	**8.741**
Recovery	62.933	8.741
Total	720.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 31 Jan

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sun 31 Jan

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sun 31 Jan	Marcus G Langseth	9 - 11	138.64
Total Production:			**138.64**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	138.64	385.46	659.66	659.66
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	2.14	4.72	4.72
Combined	**138.64**	**387.60**	**664.39**	**664.39**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
9	MCS05	355.8	1708	2809	Prime	41.32	4.386	Complete	Complete
11	MCS1B	85.9	5773	3179	Prime	97.31	4.451	Part	Midnight
NTBP: 6134 - 5774									
Total						**138.64**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

20%

Prime Lines Completed

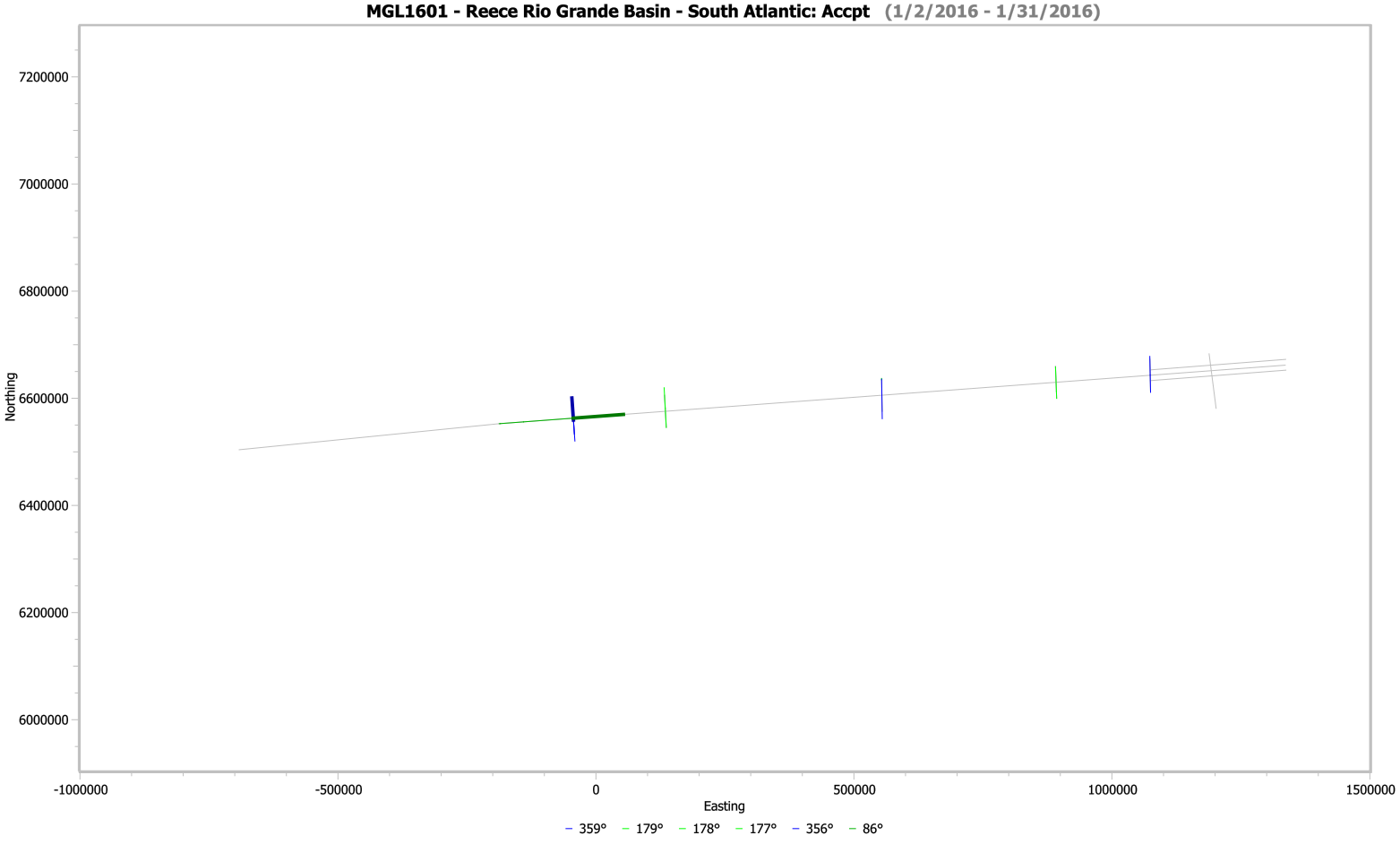
35%

Preplot Lines	Complete	Incomplete	Pending
20	7	1	0

Percentages Charged	
Prime	19.61% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	41.52 km
Average Charged Daily Prime and Infill Production	41.52 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/2/2016 - 1/31/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Mon 01 Feb

The vessel started the day in production on MGL1601MCS1B, which was completed at 10:32 UTC. A line change commenced during which time the vessel acquired data on MGL1601MCST2 on the way to Line MGL1601MCS04.. At 15:55 UTC the T2 line was stopped and the vessel continued on it's line change to MGL1601MCS04, which started at 16:57 UTC and continued throughout the rest of the day. During the Line Change between MCS1B and MCS04 - (on MCST2) Sub-arrays 3 and 4 where recovered for preventive maintenance. During Line MCS04 - Sub-Array 2 Element 1 started having Intermittent Auto-Fire issues and had to be recovered and repaired.

Daily Comment Summaries - Plan for Tomorrow

Mon 01 Feb

The Vessel will start the day in production on line MGL1601MCS04 and at ~03:30 UTC will complete this line. It will start a line Change back to MGL1601MCS1C during which time will acquire data on MGL1601MCST3, MG1601MCS1C is expected to begin at ~12:00 UTC and continue throughout the rest of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Mon 1. Feb 00:00	Mon 1. Feb 07:23	7.383
SOL Seq 11 MGL1601MCS1B FGSP=3178 FCSP=3178 Hdg=85.9° Prime EOL Seq 11 MGL1601MCS1B LGSP=1542 LCSP=1542 Incomplete				
Streamers	DT_ST	Mon 1. Feb 07:23	Mon 1. Feb 07:27	0.067
NTBP Seq 11 FSP=1541 LSP=1529 - Failure of LAUM#5 on Streamer one. Data Looped back through LAUM#7				
Production Prime	AC_PP	Mon 1. Feb 07:27	Mon 1. Feb 10:32	3.083
SOL Seq 11 MGL1601MCS1B FGSP=1528 FCSP=1528 Hdg=85.9° Prime EOL Seq 11 MGL1601MCS1B LGSP=844 LCSP=844 Complete EOL Feather=-1.9° EOL Water Depth=4677m				
Prime Line Change	AC_PLC	Mon 1. Feb 10:32	Mon 1. Feb 11:11	0.650
Nominal Prime line change.				
Production Prime	AC_PP	Mon 1. Feb 11:11	Mon 1. Feb 15:55	4.733
SOL Seq 12 MGL1601MCST2 FGSP=1887 FCSP=1887 Hdg=180° Prime EOL Seq 12 MGL1601MCST2 LGSP=2931 LCSP=2931 Complete SOL Feather=0° SOL Water Depth=4670m EOL Feather=-5.9° EOL Water Depth=4687m				
Prime Line Change	AC_PLC	Mon 1. Feb 15:55	Mon 1. Feb 16:57	1.033
Nominal Prime line change.				
Prime Line Change	AC_PLC	Mon 1. Feb 16:57	Mon 1. Feb 18:33	1.600
NTBP Seq 13 FSP=643 LSP=1000 -Approach (Run-in) Shot Points - Not Charged.				
Production Prime	AC_PP	Mon 1. Feb 18:33	Mon 1. Feb 20:47	2.233
SOL Seq 13 MGL1601MCS04 FGSP=1001 FCSP=1001 Hdg=356.8° Prime EOL Seq 13 MGL1601MCS04 LGSP=1493 LCSP=1493 Incomplete SOL Water Depth=4529m				
Source	DT_SC	Mon 1. Feb 20:47	Mon 1. Feb 21:29	0.700
NTBP Seq 13 FSP=1494 LSP=1654 - Sub-Arrary 2 Element 1 Intermittent Auto-Fire Error.				
Production Prime	AC_PP	Mon 1. Feb 21:29	Mon 1. Feb 24:00	2.517
SOL Seq 13 MGL1601MCS04 FGSP=1655 FCSP=1655 Hdg=356.8° Prime MSP Seq 13 MGL1601MCS04 LGSP=2214 LCSP=2214 Mdnight				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

1-Feb	Hours	% Percent
Acquisition	**23.233**	**96.806**
Prime Line Change	3.283	13.681
Production Prime	19.950	83.125
DownTime	**0.767**	**3.194**
Source	0.700	2.917
Streamers	0.067	0.278
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**49.733**
At Anchor	8.767	1.178
Deployment	26.467	3.557
Mob Ashore	52.833	7.101

Category	Hours	% Percent
Transit to Prospect	281.950	37.897
Chargeable Standby	**115.183**	**15.482**
Cetacean	3.033	0.408
Transit	112.150	15.074
DownTime	**75.183**	**10.105**
Contractor Request	13.900	1.868
Equipment Handling	4.750	0.638
Nav Systems Onboard	0.083	0.011
Source	4.700	0.632
Streamers	49.533	6.658
Vessel	2.217	0.298
Acquisition	**120.683**	**16.221**
Prime Line Change	5.933	0.797
Production Prime	114.750	15.423
Demobilisation	**62.933**	**8.459**
Recovery	62.933	8.459
Total	744.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Mon 01 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
During Line MGL1601MCS1B - LAUM #5 (S/N: 1590) on Streamer #1 Failed. Telemetry was looped back through LAUM #7 to keep streamer operational.

Towing and Handling (Source):
During Line MGL1601MCS04 - Sub-Array 2 Element 1 started having Intermittent Auto-Fire issues and had to be recovered and repaired.

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Mon 01 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Mon 1 Feb	Marcus G Langseth	11 - 13	126.56
Total Production:			**126.56**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	126.56	126.56	126.56	786.22
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**126.56**	**126.56**	**126.56**	**790.95**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
11	MCS1B	85.9	3178	844	Prime	87.07	2.901	Complete	Complete
NTBP: 1541 - 1529									
13	MCS04	356.8	1001	2214	Prime	39.49	3.269	Part	Mdnight
NTBP: 643 - 1000, NTBP: 1494 - 1654									
Total						**126.56**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

23%

Prime Lines Completed

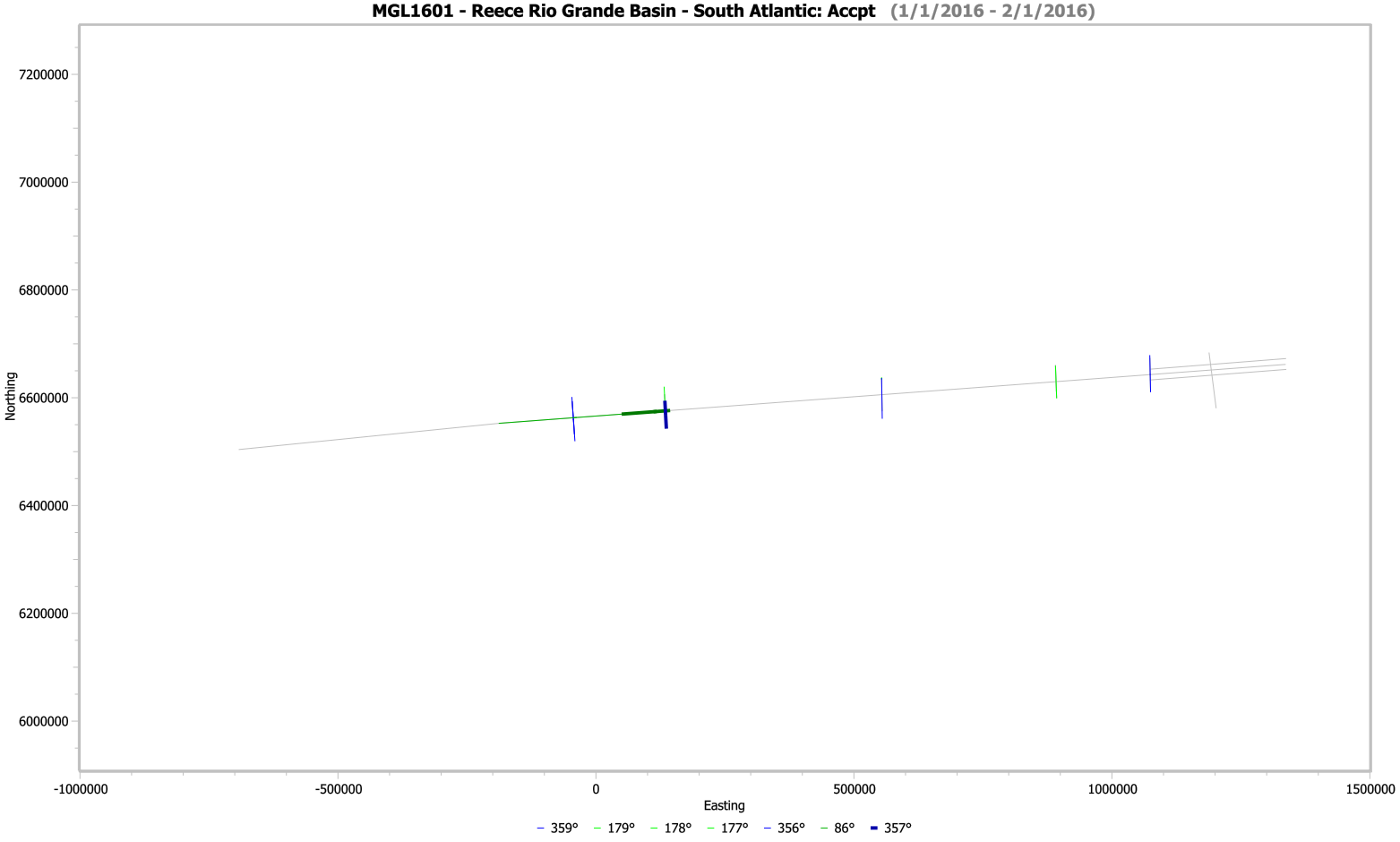
40%

Preplot Lines	Complete	Incomplete	Pending
20	8	1	0

Percentages Charged	
Prime	23.34% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	46.53 km
Average Charged Daily Prime and Infill Production	46.53 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/1/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Tue 02 Feb

The vessel started the day in production on MGL1601MCS04, which was completed at 02:30 UTC. A line change commenced during which time the vessel acquired data on MGL1601MCST3 on the way to Line MGL1601MCS1C.. At 08:05 UTC the MCST3 line was stopped and the vessel continued on it's line change to MGL1601MCS1C, which started at 08:24 UTC and continued throughout the rest of the day.

At 11:20 UTC - Fire and Emergency Drill Conducted
At 11:45 UTC - Abandon Ship Drill Conducted

Daily Comment Summaries - Plan for Tomorrow

Tue 02 Feb

The Vessel will start the day in production on line MGL1601MCS1C and continue throughout the rest of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Tue 2. Feb 00:00	Tue 2. Feb 02:30	2.500
SOL Seq 13 MGL1601MCS04 FGSP=2215 FCSP=2215 Hdg=356.8° Prime EOL Seq 13 MGL1601MCS04 LGSP=2763 LCSP=2763 Complete EOL Feather=1.8° EOL Water Depth=4549m				
Prime Line Change	AC_PLC	Tue 2. Feb 02:30	Tue 2. Feb 04:11	1.683
Nominal Prime line change.				
Production Prime	AC_PP	Tue 2. Feb 04:11	Tue 2. Feb 08:05	3.900
SOL Seq 14 MGL1601MCST3 FGSP=967 FCSP=967 Hdg=180° Prime EOL Seq 14 MGL1601MCST3 LGSP=1786 LCSP=1786 Complete SOL Feather=-57.8° SOL Water Depth=4308m				
Prime Line Change	AC_PLC	Tue 2. Feb 08:05	Tue 2. Feb 08:22	0.283
Nominal Prime line change.				
Production Prime	AC_PP	Tue 2. Feb 08:22	Tue 2. Feb 09:56	1.567
NTBP Seq 15 FSP=12552 LSP=12219 - Approach (Run-in) Shot Points "12552 to 12219" - Not Charged.				
Production Prime	AC_PP	Tue 2. Feb 09:56	Tue 2. Feb 24:00	14.067
SOL Seq 15 MGL1601MGL1C FGSP=12218 FCSP=12218 Hdg=85.9° Prime MSP Seq 15 MGL1601MGL1C LGSP=9098 LCSP=9098 Mdnight				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

2-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Prime Line Change	1.967	8.194
Production Prime	22.033	91.806
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**48.179**
At Anchor	8.767	1.141
Deployment	26.467	3.446
Mob Ashore	52.833	6.879
Transit to Prospect	281.950	36.712
Chargeable Standby	**115.183**	**14.998**
Cetacean	3.033	0.395
Transit	112.150	14.603
DownTime	**75.183**	**9.789**
Contractor Request	13.900	1.810
Equipment Handling	4.750	0.618
Nav Systems Onboard	0.083	0.011
Source	4.700	0.612
Streamers	49.533	6.450
Vessel	2.217	0.289
Acquisition	**144.683**	**18.839**
Prime Line Change	7.900	1.029
Production Prime	136.783	17.810
Demobilisation	**62.933**	**8.194**

Category	Hours	% Percent
Recovery	62.933	8.194
Total	768.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Tue 02 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Tue 02 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Tue 2 Feb	Marcus G Langseth	13 - 15	137.62
Total Production:			**137.62**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	137.62	264.19	264.19	923.85
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**137.62**	**264.19**	**264.19**	**928.58**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
13	MCS04	356.8	2215	2763	Prime	20.59	4.438	Complete	Complete
15	MGL1C	85.9	12218	9098	Prime	117.04	4.491	Part	Midnight
NTBP: 12552 - 12219									
Total						**137.62**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

27%

Prime Lines Completed

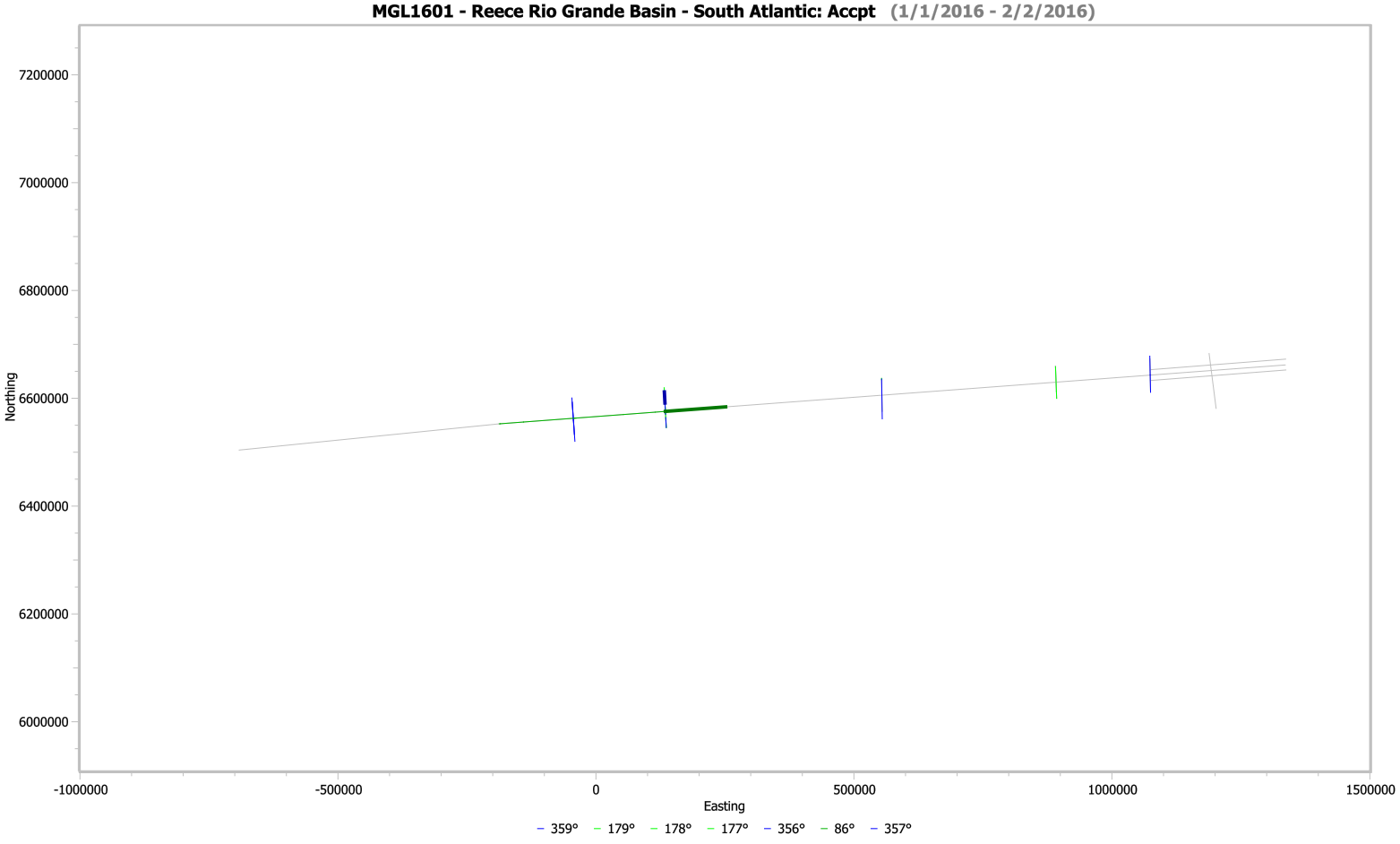
45%

Preplot Lines	Complete	Incomplete	Pending
20	9	1	0

Percentages Charged	
Prime	27.40% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	51.59 km
Average Charged Daily Prime and Infill Production	51.59 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/2/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Wed 03 Feb

The Vessel spent the entire day in production on MGL1601MCS1C.

