DOWL HKM

June 3, 2009
Project No. 14B805.101

Michael Jacobs, P.G.
Pioneer Natural Resources USA, Inc.
4815 E. Hwy 80
Midland, TX 79706

RE: April, 2009 Groundwater Monitoring Data Report
Pioneer Natural Resources USA, Inc.
Biere 1-22 Well Site
East Poplar Oil Well Field
Poplar, Montana

Dear Michael Jacobs,

Pursuant to the United States Environmental Protection Agency, Emergency Administrative Order Upon Consent (EAOC), Pioneer Natural Resources USA, Inc. (Pioneer) conducted semi-annual groundwater monitoring and sampling in the vicinity of the Biere 1-22 oil well. The investigation was performed during April, 2009 and included groundwater monitoring and sampling. This letter serves as a semi-annual groundwater monitoring and sampling report under the EAOC.

During April 14th through April 22nd, 2009, monitor wells and selected available existing domestic wells were sampled. The locations of the monitor and domestic wells are shown on the figure provided in Appendix A. Wells were gauged using an electronic interface probe capable of detecting water and light non-aqueous phase liquid (LNAPL) with a precision of 0.01 feet. Prior to sample collection, wells were purged by use of a decontaminated submersible electric pump or disposable bailers.

To ensure representative groundwater samples were collected from the aquifer, water quality parameters were monitored and allowed to stabilize during the purging process prior to sample collection. Conductivity, temperature, and pH of the purged groundwater were monitored. Once at least three well volumes had been purged and the parameters had stabilized, samples were collected in the appropriate laboratory containers and preserved as directed by the laboratory. Samples were labeled and packaged on ice to maintain a temperature near 4 degrees Celsius. Tabulated water level elevations and depth to fluid data, water quality parameter readings, and inorganic and organic water chemistry results are presented in Tables 1, 2, and 3, respectively.

All groundwater samples were hand delivered to Energy Laboratories, Inc., in Billings, Montana for laboratory analysis. Appendix B contains chain of custody information, laboratory analytical reports, and laboratory quality assurance/quality control (QA/QC) data for these samples.

Please do not hesitate to call us if you have any questions regarding this report or the data contained herein.

Sincerely,
DOWL HKM

Christopher Leibli, P.G.
Staff Geologist

Attachments:

Table 1:	Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Table 2:	Inorganic Water Chemistry Data
Table 3:	BTEX and TPH Analytical Results

Appendix A:	Well Location Map
Appendix B:	Laboratory Analytical Reports

cc: Bill Knight, Pioneer Natural Resources USA, Inc.
Christa Tyrrell, Fort Peck Tribes - OEP

Table 1

Depth to Water and Product in Monitor Wells and Domestic Wells

Table 1 - Depth to Water and LNAPL in Monitor Wells and Domestic Wells

Pioneer Natural Resources, USA, Inc. - Biere 1-22 Investigation

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Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
LAW-M01	2091.17	2093.01	12/5/2006		57.63		2035.38
			10/2/2007		58.00		2035.01
			4/14/2009		58.32		2034.69
LAW-M03	1986.45	1988.90	12/15/2006		31.47		1957.43
			3/13/2007		39.99		1948.91
			10/2/2007		31.76		1957.14
			3/25/2008		31.38		1957.52
			10/22/2008		32.10		1956.80
			4/14/2009		29.82		1959.08
LAW-M04		1976.85	12/15/2006		23.14		1953.71
LAW-M05		2048.90	12/15/2006		98.58		1950.32
			4/19/2009		97.54		1951.36
LAW-M06		2023.68	12/15/2006		76.18		1947.50
LAW-M08		2010.58	12/15/2006		62.40		1948.18
M-10			4/16/2009		9.15		
M-18	2047.10	2048.13	11/6/2001		80.80		1967.33
			2/19/2002		80.25		1967.88
			5/20/2002		80.60		1967.53
			8/19/2002		80.60		1967.53
			3/5/2003		79.60		1968.53
			5/12/2003		79.00		1969.13
			8/12/2003		80.46		1967.67
			3/18/2004		80.47		1967.66
			6/13/2004		80.30		1967.83
			3/2/2005		80.70		1967.43
			8/18/2005		80.60		1967.53
			8/22/2006		80.76		1967.37
			12/5/2006		80.57		1967.56
			10/2/2007		80.86		1967.27
			4/14/2009		78.72		1969.41
M-25	2031.70	2033.33	11/9/2001		67.30		1966.03
M-27	2029.92	2031.19	8/13/2001		67.15		1964.04
			9/5/2001		67.28		1963.91
			11/6/2001		67.61		1963.58
			2/19/2002		67.07		1964.12
			5/20/2002		67.04		1964.15
			8/19/2002		67.74		1963.45
			11/4/2002		67.70		1963.49
			3/5/2003		68.88		1962.31
			5/12/2003		66.60		1964.59
			8/12/2003		67.30		1963.89
			11/9/2003		68.00		1963.19
			3/18/2004		67.39		1963.80
			6/7/2004		66.05		1965.14
			9/13/2004		67.12		1964.07
			11/18/2004		67.42		1963.77
			3/1/2005		67.19		1964.00
			5/24/2005		67.24		1963.95
			8/16/2005		67.50		1963.69
			11/15/2005		67.66		1963.53

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Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			2/7/2006		67.42		1963.77
			5/23/2006		66.88		1964.31
			8/22/2006		67.81		1963.38
			12/5/2006		67.66		1963.53
			3/12/2007		67.29		1963.90
			10/2/2007		67.80		1963.39
			3/25/2008		67.56		1963.63
			10/22/2008		67.97		1963.22
			4/14/2009		66.03		1965.16
M-28	2102.82	2096.63	5/31/2001		49.23		2047.40
			8/13/2001		48.85		2047.78
			9/5/2001		48.61		2048.02
			11/6/2001		49.06		2047.57
			2/19/2002		49.00		2047.63
			5/20/2002		49.10		2047.53
			8/19/2002		49.62		2047.01
			11/6/2002		49.73		2046.90
			3/5/2003		49.39		2047.24
			5/12/2003		50.50		2046.13
			8/12/2003		49.92		2046.71
			11/5/2003		50.28		2046.35
			3/16/2004		50.01		2046.62
			6/7/2004		50.04		2046.59
			9/15/2004		49.85		2046.78
			11/19/2004		49.73		2046.90
			3/1/2005		49.78		2046.85
			5/24/2005		50.31		2046.32
			8/16/2005		50.11		2046.52
			11/15/2005		50.66		2045.97
			2/7/2006		50.58		2046.05
			5/23/2006		49.88		2046.75
			8/22/2006		50.28		2046.35
			12/5/2006		50.33		2046.30
			3/12/2007		50.25		2046.38
			10/2/2007		50.10		2046.53
			3/25/2008		50.45		2046.18
			10/22/2008		51.13		2045.50
			4/14/2009		50.95		2045.68
M-31	2085.00	2087.17	5/31/2001		40.37		2046.80
			8/13/2001		40.26		2046.91
			9/5/2001		40.15		2047.02
			11/6/2001		40.33		2046.84
			2/19/2002		40.42		2046.75
			5/20/2002		40.77		2046.40
			8/19/2002		41.22		2045.95
			11/4/2002		41.18		2045.99
			3/5/2003		41.30		2045.87
			5/12/2003		40.87		2046.30
			8/12/2003		41.62		2045.55
			11/5/2003		41.86		2045.31
			3/16/2004		41.65		2045.52
			6/7/2004		41.85		2045.32
			9/13/2004		41.65		2045.52
			11/18/2004		41.52		2045.65
			3/1/2005		41.65		2045.52
			5/24/2005		41.91		2045.26
			8/16/2005		41.07		2046.10
			11/15/2005		41.27		2045.90

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Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			2/7/2006		41.34		2045.83
			5/23/2006		41.20		2045.97
			8/22/2006		41.36		2045.81
			12/5/2006		41.71		2045.46
			3/12/2007		41.80		2045.37
			10/2/2007		41.82		2045.35
			3/25/2008		42.05		2045.12
			10/22/2008		42.81		2044.36
			4/14/2009		43.15		2044.02
M-39	2049.10	2050.63	11/6/2001		100.68		1949.95
			12/5/2006		100.60		1950.03
M-41			12/5/2006		42.24		
M-69			4/14/2009		3.80		
M-80			4/18/2009		16.31		
MOC- 1B	2077.05	2079.51	11/6/2001		28.25		2051.26
			11/4/2002		28.66		2050.85
			6/7/2004		28.48		2051.03
			12/5/2006		30.40		2049.11
			3/12/2007		30.41		2049.10
			10/2/2007		28.58		2050.93
			3/25/2008		30.29		2049.22
			10/22/2008		31.04		2048.47
			4/14/2009		30.15		2049.36
MOC- 2	2036.10	2038.91	11/9/2001		73.50		1965.41
			12/5/2006		73.60		1965.31
			3/12/2007		73.01		1965.90
			10/2/2007		73.80		1965.11
			3/25/2008		73.50		1965.41
			10/22/2008		74.12		1964.79
			4/14/2009		71.76		1967.15
MOC- 3		2010.56	12/5/2006		53.01		1957.55
			3/12/2007		53.93		1956.63
			10/2/2007		52.46		1958.10
			3/25/2008		52.93		1957.63
			10/22/2008		53.52		1957.04
			4/14/2009		52.50		1958.06
MOC- 4		1966.63	12/5/2006		76.15		1890.48
			3/13/2007		75.62		1891.01
			10/2/2007		74.92		1891.71
			3/25/2008		74.57		1892.06
			10/22/2008		75.12		1891.51
			4/14/2009		72.64		1893.99
MOC- 5		2055.86	12/5/2006		17.74		2038.12
			10/2/2007		15.66		2040.20
MOC- 7		2051.96	12/5/2006		34.74		2017.22
			10/2/2007		33.16		2018.80
MOC- 8		1969.92	12/5/2006		75.17		1894.75
			10/2/2007		75.37		1894.55

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MOC- 9		2051.83	12/5/2006		27.45		2024.38
			10/2/2007		25.92		2025.91
MOC-10		2052.66	12/5/2006		31.54		2021.12
			10/2/2007		30.38		2022.28
MOC-11		1974.04	12/5/2006		76.20		1897.84
			10/2/2007		74.87		1899.17
MOC-12		2053.25	12/5/2006		55.39		1997.86
			10/2/2007		54.25		1999.00
MOC-13			12/5/2006		35.59		
			10/2/2007		35.48		
MOC-14		2052.26	12/5/2006		35.13		2017.13
			10/2/2007		33.95		2018.31
MOC-16		2049.02	12/5/2006		30.40		2018.62
			10/2/2007		29.54		2019.48
MOC-17		2063.19	12/5/2006		31.92		2031.27
			10/2/2007		31.82		2031.37
MOC-18		2055.13	12/5/2006		33.03		2022.10
			10/2/2007		32.89		2022.24
MOC-19		1971.24	12/5/2006		75.29		1895.95
			10/2/2007		75.48		1895.76
MOC-20A		1991.89	12/5/2006		17.73		1974.16
			3/12/2007		19.66		1972.23
			10/2/2007		16.16		1975.73
			3/25/2008		16.66		1975.23
			10/22/2008		17.68		1974.21
			4/14/2009		18.45		1973.44
MOC-20B		1926.46	12/5/2006		73.18		1853.28
			3/12/2007		72.60		1853.86
			10/2/2007		73.37		1853.09
			3/25/2008		73.07		1853.39
			10/22/2008		73.76		1852.70
			4/14/2009		71.47		1854.99
MOC-23		2042.56	12/5/2006		25.78		2016.78
			10/2/2007		25.40		2017.16
PNR- 4	2080.86	2084.21	8/13/2001	27.38	56.31	28.93	2048.15
			9/4/2001	27.08	69.88	42.80	2044.28
			11/6/2001	29.01	69.88	40.87	2042.93
PNR- 5	2082.64	2085.56	5/31/2000		37.17		2048.39
			8/13/2001		37.04		2048.52
			9/5/2001		36.99		2048.57
			11/6/2001		37.05		2048.51
			2/19/2002		37.22		2048.34
			5/20/2002		38.25		2047.31
			8/19/2002		38.76		2046.80
			11/4/2002		38.81		2046.75
			3/5/2003		38.70		2046.86

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			5/12/2003		38.53		2047.03
			8/12/2003		39.15		2046.41
			11/4/2003		39.39		2046.17
			3/16/2004		39.58		2045.98
			6/7/2004		39.54		2046.02
			9/13/2004		39.18		2046.38
			11/17/2004		39.27		2046.29
			3/2/2005		39.50		2046.06
			5/25/2005		39.53		2046.03
			8/17/2005		39.35		2046.21
			11/16/2005		39.24		2046.32
			2/9/2006		39.67		2045.89
			5/25/2006		39.67		2045.89
			8/22/2006		39.78		2045.78
			12/5/2006		39.91		2045.65
			3/12/2007		39.83		2045.73
			10/2/2007		39.47		2046.09
			10/22/2008		40.17		2045.39
			4/14/2009		40.27		2045.29
PNR- 6	2116.53	2119.07	5/31/2000		20.33		2098.74
			8/13/2001		20.55		2098.52
			9/5/2001		20.51		2098.56
			11/6/2001		21.02		2098.05
			2/19/2002		21.39		2097.68
			5/20/2002		21.65		2097.42
			8/19/2002		21.06		2098.01
			11/4/2002		21.23		2097.84
			3/4/2003		20.50		2098.57
			5/12/2003		22.12		2096.95
			8/12/2003		21.04		2098.03
			11/4/2003		21.60		2097.47
			3/16/2004		22.16		2096.91
			6/7/2004		20.32		2098.75
			9/13/2004		20.05		2099.02
			11/17/2004		20.78		2098.29
			2/28/2005		21.55		2097.52
			5/23/2005		21.88		2097.19
			8/16/2005		21.93		2097.14
			11/15/2005		22.47		2096.60
			2/7/2006		22.66		2096.41
			5/23/2006		22.35		2096.72
			8/22/2006		21.61		2097.46
			12/5/2006		20.96		2098.11
			3/12/2007		21.13		2097.94
			10/2/2007		19.24		2099.83
			3/25/2008		21.18		2097.89
			10/22/2008		19.81		2099.26
			4/14/2009		19.48		2099.59
PNR- 7	2069.59	2072.22	5/31/2000		25.50		2046.72
			8/13/2001		25.19		2047.03
			9/5/2001		25.08		2047.14
			11/6/2001		25.47		2046.75
			2/19/2002		25.72		2046.50
			5/20/2002		26.20		2046.02
			8/19/2002		26.17		2046.05
			11/4/2002		26.54		2045.68
			3/4/2003		27.50		2044.72
			5/12/2003		27.39		2044.83

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Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			8/12/2003		27.05		2045.17
			11/4/2003		27.40		2044.82
			3/16/2004		27.55		2044.67
			6/7/2004		27.32		2044.90
			9/13/2004		26.98		2045.24
			11/17/2004		27.35		2044.87
			3/1/2005		27.15		2045.07
			5/25/2005		27.90		2044.32
			8/17/2005		27.28		2044.94
			11/16/2005		27.78		2044.44
			2/9/2006		27.88		2044.34
			5/24/2006		28.09		2044.13
			8/22/2006		28.02		2044.20
			12/5/2006		27.92		2044.30
			3/12/2007		27.97		2044.25
			10/4/2007		28.07		2044.15
			3/25/2008		28.12		2044.10
			10/22/2008		28.87		2043.35
			4/14/2009		28.51		2043.71
PNR- 8	2060.21	2062.99	5/31/2000		63.64		1999.35
			8/13/2001		63.53		1999.46
			9/5/2001		63.84		1999.15
			11/6/2001		64.54		1998.45
			2/19/2002		64.21		1998.78
			5/20/2002		64.40		1998.59
			8/19/2002		64.61		1998.38
			11/4/2002		64.56		1998.43
			3/4/2003		64.00		1998.99
			5/12/2003		64.84		1998.15
			8/12/2003		64.94		1998.05
			11/4/2003		68.50		1994.49
			3/16/2004		65.41		1997.58
			6/7/2004		64.98		1998.01
			9/13/2004		65.16		1997.83
			11/16/2004		65.61		1997.38
			3/2/2005		65.64		1997.35
			5/26/2005		65.94		1997.05
			8/18/2005		65.75		1997.24
			11/17/2005		66.26		1996.73
			2/9/2006		66.09		1996.90
			5/24/2006		65.77		1997.22
			8/22/2006		66.11		1996.88
			12/5/2006		66.09		1996.90
			3/12/2007		66.13		1996.86
			10/2/2007		66.41		1996.58
			3/25/2008		66.32		1996.67
			10/22/2008		66.91		1996.08
			4/14/2009		66.04		1996.95
PNR- 9	2014.11	2017.26	5/31/2000		56.46		1960.80
			8/13/2001		57.29		1959.97
			9/5/2001		57.28		1959.98
			11/6/2001		57.61		1959.65
			2/19/2002		57.12		1960.14
			5/20/2002		57.08		1960.18
			8/19/2002		57.90		1959.36
			11/4/2002		57.29		1959.97
			3/4/2003		57.11		1960.15
			5/12/2003		56.47		1960.79

Table 1 - Depth to Water and LNAPL in Monitor Wells and Domestic Wells

Pioneer Natural Resources, USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last Update: 6/2/2009

Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			8/12/2003		57.33		1959.93
			11/4/2003		57.40		1959.86
			3/18/2004		57.31		1959.95
			6/7/2004		56.04		1961.22
			9/13/2004		57.12		1960.14
			11/16/2004		57.26		1960.00
			3/1/2005		57.12		1960.14
			5/24/2005		57.19		1960.07
			8/16/2005		57.38		1959.88
			11/15/2005		57.74		1959.52
			2/9/2006		57.24		1960.02
			5/23/2006		56.69		1960.57
			8/22/2006		57.67		1959.59
			12/5/2006		57.39		1959.87
			3/12/2007		59.96		1957.30
			10/2/2007		57.73		1959.53
			3/25/2008		57.35		1959.91
			10/22/2008		58.00		1959.26
			4/14/2009		55.68		1961.58
PNR-10	2009.17	2011.69	5/31/2000		53.93		1957.76
			8/13/2001		53.93		1957.76
			9/5/2001		54.03		1957.66
			11/6/2001		54.37		1957.32
			2/19/2002		53.88		1957.81
			5/20/2002		53.79		1957.90
			8/19/2002		54.27		1957.42
			11/4/2002		54.04		1957.65
			3/4/2003		53.84		1957.85
			5/12/2003		53.17		1958.52
			8/12/2003		54.11		1957.58
			11/4/2003		54.30		1957.39
			3/18/2004		53.99		1957.70
			6/7/2004		52.74		1958.95
			9/13/2004		53.85		1957.84
			11/16/2004		53.99		1957.70
			3/1/2005		53.80		1957.89
			5/24/2005		53.94		1957.75
			8/16/2005		54.11		1957.58
			11/15/2005		54.48		1957.21
			2/7/2006		54.03		1957.66
			5/23/2006		53.38		1958.31
			8/22/2006		54.42		1957.27
			12/5/2006		54.11		1957.58
			3/12/2007		53.55		1958.14
			10/2/2007		54.41		1957.28
			3/25/2008		54.03		1957.66
			10/22/2008		54.73		1956.96
			4/14/2009		52.42		1959.27
PNR-12	2098.44	2101.23	5/31/2000		51.10		2050.13
			8/13/2001		49.90		2051.33
			9/5/2001		49.67		2051.56
			11/6/2001		50.52		2050.71
			2/19/2002		50.80		2050.43
			5/20/2002		51.40		2049.83
			8/19/2002		51.20		2050.03
			11/4/2002		50.86		2050.37
			3/4/2003		51.79		2049.44
			5/12/2003		51.95		2049.28

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Pioneer Natural Resources, USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last Update: 6/2/2009

Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			8/12/2003		50.80		2050.43
			11/4/2003		54.10		2047.13
			3/16/2004		51.75		2049.48
			6/7/2004		51.01		2050.22
			9/13/2004		50.51		2050.72
			11/16/2004		51.05		2050.18
			2/28/2005		51.52		2049.71
			5/23/2005		51.74		2049.49
			8/15/2005		51.05		2050.18
			11/15/2005		51.98		2049.25
			2/7/2006		52.12		2049.11
			5/23/2006		51.54		2049.69
			8/22/2006		52.00		2049.23
			12/5/2006		52.00		2049.23
			3/12/2007		51.92		2049.31
			10/2/2007		51.20		2050.03
			3/25/2008		51.99		2049.24
			10/22/2008		52.76		2048.47
			4/14/2009		52.20		2049.03
PNR-13	2079.38	2081.12	8/13/2001		30.44		2050.68
			9/5/2001		30.19		2050.93
			11/6/2001		30.46		2050.66
			2/19/2002		31.48		2049.64
			5/20/2002		32.05		2049.07
			8/19/2002		32.32		2048.80
			11/4/2002		32.34		2048.78
			3/4/2003		32.96		2048.16
			5/12/2003		33.01		2048.11
			8/12/2003		32.50		2048.62
			11/4/2003		32.87		2048.25
			3/16/2004		33.20		2047.92
			6/7/2004		32.93		2048.19
			9/13/2004		32.48		2048.64
			11/16/2004		32.27		2048.85
			3/1/2005		32.92		2048.20
			5/24/2005		33.26		2047.86
			8/17/2005		36.33		2044.79
			11/16/2005		34.33		2046.79
			2/8/2006		33.29		2047.83
			5/24/2006		33.49		2047.63
			8/22/2006		33.58		2047.54
			12/5/2006		33.63		2047.49
			3/12/2007		33.62		2047.50
			10/2/2007		33.04		2048.08
			3/25/2008		33.56		2047.56
			10/22/2008		34.11		2047.01
			4/14/2009		33.89		2047.23
PNR-14	2079.82	2082.11	8/13/2001		32.50		2049.61
			9/4/2001		32.27		2049.84
			11/6/2001		32.30		2049.81
			2/19/2002		33.42		2048.69
			5/20/2002		33.77		2048.34
			8/19/2002		34.33		2047.78
			11/4/2002		34.27		2047.84
			3/4/2003		34.67		2047.44
			5/12/2003		34.71		2047.40
			8/12/2003		34.48		2047.63
			11/5/2003		34.75		2047.36

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Pioneer Natural Resources, USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last Update: 6/2/2009

Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			3/16/2004		34.80		2047.31
			6/7/2004		34.71		2047.40
			9/13/2004		34.23		2047.88
			11/17/2004		34.43		2047.68
			3/2/2005		34.55		2047.56
			5/25/2005		34.78		2047.33
			8/17/2005		34.41		2047.70
			11/16/2005		34.64		2047.47
			2/9/2006		34.90		2047.21
			5/24/2006		34.96		2047.15
			8/22/2006		34.94		2047.17
			12/5/2006		35.10		2047.01
			3/12/2007		35.05		2047.06
			10/2/2007		34.57		2047.54
			3/25/2008		35.03		2047.08
			10/22/2008		35.49		2046.62
			4/14/2009		35.45		2046.66
PNR-15	2081.92	2084.10	8/13/2001		33.86		2050.24
			9/4/2001		33.84		2050.26
			11/6/2001		34.30		2049.80
			2/19/2002		35.36		2048.74
			5/20/2002		35.87		2048.23
			8/19/2002		36.20		2047.90
			11/4/2002		36.22		2047.88
			3/5/2003	36.20	36.22	0.02	2047.89
			5/12/2003		36.81		2047.29
			8/12/2003		36.20		2047.90
			11/5/2003		36.26		2047.84
			3/16/2004		36.44		2047.66
			6/7/2004		36.31		2047.79
			9/15/2004		35.72		2048.38
			11/17/2004		36.00		2048.10
			3/2/2005		36.12		2047.98
			5/25/2005		36.39		2047.71
			8/17/2005		35.88		2048.22
			11/16/2005		36.17		2047.93
			2/8/2006		36.25		2047.85
			5/24/2006		36.48		2047.62
			8/22/2006		36.49		2047.61
			12/5/2006		36.65		2047.45
			3/12/2007		36.55		2047.55
			10/2/2007		35.98		2048.12
			3/25/2008		36.46		2047.64
			10/22/2008		36.97		2047.13
			4/14/2009		36.89		2047.21
PNR-16	2053.88	2056.80	8/13/2001		13.83		2042.97
			9/5/2001		12.70		2044.10
			11/6/2001		14.50		2042.30
			2/19/2002		14.76		2042.04
			5/20/2002		13.76		2043.04
			8/19/2002		9.47		2047.33
			11/4/2002		11.69		2045.11
			3/4/2003		15.20		2041.60
			5/12/2003		10.21		2046.59
			8/12/2003		13.41		2043.39
			11/4/2003		15.42		2041.38
			3/16/2004		17.25		2039.55
			6/7/2004		7.49		2049.31

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Pioneer Natural Resources, USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last Update: 6/2/2009

Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			9/13/2004		10.07		2046.73
			11/16/2004		11.90		2044.90
			3/1/2005		14.08		2042.72
			5/24/2005		12.67		2044.13
			8/17/2005		13.24		2043.56
			11/15/2005		15.89		2040.91
			2/7/2006		17.04		2039.76
			5/24/2006		13.54		2043.26
			8/22/2006		14.67		2042.13
			12/5/2006		14.36		2042.44
			3/12/2007		15.67		2041.13
			10/2/2007		16.20		2040.60
			3/25/2008		18.27		2038.53
			10/22/2008		14.40		2042.40
			4/14/2009		7.47		2049.33
PNR-17	2084.06	2086.14	8/13/2001	30.40	55.62	25.22	2048.17
			9/4/2001	30.42	55.86	25.44	2048.09
			11/6/2001	30.98	55.86	24.88	2047.70
			2/19/2002	32.04	55.77	23.73	2046.98
			5/20/2002	32.75	NM	NM	NM
			8/19/2002	33.62	NM	NM	NM
			11/4/2002	37.68	40.43	2.75	2047.63
			3/4/2003	38.37	40.31	1.94	2047.19
			5/12/2003	38.55	40.42	1.87	2047.03
			8/12/2003	38.22	40.04	1.82	2047.37
			11/6/2003	38.28	41.11	2.83	2047.01
			3/16/2004	37.95	43.46	5.51	2046.54
			6/7/2004	37.83	43.33	5.50	2046.66
			9/16/2004	37.38	42.71	5.33	2047.16
			11/17/2004	38.19	40.65	2.46	2047.21
			3/2/2005	38.47	39.28	0.81	2047.43
			5/25/2005	38.55	40.15	1.60	2047.11
			8/17/2005	38.23	39.12	0.89	2047.64
			11/16/2005	38.54	38.64	0.10	2047.57
			2/8/2006	38.50	38.59	0.09	2047.61
			5/24/2006	38.78	39.02	0.24	2047.29
			8/22/2006	38.69	38.82	0.13	2047.41
			12/5/2006	39.87	39.96	0.09	2046.24
			3/12/2007	38.83	38.86	0.03	2047.30
			10/2/2007	38.32	38.35	0.03	2047.81
			3/25/2008	38.75	38.78	0.03	2047.38
			10/22/2008	39.21	39.24	0.03	2046.92
			4/14/2009	39.26	39.33	0.07	2046.86
PNR-18	2116.21	2118.16	8/13/2001		68.90		2049.26
			9/5/2001		68.58		2049.58
			11/6/2001		69.08		2049.08
			2/19/2002		69.11		2049.05
			5/20/2002		70.10		2048.06
			8/19/2002		69.71		2048.45
			11/4/2002		69.36		2048.80
			3/4/2003		70.02		2048.14
			5/12/2003		70.38		2047.78
			8/12/2003		69.65		2048.51
			11/4/2003		70.30		2047.86
			3/16/2004		70.10		2048.06
			6/7/2004		69.44		2048.72
			9/13/2004		69.39		2048.77
			11/16/2004		69.71		2048.45

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Pioneer Natural Resources, USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last Update: 6/2/2009

Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			2/28/2005		69.96		2048.20
			5/23/2005		70.13		2048.03
			8/15/2005		69.92		2048.24
			11/15/2005		70.61		2047.55
			2/7/2006		70.63		2047.53
			5/23/2006		69.96		2048.20
			8/22/2006		70.40		2047.76
			12/5/2006		70.44		2047.72
			3/12/2007		70.24		2047.92
			10/2/2007		70.05		2048.11
			3/25/2008		70.40		2047.76
			10/22/2008		71.19		2046.97
			4/14/2009		70.77		2047.39
PNR-19	2071.26	2073.23	8/13/2001		25.75		2047.48
			9/5/2001		25.68		2047.55
			11/6/2001		25.98		2047.25
			2/19/2002		26.00		2047.23
			5/20/2002		26.37		2046.86
			8/19/2002		26.75		2046.48
			11/4/2002		26.86		2046.37
			3/4/2003		27.30		2045.93
			5/12/2003		27.52		2045.71
			8/12/2003		27.44		2045.79
			11/4/2003		27.58		2045.65
			3/16/2004		27.77		2045.46
			6/7/2004		27.67		2045.56
			9/13/2004		27.38		2045.85
			11/16/2004		27.46		2045.77
			3/1/2005		27.51		2045.72
			5/25/2005		27.90		2045.33
			8/17/2005		27.69		2045.54
			11/16/2005		27.85		2045.38
			2/8/2006		27.87		2045.36
			5/24/2006		28.13		2045.10
			8/22/2006		28.14		2045.09
			12/5/2006		28.29		2044.94
			3/13/2007		28.47		2044.76
			10/2/2007		28.22		2045.01
			3/25/2008		28.36		2044.87
			10/22/2008		28.56		2044.67
			4/14/2009		28.83		2044.40
PNR-20	2084.55	2087.16	8/18/2001		41.20		2045.96
			9/5/2001		41.05		2046.11
			11/6/2001		41.58		2045.58
			2/19/2002		41.41		2045.75
			5/20/2002		41.60		2045.56
			8/19/2002		41.91		2045.25
			11/4/2002		41.78		2045.38
			3/4/2003		42.30		2044.86
			5/12/2003		42.41		2044.75
			8/12/2003		42.39		2044.77
			11/4/2003		45.20		2041.96
			3/16/2004		42.56		2044.60
			6/7/2004		42.57		2044.59
			9/13/2004		42.37		2044.79
			11/17/2004		42.61		2044.55
			3/1/2005		42.37		2044.79
			5/24/2005		42.71		2044.45

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Pioneer Natural Resources, USA, Inc. - Biere 1-22 Investigation

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			8/16/2005		42.56		2044.60
			11/15/2005		43.59		2043.57
			2/9/2006		42.72		2044.44
			5/23/2006		42.57		2044.59
			8/22/2006		42.82		2044.34
			12/5/2006		42.81		2044.35
			3/12/2007		42.80		2044.36
			10/2/2007		43.05		2044.11
			3/25/2008		43.10		2044.06
			10/22/2008		43.65		2043.51
			4/14/2009		44.87		2042.29
PNR-21	2099.04	2101.59	8/13/2001		58.80		2042.79
			9/5/2001		58.68		2042.91
			11/6/2001		59.12		2042.47
			2/19/2002		58.81		2042.78
			5/20/2002		58.80		2042.79
			8/19/2002		59.02		2042.57
			11/4/2002		58.89		2042.70
			3/5/2003		58.78		2042.81
			5/12/2003		58.80		2042.79
			8/12/2003		59.32		2042.27
			11/5/2003		59.70		2041.89
			3/16/2004		59.46		2042.13
			6/7/2004		59.43		2042.16
			9/13/2004		59.31		2042.28
			11/17/2004		59.46		2042.13
			3/1/2005		59.23		2042.36
			5/24/2005		59.43		2042.16
			8/16/2005		59.35		2042.24
			11/15/2005		59.82		2041.77
			2/9/2006		59.64		2041.95
			5/23/2006		59.60		2041.99
			8/22/2006		59.53		2042.06
			12/5/2006		59.57		2042.02
			3/12/2007		59.46		2042.13
			10/2/2007		59.84		2041.75
			3/25/2008		59.82		2041.77
			10/22/2008		60.21		2041.38
			4/14/2009		61.07		2040.52
PNR-22	2127.38	2129.43	8/13/2001		81.50		2047.93
			9/5/2001		81.21		2048.22
			11/6/2001		81.66		2047.77
			2/19/2002		81.48		2047.95
			5/20/2002		81.90		2047.53
			8/19/2002		82.11		2047.32
			11/4/2002		81.75		2047.68
			3/4/2003		82.41		2047.02
			5/12/2003		82.62		2046.81
			8/12/2003		82.22		2047.21
			11/5/2003		82.60		2046.83
			3/16/2004		82.47		2046.96
			6/7/2004		82.24		2047.19
			9/13/2004		81.98		2047.45
			11/18/2004		82.15		2047.28
			3/1/2005		82.22		2047.21
			5/24/2005		82.65		2046.78
			8/16/2005		82.52		2046.91
			11/15/2005		83.07		2046.36

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Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			2/7/2006		83.08		2046.35
			5/25/2006		82.58		2046.85
			8/22/2006		82.78		2046.65
			12/5/2006		82.80		2046.63
			3/12/2007		82.60		2046.83
			10/2/2007		82.66		2046.77
			3/25/2008		82.82		2046.61
			10/22/2008		83.59		2045.84
			4/14/2009		83.25		2046.18
PNR-23	2083.00	2085.27	8/13/2001		35.85		2049.42
			9/4/2001		35.90		2049.37
			11/6/2001		36.03		2049.24
			2/19/2002		36.88		2048.39
			5/20/2002		37.35		2047.92
			8/19/2002		37.78		2047.49
			11/4/2002		37.81		2047.46
			3/4/2003		38.26		2047.01
			5/12/2003		38.34		2046.93
			8/12/2003		38.13		2047.14
			11/6/2003		38.36		2046.91
			3/16/2004		38.62		2046.65
			6/7/2004		38.51		2046.76
			9/15/2004		38.10		2047.17
			11/17/2004		38.35		2046.92
			3/2/2005		38.51		2046.76
			5/25/2005		38.78		2046.49
			8/17/2005		38.44		2046.83
			11/16/2005		38.57		2046.70
			2/9/2006		38.79		2046.48
			5/25/2006		38.67		2046.60
			8/22/2006		38.75		2046.52
			12/5/2006		38.90		2046.37
			3/12/2007		38.85		2046.42
			10/2/2007		38.36		2046.91
			3/25/2008		38.73		2046.54
			10/22/2008		39.08		2046.19
			4/14/2009		39.20		2046.07
PNR-24	2083.00	2085.68	8/13/2001		36.30		2049.38
			9/4/2001		36.31		2049.37
			11/6/2001		36.45		2049.23
			2/19/2002		37.17		2048.51
			5/20/2002		37.52		2048.16
			8/19/2002		37.88		2047.80
			11/4/2002	37.90	39.68	1.78	2047.25
			3/4/2003	38.38	40.05	1.67	2046.80
			5/12/2003	38.48	38.48	0.00	2047.20
			8/12/2003	38.39	39.35	0.96	2047.00
			11/6/2003	38.53	39.90	1.37	2046.74
			3/16/2004	38.70	44.30	5.60	2045.30
			6/7/2004	38.65	39.98	1.33	2046.63
			9/15/2004	38.33	38.51	0.18	2047.30
			11/17/2004	38.51	39.21	0.70	2046.96
			3/2/2005	38.61	39.50	0.89	2046.80
			5/25/2005	38.74	39.91	1.17	2046.59
			8/17/2005	38.54	38.89	0.35	2047.03
			11/16/2005	38.65	39.09	0.44	2046.90
			2/8/2006	38.63	39.24	0.61	2046.87
			5/24/2006	38.90	39.87	0.97	2046.49

