

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PETROLEUM GEO-SERVICES INC.
Petitioner

v.

WESTERNGECO LLC
Patent Owner

Case IPR2014-01478
U.S. Patent No. 7,293,520

PETITIONER'S EXHIBIT LIST

IPR2014-01478 ('520) APPENDIX OF EXHIBITS

Exhibit No.	Description
PGS 1001	U.S. Patent 7,293,520 B2 (Hillesund)
PGS 1002	Declaration of Dr. Brian J. Evans, Ph.D.
PGS 1003	Declaration of Dr. Jack H. Cole, Ph.D.
PGS 1004	U.S. Patent 5,790,472 (Workman)
PGS 1005	U.S. Patent 3,581,273 (Hedberg)
PGS 1006	WO 98/28636 ('636 PCT)
PGS 1007	WO 84/03153 ('153 PCT)
PGS 1008	U.S. Patent 4,890,568 (Dolengowski)
PGS 1009	U.S. Patent 3,605,674 (Weese)
PGS 1010	U.S. Patent 4,231,111 (Neeley)
PGS 1011	U.S. Patent 4,486,863 (French)
PGS 1012	David H. Johnston <i>et. Al.</i> , "Time-Lapse Seismic analysis of the North Sea Fulmer Field," SEG Extended Abstracts (1997). [supplemented with Ex. PGS 1084]
PGS 1013	Jury Verdict in re: <i>WesternGeco L.L.C. v. Ion Geophysical Corporation</i> , Civil Action No. 4:09-CV-01827, DE 536, dated August 16, 2012.
PGS 1014	Memorandum and Order in re: <i>WesternGeco L.L.C. v. ION Geophysical Corporation</i> , Civil Action No. 4:09-CV-01827, DE 634, dated June 19, 2013
PGS 1015	Memorandum and Order in re: <i>WesternGeco L.L.C. v. ION Geophysical Corporation</i> in re: Civil Action No. 4:09-CV-01827, DE 120, dated July 16, 2010
PGS 1016	WesternGeco's Opposition to ION's Motion for a New Trial on Invalidity Under 35 U.S.C. §§ 102 and 103 in re: <i>WesternGeco L.L.C. v. ION Geophysical Corporation</i> Civil Action No.4:09-CV-01827, DE 574, dated October 26, 2012
PGS 1017	U.S. Patent 5,532,975 (Elholm)
PGS 1018	U.S. Patent 6,011,752 (Ambs)

PGS 1019	WesternGeco's Opposition to Defendants' Motion for Summary Judgment of Invalidity of the Bittleston Patents in re: <i>WesternGeco L.L.C. v. ION Geophysical Corporation</i> , Civil Action No. 4:09-CV-01827, DE 287, dated April 20, 2012
PGS 1020	WesternGeco's Reply Claim Construction Brief in re: <i>WesternGeco L.L.C. v. ION Geophysical Corporation</i> Civil Action No. 4:09-CV-01827, DE 77, dated March 12, 2010
PGS 1021	Richard C. Dorf & Robert H. Bishop, <i>Modern Control Systems</i> (8th ed. 1998) at 2, 3, 4, and 9-11 [supplemented with Ex. PGS 1100]
PGS 1022	WesternGeco's Motion for Summary Judgment of Willful Infringement of Valid Claims of the '520 Patent in re: <i>WesternGeco L.L.C. v. ION Geophysical Corporation</i> Civil Action No. 4:09-CV-01827, DE 276, dated March 30, 2012
PGS 1023	Memorandum and Order in re: <i>WesternGeco L.L.C. v. ION Geophysical Corporation</i> , Civil Action No. 4:09-CV-01827, DE 345, dated June 11, 2012
PGS 1024	Jury Instructions in re: <i>WesternGeco L.L.C. v. Ion Geophysical Corporation</i> , Civil Action No. 4:09-CV-01827, DE 530, dated August 14, 2012.
PGS 1025	INTENTIONALLY LEFT BLANK
PGS 1026	U.S. Patent 4,671,235 (Hosaka)
PGS 1027	U.S. Patent 4,408,292 (Nakatani)
PGS 1028	Louis Whitcomb et al., <i>Towards Precision Robotic Maneuvering Survey, and Manipulation in Unstructured Undersea Environments</i> , Robotics Research – The Eighth International Symposium (1998) at 5-6 [supplemented with Ex. PGS 1085]
PGS 1029	Kenneth M. Sobel & Eliezer Y. Shapiro, <i>Eigenstructure Assignment for Design of Multimode Flight Control Systems</i> , 5 <i>Control Systems Mag.</i> (1985) at 9 and 14
PGS 1030	U.S. Patent 4,885,726 (Myers)
PGS 1031	U.S. Patent 3,412,704 (Buller)
PGS 1032	U.S. Patent 4,033,278 (Waters)
PGS 1033	U.S. Patent 4,404,664 (Zachariadis)
PGS 1034	Stuart Bennett, <i>A Brief History of Automatic Control</i> , 16 <i>Inst. Of Electrical and Electronics Control Systems Magazine</i> (June 1996) at 17