Daily Comment Summaries - Plan for Tomorrow

Wed 03 Feb

The Vessel will start the day in production on line MGL1601MCS1C and at ~13:30 UTC will complete this line. It will start a line Change back to MGL1601MCS03 during which time will acquire data on MGL1601MCST4, MG1601MCS04 is expected to begin at ~20:00 UTC and continue throughout the rest of the day. During the Line change between MCS1C and MCS03 Sub-Arrays 3 & 4 will be recovered for preventive maintenance.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Wed 3. Feb 00:00	Wed 3. Feb 24:00	24.000
SOL Seq 15 MGL1601MGL1C FGSP=9097 FCSP=9097 Hdg=85.9° Prime MSP Seq 15 MGL1601MGL1C LGSP=3834 LCSP=3834 Mdnight				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

3-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Production Prime	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**46.719**
At Anchor	8.767	1.107
Deployment	26.467	3.342
Mob Ashore	52.833	6.671
Transit to Prospect	281.950	35.600
Chargeable Standby	**115.183**	**14.543**
Cetacean	3.033	0.383
Transit	112.150	14.160
DownTime	**75.183**	**9.493**
Contractor Request	13.900	1.755
Equipment Handling	4.750	0.600
Nav Systems Onboard	0.083	0.011
Source	4.700	0.593
Streamers	49.533	6.254
Vessel	2.217	0.280
Acquisition	**168.683**	**21.298**
Prime Line Change	7.900	0.997
Production Prime	160.783	20.301
Demobilisation	**62.933**	**7.946**
Recovery	62.933	7.946
Total	792.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 03 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Wed 03 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Wed 3 Feb	Marcus G Langseth	15	197.40
Total Production:			**197.40**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	197.40	461.59	461.59	1121.25
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**197.40**	**461.59**	**461.59**	**1125.97**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
15	MGL1C	85.9	9097	3834	Prime	197.40	4.440	Part	Mdnight
Total						**197.40**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

33%

Prime Lines Completed

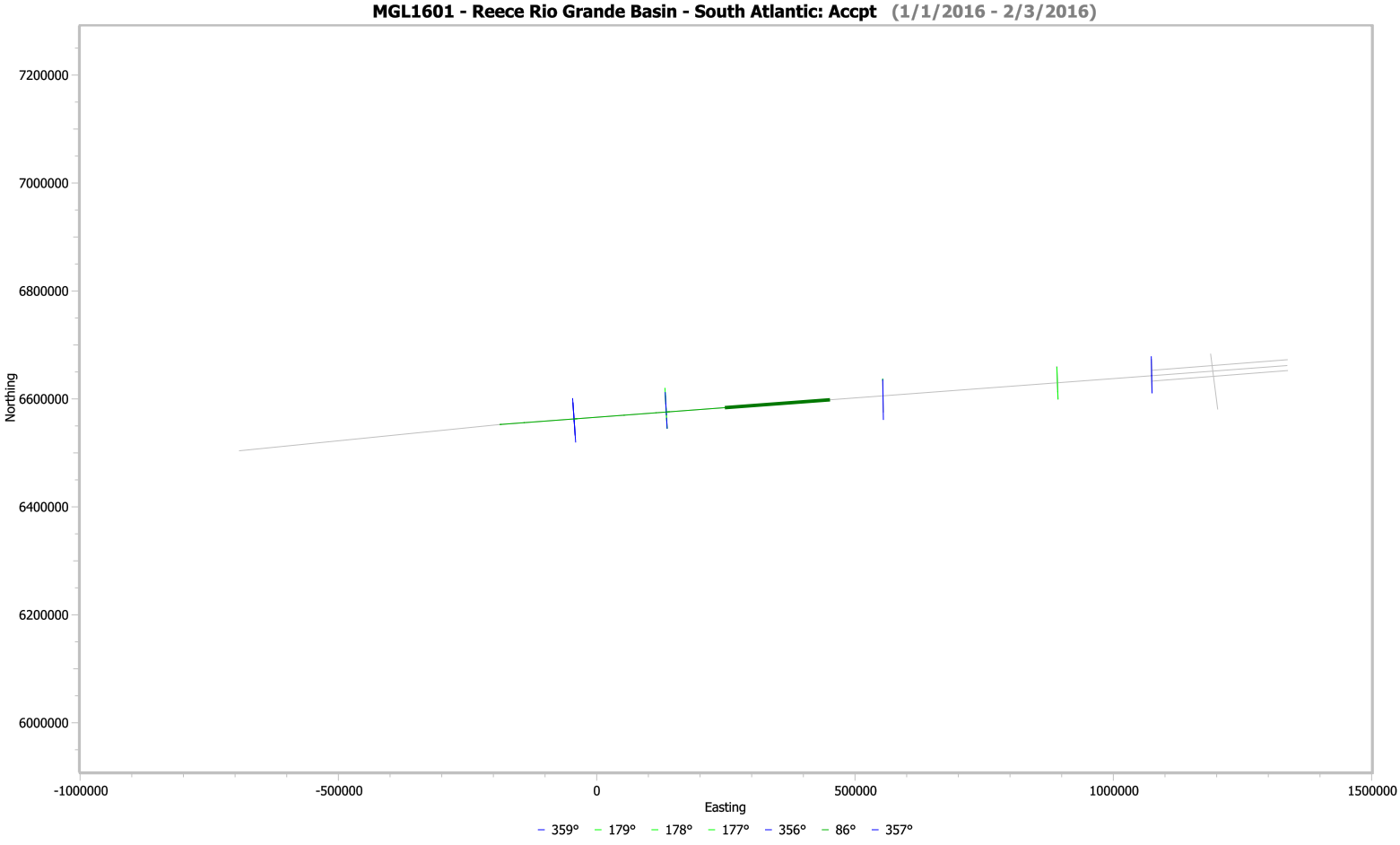
45%

Preplot Lines	Complete	Incomplete	Pending
20	9	1	0

Percentages Charged	
Prime	33.23% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	59.26 km
Average Charged Daily Prime and Infill Production	59.26 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/3/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 04 Feb

The Vessel started the day in production on line MGL1601MCS1C and at 13:38 UTC completed this line.The vessel then started a line Change back to MGL1601MCS03 during which time will acquire data on MGL1601MCST4, MG1601MCS03 began 20:16 UTC and continue throughout the rest of the day. During the Line change between MCS1C and MCS03 Sub-Arrays 3 & 4 will be recovered for preventive maintenance.

Daily Comment Summaries - Plan for Tomorrow

Thu 04 Feb

The Vessel will start the day in production on line MGL1601MCS04 and at ~05:50 UTC will complete this line. It will start a line Change back to MGL1601MCS1D during which time will acquire data on MGL1601MCST5 MG1601MCS1D is expected to begin at ~13:00 UTC and continue throughout the rest of the day. During the Line change between MCS03 and MCS1D Sub-Arrays 1 & 2 will be recovered for preventive maintenance.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Thu 4. Feb 00:00	Thu 4. Feb 13:38	13.633
SOL Seq 15 MGL1601MGL1C FGSP=3833 FCSP=3833 Hdg=85.9° Prime EOL Seq 15 MGL1601MGL1C LGSP=835 LCSP=835 Complete EOL Feather=3.1° EOL Water Depth=4329m				
Prime Line Change	AC_PLC	Thu 4. Feb 13:38	Thu 4. Feb 14:39	1.017
Nominal Prime line change.				
Production Prime	AC_PP	Thu 4. Feb 14:39	Thu 4. Feb 19:04	4.417
SOL Seq 16 MGL1601MCST4 FGSP=1963 FCSP=1963 Hdg=180° Prime EOL Seq 16 MGL1601MCST4 LGSP=2930 LCSP=2930 Complete SP 1963 to 2468 Acquired at 3300in3 while Sub-Arrays 3 & 4 where on-board for maintenance. SOL Feather=61.8° SOL Water Depth=4263m EOL Feather=-5.9° EOL Water Depth=4201m				
Prime Line Change	AC_PLC	Thu 4. Feb 19:04	Thu 4. Feb 20:16	1.200
Nominal Prime line change.				
Production Prime	AC_PP	Thu 4. Feb 20:16	Thu 4. Feb 21:47	1.517
NTBP Seq 17 FSP=667 LSP=1000 - Approach (Run-in) Shot Points - Not Charged.				
Production Prime	AC_PP	Thu 4. Feb 21:47	Thu 4. Feb 24:00	2.217
SOL Seq 17 MGL1601MCS3 FGSP=1001 FCSP=1001 Hdg=359.1° Prime MSP Seq 17 MGL1601MCS3 LGSP=1487 LCSP=1487 Midnight SOL Feather=-5.9° SOL Water Depth=4328m				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

4-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Prime Line Change	2.217	9.236
Production Prime	21.783	90.764
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**45.345**
At Anchor	8.767	1.074
Deployment	26.467	3.243
Mob Ashore	52.833	6.475
Transit to Prospect	281.950	34.553
Chargeable Standby	**115.183**	**14.116**
Cetacean	3.033	0.372
Transit	112.150	13.744
DownTime	**75.183**	**9.214**
Contractor Request	13.900	1.703
Equipment Handling	4.750	0.582
Nav Systems Onboard	0.083	0.010
Source	4.700	0.576
Streamers	49.533	6.070

Category	Hours	% Percent
Vessel	2.217	0.272
Acquisition	**192.683**	**23.613**
Prime Line Change	10.117	1.240
Production Prime	182.567	22.373
Demobilisation	**62.933**	**7.712**
Recovery	62.933	7.712
Total	816.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 04 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Thu 04 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Thu 4 Feb	Marcus G Langseth	15 - 17	130.72
Total Production:			**130.72**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	130.72	592.31	592.31	1251.98
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**130.72**	**592.31**	**592.31**	**1256.70**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
15	MGL1C	85.9	3833	835	Prime	112.46	4.453	Complete	Complete
17	MCS3	359.1	1001	1487	Prime	18.26	4.439	Part	Midnight
NTBP: 667 - 1000									
Total						**130.72**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

37%

Prime Lines Completed

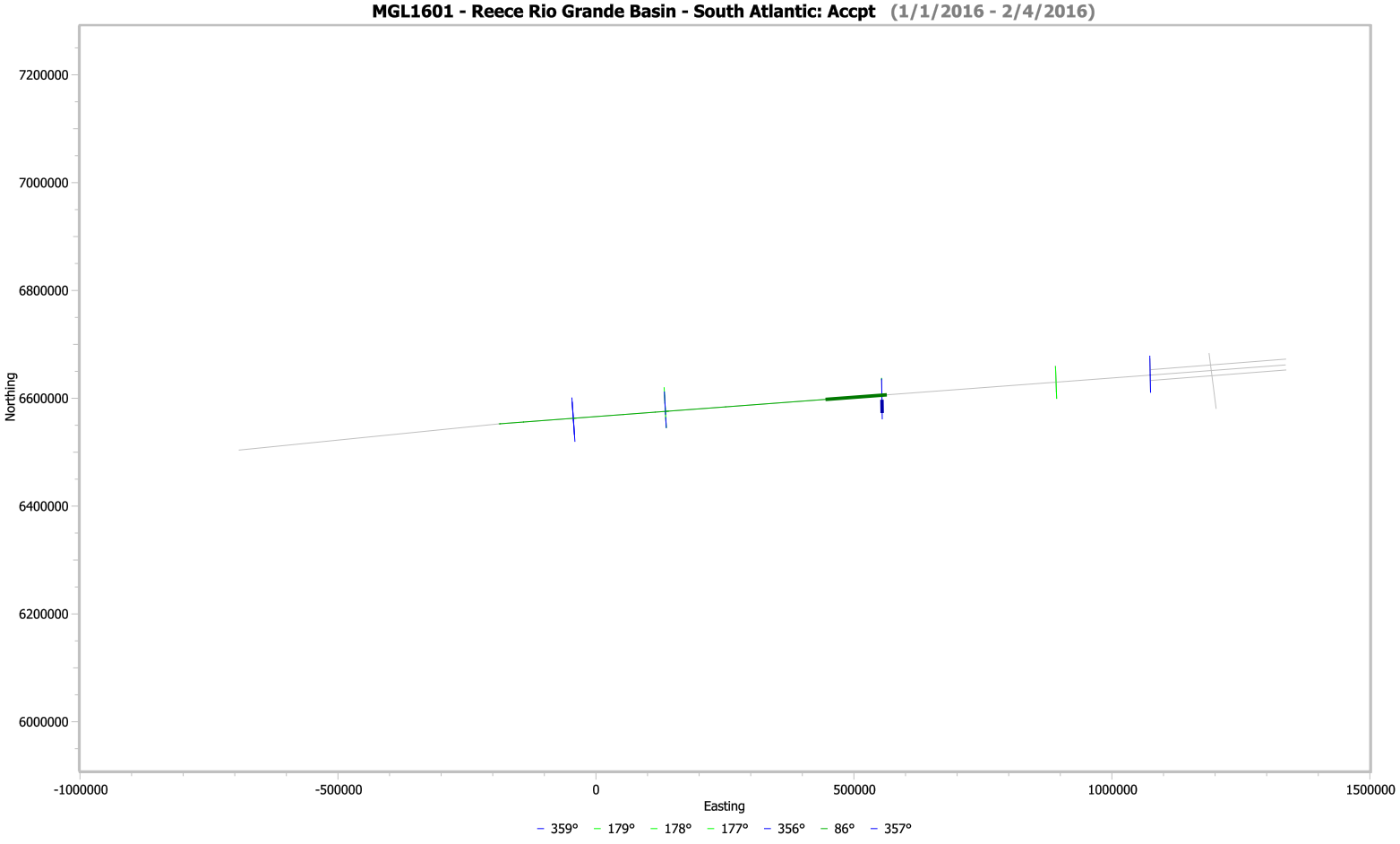
50%

Preplot Lines	Complete	Incomplete	Pending
20	10	1	0

Percentages Charged	
Prime	37.09% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	62.84 km
Average Charged Daily Prime and Infill Production	62.84 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/4/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Fri 05 Feb

The Vessel started the day in production on line MGL1601MCS03 and at 05:50 UTC completed the line. It started a line Change back to MGL1601MCS1D during which time will acquire data on MGL1601MCST5 MG1601MCS1D began at 12:34 UTC and continue throughout the rest of the day. During the Line change between MCS03 and MCS1D Sub-Arrays 1 & 2 were recovered for preventive maintenance.

Daily Comment Summaries - Plan for Tomorrow

Fri 05 Feb

The Vessel will start the day in production on line MGL1601MCS1D and continue throughout the rest of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Fri 5. Feb 00:00	Fri 5. Feb 05:50	5.833
SOL Seq 17 MGL1601MCS3 FGSP=1488 FCSP=1488 Hdg=359.1° Prime EOL Seq 17 MGL1601MCS3 LGSP=2763 LCSP=2763 Complete EOL Feather=-0.2° EOL Water Depth=4162m				
Prime Line Change	AC_PLC	Fri 5. Feb 05:50	Fri 5. Feb 07:36	1.767
Nominal Prime line change.				
Production Prime	AC_PP	Fri 5. Feb 07:36	Fri 5. Feb 11:17	3.683
SOL Seq 18 MGL1601MCST5 FGSP=970 FCSP=970 Hdg=180° Prime EOL Seq 18 MGL1601MCST5 LGSP=1752 LCSP=1752 Complete SOL Feather=0° SOL Water Depth=4242m EOL Feather=-19° EOL Water Depth=4307m				
Prime Line Change	AC_PLC	Fri 5. Feb 11:17	Fri 5. Feb 12:34	1.283
Nominal Prime line change.				
Production Prime	AC_PP	Fri 5. Feb 12:34	Fri 5. Feb 13:12	0.633
NTBP Seq 19 FSP=10169 LSP=10028 - Approach (Run-in) Shot Points "10169 to 10028" - Not Charged.				
Production Prime	AC_PP	Fri 5. Feb 13:12	Fri 5. Feb 24:00	10.800
SOL Seq 19 MGL1601MCS1D FGSP=10027 FCSP=10027 Hdg=85.9° Prime MSP Seq 19 MGL1601MCS1D LGSP=7683 LCSP=7683 Midnight SOL Feather=-41° SOL Water Depth=4345m				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

5-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Prime Line Change	3.050	12.708
Production Prime	20.950	87.292
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**44.050**
At Anchor	8.767	1.044
Deployment	26.467	3.151
Mob Ashore	52.833	6.290
Transit to Prospect	281.950	33.565
Chargeable Standby	**115.183**	**13.712**
Cetacean	3.033	0.361
Transit	112.150	13.351
DownTime	**75.183**	**8.950**
Contractor Request	13.900	1.655
Equipment Handling	4.750	0.565
Nav Systems Onboard	0.083	0.010
Source	4.700	0.560
Streamers	49.533	5.897
Vessel	2.217	0.264
Acquisition	**216.683**	**25.796**
Prime Line Change	13.167	1.567

Category	Hours	% Percent
Production Prime	203.517	24.228
Demobilisation	**62.933**	**7.492**
Recovery	62.933	7.492
Total	840.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Fri 05 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Fri 05 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Fri 5 Feb	Marcus G Langseth	17 - 19	135.79
Total Production:			**135.79**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	135.79	728.10	728.10	1387.76
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**135.79**	**728.10**	**728.10**	**1392.49**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
17	MCS3	359.1	1488	2763	Prime	47.85	4.426	Complete	Complete
19	MCS1D	85.9	10027	7683	Prime	87.94	4.395	Part	Midnight
NTBP: 10169 - 10028									
Total						**135.79**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

41%

Prime Lines Completed

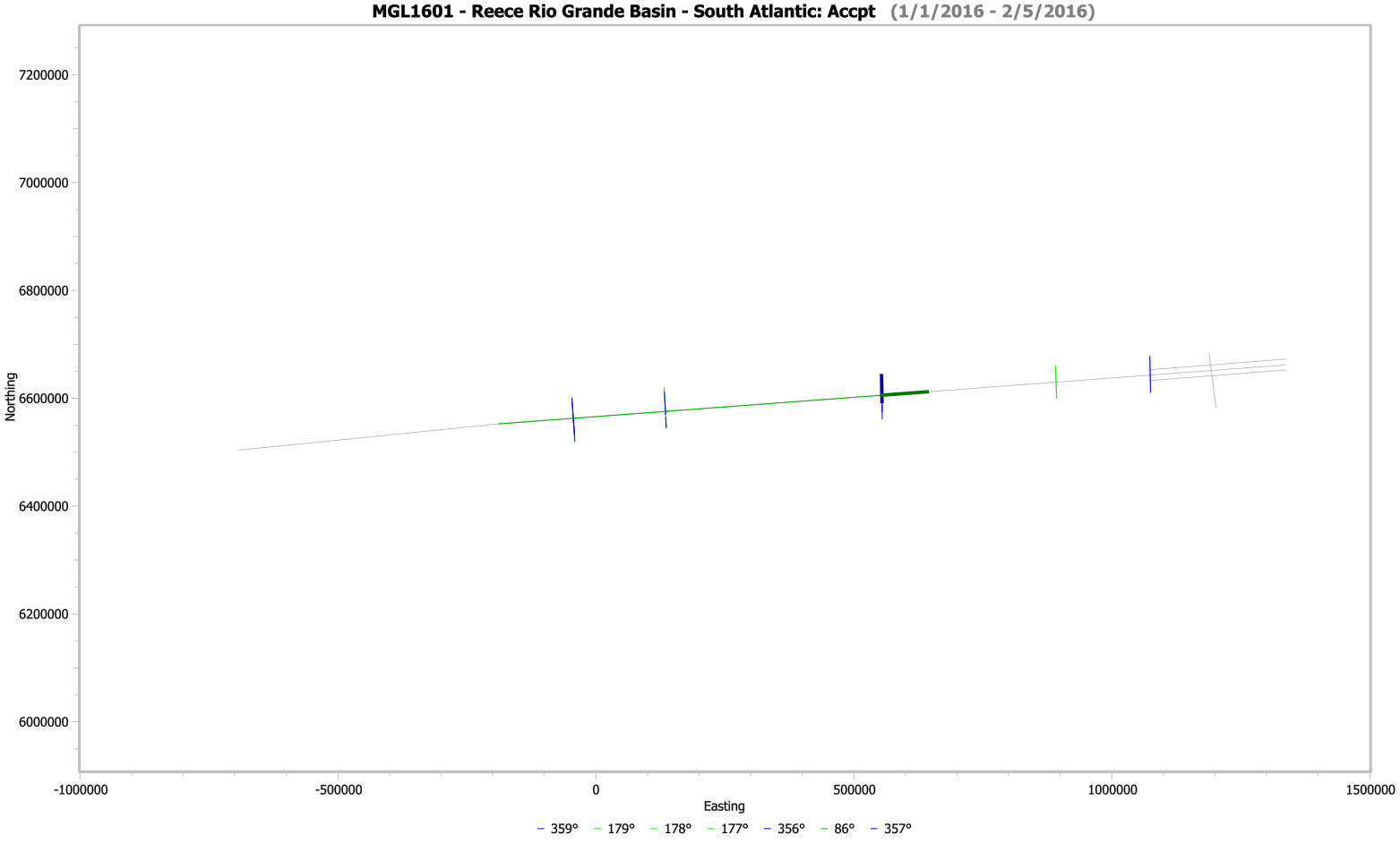
55%

Preplot Lines	Complete	Incomplete	Pending
20	11	1	0

Percentages Charged	
Prime	41.10% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	66.31 km
Average Charged Daily Prime and Infill Production	66.31 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/5/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sat 06 Feb

The Vessel started the day in production on line MGL1601MCS1D and continued throughout the rest of the day. During the day there was one brief power down for a PSO Sighting of a Turtle.