Table 1 - Depth to Water and LNAPL in Monitor Wells and Domestic Wells

Pioneer Natural Resources, USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last Update: 6/2/2009

Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			8/22/2006	38.86	39.85	0.99	2046.52
			12/5/2006	39.12	39.75	0.63	2046.37
			3/12/2007	39.06	39.26	0.20	2046.56
			10/2/2007		38.65		2047.03
			3/25/2008		39.05		2046.63
			10/22/2008	39.42	39.52	0.10	2046.23
			4/14/2009	39.45	39.61	0.16	2046.18
PNR-25	2081.92	2084.03	8/13/2001	33.78	34.08	0.30	2050.16
			9/4/2001		33.73		2050.30
			11/6/2001		34.09		2049.94
			2/19/2002	34.98	36.63	1.65	2048.56
			5/20/2002	35.36	NM	NM	NM
			8/19/2002	35.64	NM	NM	NM
			11/4/2002	35.55	37.48	1.93	2047.90
			3/4/2003	35.91	38.04	2.13	2047.48
			5/12/2003	36.02	38.04	2.02	2047.40
			8/12/2003	35.62	37.03	1.41	2047.99
			11/5/2003	35.15	37.50	2.35	2048.18
			3/16/2004	35.93	38.00	2.07	2047.48
			6/7/2004	35.86	37.53	1.67	2047.67
			9/15/2004	35.37	36.58	1.21	2048.30
			11/17/2004	35.60	37.08	1.48	2047.99
			3/2/2005	35.66	37.35	1.69	2047.86
			5/25/2005	35.90	37.86	1.96	2047.54
			8/17/2005	35.55	37.03	1.48	2048.04
			11/16/2005	35.77	37.51	1.74	2047.74
			2/8/2006	35.82	37.88	2.06	2047.59
			5/24/2006	36.01	38.12	2.11	2047.39
			8/22/2006	36.04	38.19	2.15	2047.35
			12/5/2006	36.15	38.30	2.15	2047.24
			3/12/2007	36.12	38.23	2.11	2047.28
			10/2/2007	35.65	37.02	1.37	2047.97
			3/25/2008	36.05	37.89	1.84	2047.43
			10/22/2008	38.58	39.98	1.40	2045.03
			4/14/2009	36.37	38.52	2.15	2047.02
PNR-26	2084.06	2086.15	8/13/2001	34.65	36.85	2.20	2050.84
			9/4/2001	35.96	37.12	1.16	2049.84
			11/6/2001	36.24	37.12	0.88	2049.65
			2/19/2002	36.98	39.30	2.32	2048.47
			5/20/2002	37.43	NM	NM	NM
			8/19/2002	37.78	NM	NM	NM
			11/4/2002	37.76	40.15	2.39	2047.67
			3/4/2003	38.11	40.07	1.96	2047.45
			5/12/2003	38.20	40.09	1.89	2047.38
			8/12/2003	37.82	39.98	2.16	2047.68
			11/6/2003	37.93	39.99	2.06	2047.60
			3/16/2004	38.80	40.01	1.21	2046.99
			6/7/2004	38.02	40.02	2.00	2047.53
			9/16/2004	37.60	39.73	2.13	2047.91
			11/17/2004	37.79	39.98	2.19	2047.70
			3/2/2005	37.87	40.00	2.13	2047.64
			5/25/2005	38.01	39.92	1.91	2047.57
			8/17/2005	37.78	40.00	2.22	2047.70
			11/16/2005	37.92	40.00	2.08	2047.61
			2/8/2006	37.90	40.01	2.11	2047.62
			5/24/2006	38.23	40.05	1.82	2047.37
			8/22/2006	38.18	40.04	1.86	2047.41
			12/5/2006	38.35	40.05	1.70	2047.29

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			3/12/2007	38.34	40.03	1.69	2047.30
			10/2/2007	37.94	40.03	2.09	2047.58
			3/25/2008	38.24	39.99	1.75	2047.39
			10/22/2008	36.44	38.50	2.06	2049.09
			4/14/2009	38.71	39.95	1.24	2047.07
PNR-27	2092.86	2095.30	9/5/2001		67.28		2028.02
			11/6/2001		55.68		2039.62
			2/19/2002		55.32		2039.98
			5/20/2002		55.25		2040.05
			8/19/2002		55.34		2039.96
			11/4/2002		55.25		2040.05
			3/5/2003		55.17		2040.13
			5/12/2003		55.62		2039.68
			8/12/2003		55.67		2039.63
			11/5/2003		56.20		2039.10
			6/7/2004		56.80		2038.50
			9/13/2004		55.73		2039.57
			11/17/2004		55.91		2039.39
			3/2/2005		55.63		2039.67
			5/24/2005		55.79		2039.51
			8/16/2005		55.64		2039.66
			11/15/2005		56.04		2039.26
			2/8/2006		55.65		2039.65
			5/23/2006		55.66		2039.64
			8/22/2006		55.85		2039.45
			12/5/2006		55.92		2039.38
			3/12/2007		55.79		2039.51
			10/2/2007		56.23		2039.07
			3/25/2008		56.20		2039.10
			10/22/2008		56.52		2038.78
			4/14/2009		57.02		2038.28
PNR-28	2079.64	2078.44	9/5/2001		46.38		2032.06
			11/6/2001		44.85		2033.59
			2/19/2002		44.67		2033.77
			5/20/2002		44.45		2033.99
			8/19/2002		44.59		2033.85
			11/4/2002		44.55		2033.89
			3/5/2003		44.49		2033.95
			5/12/2003		44.40		2034.04
			8/12/2003		44.89		2033.55
			11/5/2003		46.20		2032.24
			6/7/2004		45.24		2033.20
			9/15/2004		45.19		2033.25
			11/17/2004		45.28		2033.16
			3/1/2005		45.06		2033.38
			5/25/2005		45.23		2033.21
			8/16/2005		45.02		2033.42
			11/15/2005		45.61		2032.83
			2/8/2006		45.17		2033.27
			5/23/2006		45.17		2033.27
			8/22/2006		45.21		2033.23
			12/5/2006		45.37		2033.07
			3/12/2007		45.24		2033.20
			10/2/2007		45.65		2032.79
			3/25/2008		45.55		2032.89
			10/22/2008		45.74		2032.70
			4/14/2009		45.91		2032.53

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PNR-29	2073.76	2072.64	9/5/2001		41.86		2030.78
			11/6/2001		40.28		2032.36
			2/19/2002		40.03		2032.61
			5/20/2002		39.80		2032.84
			8/19/2002		39.96		2032.68
			11/4/2002		39.82		2032.82
			3/5/2003		39.70		2032.94
			5/12/2003		40.17		2032.47
			8/12/2003		40.21		2032.43
			11/4/2003		40.70		2031.94
			6/15/2004		40.54		2032.10
			9/15/2004		40.54		2032.10
			11/17/2004		40.64		2032.00
			3/1/2005		40.39		2032.25
			5/25/2005		40.68		2031.96
			8/16/2005		40.42		2032.22
			11/15/2005		41.03		2031.61
			2/8/2006		40.45		2032.19
			5/23/2006		40.47		2032.17
			8/22/2006		40.60		2032.04
			12/5/2006		40.63		2032.01
			3/12/2007		40.68		2031.96
			10/2/2007		40.95		2031.69
			3/25/2008		40.83		2031.81
			10/22/2008		41.14		2031.50
			4/14/2009		41.06		2031.58
PNR-30-06	2083.55	2083.55	10/19/2006		37.91		2045.64
			12/5/2006	37.50	40.70	3.20	2045.09
			3/12/2007	37.39	40.86	3.47	2045.12
PNR-31-06	2098.91	2100.98	10/19/2006		58.69		2042.29
			12/5/2006		58.85		2042.13
			3/12/2007		58.59		2042.39
			10/2/2007		58.95		2042.03
			3/25/2008		58.86		2042.12
			4/14/2009		60.15		2040.83
PNR-32-06	2098.17	2100.01	10/19/2006		57.87		2042.14
			12/5/2006		58.00		2042.01
			3/12/2007		57.80		2042.21
			10/2/2007		58.16		2041.85
			3/25/2008		58.14		2041.87
			4/14/2009		59.44		2040.57
PNR-33-06	2142.86	2144.53	10/19/2006		102.50		2042.03
			12/5/2006		100.76		2043.77
			3/12/2007		102.35		2042.18
			10/2/2007		102.81		2041.72
			3/25/2008		102.89		2041.64
			10/22/2008		103.52		2041.01
			4/14/2009		103.32		2041.21
PNR-34-07	2053.42	2052.14	3/12/2007		93.84		1958.30
			10/2/2007		94.31		1957.83
			3/25/2008		94.20		1957.94
			10/22/2008		94.89		1957.25
			4/14/2009		93.35		1958.79
PNR-35-07	2060.91	2059.75	3/12/2007		71.15		1988.60

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			10/2/2007		71.55		1988.20
			3/25/2008		71.37		1988.38
			10/22/2008		71.34		1988.41
			4/14/2009		71.19		1988.56
PNR-36-07	2104.80	2107.00	3/12/2007		54.74		2052.26
			10/2/2007		53.88		2053.12
			3/25/2008		54.76		2052.24
			10/22/2008		55.57		2051.43
			4/14/2009		54.95		2052.05
PNR-37-07	2097.50	2100.50	10/2/2007		50.41		2050.09
			3/25/2008		51.18		2049.32
			4/14/2009		51.41		2049.09
PNR-38-08	2038.21	2039.34	3/25/2008		86.52		1952.82
			10/22/2008		87.93		1951.41
			4/14/2009		85.81		1953.53
PNR-39-08	2052.80	2055.27	10/22/2008		98.38		1956.89
			4/14/2009		96.71		1958.56
USGS-06-1			4/14/2009		54.01		
USGS-06-2			4/14/2009		48.84		
USGS-06-7			10/4/2007		62.45		
USGS-06-8			10/4/2007		61.79		
			4/14/2009		55.34		
USGS-06-9			10/4/2007		16.79		
USGS-06-11			4/14/2009		14.95		
USGS-92-12	2063.92	2065.92	5/31/2001		15.10		2050.82
			8/13/2001		10.70		2055.22
			9/5/2001		12.12		2053.80
			11/6/2001		13.11		2052.81
			2/19/2002		13.85		2052.07
			5/20/2002		13.65		2052.27
			8/19/2002		12.68		2053.24
			11/4/2002		12.77		2053.15
			3/4/2003		14.20		2051.72
			5/12/2003		12.58		2053.34
			8/12/2003		11.99		2053.93
			11/5/2003		17.10		2048.82
			6/7/2004		10.75		2055.17
			9/14/2004		10.70		2055.22
			11/16/2004		12.35		2053.57
			3/1/2005		13.28		2052.64
			5/25/2005		12.02		2053.90
			8/17/2005		11.00		2054.92
			11/15/2005		12.50		2053.42
			2/7/2006		13.08		2052.84
			5/24/2006		12.22		2053.70
			8/22/2006		14.04		2051.88
			12/5/2006		14.90		2051.02
			3/12/2007		14.97		2050.95
			10/2/2007		12.84		2053.08

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			3/25/2008		14.47		2051.45
			10/22/2008		14.83		2051.09
			4/14/2009		10.90		2055.02
USGS-92-6			4/14/2009		17.05		
USGS-92-7			4/14/2009		11.26		
USGS-92-9			4/14/2009		7.75		
USGS 93-3	2082.10	2083.46	5/31/2001		35.07		2048.39
			11/6/2001		35.22		2048.24
			2/19/2002		35.72		2047.74
			5/20/2002		36.30		2047.16
			8/19/2002		36.75		2046.71
			11/4/2002		36.81		2046.65
			3/4/2003		37.20		2046.26
			5/12/2003		37.23		2046.23
			8/12/2003		37.16		2046.30
			11/4/2003		37.32		2046.14
			3/16/2004		39.58		2043.88
			6/7/2004		37.47		2045.99
			9/14/2004		37.07		2046.39
			11/17/2004		37.25		2046.21
			3/1/2005		37.26		2046.20
			5/25/2005		37.52		2045.94
			8/17/2005		37.35		2046.11
			11/16/2005		37.41		2046.05
			2/9/2006		37.75		2045.71
			5/24/2006		37.90		2045.56
			8/22/2006		37.92		2045.54
			12/5/2006		38.00		2045.46
			3/12/2007		38.02		2045.44
			10/2/2007		37.72		2045.74
			3/25/2008		38.04		2045.42
			10/22/2008		38.40		2045.06
			4/14/2009		38.51		2044.95
							2083.46
USGS 93-3a	2081.97	2083.23	8/13/2001		35.15		2048.31
			9/5/2001		35.11		2048.35
			11/6/2001		34.96		2048.50
			5/20/2002		36.05		2047.41
			8/19/2002		36.62		2046.84
			11/4/2002		36.59		2046.87
			8/12/2003		36.94		2046.52
			11/5/2003		37.89		2045.57
			6/7/2004		37.28		2046.18
			11/17/2004		37.25		2046.21
			3/1/2005		37.26		2046.20
			5/25/2005		37.52		2045.94
USGS-93-4A			4/14/2009		41.49		
USGS-93-5			4/17/2009		55.04		
Whitmer	1980.41	1981.44	5/31/2001		23.82		1957.62
			11/6/2001		24.30		1957.14
			2/19/2002		24.30		1957.14
			5/20/2002		24.10		1957.34
			8/19/2002		24.20		1957.24

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Well Name and Elevation			Fluid Levels				
Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
			11/4/2002		24.30		1957.14
			3/4/2003		24.30		1957.14
			5/12/2003		24.20		1957.24
			8/12/2003		25.00		1956.44
			3/18/2004		24.10		1957.34
			6/7/2004		22.09		1959.35
			9/16/2004		23.90		1957.54
			11/18/2004		24.20		1957.24
			3/2/2005		24.10		1957.34
			5/24/2005		24.20		1957.24
			8/16/2005		24.03		1957.41
			11/17/2005		24.22		1957.22
			2/9/2006		23.84		1957.60
			5/25/2006		23.58		1957.86
			8/22/2006		24.40		1957.04
			12/5/2006		24.07		1957.37
			3/12/2007		23.51		1957.93
			10/2/2007		24.30		1957.14
			3/25/2008		23.98		1957.46
			4/14/2009		22.33		1959.11

Notes:

* = Groundwater elevation corrected for LNAPL thickness; Corrected Depth to Water = Depth to Water - .7 x Accum. LNAPL.

All elevations are provided in feet above mean sea level (MSL).

Accronyms/Abbreviations:

