

Line Name: MGL1211OBS03		NAVIGATION		DATE: 2012-06-14		Lamont-Doherty Earth Observatory	
Line Brg : 347.9 °		LINE LOGS		JULIAN DAY: 166		COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: Suzanne Carbotte - PI				SURVEY: Cascadia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS	
DC SOL : 11.6m		DEPTH SOL : 2979.5m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary			
DC EOL : -0.7m		DEPTH EOL : 2187.4m		NAVIGATION SYSTEM USED: SeaPath 200			
SMG SOL: 4.5 knots		FEATHER SOL: n/a °		NAVIGATION SYSTEM USED: C-Nav2000			
SMG EOL: 4.5 knots		FEATHER EOL: n/a °		GRAVITY METER: BMG-II: used, SN210			
WEATHER		MAX FEATHER: n/a °		MAGNETOMETER: GeoMetrics: used			
WIND SOL: 10 knots		MAG DEC USED : 16.89°					
WIND EOL: 10 knots		shift hours		shift hours		watch personnel	
SEAS SOL: 1.0m		19:00 - 07:00 utc => david martinson		19:00 - 01:00 utc => Helen: Greg		01:00 - 07:00 Shuoshou; Louise	
SEAS EOL: 1.0m		07:00 - 19:00 utc => mike martello		07:00 - 13:00 utc => Aaron; Laurel		13:00 - 19:00 James; Beatrise	
SP	TIME(UTC)	EVENT	COMMENTS				
995	20:22	SOL	Start of line				
1011	21:20	OBS	Crossed L3_OBS_01				
1041	23:09	OBS	Crossed L3_OBS_02				
1055	23:59	Midnight	Start of Julian day 167				
1066	00:40	Source	Power down for whale inside exclusion zone				
1070	00:54	Source	Source at full volume				
1075	01:11	OBS	Crossed L3_OBS_03				
1101	02:42	OBS	Crossed L3_OBS_04				
1108	03:07	Source	Air pressure dropped to 1389. Stopped guns and slowed vessel. No shots were missed when air was back up				
1134	04:42	OBS	Crossed L3_OBS_05				
1155	05:57	gyro	Speed through water and heading alarms on - no effect on data				
1162	06:22	OBS	Crossed L3_OBS_06				
1198	08:31	XBT	XBT Probe Launched T-5 Seq 002				
1200	08:38	OBS	Crossed L3_OBS_07				
1234	10:42	OBS	Crossed L3_OBS_08				
1259	12:09	Source	Air pressure dropped to approx 1600psi and recovered without intervention. No shots lost				
1267	12:36	OBS	Crossed L3_OBS_09				
1281	13:26	Source	Air pressure dropped to approx 1430psi and recovered without intervention. No shots lost				
1295	14:15	Source	Power down for whale inside exclusion zone				
1296	14:19	Source	Source at full volume				
1300	14:34	OBS	Crossed L3_OBS_10				
1333	16:32	OBS	Crossed L3_OBS_11				
1336	16:44	multibeam	Start BIST				
1338	16:52	multibeam	Passed BIST pinging and logging				
1369	18:41	OBS	Crossed L3_OBS_12				
1399	20:29	OBS	Crossed L3_OBS_13				
1432	22:28	OBS	Crossed L3_OBS_14				
1458	24:00	Midnight	Start of Julian day 168				
1468	00:37	OBS	Crossed L3_OBS_15				
1499	02:27	OBS	Crossed L3_OBS_16				
1506	02:51	Source	Power down for sea lions inside exclusion zone				
1507	02:56	Source	Missed shot, source did not fire				
1510	03:11	Source	Source at full volume				
1531	04:27	OBS	Crossed L3_OBS_17				
1654	06:26	OBS	Crossed L3_OBS_18				
1598	8:28	OBS	Crossed L3_OBS_19				
1631	10:28	OBS	Crossed L3_OBS_20				
1664	12:24	OBS	Crossed L3_OBS_21				
1697	14:22	OBS	Crossed L3_OBS_22				
1731	16:24	OBS	Crossed L3_OBS_23				
1741	17:00	Source	Power down for seal inside exclusion zone				
1746	17:27	Source	Source at full volume				
1760	18:17	OBS	Crossed L3_OBS_24				
1790	20:04	OBS	Crossed L3_OBS_25				
1791	20:08	Source	Power down for mammal inside exclusion zone				
1799	20:48	Source	Shutdown for seals inside source safety radius				
1809	21:23	Source	Start mitigation gun				
1811	21:32	Source	Start ramp-up				
1816	22:02	Source	Ramp-up complete, source at full volume				
1819	22:13	Source	Shutdown for seals inside source safety radius				
1820	22:17	OBS	Crossed L3_OBS_26				
1831	22:56	EOL	End of line				
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:				
Tailbuoy #1	na	Gun string #1	na				
		Gun string #2	good				
		Gun string #3	good				
		Gun string #4	na				
MGL1211_V2.LMN			Source.SCN(001)		mg12010.RTCN		
SP spacing:			500.0m				
line status:							

VESSEL POSITION			
	Shotpoints	Latitude (N / +)	Longitude (W / -)
FSP	995	44° 11' 29.574"	125° 18' 34.615"
LSP	1831	47° 51' 41.962"	126° 29' 15.550"

NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	232.0m
NRP - CNG	n/a
COS - CNG	n/a
NRP - CMP	n/a

Note: LMN line parameter set to great circle line
 Configuration: 4 x 10 gun array

P1 P2
 MGL1211OBS03.p190 MGL1211OBS03.p294

Seq# 002		Line Name: MGL1211OBSFS01	NAVIGATION	DATE: 2012-06-17	Lamont-Doherty Earth Observatory													
		Line Brg : Circular shoot °	LINE LOGS	JULIAN DAY: 169	COLUMBIA UNIVERSITY EARTH INSTITUTE													
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS														
DC SOL : -7.5m	DEPTH SOL : 2201.9m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																
DC EOL : 3.4m	DEPTH EOL : 2548.8m	NAVIGATION SYSTEM USED: SeaPath 200																
SMG SOL: 3.6 knots	FEATHER SOL: n/a °	NAVIGATION SYSTEM USED: C-Nav2000																
SMG EOL: 3.1 knots	FEATHER EOL: n/a °	GRAVITY METER: BMG-II: used, SN210																
WEATHER	MAX FEATHER: n/a °	MAGNETOMETER: GeoMetrics: used																
WIND SOL: 21 knots		MAG DEC USED : 16.89°																
WIND EOL: 22 knots	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personne!</u>	<u>shift hours</u>	<u>watch personne!</u>												
SEAS SOL: 1.0m	19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen: Greg	01:00 – 07:00	Shuoshou; Louise												
SEAS EOL: 3.0m	07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrise												
SP	TIME(UTC)	EVENT	COMMENTS															
1845	00:44	SOL	Start of line															
1948	06:48	crossing	crossed MGL1211OBS02															
2048	12:46	Source	LGSP dt Seals present in EZ - aborted line															
2049	12:50	Source	Power down for seal inside exclusion zone															
2052	13:06	Source	Shut down for seal inside shutdown zone - shooting OFF															
2062	13:58	EOL	End of line - line aborted for mammal activity															
2048	12:46	LGSP	Last good sp prior to gun volume reduction															
			VESEL POSITION <table border="1"> <thead> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>1845</td> <td>47° 51' 14.846"</td> <td>-126° 30' 07.188"</td> </tr> <tr> <td>LSP</td> <td>2062</td> <td>47° 04' 58.310"</td> <td>-126° 47' 06.008"</td> </tr> </tbody> </table>					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	1845	47° 51' 14.846"	-126° 30' 07.188"	LSP	2062	47° 04' 58.310"	-126° 47' 06.008"
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Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V2.LMN Source:SCN(001) mgl2010.RTCN														
Tailbuoy #1	na	Gun string #1	na	SP spacing: 500.0m														
		Gun string #2	good	line status: Line Incomplete														
		Gun string #3	good															
		Gun string #4	na															

Seq# 003		Line Name: MGL1211OBSFS01A		NAVIGATION		DATE: 2012-06-17		 																	
		Line Brg : Fan Shoot °		LINE LOGS		JULIAN DAY: 169																			
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS																			
DC SOL : -2.0m		DEPTH SOL : 2252.5m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL : -3.0m		DEPTH EOL : 2563.6m		NAVIGATION SYSTEM USED: SeaPath 200																					
SMG SOL: 4.0 knots		FEATHER SOL: n/a °		NAVIGATION SYSTEM USED: C-Nav2000																					
SMG EOL: 4.5 knots		FEATHER EOL: n/a °		GRAVITY METER: BMG-II: used, SN210																					
<u>WEATHER</u>		MAX FEATHER: n/a °		MAGNETOMETER: GeoMetrics: used																					
WIND SOL: 5 knots				MAG DEC USED : 16.89°																					
WIND EOL: 10 knots		shift hours		shift leaders		shift hours		watch personnel																	
SEAS SOL: 2.0m		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen: Greg																	
SEAS EOL: 1.0m		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel																	
01:00 – 07:00						01:00 – 07:00		Shuoshou; Louise																	
13:00 – 19:00						13:00 – 19:00		James; Beatrise																	
SP	TIME(UTC)	EVENT	COMMENTS																						
2133	22:12	SOL	Start of Line																						
2156	23:35	EOL	End of Line																						
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Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V2.LMN		Source:SCN(001)		mgl2010.RTCN																	
Tailbuoy #1	na	Gun string #1	na	SP spacing: 500.0m		line status: stop - complete																			
		Gun string #2	good																						
		Gun string #3	good																						
		Gun string #4	na																						

Seq# 004		Line Name: MGL1211OBST01		NAVIGATION		DATE: 2012-06-17		 																			
		Line Brg : 76.7 °		LINE LOGS		JULIAN DAY: 169																					
CLIENT: Suzanne Carbotte - PI				SURVEY: Cascdia "rapid 2d MCS"				AREA: Juan de Fuca Ridge: OBS & MCS																			
DC SOL : -3.0m		DEPTH SOL : 2565.9m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary		DC EOL : 2046.3m		DEPTH EOL : 1224.7m		NAVIGATION SYSTEM USED: SeaPath 200																	
SMG SOL: 4.5 knots		FEATHER SOL: n/a °		NAVIGATION SYSTEM USED: C-Nav2000		SMG EOL: 4.3 knots		FEATHER EOL: n/a °		GRAVITY METER: BMG-II: used, SN210																	
WEATHER		MAX FEATHER: n/a °		MAGNETOMETER: GeoMetrics: used						MAG DEC USED : 16.89°																	
WIND SOL: 10 knots		shift hours		shift leaders		shift hours		watch personnel		shift hours																	
WIND EOL: 15 knots		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen: Greg		01:00 – 07:00																	
SEAS SOL: 1.0m		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel		13:00 – 19:00																	
SEAS EOL: 1.0m										James; Beatrise																	
SP	TIME(UTC)	EVENT	COMMENTS																								
2159	23:41	SOL	Start of Line																								
2164	23:59	Midnight	Start of Julian day 170																								
	05:11	Maggie	Appears to have been down for approx. 10 mins																								
	05:24	Maggie	Maggie on board																								
	05:37	Maggie	Start maggie out																								
	05:41	Maggie	Maggie in position																								
	05:58	Maggie	Stopped working - restarted and working again																								
2332	09:13	Turn	Turn to MGL1211OBS02 initiated																								
2333	09:17	EOL	End of Line. LGSP																								
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		Gun string #2	good					line status: Line complete																			
		Gun string #3	good																								
		Gun string #4	na																								