Daily Comment Summaries - Plan for Tomorrow

Sat 06 Feb

The Vessel will start the day in production on line MGL1601MCS1D and at ~07:30 UTC will complete this line. It will start a line Change back to MGL1601MCS02 during which time will acquire data on MGL1601MCST6, MG1601MCS04 is expected to begin at ~14:00 UTC and continue throughout the rest of the day. During the Line change between MCS1D and MCS02 Sub-Arrays 3 & 4 will be recovered for preventive maintenance.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Sat 6. Feb 00:00	Sat 6. Feb 16:06	16.100
SOL Seq 19 MGL1601MCS1D FGSP=7682 FCSP=7682 Hdg=85.9° Prime EOL Seq 19 MGL1601MCS1D LGSP=4184 LCSP=4184 Incomplete				
Cetacean	DT_CT	Sat 6. Feb 16:06	Sat 6. Feb 16:10	0.067
NTBP Seq 19 FSP=4183 LSP=4168 - PSO Sighting of a Turtle				
Production Prime	AC_PP	Sat 6. Feb 16:10	Sat 6. Feb 24:00	7.833
SOL Seq 19 MGL1601MCS1D FGSP=4167 FCSP=4167 Hdg=85.9° Prime MSP Seq 19 MGL1601MCS1D LGSP=2447 LCSP=2447 Midnight				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

6-Feb	Hours	% Percent
Acquisition	**23.933**	**99.722**
Production Prime	23.933	99.722
DownTime	**0.067**	**0.278**
Cetacean	0.067	0.278
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**42.826**
At Anchor	8.767	1.015
Deployment	26.467	3.063
Mob Ashore	52.833	6.115
Transit to Prospect	281.950	32.633
DownTime	**75.250**	**8.709**
Cetacean	0.067	0.008
Contractor Request	13.900	1.609
Equipment Handling	4.750	0.550
Nav Systems Onboard	0.083	0.010
Source	4.700	0.544
Streamers	49.533	5.733
Vessel	2.217	0.257
Chargeable Standby	**115.183**	**13.331**
Cetacean	3.033	0.351
Transit	112.150	12.980
Acquisition	**240.617**	**27.849**
Prime Line Change	13.167	1.524
Production Prime	227.450	26.325
Demobilisation	**62.933**	**7.284**
Recovery	62.933	7.284
Total	864.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 06 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sat 06 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sat 6 Feb	Marcus G Langseth	19	195.75
Total Production:			**195.75**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	195.75	923.85	923.85	1583.51
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**195.75**	**923.85**	**923.85**	**1588.24**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
19	MCS1D	85.9	7682	2447	Prime	195.75	2.925	Part	Mdnight
NTBP: 4183 - 4168									
Total						**195.75**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

47%

Prime Lines Completed

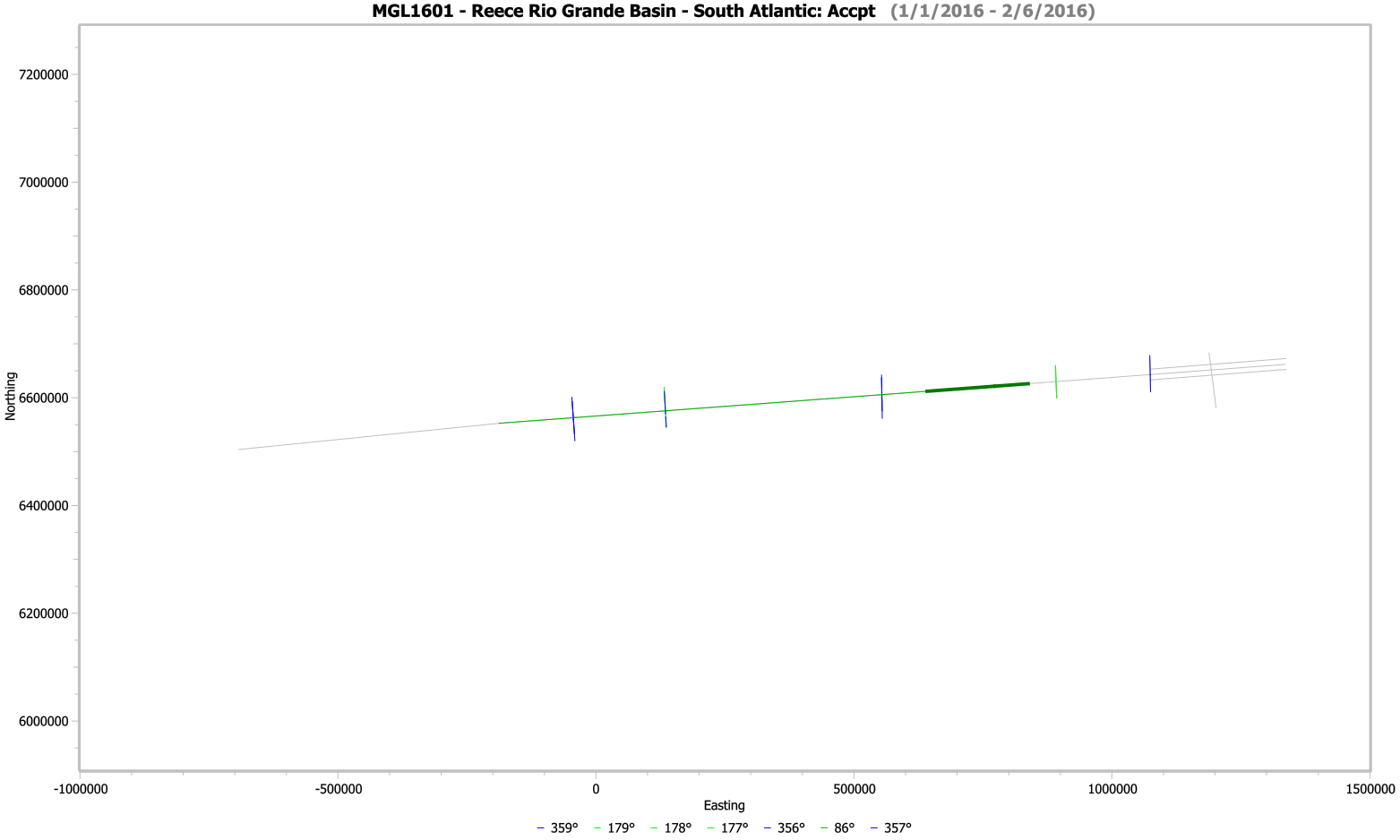
55%

Preplot Lines	Complete	Incomplete	Pending
20	11	1	0

Percentages Charged	
Prime	46.87% of 3388.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	72.19 km
Average Charged Daily Prime and Infill Production	72.19 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/6/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sun 07 Feb

The Vessel started the day in production on line MGL1601MCS1D and at 07:21 UTC completed this line. It start a line Change back to MGL1601MCS02 during which time will acquire data on MGL1601MCST6, MG1601MCS02 began at 13:59 UTC and continued throughout the rest of the day. .During the Line change between MCS1D and MCS02 Sub-Arrays 3 & 4 will be recovered for preventive maintenance.

Daily Comment Summaries - Plan for Tomorrow

Sun 07 Feb

The Vessel will start the day in production on line MGL1601MCS02 and at ~00:07 UTC will complete this line. It will start a line Change back to MGL1601MCS1E during which time will acquire data on MGL1601MCST7, MG1601MCS1E is expected to begin at ~8:00 UTC and continue throughout the rest of the day. During the Line change between MCS02 and MCS1E Sub-Arrays 1 & 2 will be recovered for preventive maintenance.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Sun 7. Feb 00:00	Sun 7. Feb 07:21	7.350
SOL Seq 19 MGL1601MCS1D FGSP=2446 FCSP=2446 Hdg=85.9° Prime EOL Seq 19 MGL1601MCS1D LGSP=837 LCSP=837 Complete EOL Water Depth=3612m				
Infill Line Change	AC_ILC	Sun 7. Feb 07:21	Sun 7. Feb 08:25	1.067
Nominal Infill line change.				
Production Prime	AC_PP	Sun 7. Feb 08:25	Sun 7. Feb 12:47	4.367
SOL Seq 20 MGL1601MCST6 FGSP=1980 FCSP=1980 Hdg=180° Prime EOL Seq 20 MGL1601MCST6 LGSP=2930 LCSP=2930 Complete EOL Feather=-2.4° EOL Water Depth=3621m				
Prime Line Change	AC_PLC	Sun 7. Feb 12:47	Sun 7. Feb 13:59	1.200
Nominal Prime line change.				
Production Infill	AC_PI	Sun 7. Feb 13:59	Sun 7. Feb 15:32	1.550
Seq 21 Approach (Run-in) Shot Points " 667 to 1000" - Not Charged.				
Production Prime	AC_PP	Sun 7. Feb 15:32	Sun 7. Feb 24:00	8.467
SOL Seq 21 MGL1601MCS02 FGSP=1001 FCSP=1001 Hdg=357.8° Prime MSP Seq 21 MGL1601MCS02 LGSP=2736 LCSP=2736 Mdnight SOL Feather=5° SOL Water Depth=3765m				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

7-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Infill Line Change	1.067	4.444
Prime Line Change	1.200	5.000
Production Infill	1.550	6.458
Production Prime	20.183	84.097
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**41.669**
At Anchor	8.767	0.987
Deployment	26.467	2.980
Mob Ashore	52.833	5.950
Transit to Prospect	281.950	31.751
DownTime	**75.250**	**8.474**
Cetacean	0.067	0.008
Contractor Request	13.900	1.565
Equipment Handling	4.750	0.535
Nav Systems Onboard	0.083	0.009
Source	4.700	0.529
Streamers	49.533	5.578
Vessel	2.217	0.250
Chargeable Standby	**115.183**	**12.971**
Cetacean	3.033	0.342
Transit	112.150	12.630

Category	Hours	% Percent
Acquisition	**264.617**	**29.799**
Infill Line Change	1.067	0.120
Prime Line Change	14.367	1.618
Production Infill	1.550	0.175
Production Prime	247.633	27.887
Demobilisation	**62.933**	**7.087**
Recovery	62.933	7.087
Total	888.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 07 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Sun 07 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

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Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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5. Lindsay Rochelle Henning
6. John Anthony Greene
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8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sun 7 Feb	Marcus G Langseth	19 - 21	125.47
Total Production:			**125.47**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	125.47	1049.32	1049.32	1708.99
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**125.47**	**1049.32**	**1049.32**	**1713.71**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
19	MCS1D	85.9	2446	837	Prime	60.38	4.433	Complete	Complete
21	MCS02	357.8	1001	2736	Prime	65.10	4.149	Part	Midnight
NTBP: 667 - 1000									
Total						**125.47**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

51%

Prime Lines Completed

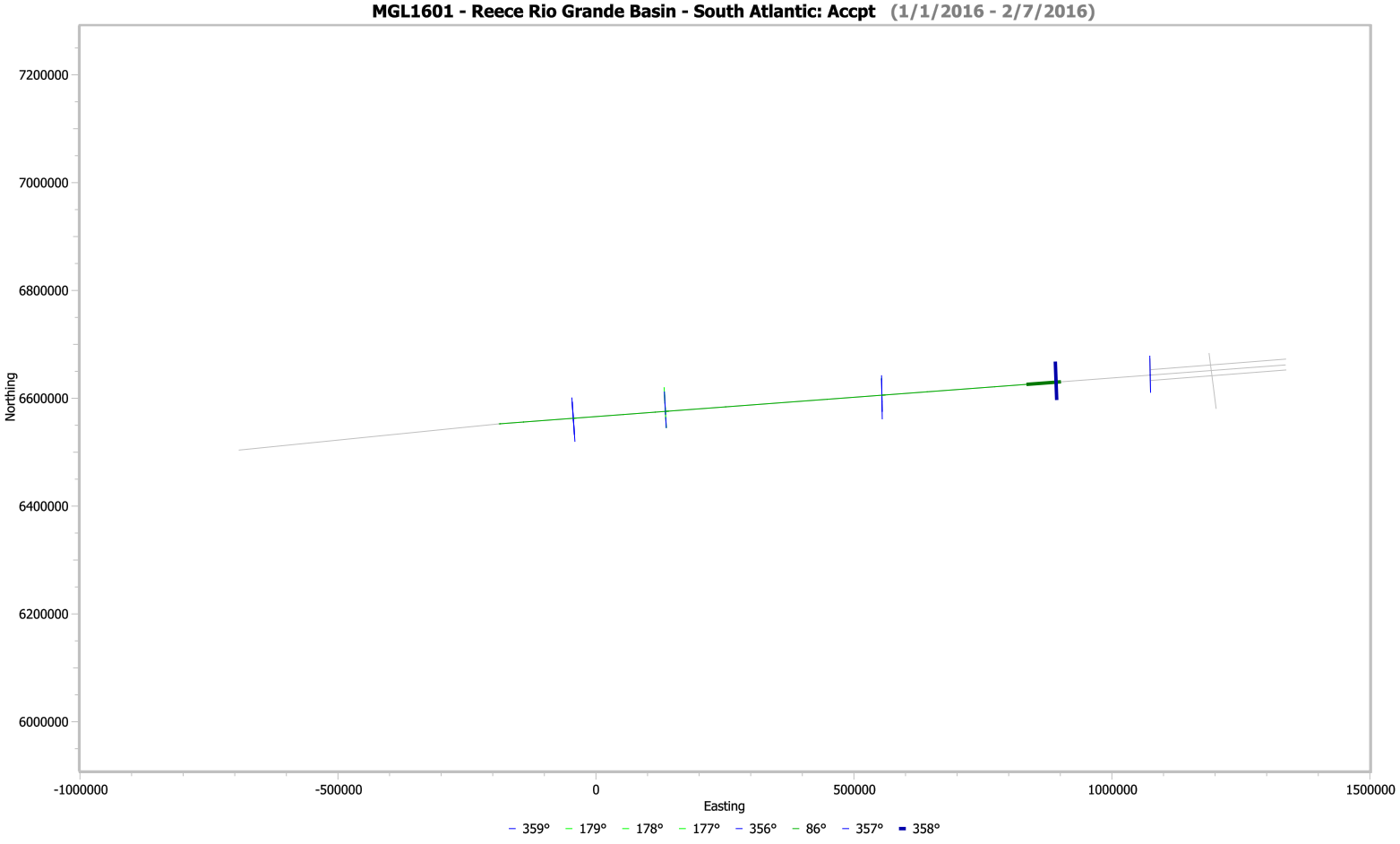
60%

Preplot Lines	Complete	Incomplete	Pending
20	12	1	0

Percentages Charged	
Prime	50.56% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	74.51 km
Average Charged Daily Prime and Infill Production	74.51 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/7/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Mon 08 Feb

The Vessel started the day in production on line MGL1601MCS02 and at 00:07 UTC this line was completed. The Vessel started a line Change back to MGL1601MCS1E during which time it acquire data on MGL1601MCST7. MG1601MCS1E began at 06:00 UTC and continue throughout the rest of the day. During the Line change between MCS02 and MCS1E Sub-Arrays 1 & 2 will be recovered for preventive maintenance.

**Note - From ~10:39 to 12:00 UTC SeaPath failed to receive GPS position on GPS receiver #1. After some general trouble shooting the system started functioning normally. It is not know at this time what caused the failure, but the system is being monitored closely. This Failure caused the Loose of Multibeam data during this time frame.

Daily Comment Summaries - Plan for Tomorrow

Mon 08 Feb

The Vessel will start the day in production on line MGL1601MCS1e and at ~06:20 UTC will complete this line. It will start a line Change back to MGL1601MCS01 during which time will acquire data on MGL1601MCST8, MG1601MCS01 is expected to begin at ~14:00 UTC and continue throughout the rest of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Mon 8. Feb 00:00	Mon 8. Feb 00:07	0.117
SOL Seq 21 MGL1601MCS02 FGSP=2737 FCSP=2737 Hdg=357.8° Prime EOL Seq 21 MGL1601MCS02 LGSP=2763 LCSP=2763 Complete EOL Feather=5.5° EOL Water Depth=3559m				
Infill Line Change	AC_ILC	Mon 8. Feb 00:07	Mon 8. Feb 02:48	2.683
Nominal Infill line change.				
Production Prime	AC_PP	Mon 8. Feb 02:48	Mon 8. Feb 05:44	2.933
SOL Seq 22 MGL1601MCST7 FGSP=1150 FCSP=1150 Hdg=180° Prime EOL Seq 22 MGL1601MCST7 LGSP=1771 LCSP=1771 Complete SOL Feather=25.1° SOL Water Depth=3794m EOL Feather=-15.6° EOL Water Depth=3568m				
Prime Line Change	AC_PLC	Mon 8. Feb 05:44	Mon 8. Feb 06:00	0.267
Nominal Prime line change.				
Production Prime	AC_PP	Mon 8. Feb 06:00	Mon 8. Feb 07:31	1.517
Approach (Run-in) Shot Points " 6213 to 5880" - Not Charged.				
Production Prime	AC_PP	Mon 8. Feb 07:31	Mon 8. Feb 24:00	16.483
SOL Seq 23 MGL1601MCS1E FGSP=5879 FCSP=5879 Hdg=85.9° Prime MSP Seq 23 MGL1601MCS1E LGSP=2244 LCSP=2244 Midnight SOL Feather=-97.7° SOL Water Depth=3578m				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

8-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Infill Line Change	2.683	11.181
Prime Line Change	0.267	1.111
Production Prime	21.050	87.708
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**40.572**
At Anchor	8.767	0.961
Deployment	26.467	2.902
Mob Ashore	52.833	5.793
Transit to Prospect	281.950	30.916
DownTime	**75.250**	**8.251**
Cetacean	0.067	0.007
Contractor Request	13.900	1.524
Equipment Handling	4.750	0.521
Nav Systems Onboard	0.083	0.009
Source	4.700	0.515
Streamers	49.533	5.431
Vessel	2.217	0.243

Category	Hours	% Percent
Chargeable Standby	**115.183**	**12.630**
Cetacean	3.033	0.333
Transit	112.150	12.297
Acquisition	**288.617**	**31.647**
Infill Line Change	3.750	0.411
Prime Line Change	14.633	1.605
Production Infill	1.550	0.170
Production Prime	268.683	29.461
Demobilisation	**62.933**	**6.901**
Recovery	62.933	6.901
Total	912.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Mon 08 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath.. - Note that ~10:39 to 12:00 UTC SeaPath failing to receive GPS position on GPS receiver #1. After some general trouble shooting the system started functioning normally. It is not know at this time what caused the failure, but the system is being monitored closely. This Failure caused the Loose of Multibeam data during this time frame.