ft = feet

ft bmp = feet below measuring point

LNAPL = light non-aqueous phase liquid

Table 2

Inorganic Water Chemistry Data

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC	Field Temp.	Field D.O.	Field pH	Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Hardness, Total as $CaCO_3$	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	Lab pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate	Flouride
		mS	°C	mg/L	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mS	mg/l	mg/l
Hendrikson	11/9/2001 9:00	3.1	7.2	nm	7.20	321	392	134	< 1	821	701	89	0.3	< 0.05	7.5	9	nm	14.5	416	1890	3.3	172	nm
LAW-M01	4/20/2009 14:30	3.0	9.4	1.09	6.84	638	778	274	< 4	29	1370	166	0.5	1.80	7.2	17	25.3	25.0	208	2420	3.0	1120	0.3
LAW-M03	3/13/2007 17:40	6.1	9.7	nm	7.25	429	524	396	< 4	1370	1960	237	2.0	< 0.05	7.1	14	32.2	nm	690	4270	6.4	1100	0.2
LAW-M03	3/27/2008 10:30	6.8	9.7	nm	7.12	419	511	416	< 4	1560	2070	250	1.7	< 0.05	7.1	9	23.4	25.7	705	4560	7.0	1120	0.2
LAW-M03	10/23/2008 15:35	6.9	10.0	0.36	7.17	423	516	443	< 4	1530	2220	270	2.1	< 0.05	7.0	10	23.3	26.9	736	4680	6.9	1210	0.2
LAW-M03	4/18/2009 15:40	7.6	10.0	0.39	6.94	393	480	448	< 4	1540	2230	270	2.0	< 0.05	7.0	13	22.4	25.0	746	4260	7.3	1110	0.2
LAW-M05	4/20/2009 17:30	5.3	9.8	0.28	6.88	577	704	378	< 4	551	2060	270	0.8	8.27	7.2	15	19.9	51.0	501	3030	5.2	1640	0.2
M-10	4/16/2009 15:10	2.1	5.0	0.68	7.11	314	383	144	< 4	94	673	76	< 0.1	< 0.05	7.5	9	12.8	14.0	217	1520	2.1	720	0.3
M-18	11/8/2001 15:30	nm	17.2	nm	nm	111	135	669	< 1	5190	2920	303	37.5	< 0.05	5.9	32	nm	< 3	1630	8600	13.5	25	nm
M-18	8/23/2006 10:30	17.5	10.4	nm	7.38	258	315	730	< 4	5620	3580	426	9.7	< 0.05	6.8	25	15.1	18.4	2790	11800	18.0	1000	0.2
M-18	12/6/2006 12:25	16.8	9.2	nm	6.96	141	172	435	< 4	5470	2810	418	29.1	< 0.05	7.1	28	5.9	8.0	2740	10300	17.4	621	< 0.1
M-18	4/22/2009 15:00	16.9	12.0	0.15	7.22	276	336	586	< 4	4960	2960	362	5.7	< 0.05	7.0	23	13.8	16.0	2540	10100	16.9	1060	0.1
M-27	8/16/2001 14:35	13.5	11.3	nm	9.30	14	17	687	< 1	5280	3940	540	1.8	< 0.05	8.8	19	<1	nm	1640	10400	13.1	160	nm
M-27	8/16/2001 14:45	13.5	11.3	nm	9.30	12	15	681	< 1	5380	3920	538	4.0	< 0.05	7.7	19	<1	nm	1610	10900	13.2	156	nm
M-27	11/8/2001 8:50	11.4	10.0	nm	8.30	4	5	710	< 1	5650	4050	553	4.3	< 0.05	6.7	23	nm	< 3	1670	9920	14.2	433	nm
M-27	2/20/2002 15:42	10.9	10.6	nm	7.88	389	475	917	< 4	5710	4450	524	2.7	< 0.05	6.7	42	17.0	nm	1700	10500	16.6	814	nm
M-27	5/21/2002 15:05	17.2	13.1	nm	7.28	211	258	839	< 4	7110	4130	494	2.7	< 0.05	6.9	20	20.0	nm	1620	12000	16.8	1160	0.2
M-27	8/20/2002 17:45	14.9	12.8	nm	8.10	4	5	707	< 4	5750	3740	479	4.2	< 0.05	5.7	19	< 2	< 2	1560	12200	16.0	664	< 0.1
M-27	11/6/2002 9:00	16.4	11.6	nm	8.55	< 4	4	732	< 4	5100	3990	526	2.6	< 0.05	6.0	23	< 2	< 2	1730	10500	17.0	619	< 0.1
M-27	3/5/2003 13:20	14.9	10.3	nm	7.78	14	17	790	< 4	5640	4230	547	2.6	< 0.05	6.5	24	2.0	< 2	1830	10300	16.7	649	< 0.1
M-27	5/28/2003 10:30	14.4	11.6	nm	7.96	5	6	771	< 4	5590	4250	565	2.6	< 0.05	5.9	25	< 2	< 2	1730	10300	15.6	525	< 0.1
M-27	8/13/2003 11:10	15.6	13.5	nm	8.02	11	14	746	< 1	6460	4070	536	3.8	< 0.05	6.1	25	< 2	2.0	1690	11000	13.3	481	< 0.1
M-27	11/6/2003 10:00	16.3	8.7	nm	8.01	5	6	732	< 4	6390	4070	545	5.6	< 0.05	6.5	27	< 2	< 4	1800	10300	14.9	418	< 0.1
M-27	March 2004	Not Sampled																					
M-27	6/8/2004 15:15	mnw	12.7	nm	7.91	30	36	725	< 4	5970	4050	544	7.2	< 0.05	6.7	24	2.7	2.7	1890	11600	14.4	564	0.1
M-27	9/15/2004 12:25	16.4	14.9	nm	7.16	214	261	1000	< 4	5920	4870	576	3.0	< 0.05	6.7	24	17.8	19.0	1870	13900	17.5	919	0.1
M-27	11/18/2004 15:35	16.7	12.3	nm	7.19	< 4	< 4	812	< 4	6050	4380	571	3.0	< 0.05	6.2	24	3.1	3.3	2090	11700	17.5	981	< 0.1
M-27	3/1/2005 12:05	18.1	13.4	nm	6.81	< 4	< 4	767	< 4	5980	4240	565	2.7	< 0.05	5.8	30	3.0	2.0	2100	11700	17.0	835	< 0.1
M-27	5/24/2005 11:20	17.5	13.1	nm	7.00	< 4	< 4	797	< 4	5790	4160	528	3.8	< 0.05	5.8	19	< 0.4	1.9	2310	11300	16.6	737	< 0.1
M-27	8/16/2005 9:30	17.8	15.7	nm	6.75	< 4	< 4	776	< 4	5790	4210	553	2.8	< 0.05	5.7	18	1.0	< 0.9	1980	12200	17.4	801	< 0.1
M-27	11/15/2005 14:28	12.7	9.8	nm	6.42	< 4	< 4	758	< 4	5270	4050	525	3.4	< 0.05	5.8	21	1.1	1.1	2150	10000	15.6	721	< 0.1
M-27	2/7/2006 13:10	13.9	9.9	nm	7.19	< 4	< 4	800	< 4	5250	4060	500	3.4	< 0.05	6.2	26	5.6	6.3	2120	9820	15.9	712	< 0.1
M-27	5/23/2006 14:00	16.5	16.6	nm	7.65	< 4	< 4	865	< 4	6520	4670	608	2.6	< 0.05	5.5	27	1.8	2.0	2400	11200	17.9	853	< 0.1
M-27	8/22/2006 14:30	18.4	9.8	nm	7.33	<4	<4	884	<4	6040	4800	581	3.0	<0.05	6.2	26	3.5	6.9	2420	12400	18.3	793	< 0.1
M-27	12/6/2006 13:40	18.1	9.4	nm	7.09	<4	<4	844	<4	6170	4500	582	3.2	<0.05	5.3	27	1.2	< 0.9	2400	11600	18.7	868	< 0.1
M-27	3/14/2007 17:30	16.6	9.8	nm	6.88	<4	<4	805	< 4	6200	4330	564	2.8	< 0.05	4.4	29	38.0	nm	2330	12300	18.5	806	< 0.1
M-27	10/4/2007 12:30	17.5	11.0	nm	7.10	33	<4	912	< 4	6520	4570	557	3.3	< 0.05	6.6	23	12.0	13.0	2260	13100	19.8	1070	< 0.1
M-27	3/27/2008 16:00	18.0	8.2	nm	7.66	<4	<4	779	< 4	6140	4110	526	3.1	< 0.05	5.6	19	< 2	<0.9	2210	11000	18.1	1340	< 0.1
M-27	10/24/2008 13:30	18.0	9.4	0.35	6.67	33	41	858	< 4	6170	4400	550	3.4	< 0.05	6.2	25	3.0	3.3	2480	11600	18.4	1010	< 0.1
M-27	4/21/2009 9:00	17.1	9.7	0.10	7.70	48	59	765	< 4	5840	3920	488	3.1	< 0.05	6.3	23	3.7	5.0	2280	12300	18.6	975	< 0.1
M-28	6/1/2000 0:00	60.5	12.0	nm	7.00	600	732	1530	< 1	25800	6920	749	nm	20.90	7.1	62	nm	nm	14200	44700	58.9	1910	nm
M-28	8/9/2001 12:15	57.7	11.5	nm	6.90	676	825	1210	< 1	23800	5600	628	4.0	27.90	6.9	57	17.3	nm	11300	40500	53.5	1880	nm
M-28	8/16/2001 17:00	54.9	11.1	mn	7.10	616	751	1340	< 1	22600	6130	677	5.4	24.60	7.0	62	19.3	nm	12800	41000	48.8	2260	nm
M-28	11/8/2001 12:00	nm	17.8	nm	nm	761	929	217	< 1	1410	1240	169	0.4	31.30	7.3	13	nm	29.0	873	3950	60.9	687	nm
M-28	2/21/2002 8:40	59.3	10.2	nm	6.63	633	772	1250	< 4	25900	5620	607	6.9	15.00	7.0	77	17.0	nm	13300	43800	47.4	1400	nm
M-28	5/23/2002 9:30	66.1	12.0	nm	5.20	598	730	1220	< 4	31000	5080	491	8.8	8.35	6.8	87	20.0	nm	15600	50700	57.7	1920	0.1
M-28	8/21/2002 10:00	61.1	12.6	nm	6.50	609	742	1240	< 4	25500	5620	614	8.0	12.90	6.8	51	18.0	18.0	9540	45900	51.8	1700	0.2
M-28	11/6/2002 11:20	62.6	11.3	nm	6.90	612	746	1210	< 4	22400	5330	562	6.7	17.00	6.9	71	< 20	< 10	12600	43100	44.0	1840	0.2
M-28	3/5/2003 15:30	54.6	10.7	nm	6.80	606	739	1190	< 4	22400	5140	528	5.6	19.70	6.8	62	18.0	22.0	11200	40500	32.9	2330	0.2
M-28	5/13/2003 16:45	52.4	12.0	nm	7.27	603	736	1180	< 4	24300	5220	551	6.7	16.90	6.7	93	16.0	19.0	13800	43800	65.0	1700	0.2
M-28	8/13/2003 15:35	55.2	13.0	nm	7.61	627	765	1130	< 1	21900	5150	564	6.0	22.70	6.7	113	21.0	22.0	11400	38600	51.5	1220	0.2
M-28	11/5/2003 10:30	51.8	11.5	nm	5.15	635	775	978	< 4	23000	4440	484	6.5	23.70	6.8	76	17.0	< 20	10300	38700	32.8	1370	0.3
M-28	3/16/2004 17:34	48.8	8.8	nm	6.30	695	848	1030	< 1	13800	5240	645	3.3	37.60	6.9	61	24.0	24.0	7520	25800	37.5	1590	0.2
M-28	6/8/2004 17:18	mnw	11.9	nm	7.02	667	814	1030	< 4	19200	4850	551	5.6	23.30	6.9	77	20.0	21.0	9940	16900	34.3	2020	0.2
M-28	9/15/2004 14:00	49.9	13.7	nm	6.66	669	816	1040	< 4	20500	4860	549	6.7	23.30	7.0	94	19.0	25.0	10800	35600	52.1	1820	0.3
M-28	11/19/2004 8:36	51.3	10.8	nm	7.06	662	808	1070	< 4	18000	5040	576	4.5	27.20	6.8	82	23.0	24.0	9280	32000	47.8	1730	0.2
M-28	3/1/2005 15:45	55.1	13.0	nm	6.63	703	857	1040	< 4	17600	4980	579	5.3	22.50	6.9	94	21.0	23.0	10900	32800	47.9	1700	0.2
M-28	5/24/2005 13:10	mnw	11.9	nm	6.95	605	738	936	< 4	14900	4610	552	4.6	27.90	7.0	68	16.0	22.0	8890	28400	42.0	1940	0.2
M-28	8/16/2005 13:15	48.5	15.8	nm	6.74	703	858	899	< 4	17700	4320	504	5.3	22.30	7.3	62	22.0	21.0	9980	30200	45.8	1570	0.2
M-28	11/15/2005 16:35	41.3	10.3	nm	6.48	630	769	990	< 4	16200	4870	584	5.1	20.10	7.0	79	23.0	22.0	9880	26600	42.8	1740	0.2
M-28	2/7/2006 16:30	45.2	9.8	nm	7.01	679	829	972	< 4	16000	4630	534	5.1	19.80	6.9	73	21.0	19.0	9450	28600	44.6	1730	0.2

Table 2 - Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
DOWL HKM Job No.: 14B805.101
Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
M-28	5/23/2006 16:20	39.1	11.8	nm	6.69	656	800	954	< 4	16300	4530	522	4.5	19.40	7.5	65	22.0	22.0	9010	24500	42.7	1850	0.2
M-28	8/22/2006 16:45	41.0	10.5	nm	7.30	627	765	872	< 4	14200	4260	505	4.1	9.84	6.8	56	23.0	22.0	8080	25600	40.4	1780	0.2
M-28	12/6/2006 14:40	37.2	9.9	nm	6.80	634	774	877	< 4	14300	4260	503	4.2	22.60	6.9	67	23.0	53.0	8480	26600	42.0	1800	0.2
M-28	3/15/2007 10:15	29.1	9.9	nm	6.48	662	808	816	< 4	11200	4290	548	3.5	23.60	6.9	57	169.0	nm	6280	21200	32.5	1770	0.2
M-28	10/3/2007 16:40	30.7	10.3	nm	6.51	647	789	733	< 4	10900	3800	479	3.0	18.00	6.8	47	22.0	22.0	5820	20700	34.2	1830	0.2
M-28	3/27/2008 9:50	32.9	14.5	nm	6.92	673	821	775	< 4	9600	4120	531	3.2	14.50	6.9	45	26.0	70.0	5900	18400	29.4	1730	0.2
M-28	10/26/2008 14:30	24.4	10.2	0.14	6.88	688	839	709	< 4	7940	3890	515	2.8	13.70	7.0	30	22.0	31.0	4490	16200	25.1	2000	0.2
M-28	4/15/2009 11:20	29.4	11.1	0.32	6.71	699	853	587	< 4	6210	3330	452	1.4	10.90	7.1	31	22.5	19.0	3620	12900	21.0	1500	0.2
M-30	6/1/2000 0:00	2.8	9.8	nm	9.20	1020	1240	126	< 1	36	801	118	nm	< 0.05	8.0	7	nm	nm	325	1740	2.4	501	nm
M-30	2/22/2002 13:00	2.9	5.6	nm	7.64	905	1100	113	< 4	43	735	110	4.0	< 0.05	7.5	7	27.5	nm	325	1790	2.6	549	nm
M-30	5/22/2002 17:10	2.6	7.0	nm	7.53	916	1120	111	< 1	34	700	103	5.6	< 0.05	7.6	6	31.5	nm	291	1730	2.6	539	0.3
M-30	8/21/2002 10:40	2.1	14.2	nm	7.30	931	1140	114	< 4	42	733	109	5.8	< 0.05	7.7	6	26.7	23.5	257	1650	2.5	528	0.3
M-30	11/19/2004 8:15	2.7	10.5	nm	7.71	818	998	121	< 1	46	735	105	4.7	< 0.05	7.4	8	27.7	28.6	254	1550	2.3	459	0.4
M-30	3/2/2005 17:50	mnw	mnw	nm	mnw	995	1210	129	< 4	58	825	122	4.2	< 0.05	7.5	8	28.3	28.4	331	1770	2.5	537	0.4
M-31	6/1/2000 0:00	87.2	11.0	nm	7.60	461	562	1760	< 1	36000	7610	783	nm	0.17	7.1	122	nm	nm	20200	60800	80.5	1690	nm
M-31	8/9/2001 11:05	88.5	10.7	nm	6.90	515	628	1540	< 1	35900	6530	649	6.6	< 0.05	6.9	150	15.6	nm	19800	63800	74.2	1220	nm
M-31	8/16/2001 17:30	84.3	11.2	nm	7.00	516	630	1640	< 1	37200	6820	659	6.9	< 0.05	6.9	150	15.8	nm	21900	63300	68.3	2120	nm
M-31	11/8/2001 16:00	51.4	11.7	nm	6.80	6	8	1170	< 1	28300	7350	1070	11.3	0.06	6.0	110	nm	<5	15700	50200	39.8	840	nm
M-31	2/21/2002 9:45	81.4	10.3	nm	6.58	464	566	1570	< 4	38600	6510	630	7.5	< 0.05	7.0	207	17.0	nm	20800	63000	58.4	1690	nm
M-31	5/22/2002 15:45	94.4	11.8	nm	6.75	513	626	1440	< 4	39700	5950	571	7.7	< 0.05	6.8	162	24.0	nm	20000	63700	64.7	2210	0.1
M-31	8/21/2002 10:45	83.5	12.1	nm	6.50	504	615	1530	< 4	39200	6390	626	8.4	< 0.05	6.8	136	16.0	14.0	16600	67100	67.5	1780	0.1
M-31	11/6/2002 10:35	89.2	10.8	nm	6.84	510	622	1520	< 4	33600	6280	601	8.1	< 0.05	6.8	177	17.0	< 10	19100	62800	55.0	1650	0.1
M-31	3/5/2003 14:10	81.9	10.2	nm	6.72	353	430	1540	< 4	39200	6210	574	7.6	< 0.05	6.7	169	16.0	15.0	19300	62500	43.2	1740	0.1
M-31	5/13/2003 16:00	79.1	11.3	nm	7.21	505	616	1500	< 4	36100	6180	588	8.1	< 0.05	6.7	238	13.0	15.0	22200	63500	85.0	1530	0.1
M-31	8/13/2003 14:40	88.1	12.7	nm	7.49	503	613	1480	< 1	37300	6070	577	8.0	< 0.05	6.6	229	16.0	18.0	20400	63900	81.9	1050	0.1
M-31	11/5/2003 11:35	83.0	11.1	nm	nm	502	612	1020	< 4	37700	4400	450	8.4	< 0.05	6.7	206	16.0	< 20	16900	62100	42.1	1140	0.2
M-31	3/16/2004 16:00	68.8	9.3	nm	6.10	503	614	1570	< 1	42000	6110	604	9.5	< 0.05	6.7	214	16.8	17.3	20200	62900	87.1	1330	0.1
M-31	6/8/2004 16:40	mnw	11.4	nm	6.94	506	618	1450	< 4	39400	5930	559	9.2	< 0.05	6.8	182	15.0	16.0	18800	62100	89.1	1700	0.2
M-31	9/15/2004 15:00	88.5	14.5	nm	6.58	518	632	1510	< 4	39500	6150	577	9.9	< 0.05	6.9	227	17.0	17.0	20900	64800	90.5	1560	0.2
M-31	11/18/2004 17:00	86.1	10.7	nm	6.84	503	613	1590	< 4	37000	6390	590	8.8	< 0.05	6.7	274	18.0	18.0	20700	62700	91.4	1510	0.1
M-31	3/1/2005 13:45	98.0	12.5	nm	6.48	550	671	1560	< 4	40300	6380	603	8.8	< 0.05	6.8	264	21.0	31.0	23000	62800	89.9	1560	0.1
M-31	5/24/2005 15:05	mnw	11.0	nm	6.82	465	568	1420	< 4	37700	5770	540	9.1	0.08	6.7	251	7.0	14.0	22800	61800	89.6	1620	0.2
M-31	8/16/2005 11:30	95.5	17.5	nm	6.49	550	671	1530	< 4	35300	6260	592	10.1	< 0.05	6.9	185	17.0	20.0	20700	61400	90.0	1310	0.1
M-31	11/15/2005 15:30	89.0	9.1	nm	6.40	461	562	1630	< 4	39700	6700	637	9.1	< 0.05	7.0	218	28.0	44.0	23600	57700	91.9	12	0.1
M-31	2/7/2006 14:00	93.5	8.9	nm	6.92	528	645	1560	< 4	37300	6180	558	10.0	< 0.05	7.1	262	17.0	17.0	22400	61200	90.4	1460	0.1
M-31	5/23/2006 17:20	86.0	11.3	nm	6.53	510	622	1560	< 4	39700	6040	523	10.1	< 0.05	7.4	305	19.0	22.0	22500	57200	91.3	1510	0.1
M-31	8/23/2006 13:30	93.6	10.3	nm	6.70	483	589	1550	< 4	37600	6090	542	4.3	< 0.05	6.6	220	23.0	23.0	23000	59800	94.3	1500	0.1
M-31	12/6/2006 15:45	92.2	9.2	nm	6.44	499	609	1450	< 4	39400	5780	527	11.5	< 0.05	6.8	239	19.0	19.0	22700	62900	95.2	1550	0.1
M-31	3/15/2007 11:30	88.9	9.4	nm	6.31	497	607	1570	< 4	40800	6380	595	11.9	< 0.05	6.7	259	58.0	nm	24100	64000	93.6	1490	0.1
M-31	10/4/2007 14:30	89.1	9.9	nm	6.77	498	607	1550	< 4	40800	6160	558	13.2	< 0.05	6.6	239	21.0	19.0	22300	63300	99.1	1620	0.1
M-31	3/27/2008 10:30	89.2	10.5	nm	6.83	399	487	1720	< 4	41200	6850	620	10.9	< 0.05	6.6	276	29.0	27.0	25100	62000	94.7	1420	0.1
M-31	10/26/2008 17:20	89.5	9.7	0.11	6.83	494	603	1550	< 4	40800	6200	566	13.2	< 0.05	6.8	236	13.0	29.0	22300	61200	92.1	1690	0.1
M-31	4/15/2009 16:15	89.9	9.6	0.15	6.81	491	599	1350	< 4	37400	5460	506	11.2	< 0.05	6.8	246	9.0	< 20	21400	53800	90.6	1470	0.1
M-36	9/5/2001 15:55	3.8	10.9	nm	7.60	661	807	206	< 1	259	1160	156	1.1	< 0.05	6.6	7	21.3	nm	458	2920	3.5	1230	nm
M-36	11/9/2001 11:05	2.7	9.6	nm	7.40	649	792	215	< 1	313	1210	163	1.0	0.05	7.2	8	nm	27.9	478	2960	3.8	1220	nm
M-38	9/5/2001 16:25	3.5	13.5	nm	7.80	654	798	212	< 1	174	1080	132	1.0	< 0.05	6.6	7	21.3	nm	434	2750	3.3	1230	nm
M-38	11/9/2001 11:40	2.4	10.2	nm	7.60	648	791	208	< 1	183	1080	135	1.0	0.05	7.3	8	nm	27.4	436	2690	3.5	1240	nm
M-39	11/7/2001 15:45	nm	9.4	nm	nm	401	413	10	38	34	1020	241	8.8	< 0.05	8.9	8	nm	1.7	269	2150	2.6	1260	nm
M-69	4/15/2009 14:17	1.8	5.9	1.39	7.36	420	512	96	< 4	61	402	40	0.4	8.36	7.6	109	14.2	13.5	170	1190	1.8	386	0.5
M-80	4/18/2009 15:30	23.2	9.2	0.29	7.04	178	217	1050	< 4	7500	5410	675	1.7	< 0.05	6.7	30	10.4	14.0	2810	13500	22.9	395	0.2
MOC-1B	3/14/2007 12:55	4.1	9.7	nm	7.22	433	528	363	< 4	75	2150	301	< 0.1	30.60	7.2	11	31.6	nm	384	4070	4.5	2220	0.2
MOC-1B	10/3/2007 10:35	4.4	9.8	nm	6.99	426	520	358	< 4	74	2080	289	< 0.1	32.20	7.2	9	23.4	25.3	367	3920	4.6	2280	0.2
MOC-1B	3/25/2008 18:30	4.4	9.6	nm	6.92	438	535	356	< 4	74	2090	292	< 0.1	36.80	7.2	8	22.7	23.0	370	3810	4.4	2240	0.2
MOC-1B	10/23/2008 14:15	4.3	9.9	0.34	7.07	430	525	360	< 4	80	2120	297	< 0.1	29.20	7.4	9	23.9	25.6	361	3810	4.4	2260	0.2
MOC-1B	4/21/2009 12:45	4.5	10.0	0.30	6.96	432	527	356	< 4	68	2070	286	< 0.1	28.90	7.3	10	23.3	24.0	368	3540	4.4	2230	0.2
MOC-2	3/13/2007 17:00	20.3	9.7	nm	6.46	321	391	1060	< 4	7050	4990	571	3.6	< 0.05	6.8	28	76.9	nm	2750	13800	20.6	1730	0.2
MOC-2	10/5/2007 14:30	21.0	9.7	nm	6.85	270	330	1060	< 4	7110	4950	556	4.0	< 0.05	6.8	25	20.0	26.0	2840	14600	21.2	1540	0.2
MOC-2	3/26/2008 17:30	21.0	9.7	nm	7.18	283	345	1090	< 4	7200	5000	555	3.6	< 0.05	6.7	27	23.0	25.0	3060	13700	21.3	1460	0.2
MOC-2	10/25/2008 13:07	22.6	9.7	0.47	6.69	304	371	1040	< 4	6880	4830	542	3.8	< 0.05	6.6	23	20.0	27.6	2910	13000	20.9	1670	0.2