Line Name: MGL1211OBS02		NAVIGATION		DATE: 2012-06-18	Lamont-Doherty Earth Observatory	
Line Brg : 275.4 °		LINE LOGS		JULIAN DAY: 170	COLUMBIA UNIVERSITY EARTH INSTITUTE	
Seq# 005		CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS
DC SOL : -617.2m	DEPTH SOL : 1055.3m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL : -8.5m	DEPTH EOL : 2531.0m	NAVIGATION SYSTEM USED: SeaPath 200				
SMG SOL: 4.5 knots	FEATHER SOL: n/a °	NAVIGATION SYSTEM USED: C-Nav2000				
SMG EOL: 3.3 knots	FEATHER EOL: n/a °	GRAVITY METER: BMG-II: used, SN210				
WEATHER	MAX FEATHER: n/a °	MAGNETOMETER: GeoMetrics: used				
WIND SOL: 15 knots		MAG DEC USED : 16.89°				
WIND EOL: 22 knots	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel
SEAS SOL: 1.0m	19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen: Greg	01:00 – 07:00	Shuoshou; Louise
SEAS EOL: 2.0m	07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrice
SP	TIME(UTC)	EVENT	COMMENTS			
3124	09:34	SOL	Start of line			
	09:38	Pam	Start Pam up, depth at 11/12m while in turn - slow to 3.0kts			
	09:44	Pam	Stop and redeploy to check depth			
	09:48	Pam	Pam at 10-9m, picking up again			
	09:54	Pam	Pam on board - speed up to 4.5kts			
3136	10:25	OBS	Crossing L2_OBS_30			
3159	11:55	OBS	Crossing L2_OBS_31			
3184	13:25	OBS	Crossing L2_OBS_32			
	14:26	Multibeam	FM mode disabled for testing;			
3206	14:43	MMO	power down for seals			
3208	14:50	OBS	Crossing L2_OBS_33			
3210	14:57	MMO	Source at full power			
3239	16:42	OBS	Crossing L2_OBS_34			
	16:51	Multibeam	FM mode on again			
	18:14	Multibeam	Lock up -- reset			
3265	18:18	MMO	power down for whale - slow vessel speed to 3 knots			
	18:24	Multibeam	Operational and logging			
3269	18:34	Source	Back to full volume			
3269	18:34	OBS	Crossing L2_OBS_35			
3299	20:25	OBS	Crossing L2_OBS_36			
3326	22:06	OBS	Crossing L3_OBS_23			
3339	22:44	Source	Power down for seals in exclusion zone			
3343	23:13	Source	Source at full power			
3345	23:21	Source	Shutdown for seals within safety radius of source			
	23:23	Source	Start mitigation gun			
3356	00:00	Midnight	Start of Julian day 171			
3358	00:08	Source	Source at full power			
3359	00:12	OBS	Crossing L2_OBS_37			
3371	00:55	Source	Power down for seal in exclusion zone			
3376	01:13	Source	Source at full power			
3380	01:27	Source	Power down for dolphins in exclusion zone			
3384	01:41	Source	Source at full power			
3385	01:45	Source	Power down for fur seal in exclusion zone			
3389	02:00	OBS	Crossing L2_OBS_38			
3390	02:04	Source	Source at full power			
3399	02:36	Source	Shutdown for seals within safety radius of source			
3401	02:43	Source	Start mitigation gun			
3403	02:50	Source	Shutdown for seals within safety radius of source			
3450	05:43	EOL	End of line d/t source shutdown for the night. Line will resume at daylight as Sequence 6			
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V2.LMN Source.SCN(001) mgl2010.RTCN		
Tailbuoy #1	na	Gun string #1	na	SP spacing: 500.0m		
		Gun string #2	good	line status: Line Incomplete		
		Gun string #3	good			
		Gun string #4	na			

VESSEL POSITION			
	Shotpoints	Latitude (N / +)	Longitude (W / -)
FSP	3124	47° 09' 24.428"	-125° 04' 13.381"
LSP	3450	47° 35' 03.018"	127° 08' 03.601"

NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	232.0m
NRP - CNG	na
COS - CNG	na
NRP - CMP	na

Note: LMN line parameter set to great circle line
 Configuration: 4 x 10 gun array

P1 P2
 MGL1211OBS02.p190 MGL1211OBS02.p294



Seq #006		Line Name: MGL1211OBS02A	NAVIGATION	DATE: 2012-06-19			
		Line Brg : 275.4 °	LINE LOGS	JULIAN DAY: 171			
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS			
DC SOL : -61.8m	DEPTH SOL : 2385.9m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL : -1.2m	DEPTH EOL : 2398.0m	NAVIGATION SYSTEM USED: SeaPath 200					
SMG SOL: 4.3 knots	FEATHER SOL: n/a °	NAVIGATION SYSTEM USED: C-Nav2000					
SMG EOL: 4.5 knots	FEATHER EOL: n/a °	GRAVITY METER: BMG-II: used, SN210					
WEATHER	MAX FEATHER: n/a °	MAGNETOMETER: GeoMetrics: used					
WIND SOL: NW 20 knots	MAG DEC USED : 16.89°						
WIND EOL: 1.0 knots	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>	
SEAS SOL: 2.0m	19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen; Greg	01:00 – 07:00	Shuoshou; Louise	
SEAS EOL: calm	07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrice	
SP	TIME(UTC)	EVENT	COMMENTS				
3555	14:49	SOL	Start of line				
3559	15:03	OBS	Crossing L2_OBS_37				
3589	16:51	OBS	Crossing L2_OBS_38				
3619	18:39	OBS	Crossing L2_OBS_39				
3649	20:25	Source	Power down for seals inside exclusion zone				
3650	20:29	OBS	Crossing L2_OBS_40				
3654	20:44	Source	Source at full volume				
3659	21:02	Source	Shutdown for seals inside exclusion zone				
3665	21:23	Source	Start mitigation gun				
3667	21:29	Source	Shutdown for seals inside exclusion zone				
3671	21:43	Source	Start mitigation gun				
3672	21:47	Source	Start ramp-up				
3679	22:12	OBS	Crossing L2_OBS_41				
3681	22:19	Source	Source at full volume				
3708	24:00	Midnight	Start of Julian day 172				
3710	00:06	OBS	Crossing L2_OBS_42				
3738	01:48	OBS	Crossing L2_OBS_43				
3769	03:40	Source	Shutdown for seals inside exclusion zone				
3770	03:45	OBS	Crossing L2_OBS_44				
	03:57	Source	Start ramp-up				
3778	04:28	Source	Source at full volume				
3800	05:46	OBS	Crossing L2_OBS_45				
	06:00	Maggie	stopped logging - time approximate				
	06:28	Maggie	now operational				
3830	07:33	OBS	Crossing L2_OBS_46				
3860	09:20	OBS	Crossing L2_OBS_47				
3936	13:54	Source	Shutdown for seals inside exclusion zone				
	14:02	Source	Mitigation gun fired 3 shots between shot points				
3939	14:04	Source	First mitigation shot point				
3939	14:06	EOL	Stop early d/t combination of seals and other vessel on line				
3936	13:54	LGSP	Last full volume shotpoint				
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V2.LMN Source.SCN(001) mgl2010.RTCN			
Tailbuoy #1	na	Gun string #1	na	SP spacing: 500.0m			
		Gun string #2	good	line status: Line complete			
		Gun string #3	good				
		Gun string #4	na				

VESSEL POSITION			
	Shotpoints	Latitude (N / +)	Longitude (W / -)
FSP	3555	47° 27' 27.231"	-126° 31' 55.004"
LSP	3939	47° 56' 56.292"	-128° 59' 04.334"

NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	232.0m
NRP - CNG	na
COS - CNG	na
NRP - CMP	na

Note: LMN line parameter set to great circle line
Configuration: 4 x 10 gun array

P1 P2
MGL1211OBS02A.p19\ MGL1211OBS02A.p294

Seq #007		Line Name: MGL1211MCS02		NAVIGATION		DATE: 2012-06-21		 		
		Line Brg : 105.5 °		LINE LOGS		JULIAN DAY: 173				
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS				
DC SOL : -7.0m		DEPTH SOL : 2659.7m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL : -90.8m		DEPTH EOL : 2508.2m		NAVIGATION SYSTEM USED: SeaPath 200						
SMG SOL: 4.1 knots		FEATHER SOL: 4.6 °		NAVIGATION SYSTEM USED: C-Nav2000						
SMG EOL: 5.3 knots		FEATHER EOL: -1.3 °		GRAVITY METER: BMG-II: used, SN210						
<u>WEATHER</u>		MAX FEATHER: -4.7 °		MAGNETOMETER: GeoMetrics: used						
WIND SOL: 9 knots				MAG DEC USED : 16.89°						
WIND EOL: 6.3 knots		<u>shift hours</u> <u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		<u>shift hours</u> <u>watch personnel</u>		
SEAS SOL: 1.0m		19:00 – 07:00 utc => david martinson		19:00 – 01:00 utc => Helen: Greg		01:00 – 07:00		Shuoshou; Louise		
SEAS EOL: 1.0m		07:00 – 19:00 utc => mike martello		07:00 – 13:00 utc => Aaron; Laurel		13:00 – 19:00		James; Beatrise		
SP	TIME(UTC)	EVENT	COMMENTS							
6657	04:26	SOL	Start of line							
6827	05:12	OBS	Crossed OBS_43							
7194	06:51	OBS	Crossed OBS_42							
7609	08:42	OBS	Crossed OBS_41							
8011	10:26	OBS	Crossed OBS_40							
8132	10:55	EOL	End of Line - Last Good Shotpoint EOL early to shoot OBS section							
						VESSEL POSITION				
						<u>Shotpoints</u>		<u>Latitude (N / +)</u>		
						<u>Longitude (W / -)</u>				
						FSP	6657	47° 42' 49.971"	-127° 46' 20.273"	
						LSP	8132	47° 34' 16.328"	-127° 04' 01.509"	
						NAVIGATION OFFSET APPLIED				
						NRP - Stern	29.5m			
						NRP - COS	232.0m			
						NRP - CNG	155.0m			
						COS - CNG	77.0m			
						NRP - CMP	116.5m			
						<u>Note: LMN line parameter set to great circle line</u> Configuration: 1 x 8 km streamer and 4 x 10 gun array				
						P1 P2 MGL1211OBS02A_p19K MGL1211OBS02A_p294				
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:			MGL1211_V2.LMN		2D_1x8_V2.SCN(001)		mgl2010.RTCN
Tailbuoy #1	intermittent	Gun string #1	na			SP spacing:		37.5m		
		Gun string #2	good			line status:		line incomplete		
		Gun string #3	good							
		Gun string #4	na							



Line Name: MGL1211MCS02A		NAVIGATION		DATE: 2012-06-21	Lamont-Doherty Earth Observatory	
Seq #008		Line Brg : 106.9 °		LINE LOGS		JULIAN DAY: 173
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS		
DC SOL : -4.2m	DEPTH SOL : 2436.0m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL : 305.2m	DEPTH EOL : 1066.7m	NAVIGATION SYSTEM USED: SeaPath 200				
SMG SOL: 3.2 knots	FEATHER SOL: -0.4 °	NAVIGATION SYSTEM USED: C-Nav2000				
SMG EOL: 3.8 knots	FEATHER EOL: -2.5 °	GRAVITY METER: BMG-II: used, SN210				
<u>WEATHER</u>	MAX FEATHER: -6.5 °	MAGNETOMETER: GeoMetrics: used				
WIND SOL: 7 knots		MAG DEC USED : 16.89°				
WIND EOL: 9 knots	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel
SEAS SOL: 1.0m	19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen: Greg	01:00 – 07:00	Shuoshou; Louise
SEAS EOL: <1.0	07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrice
SP	TIME(UTC)	EVENT	COMMENTS			
8716	21:45	SOL	Start of line			
8816	22:13	OBS	Crossing L2_OBS_38			
9070	23:22	Source	Power down for seal			
9077	23:24	Source	Source at full volume			
9092	23:28	Source	Power down for seal			
9096	23:30	Source	Source at full volume			
9101	23:31	Source	Power down for porpoise			
9156	23:51	Source	Source at full volume			
9184	00:00	Midnight	Midnight Shootonit			
9213	00:08	OBS	Crossing L2_OBS_37			
9609	01:55	Source	Power down for seal			
9661	02:11	Source	Source at full volume			
9913	03:22	Source	Power down for seal			
9964	03:37	Source	Source at full volume			
9977	03:41	Source	Power down for seal			
9999	03:48	Source	Source at full volume			
10014	03:52	OBS	Crossing L2_OBS_36			
10112	04:18	Source	Shutdown for seal			
10120	04:20	Source	Start mitigation gun			
10134	04:24	Source	Shutdown for seal			
10185	04:40	Source	Start mitigation gun			
10196	04:43	Source	Shutdown for seal			
10244	05:00	Source	Start mitigation gun			
10347	05:36	Source	Start ramp up			
10418	06:00	OBS	Crossing L2_OBS_35			
10438	06:06	Source	Source at full volume			
	06:11-06:18	Multibeam	Error HDSS.exe, restart SIS program; Multibeam operational			
10822	07:54	OBS	Crossing L2_OBS_34			
11236	09:42	OBS	Crossing L2_OBS_33			
11556	11:05	OBS	Crossing L2_OBS_32			
11882	12:31	OBS	Crossing L2_OBS_31			
11926	12:42	Source	Shutdown for porpoise			
11954	12:49	Source	Start mitigation gun			
12009	13:04	Source	Source at full volume			
12197	13:52	OBS	Crossing L2_OBS_30			
12289	14:16	Turn	Starting STBD turn off line heading			
12316	14:25	EOL	End of Line - LGSP			
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V3.LMN SOURCE.SCN(001) mgl2010.RTCN		
Tailbuoy #1	intermittent	Gun string #1	na	SP spacing: 37.5m		
		Gun string #2	good	line status: Line complete		
		Gun string #3	good			
		Gun string #4	na			