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
Due to SeaPath Failure from ~10:39 to 12:00 UTC there was a loose of Multibeam Data during this time frame

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Mon 08 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

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Dubuque, Amanda Ella - Lead PSO
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6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Mon 8 Feb	Marcus G Langseth	21 - 23	137.36
Total Production:			**137.36**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	137.36	137.36	1186.69	1846.35
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**137.36**	**137.36**	**1186.69**	**1851.07**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
21	MCS02	357.8	2737	2763	Prime	1.01	4.512	Complete	Complete
23	MCS1E	85.9	5879	2244	Prime	136.35	4.465	Part	Midnight
NTBP: 6213 - 5880									
Total						**137.36**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

55%

Prime Lines Completed

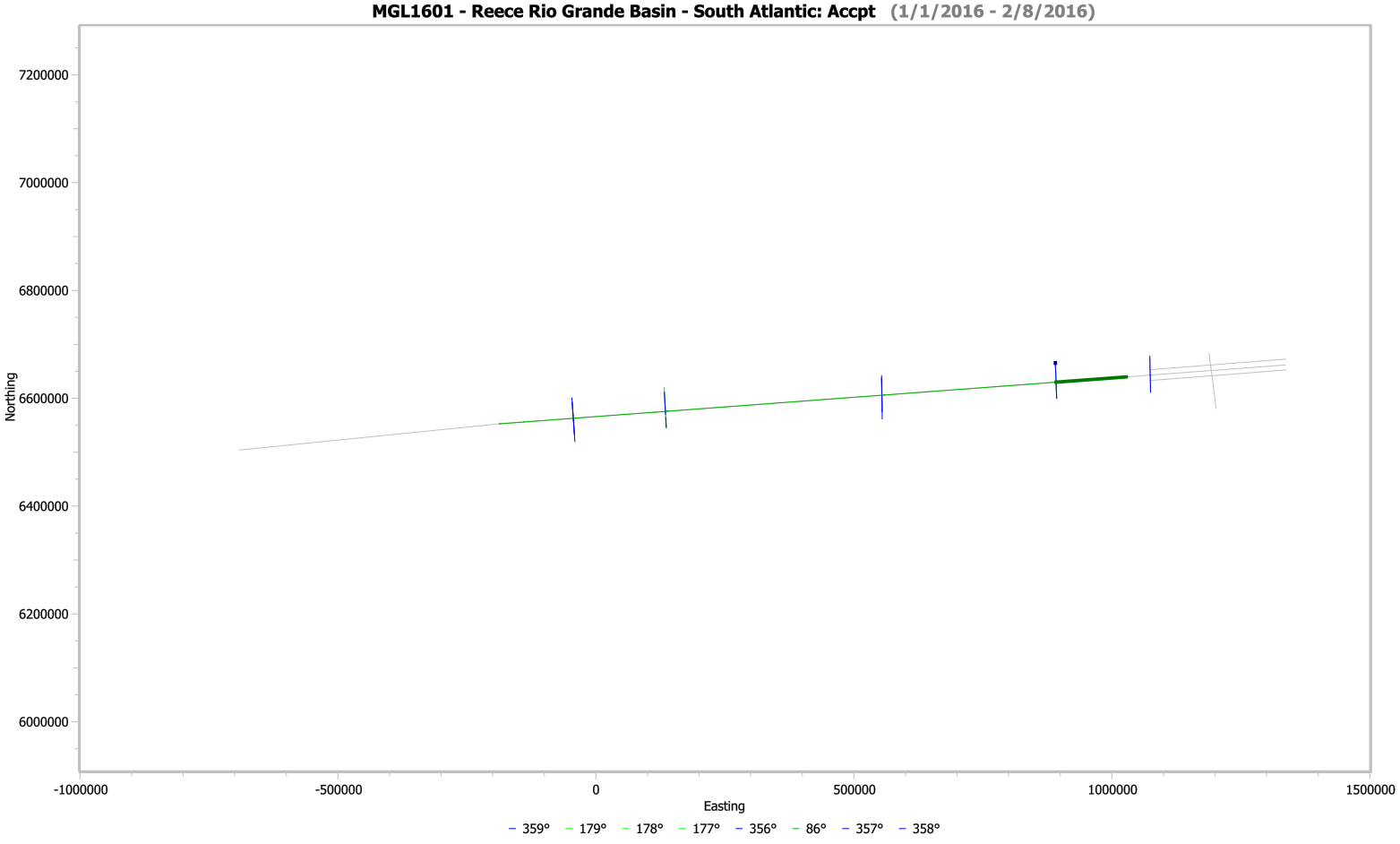
65%

Preplot Lines	Complete	Incomplete	Pending
20	13	1	0

Percentages Charged	
Prime	54.61% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	77.13 km
Average Charged Daily Prime and Infill Production	77.13 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/8/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Tue 09 Feb

The Vessel started the day in production on line MGL1601MCS1e and at 06:25 UTC the line was completed. The Vessel started line Change back to MGL1601MCS01 during which time will acquire data on MGL1601MCST8, MG1601MCS01 is expected to began at 13:04 UTC and continue until 23:06 UTC. The Vessel then started another line change back to MGL1601MCS1F, during which time will acquire data on MGL1601MCST9. The Vessel continued in this mode of operation throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Tue 09 Feb

The Vessel will start the day on line change back to MGL1601MCS1F, during which time will be acquiring data on MGL1601MCST9.. Line MGL1601MCS1F is expected to start ~05:00 UTC and continue throughout the rest of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Tue 9. Feb 00:00	Tue 9. Feb 06:25	6.417
SOL Seq 23 MGL1601MCS1E FGSP=2243 FCSP=2243 Hdg=85.9° Prime EOL Seq 23 MGL1601MCS1E LGSP=846 LCSP=846 Complete				
Prime Line Change	AC_PLC	Tue 9. Feb 06:25	Tue 9. Feb 06:57	0.533
Nominal Prime line change.				
Production Prime	AC_PP	Tue 9. Feb 06:57	Tue 9. Feb 11:51	4.900
SOL Seq 24 MGL1601MCST8 FGSP=1892 FCSP=1892 Hdg=180° Prime EOL Seq 24 MGL1601MCST8 LGSP=2930 LCSP=2930 Complete EOL Feather=-4.3° EOL Water Depth=3309m				
Prime Line Change	AC_PLC	Tue 9. Feb 11:51	Tue 9. Feb 13:04	1.217
Nominal Prime line change.				
Production Prime	AC_PP	Tue 9. Feb 13:04	Tue 9. Feb 14:36	1.533
Seq 25 - Approach (Run-in) Shot Points "667-1000" - Not Charge				
Production Prime	AC_PP	Tue 9. Feb 14:36	Tue 9. Feb 23:06	8.500
SOL Seq 25 MGL1601MCS01 FGSP=1001 FCSP=1001 Hdg=358.8° Prime EOL Seq 25 MGL1601MCS01 LGSP=2763 LCSP=2763 Complete SOL Feather=0° SOL Water Depth=3157m EOL Feather=1.8° EOL Water Depth=3233m				
Infill Line Change	AC_ILC	Tue 9. Feb 23:06	Tue 9. Feb 24:00	0.900
Nominal Infill line change.				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

9-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Infill Line Change	0.900	3.750
Prime Line Change	1.750	7.292
Production Prime	21.350	88.958
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**39.532**
At Anchor	8.767	0.937
Deployment	26.467	2.828
Mob Ashore	52.833	5.645
Transit to Prospect	281.950	30.123
DownTime	**75.250**	**8.040**
Cetacean	0.067	0.007
Contractor Request	13.900	1.485
Equipment Handling	4.750	0.507
Nav Systems Onboard	0.083	0.009
Source	4.700	0.502
Streamers	49.533	5.292
Vessel	2.217	0.237
Chargeable Standby	**115.183**	**12.306**
Cetacean	3.033	0.324

Category	Hours	% Percent
Transit	112.150	11.982
Acquisition	**312.617**	**33.399**
Infill Line Change	4.650	0.497
Prime Line Change	16.383	1.750
Production Infill	1.550	0.166
Production Prime	290.033	30.986
Demobilisation	**62.933**	**6.724**
Recovery	62.933	6.724
Total	936.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Tue 09 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Tue 09 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Tue 9 Feb	Marcus G Langseth	23 - 25	118.54
Total Production:			**118.54**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	118.54	255.90	1305.22	1964.89
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**118.54**	**255.90**	**1305.22**	**1969.61**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
23	MCS1E	85.9	2243	846	Prime	52.42	4.408	Complete	Complete
25	MCS01	358.8	1001	2763	Prime	66.11	4.197	Complete	Complete
NTBP: 667 - 1000									
Total						**118.54**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

58%

Prime Lines Completed

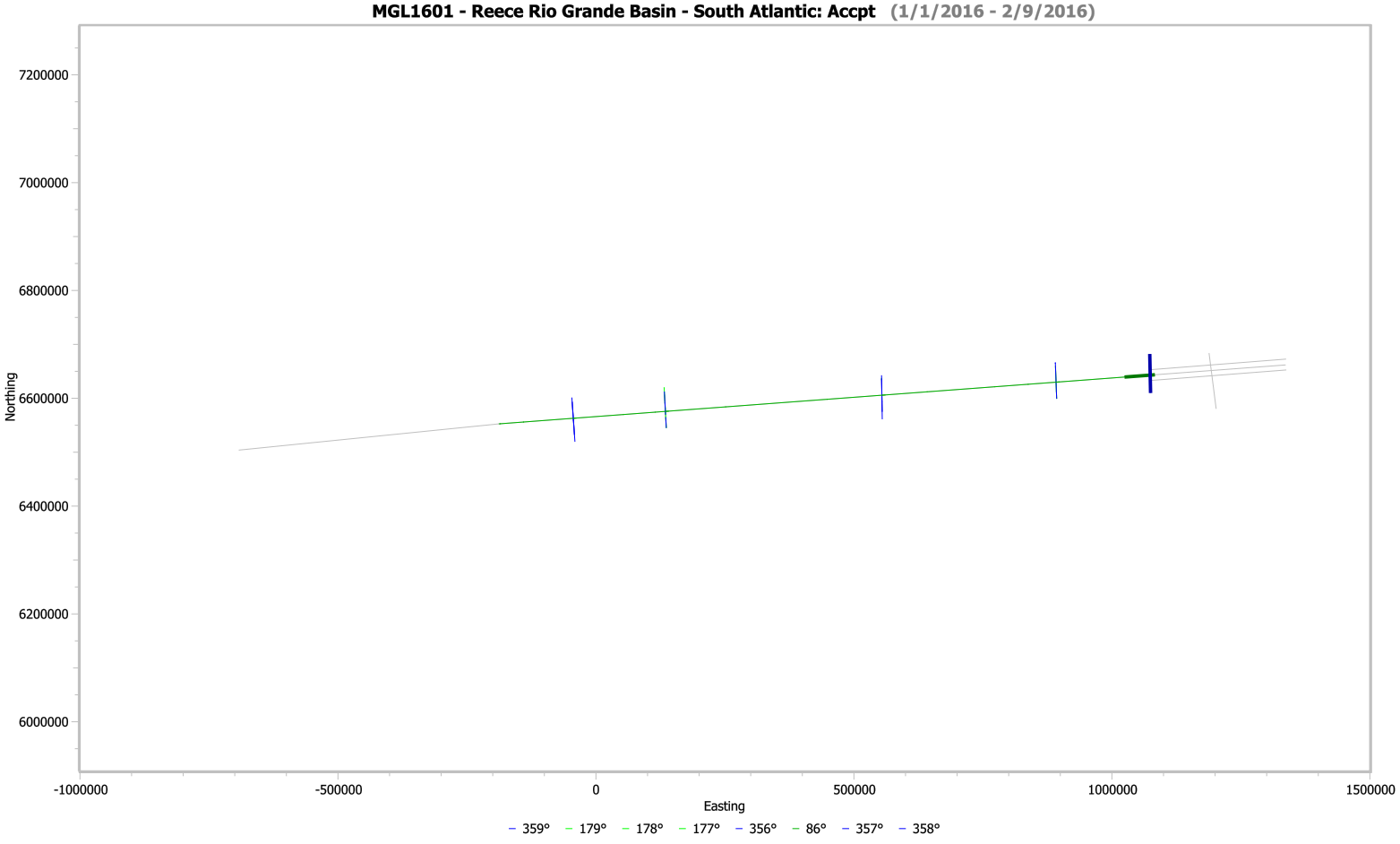
75%

Preplot Lines	Complete	Incomplete	Pending
20	15	0	0

Percentages Charged	
Prime	58.11% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	78.78 km
Average Charged Daily Prime and Infill Production	78.78 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/9/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Wed 10 Feb

The Vessel Started the day on line change back to MGL1601MCS1F, during which time it acquired data on MGL1601MCST9.. Line MGL1601MCS1F started 05:03 UTC and continue throughout the rest of the day. Near the begging of Line MGL1601MCS1F, the SEAL recording system locked up. The Issues was found to be that SeisNET #1 disk drive had filled up and as soon as this problem was corrected SEAL was brought back on-line an recording continued.

Daily Comment Summaries - Plan for Tomorrow

Wed 10 Feb

The Vessel will start the day continuing production on Line MGL1601MCS1F This line is expected to be completed at ~15:24 UTC. At which time the vessel will begin a line change to MGL1601MCS06. During the Line CHange Sub-Arrays 3 and 4 will be recovered for maintenance.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Infill Line Change	AC_ILC	Wed 10. Feb 00:00	Wed 10. Feb 00:03	0.050
Nominal Infill line change.				
Production Prime	AC_PP	Wed 10. Feb 00:03	Wed 10. Feb 04:54	4.850
SOL Seq 26 MGL1601MCST9 FGSP=774 FCSP=774 Hdg=180° Prime EOL Seq 26 MGL1601MCST9 LGSP=1766 LCSP=1766 Complete SOL Feather=0° SOL Water Depth=144m				
Prime Line Change	AC_PLC	Wed 10. Feb 04:54	Wed 10. Feb 05:03	0.150
Nominal Prime line change.				
Production Prime	AC_PP	Wed 10. Feb 05:03	Wed 10. Feb 06:49	1.767
Approach (Run-in) Shot Points "8367-7998" - Not Charge				
Production Prime	AC_PP	Wed 10. Feb 06:49	Wed 10. Feb 07:10	0.350
SOL Seq 27 MGL1601MGL1F FGSP=7997 FCSP=7997 Hdg=85.9° Prime EOL Seq 27 MGL1601MGL1F LGSP=7931 LCSP=7931 Incomplete SOL Feather=2° SOL Water Depth=3305m				
Recording	DT_RC	Wed 10. Feb 07:10	Wed 10. Feb 07:31	0.350
NTBP Seq 27 FSP=7930 LSP=7866 - Lock up of SEAL due to SeisNET #1 disk drive filling up.				
Production Prime	AC_PP	Wed 10. Feb 07:31	Wed 10. Feb 24:00	16.483
SOL Seq 27 MGL1601MGL1F FGSP=7865 FCSP=7865 Hdg=85.9° Prime MSP Seq 27 MGL1601MGL1F LGSP=4376 LCSP=4376 Midnight				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

10-Feb	Hours	% Percent
Acquisition	**23.650**	**98.542**
Infill Line Change	0.050	0.208
Prime Line Change	0.150	0.625
Production Prime	23.450	97.708
DownTime	**0.350**	**1.458**
Recording	0.350	1.458
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**38.543**
At Anchor	8.767	0.913
Deployment	26.467	2.757
Mob Ashore	52.833	5.503
Transit to Prospect	281.950	29.370
DownTime	**75.600**	**7.875**
Cetacean	0.067	0.007
Contractor Request	13.900	1.448
Equipment Handling	4.750	0.495
Nav Systems Onboard	0.083	0.009
Recording	0.350	0.036
Source	4.700	0.490
Streamers	49.533	5.160
Vessel	2.217	0.231
Chargeable Standby	**115.183**	**11.998**

Category	Hours	% Percent
Cetacean	3.033	0.316
Transit	112.150	11.682
Acquisition	**336.267**	**35.028**
Infill Line Change	4.700	0.490
Prime Line Change	16.533	1.722
Production Infill	1.550	0.161
Production Prime	313.483	32.655
Demobilisation	**62.933**	**6.556**
Recovery	62.933	6.556
Total	960.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 10 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good. - SEAL Stopped recording during Line MGL1601MCS1F from Shot Point 1067 to 1133. This malfunction occurred due to SeisNET #1's Disk Drive filling up.

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
Maggie was recovered due to erratic reeding and was found to be covered in fishing gear.

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Wed 10 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Wed 10 Feb	Marcus G Langseth	27	133.39
Total Production:			**133.39**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	133.39	389.29	1312.05	2098.28
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**133.39**	**389.29**	**1312.05**	**2103.00**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
27	MGL1F	85.9	7997	4376	Prime	133.39	3.965	Part	Mdnight
NTBP: 8367 - 7998, NTBP: 7930 - 7866									
Total						**133.39**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

62%

Prime Lines Completed

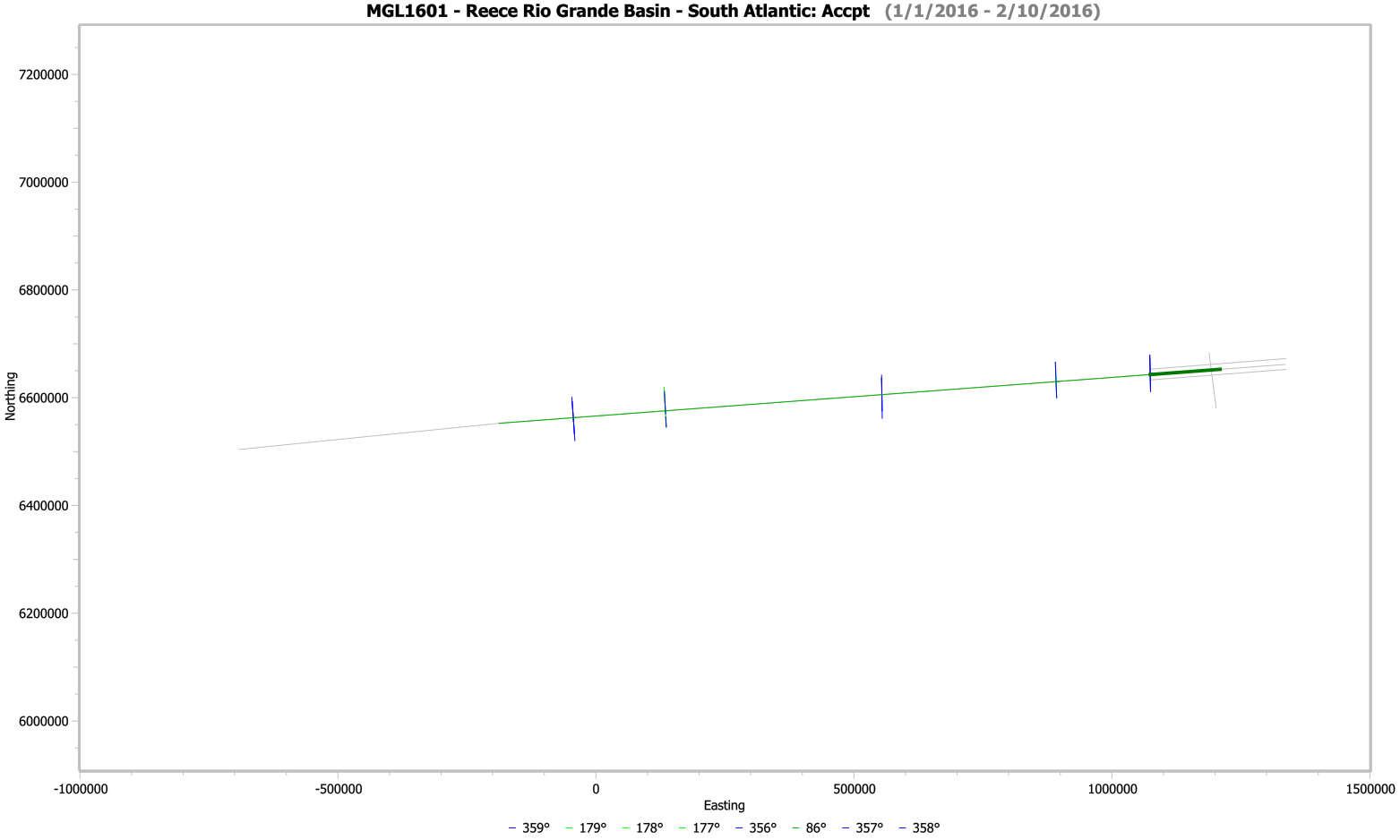
75%

Preplot Lines	Complete	Incomplete	Pending
20	15	1	0

Percentages Charged	
Prime	62.05% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	80.88 km
Average Charged Daily Prime and Infill Production	80.88 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/10/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 11 Feb

The Vessel started the day continuing production on Line MGL1601MCS1F This was completed at 15:27 UTC. At which time the vessel will begin a line change to MGL1601MCS06. During the Line Change between MGL1601MCS1F and MGL1601MCS06, an attempt was made to recover Sub-Arrays 3 and 4 for preventive maintenance. This was aborted due to issue with Hydraulic System #1 where as pump #2 would randomly shut down and pump #3 would not provide any pressure. Sub-Array #3 was redeployed on Pump #1, which had issues during MGL1521. The Engineering Staff is looking into the issues now. The Vessel resumed production on MGL1601MCS06 at 16:54 UTC and continued in this operational mode throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Thu 11 Feb

The vessel will start the day in production on Line MGL1601MCS06 and will continue is this mode throughout the remainder of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Thu 11. Feb 00:00	Thu 11. Feb 15:27	15.450
SOL Seq 27 MGL1601MGL1F FGSP=4375 FCSP=4375 Hdg=85.9° Prime EOL Seq 27 MGL1601MGL1F LGSP=1042 LCSP=1042 Complete EOL Feather=1.8° EOL Water Depth=3159m				
Prime Line Change	AC_PLC	Thu 11. Feb 15:27	Thu 11. Feb 16:54	1.450
Nominal Prime line change.				
Production Prime	AC_PP	Thu 11. Feb 16:54	Thu 11. Feb 17:09	0.250
Approach (Run-in) Shot Points "8077-8027" - Not Charge				
Production Infill	AC_PI	Thu 11. Feb 17:09	Thu 11. Feb 24:00	6.850
SOL Seq 28 MGL1601MCS06 FGSP=8026 FCSP=8026 Hdg=265.7° Infill MSP Seq 28 MGL1601MCS06 LGSP=6621 LCSP=6621 Midnight SOL Feather=120° SOL Water Depth=3112.5m				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

11-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Prime Line Change	1.450	6.042
Production Infill	6.850	28.542
Production Prime	15.700	65.417
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**37.603**
At Anchor	8.767	0.891
Deployment	26.467	2.690
Mob Ashore	52.833	5.369
Transit to Prospect	281.950	28.653
DownTime	**75.600**	**7.683**
Cetacean	0.067	0.007
Contractor Request	13.900	1.413
Equipment Handling	4.750	0.483
Nav Systems Onboard	0.083	0.008
Recording	0.350	0.036
Source	4.700	0.478
Streamers	49.533	5.034
Vessel	2.217	0.225
Chargeable Standby	**115.183**	**11.706**
Cetacean	3.033	0.308
Transit	112.150	11.397
Acquisition	**360.267**	**36.612**
Infill Line Change	4.700	0.478
Prime Line Change	17.983	1.828
Production Infill	8.400	0.854
Production Prime	329.183	33.454
Demobilisation	**62.933**	**6.396**

Category	Hours	% Percent
Recovery	62.933	6.396
Total	984.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 11 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good. -

Towing and Handling (Source):
During the Line Change between MGL1601MCS1F and MGL1601MCS06, an attempt was made to recover Sub-Arrays 3 and 4 for preventive maintenance. This was aborted due to issue with Hydraulic System #1 where as pump #2 would randomly shut down and pump #3 would not provide any pressure. Sub-Array #3 was redeployed on Pump #1, which had issues during MGL1521. The Engineering Staff is looking into the issues now.