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
MOC-2	4/21/2009 13:40	21.4	9.8	0.20	6.80	265	348	1030	< 4	6560	4720	519	3.4	< 0.05	6.8	26	19.7	26.0	2990	13600	21.1	1430	0.2
MOC-3	3/14/2007 11:50	3.6	9.7	nm	7.19	360	439	318	< 4	74	1690	218	< 0.1	13.40	7.3	12	43.1	nm	400	3500	4.0	1890	0.5
MOC-3	10/2/2007 19:00	3.8	9.7	nm	6.94	359	438	299	< 4	76	1580	202	< 0.1	15.20	7.1	10	19.3	30.3	379	3370	4.1	1890	0.5
MOC-3	3/25/2008 16:50	3.9	9.9	nm	6.92	364	444	314	< 4	73	1670	216	< 0.1	17.90	7.3	11	19.4	20.7	385	3260	3.9	1890	0.5
MOC-3	10/23/2008 12:40	3.7	10.5	0.72	6.75	358	437	309	< 4	78	1630	208	< 0.1	17.70	7.3	10	19.6	24.5	392	3330	3.9	1830	0.5
MOC-3	4/20/2009 19:05	3.9	10.0	0.25	7.00	360	439	306	< 4	70	1600	204	< 0.1	14.20	7.3	11	19.2	20.0	368	3140	3.9	1900	0.5
MOC-4	10/17/2006 13:30	nm	nm	nm	nm	333	406	435	< 4	2660	2200	271	1.2	< 0.05	7.3	17	17.1	18.9	1170	5700	9.4	789	0.2
MOC-4	10/4/2007 11:00	9.2	9.9	nm	7.24	330	403	446	< 4	2580	2290	286	1.3	< 0.05	7.1	15	17.9	20.1	1230	5550	9.6	817	0.2
MOC-4	3/26/2008 16:30	9.1	9.6	nm	7.47	342	417	403	< 4	2590	2080	261	1.2	< 0.05	7.1	14	15.6	17.0	1130	5440	9.1	779	0.2
MOC-4	10/25/2008 12:08	9.8	9.5	0.32	7.05	340	415	416	< 4	2420	2150	271	1.3	< 0.05	7.4	14	16.0	18.7	1160	5470	9.0	834	0.2
MOC-4	4/23/2009 13:00	9.1	9.7	0.31	7.35	334	408	394	< 4	2300	2020	250	1.4	< 0.05	7.3	16	16.0	18.0	1120	5040	8.9	793	0.2
MOC-20A	3/13/2007 13:40	5.4	9.2	nm	6.63	343	419	503	< 4	128	3020	429	0.9	41.70	7.2	24	37.9	nm	464	5480	5.8	3220	0.4
MOC-20A	10/3/2007 17:00	5.5	10.0	nm	7.27	311	379	473	< 4	125	2860	408	0.3	22.00	7.2	23	40.1	106.0	462	5370	5.9	3290	0.4
MOC-20A	3/26/2008 15:00	5.5	10.1	nm	7.46	315	385	473	< 4	119	2870	411	0.6	19.70	7.0	22	30.8	302.0	425	5260	5.5	3290	0.4
MOC-20A	10/24/2008 11:46	5.5	9.6	nm	7.06	280	342	476	< 4	133	2970	433	< 0.1	9.65	7.4	22	29.9	32.1	486	5310	5.6	3390	0.5
MOC-20A	4/21/2009 11:00	5.7	9.5	0.34	7.12	271	331	469	< 4	120	2930	428	< 0.1	10.80	7.4	24	29.7	28.0	464	4800	5.5	3290	0.4
MOC-20B	3/13/2007 15:00	4.3	9.7	nm	6.52	400	488	340	< 4	163	1680	202	1.3	< 0.05	7.1	9	29.7	nm	513	3790	4.5	2020	0.3
MOC-20B	10/3/2007 13:30	4.4	10.0	nm	6.95	402	490	323	< 4	181	1600	192	1.2	< 0.05	7.0	9	25.9	30.6	490	3800	4.7	2050	0.3
MOC-20B	3/26/2008 14:30	4.4	9.6	nm	7.55	409	499	330	< 4	176	1640	199	1.1	< 0.05	7.0	8	26.0	28.3	481	3640	4.4	2040	0.3
MOC-20B	10/23/2008 17:10	4.3	9.8	0.64	7.15	406	495	342	< 4	198	1700	207	1.2	< 0.05	7.0	8	26.8	32.2	506	3700	4.5	2050	0.3
MOC-20B	4/21/2009 12:40	4.5	9.7	0.27	6.86	398	486	331	< 4	180	1650	199	1.3	< 0.05	7.1	9	25.6	31.0	481	3440	4.4	2010	0.3
PNR-4	6/1/2000 0:00	nm	60.0	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
PNR-4	8/10/2001 13:15	102.6	67.7	nm	6.80	176	215	839	< 1	44700	2610	125	14.1	< 0.05	7.0	534	55.7	nm	24800	71200	75.1	1800	nm
PNR-4	8/10/2001 13:20	102.6	67.7	nm	6.80	190	232	793	< 1	44500	2480	121	14.4	< 0.05	7.0	500	52.3	nm	24000	71200	78.2	1900	nm
PNR-4	11/6/2001 15:00	nm	94.4	nm	nm	122	149	1210	< 1	31800	3210	43	15.1	0.08	7.9	453	nm	237.0	20700	61400	49.2	1310	nm
PNR-4	Plugged and abandoned																						
PNR-5	6/1/2000 0:00	96.6	41.6	nm	7.30	267	325	1170	< 1	38900	3810	213	nm	< 0.05	7.4	396	nm	nm	22600	65200	85.1	1690	nm
PNR-5	8/8/2001 11:00	96.0	40.8	nm	6.60	319	390	1100	< 1	40700	3850	264	16.8	< 0.05	6.7	436	36.6	nm	23400	68600	79.5	1400	nm
PNR-5	8/15/2001 11:00	mnw	38.6	nm	6.80	299	365	1210	< 1	41200	4140	271	17.9	< 0.05	6.9	460	40.6	nm	23800	68000	72.8	1520	nm
PNR-5	11/7/2001 11:10	or	43.3	nm	5.80	335	409	1030	< 1	33700	3540	234	17.9	< 0.05	6.5	368	nm	36.7	21500	67200	52.7	1290	nm
PNR-5	2/20/2002 10:02	92.2	41.7	nm	6.27	449	548	1100	< 4	44500	3770	248	17.3	< 0.05	6.7	432	30.0	nm	23500	67700	61.3	1270	nm
PNR-5	5/22/2002 10:40	93.6	41.1	nm	6.42	335	409	975	< 4	43500	3310	212	16.4	< 0.05	6.7	377	39.0	nm	21800	68800	68.4	1870	0.4
PNR-5	8/20/2002 17:10	93.3	39.2	nm	6.30	323	394	1040	< 4	42600	3590	241	15.9	< 0.05	6.6	297	36.0	37.0	23700	69700	71.9	1570	0.3
PNR-5	11/6/2002 11:10	102.1	40.0	nm	6.37	325	397	1140	< 4	42800	3870	250	16.3	< 0.05	6.7	446	29.0	40.0	22800	68100	61.3	1730	0.3
PNR-5	3/4/2003 16:30	103.2	35.1	nm	6.60	320	391	1070	< 4	42100	3570	218	16.1	< 0.05	6.6	413	34.0	52.0	22100	67800	50.5	1880	0.3
PNR-5	5/28/2003 12:35	97.0	41.6	nm	6.39	329	401	1020	< 1	39600	3490	228	15.6	< 0.05	6.5	473	32.0	41.0	23000	69300	95.2	1480	0.4
PNR-5	8/13/2003 14:59	89.3	40.8	nm	6.64	328	400	1110	< 1	42000	3530	256	17.0	< 0.05	6.7	450	38.0	40.0	23100	69700	90.2	1170	0.4
PNR-5	11/4/2003 15:30	nm	37.4	nm	6.29	324	395	654	< 4	42200	2400	186	16.7	< 0.05	6.6	359	27.0	27.0	19300	68400	48.9	1200	0.4
PNR-5	3/17/2004 10:15	102.0	40.3	nm	6.42	327	399	1170	< 1	44300	3960	256	16.7	< 0.05	6.8	507	38.0	35.0	25000	68500	94.8	1170	0.3
PNR-5	6/9/2004 9:40	94.8	39.1	nm	6.59	311	379	1030	< 4	42900	3520	228	16.4	< 0.05	6.6	400	36.0	35.0	22400	65800	97.1	1720	0.4
PNR-5	9/14/2004 16:20	100.3	38.1	nm	7.68	330	403	1140	< 4	43400	3890	253	17.8	< 0.05	6.8	446	39.0	44.0	24000	69700	98.1	1590	0.3
PNR-5	11/17/2004 13:50	107.5	35.8	nm	6.58	300	366	1070	< 4	42800	3640	233	15.5	< 0.05	6.6	445	30.0	43.0	24300	67600	94.9	1560	0.3
PNR-5	3/2/2005 12:15	97.2	38.1	nm	6.41	326	398	1150	< 4	43700	3950	259	17.3	< 0.05	6.7	501	39.0	34.0	27200	67200	96.7	1590	0.4
PNR-5	5/25/2005 17:20	100.0	36.2	nm	6.26	278	339	1190	< 4	43100	4130	279	16.2	< 0.05	6.6	446	34.0	31.0	26400	68400	95.6	1910	0.4
PNR-5	8/17/2005 11:00	99.7	48.4	nm	6.26	315	385	1090	< 4	35400	3800	261	16.8	< 0.05	6.8	464	31.0	42.0	23300	65300	94.8	1300	0.4
PNR-5	11/16/2005 13:00	104.8	34.2	nm	6.81	273	334	1170	< 4	40900	4110	286	14.9	< 0.05	6.7	420	32.0	33.0	25500	58700	95.8	1330	0.3
PNR-5	2/9/2006 15:20	103.6	34.7	nm	6.56	317	387	1010	< 4	38500	3410	217	15.4	< 0.05	6.8	430	35.0	35.0	23000	59400	91.6	1400	0.3
PNR-5	5/25/2006 10:30	85.5	35.5	nm	6.53	321	392	990	< 4	37700	3380	220	18.0	< 0.05	7.4	382	37.0	34.0	23000	49400	89.0	1270	0.4
PNR-5	8/23/2006 15:40	87.2	36.1	nm	6.31	326	398	837	< 4	32900	2850	185	14.0	< 0.05	6.6	310	41.0	37.0	19900	56400	87.6	1090	0.4
PNR-5	12/7/2006 13:25	84.7	33.8	nm	6.27	380	464	796	< 4	32400	2740	182	15.2	< 0.05	6.8	332	37.0	37.0	19800	53100	83.8	1040	0.4
PNR-5	3/14/2007 14:14	92.9	33.2	nm	6.51	416	507	811	< 4	32800	2910	215	13.0	< 0.05	6.8	329	537.0	nm	20000	50800	79.8	892	0.4
PNR-5	10/5/2007 11:40	73.7	29.7	nm	6.11	495	604	684	< 4	27900	2440	177	13.0	< 0.05	6.8	278	37.0	34.0	17100	46400	73.1	913	0.4
PNR-5	3/27/2008 16:30	68.2	33.3	nm	6.90	652	796	482	< 4	23500	1710	124	9.5	< 0.05	6.8	228	39.0	39.0	14100	38300	61.2	689	0.5
PNR-5	10/27/2008 13:35	52.0	31.5	0.05	6.75	743	906	458	< 4	20300	1650	123	9.2	< 0.05	7.0	216	36.0	46.0	13200	32500	52.9	785	0.6
PNR-5	4/15/2009 14:20	44.7	31.1	0.17	6.79	850	1040	303	< 4	15900	1180	95	6.6	< 0.05	7.1	167	33.0	29.0	10400	25600	44.9	842	0.6
PNR-6	5/31/2000 0:00	1.2	9.4	nm	5.90	511	624	109	< 1	14	587	77	nm	0.06	8.0	6	nm	nm	75	849	1.2	229	nm
PNR-6	8/7/2001 9:55	1.7	10.4	nm	6.70	555	677	111	< 1	31	724	108	0.3	0.28	7.1	6	21.2	nm	124	1350	1.8	559	nm
PNR-6	8/15/2001 15:30	mnw	9.2	nm	7.60	534	652	126	< 1	30	835	126	0.2	0.25	7.3	7	23.0	nm	143	1280	1.7	530	nm
PNR-6	11/7/2001 8:55	0.8	7.8	nm	7.50	534	651	109	< 1	30	690	101	0.2	0.31	7.3	6	nm	35.8	117	1210	1.6	437	nm
PNR-6	2/19/2002 13:30	2.1	10.3	nm	7.22	481	587	151	< 4	49	966	143	0.3	0.49	7.0	7	40.6	nm	121	1740	2.3	869	nm
PNR-6	5/21/2002 12:15	2.4	11.7	nm	7.43	513	626	142	< 4	35	837	117	0.3	0.42	7.5	7	30.9	nm	123	1370	1.9	831	0.5