VESSEL POSITION			
	Shotpoints	Latitude (N / +)	Longitude (W / -)
FSP	8716	47° 30' 44.719"	-126° 47' 21.964"
LSP	12316	47° 09' 41.030"	-125° 04' 48.311"

NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	232.0m
NRP - CNG	155.0m
COS - CNG	77.0m
NRP - CMP	116.5m

Note: LMN line parameter set to great circle line
 Configuration: 1 x 8 km streamer and 4 x 10 gun array

P1 P2
 MGL1211MCS02A.p19f MGL1211MCS02A.p294

Seq #009		Line Name: MGL1211MCST02		NAVIGATION		DATE: 2012-06-22																			
		Line Brg : 310.5 °		LINE LOGS		JULIAN DAY: 174																			
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS																			
DC SOL : 193.8m		DEPTH SOL : 1496.3m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL : 1170.3m		DEPTH EOL : 1710.8m		NAVIGATION SYSTEM USED: SeaPath 200																					
SMG SOL: 3.2 knots		FEATHER SOL: 12.6 °		NAVIGATION SYSTEM USED: C-Nav2000																					
SMG EOL: 4.7 knots		FEATHER EOL: -3.2 °		GRAVITY METER: BMG-II: used, SN210																					
WEATHER		MAX FEATHER: 12.6 °		MAGNETOMETER: GeoMetrics: used																					
WIND SOL: 9 knots				MAG DEC USED : 16.89°																					
WIND EOL: 10 knots		shift hours		shift leaders		shift hours		watch personnel																	
SEAS SOL: 1.0m		19:00 - 07:00 utc =>		david martinson		19:00 - 01:00 utc =>		Helen; Greg																	
SEAS EOL: 1.0m		07:00 - 19:00 utc =>		mike martello		07:00 - 13:00 utc =>		Aaron; Laurel																	
13:00 - 19:00								James; Beatrise																	
SP	TIME(UTC)	EVENT	COMMENTS																						
15083	17:09	SOL	Start of line																						
	17:09	Pam	start deployment																						
	17:11	maggie	start deployment																						
	17:15	maggie	maggie in position																						
	17:18	Pam	Pan in position																						
	17:18	maggie	recover - not working																						
	17:22	maggie	maggie on board																						
	17:41	port main	Port engine off line - slow vessel																						
	18:04	bist	start																						
	18:14	bist	Passed test and logging																						
	18:46	maggie	deploying and checking while deploying																						
	18:46	speed	Port engine on line - increase speed to cable tension limit.																						
15468	19:02	maggie	maggie redeployed and in position																						
15534	19:20	EOL	End of line																						
								<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>15083</td> <td>47° 09' 08.936"</td> <td>-125° 14' 34.179"</td> </tr> <tr> <td>LSP</td> <td>15534</td> <td>47° 15' 26.302"</td> <td>-125° 24' 13.477"</td> </tr> </tbody> </table>		VESSEL POSITION					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	15083	47° 09' 08.936"	-125° 14' 34.179"	LSP	15534	47° 15' 26.302"	-125° 24' 13.477"
VESSEL POSITION																									
	Shotpoints	Latitude (N / +)	Longitude (W / -)																						
FSP	15083	47° 09' 08.936"	-125° 14' 34.179"																						
LSP	15534	47° 15' 26.302"	-125° 24' 13.477"																						
								<table border="1"> <thead> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>232.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>155.0m</td> </tr> <tr> <td>COS - CNG</td> <td>77.0m</td> </tr> <tr> <td>NRP - CMP</td> <td>116.5m</td> </tr> </tbody> </table>		NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	232.0m	NRP - CNG	155.0m	COS - CNG	77.0m	NRP - CMP	116.5m				
NAVIGATION OFFSET APPLIED																									
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NRP - COS	232.0m																								
NRP - CNG	155.0m																								
COS - CNG	77.0m																								
NRP - CMP	116.5m																								
								<p>Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array</p>																	
								<p>P1 P2 MGL1211MCST02.p19C MGL1211MCST02.p294</p>																	
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V3.LMN		SOURCE.SCN(001)		mg2010.RTCN																	
Tailbuoy #1	intermittent	Gun string #1	na	SP spacing: 37.5m																					
		Gun string #2	good																						
		Gun string #3	good																						
		Gun string #4	na																						
				line status:		Complete																			



Line Name: MGL1211MCST02A **NAVIGATION** DATE: 2012-06-22
Seq #010 Line Brg : 310.5 ° **LINE LOGS** JULIAN DAY: 174 COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: Suzanne Carbotte - PI SURVEY: Cascdia "rapid 2d MCS" AREA: Juan de Fuca Ridge: OBS & MCS



DC SOL : 0.3m DEPTH SOL : 1710.8m NAVIGATION SYSTEM USED: C-Nav3050 - Primary
DC EOL : -1133.1m DEPTH EOL : 1413.3m NAVIGATION SYSTEM USED: SeaPath 200
SMG SOL: 4.7 knots FEATHER SOL: 0.1 ° NAVIGATION SYSTEM USED: C-Nav2000
SMG EOL: 4.3 knots FEATHER EOL: 4.7 ° GRAVITY METER: BMG-II: used, SN210
WEATHER MAX FEATHER: 4.7 ° MAGNETOMETER: GeoMetrics: used
MAG DEC USED : 16.89°

WIND SOL: 10 knots
WIND EOL: 10 knots
SEAS SOL: 1.0m
SEAS EOL: 1.0m

shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel
19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen: Greg	01:00 – 07:00	Shuoshou; Louise
07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrise

SP	TIME(UTC)	EVENT	COMMENTS	VESSEL POSITION		
15547	19:23	SOL	Start of line	Shotpoints	Latitude (N / +)	Longitude (W / -)
15877	20:54	EOL	End of line	FSP 15547	47° 15' 40.006"	-125° 24' 34.362"
				LSP 15877	47° 19' 49.795"	-125° 32' 18.082"
				NAVIGATION OFFSET APPLIED		
				NRP - Stern	29.5m	
				NRP - COS	232.0m	
				NRP - CNG	155.0m	
				COS - CNG	77.0m	
				NRP - CMP	116.5m	
				Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array		
				P1	P2	
				MGL1211MCST02A.p19 MGL1211MCST02A.p294		

Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V3.LMN	SOURCE.SCN(001)	mg2010.RTCN
Tailbuoy #1	intermittent	Gun string #1	na	SP spacing: 37.5m		
		Gun string #2	good	line status: Complete		
		Gun string #3	good			
		Gun string #4	na			

Seq #012		Line Name: MGL1211MCS02B		NAVIGATION		DATE: 2012-06-22		 	
		Line Brg : 287.9 °		LINE LOGS		JULIAN DAY: 174			
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS			
DC SOL : 21.0m		DEPTH SOL : 1733.3m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL : 161.5m		DEPTH EOL : 2390.7m		NAVIGATION SYSTEM USED: SeaPath 200					
SMG SOL: 3.9 knots		FEATHER SOL: 31.3 °		NAVIGATION SYSTEM USED: C-Nav2000					
SMG EOL: 3.5 knots		FEATHER EOL: -1.3 °		GRAVITY METER: BMG-II: used, SN210					
<u>WEATHER</u>		MAX FEATHER: 31.3 °		MAGNETOMETER: GeoMetrics: used					
WIND SOL: 10 knots				MAG DEC USED : 16.89°					
WIND EOL: 10 knots									
SEAS SOL: 1.0m		shift hours		shift leaders		shift hours		watch personnel	
SEAS EOL: 1.0m		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen: Greg	
		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel	
						13:00 – 19:00		James; Beatrice	
SP	TIME(UTC)	EVENT	COMMENTS						
16502	23:10	SOL	Start of line						
16683	00:00	Midnight	Midnight Shotpoint						
16905	00:56	OBS	Crossing L2_OBS_35						
17309	02:42	OBS	Crossing L2_OBS_36						
17515	03:38	Source	Power down for seal						
17593	04:00	Source	Source at full volume						
17660	04:18	OBS	Crossing L3_OBS_23						
17825	05:06	EOL	End of line						
								VESSEL POSITION	
								Shotpoints Latitude (N / +) Longitude (W / -)	
								FSP 16502 47° 17' 57.127" -125° 47' 55.579"	
								LSP 17825 47° 26' 11.526" -126° 25' 25.451"	
								NAVIGATION OFFSET APPLIED	
								NRP - Stern 29.5m	
								NRP - COS 232.0m	
								NRP - CNG 155.0m	
								COS - CNG 77.0m	
								NRP - CMP 116.5m	
								Note: LMN line parameter set to great circle line	
								Configuration: 1 x 8 km streamer and 4 x 10 gun array	
								P1 P2	
								MGL1211MCS02B.p19(MGL1211MCS02B.p294	
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V3.LMN		SOURCE.SCN(001)		mg12010.RTCN	
Tailbuoy #1	intermittent	Gun string #1	na	SP spacing: 37.5m		line status: Complete			
		Gun string #2	good						
		Gun string #3	good						
		Gun string #4	na						

Seq #013		Line Name: MGL1211MCS03				NAVIGATION		DATE: 2012-06-23																						
		Line Brg : 347 °				LINE LOGS		JULIAN DAY: 175																						
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascadia "rapid 2d MCS"				AREA: Juan de Fuca Ridge: OBS & MCS																								
DC SOL : -5978.1m DC EOL :		DEPTH SOL : 2383.6m DEPTH EOL : 2267.2m				NAVIGATION SYSTEM USED: C-Nav3050 - Primary																								
SMG SOL: 3.7 knots SMG EOL: 4.9 knots		FEATHER SOL: 46.5 ° FEATHER EOL: 3.0 °				NAVIGATION SYSTEM USED: SeaPath 200																								
<u>WEATHER</u>		MAX FEATHER: 46.5 °				GRAVITY METER: BMG-II: used, SN210																								
WIND SOL: 15 knots		WIND EOL: 12 knots				MAGNETOMETER: GeoMetrics: used																								
SEAS SOL: 1.0m		SEAS EOL: 1.0m				MAG DEC USED : 16.89°																								
shift hours		shift leaders				shift hours		watch personnel		shift hours		watch personnel																		
19:00 – 07:00 utc =>		david martinson				19:00 – 01:00 utc =>		Helen: Greg		01:00 – 07:00		Shuoshou; Louise																		
07:00 – 19:00 utc =>		mike martello				07:00 – 13:00 utc =>		Aaron; Laurel		13:00 – 19:00		James; Beatrise																		
SP	TIME(UTC)	EVENT	COMMENTS																											
18139	05:27	SOL	Start of line																											
18453	07:42	Speed	resume normal shooting speed. (slowed down d/t turn's and maneuvering)																											
18799	09:11	EOL	End of Line																											
			<table border="1" style="width:100%; border-collapse: collapse; margin: 5px;"> <thead> <tr> <th colspan="4" style="text-align: center;">VESSEL POSITION</th> </tr> <tr> <th style="width: 5%;">Shotpoints</th> <th style="width: 10%;">Latitude (N / +)</th> <th colspan="2" style="width: 85%;">Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>18139</td> <td>47° 27'</td> <td>15.873"</td> <td>-126° 26' 08.709"</td> </tr> <tr> <td>LSP</td> <td>18799</td> <td>47° 40'</td> <td>59.960"</td> <td>-126° 25' 44.410"</td> </tr> </tbody> </table>										VESSEL POSITION				Shotpoints	Latitude (N / +)	Longitude (W / -)		FSP	18139	47° 27'	15.873"	-126° 26' 08.709"	LSP	18799	47° 40'	59.960"	-126° 25' 44.410"
VESSEL POSITION																														
Shotpoints	Latitude (N / +)	Longitude (W / -)																												
FSP	18139	47° 27'	15.873"	-126° 26' 08.709"																										
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			<table border="1" style="width:100%; border-collapse: collapse; margin: 5px;"> <thead> <tr> <th colspan="2" style="text-align: center;">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>232.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>155.0m</td> </tr> <tr> <td>COS - CNG</td> <td>77.0m</td> </tr> <tr> <td>NRP - CMP</td> <td>116.5m</td> </tr> </tbody> </table>										NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	232.0m	NRP - CNG	155.0m	COS - CNG	77.0m	NRP - CMP	116.5m						
NAVIGATION OFFSET APPLIED																														
NRP - Stern	29.5m																													
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COS - CNG	77.0m																													
NRP - CMP	116.5m																													
			Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array																											
			<table style="width:100%; border: none;"> <tr> <td style="text-align: center;"><u>P1</u></td> <td style="text-align: center;"><u>P2</u></td> </tr> <tr> <td style="text-align: center;">MGL1211MCS03.p190</td> <td style="text-align: center;">MGL1211MCS03.p294</td> </tr> </table>										<u>P1</u>	<u>P2</u>	MGL1211MCS03.p190	MGL1211MCS03.p294														
<u>P1</u>	<u>P2</u>																													
MGL1211MCS03.p190	MGL1211MCS03.p294																													
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:				MGL1211_V3.LMN		SOURCE.SCN(001)		mg2010.RTCN																			
Tallbuoy #1	intermittent	Gun string #1	na	SP spacing: 37.5m																										
		Gun string #2	good	line status: Complete																										
		Gun string #3	good																											
		Gun string #4	na																											