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report

Daily Comment Summaries - Personnel Onboard

Thu 11 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Thu 11 Feb	Marcus G Langseth	27 - 28	177.75
Total Production:			**177.75**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	125.02	514.31	1563.64	2223.30
Infill	52.73	52.73	52.73	52.73
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**177.75**	**567.04**	**1616.36**	**2280.75**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
27	MGL1F	85.9	4375	1042	Prime	125.02	4.368	Complete	Complete
28	MCS06	265.7	8026	6621	Infill	52.73	4.153	Part	Midnight
NTBP: 8077 - 8027									
Total						**177.75**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

66%

Prime Lines Completed

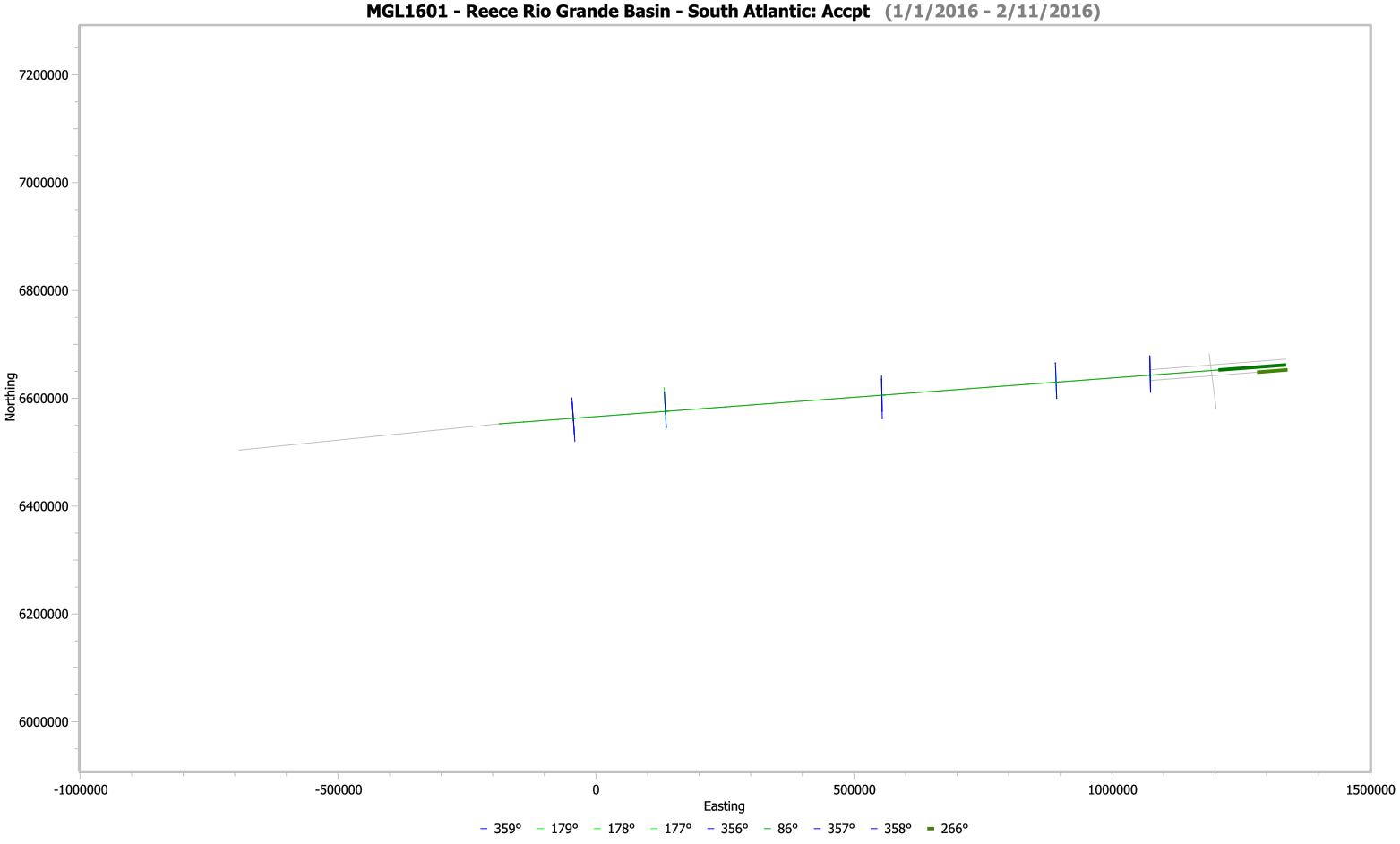
80%

Preplot Lines	Complete	Incomplete	Pending
20	16	0	0

Percentages Charged	
Prime	65.74% of 3389.36 km (Sail Line)
Infill	2.05% of Charged Prime km (Sail Line)
	1.56% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	84.47 km
Average Charged Daily Prime and Infill Production	84.47 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/11/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Fri 12 Feb

The vessel started the day on Line MGL1601MCS06 and at 11:13 UTC that line was stopped to change the Recording Length of the Seismic data from 15 to 16 sec in hope it would allow the vessel to go a little faster, while helping with the telemetry error that where being seen on the recording system. Line MGL1601MCS6A was started at 11:26 and continued through the end of the day.. During line MGL1601MCS6A there was a brief power outage, due to a tripped breaker on the Main Buss Panel in the Engine Control room. This caused a loss of production from 18:19 to 18:24 UTC, while service where being restored.

Daily Comment Summaries - Plan for Tomorrow

Fri 12 Feb

The Vessel will start the day in production on MGL1601MCS6A. This line will conclude at 02:47 UTC. At which time the vessel will start a line change to Line MGL1601MCS08. This Line is expected to start at ~05:30 and continue throughout the rest of the day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Infill	AC_PI	Fri 12. Feb 00:00	Fri 12. Feb 11:13	11.217
SOL Seq 28 MGL1601MCS06 FGSP=6620 FCSP=6620 Hdg=265.7° Infill EOL Seq 28 MGL1601MCS06 LGSP=4213 LCSP=4213 Complete EOL Feather=-2.8° EOL Water Depth=4857m				
Recording	DT_RC	Fri 12. Feb 11:13	Fri 12. Feb 11:26	0.217
Downtime due to recording systems. Changing Record Length to 14 sec to help Recording system with Telemetry errors and allow for faster vessel speed down line.				
Production Prime	AC_PP	Fri 12. Feb 11:26	Fri 12. Feb 18:19	6.883
SOL Seq 29 MGL1601MCS6A FGSP=4170 FCSP=4170 Hdg=265.7° Prime EOL Seq 29 MGL1601MCS6A LGSP=2720 LCSP=2720 Incomplete				
Vessel	DT_VE	Fri 12. Feb 18:19	Fri 12. Feb 18:24	0.083
NTBP Seq 29 FSP=2719 LSP=2704				
Production Prime	AC_PP	Fri 12. Feb 18:24	Fri 12. Feb 24:00	5.600
SOL Seq 29 MGL1601MCS6A FGSP=2703 FCSP=2703 Hdg=265.7° Prime MSP Seq 29 MGL1601MCS6A LGSP=1500 LCSP=1500 Mdnight				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

12-Feb	Hours	% Percent
Acquisition	**23.700**	**98.750**
Production Infill	11.217	46.736
Production Prime	12.483	52.014
DownTime	**0.300**	**1.250**
Recording	0.217	0.903
Vessel	0.083	0.347
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**36.708**
At Anchor	8.767	0.870
Deployment	26.467	2.626
Mob Ashore	52.833	5.241
Transit to Prospect	281.950	27.971
DownTime	**75.900**	**7.530**
Cetacean	0.067	0.007
Contractor Request	13.900	1.379
Equipment Handling	4.750	0.471
Nav Systems Onboard	0.083	0.008
Recording	0.567	0.056
Source	4.700	0.466
Streamers	49.533	4.914
Vessel	2.300	0.228
Chargeable Standby	**115.183**	**11.427**
Cetacean	3.033	0.301
Transit	112.150	11.126
Acquisition	**383.967**	**38.092**
Infill Line Change	4.700	0.466
Prime Line Change	17.983	1.784

Category	Hours	% Percent
Production Infill	19.617	1.946
Production Prime	341.667	33.896
Demobilisation	**62.933**	**6.243**
Recovery	62.933	6.243
Total	1008.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Fri 12 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good. -

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
During line MGL1601MCS6A there was a brief power outage, due to a tripped breaker on the Main Buss Panel in the Engine Control room. This caused a loss of production from 18:19 to 18:24 UTC, while service where being restored.

Daily Comment Summaries - Personnel Onboard

Fri 12 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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1. Robert Sherman Reece - PI
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4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Fri 12 Feb	Marcus G Langseth	28 - 29	189.86
Total Production:			**189.86**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	189.86	756.90	1806.22	2465.89
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**189.86**	**756.90**	**1806.22**	**2470.61**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
28	MCS06	265.7	6620	4213	Prime	90.30	4.345	Complete	Complete
29	MCS6A	265.7	4170	1500	Prime	99.56	3.102	Part	Midnight
NTBP: 2719 - 2704									
Total						**189.86**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

73%

Prime Lines Completed

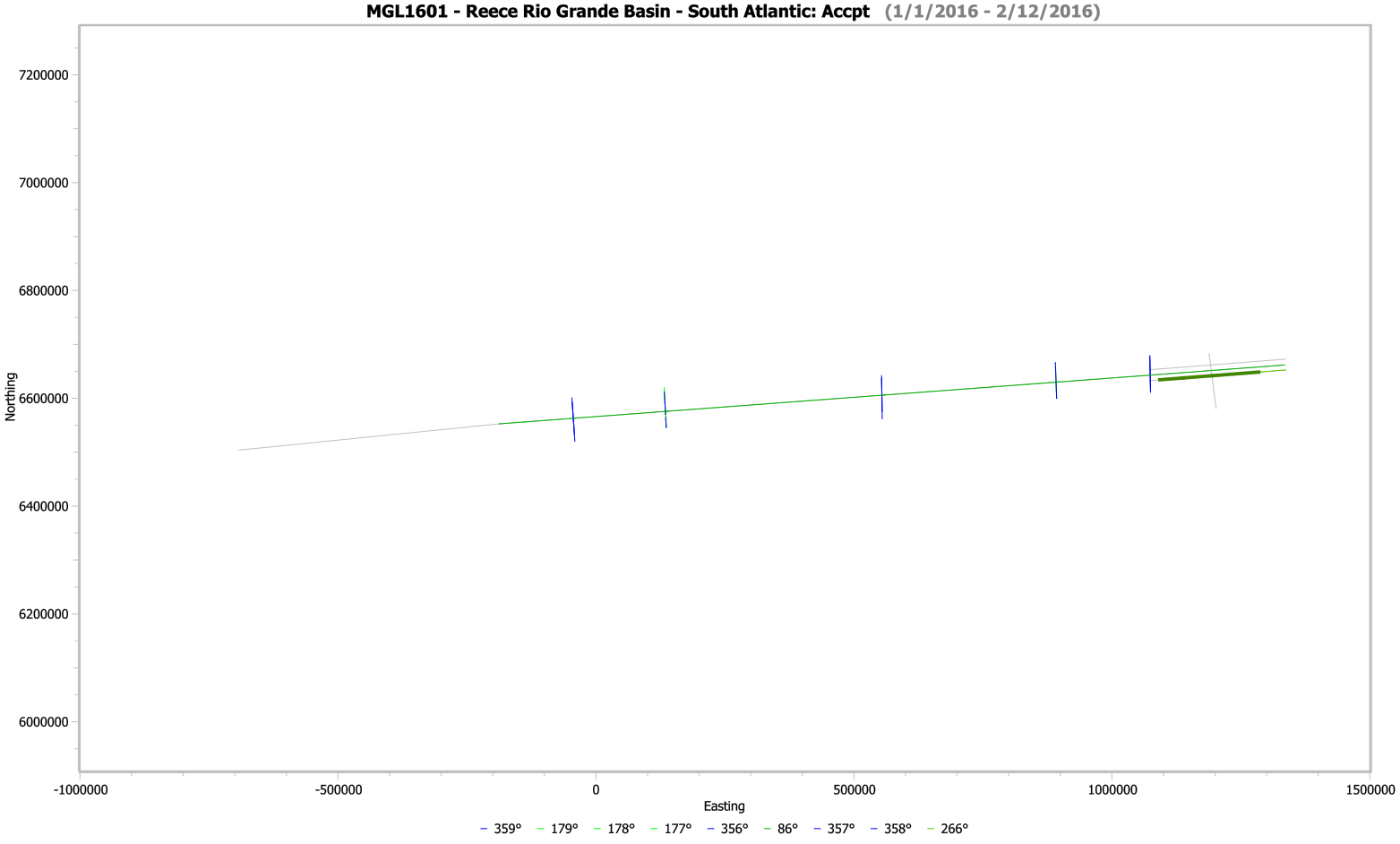
85%

Preplot Lines	Complete	Incomplete	Pending
20	17	0	0

Percentages Charged	
Prime	72.89% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	88.24 km
Average Charged Daily Prime and Infill Production	88.24 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/12/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sat 13 Feb

The Vessel started the day in production on MGL1601MCS6A. This concluded at 02:47 UTC, at which time the vessel will start a line change to Line MGL1601MCS08. This Line started 05:32 and continue throughout the rest of the day.

Daily Comment Summaries - Plan for Tomorrow

Sat 13 Feb

The Vessel started the day continuing production on MGL1601MCS08. The Vessel will remain in this mode until 06:00, at which time will begin recovering all towed equipment. The Towed equipment is expected to be on-board by 18:00 UTC and the vessel will begin the transit back to CVI.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Sat 13. Feb 00:00	Sat 13. Feb 02:47	2.783
SOL Seq 29 MGL1601MCS6A FGSP=1499 FCSP=1499 Hdg=265.7° Prime EOL Seq 29 MGL1601MCS6A LGSP=874 LCSP=874 Complete EOL Feather=0.1° EOL Water Depth=3100m				
Infill Line Change	AC_ILC	Sat 13. Feb 02:47	Sat 13. Feb 05:52	3.083
Nominal Infill line change.				
Production Prime	AC_PP	Sat 13. Feb 05:52	Sat 13. Feb 07:03	1.183
Approach (Run-in) Shot Points "667 to 1000" - Not Charge				
Production Prime	AC_PP	Sat 13. Feb 07:03	Sat 13. Feb 24:00	16.950
SOL Seq 30 MGL1601MCS08 FGSP=1001 FCSP=1001 Hdg=85.7° Prime MSP Seq 30 MGL1601MCS08 LGSP=4709 LCSP=4709 Mdnight SOL Feather=1° SOL Water Depth=3422m				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

13-Feb	Hours	% Percent
Acquisition	**24.000**	**100.000**
Infill Line Change	3.083	12.847
Production Prime	20.917	87.153
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**35.854**
At Anchor	8.767	0.849
Deployment	26.467	2.565
Mob Ashore	52.833	5.120
Transit to Prospect	281.950	27.321
DownTime	**75.900**	**7.355**
Cetacean	0.067	0.006
Contractor Request	13.900	1.347
Equipment Handling	4.750	0.460
Nav Systems Onboard	0.083	0.008
Recording	0.567	0.055
Source	4.700	0.455
Streamers	49.533	4.800
Vessel	2.300	0.223
Chargeable Standby	**115.183**	**11.161**
Cetacean	3.033	0.294
Transit	112.150	10.867
Acquisition	**407.967**	**39.532**
Infill Line Change	7.783	0.754
Prime Line Change	17.983	1.743
Production Infill	19.617	1.901
Production Prime	362.583	35.134
Demobilisation	**62.933**	**6.098**
Recovery	62.933	6.098
Total	1032.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 13 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 is still not operational. Data is being looped back through LAUM #7. All data looks good. -

Towing and Handling (Source):
No Major Issues to Report

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Sat 13 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sat 13 Feb	Marcus G Langseth	29 - 30	162.56
Total Production:			**162.56**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	162.56	919.46	1968.79	2628.45
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**162.56**	**919.46**	**1968.79**	**2633.18**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
29	MCS6A	265.7	1499	874	Prime	23.47	4.547	Complete	Complete
30	MCS08	85.7	1001	4709	Prime	139.09	4.430	Part	Midnight
NTBP: 667 - 1000									
Total						**162.56**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

78%

Prime Lines Completed

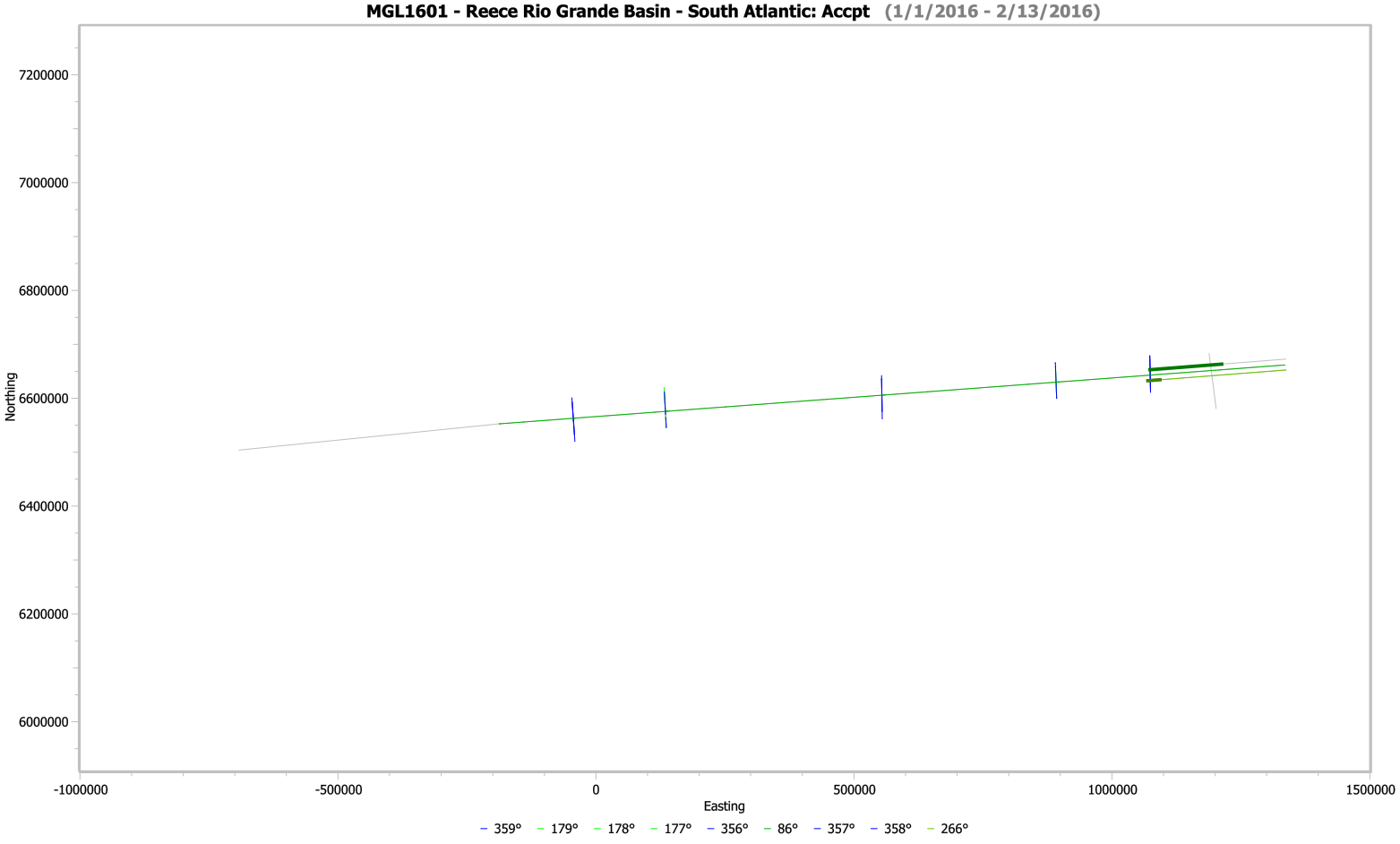
85%

Preplot Lines	Complete	Incomplete	Pending
20	17	1	0

Percentages Charged	
Prime	77.69% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	90.80 km
Average Charged Daily Prime and Infill Production	90.80 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/13/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sun 14 Feb

The Vessel started the day continuing production on MGL1601MCS08. The Vessel completed the line at 06:00 UTC and begin recovering all towed equipment. The Towed equipment was all on-board by 14:59 UTC and the vessel will begin the transit back to CVI, which continued throughout the day. ETA Porto Grande, CVI 25th of Feb at ~19:00 UTC.