PGS 1035	Karl J. Åström & Björn Wittenmark, <i>Computer-Controlled Systems: Theory and Design</i> (3d ed. 1997) at 1-8, 12 and 28
PGS 1036	U.S. Patent 5,200,930 (Rouquette)
PGS 1037	U.S. Patent 6,011,753 (Chien)
PGS 1038	Brian J. Evans, <i>A Handbook for Seismic Data Acquisition in Exploration</i> (David V. Fitterman & William H. Dragoset, Jr. eds., (1997)
PGS 1039	E. J. W. Jones, <i>Marine Geophysics</i> (1999) at 89
PGS 1040	W.R. Cotton & J.I. Sanders, <i>The Reality of Trace Binning in 3-D Marine Surveying</i> (1983) at 565 [supplemented with Ex. PGS 1086]
PGS 1041	Biondo L. Biondi, <i>3D Seismic Imaging</i> (2006) at 123-124
PGS 1042	Christopher L. Liner, <i>Elements of 3-D Seismology</i> (1999) at 104-105, 206-209
PGS 1043	Gerald H.F. Gardner & Anat Canning, <i>Effect of irregular sampling on 3-D prestack migration</i> , SEG Abstracts (1994) at 1553-1556 [supplemented with Ex. PGS 1087]
PGS 1044	Christopher L. Liner & Ralph Gobeli, <i>Bin Size and Linear $v(z)$</i> , Society of Exploration Geophysics Technical Program Expanded Abstracts (1996) at 47 [supplemented with Ex. PGS 1088]
PGS 1045	<i>Towed Streamer Seismic – More Efficiency</i> , Petroleum Geo-Services, http://www.pgs.com/Geophysical-Services/Towed-Streamer-Seismic/More-Efficiency/ (last visited April 22, 2014)
PGS 1046	International Application No. PCT/IB99/01590 (September 28, 1999)
PGS 1047	WesternGeco filed continuation application No. 11/455,042 on June 16, 2006
PGS 1048	August 18, 2006 Office Action in re: '520 Patent
PGS 1049	October 18, 2006 Terminal Disclaimer filed by Applicant in re: '520 Patent
PGS 1050	January 5, 2007 Information Disclosure Statement (IDS) in re: '520 Patent
PGS 1051	May 24, 2007 Notice of Allowability in re: '520 Patent
PGS 1052	U.S. Patent 6,932,017 (Hillesund)
PGS 1053	Defendants' Amended Response in Opposition to Westerngeco LLC's Motion for Summary Judgment of Willful Infringement of Valid Claims of the '520 Patent (DE 298)
PGS 1054	Franklyn K. Levin, "The Effect of Binning on Data From a

	Feathered Streamer,” Geophysics, Vol. 49, No. 8 (1984); pp. 1386-1387
PGS 1055	U.S. Patent 4,992,990 (Langeland)
PGS 1056	INTENTIONALLY LEFT BLANK
PGS 1057	Vassilis N. Gikas, [Full Thesis] (Aug. 1996) [supplemented with Ex. PGS 1099 and Ex. PGS 1101]
PGS 1058	Gikas et al., Hydrographic J., Vol. 77; pgs. 11-24 (1995)
PGS 1059	U.S. Patent 4,809,005 (Counselman)
PGS 1060	Thor Fossen, Guidance and Control of Ocean Vehicles 288 (1994)
PGS 1061	Gregory E. Upchurch., Intellectual Property Litigation Guide: § 15:5 Overview – Effective filing date, 2 IP Litigation Guide: Patents & Trade Secrets [supplemented with Ex. PGS 1089]
PGS 1062	Shashank Upadhye, Generic Pharmaceutical Patent and FDA Law § 1:71 Section 119 Claiming foreign priority – Section 102(b) [supplemented with Ex. PGS 1090]
PGS 1063	Simon Bittleston Trial Transcript in re: <i>WesternGeco L.L.C. v. Ion Geophysical Corporation</i> , Civil Action No. 4:09-CV-01827, ECF 433, dated July 25, 2012 at 578.
PGS 1064	U.S. Patent 6,144,342 (Bertheas)
PGS 1065	David E. Lumley <i>et al.</i> , “Assessing the Technical Risk of a 4D Seismic Project,” SEG Technical Program Expanded Abstracts (1997) [supplemented with Ex. PGS 1091]
PGS 1066	U.S. 4,191,328 (Isaacs)
PGS 1067	U.S. 4,493,067 (Thomas)
PGS 1068	U.S. 4,646,528 (Marcade)
PGS 1069	U.S. 4,599,712 (Chelminski)
PGS 1070	P.M Krail & H. Brysk, “The Shape of a Marine Streamer in a Cross Current,” Geophysics Vol. 54, No. 3 (1989)
PGS 1071	Karl J. Åström and Björn Wittenmark, Computer-Controlled Systems: Theory and Design (1984)
PGS 1072	R.P. Loweth, Manual of Offshore Surveying for Geoscientists and Engineers (1997)
PGS 1073	Mamdouh R. Gadallah, Reservoir Seismology: Geophysics in Nontechnical Language (1994)
PGS 1074	J.W. Bedenbender, R.C. Johnston, & E.B. Neitzel, “Electroacoustic Characteristics of Marine Seismic Streamers,” Geophysics, Vol. 35, No. 6 (1970).

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