Seq #015		Line Name: MGL1211MCS03A	NAVIGATION	DATE: 2012-06-23	Lamont-Doherty Earth Observatory	
Line Brg : 167 °		LINE LOGS	JULIAN DAY: 175	COLUMBIA UNIVERSITY EARTH INSTITUTE		
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS		
DC SOL : -236.3m	DEPTH SOL : 2244.2m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL : -27.6m	DEPTH EOL : 2963.1m	NAVIGATION SYSTEM USED: SeaPath 200				
SMG SOL: 3.7 knots	FEATHER SOL: -42.2 °	NAVIGATION SYSTEM USED: C-Nav2000				
SMG EOL: 3.9 knots	FEATHER EOL: 1.4 °	GRAVITY METER: BMG-II: used, SN210				
WEATHER	MAX FEATHER: -8.0 °	MAGNETOMETER: GeoMetrics: used				
WIND SOL: 12 knots	MAG DEC USED : 16.89°					
WIND EOL: 6 knots	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel
SEAS SOL: 1m	19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen: Greg	01:00 – 07:00	Shuoshou; Louise
SEAS EOL: 1.0m	07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrice
SP	TIME(UTC)	EVENT	COMMENTS			
20167	14:20	SOL	Start of line			
20534	16:06	OBS crossing	cross L3_OBS_25			
	16:23	Source	no source fired, power down for dolphin, SP 20600			
	16:23	Source	mitigation gun firing. SP 20601			
	16:48	Source	Firing full source volume			
	17:10	bist	Start test			
	17:20	bist	Passed test, logging			
20934	17:51	OBS crossing	cross L3_OBS_24			
20952	17:55	Source	Power down for seal			
21020	18:12	Source	Source at full volume			
21120	18:36	Source	Power down for seal			
21185	18:52	Source	Source at full volume			
21332	19:27	OBS crossing	cross L3_OBS_23			
21522	20:13	Spectra	NCC lockup missing shots			
21527	20:15	Spectra	NCC lockup missing shots (missed shots 21522-21527)			
21778	21:16	OBS crossing	cross L3_OBS_22			
22111	22:37	Source	Power down for dolphins			
22173	22:54	Source	no source fired			
22174	22:54	Source	Source at full volume			
22218	23:07	OBS crossing	cross L3_OBS_21			
22417	23:57	Source	Power down for seal			
22429	24:00	Midnight	Midnight shot point			
22436	00:02	Source	Source at full volume			
22659	00:59	OBS crossing	cross L3_OBS_20			
23077-23080	02:49	Spectra	NCC lockup missing shots			
23100	02:53	OBS crossing	cross L3_OBS_19			
23548	04:46	OBS crossing	cross L3_OBS_18			
23998	06:43	OBS crossing	cross L3_OBS_17			
24425	08:47	OBS crossing	cross L3_OBS_16			
24833	10:43	OBS crossing	cross L3_OBS_15			
25310	12:50	OBS crossing	cross L3_OBS_14			
25384	13:09	Source	Power down for dolphins			
25394	13:11	Source	Shot down for dolphin			
25411	13:16	Source	Source at full volume			
25752	14:48	OBS crossing	cross L3_OBS_13			
26055	16:09	Source	Power down for seal			
26100	16:23	Source	Source at full volume			
26152	16:37	OBS crossing	cross L3_OBS_12			
26632	18:39	OBS crossing	cross L3_OBS_11			
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V3.LMN SOURCE.SCN(001) mgl2010.RTCN		
Tailbuoy #1	intermittent	Gun string #1	na	SP spacing: 37.5m		
		Gun string #2	good	line status: line complete		
		Gun string #3	good			
		Gun string #4	na			

VESSEL POSITION			
	Shotpoints	Latitude (N / +)	Longitude (W / -)
FSP	20167	47° 48' 02.274"	-126° 27' 49.920"
LSP	30879	44° 16' 23.975"	-125° 20' 02.071"

NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	232.0m
NRP - CNG	404.0m
COS - CNG	172.0m
NRP - CMP	318.0m

Note: LMN line parameter set to great circle line
Configuration: 1 x 8 km streamer and 4 x 10 gun array

P1 P2
MGL1211MCS03A.p19f MGL1211MCS03A.p29f

Seq #016		Line Name: MGL1211MCST04	NAVIGATION	DATE: 2012-06-25																		
		Line Brg : 90 °	LINE LOGS	JULIAN DAY: 177																		
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS																		
DC SOL : 1180.0m	DEPTH SOL : 105.8m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																				
DC EOL : -308.0m	DEPTH EOL : 81.3m	NAVIGATION SYSTEM USED: SeaPath 200																				
SMG SOL: 4.3 knots	FEATHER SOL: -2.7 °	NAVIGATION SYSTEM USED: C-Nav2000																				
SMG EOL: 3.7 knots	FEATHER EOL: -4.1 °	GRAVITY METER: BMG-II: used, SN210																				
<u>WEATHER</u>	MAX FEATHER: -4.1 °	MAGNETOMETER: GeoMetrics: used																				
WIND SOL: 1.5 knots	MAG DEC USED : 16.89°																					
WIND EOL: 4 knots	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																
SEAS SOL: 1.0m	19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen: Greg	01:00 – 07:00	Shuoshou; Louise																
SEAS EOL: 1.0m	07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrise																
SP	TIME(UTC)	EVENT	COMMENTS																			
31333	19:46	SOL	Start of line																			
32081	23:06	Source	Power down for seal																			
32123	23:18	Source	Source at full volume																			
32258	24:00	Midnight	Start of Julian day 178																			
32391	00:41	EOL	End of line																			
			<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>31333</td> <td>44° 12' 45.794"</td> <td>-124° 51' 19.930"</td> </tr> <tr> <td>LSP</td> <td>32391</td> <td>44° 15' 23.430"</td> <td>-124° 21' 44.298"</td> </tr> </tbody> </table>				VESSEL POSITION					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	31333	44° 12' 45.794"	-124° 51' 19.930"	LSP	32391	44° 15' 23.430"	-124° 21' 44.298"
VESSEL POSITION																						
	Shotpoints	Latitude (N / +)	Longitude (W / -)																			
FSP	31333	44° 12' 45.794"	-124° 51' 19.930"																			
LSP	32391	44° 15' 23.430"	-124° 21' 44.298"																			
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NAVIGATION OFFSET APPLIED																						
NRP - Stern	29.5m																					
NRP - COS	232.0m																					
NRP - CNG	504.0m																					
COS - CNG	272.0m																					
NRP - CMP	318.0m																					
			<p>Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array</p>																			
			<p>P1 P2 MGL1211MCST04.p19C MGL1211MCST04.p294</p>																			
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:			MGL1211_V3.LMN SOURCE.SCN(001) mgl2010.RTCN																
Tailbuoy #1	intermittent	Gun string #1	na																			
		Gun string #2	good																			
		Gun string #3	good																			
		Gun string #4	na																			
				SP spacing:	37.5m																	
				line status:	line complete																	

Seq #017		Line Name: MGL1211MCS01	NAVIGATION	DATE: 2012-06-26	Lamont-Doherty Earth Observatory	
		Line Brg : 296.2 °	LINE LOGS	JULIAN DAY: 178	COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS		
DC SOL : -96.4m	DEPTH SOL : 77.4m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL : 202.0m	DEPTH EOL : 1548.9m	NAVIGATION SYSTEM USED: SeaPath 200				
SMG SOL: 4 knots	FEATHER SOL: -100.6 °	NAVIGATION SYSTEM USED: C-Nav2000				
SMG EOL: 3.9 knots	FEATHER EOL: -0.9 °	GRAVITY METER: BMG-II: used, SN210				
WEATHER	MAX FEATHER: -6.8 °	MAGNETOMETER: GeoMetrics: used				
WIND SOL: 1.5 knots	MAG DEC USED : 16.89°					
WIND EOL: 20 knots	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel
SEAS SOL: 1.0m	19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen; Greg	01:00 – 07:00	Shuoshou; Louise
SEAS EOL: 2.0m	07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrice
SP	TIME(UTC)	EVENT	COMMENTS			
32467	01:29	SOL	Start of line			
32827	03:11	OBS	Crossing L1_OBS_50			
33046	04:19	Spectra	NCC lockup, last good shot			
33055	04:23	Spectra	First good shot after NCC lockup, missed 33047-33054			
33351	05:41	OBS	Crossing L1_OBS_54			
33809	07:51	OBS	Crossing L1_OBS_55			
34141	09:21	OBS	Crossing L1_OBS_56			
	09:41	Multibeam	Start bist			
	09:53	Multibeam	Bist passed and logging			
34617	11:26	OBS	Crossing L1_OBS_57			
35557	15:39	OBS	Crossing L1_OBS_58			
35806	16:43	Source	Powered down d/t PSO sighting - Last Full Volume SP 35806			
35828	16:49	Source	Resumed Full Volume - SP 35828			
35947	17:21	OBS	Crossing L1_OBS_59			
36340	19:11	OBS	Crossing L1_OBS_60			
36738	21:07	OBS	Crossing L1_OBS_61			
37076	22:41	Source	Power down for whale			
37142	22:58	OBS	Crossing L1_OBS_62			
37267	23:42	Source	Source at full volume			
37318	23:54	Source	Power down for whale			
37366	00:00	Midnight	Midnight Shotpoint Start JD179			
37478	00:55	Source	Source at full volume			
37530	01:11	OBS	Crossed L1_OBS_63			
37917	02:51	OBS	Crossed L1_OBS_64			
38313	04:35	OBS	Crossed L1_OBS_65			
38807	06:44	OBS	Crossed L1_OBS_66			
39297	08:51	OBS	Crossed L1_OBS_67			
39698	10:40	OBS	Crossed L1_OBS_68			
40099	12:29	OBS	Crossed L1_OBS_69			
40499	14:16	OBS	Crossed L1_OBS_70			
40900	16:06	OBS	Crossed L1_OBS_71			
41299	18:05	OBS	Crossed L1_OBS_72			
41701	20:03	OBS	Crossed L1_OBS_73			
42095	21:59	OBS	Crossed L1_OBS_74			
42496	23:52	OBS	Crossed L1_OBS_75			
42523	00:00	Midnight	Midnight Shotpoint Start JD180			
42893	01:40	OBS	Crossed L1_OBS_76			
43291	03:37	OBS	Crossed L1_OBS_77			
		OBS	Crossed L1_OBS_78			
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V4.LMN SOURCE.SCN(001) mgl2010.RTCN		
Tailbuoy #1	intermittent	Gun string #1	na	SP spacing: 37.5m		
		Gun string #2	None	line status: line complete		
		Gun string #3	None			
		Gun string #4	na			

VESSEL POSITION			
	Shotpoints	Latitude (N / +)	Longitude (W / -)
FSP	32467	44° 18' 14.825"	-124° 21' 18.940"
LSP	45199	45° 54' 14.684"	-129° 59' 12.012"
NAVIGATION OFFSET APPLIED			
NRP - Stern	29.5m		
NRP - COS	232.0m		
NRP - CNG	504.0m		
COS - CNG	272.0m		
NRP - CMP	318.0m		

Note: LMN line parameter set to great circle line
Configuration: 1 x 8 km streamer and 4 x 10 gun array


P1 P2
MGL1211MCS01.p190 MGL1211MCS01.p294

Seq #019		Line Name: MGL1211MCSAX1	NAVIGATION	DATE: 2012-06-28	
		Line Brg : 154.9 °	LINE LOGS	JULIAN DAY: 180	
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS	
DC SOL : -44.0m	DEPTH SOL : 1860.6m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary			
DC EOL : -6.3m	DEPTH EOL : 2176.8m	NAVIGATION SYSTEM USED: SeaPath 200			
SMG SOL: 4.3 knots	FEATHER SOL: 105.3 °	NAVIGATION SYSTEM USED: C-Nav2000			
SMG EOL: 4.1 knots	FEATHER EOL: 1.2 °	GRAVITY METER: BMG-II: used, SN210			
<u>WEATHER</u>	MAX FEATHER: 105.3 °	MAGNETOMETER: GeoMetrics: used			
WIND SOL: 21 knots		MAG DEC USED : 16.89°			
WIND EOL: 20 knots	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>
SEAS SOL: 2.0m	19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen; Greg	01:00 – 07:00
SEAS EOL: 2.0m	07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00
<u>SP</u>	<u>TIME(UTC)</u>	<u>EVENT</u>	<u>COMMENTS</u>		
46845	16:43	SOL	Start of line		
47704	20:28	EOL	End of line		
			VESSEL POSITION		
			<u>Shotpoints</u>	<u>Latitude (N / +)</u>	<u>Longitude (W / -)</u>
			FSP	46845	46° 03' 24.709"
			LSP	47704	45° 48' 40.383"
			NAVIGATION OFFSET APPLIED		
			NRP - Stern	29.5m	
			NRP - COS	232.0m	
			NRP - CNG	504.0m	
			COS - CNG	272.0m	
			NRP - CMP	318.0m	
<u>Note: LMN line parameter set to great circle line</u>					
Configuration: 1 x 8 km streamer and 4 x 10 gun array					
			<u>P1</u>	<u>P2</u>	
			MGL1211MCSAX1.p19\ MGL1211MCSAX1.p294		
<u>Posnet locations & remarks: good - none - intermittent</u>		<u>Acoustic remarks:</u>		MGL1211_V5.LMN	SOURCE.SCN(001) mgl2010.RTCN
<u>Tailbuoy #1</u>	intermittent	<u>Gun string #1</u>	na	SP spacing:	37.5m
		<u>Gun string #2</u>	None	line status: complete	
		<u>Gun string #3</u>	None		
		<u>Gun string #4</u>	na		