Daily Comment Summaries - Plan for Tomorrow

Sun 14 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Production Prime	AC_PP	Sun 14. Feb 00:00	Sun 14. Feb 05:59	5.983
SOL Seq 30 MGL1601MCS08 FGSP=4710 FCSP=4710 Hdg=85.7° Prime EOL Seq 30 MGL1601MCS08 LGSP=6040 LCSP=6040 Complete EOL Feather=-4.2° EOL Water Depth=3219m				
Recovery	DM_RC	Sun 14. Feb 05:59	Sun 14. Feb 07:40	1.683
Recovery of Source, PAM, and Maggie				
Streamers	DT_ST	Sun 14. Feb 07:40	Sun 14. Feb 08:55	1.250
Downtime due to removal of loops from lead-in 2 and re-tensioning of Lead-in				
Recovery	DM_RC	Sun 14. Feb 08:55	Sun 14. Feb 14:47	5.867
Demobilising offshore, recovering Streamer				
Transit From Prospect	DM_TF	Sun 14. Feb 14:47	Sun 14. Feb 24:00	9.217
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

14-Feb	Hours	% Percent
Acquisition	**5.983**	**24.931**
Production Prime	5.983	24.931
Demobilisation	**16.767**	**69.861**
Recovery	7.550	31.458
Transit From Prospect	9.217	38.403
DownTime	**1.250**	**5.208**
Streamers	1.250	5.208
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**35.039**
At Anchor	8.767	0.830
Deployment	26.467	2.506
Mob Ashore	52.833	5.003
Transit to Prospect	281.950	26.700
DownTime	**77.150**	**7.306**
Cetacean	0.067	0.006
Contractor Request	13.900	1.316
Equipment Handling	4.750	0.450
Nav Systems Onboard	0.083	0.008
Recording	0.567	0.054
Source	4.700	0.445
Streamers	50.783	4.809
Vessel	2.300	0.218
Chargeable Standby	**115.183**	**10.908**
Cetacean	3.033	0.287
Transit	112.150	10.620
Acquisition	**413.950**	**39.200**
Infill Line Change	7.783	0.737
Prime Line Change	17.983	1.703
Production Infill	19.617	1.858
Production Prime	368.567	34.902

Category	Hours	% Percent
Demobilisation	**79.700**	**7.547**
Recovery	70.483	6.675
Transit From Prospect	9.217	0.873
Total	1056.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 14 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
LAUM #5 on Streamer 1 was changed. Streamer was recovered and there was a little damage as we had one bird which lost one of its wings and the taildrag has skin damaged due to something striking it while under tow.

Towing and Handling (Source):
Failed Lifting Harness on the PORT PV-3000

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Sun 14 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production
Sun 14 Feb	Marcus G Langseth	30	49.91
Total Production:			**49.91**

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	49.91	969.38	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**49.91**	**969.38**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
30	MCS08	85.7	4710	6040	Prime	49.91	4.501	Complete	Complete
Total						**49.91**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

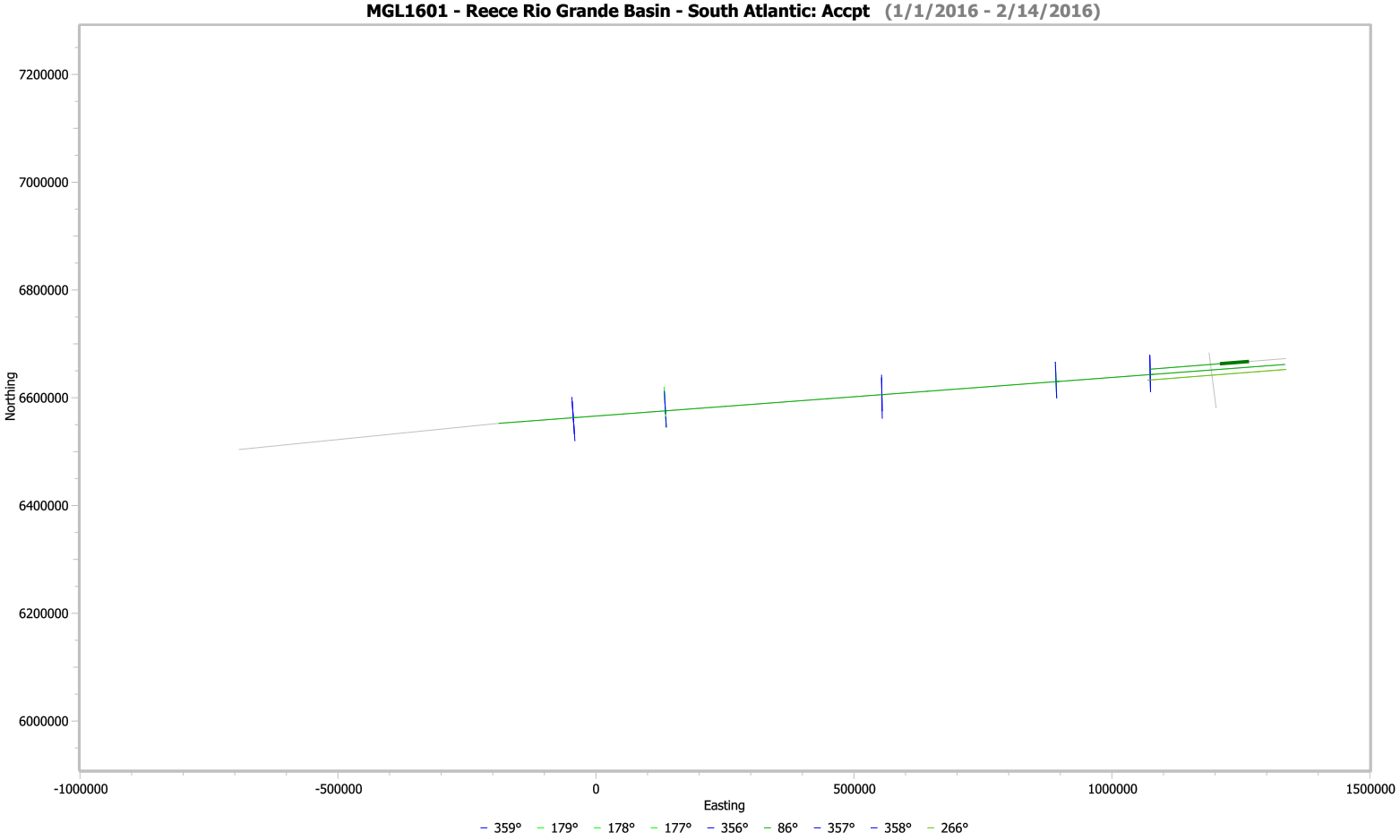
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	89.44 km
Average Charged Daily Prime and Infill Production	89.44 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/14/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Mon 15 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.
1. Changed out TES on Streamer 2
2. Testing - All II the streamer equipment that was suspected bad during the deployment- See Daily Comments on Status of Equipment for Details.
3. Started Processing MGL1601 MCS Navigation Data
4. Updated the Streamer Layout Sheets
5. Cleaned up and Put Maggie back in the Storage Container in Port Lab
6. Affected re-pairs to the PV-3000 Damaged during recovery.
7. Completed Shipping Documentation for SSCU (165) to be sent in for repair.
8. Started Re-termination of Damaged Maggie Tow Leader
9. Started Re-Building Source Elements
10. Stored XBT flume and put way both XBT Launchers
11. Cleaned up and Stored the remaining SSCU equipment in its shipment case on the shelves in the A-Deck Lab.
12. Started working on CSO handover notes.

Daily Comment Summaries - Plan for Tomorrow

Mon 15 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Mon 15. Feb 00:00	Mon 15. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

15-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**34.261**
At Anchor	8.767	0.812
Deployment	26.467	2.451
Mob Ashore	52.833	4.892
Transit to Prospect	281.950	26.106
DownTime	**77.150**	**7.144**
Cetacean	0.067	0.006
Contractor Request	13.900	1.287
Equipment Handling	4.750	0.440
Nav Systems Onboard	0.083	0.008
Recording	0.567	0.052
Source	4.700	0.435
Streamers	50.783	4.702
Vessel	2.300	0.213
Chargeable Standby	**115.183**	**10.665**
Cetacean	3.033	0.281
Transit	112.150	10.384
Acquisition	**413.950**	**38.329**
Infill Line Change	7.783	0.721
Prime Line Change	17.983	1.665
Production Infill	19.617	1.816
Production Prime	368.567	34.127
Demobilisation	**103.700**	**9.602**
Recovery	70.483	6.526
Transit From Prospect	33.217	3.076
Total	1080.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Mon 15 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
This morning the crew had a chance to go through all the streamer equipment that was suspected bad during the deployment.
Here is a list of items on-board that are in need of repair.
LAUM:
1. S/N: 1590 – Failed Auto Test – Bad Telemetry
2. S/N: 1871 - Leakage issue – Failed during sea trials in 2015

SSAS: (Section 34)
1. S/N: 20113 – Skin Damage on Boot and Sea Water intrusion

SSCU:
1. S/N: 165 – High Voltage Power Line Failure –

TES:
1. S/N: 3033 – Skin Damage and Sea water intrusion

All other Equipment Suspected bad was re-tested an determined to be good.
LAUM:
1. S/N: 1318 – Tested Good — No Leakage
2. S/N: 1132 – Tested Good – No Leakage

HAU:
1. S/N: 686 – Tested Good and is in service in the recovery front end

TAPU:
1. S/N: 237 – Tested Good – No Leakage

Towing and Handling (Source):
Re-pairs to PV-3000 Completed, just need to re-locate it to its proper location.

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Mon 15 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
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1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

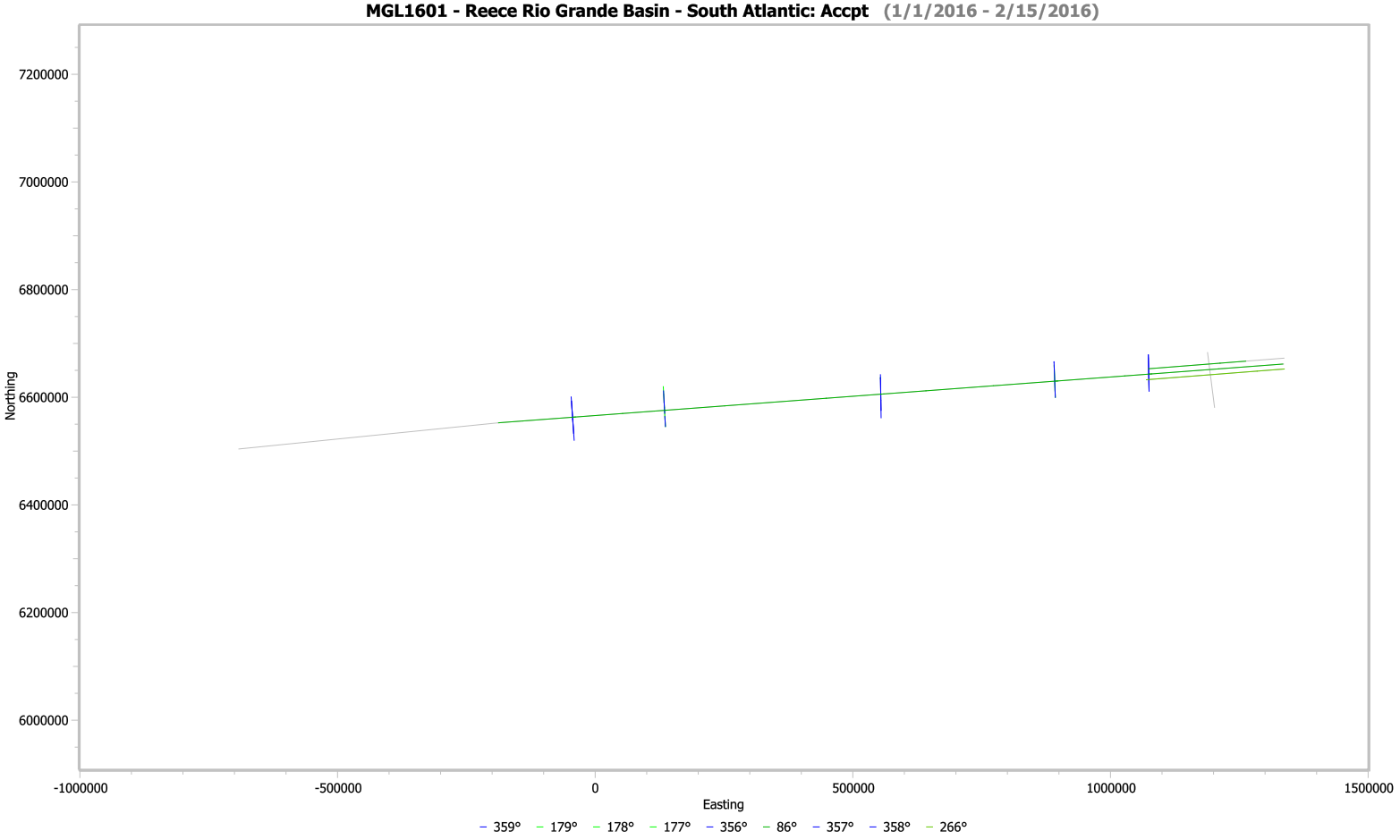
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	86.55 km
Average Charged Daily Prime and Infill Production	86.55 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/15/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Wed 17 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.

FInished Processing MGL1601 MCS Navigation Data
Started re-processing MGL0808 MCS Navigation data, as well as MG1521 OBS Navigation Data
Continued Re-Building Source Elements
Continued working on CSO handover notes.
Completed to Dismantle Birds and Pods - Completing full check out on Each
Completed relocation of Public Internet PC to ships office in preparation for MGL1602
Mounted PosNET Tailbuoy GPS Pod on Mast of TB#1
Worked on various REQ
Continue to Clean and Stored away Lab Spaces

Daily Comment Summaries - Plan for Tomorrow

Wed 17 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Wed 17. Feb 00:00	Wed 17. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

17-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**32.803**
At Anchor	8.767	0.777
Deployment	26.467	2.346
Mob Ashore	52.833	4.684
Transit to Prospect	281.950	24.996
DownTime	**77.150**	**6.840**
Cetacean	0.067	0.006
Contractor Request	13.900	1.232
Equipment Handling	4.750	0.421
Nav Systems Onboard	0.083	0.007
Recording	0.567	0.050
Source	4.700	0.417
Streamers	50.783	4.502
Vessel	2.300	0.204
Chargeable Standby	**115.183**	**10.211**
Cetacean	3.033	0.269
Transit	112.150	9.942
Acquisition	**413.950**	**36.698**
Infill Line Change	7.783	0.690
Prime Line Change	17.983	1.594
Production Infill	19.617	1.739
Production Prime	368.567	32.674
Demobilisation	**151.700**	**13.449**
Recovery	70.483	6.249
Transit From Prospect	81.217	7.200
Total	1128.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 17 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Wed 17 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

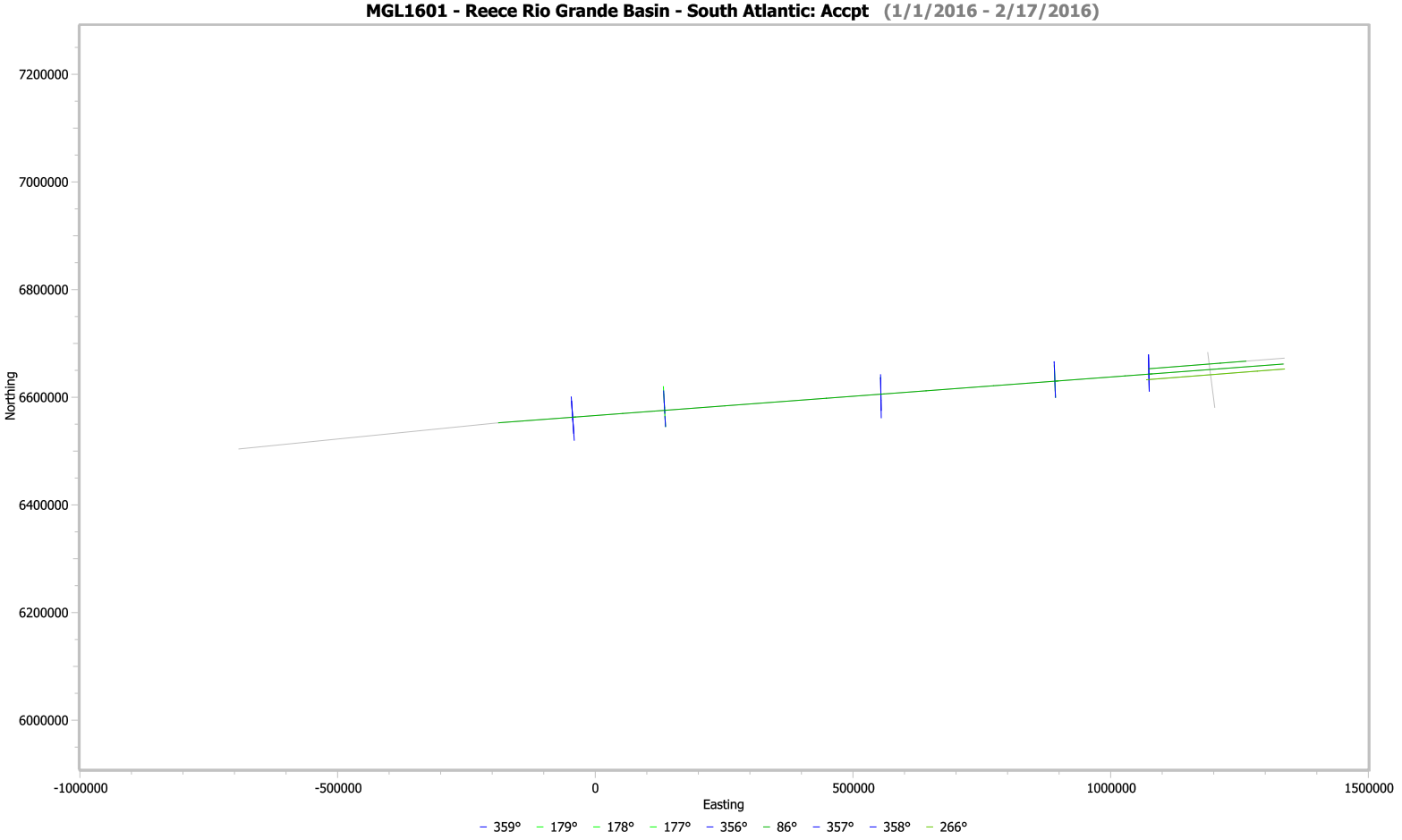
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	81.31 km
Average Charged Daily Prime and Infill Production	81.31 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/17/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 18 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.

Continued re-processing MGL0808 MCS Navigation data, as well as MG1521 OBS Navigation Data
Started Training on SPIRT Processing software
Started Training on Quick Plot Pro and SurvOPT software
Continued Re-Building Source Elements
Continued working on CSO handover notes.
Completed full inventory off all Birds, PODs, and SRD's
Continued to mounted PosNET Tailbuoy GPS Pod on Mast of TB#1
Worked on various REQ
Continue to Clean and Stored away Lab Spaces
Completed weekly checks of Workboat
Conducted Daily BIST Test on EM122
Completed Daily Function Test of EM122 and Knudsen
Investigated Modifying Small diameter Seal Weights to work with the Sentinel Streamer.
Started doing deck test of Wide Tow winches. During testing of the Stbd Wide Tow Winch, had a failure of the counterbalance valve on the slewing side of the hydraulic circuit.
Any further test have been post ponded until replacement parts can be secured.