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC	Field Temp.	Field D.O.	Field pH	Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Hardness, Total as $CaCO_3$	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	Lab pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate	Flouride
		mS	°C	mg/L	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mS	mg/l	mg/l
PNR-6	8/19/2002 16:35	1.4	10.3	nm	7.10	514	627	112	< 4	23	710	104	0.5	0.30	7.4	5	22.5	43.5	91	1180	1.7	450	0.4
PNR-6	11/5/2002 11:25	1.3	9.3	nm	7.27	530	647	100	< 4	19	589	82	0.4	0.19	7.5	6	21.2	27.0	97	1000	1.5	341	0.5
PNR-6	3/4/2003 10:40	1.2	8.3	nm	6.79	530	646	94	< 4	31	567	81	0.3	0.12	7.6	6	21.9	30.3	120	897	1.3	276	0.5
PNR-6	5/13/2003 11:30	0.8	11.5	nm	7.78	545	665	94	< 4	16	573	82	0.2	0.16	7.2	7	21.3	51.8	99	918	1.4	265	0.6
PNR-6	8/13/2003 8:16	1.1	9.6	nm	7.99	521	635	95	< 1	16	594	86	0.3	0.26	7.4	6	22.0	42.8	95	955	1.4	323	0.5
PNR-6	11/4/2003 13:30	1.1	8.3	nm	7.13	535	652	100	< 4	26	643	95	0.2	0.27	7.6	7	23.1	40.1	114	1140	1.5	460	0.5
PNR-6	March 2004	Not Sampled																					
PNR-6	6/8/2004 10:20	mnw	10.3	nm	7.57	478	583	241	< 4	126	1990	337	< 0.1	2.47	7.4	10	22.2	32.2	283	3740	3.8	2180	0.5
PNR-6	9/14/2004 9:15	2.6	9.8	nm	7.55	535	653	155	< 4	56	1230	205	< 0.1	1.18	7.6	7	23.6	26.9	183	2240	2.7	1120	0.5
PNR-6	11/16/2004 10:17	2.3	9.6	nm	7.42	526	642	123	< 4	34	901	144	< 0.1	0.62	7.4	7	25.1	26.1	124	1370	1.9	605	0.5
PNR-6	2/28/2005 17:30	1.9	9.5	nm	7.08	541	660	136	< 4	31	865	128	0.2	0.39	7.3	7	23.8	26.6	96	1340	1.8	541	0.5
PNR-6	5/23/2005 18:00	1.4	9.9	nm	7.40	454	553	140	< 4	28	852	122	0.5	0.37	7.2	7	23.2	26.4	92	1320	1.7	501	0.5
PNR-6	8/16/2005 9:35	1.6	10.1	nm	7.19	535	653	139	< 4	27	856	124	0.3	0.34	7.5	6	21.7	1.1	94	1270	1.7	482	0.5
PNR-6	11/15/2005 10:00	1.6	7.6	nm	7.19	497	606	118	< 4	25	755	112	0.2	0.21	7.5	8	23.8	33.3	95	1190	1.7	487	1.0
PNR-6	2/7/2006 10:47	1.2	7.9	nm	7.23	558	681	104	< 4	17	651	95	0.3	0.11	7.1	7	40.3	215.0	97	993	1.5	332	0.5
PNR-6	5/23/2006 10:30	1.4	12.8	nm	7.29	520	635	108	< 4	20	655	93	0.3	0.16	8.0	7	44.7	115.0	103	924	1.5	330	0.5
PNR-6	8/22/2006 10:45	1.4	9.4	nm	7.26	506	618	88	< 4	12	557	82	0.3	0.09	7.2	7	22.9	27.4	93	820	1.3	214	0.5
PNR-6	12/5/2006 13:40	1.4	8.8	nm	7.11	509	621	91	< 4	16	594	89	0.2	0.11	7.2	6	22.7	30.5	99	914	1.5	274	0.5
PNR-6	3/14/2007 10:15	1.2	9.4	nm	6.96	503	613	97	< 4	14	596	86	0.4	0.17	7.5	6	25.8	nm	93	919	1.4	262	0.5
PNR-6	10/2/2007 18:55	2.6	10.9	nm	7.29	481	587	130	< 4	37	933	148	0.5	0.66	7.6	6	24.7	36.8	132	1520	2.2	701	0.5
PNR-6	3/26/2008 11:50	1.4	9.2	nm	7.09	505	616	95	< 4	19	616	92	0.4	0.21	7.5	5	22.5	27.2	91	948	1.5	315	0.5
PNR-6	10/22/2008 14:40	1.8	8.9	0.45	7.14	486	593	119	< 4	25	801	122	0.5	0.48	7.3	6	25.4	29.2	111	1210	1.7	489	0.5
PNR-6	4/17/2009 15:15	5.5	9.1	3.11	7.00	405	494	346	< 4	153	2950	506	< 0.1	3.62	7.4	12	24.9	29.0	420	4570	5.5	3310	0.4
PNR-7	5/31/2000 0:00	52.4	10.0	nm	6.60	343	418	2770	< 1	21700	15700	2130	nm	4.11	7.2	55	nm	nm	6800	35300	48.2	1540	nm
PNR-7	8/7/2001 17:20	53.1	9.6	nm	6.90	368	449	2460	< 1	23300	13800	1850	0.3	4.78	6.7	52	17.0	nm	6740	39300	49.4	1370	nm
PNR-7	8/15/2001 17:55	33.4	9.6	nm	7.00	347	423	2600	< 1	23000	15700	2220	0.4	3.86	6.9	57	19.9	nm	7910	40600	44.9	1590	nm
PNR-7	11/7/2001 11:50	or	8.9	nm	6.60	351	428	2630	< 1	22100	14600	1960	0.4	4.06	6.6	52	nm	20.2	7060	40600	34.7	1440	nm
PNR-7	2/19/2002 17:05	50.4	9.4	nm	6.49	351	429	2700	< 4	23700	14800	1960	0.3	4.19	6.7	57	17.0	nm	7550	36200	41.0	1390	nm
PNR-7	5/22/2002 13:10	57.7	9.5	nm	6.66	356	435	2490	< 4	23500	13900	1860	0.3	3.91	6.6	60	29.0	nm	7450	39800	45.1	1650	0.3
PNR-7	8/20/2002 15:07	49.8	10.9	nm	6.60	353	431	2510	< 4	23900	14400	1990	0.4	3.58	6.7	47	17.0	26.0	8200	42100	45.9	1460	0.3
PNR-7	11/5/2002 14:50	55.0	10.1	nm	6.72	356	434	2660	< 4	24100	14500	1900	0.4	3.87	6.8	57	14.0	19.0	7690	44500	37.4	1580	0.2
PNR-7	3/4/2003 15:05	51.6	9.1	nm	6.57	346	422	2600	< 4	22900	14200	1880	0.4	3.85	6.6	72	17.0	17.0	8650	39800	29.0	1500	0.3
PNR-7	May 2003	Not Sampled																					
PNR-7	8/12/2003 12:20	59.5	11.6	nm	6.35	354	432	2730	< 1	24300	3050	1950	0.3	3.23	6.5	69	20.0	18.0	8460	45100	56.0	964	< 0.1
PNR-7	11/4/2003 14:30	49.7	8.1	nm	6.31	359	438	2090	< 4	24900	11400	1490	0.4	3.58	6.8	55	14.0	22.0	6880	40200	23.7	1110	< 0.73
PNR-7	3/17/2004 17:10	48.5	12.7	nm	6.75	367	447	2870	< 1	25300	15400	2010	0.4	3.71	6.6	68	20.0	18.0	9040	41200	56.9	1100	0.2
PNR-7	6/8/2004 18:40	51.8	10.1	nm	6.75	367	448	2530	< 4	25800	13600	1770	0.4	3.73	6.6	69	18.0	23.0	8850	46400	60.0	1570	0.3
PNR-7	9/14/2004 18:00	57.2	10.2	nm	7.13	382	466	2630	< 4	25000	14100	1840	0.4	3.65	6.8	88	22.0	23.0	9390	46100	60.8	1350	0.3
PNR-7	11/17/2004 13:40	66.2	10.2	nm	6.91	365	446	2670	< 1	25500	14200	1830	0.4	3.85	6.6	71	21.0	20.0	9700	43000	61.3	1580	0.3
PNR-7	3/1/2005 17:30	53.8	9.6	nm	6.49	370	452	2560	< 4	25400	13700	1780	0.4	3.56	6.6	72	22.0	23.0	9940	42100	60.6	1450	0.3
PNR-7	5/25/2005 13:47	63.5	10.2	nm	6.42	345	421	2640	< 4	25300	14000	1800	0.4	3.77	6.6	49	17.0	16.0	10600	44100	59.7	1700	0.3
PNR-7	8/17/2005 10:52	62.7	10.6	nm	6.51	399	487	2840	< 4	26100	15100	1940	0.4	3.59	6.7	71	18.0	22.0	10500	45400	61.9	1590	0.2
PNR-7	11/16/2005 14:00	66.7	8.4	nm	6.77	350	427	2800	< 4	26800	14900	1920	0.4	3.57	6.8	66	25.0	25.0	10700	43300	63.0	1480	0.3
PNR-7	2/9/2006 14:15	60.2	8.0	nm	6.83	395	482	2840	< 4	25100	14600	1820	0.5	3.70	6.8	98	18.0	19.0	11000	41200	61.9	1450	0.2
PNR-7	5/24/2006 16:10	50.2	10.2	nm	6.56	384	468	2560	< 4	26200	13600	1750	0.5	3.61	7.3	76	18.0	20.0	11500	42300	62.9	1470	0.2
PNR-7	8/24/2006 10:24	52.4	9.2	nm	6.59	363	442	2520	< 4	26600	13200	1660	0.4	3.69	6.5	67	22.0	22.0	10800	44400	66.1	1450	0.2
PNR-7	12/8/2006 10:15	64.1	8.6	nm	6.71	369	450	2460	< 4	23800	12600	1580	0.5	3.44	6.7	57	19.0	21.0	10400	43100	66.7	1410	0.2
PNR-7	3/15/2007 12:15	60.5	8.7	nm	6.65	371	452	2670	< 4	27600	13900	1750	0.5	3.39	6.5	105	194.0	nm	11700	45400	66.3	1350	< 0.1
PNR-7	10/4/2007 19:00	65.5	8.9	nm	6.35	372	453	2560	< 4	26500	13100	1630	0.5	3.80	6.4	72	19.0	24.0	11000	45400	70.1	1510	0.2
PNR-7	3/28/2008 10:30	69.5	8.9	nm	6.37	381	465	2600	< 4	27200	13100	1630	0.6	3.69	6.6	66	20.0	20.0	11300	42100	63.7	2600	0.2
PNR-7	10/25/2008 17:30	70.4	8.7	0.25	6.50	380	464	2790	< 4	29200	14300	1770	0.5	3.35	6.7	57	17.0	26.0	12300	45200	66.7	1630	0.2
PNR-7	4/15/2009 17:15	65.4	8.9	0.93	6.36	380	464	2400	< 4	26700	12100	1490	0.5	3.31	6.8	65	9.0	7.0	11800	45500	66.6	1430	0.2
PNR-8	5/31/2000 0:00	5.6	9.7	nm	5.60	464	566	272	< 1	380	1500	200	nm	< 0.05	7.8	12	nm	nm	420	2350	4.1	738	nm
PNR-8	8/7/2001 13:50	4.3	9.9	nm	7.50	459	560	266	< 1	764	1470	196	0.4	< 0.05	7.1	10	20.7	nm	406	3460	4.4	1210	nm
PNR-8	8/16/2001 18:10	4.6	10.0	nm	7.50	<1	<1	254	< 1	647	1420	191	0.3	< 0.05	2.3	8	26.1	nm	406	4460	12.8	2990	nm
PNR-8	11/6/2001 16:30	or	7.8	nm	7.10	457	557	327	< 1	1020	1820	243	0.4	0.18	7.2	14	nm	31.3	480	3940	5.0	1150	nm
PNR-8	2/22/2002 16:00	5.9	11.5	nm	7.58	489	596	307	< 4	888	1680	222	0.3	< 0.05	7.2	15	462.0	nm	481	3640	4.9	1180	nm
PNR-8	5/21/2002 17:45	5.8	9.0	nm	7.34	424	517	290	< 4	1310	1610	215	0.3	0.08	7.4	12	159.0	nm	463	4020	5.6	1190	0.4
PNR-8	8/21/2002 10:10	4.2	10.3	nm	7.30	404	492	320	< 4	1160	1810	246	0.5	0.08	7.3	11	20.0	140.0	435	4240	5.8	1290	0.4
PNR-8	11/5/2002 15:25	5.4	10.3	nm	7.15	445	543	340	< 4	1140	1850	242	0.4	< 0.05	7.2	12	21.0	294.0	485	3880	5.6	1260	0.3
PNR-8	3/4/2003 12:10	5.0	9.9	nm	7.58	433	529	336	< 4	1170	1860	247	0.3	< 0.05	7.1	13	22.0	95.0	528	3960	5.5	1280	0.3
PNR-8	5/13/2003 17:00	6.1	10.4	nm	7.22	445	543	350	< 4	1090	1920	254	0.4	0.14	7.2	13	21.0	181.0	552	3910	5.2	1150	0.3
PNR-8	8/12/2003 9:46	4.2	10.6	nm	7.18	445	543	367	< 1	1170	2020	268	0.3	< 0.05	7.1	12	23.0	80.0	584	4640	5.7	1090	0.3
PNR-8	11/4/2003 12:00	3.9	8.0	nm	5.62	462	564	321	< 4	1060	1770	234	0.4	< 0.05	7.4	12	23.5	31.8	452	3700	4.7	1190	0.3
PNR-8	3/18/2004 11:30	7.8	9.9	nm	7.25	465	567	348	< 1	1120	1930	258	0.3	0.06	7.2	12	25.7	64.3	491	3890	5.0	1060	0.3
PNR-8	6/8/2004 18:40	5.2	10.5	nm	7.35	469	572	352	< 4	1240	1940	256	0.5	0.06	7.3	13	18.8	25.8	530	4250	5.7	1240	0.4