Seq #020		Line Name: MGL1211MCST06		NAVIGATION		DATE: 2012-06-28		 		
		Line Brg : 41 °		LINE LOGS		JULIAN DAY: 180				
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS				
DC SOL : 10.3m		DEPTH SOL : 2000.4m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL : 190.0m		DEPTH EOL : 2556.9m		NAVIGATION SYSTEM USED: SeaPath 200						
SMG SOL: 3.9 knots		FEATHER SOL: -51 °		NAVIGATION SYSTEM USED: C-Nav2000						
SMG EOL: 3.4 knots		FEATHER EOL: 3.2 °		GRAVITY METER: BMG-II: used, SN210						
<u>WEATHER</u>		MAX FEATHER: -51 °		MAGNETOMETER: GeoMetrics: used						
WIND SOL: 16 knots				MAG DEC USED : 16.89°						
WIND EOL: 10 knots		<u>shift hours</u> <u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		<u>shift hours</u> <u>watch personnel</u>		
SEAS SOL: 2.0m		19:00 – 07:00 utc => david martinson		19:00 – 01:00 utc => Helen: Greg		01:00 – 07:00		Shuoshou; Louise		
SEAS EOL: 2.0m		07:00 – 19:00 utc => mike martello		07:00 – 13:00 utc => Aaron; Laurel		13:00 – 19:00		James; Beatrise		
<u>SP</u>	<u>TIME(UTC)</u>	<u>EVENT</u>	<u>COMMENTS</u>							
47851	21:08	SOL	Start of line							
47942	21:49	Source	Volume at 6380							
47953	21:52	Source	Volume at 6520							
48160	22:57	Source	Volume at 6380							
48317	23:45	EOL	End of line							
						VESSEL POSITION				
						Shotpoints				
						Latitude (N / +)				
						Longitude (W / -)				
						FSP		47851 45° 49' 18.183" -129° 49' 18.418"		
						LSP		48317 45° 56' 13.889" -129° 40' 47.590"		
						NAVIGATION OFFSET APPLIED				
						NRP - Stern 29.5m				
						NRP - COS 232.0m				
						NRP - CNG 504.0m				
						COS - CNG 272.0m				
						NRP - CMP 318.0m				
						<u>Note: LMN line parameter set to great circle line</u> Configuration: 1 x 8 km streamer and 4 x 10 gun array				
						P1		P2		
						MGL1211MCST06.p19C MGL1211MCST06.p294				
<u>Posnet locations & remarks: good - none - intermittent</u>			<u>Acoustic remarks:</u>			MGL1211_V5.LMN		SOURCE.SCN(001)		mgl2010.RTCN
<u>Tailbuoy #1</u>	intermittent	<u>Gun string #1</u>	na			SP spacing: 37.5m				
		<u>Gun string #2</u>	None							
		<u>Gun string #3</u>	None							
		<u>Gun string #4</u>	na					line status: complete		

Seq #021		Line Name: MGL1211MCSAX2		NAVIGATION		DATE: 2012-06-29		Lamont-Doherty Earth Observatory	
		Line Brg : 246 °		LINE LOGS		JULIAN DAY: 181		COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS					
DC SOL : 16.4m		DEPTH SOL : 1999.9m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL : -1.6m		DEPTH EOL : 2072.7m		NAVIGATION SYSTEM USED: SeaPath 200					
SMG SOL: 4.2 knots		FEATHER SOL: -78.0 °		NAVIGATION SYSTEM USED: C-Nav2000					
SMG EOL: 3.4 knots		FEATHER EOL: -2.9 °		GRAVITY METER: BMG-II: used, SN210					
<u>WEATHER</u>		MAX FEATHER: -78.0 °		MAGNETOMETER: GeoMetrics: used					
WIND SOL: 19 knots				MAG DEC USED : 16.89°					
WIND EOL: 19 knots		shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel		
SEAS SOL: 2.0m		19:00 - 07:00 utc =>	david martinson	19:00 - 01:00 utc =>	Helen: Greg	01:00 - 07:00	Shuoshou; Louise		
SEAS EOL: 2.0m		07:00 - 19:00 utc =>	mike martello	07:00 - 13:00 utc =>	Aaron; Laurel	13:00 - 19:00	James; Beatrise		
SP	TIME(UTC)	EVENT	COMMENTS						
48886	01:04	SOL	Start of line (source volume 3300)						
49754	05:15	EOL	End of line						
			NAVIGATION OFFSET APPLIED						
			NRP - Stern			29.5m			
			NRP - COS			232.0m			
			NRP - CNG			504.0m			
			COS - CNG			272.0m			
			NRP - CMP			318.0m			
			Note: LMN line parameter set to great circle line						
			Configuration: 1 x 8 km streamer and 4 x 10 gun array						
			P1			P2			
			MGL1211MCSAX2.p19\ MGL1211MCSAX2.p294						
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V5.LMN		SOURCE.SCN(001)		mgl2010.RTCN	
Tailbuoy #1	intermittent	Gun string #1	na						
		Gun string #2	None						
		Gun string #3	None						
		Gun string #4	na						
			line status:			complete			


Seq #022		Line Name: MGL1211MCS01A		NAVIGATION		DATE: 2012-06-29				
		Line Brg : 111 °		LINE LOGS		JULIAN DAY: 181				
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS				
DC SOL : 567.5m		DEPTH SOL : 1630.0m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL : 70.9m		DEPTH EOL : 1692.2m		NAVIGATION SYSTEM USED: SeaPath 200						
SMG SOL: 4.3 knots		FEATHER SOL: 90.3 in turn °		NAVIGATION SYSTEM USED: C-Nav2000						
SMG EOL: 4.5 knots		FEATHER EOL: 0.8 °		GRAVITY METER: BMG-II: used, SN210						
<u>WEATHER</u>		MAX FEATHER: 2.0 °		MAGNETOMETER: GeoMetrics: used						
WIND SOL: 6 knots				MAG DEC USED : 16.89°						
WIND EOL: 7 knots		shift hours		shift leaders		shift hours		watch personnel		
SEAS SOL: 1.0m		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen: Greg		
SEAS EOL: 1.0m		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel		
01:00 – 07:00						13:00 – 19:00		James; Beatrise		
SP	TIME(UTC)	EVENT	COMMENTS							
50101	08:45	SOL	Start of line							
50209-50211	09:16	Spectra	Reset Run to end of line time not updating - did not fix - leave as is.							
50794	12:00	EOL	End of line							
						NAVIGATION OFFSET APPLIED				
				NRP - Stern		29.5m				
				NRP - COS		232.0m				
				NRP - CNG		504.0m				
				COS - CNG		272.0m				
				NRP - CMP		318.0m				
				Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array						
				P1		P2				
				MGL1211MCS01A.p19k MGL1211MCS01A.p294						
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:			MGL1211_V5.LMN		SOURCE.SCN(001)		mgl2010.RTCN
Tailbuoy #1	intermittent	Gun string #1	na			SP spacing:		37.5m		
		Gun string #2	None			line status:		complete		
		Gun string #3	None							
		Gun string #4	na							


Seq #023		Line Name: MGL1211OBS01		NAVIGATION		DATE: 2012-06-29																			
		Line Brg : 111 °		LINE LOGS		JULIAN DAY: 181																			
CLIENT: Suzanne Carbotte - PI				SURVEY: Cascdia "rapid 2d MCS"				AREA: Juan de Fuca Ridge: OBS & MCS																	
DC SOL : 278.1m		DEPTH SOL : 1735.6m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL : -336.8m		DEPTH EOL : 2703.6m		NAVIGATION SYSTEM USED: SeaPath 200																					
SMG SOL: 4.5 knots		FEATHER SOL: 0.0 °		NAVIGATION SYSTEM USED: C-Nav2000																					
SMG EOL: 3.4 knots		FEATHER EOL: 6.6 °		GRAVITY METER: BMG-II: used, SN210																					
WEATHER		MAX FEATHER: 7.7 °		MAGNETOMETER: GeoMetrics: used																					
WIND SOL: 7 knots				MAG DEC USED : 16.89°																					
WIND EOL: 4 knots		shift hours		shift leaders		shift hours		watch personnel																	
SEAS SOL: 1.0m		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen; Greg																	
SEAS EOL: 1.0m		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel																	
01:00 – 07:00								Shuoshou; Louise																	
13:00 – 19:00								James; Beatrise																	
SP	TIME(UTC)	EVENT	COMMENTS																						
51032	12:03	SOL	Start of line																						
51123	17:55	EOL	End of line																						
			<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>51032</td> <td>45° 53' 14.945"</td> <td>-129° 55' 40.959"</td> </tr> <tr> <td>LSP</td> <td>51123</td> <td>45° 45' 04.375"</td> <td>-129° 22' 33.311"</td> </tr> </tbody> </table>							VESSEL POSITION					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	51032	45° 53' 14.945"	-129° 55' 40.959"	LSP	51123	45° 45' 04.375"	-129° 22' 33.311"
VESSEL POSITION																									
	Shotpoints	Latitude (N / +)	Longitude (W / -)																						
FSP	51032	45° 53' 14.945"	-129° 55' 40.959"																						
LSP	51123	45° 45' 04.375"	-129° 22' 33.311"																						
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NRP - CMP	318.0m																								
			<p>Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array</p>																						
			<p>P1 P2 MGL1211OBS01.p190 MGL1211OBS01.p294</p>																						
Posnet locations & remarks: good - none - intermittent				Acoustic remarks:				MGL1211_V5.LMN SOURCE.SCN(001) mgl2010.RTCN																	
Tailbuoy #1	intermittent	Gun string #1	na																						
		Gun string #2	None																						
		Gun string #3	None																						
		Gun string #4	na																						
				SP spacing: 500.0m		line status: complete																			

Seq #024		Line Name: MGL1211OBSFS02A		NAVIGATION	DATE: 2012-06-29		
		Line Brg : ARC °		LINE LOGS	JULIAN DAY: 181		
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS			
DC SOL : -295.2m		DEPTH SOL : 2702.1m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary			
DC EOL : 44.1m		DEPTH EOL : 2751.1m		NAVIGATION SYSTEM USED: SeaPath 200			
SMG SOL: 3.4 knots		FEATHER SOL: -78.5 (turn) °		NAVIGATION SYSTEM USED: C-Nav2000			
SMG EOL: 4.0 knots		FEATHER EOL: 4.9 °		GRAVITY METER: BMG-II: used, SN210			
WEATHER		MAX FEATHER: -78.5 °		MAGNETOMETER: GeoMetrics: used			
WIND SOL: 5 knots				MAG DEC USED : 16.89°			
WIND EOL: 4 knots		shift hours shift leaders		shift hours watch personnel		shift hours watch personnel	
SEAS SOL: 1.0m		19:00 – 07:00 utc => david martinson		19:00 – 01:00 utc => Helen; Greg		01:00 – 07:00 Shuoshou; Louise	
SEAS EOL: 1.0m		07:00 – 19:00 utc => mike martello		07:00 – 13:00 utc => Aaron; Laurel		13:00 – 19:00 James; Beatrise	
SP	TIME(UTC)	EVENT	COMMENTS				
51207	18:06	SOL	Start of line - MCS and OBS				
51512	00:00	Midnight	Midnight Shotpoint Start JD 182				
51725	04:04	EOL	End of line				
				VESSEL POSITION			
				Shotpoints	Latitude (N / +)	Longitude (W / -)	
FSP				51207	45° 45' 19.286"	-129° 21' 45.094"	
LSP				51725	46° 00' 47.427"	-128° 33' 06.453"	
				NAVIGATION OFFSET APPLIED			
				NRP - Stern 29.5m			
				NRP - COS 232.0m			
				NRP - CNG 504.0m			
				COS - CNG 272.0m			
				NRP - CMP 318.0m			
				Note: LMN line parameter set to great circle line			
				Configuration: 1 x 8 km streamer and 4 x 10 gun array			
				P1 P2 MGL1211OBSFS02A.p1MGL1211OBSFS02A1.p294			
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:				
Tailbuoy #1	intermittent	Gun string #1	na	MGL1211_V5.LMN SOURCE.SCN(001) mgl2010.RTCN			
		Gun string #2	None	SP spacing: 150.0m			
		Gun string #3	None	line status: complete			
		Gun string #4	na				