Daily Comment Summaries - Plan for Tomorrow

Thu 18 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Thu 18. Feb 00:00	Thu 18. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

18-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**32.120**
At Anchor	8.767	0.761
Deployment	26.467	2.297
Mob Ashore	52.833	4.586
Transit to Prospect	281.950	24.475
DownTime	**77.150**	**6.697**
Cetacean	0.067	0.006
Contractor Request	13.900	1.207
Equipment Handling	4.750	0.412
Nav Systems Onboard	0.083	0.007
Recording	0.567	0.049
Source	4.700	0.408
Streamers	50.783	4.408
Vessel	2.300	0.200
Chargeable Standby	**115.183**	**9.999**
Cetacean	3.033	0.263
Transit	112.150	9.735
Acquisition	**413.950**	**35.933**
Infill Line Change	7.783	0.676
Prime Line Change	17.983	1.561
Production Infill	19.617	1.703
Production Prime	368.567	31.994
Demobilisation	**175.700**	**15.252**
Recovery	70.483	6.118
Transit From Prospect	105.217	9.133
Total	1152.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 18 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
During testing of the Stbd Wide Tow Winch, had a failure of the counterbalance valve on the slewing side of the hydraulic circuit. There was a small oil leak as well as some flying metal. No one was seriously injured and the oil was all oil was contained in the containment try around the winch. We do not have any spare on-board of the particular SUN Counterbalance Valve that fail. A order will be placed and a report w/ photos will be forth coming which will detail what work has to be completed on these winches during the next maintenance period. .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Thu 18 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
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5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

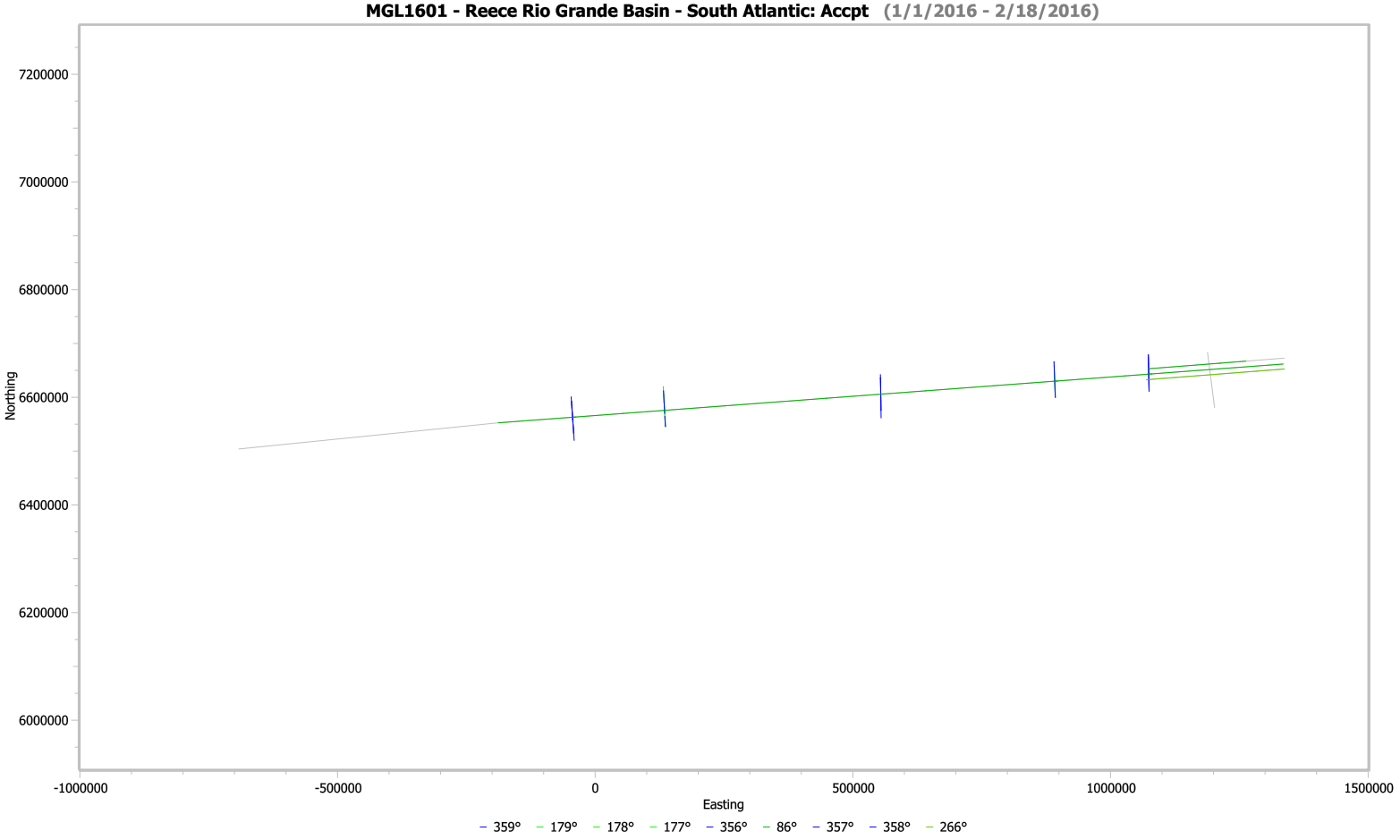
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	78.91 km
Average Charged Daily Prime and Infill Production	78.91 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/18/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Fri 19 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.

Continued re-processing MGL0808 MCS Navigation data, as well as MG1521 OBS Navigation Data
Continued Training on SPIRT Processing software
Continued Training on Quick Plot Pro and SurvOPT software
Continued Re-Building Source Elements
Raised Source Sub-Array 1 up to allow for more Pallets to be stored under it during the MGL1602 Cruise.
Removed Source Elements and raised other Source Sub-Arrays to all for easy access in walk ways.
Continued working on CSO handover notes.
Continue to Clean and Stored away Lab Spaces
Conducted Daily BIST Test on EM122
Completed Daily Function Test of EM122 and Knudsen
Completed Packing up SSCU for Shipment on arrival in CVI
Worked with HSN Support to track down new HSN Modem being delivered to CVI
Participated in Departmental Cross Audit associated with the Join Health and Safety Committee Meeting held yesterday.
Started working on NCCAR for Stbd Wide tow winch failure, as well as a shipyard plan for full over haul of both Winches.

Daily Comment Summaries - Plan for Tomorrow

Fri 19 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Fri 19. Feb 00:00	Fri 19. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

19-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**31.464**
At Anchor	8.767	0.745
Deployment	26.467	2.251
Mob Ashore	52.833	4.493
Transit to Prospect	281.950	23.975
DownTime	**77.150**	**6.560**
Cetacean	0.067	0.006
Contractor Request	13.900	1.182
Equipment Handling	4.750	0.404
Nav Systems Onboard	0.083	0.007
Recording	0.567	0.048
Source	4.700	0.400
Streamers	50.783	4.318
Vessel	2.300	0.196
Chargeable Standby	**115.183**	**9.795**
Cetacean	3.033	0.258
Transit	112.150	9.537
Acquisition	**413.950**	**35.200**
Infill Line Change	7.783	0.662
Prime Line Change	17.983	1.529
Production Infill	19.617	1.668
Production Prime	368.567	31.341
Demobilisation	**199.700**	**16.981**
Recovery	70.483	5.993
Transit From Prospect	129.217	10.988
Total	1176.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Fri 19 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Fri 19 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

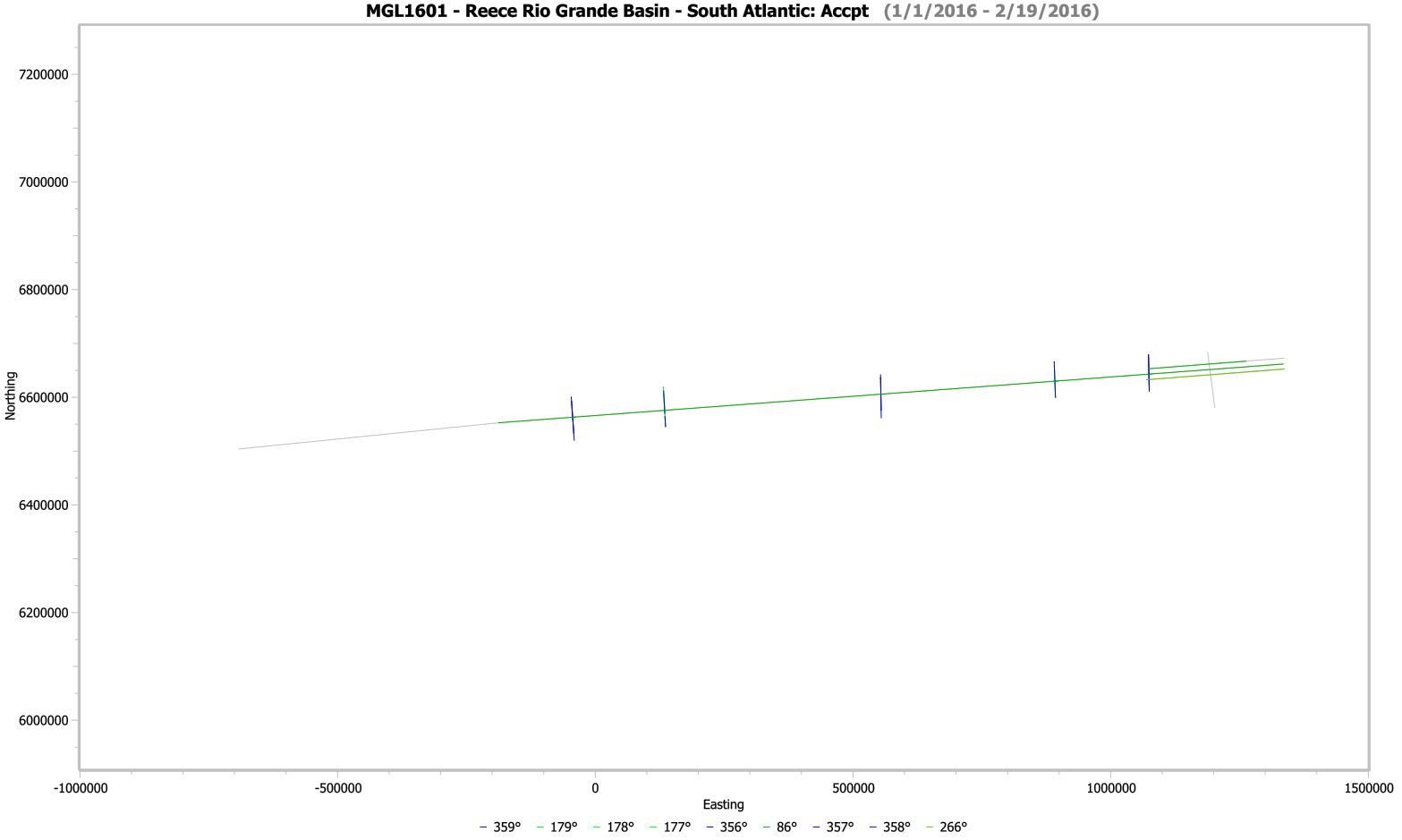
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	76.66 km
Average Charged Daily Prime and Infill Production	76.66 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/19/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sat 20 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.

Continued re-processing MGL0808 MCS Navigation data, as well as MG1521 OBS Navigation Data
Continued Training on SPIRT Processing software
Continued Training on Quick Plot Pro and SurvOPT software
Completed Re-Building Source Elements
Continued working on CSO handover notes.
Continue to Clean and Stored away Lab Spaces
Conducted Daily BIST Test on EM122
Completed Daily Function Test of EM122 and Knudsen
Completed Packing up SSCU for Shipment on arrival in CVI
Tested All Spares in rack hardware for DigiShot and DigiCourse an updated them with current configurations.
.

Daily Comment Summaries - Plan for Tomorrow

Sat 20 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Sat 20. Feb 00:00	Sat 20. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

20-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**30.835**
At Anchor	8.767	0.731
Deployment	26.467	2.206
Mob Ashore	52.833	4.403
Transit to Prospect	281.950	23.496
DownTime	**77.150**	**6.429**
Cetacean	0.067	0.006
Contractor Request	13.900	1.158
Equipment Handling	4.750	0.396
Nav Systems Onboard	0.083	0.007
Recording	0.567	0.047
Source	4.700	0.392
Streamers	50.783	4.232
Vessel	2.300	0.192
Chargeable Standby	**115.183**	**9.599**
Cetacean	3.033	0.253
Transit	112.150	9.346
Acquisition	**413.950**	**34.496**
Infill Line Change	7.783	0.649
Prime Line Change	17.983	1.499
Production Infill	19.617	1.635
Production Prime	368.567	30.714
Demobilisation	**223.700**	**18.642**
Recovery	70.483	5.874
Transit From Prospect	153.217	12.768
Total	1200.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 20 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Sat 20 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
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Malizia, Heidi Kristine - PSO

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4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

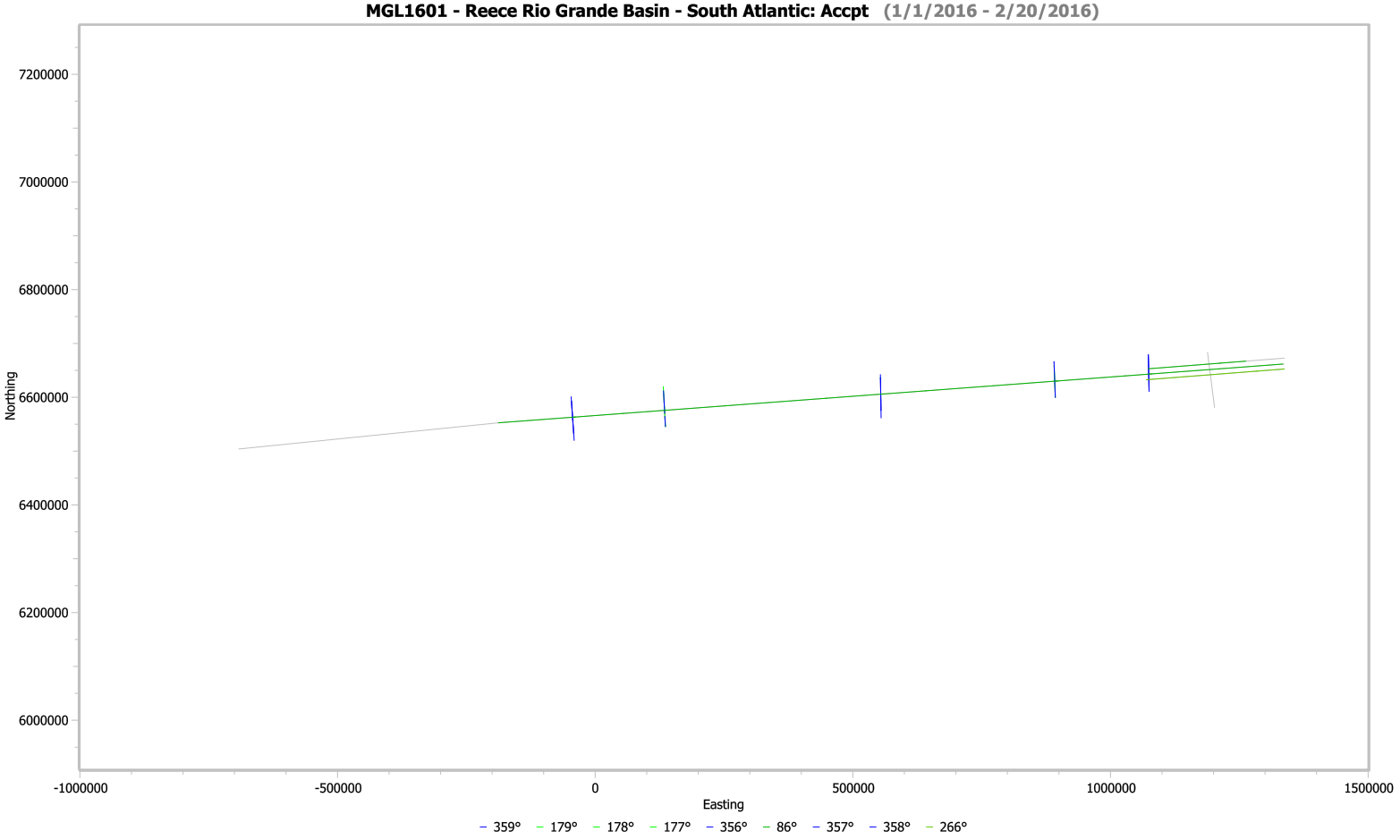
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	74.53 km
Average Charged Daily Prime and Infill Production	74.53 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/20/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Sun 21 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.

Continued re-processing MGL0808 MCS Navigation data, as well as MG1521 OBS Navigation Data
Continued Training on SPIRT Processing software
Continued Training on Quick Plot Pro and SurvOPT software
Continued working on CSO handover notes.
Continue to Clean and Stored away Lab Spaces
Conducted Daily BIST Test on EM122
Completed Daily Function Test of EM122 and Knudsen
Deployed Workboat over to Exercise it and to provide some coxswain training.
.

Daily Comment Summaries - Plan for Tomorrow

Sun 21 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Sun 21. Feb 00:00	Sun 21. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

21-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**30.230**
At Anchor	8.767	0.716
Deployment	26.467	2.162
Mob Ashore	52.833	4.316
Transit to Prospect	281.950	23.035
DownTime	**77.150**	**6.303**
Cetacean	0.067	0.005
Contractor Request	13.900	1.136
Equipment Handling	4.750	0.388
Nav Systems Onboard	0.083	0.007
Recording	0.567	0.046
Source	4.700	0.384
Streamers	50.783	4.149
Vessel	2.300	0.188
Chargeable Standby	**115.183**	**9.410**
Cetacean	3.033	0.248
Transit	112.150	9.163
Acquisition	**413.950**	**33.819**
Infill Line Change	7.783	0.636
Prime Line Change	17.983	1.469
Production Infill	19.617	1.603
Production Prime	368.567	30.112
Demobilisation	**247.700**	**20.237**
Recovery	70.483	5.758
Transit From Prospect	177.217	14.478
Total	1224.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 21 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Sun 21 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

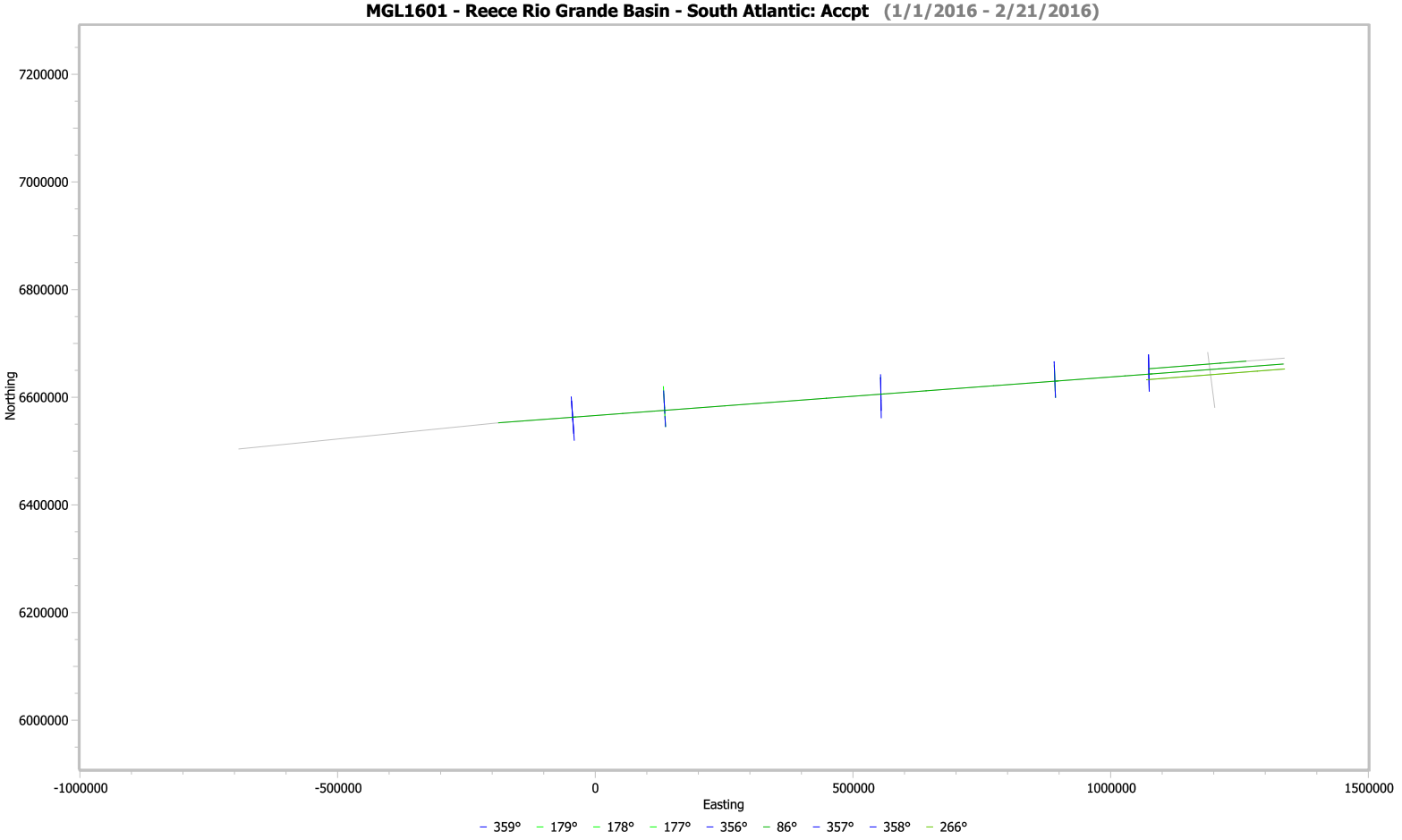
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	72.52 km
Average Charged Daily Prime and Infill Production	72.52 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/21/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Mon 22 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.