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC	Field Temp.	Field D.O.	Field pH	Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Hardness, Total as $CaCO_3$	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	Lab pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate	Flouride
		mS	°C	mg/L	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mS	mg/l	mg/l
PNR-8	9/14/2004 17:05	4.5	12.1	nm	7.70	440	537	360	< 4	1070	1960	256	0.5	0.06	7.3	13	23.7	38.1	514	4120	5.7	1080	0.3
PNR-8	11/16/2004 16:15	6.3	12.6	nm	7.15	448	547	375	< 4	1230	2020	264	0.4	0.08	7.2	14	25.2	48.8	527	4130	5.9	1160	0.3
PNR-8	3/2/2005 15:30	5.6	9.2	nm	7.27	474	579	383	< 4	1400	2150	290	0.5	< 0.05	7.3	17	25.5	35.1	650	4390	6.2	1210	0.4
PNR-8	5/26/2005 10:46	5.9	10.5	nm	7.19	391	477	433	< 4	1540	2390	319	0.5	< 0.05	7.2	11	25.7	67.5	681	4820	6.5	1150	0.4
PNR-8	8/18/2005 11:50	6.3	12.4	nm	7.45	287	350	400	< 4	1420	2230	299	0.4	< 0.05	7.3	12	20.1	47.8	594	4600	6.4	1170	0.4
PNR-8	11/17/2005 9:45	7.3	9.5	nm	6.96	412	503	449	< 4	1610	2510	337	0.4	< 0.05	7.2	12	24.2	70.1	703	4530	6.8	1180	0.3
PNR-8	2/9/2006 9:45	6.8	9.9	nm	7.68	465	568	417	< 4	1590	2310	309	0.5	< 0.05	7.3	16	24.7	63.3	707	4780	7.0	1180	0.3
PNR-8	5/24/2006 17:50	5.3	9.8	nm	7.11	451	551	424	< 4	1630	2340	312	0.5	< 0.05	7.9	16	23.4	40.8	664	4230	6.9	1200	0.3
PNR-8	8/24/2006 12:30	7.8	10.1	nm	7.22	422	515	434	< 4	1620	2410	322	0.5	0.14	7.0	16	21.8	61.7	724	4960	7.3	1170	0.3
PNR-8	12/7/2006 11:30	7.0	8.5	nm	7.31	419	512	435	< 4	1810	2450	331	0.4	< 0.05	7.2	15	23.6	89.0	763	5130	7.9	1170	0.3
PNR-8	3/14/2007 13:25	7.8	9.4	nm	7.23	427	520	495	< 4	2210	2760	369	0.5	0.20	7.1	19	36.3	nm	899	5430	8.3	1070	0.3
PNR-8	10/4/2007 14:35	9.0	10.7	nm	6.98	423	517	461	< 4	1970	2570	345	0.5	0.36	7.1	15	23.0	40.6	810	5370	8.5	1200	0.3
PNR-8	3/28/2008 11:30	7.3	9.2	nm	7.02	421	513	502	< 4	2270	2800	375	0.5	0.18	7.2	15	23.0	38.2	953	5700	8.8	1150	0.3
PNR-8	10/27/2008 16:15	9.0	9.6	0.99	7.08	432	527	450	< 4	1610	2490	332	0.6	0.08	7.2	14	26.6	29.5	740	5050	7.2	1130	0.3
PNR-8	4/16/2009 14:15	7.0	9.0	1.62	6.90	407	496	439	< 4	1520	2490	338	0.5	< 0.05	7.1	16	23.1	23.0	680	4370	7.3	1260	0.3
PNR-9	6/1/2000 0:00	9.7	11.4	nm	9.10	263	321	583	< 1	3060	2920	355	nm	< 0.05	7.3	16	nm	nm	887	5700	9.3	609	nm
PNR-9	8/9/2001 9:35	10.1	10.5	nm	7.40	305	372	637	< 1	3360	3150	378	1.6	< 0.05	7.1	18	17.3	nm	985	7940	9.7	760	nm
PNR-9	8/16/2001 13:45	mnw	10.9	nm	7.60	274	334	663	< 1	3620	3350	412	1.2	< 0.05	7.2	17	15.8	nm	1050	8020	9.9	639	nm
PNR-9	11/7/2001 14:30	4.5	9.4	nm	7.70	263	321	691	< 1	3640	3450	420	1.7	< 0.05	7.0	20	nm	29.2	1060	7630	10.3	740	nm
PNR-9	2/20/2002 14:50	10.2	10.7	nm	7.24	281	343	689	< 4	3700	3420	413	1.8	< 0.05	6.8	30	32.0	nm	1110	7300	11.7	629	nm
PNR-9	5/22/2002 10:15	11.9	12.6	nm	7.32	274	334	607	< 4	4330	3060	375	1.8	< 0.05	7.0	18	25.0	nm	1030	8580	11.3	510	0.2
PNR-9	8/20/2002 16:20	11.1	12.7	nm	7.20	251	306	670	< 4	4060	3460	434	1.8	< 0.05	7.0	16	15.0	24.0	1000	9120	11.9	690	0.2
PNR-9	11/5/2002 14:05	11.5	10.9	nm	7.50	270	330	704	< 4	4000	3470	417	1.9	< 0.05	7.1	18	14.0	25.0	1030	8340	12.1	757	0.2
PNR-9	3/4/2003 16:00	11.2	9.3	nm	7.37	252	308	756	< 4	3920	3620	421	1.9	< 0.05	6.8	20	16.0	36.0	1110	7880	12.8	720	0.2
PNR-9	5/27/2003 18:15	10.5	12.7	nm	7.16	271	330	735	< 1	3790	3620	434	1.8	< 0.05	6.9	19	16.0	54.0	1070	8530	13.0	711	0.2
PNR-9	8/13/2003 10:35	11.7	14.9	nm	7.82	257	314	718	< 1	4580	3530	421	1.9	< 0.05	6.8	19	16.0	22.0	1110	8850	10.9	571	0.2
PNR-9	11/4/2003 14:35	10.1	10.0	nm	6.93	262	319	696	< 4	4700	3720	480	1.9	< 0.05	7.0	21	15.0	22.0	1210	8280	11.6	663	0.2
PNR-9	March 2004	Not Sampled																					
PNR-9	6/8/2004 13:35	mnw	11.5	nm	7.56	1030	1260	783	< 4	4340	3880	467	2.1	< 0.05	7.1	20	16.3	19.1	1350	9660	12.2	842	0.2
PNR-9	9/14/2004 11:00	12.0	11.3	nm	7.67	276	337	835	< 4	4210	4070	483	2.3	< 0.05	7.0	20	17.5	21.4	1220	10600	13.3	752	0.3
PNR-9	11/16/2004 16:12	17.3	10.0	nm	7.36	254	310	848	< 4	4480	4110	465	2.1	< 0.05	6.9	23	18.8	19.9	1270	9140	13.6	769	0.3
PNR-9	3/1/2005 12:10	13.0	9.3	nm	7.33	280	341	827	< 4	4450	4080	490	2.1	< 0.05	7.1	24	19.0	19.0	1430	9590	13.4	767	0.2
PNR-9	5/24/2005 17:25	13.8	10.2	nm	7.23	237	289	886	< 4	4580	4390	528	2.2	< 0.05	7.0	19	21.6	21.7	1490	10200	13.6	908	0.3
PNR-9	8/16/2005 12:00	13.6	9.9	nm	7.27	274	334	852	< 4	4540	4190	502	2.1	< 0.05	7.1	16	17.4	17.4	1300	10300	13.9	779	0.3
PNR-9	11/15/2005 15:55	14.5	10.1	nm	7.28	250	305	930	< 4	4600	4620	557	2.1	< 0.05	7.2	20	18.1	21.2	1550	9990	14.2	766	0.1
PNR-9	2/8/2006 12:00	14.2	8.2	nm	7.54	263	320	925	< 4	4490	4540	542	2.2	< 0.05	7.1	25	19.5	20.7	1550	8850	14.2	761	0.2
PNR-9	5/23/2006 13:15	12.0	10.0	nm	7.32	252	307	863	< 4	4990	4260	511	2.3	< 0.05	7.4	24	18.0	22.0	1520	9800	14.5	831	0.2
PNR-9	8/23/2006 9:40	16.1	10.2	nm	7.29	246	300	904	< 4	4760	4480	539	2.2	< 0.05	6.8	22	19.0	20.4	1550	10800	15.1	823	0.2
PNR-9	12/6/2006 15:00	14.1	9.1	nm	7.47	253	308	895	< 4	4620	4420	530	2.5	< 0.05	7.0	23	17.3	23.2	1600	10000	15.2	855	0.2
PNR-9	3/13/2007 16:35	14.5	9.5	nm	7.24	247	302	890	< 4	4570	4360	520	2.5	< 0.05	6.9	29	80.0	nm	1590	10700	15.3	699	0.2
PNR-9	10/4/2007 10:40	18.2	10.7	nm	7.20	248	303	919	< 4	5200	4510	539	3.0	< 0.05	6.8	21	17.0	51.0	1670	11300	16.2	889	0.2
PNR-9	3/27/2008 13:40	15.1	9.5	nm	7.13	260	318	869	< 4	5040	4230	501	2.3	< 0.05	7.0	18	18.0	19.6	1640	9620	15.3	860	0.2
PNR-9	10/23/2008 17:00	15.7	9.6	0.30	7.24	256	312	947	< 4	5110	4640	553	2.6	< 0.05	7.0	18	17.0	23.1	1720	10400	15.7	939	0.2
PNR-9	4/18/2009 16:20	16.1	10.4	0.41	6.96	256	312	847	< 4	4720	4140	491	2.5	< 0.05	6.9	22	15.4	17.0	1620	9710	15.7	909	0.2
PNR-10	6/1/2000 0:00	3.2	10.5	nm	8.90	528	645	208	< 1	147	978	111	nm	< 0.05	7.6	8	nm	nm	435	2480	3.1	1210	nm
PNR-10	8/8/2001 18:50	3.7	11.4	nm	7.40	571	697	230	< 1	245	1090	127	1.2	< 0.05	7.2	8	24.3	nm	449	2890	3.5	1260	nm
PNR-10	8/16/2001 13:15	mnw	11.3	nm	7.70	550	672	229	< 1	263	1100	128	1.2	< 0.05	7.2	8	28.3	nm	482	2900	3.5	1320	nm
PNR-10	11/7/2001 12:30	nm'	9.4	nm	nm	528	644	217	< 1	196	1040	121	1.2	0.08	7.4	10	nm	38.9	443	2690	3.2	1220	nm
PNR-10	2/20/2002 13:38	2.4	10.3	nm	7.27	578	705	230	< 4	304	1110	131	1.2	< 0.05	7.0	8	30.1	nm	448	2920	3.9	1340	nm
PNR-10	5/21/2002 13:35	3.8	11.6	nm	7.31	535	653	214	< 4	415	1040	124	1.3	< 0.05	7.2	8	30.6	nm	430	2810	3.8	1680	0.2
PNR-10	8/20/2002 12:20	3.4	13.1	nm	7.20	512	624	230	< 4	351	1150	139	1.3	0.07	7.2	7	23.4	31.2	407	3090	4.0	1350	0.3
PNR-10	11/5/2002 13:30	3.9	11.0	nm	7.47	524	639	263	< 4	384	1250	145	1.4	< 0.05	7.2	11	24.0	30.7	581	3130	4.1	1380	0.3
PNR-10	3/4/2003 16:50	3.8	9.2	nm	7.34	540	658	268	< 4	426	1270	150	1.3	< 0.05	7.0	9	23.8	51.9	470	3180	4.3	1340	0.3
PNR-10	5/27/2003 17:45	3.6	12.4	nm	7.30	516	630	268	< 1	434	1310	155	1.2	< 0.05	7.1	9	24.8	29.2	476	3230	4.4	1350	0.3
PNR-10	8/13/2003 10:00	3.9	13.3	nm	7.97	512	624	263	< 1	457	1270	149	1.2	< 0.05	6.9	9	24.1	45.0	444	3270	4.2	1340	0.3
PNR-10	11/4/2003 13:45	3.6	10.2	nm	7.87	512	624	240	< 4	512	1270	162	1.4	< 0.05	7.2	9	24.5	28.3	468	3310	3.9	1420	0.3
PNR-10	March 2004	Not Sampled																					
PNR-10	6/8/2004 14:10	mnw	11.5	nm	7.51	493	602	284	< 4	561	1410	170	1.4	< 0.05	7.2	9	23.9	56.0	524	3390	4.2	1410	0.3
PNR-10	9/14/2004 11:40	4.0	11.5	nm	7.51	519	633	300	< 4	607	1490	180	1.8	< 0.05	7.2	10	25.6	31.0	508	3510	4.6	1350	0.3
PNR-10	11/16/2004 11:28	5.7	10.6	nm	7.30	504	615	316	< 4	602	1540	181	1.5	< 0.05	7.2	10	26.2	29.1	502	3430	4.6	1360	0.3
PNR-10	3/1/2005 11:06	4.5	9.6	nm	7.28	524	640	315	< 4	653	1570	191	1.4	< 0.05	7.1	12	26.7	28.3	571	3560	4.7	1370	0.3
PNR-10	5/24/2005 15:50	4.8	10.8	nm	7.16	442	540	300	< 4	645	1500	181	1.6	< 0.05	7.2	11	25.4	25.3	556	3610	4.8	1260	0.3
PNR-10	8/16/2005 10:48	4.6	9.9	nm	7.17	522	637	327	< 4	688	1630	197	1.4	< 0.05	7.2	7	25.2	26.4	495	3660	4.9	1360	0.3
PNR-10	11/15/2005 11:45	4.9	8.9	nm	6.35	460	561	356	< 4	758	1800	220	1.4	< 0.05	7.2	8	25.9	28.0	585	3730	5.1	1400	0.2
PNR-10	2/7/2006 14:00	4.6	10.2	nm	7.22	498	607	355	< 4	708	1740	208	1.5	< 0.05	7.1	11	27.9	29.4	582	3730	5.1	1300	0.3
PNR-10	5/23/2006 12:15	4.2	10.0	nm	7.23	480	585	352	< 4	834	1740	209	1.7	< 0.05	7.8	11	26.7	32.2	597	3790	5.1	1430	0.2

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
PNR-10	8/23/2006 10:35	5.6	10.1	nm	7.20	452	551	354	< 4	811	1740	208	1.5	< 0.05	7.0	11	26.8	29.6	598	3820	5.5	1370	0.2
PNR-10	12/6/2006 14:30	5.3	9.2	nm	7.40	458	559	366	< 4	790	1770	208	1.8	< 0.05	7.0	12	27.2	29.6	633	3890	14.9	1340	0.2
PNR-10	3/13/2007 15:20	5.3	9.8	nm	7.26	450	550	376	< 4	922	1870	225	1.9	< 0.05	7.1	11	40.9	nm	620	4050	5.6	1390	0.2
PNR-10	10/3/2007 16:30	5.8	10.1	nm	7.08	442	540	368	< 4	984	1840	225	1.7	< 0.05	7.0	10	26.1	32.2	612	4130	6.1	1400	0.2
PNR-10	3/27/2008 11:45	5.9	9.7	nm	7.08	446	545	375	< 4	1090	1880	230	1.6	< 0.05	7.1	9	26.6	29.1	629	4300	6.0	1410	0.2
PNR-10	10/23/2008 14:20	6.1	9.9	0.38	7.15	439	536	394	< 4	1010	1970	241	2.0	< 0.05	7.1	10	25.8	29.4	655	4190	5.9	1460	0.2
PNR-10	4/18/2009 14:05	6.4	9.9	0.23	6.90	423	516	415	< 4	1060	2090	256	2.0	< 0.05	7.1	12	25.5	28.0	676	3910	6.3	1390	0.2
PNR-12	5/31/2000 0:00	4.5	12.1	nm	6.00	699	853	425	< 1	78	2410	328	nm	95.70	7.6	17	nm	nm	362	1020	4.6	2030	nm
PNR-12	8/8/2001 15:00	4.9	12.8	nm	7.30	537	655	421	< 1	74	2390	325	0.3	139.00	7.3	15	19.1	nm	397	4720	4.8	2130	nm
PNR-12	8/15/2001 16:00	mnw	13.4	nm	7.40	738	900	444	< 1	72	2570	356	0.3	138.00	7.3	16	21.1	nm	381	4610	4.6	2050	nm
PNR-12	11/6/2001 16:20	4.1	10.0	nm	7.70	739	901	425	< 1	72	2430	333	0.4	105.00	7.2	15	nm	64.5	336	4590	4.7	2040	nm
PNR-12	2/20/2002 11:55	4.6	10.8	nm	7.14	735	897	375	< 4	67	2370	349	0.2	145.00	7.2	14	36.0	nm	373	4700	5.1	2170	nm
PNR-12	5/21/2002 11:00	4.9	14.0	nm	7.22	666	812	409	< 4	56	2360	324	< 0.1	142.00	7.3	12	22.0	nm	342	4630	5.1	2250	0.2
PNR-12	8/19/2002 16:05	4.6	12.3	nm	8.80	744	908	328	< 4	68	2070	304	1.1	82.90	7.4	11	20.5	88.4	298	3990	4.5	1830	0.3
PNR-12	11/5/2002 11:15	4.8	11.0	nm	7.31	700	854	442	< 4	76	2470	331	< 0.1	130.00	7.2	12	19.0	69.0	328	4660	5.1	2200	0.2
PNR-12	3/4/2003 13:10	4.6	9.6	nm	7.53	684	834	407	< 4	148	2420	340	< 0.1	128.00	7.2	15	19.0	139.0	361	4590	4.8	2200	0.2
PNR-12	5/27/2003 17:00	4.3	13.5	nm	7.46	656	801	393	< 1	80	2280	316	< 0.1	112.00	7.2	13	17.0	181.0	323	4540	5.3	2200	0.3
PNR-12	8/13/2003 8:05	4.0	15.6	nm	8.21	685	835	415	< 1	58	2440	341	< 0.1	133.00	7.1	11	19.9	33.1	314	4600	4.9	2180	0.2
PNR-12	11/4/2003 12:35	3.3	10.2	nm	5.38	681	831	370	< 4	64	2380	354	< 0.1	135.00	7.2	12	20.6	46.8	331	4590	4.4	2240	0.2
PNR-12	March 2004	Not Sampled																					
PNR-12	6/8/2004 9:15	mnw	12.9	nm	7.27	691	843	402	< 4	72	2410	342	< 0.1	337.00	7.2	11	19.4	33.8	389	4540	4.6	2120	0.3
PNR-12	9/14/2004 10:00	4.5	12.9	nm	7.43	695	847	424	< 4	75	2540	359	< 0.1	104.00	7.1	12	21.0	17.1	345	4580	4.9	2080	0.2
PNR-12	11/16/2004 9:35	6.1	10.2	nm	7.12	649	792	453	< 4	70	2640	366	< 0.1	135.00	7.4	12	21.8	33.8	340	4550	5.0	2100	0.3
PNR-12	2/28/2005 17:10	4.5	9.5	nm	7.09	697	850	416	< 4	66	2530	363	< 0.1	126.00	7.1	12	21.8	25.4	361	4620	4.9	2100	0.3
PNR-12	5/23/2005 18:50	4.8	10.3	nm	6.94	586	716	404	< 4	65	2420	342	< 0.1	130.00	6.9	11	20.4	24.1	354	4540	4.8	1980	0.3
PNR-12	8/15/2005 6:00	4.7	10.3	nm	6.95	687	838	440	< 4	63	2630	372	< 0.1	163.00	7.2	9	21.7	20.9	335	4600	4.9	2060	0.2
PNR-12	11/15/2005 9:45	4.8	9.7	nm	7.08	617	752	444	< 4	71	2690	384	< 0.1	155.00	7.1	9	20.3	38.5	376	4520	5.0	2170	0.2
PNR-12	2/7/2006 13:00	4.7	10.3	nm	6.97	669	816	435	< 4	66	2670	385	< 0.1	204.00	7.0	11	22.8	27.6	374	4550	5.0	2100	0.2
PNR-12	5/23/2006 10:50	4.3	10.4	nm	7.00	645	787	445	< 4	72	2710	388	< 0.1	197.00	7.9	11	21.9	26.1	376	4400	5.0	2200	0.2
PNR-12	8/22/2006 16:10	4.1	10.5	nm	7.02	609	743	436	< 4	68	2660	381	< 0.1	185.00	6.9	11	22.3	32.1	361	4540	5.1	2070	0.2
PNR-12	12/5/2006 15:45	5.0	9.5	nm	6.92	615	750	450	< 4	69	2650	370	< 0.1	187.00	7.0	11	22.1	30.1	361	4700	5.3	2120	0.2
PNR-12	3/14/2007 12:15	4.6	9.9	nm	6.74	615	751	451	< 4	71	2690	380	< 0.1	202.00	7.2	13	37.4	nm	367	4710	5.2	1970	0.2
PNR-12	10/3/2007 13:00	5.9	11.3	nm	7.15	587	716	409	< 4	63	2460	349	< 0.1	144.00	7.3	8	22.0	45.3	321	4450	5.2	2060	0.2
PNR-12	3/26/2008 10:45	4.9	9.7	nm	6.84	540	659	415	< 4	58	2500	355	< 0.1	166.00	7.1	9	21.5	22.2	333	4450	4.9	2100	0.2
PNR-12	10/23/2008 10:40	4.7	9.8	1.33	7.06	602	735	429	< 4	68	2580	366	< 0.1	125.00	7.1	9	22.3	36.4	360	4440	4.9	2110	0.2
PNR-12	4/20/2009 18:10	5.0	10.0	0.55	6.80	606	739	415	< 4	58	2490	354	< 0.1	157.00	7.1	10	21.5	23.0	336	3860	4.9	2100	0.2
PNR-13	8/15/2001 18:15	21.3	14.5	nm	7.50	372	453	1050	< 1	12300	4870	546	6.0	1.12	7.3	31	18.9	nm	6050	22200	27.3	862	nm
PNR-13	8/15/2001 19:00	21.3	14.5	nm	7.50	375	457	984	< 1	11500	4480	492	5.1	1.46	7.2	42	20.1	nm	5710	21200	25.6	841	nm
PNR-13	11/7/2001 13:35	or	9.4	nm	7.40	424	517	529	< 1	3420	2540	296	2.1	0.37	7.1	26	nm	26.4	1610	7780	10.9	1360	nm
PNR-13	2/19/2002 16:30	7.7	9.5	nm	7.09	559	682	474	< 4	2220	2310	273	1.2	< 0.05	7.0	17	32.0	nm	1250	6720	9.4	1810	nm
PNR-13	5/22/2002 14:00	6.8	11.0	nm	7.20	508	619	418	< 4	1040	2070	249	1.2	< 0.05	7.4	14	29.0	nm	680	5120	6.3	2270	0.3
PNR-13	8/20/2002 15:45	4.4	13.3	nm	6.90	444	541	408	< 4	679	2080	257	1.4	< 0.05	7.2	12	24.0	30.0	588	4530	5.6	2000	0.4
PNR-13	11/5/2002 15:30	4.9	9.9	nm	7.09	511	623	386	< 4	769	1900	227	1.3	< 0.05	7.2	14	22.0	30.0	493	4110	5.3	1730	0.4
PNR-13	3/4/2003 11:15	4.4	9.3	nm	7.48	485	592	384	< 4	592	1880	224	1.2	< 0.05	7.1	11	22.9	37.0	437	3950	4.7	1810	0.4
PNR-13	5/28/2003 10:05	4.6	12.2	nm	7.10	501	612	386	< 1	517	1910	230	1.1	< 0.05	7.2	14	24.0	28.0	471	3940	5.1	1770	0.5
PNR-13	8/13/2003 10:20	3.4	11.1	nm	7.37	518	632	305	< 1	690	1550	193	1.1	< 0.05	7.1	11	23.3	29.3	374	3570	4.3	1180	0.3
PNR-13	11/4/2003 14:15	6.8	10.1	nm	7.27	541	661	322	< 4	1200	1720	223	1.5	< 0.05	7.2	14	23.7	26.0	772	4630	5.6	1600	0.4
PNR-13	March 2004	Not Sampled																					
PNR-13	6/8/2004 15:30	3.7	11.0	nm	7.37	560	683	316	< 4	860	1620	201	1.6	< 0.05	7.1	11	23.1	27.4	667	4190	5.6	1580	0.4
PNR-13	9/14/2004 10:00	3.6	11.1	nm	7.67	542	662	307	< 4	565	1550	190	1.4	0.05	7.2	11	25.8	25.9	350	3150	4.1	1180	0.4
PNR-13	11/16/2004 15:30	4.9	12.9	nm	7.13	532	649	326	< 4	624	1650	202	1.3	< 0.05	7.2	13	25.2	30.8	520	3480	4.7	1360	0.4
PNR-13	3/1/2005 13:25	3.8	10.0	nm	7.16	537	655	308	< 4	447	1570	196	1.1	< 0.05	7.1	12	27.0	28.1	370	3110	3.9	1270	0.4
PNR-13	5/24/2005 12:00	4.6	11.4	nm	7.08	476	581	292	< 4	470	1510	189	1.3	< 0.05	7.1	12	24.0	29.7	488	3610	4.5	1410	0.4
PNR-13	8/17/2005 9:40	4.1	14.4	nm	7.01	489	597	303	< 4	541	1550	193	1.2	0.39	7.3	9	25.5	62.6	383	3440	4.5	1330	0.4
PNR-13	11/16/2005 10:50	4.8	9.7	nm	6.68	507	618	337	< 4	500	1780	227	1.2	< 0.05	7.3	10	26.8	55.3	565	3840	4.7	1690	0.3
PNR-13	2/8/2006 10:40	5.0	9.3	nm	7.32	539	657	321	< 4	410	1690	216	1.3	< 0.05	7.3	11	27.9	29.0	535	3750	4.6	1620	0.3
PNR-13	5/24/2006 13:15	3.1	16.5	nm	7.08	510	623	318	< 4	385	1680	215	1.2	< 0.05	7.9	11	27.7	31.1	480	3240	4.3	1630	0.3
PNR-13	8/22/2006 14:25	4.3	11.8	nm	7.15	502	612	325	< 4	437	1760	231	1.3	< 0.05	7.0	11	24.9	29.1	620	3880	5.1	1770	0.3
PNR-13	12/6/2006 11:30	5.0	7.0	nm	7.40	508	619	334	< 4	769	1800	235	1.4	< 0.05	7.3	11	23.8	29.6	723	4430	6.1	1780	0.3
PNR-13	3/14/2007 16:20	3.8	9.4	nm	7.37	504	615	318	< 4	407	1700	220	1.5	< 0.05	7.2	10	37.8	nm	546	3790	4.8	1670	0.3
PNR-13	10/7/2008 17:30	4.1	10.2	nm	7.02	499	608	308	< 4	347	1630	210	1.2	< 0.05	7.2	9	25.6	36.5	495	3750	4.8	1740	0.3
PNR-13	3/27/2008 15:00	4.1	9.7	nm	7.05	485	592	313	< 4	319	1630	206	1.2	< 0.05	6.9	10	27.3	30.0	423	3430	4.2	1630	0.3
PNR-13	10/25/2008 14:30	4.0	9.7	0.93	7.17	486	593	309	< 4	306	1640	211	1.5	< 0.05	7.3	9	25.8	40.0	455	3490	4.3	1720	0.4
PNR-13	4/18/2009 17:55	4.0	11.8	0.62	6.90	462	564	328	< 4	235	1690	213	1.3	< 0.05	7.3	11	25.5	37.0	423	3080	4.3	1720	0.4
PNR-14	8/9/2001 16:00	96.6	42.6	nm	6.40	321	391	1390	< 1	44200	5110	397	23.8	< 0.05	6.5	327	30.7	nm	23100	70000	80.5	1460	nm