Seq #025		Line Name: MGL1211OBS04		NAVIGATION		DATE: 2012-06-30													
		Line Brg : 202 °		LINE LOGS		JULIAN DAY: 182													
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS													
DC SOL : 19.7m		DEPTH SOL : 2756.9m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary															
DC EOL : 236.0m		DEPTH EOL : 2802.6m		NAVIGATION SYSTEM USED: SeaPath 200															
SMG SOL: 3.9 knots		FEATHER SOL: 82.5 (turn) °		NAVIGATION SYSTEM USED: C-Nav2000															
SMG EOL: 3.8 knots		FEATHER EOL: 4.9 °		GRAVITY METER: BMG-II: used, SN210															
WEATHER		MAX FEATHER: 7.2 °		MAGNETOMETER: GeoMetrics: used															
WIND SOL: 4 knots				MAG DEC USED : 16.89°															
WIND EOL: 15 knots		shift hours		shift leaders		shift hours		watch personnel											
SEAS SOL: 1.0m		19:00 – 07:00 utc => david martinson		19:00 – 01:00 utc => Helen: Greg		01:00 – 07:00		Shuoshou; Louise											
SEAS EOL: 2.0m		07:00 – 19:00 utc => mike martello		07:00 – 13:00 utc => Aaron; Laurel		13:00 – 19:00		James; Beatrise											
SP	TIME(UTC)	EVENT	COMMENTS																
52013	04:22	SOL	Start of line - MCS and OBS source volume = 6560																
52044	04:56	OBS	Crossing L4_OBS_81																
52131	06:32	OBS	Crossing L4_OBS_82																
52232	08:20	OBS	Crossing L4_OBS_83																
	09:50	multibeam	Start bist																
	10:00	multibeam	Passed bist and logging																
52334-52335	10:07	crossing line	crossing L1 at obs 75																
52491	12:43	OBS	Crossing L4_OBS_84																
52647	15:25	OBS	Crossing L4_OBS_85																
52656	15:37	EOL	end of line																
				VESSEL POSITION <table border="1"> <thead> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>52013</td> <td>45° 59' 16.500"</td> <td>-128° 31' 38.383"</td> </tr> <tr> <td>LSP</td> <td>52656</td> <td>45° 11' 06.954"</td> <td>-128° 59' 50.066"</td> </tr> </tbody> </table>					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	52013	45° 59' 16.500"	-128° 31' 38.383"	LSP	52656	45° 11' 06.954"	-128° 59' 50.066"
	Shotpoints	Latitude (N / +)	Longitude (W / -)																
FSP	52013	45° 59' 16.500"	-128° 31' 38.383"																
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NRP - CMP	318.0m																		
				Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array															
				<p style="text-align: center;"> P1 P2 MGL1211OBS04.p190 MGL1211OBS04.p294 </p>															
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:			MGL1211_V5.LMN SOURCE.SCN(001) mgl2010.RTCN													
Tailbuoy #1	intermittent	Gun string #1	na																
		Gun string #2	None																
		Gun string #3	None																
		Gun string #4	na																
				SP spacing: 150.0m															
				line status:		complete													

Line Name: MGL1211OBSFS02B				NAVIGATION				DATE: 2012-06-30																			
Line Brg : arc °				LINE LOGS				JULIAN DAY: 182																			
CLIENT: Suzanne Carbotte - PI				SURVEY: Cascdia "rapid 2d MCS"				AREA: Juan de Fuca Ridge: OBS & MCS																			
DC SOL : 229.1m				DEPTH SOL : 2813.0m				NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL : 346.3m				DEPTH EOL : 2705.6m				NAVIGATION SYSTEM USED: SeaPath 200																			
SMG SOL: 4.2 knots				FEATHER SOL: in turn °				NAVIGATION SYSTEM USED: C-Nav2000																			
SMG EOL: 3.7 knots				FEATHER EOL: 7.0 °				GRAVITY METER: BMG-II: used, SN210																			
WEATHER				MAX FEATHER: 7.0 °				MAGNETOMETER: GeoMetrics: used																			
WIND SOL: 15 knots								MAG DEC USED : 16.89°																			
WIND EOL: 15 knots																											
SEAS SOL: 2.0m																											
SEAS EOL: 2.0m																											
				shift hours				watch personnel																			
				19:00 – 07:00 utc => david martinson				19:00 – 01:00 utc => Helen: Greg																			
				07:00 – 19:00 utc => mike martello				07:00 – 13:00 utc => Aaron; Laurel																			
				13:00 – 19:00				James; Beatrice																			
SP	TIME(UTC)	EVENT	COMMENTS																								
52711	15:53	SOL	Start of line - MCS and OBS source volume = 6520																								
52992	21:09	Source	Power down for whale																								
53016	21:37	Source	Source at 6520																								
53130	23:45	Source	Power down for whale																								
53136	23:52	Source	Source at 6480																								
53143	00:00	Midnight	Midnight Shotpoint Start JD18																								
53206	01:14	EOL	End of line																								
<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>52711</td> <td>45° 10' 46.368"</td> <td>-129° 01' 14.492"</td> </tr> <tr> <td>LSP</td> <td>53206</td> <td>45° 44' 00.481"</td> <td>-129° 21' 54.886"</td> </tr> </tbody> </table>												VESSEL POSITION					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	52711	45° 10' 46.368"	-129° 01' 14.492"	LSP	53206	45° 44' 00.481"	-129° 21' 54.886"
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FSP	52711	45° 10' 46.368"	-129° 01' 14.492"																								
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NRP - CMP	318.0m																										
<p>Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array</p>																											
<p style="text-align: center;">P1 P2 MGL1211OBSFS02B.p1 MGL1211OBSFS02B.p294</p>																											
Posnet locations & remarks: good - none - intermittent				Acoustic remarks:				MGL1211_V5.LMN SOURCE.SCN(001) mgl2010.RTCN																			
Tailbuoy #1	intermittent	Gun string #1	na																								
		Gun string #2	None																								
		Gun string #3	None																								
		Gun string #4	na																								
				SP spacing: 150.0m				line status: complete																			

Seq #027		Line Name: MGL1211OBS01A		NAVIGATION		DATE: 2012-07-01															
		Line Brg : 110 °		LINE LOGS		JULIAN DAY: 183															
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS															
DC SOL : 65.2m		DEPTH SOL : 2707.1m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																	
DC EOL : -2.1m		DEPTH EOL : 2800.9m		NAVIGATION SYSTEM USED: SeaPath 200																	
SMG SOL: 4 knots		FEATHER SOL: in turn °		NAVIGATION SYSTEM USED: C-Nav2000																	
SMG EOL: 4.6 knots		FEATHER EOL: 5.0 °		GRAVITY METER: BMG-II: used, SN210																	
WEATHER		MAX FEATHER: 8.5 °		MAGNETOMETER: GeoMetrics: used																	
WIND SOL: 15 knots				MAG DEC USED : 16.89°																	
WIND EOL: 9 knots		shift hours		shift leaders		shift hours		watch personnel													
SEAS SOL: 2.0m		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen; Greg													
SEAS EOL: 1.0m		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel													
01:00 – 07:00						13:00 – 19:00		James; Beatrise													
SP	TIME(UTC)	EVENT	COMMENTS																		
53429	01:31	SOL	Start of line - MCS and OBS source volume = 6480																		
53436	01:59	OBS	Crossing L1_OBS_78																		
53466	03:49	OBS	Crossing L1_OBS_77																		
53496	05:37	OBS	Crossing L1_OBS_76																		
	07:14	multibeam	Run Bist																		
	07:23	multibeam	Pass Bist - logging																		
53526	07:28	OBS	Crossing L1_OBS_75 at cross line L4																		
53556	09:16	OBS	Crossing L1_OBS_74																		
53585	10:58	OBS	Crossing L1_OBS_73																		
	12:14	VIG2	seapath dropout																		
	12:20	VIG2	seapath back in																		
53616	12:52	OBS	Crossing L1_OBS_72																		
53620	13:06	EOL	EOL to pick up streamer and do gun repair																		
								VESSEL POSITION <table border="1"> <thead> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>53429</td> <td>45° 44' 18.654"</td> <td>-129° 20' 29.379"</td> </tr> <tr> <td>LSP</td> <td>53620</td> <td>45° 26' 16.788"</td> <td>-128° 11' 41.890"</td> </tr> </tbody> </table>			Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	53429	45° 44' 18.654"	-129° 20' 29.379"	LSP	53620	45° 26' 16.788"	-128° 11' 41.890"
	Shotpoints	Latitude (N / +)	Longitude (W / -)																		
FSP	53429	45° 44' 18.654"	-129° 20' 29.379"																		
LSP	53620	45° 26' 16.788"	-128° 11' 41.890"																		
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NRP - Stern	29.5m																				
NRP - COS	232.0m																				
NRP - CNG	504.0m																				
COS - CNG	272.0m																				
NRP - CMP	318.0m																				
								Note: LMN line parameter set to great circle line Configuration: 1 x 8 km streamer and 4 x 10 gun array													
								P1 P2 MGL1211OBS01A,p19f MGL1211OBS01A,p294													
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V5.LMN		SOURCE.SCN(001)		mgl2010.RTCN													
Tailbuoy #1	intermittent	Gun string #1	na			SP spacing: 500.0m															
		Gun string #2	None																		
		Gun string #3	None																		
		Gun string #4	na					line status: complete													

Seq #028		Line Name: MGL1211OBS01B		NAVIGATION		DATE: 2012-07-01							
		Line Brg : 110 °		LINE LOGS		JULIAN DAY: 183							
CLIENT: Suzanne Carbotte - PI				SURVEY: Cascdia "rapid 2d MCS"				AREA: Juan de Fuca Ridge: OBS & MCS					
DC SOL : 0.4m		DEPTH SOL : 2807.1m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary									
DC EOL : -10.5m		DEPTH EOL : 849.8m		NAVIGATION SYSTEM USED: SeaPath 200									
SMG SOL: 5.1 knots		FEATHER SOL: na °		NAVIGATION SYSTEM USED: C-Nav2000									
SMG EOL: 4.7 knots		FEATHER EOL: na °		GRAVITY METER: BMG-II: used, SN210									
WEATHER				MAX FEATHER: na °		MAGNETOMETER: GeoMetrics: used							
WIND SOL: 3 knots				MAG DEC USED : 16.89°									
WIND EOL: 20 knots		shift hours		shift leaders		shift hours		watch personnel		shift hours		watch personnel	
SEAS SOL: 1.0m		19:00 - 07:00 utc =>		david martinson		19:00 - 01:00 utc =>		Helen: Greg		01:00 - 07:00		Shuoshou; Louise	
SEAS EOL: 1.0m		07:00 - 19:00 utc =>		mike martello		07:00 - 13:00 utc =>		Aaron; Laurel		13:00 - 19:00		James; Beatrise	
SP	TIME(UTC)	EVENT	COMMENTS										
54312	20:26	SOL	Start of line - source volume = 6560										
54316	20:40	OBS	Crossing L1_OBS_72										
54346	21:51	OBS	Crossing L1_OBS_71										
54372	00:00	Midnight	Midnight Shotpoint Start of JD 184										
54376	00:17	OBS	Crossing L1_OBS_70										
54406	02:04	OBS	Crossing L1_OBS_69										
54436	03:52	OBS	Crossing L1_OBS_68										
54466	05:37	OBS	Crossing L1_OBS_67										
54502	07:44	OBS	Crossing L1_OBS_66										
54539	09:57	OBS	Crossing L1_OBS_65										
54570	11:47	OBS	Crossing L1_OBS_64										
54598	13:27	OBS	Crossing L1_OBS_63										
54627	15:19	OBS	Crossing L1_OBS_62										
	15:45	multibeam	Start Bist										
	15:55	multibeam	Passed Bist- logging										
54658	17:09	OBS	Crossing L1_OBS_61										
54686	18:51	crossing	crossing MGL1211OBSFS04										
54688	18:58	OBS	Crossing L1_OBS_60										
54717	20:41	OBS	Crossing L1_OBS_59										
54746	22:24	OBS	Crossing L1_OBS_58										
54773	00:00	Midnight	Midnight Shotpoint Start of JD 185										
54786	00:47	OBS	Crossing L3_OBS_04										
54794	01:16	Source	Shutdown for dolphins										
54826	04:00	Source	Mitigation gun on line										
54827	04:09	Source	Begin ramp up										
54833	04:41	Source	Ramp up complete, source volume = 6560										
54840	05:03	EOL	End of line										
Posnet locations & remarks: good - none - intermittent Tailbuoy #1 na Gun string #1 na Gun string #2 None Gun string #3 None Gun string #4 na		Acoustic remarks:		MGL1211_V5.LMN SOURCE.SCN(001) mgl2010.RTCN SP spacing: 500.0m		line status:		complete					
		VESSEL POSITION Shotpoints Latitude (N / +) Longitude (W / -) FSP 54312 45° 27' 03.118" -128° 14' 33.866" LSP 54840 44° 33' 42.099" -125° 08' 14.042"											
		NAVIGATION OFFSET APPLIED NRP - Stern 29.5m NRP - COS 232.0m											
		Note: LMN line parameter set to great circle line Configuration: 4 x 10 gun array											
		P1 P2 MGL1211OBS01B.p19C MGL1211OBS01B.p294											