Continued Training on SPIRT Processing software
Continued Training on Quick Plot Pro and SurvOPT software
Continued working on CSO handover notes.
Continue to Clean and Stored away Lab Spaces
Conducted Daily BIST Test on EM122
Completed Monday Gravity Meter Weekly Check
Completed Monday Workboat Weakly Check
Completed Daily Function Test of EM122 and Knudsen
Tested / Exercised CTD Winch to confirm Operational for MGL1602
Tested both Seal Front Ends and confirmed Lic Activation.
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Daily Comment Summaries - Plan for Tomorrow

Mon 22 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Mon 22. Feb 00:00	Mon 22. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

22-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**29.649**
At Anchor	8.767	0.702
Deployment	26.467	2.121
Mob Ashore	52.833	4.233
Transit to Prospect	281.950	22.592
DownTime	**77.150**	**6.182**
Cetacean	0.067	0.005
Contractor Request	13.900	1.114
Equipment Handling	4.750	0.381
Nav Systems Onboard	0.083	0.007
Recording	0.567	0.045
Source	4.700	0.377
Streamers	50.783	4.069
Vessel	2.300	0.184
Chargeable Standby	**115.183**	**9.229**
Cetacean	3.033	0.243
Transit	112.150	8.986
Acquisition	**413.950**	**33.169**
Infill Line Change	7.783	0.624
Prime Line Change	17.983	1.441
Production Infill	19.617	1.572
Production Prime	368.567	29.533
Demobilisation	**271.700**	**21.771**
Recovery	70.483	5.648
Transit From Prospect	201.217	16.123
Total	1248.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Mon 22 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Mon 22 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

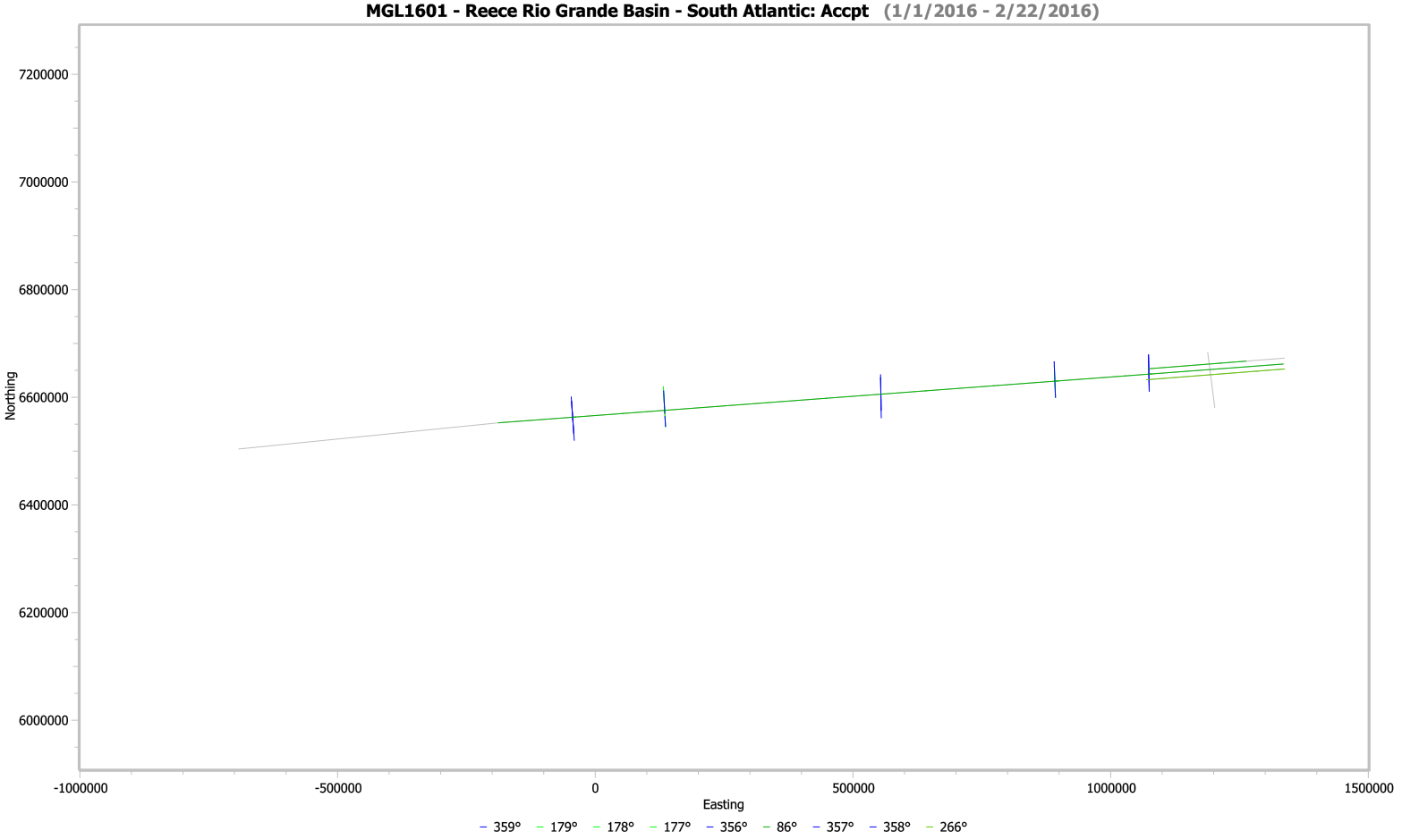
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	70.61 km
Average Charged Daily Prime and Infill Production	70.61 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/22/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Tue 23 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.

Continued Training on SPIRT Processing software
Continued Training on Quick Plot Pro and SurvOPT software
Completed CSO handover notes.
Continue to Clean and Stored away Lab Spaces
Conducted Daily BIST Test on EM122
Completed Monday Gravity Meter Weekly Check
Completed Monday Workboat Weakly Check
Completed Daily Function Test of EM122 and Knudsen
Tested / Exercised CTD Winch to confirm Operational for MGL1602

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Daily Comment Summaries - Plan for Tomorrow

Tue 23 Feb

The Vessel will continue transiting back to CVI throughout the Day.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Tue 23. Feb 00:00	Tue 23. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

23-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**29.089**
At Anchor	8.767	0.689
Deployment	26.467	2.081
Mob Ashore	52.833	4.154
Transit to Prospect	281.950	22.166
DownTime	**77.150**	**6.065**
Cetacean	0.067	0.005
Contractor Request	13.900	1.093
Equipment Handling	4.750	0.373
Nav Systems Onboard	0.083	0.007
Recording	0.567	0.045
Source	4.700	0.369
Streamers	50.783	3.992
Vessel	2.300	0.181
Chargeable Standby	**115.183**	**9.055**
Cetacean	3.033	0.238
Transit	112.150	8.817
Acquisition	**413.950**	**32.543**
Infill Line Change	7.783	0.612
Prime Line Change	17.983	1.414
Production Infill	19.617	1.542
Production Prime	368.567	28.975
Demobilisation	**295.700**	**23.247**
Recovery	70.483	5.541
Transit From Prospect	225.217	17.706
Total	1272.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Tue 23 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Tue 23 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

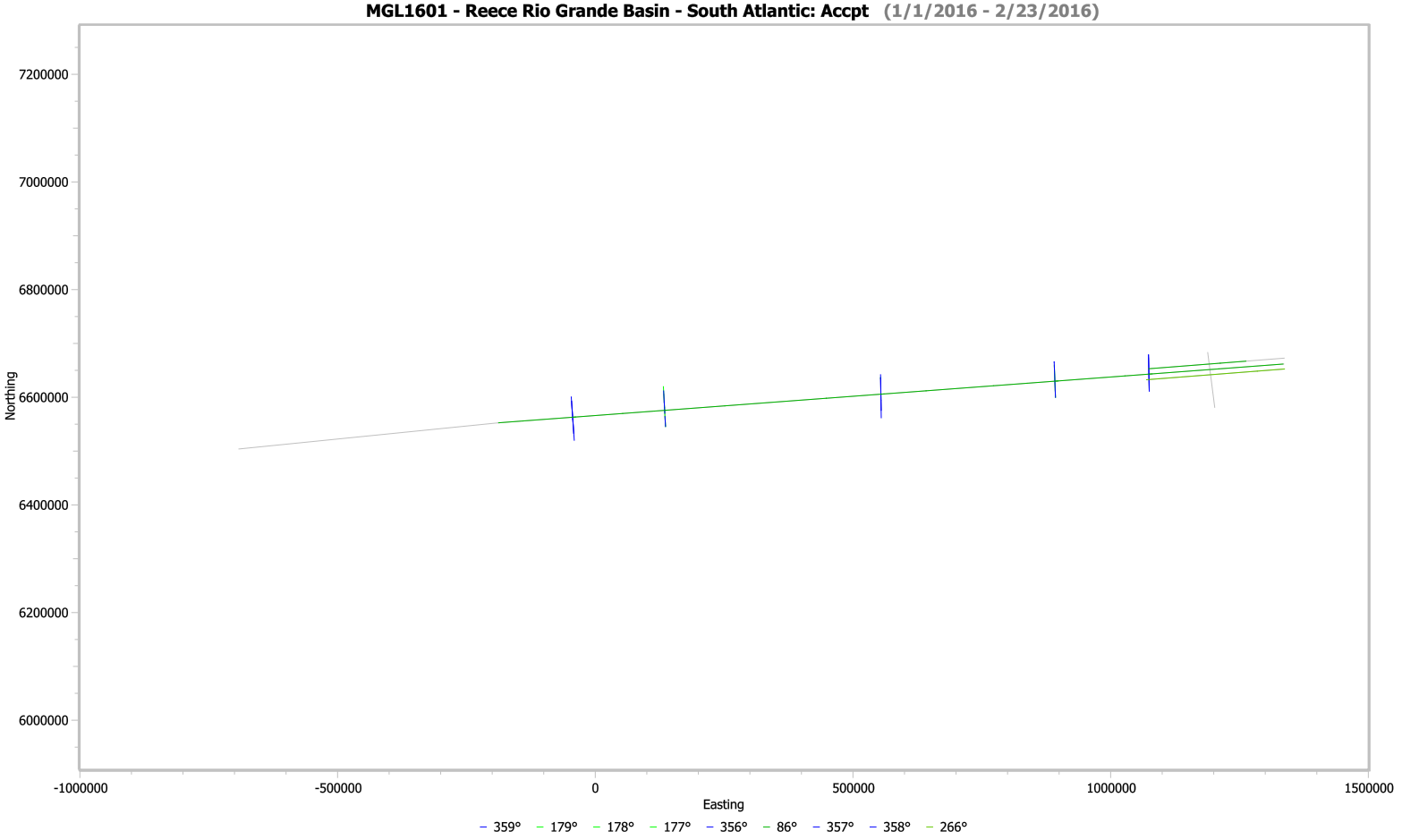
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	68.80 km
Average Charged Daily Prime and Infill Production	68.80 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/23/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Wed 24 Feb

The Vessel spent the entire day in transit to Porto Grande, CVI. The Science Crew work on Items from the work-list.

Continued Training on SPIRT Processing software
Continue to Clean and Stored away Lab Spaces
Conducted Daily BIST Test on EM122
Completed Daily Function Test of EM122 and Knudsen

.

Daily Comment Summaries - Plan for Tomorrow

Wed 24 Feb

The Vessel will start the transiting back to CVI an is expected to arrive at ~14:00 UTC. It will remain alongside for the remainder of the day Demobilizing from MGL1601

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Wed 24. Feb 00:00	Wed 24. Feb 24:00	24.000
Demobilising, In Transit from prospect to Porto Granda, CVI				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

24-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Transit From Prospect	24.000	100.000
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**28.551**
At Anchor	8.767	0.676
Deployment	26.467	2.042
Mob Ashore	52.833	4.077
Transit to Prospect	281.950	21.755
DownTime	**77.150**	**5.953**
Cetacean	0.067	0.005
Contractor Request	13.900	1.073
Equipment Handling	4.750	0.367
Nav Systems Onboard	0.083	0.006
Recording	0.567	0.044
Source	4.700	0.363
Streamers	50.783	3.918
Vessel	2.300	0.177
Chargeable Standby	**115.183**	**8.888**
Cetacean	3.033	0.234
Transit	112.150	8.654
Acquisition	**413.950**	**31.941**
Infill Line Change	7.783	0.601
Prime Line Change	17.983	1.388
Production Infill	19.617	1.514
Production Prime	368.567	28.439
Demobilisation	**319.700**	**24.668**
Recovery	70.483	5.439
Transit From Prospect	249.217	19.230
Total	1296.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 24 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
HSN currently not Tracking the AOR SAT.

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Wed 24 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

PSO Staff Onboard the Langseth
Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

Science Party Staff Onboard the Langseth
1. Robert Sherman Reece - PI
2. Gail Lynn Christeson - CO-PI
3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

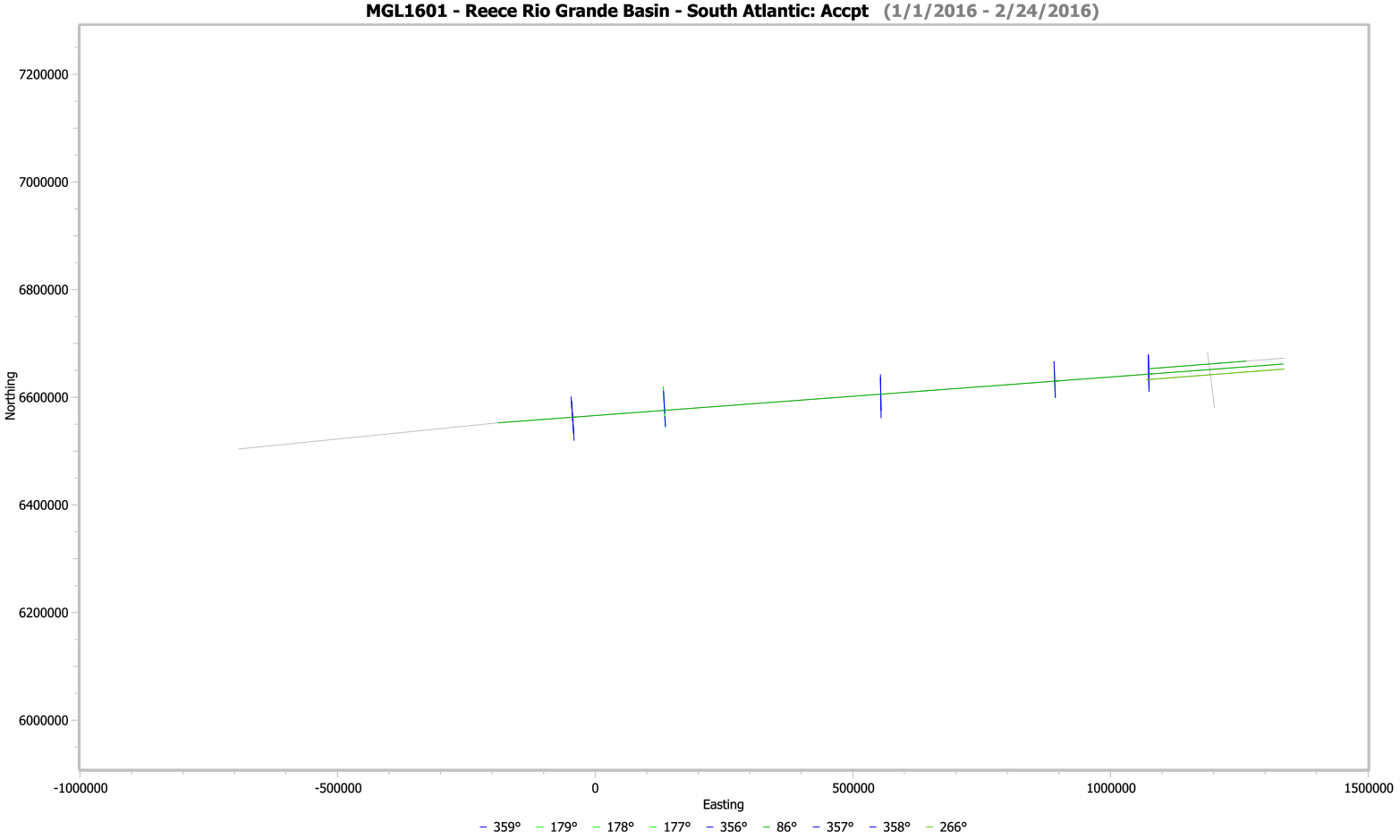
90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	67.08 km
Average Charged Daily Prime and Infill Production	67.08 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/24/2016)



Daily Science Report

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Client:	United States National Science Foundation	**Contractor:**	Lamont-Doherty Earth Observatory
Job No:	MGL1601	**Job No:**	MGL1601
Block:	MGL1601 - Reece Rio Grande Basin - South Atlantic	**Vessel:**	Marcus G Langseth
Client Contact:	Dr. Robert Reece	**Vessel Supervisor:**	Paul Ljunggren
Consultancy:		**Party Chiefs:**	Robert Steinhaus /David Martinson/ Todd Jensvold
Job No:		**Client Reps:**	

Daily Comment Summaries - Daily Summary

Thu 25 Feb

The Vessel started the day in transit to Porto Grande, CVI. At 15:41 UTC the vessel arrived alongside. After clearing Customs a Post Cruise Gravity was completed and the WHOI OBS Vane was removed from the vessel.

Daily Comment Summaries - Plan for Tomorrow

Thu 25 Feb

The Vessel will remain alongside Porto Grande, CVI all of the day Demobilizing from MGL1601 and starting Mobilization for MGL1602.

Timing Diary (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Code	Start	End	Duration
Transit From Prospect	DM_TF	Thu 25. Feb 00:00	Thu 25. Feb 15:41	15.683
Demobilising, In Transit from prospect to Porto Granda, CVI				
Demob Ashore	DM_DA	Thu 25. Feb 15:41	Thu 25. Feb 24:00	8.317
Demobilising ashore. - Vessel Alongside Porto Grande, CVI demo'ing from MGL1601				

Timing Day By Day (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

25-Feb	Hours	% Percent
Demobilisation	**24.000**	**100.000**
Demob Ashore	8.317	34.653
Transit From Prospect	15.683	65.347
Day's Total	**24.000**	**100.000**

Timing Breakdown Summary - Project (Marcus G Langseth, MGL1601 - Reece Rio Grande Basin - South Atlantic)

Category	Hours	% Percent
Mobilisation	**370.017**	**28.032**
At Anchor	8.767	0.664
Deployment	26.467	2.005
Mob Ashore	52.833	4.003
Transit to Prospect	281.950	21.360
DownTime	**77.150**	**5.845**
Cetacean	0.067	0.005
Contractor Request	13.900	1.053
Equipment Handling	4.750	0.360
Nav Systems Onboard	0.083	0.006
Recording	0.567	0.043
Source	4.700	0.356
Streamers	50.783	3.847
Vessel	2.300	0.174
Chargeable Standby	**115.183**	**8.726**
Cetacean	3.033	0.230
Transit	112.150	8.496
Demobilisation	**343.700**	**26.038**
Demob Ashore	8.317	0.630
Recovery	70.483	5.340
Transit From Prospect	264.900	20.068
Acquisition	**413.950**	**31.360**
Infill Line Change	7.783	0.590
Prime Line Change	17.983	1.362
Production Infill	19.617	1.486
Production Prime	368.567	27.922
Total	1320.000	

Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 25 Feb

Navigation:
RTCM correction from CNAV 2000 are not getting to Seapath..

Information Technology (IT):
No Major Issues to Report . .

Acquisition (OBS):
No Major Issues to Report .

Towing and Handling (Source):
No Major Issues to Report .

General Purpose Science:
No Major Issues to Report .

Miscellaneous:
No Major Issues to Report .

Daily Comment Summaries - Personnel Onboard

Thu 25 Feb

Technical Staff Onboard the Langseth
Steinhaus, Robert -Chief Science Officer
Martinson, David - Science Officer
Jensvold ,Todd - Science Officer
Stewart , Graeme - Marine Tech (ACQ)
Curtis, Klayton - Marine Tech (ACQ)
Traceski, Shane - Marine Tech (Nav)
Spoto, Thomas - Chief Source Mechanic
Kasinger, Josh Marine Tech Source
Gutierrez, Carlos Marine Tech Source

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Dubuque, Amanda Ella - Lead PSO
Piko, Amy - Lead PAM Operator
Frey, Cassandra Ashley - PSO
O'Dea, Sheila Niamh - PSO
Malizia, Heidi Kristine - PSO

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1. Robert Sherman Reece - PI
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3. Stacey Lynn Worman
4. Akhil Venkata Krishnasai Amara
5. Lindsay Rochelle Henning
6. John Anthony Greene
7. Justin David Estep
8. Alexis Louise Wright
9. Clinton Daniel Koch
10. Daniel S. Kot
11. Peter Lemmond

Production Day By Day (Accpt km by shotpoint) - Sail Line

Date	Vessel	First - Last Sequence	Production

Production Totals (Accpt km by shotpoint) - Sail Line

Accepted km	Day	Week	Month	Project
Prime	0.00	0.00	2018.70	2678.36
Infill	0.00	0.00	0.00	0.00
Prime, Reshoot	0.00	0.00	0.00	4.72
Combined	**0.00**	**0.00**	**2018.70**	**2683.09**

Production Listing (Accpt km by shotpoint) - Sail Line

MGL1601 - Reece Rio Grande Basin - South Atlantic (MGL1601) (no data for period)

Sequence	Line	Heading	FGSP	LGSP	Production Type	Production	Ave Knots	Seq Status	Line Status
Total						**0.00**			

Survey Progress (MGL1601 - Reece Rio Grande Basin - South Atlantic)

Percentage of Prime Charged

79%

Prime Lines Completed

90%

Preplot Lines	Complete	Incomplete	Pending
20	18	0	0

Percentages Charged	
Prime	79.16% of 3389.36 km (Sail Line)
Infill	0.00% of Charged Prime km (Sail Line)
	0.00% of Preplot km (Sail Line)

Average Daily Production	
Average Accepted Daily Prime and Infill Production	65.44 km
Average Charged Daily Prime and Infill Production	65.44 km

MGL1601 - Reece Rio Grande Basin - South Atlantic: Accpt (1/1/2016 - 2/25/2016)