Line Name: MGL1211OBS01C		NAVIGATION		DATE: 2012-07-03	Lamont-Doherty Earth Observatory																																				
Seq #029		Line Brg : 110 °		LINE LOGS		JULIAN DAY: 185																																			
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS																																					
DC SOL : -99.2m	DEPTH SOL : 2863.0m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																																							
DC EOL : 467.9m	DEPTH EOL : 70.8m	NAVIGATION SYSTEM USED: SeaPath 200																																							
SMG SOL: 4.8 knots	FEATHER SOL: na °	NAVIGATION SYSTEM USED: C-Nav2000																																							
SMG EOL: 5.2 knots	FEATHER EOL: na °	GRAVITY METER: BMG-II: used, SN210																																							
<u>WEATHER</u>	MAX FEATHER: na °	MAGNETOMETER: GeoMetrics: used																																							
WIND SOL: 20 knots		MAG DEC USED : 16.89°																																							
WIND EOL: 6 knots	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel																																			
SEAS SOL: 2.0m	19:00 - 07:00 utc =>	david martinson	19:00 - 01:00 utc =>	Helen; Greg	01:00 - 07:00	Shuoshou; Louise																																			
SEAS EOL: 2.0m	07:00 - 19:00 utc =>	mike martello	07:00 - 13:00 utc =>	Aaron; Laurel	13:00 - 19:00	James; Beatrise																																			
SP	TIME(UTC)	EVENT	COMMENTS																																						
55792	08:47	SOL	Start of line - source volume = 6560																																						
	08:48	multibeam	reset sis for lack of graphics																																						
	08:57	multibeam	on line and logging																																						
55817	10:06	OBS	crossing L1_OBS_57																																						
55853	12:21	OBS	crossing L1_OBS_56																																						
	13:02	Pam	pick up to check d/t shallow dept!																																						
	13:09	Pam	Pam on board - following seas, may stay up awhile																																						
55877	13:51	OBS	crossing L1_OBS_55																																						
	14:52	multibeam	rebooting sis computer																																						
	14:57	multibeam	Start Bist																																						
	15:04	crossing	crossed MGL1211OBS10																																						
	15:05	multibeam	passed Bist																																						
	15:06	multibeam	SiS up and logging																																						
55912	16:05	OBS	crossing L1_OBS_54																																						
55916	16:24	crossing	crossed MGL1211OBS15																																						
55921	16:45	offline	Max distance off -215m (offline from sp 55914 to sp55923)																																						
55934	17:31	crossing	crossed MGL1211OBS06																																						
55951	18:39	OBS	crossing L1_OBS_50																																						
55955	19:23	crossing	crossed MGL1211OBS17																																						
55991	21:02	EOL	End of line																																						
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Posnet locations & remarks: good - none - intermittent				Acoustic remarks:																																					
Tailbuoy #1	na	Gun string #1	na																																						
		Gun string #2	None																																						
		Gun string #3	None																																						
		Gun string #4	na																																						
			MGL1211_V5.LMN		SOURCE.SCN(001)	mgl2010.RTCN																																			
			SP spacing:		500.0m																																				
			line status:		complete																																				

VESSEL POSITION			
	Shotpoints	Latitude (N / +)	Longitude (W / -)
FSP	55792	44° 38' 47.548"	-125° 24' 54.879"
LSP	55991	44° 15' 36.981"	-124° 17' 20.552"



NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	232.0m

Note: LMN line parameter set to great circle line
Configuration: 4 x 10 gun array

P1 P2
MGL1211OBS01C.p19\ MGL1211OBS01C.p294

Seq #030	Line Name: TREHUOBS01	NAVIGATION		DATE: 2012-07-03	Lamont-Doherty Earth Observatory	
	Line Brg : 191.3 °	LINE LOGS		JULIAN DAY: 185	COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS		
DC SOL : -5.6m	DEPTH SOL : 72.2m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL : 21.9m	DEPTH EOL : 95.2m	NAVIGATION SYSTEM USED: SeaPath 200				
SMG SOL: 5.4 knots	FEATHER SOL: na °	NAVIGATION SYSTEM USED: C-Nav2000				
SMG EOL: 5.5 knots	FEATHER EOL: na °	GRAVITY METER: BMG-II: used, SN210				
WEATHER	MAX FEATHER: na °	MAGNETOMETER: GeoMetrics: used				
WIND SOL: 6 knots		MAG DEC USED : 16.89°				
WIND EOL: 6 knots	shift hours shift leaders shift hours watch personnel shift hours watch personnel					
SEAS SOL: 2.0m	19:00 – 07:00 utc => david martinson	19:00 – 01:00 utc =>	Helen: Greg	01:00 – 07:00	Shuoshou; Louise	
SEAS EOL: 2.0m	07:00 – 19:00 utc => mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00	James; Beatrise	
SP	TIME(UTC)	EVENT	COMMENTS			
56006	21:04	SOL	Start of line - source volume = 6560			
56138	23:18	EOL	End of line			
			VESSEL POSITION			
			Shotpoints	Latitude (N / +)	Longitude (W / -)	
FSP			56006	44° 15' 15.749"	-124° 17' 19.455"	
LSP			56138	44° 03' 33.968"	-124° 20' 36.805"	
			NAVIGATION OFFSET APPLIED			
NRP - Stern			29.5m			
NRP - COS			232.0m			
			<u>Note: LMN line parameter set to great circle line</u>			
			Configuration: 4 x 10 gun array			
			<u>P1</u>		<u>P2</u>	
			TREHUOBS01.p190		TREHUOBS01.p294	
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V7.LMN SOURCE.SCN(001) mgl2010.RTCN		
Tailbuoy #1	na	Gun string #1	na	SP spacing: 170.0m		
		Gun string #2	None			
		Gun string #3	None			
		Gun string #4	na	line status: complete		



Seq #033		Line Name: TREHUOBS04		NAVIGATION	DATE: 2012-07-04																				
		Line Brg : 271 °		LINE LOGS	JULIAN DAY: 186																				
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS																			
DC SOL : -380.3m DC EOL : -321.8m SMG SOL: 4.6 knots SMG EOL: 4.6 knots WEATHER WIND SOL: 15 knots WIND EOL: 12 knots SEAS SOL: 1.0m SEAS EOL: 1.0m		DEPTH SOL : 104.4m DEPTH EOL : 155.2m FEATHER SOL: na ° FEATHER EOL: na ° MAX FEATHER: na °		NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 200 NAVIGATION SYSTEM USED: C-Nav2000 GRAVITY METER: BMG-II: used, SN210 MAGNETOMETER: GeoMetrics: used MAG DEC USED : 16.89°																					
		shift hours shift leaders		shift hours watch personnel		shift hours watch personnel																			
		19:00 - 07:00 utc => david martinson		19:00 - 01:00 utc => Helen; Greg		01:00 - 07:00 Shuoshou; Louise																			
		07:00 - 19:00 utc => mike martello		07:00 - 13:00 utc => Aaron; Laurel		13:00 - 19:00 James; Beatrise																			
SP	TIME(UTC)	EVENT	COMMENTS																						
58005	13:03	SOL	Start of line - source volume = mitigation only																						
58018	13:22	mmo	shut down for right whale																						
	14:06	ramp start	start ramp up																						
	14:36	ramp up	Completed																						
58060	14:38	FGSP	first good sp after ramp up																						
58096	15:31	EOL	end of line																						
			<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">VESSEL POSITION</th> </tr> <tr> <th></th> <th style="text-align: center;">Shotpoints</th> <th style="text-align: center;">Latitude (N / +)</th> <th style="text-align: center;">Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">FSP</td> <td style="text-align: center;">58005</td> <td style="text-align: center;">44° 51' 41.674"</td> <td style="text-align: center;">-124° 13' 43.302"</td> </tr> <tr> <td style="text-align: center;">LSP</td> <td style="text-align: center;">58096</td> <td style="text-align: center;">44° 51' 48.900"</td> <td style="text-align: center;">-124° 25' 27.857"</td> </tr> </tbody> </table>							VESSEL POSITION					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	58005	44° 51' 41.674"	-124° 13' 43.302"	LSP	58096	44° 51' 48.900"	-124° 25' 27.857"
VESSEL POSITION																									
	Shotpoints	Latitude (N / +)	Longitude (W / -)																						
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NAVIGATION OFFSET APPLIED																									
NRP - Stern	29.5m																								
NRP - COS	232.0m																								
			Note: LMN line parameter set to great circle line Configuration: 4 x 10 gun array																						
			P1 P2 TREHUOBS04.p190 TREHUOBS04.p294																						
Posnet locations & remarks: good - none - intermittent				Acoustic remarks:				MGL1211_V7.LMN SOURCE.SCN(001) mgl2010.RTCN																	
Tailbuoy #1	na	Gun string #1	na			SP spacing: 170.0m																			
		Gun string #2	None			line status: complete																			
		Gun string #3	None																						
		Gun string #4	na																						

Seq #034		Line Name: TREHUOBS05	NAVIGATION	DATE: 2012-07-04	 																
		Line Brg : 195 °	LINE LOGS	JULIAN DAY: 186																	
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascadia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS																	
DC SOL : -125.0m		DEPTH SOL : 157.1m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																	
DC EOL : 323.1m		DEPTH EOL : 737.8m		NAVIGATION SYSTEM USED: SeaPath 200																	
SMG SOL: 4.7 knots		FEATHER SOL: na °		NAVIGATION SYSTEM USED: C-Nav2000																	
SMG EOL: 4.4 knots		FEATHER EOL: na °		GRAVITY METER: BMG-II: used, SN210																	
WEATHER		MAX FEATHER: na °		MAGNETOMETER: GeoMetrics: used																	
WIND SOL: 12 knots				MAG DEC USED : 16.89°																	
WIND EOL: 15 knots		<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u> <u>watch personnel</u>															
SEAS SOL: 1.0m		19:00 – 07:00 utc =>	david martinson	19:00 – 01:00 utc =>	Helen; Greg	01:00 – 07:00 Shuoshou; Louise															
SEAS EOL: 1.0m		07:00 – 19:00 utc =>	mike martello	07:00 – 13:00 utc =>	Aaron; Laurel	13:00 – 19:00 James; Beatrice															
SP	TIME(UTC)	EVENT	COMMENTS																		
59003	15:34	SOL	Start of line - source volume = mitigation only																		
59147	17:59	OBS	crossing OBS49																		
59510	00:00	Midnight	Midnight Shotpoint Start JD 187																		
59541	00:31	OBS	crossing OBS51																		
59648	02:18	Source	Power down for whale																		
59660	02:31	Source	Source at full volume																		
59681	02:52	Source	Power down for whale																		
59695	03:07	Source	Source at full volume																		
59768	04:23	EOL	End of line																		
						<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>59003</td> <td>44° 51' 40.451"</td> <td>-124° 25' 40.171"</td> </tr> <tr> <td>LSP</td> <td>59768</td> <td>43° 43' 48.608"</td> <td>-124° 50' 47.950"</td> </tr> </tbody> </table>	VESSEL POSITION				Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	59003	44° 51' 40.451"	-124° 25' 40.171"	LSP	59768	43° 43' 48.608"	-124° 50' 47.950"
VESSEL POSITION																					
	Shotpoints	Latitude (N / +)	Longitude (W / -)																		
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NRP - Stern	29.5m																				
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						<p>P1 P2 TREHUOBS05.p190 TREHUOBS05.p294</p>															
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:			MGL1211_V7.LMN SOURCE.SCN(001) mgl2010.RTCN															
Tailbuoy #1	na	Gun string #1	na			SP spacing: 170.0m															
		Gun string #2	None																		
		Gun string #3	None																		
		Gun string #4	na			line status: complete															

Seq #035		Line Name: TREHUOBS06		NAVIGATION		DATE: 2012-07-05		 COLUMBIA UNIVERSITY EARTH INSTITUTE																	
		Line Brg : 329 °		LINE LOGS		JULIAN DAY: 187																			
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS																			
DC SOL : 272.3m		DEPTH SOL : 737.8m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL : 119.4m		DEPTH EOL : 806.3m		NAVIGATION SYSTEM USED: SeaPath 200																					
SMG SOL: 4.2 knots		FEATHER SOL: na °		NAVIGATION SYSTEM USED: C-Nav2000																					
SMG EOL: 5.6 knots		FEATHER EOL: na °		GRAVITY METER: BMG-II: used, SN210																					
<u>WEATHER</u>		MAX FEATHER: na °		MAGNETOMETER: GeoMetrics: used																					
WIND SOL: 15 knots				MAG DEC USED : 16.89°																					
WIND EOL: 13 knots		shift hours		shift leaders		shift hours		watch personnel																	
SEAS SOL: 1.0m		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen; Greg																	
SEAS EOL: 1.0m		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel																	
SP	TIME(UTC)	EVENT	COMMENTS																						
60015	04:35	SOL	Start of line - source volume = 6560																						
60160	07:07	EOL	End of line - source volume = 6560																						
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VESSEL POSITION																									
Shotpoints	Latitude (N / +)	Longitude (W / -)																							
FSP	60015	43° 43' 42.246"	-124° 51' 52.663"																						
LSP	60160	43° 55' 03.407"	-125° 01' 28.704"																						
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NRP - Stern	29.5m																								
NRP - COS	232.0m																								
			<p><u>Note: LMN line parameter set to great circle line</u> Configuration: 4 x 10 gun array</p>																						
			<table style="width:100%;"> <tr> <td style="width: 50%; text-align: center;"><u>P1</u> TREHUOBS06.p190</td> <td style="width: 50%; text-align: center;"><u>P2</u> TREHUOBS06.p294</td> </tr> </table>							<u>P1</u> TREHUOBS06.p190	<u>P2</u> TREHUOBS06.p294														
<u>P1</u> TREHUOBS06.p190	<u>P2</u> TREHUOBS06.p294																								
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V7.LMN		SOURCE.SCN(001)		mgl2010.RTCN																	
Tailbuoy #1	na	Gun string #1	na	SP spacing: 170.0m																					
		Gun string #2	None	line status: complete																					
		Gun string #3	None																						
		Gun string #4	na																						

Seq #037		Line Name: TREHUOBS08		NAVIGATION		DATE: 2012-07-05				
		Line Brg : 123 °		LINE LOGS		JULIAN DAY: 187				
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS				
DC SOL : 374.2m		DEPTH SOL : 292.2m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL : 323.7m		DEPTH EOL : 50.0m		NAVIGATION SYSTEM USED: SeaPath 200						
SMG SOL: 4.8 knots		FEATHER SOL: na °		NAVIGATION SYSTEM USED: C-Nav2000						
SMG EOL: 5.8 knots		FEATHER EOL: na °		GRAVITY METER: BMG-II: used, SN210						
WEATHER		MAX FEATHER: na °		MAGNETOMETER: GeoMetrics: used						
WIND SOL: 12 knots				MAG DEC USED : 16.89°						
WIND EOL: 10 knots		shift hours		shift leaders		shift hours		watch personnel		
SEAS SOL: 1.0m		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen: Greg		
SEAS EOL: 1.0m		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel		
01:00 – 07:00						13:00 – 19:00		James; Beatrise		
SP	TIME(UTC)	EVENT	COMMENTS							
62006	18:13	SOL	Start of line - source volume = 6560							
62271	22:41	EOL	End of line - source volume = 6560							
			VESSEL POSITION							
					Shotpoints	Latitude (N / +)	Longitude (W / -)			
					FSP	62006	44° 51' 24.404"	-124° 39' 25.852"		
					LSP	62271	44° 38' 08.654"	-124° 10' 49.199"		
			NAVIGATION OFFSET APPLIED							
			NRP - Stern		29.5m					
			NRP - COS		232.0m					
			Note: LMN line parameter set to great circle line Configuration: 4 x 10 gun array							
					P1			P2		
					TREHUOBS08.p190		TREHUOBS08.p294			
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:			MGL1211_V8.LMN		SOURCE.SCN(001)		mgl2010.RTCN
Tailbuoy #1	na	Gun string #1	na							
		Gun string #2	None							
		Gun string #3	None							
		Gun string #4	na							
					SP spacing:		170.0m			
					line status:					

Seq #038		Line Name: TREHU0BS09		NAVIGATION		DATE: 2012-07-05																	
		Line Brg : 192 °		LINE LOGS		JULIAN DAY: 187																	
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS																	
DC SOL : 52.5m		DEPTH SOL : 53.2m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL : -0.1m		DEPTH EOL : 69.1m		NAVIGATION SYSTEM USED: SeaPath 200																			
SMG SOL: 5.8 knots		FEATHER SOL: na °		NAVIGATION SYSTEM USED: C-Nav2000																			
SMG EOL: 5.4 knots		FEATHER EOL: na °		GRAVITY METER: BMG-II: used, SN210																			
WEATHER		MAX FEATHER: na °		MAGNETOMETER: GeoMetrics: used																			
WIND SOL: 10 knots				MAG DEC USED : 16.89°																			
WIND EOL: 9 knots		<u>shift hours</u> <u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																	
SEAS SOL: 1.0m		19:00 – 07:00 utc => david martinson		19:00 – 01:00 utc => Helen: Greg		01:00 – 07:00 Shuoshou; Louise																	
SEAS EOL: 1.0m		07:00 – 19:00 utc => mike martello		07:00 – 13:00 utc => Aaron; Laurel		13:00 – 19:00 James; Beatrise																	
SP	TIME(UTC)	EVENT	COMMENTS																				
62303	22:43	SOL	Start of line - source volume = 6560																				
62379	00:00	Midnight	Midnight Shotpoint Start of JD 188																				
62533	02:35	EOL	Early end of line due to whales																				
<table border="1" style="margin-left: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>62303</td> <td>44° 37' 58.242"</td> <td>-124° 10' 45.940"</td> </tr> <tr> <td>LSP</td> <td>62533</td> <td>44° 17' 17.892"</td> <td>-124° 16' 44.675"</td> </tr> </tbody> </table>								VESSEL POSITION					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	62303	44° 37' 58.242"	-124° 10' 45.940"	LSP	62533	44° 17' 17.892"	-124° 16' 44.675"
VESSEL POSITION																							
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LSP	62533	44° 17' 17.892"	-124° 16' 44.675"																				
NAVIGATION OFFSET APPLIED																							
NRP - Stern		29.5m																					
NRP - COS		232.0m																					
<u>Note: LMN line parameter set to great circle line</u> Configuration: 4 x 10 gun array																							
		P1		P2																			
		TREHU0BS09.p190		TREHU0BS09.p294																			
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:			MGL1211_V8.LMN SOURCE.SCN(001) mgl2010.RTCN																	
Tailbuoy #1	na	Gun string #1	na			SP spacing: 170.0m																	
		Gun string #2	None			line status: complete																	
		Gun string #3	None																				
		Gun string #4	na																				

Seq #039		Line Name: MGL1211OBST02		NAVIGATION		DATE: 2012-07-06		 										
		Line Brg : 312 °		LINE LOGS		JULIAN DAY: 188												
CLIENT: Suzanne Carbotte - PI			SURVEY: Cascdia "rapid 2d MCS"			AREA: Juan de Fuca Ridge: OBS & MCS												
DC SOL : -51.0m		DEPTH SOL : 77.9m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary														
DC EOL : -340.4m		DEPTH EOL : 2705.1m		NAVIGATION SYSTEM USED: SeaPath 200														
SMG SOL: 5.3 knots		FEATHER SOL: na °		NAVIGATION SYSTEM USED: C-Nav2000														
SMG EOL: 5.4 knots		FEATHER EOL: na °		GRAVITY METER: BMG-II: used, SN210														
<u>WEATHER</u>		MAX FEATHER: na °		MAGNETOMETER: GeoMetrics: used														
WIND SOL: 10 knots				MAG DEC USED : 16.89°														
WIND EOL: 4 knots		shift hours		shift leaders		shift hours		watch personnel										
SEAS SOL: 1.0m		19:00 – 07:00 utc =>		david martinson		19:00 – 01:00 utc =>		Helen; Greg										
SEAS EOL: 1.0m		07:00 – 19:00 utc =>		mike martello		07:00 – 13:00 utc =>		Aaron; Laurel										
01:00 – 07:00						01:00 – 07:00		Shuoshou; Louise										
13:00 – 19:00						13:00 – 19:00		James; Beatrise										
SP	TIME(UTC)	EVENT	COMMENTS															
62659	03:45	SOL	Start of line - source volume = 6560															
62746	05:15	Source	Source volume = 6520															
	10:40	multibeam	start Bist															
	10:51	multibeam	Passed Bist and logging															
	14:35	spectra	Main lock-up - missed sp's 26392, 63293, 63294															
	15:44	XBT	launch T5 seq 390 at sp 63361															
	15:51	spectra	main lock-up - missed sp's 63368 - 63374															
	16:32	turn	start turn to port															
63412	16:36	EOL	end of line															
								<p style="text-align: center;">VESSEL POSITION</p> <table border="1"> <thead> <tr> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP 62659</td> <td>44° 19' 28.772"</td> <td>-124° 22' 48.572"</td> </tr> <tr> <td>LSP 63412</td> <td>45° 05' 29.388"</td> <td>-125° 35' 18.557"</td> </tr> </tbody> </table>		Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP 62659	44° 19' 28.772"	-124° 22' 48.572"	LSP 63412	45° 05' 29.388"	-125° 35' 18.557"
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								<p style="text-align: center;">P1 P2 MGL1211OBST02.p19c MGL1211OBST02.p294</p>										
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V8.LMN		SOURCE.SCN(001)		mgl2010.RTCN										
Tailbuoy #1	na	Gun string #1	na	SP spacing: 170.0m														
		Gun string #2	None															
		Gun string #3	None															
		Gun string #4	na			line status: complete												

Seq #040		Line Name: MGL1211OBS2FS03		NAVIGATION	DATE: 2012-07-06	 																
		Line Brg : arc °		LINE LOGS	JULIAN DAY: 188																	
CLIENT: Suzanne Carbotte - PI		SURVEY: Cascdia "rapid 2d MCS"		AREA: Juan de Fuca Ridge: OBS & MCS																		
DC SOL : -170.2m		DEPTH SOL : 2705.8m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL :		DEPTH EOL :		NAVIGATION SYSTEM USED: SeaPath 200																		
SMG SOL: 5.3 knots		FEATHER SOL: na °		NAVIGATION SYSTEM USED: C-Nav2000																		
SMG EOL:		FEATHER EOL: na °		GRAVITY METER: BMG-II: used, SN210																		
WEATHER		MAX FEATHER: na °		MAGNETOMETER: GeoMetrics: used																		
WIND SOL: 4 knots				MAG DEC USED : 16.89°																		
WIND EOL: 17 knots		shift hours shift leaders		shift hours watch personnel		shift hours watch personnel																
SEAS SOL: 1.0m		19:00 - 07:00 utc => david martinson		19:00 - 01:00 utc => Helen; Greg		01:00 - 07:00 Shuoshou; Louise																
SEAS EOL: 1.0m		07:00 - 19:00 utc => mike martello		07:00 - 13:00 utc => Aaron; Laurel		13:00 - 19:00 James; Beatrise																
SP	TIME(UTC)	EVENT	COMMENTS																			
64003	16:39	SOL	Start of line - source volume = 6560																			
64140	19:03	Source	Power down for dolphins																			
64148	19:12	Source	Souce at full volume																			
64434	00:00	Midnight	Midnight Shotpoint Start of JD 189																			
64610	02:58	NCC	Missed shots 64608 and 64609 due to NCC lockup																			
64920	08:12	EOL	End of Line - source volume = 652																			
			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N / +)</th> <th>Longitude (W / -)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>64003</td> <td>45° 06' 30.591"</td> <td>-125° 35' 36.001"</td> </tr> <tr> <td>LSP</td> <td>64920</td> <td></td> <td></td> </tr> </tbody> </table>				VESSEL POSITION					Shotpoints	Latitude (N / +)	Longitude (W / -)	FSP	64003	45° 06' 30.591"	-125° 35' 36.001"	LSP	64920		
VESSEL POSITION																						
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FSP	64003	45° 06' 30.591"	-125° 35' 36.001"																			
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Posnet locations & remarks: good - none - intermittent		Acoustic remarks:		MGL1211_V8.LMN SOURCE.SCN(001) mgl2010.RTCN																		
Tailbuoy #1	na	Gun string #1	na	SP spacing: 170.0m																		
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		Gun string #3	None																			
		Gun string #4	na																			