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
PNR-14	8/14/2001 9:45	96.9	39.7	nm	6.60	294	358	1430	< 1	44300	5190	394	24.0	< 0.05	6.6	310	30.8	nm	23200	69700	74.3	1330	nm
PNR-14	11/7/2001 14:35	or	45.6	nm	6.40	340	415	1690	< 1	40900	6370	519	28.1	< 0.05	6.3	170	nm	37.3	22200	67400	51.1	1490	nm
PNR-14	2/21/2002 11:30	91.4	41.2	nm	6.09	372	454	1570	< 4	43100	5910	483	29.8	< 0.05	6.6	249	25.0	nm	22700	64200	60.4	1300	nm
PNR-14	5/22/2002 12:05	90.2	42.5	nm	6.26	338	412	1260	< 4	39700	4630	358	22.2	< 0.05	6.4	262	42.0	nm	22000	67200	66.7	1730	0.4
PNR-14	8/20/2002 17:45	87.8	40.0	nm	6.10	325	397	1250	< 4	39900	4800	407	18.5	< 0.05	6.5	133	30.0	29.0	21200	66300	68.5	1510	0.3
PNR-14	11/6/2002 11:28	105.5	40.9	nm	6.30	295	360	1410	< 4	35300	5210	412	18.4	< 0.05	6.6	368	22.0	33.0	21500	65400	57.5	1590	0.3
PNR-14	3/4/2003 17:15	91.8	35.7	nm	6.42	281	343	1390	< 4	40200	5050	384	17.5	< 0.05	6.4	355	29.0	42.0	20800	65200	47.4	1650	0.3
PNR-14	5/28/2003 11:45	64.7	40.2	nm	6.44	314	383	1280	< 1	33300	4940	426	15.1	< 0.05	6.5	343	29.0	30.0	19300	60600	84.1	1460	0.3
PNR-14	8/13/2003 15:43	78.2	39.7	nm	6.36	306	373	1300	< 1	37400	4860	394	17.0	< 0.05	6.4	370	30.0	31.0	20700	62800	82.2	1030	0.3
PNR-14	11/5/2003 11:45	83.3	38.5	nm	5.79	331	404	1170	< 4	26400	5370	596	6.3	< 0.05	6.5	214	39.0	46.0	12400	43300	31.0	1210	0.4
PNR-14	3/17/2004 10:45	96.8	38.8	nm	6.05	377	460	1110	< 1	30300	4400	397	12.7	< 0.05	6.7	314	35.0	32.0	16800	49300	70.4	1080	0.4
PNR-14	6/9/2004 10:40	66.4	38.2	nm	6.62	384	469	827	< 4	28100	3230	283	11.8	< 0.05	6.6	241	27.0	30.0	14500	45500	68.5	1400	0.4
PNR-14	9/14/2004 15:35	62.5	36.4	nm	7.80	412	503	748	< 4	25000	3000	275	11.1	< 0.05	6.8	263	34.0	34.0	13800	39800	60.0	1300	0.4
PNR-14	11/17/2004 15:30	65.5	36.0	nm	6.88	405	495	741	< 4	19300	2970	271	9.1	< 0.05	6.7	242	30.0	32.0	11700	36200	55.6	1140	0.4
PNR-14	3/2/2005 10:50	42.5	40.7	nm	6.59	472	576	617	< 4	16500	2600	257	7.7	< 0.05	6.8	175	31.0	30.0	10400	29700	45.5	1480	0.5
PNR-14	5/25/2005 9:46	41.2	34.5	nm	6.63	453	553	568	< 4	13600	2440	248	6.8	< 0.05	6.9	178	30.0	67.0	8840	25200	38.1	2110	0.5
PNR-14	8/17/2005 15:18	34.9	33.5	nm	6.72	591	721	528	< 4	11100	2390	260	6.2	< 0.05	7.0	125	30.0	28.0	6900	21400	33.0	2270	0.5
PNR-14	11/16/2005 11:05	43.1	31.9	nm	6.66	541	660	663	< 4	10800	3170	368	5.6	< 0.05	7.1	173	37.0	37.0	6850	20100	31.7	2040	0.4
PNR-14	2/9/2006 14:35	31.6	30.8	nm	6.73	624	761	566	< 4	9060	2730	321	5.4	< 0.05	7.0	145	34.0	32.0	5650	18700	28.6	2140	0.3
PNR-14	5/24/2006 17:00	25.7	32.0	nm	6.49	615	751	570	< 4	9220	2790	331	6.1	< 0.05	7.6	121	34.0	35.0	5530	17600	27.4	2080	0.4
PNR-14	8/23/2006 16:20	26.1	32.0	nm	6.44	605	738	525	< 4	8220	2640	322	4.3	< 0.05	6.9	105	34.0	35.0	4930	16700	26.9	2060	0.4
PNR-14	12/7/2006 15:30	19.2	27.9	nm	7.08	633	772	523	< 4	7230	2640	324	4.4	< 0.05	6.9	91	32.0	32.0	4530	15600	24.5	2080	0.4
PNR-14	3/14/2007 10:45	26.1	28.4	nm	6.59	643	785	514	< 4	6590	2780	362	4.0	< 0.05	6.8	96	96.8	nm	4440	14600	23.2	1890	0.4
PNR-14	10/4/2007 16:50	20.2	28.7	nm	6.53	673	821	478	< 4	6290	2640	351	3.1	< 0.05	6.7	76	30.0	35.0	3560	13500	21.7	2100	0.4
PNR-14	3/27/2008 13:15	19.2	28.6	nm	6.76	693	846	475	< 4	5880	2650	356	2.9	< 0.05	6.8	70	33.0	30.8	3530	12800	20.0	1930	0.4
PNR-14	10/27/2008 11:30	17.8	26.4	0.17	6.73	699	853	488	< 4	5200	2770	377	9.2	0.06	7.0	68	31.0	32.6	3390	11800	18.2	2030	0.5
PNR-14	4/16/2009 14:00	16.6	25.4	0.13	6.69	694	847	407	< 4	4450	2310	315	2.2	< 0.05	7.2	59	27.9	31.0	2840	10400	16.7	1810	0.5
PNR-15	8/10/2001 8:15	94.6	80.1	nm	7.40	162	197	950	< 1	43500	3370	243	14.4	< 0.05	7.4	440	41.9	nm	22700	66100	79.3	1470	nm
PNR-15	8/14/2001 13:00	97.2	80.1	nm	7.10	288	351	1170	< 1	40800	4060	277	15.4	< 0.05	7.0	480	47.6	nm	25200	66000	72.9	1650	nm
PNR-15	11/8/2001 9:10	102.0	81.7	nm	6.20	369	450	950	< 1	37400	3340	237	15.6	0.08	6.7	382	nm	50.1	21300	62400	49.4	1430	nm
PNR-15	2/21/2002 14:54	104.5	64.7	nm	6.24	336	412	991	< 4	45500	3430	232	15.7	0.06	6.8	462	70.0	nm	22700	68100	62.4	1420	nm
PNR-15	5/22/2002 14:55	106.9	67.2	nm	6.41	330	402	951	< 4	43000	3300	226	14.9	< 0.05	6.6	398	61.0	nm	21900	68800	69.1	2300	0.3
PNR-15	8/21/2002 14:00	101.7	60.5	nm	6.40	346	423	1110	< 4	46200	3800	250	15.4	0.07	6.8	365	38.0	43.0	22100	70100	72.7	1840	0.4
PNR-15	11/6/2002 14:35	112.6	56.5	nm	6.43	325	396	1010	< 4	37400	3480	235	15.4	< 0.05	6.8	420	27.0	42.0	21700	67800	60.4	1750	0.3
PNR-15	3/5/2003 12:30	107.0	55.5	nm	7.17	324	395	1090	< 4	39300	3680	278	14.2	< 0.05	6.6	403	35.0	34.0	24800	64600	46.8	1730	0.4
PNR-15	5/28/2003 15:35	90.9	52.7	nm	6.42	331	403	1060	< 1	38600	3810	282	13.1	< 0.05	6.7	432	32.0	33.0	22200	65400	90.1	1380	0.4
PNR-15	8/14/2003 9:58	78.9	53.2	nm	6.50	336	410	1030	< 1	35900	3710	278	12.9	< 0.05	6.6	378	33.0	37.0	19800	59600	78.3	1020	0.4
PNR-15	11/5/2003 14:30	81.6	53.7	nm	5.92	371	453	914	< 4	31800	3380	267	10.5	< 0.05	6.7	386	39.0	39.0	18700	51800	37.8	1100	0.4
PNR-15	3/17/2004 13:35	84.0	45.9	nm	6.42	402	490	827	< 1	27600	3110	253	10.1	< 0.05	6.1	286	35.0	43.0	15800	45800	66.3	1160	0.4
PNR-15	6/8/2004 12:45	56.3	37.8	nm	7.01	422	515	652	< 4	24700	2490	209	9.0	< 0.05	7.0	241	30.0	36.0	13900	37100	60.5	1530	0.5
PNR-15	9/15/2004 16:30	62.2	43.1	nm	6.74	423	516	753	< 4	23300	2920	252	9.4	< 0.05	7.0	235	36.0	40.0	13200	39000	58.9	1310	0.4
PNR-15	11/18/2004 9:05	58.9	40.4	nm	6.88	384	469	668	< 4	21300	2660	239	7.7	< 0.05	6.8	253	27.0	30.0	12000	35200	54.7	1310	0.5
PNR-15	3/2/2005 12:20	47.6	38.2	nm	6.72	467	570	660	< 4	19600	2640	242	7.4	< 0.05	7.0	191	31.0	39.0	11800	33000	50.2	1290	0.5
PNR-15	5/25/2005 10:40	44.0	35.3	nm	6.95	453	553	498	< 4	14700	2040	194	5.9	< 0.05	7.2	175	29.0	38.0	9080	26100	40.0	1650	0.7
PNR-15	8/17/2005 16:45	43.7	36.6	nm	6.93	504	615	510	< 4	12700	2090	199	6.2	< 0.05	7.2	128	26.0	29.0	8400	27300	42.2	1200	0.6
PNR-15	11/16/2005 11:35	44.2	33.4	nm	7.02	494	603	555	< 4	13800	2270	214	5.5	< 0.05	7.1	177	33.0	39.0	8830	22800	37.7	1420	0.6
PNR-15	2/8/2006 10:45	33.1	31.7	nm	7.17	575	701	392	< 4	10400	1580	146	4.6	< 0.05	7.2	115	30.0	35.0	6920	19500	31.6	1560	0.7
PNR-15	5/24/2006 11:15	19.2	30.3	nm	7.25	604	737	255	< 4	7470	1010	91	3.5	< 0.05	7.9	90	29.0	33.0	5310	14200	24.3	1840	0.9
PNR-15	8/23/2006 17:15	28.2	31.8	nm	6.80	562	686	312	< 4	8720	1230	111	3.9	< 0.05	7.2	93	27.0	27.0	5950	16900	28.2	1670	0.7
PNR-15	12/7/2006 16:30	22.0	28.5	nm	7.08	575	701	310	< 4	8790	1250	115	4.3	< 0.05	7.3	85	26.0	28.0	5720	17100	28.1	1650	0.8
PNR-15	3/14/2007 11:40	31.8	26.1	nm	7.00	572	697	352	< 4	9290	1470	142	4.9	< 0.05	7.3	100	158.0	nm	6260	17600	28.7	1640	0.7
PNR-15	10/4/2007 18:00	26.1	26.1	nm	7.05	578	705	328	< 4	9050	1340	126	4.6	< 0.05	7.2	96	28.0	36.0	6390	16800	28.0	1810	0.6
PNR-15	3/27/2008 15:20	22.7	26.9	nm	7.30	604	737	269	< 4	7720	1130	113	3.7	< 0.05	7.3	81	24.0	35.0	5390	15100	25.0	1580	0.6
PNR-15	10/27/2008 12:30	20.4	24.9	0.08	7.20	628	766	217	< 4	6110	911	90	3.5	< 0.05	7.5	64	21.0	27.5	4510	12900	20.7	1910	0.7
PNR-15	4/16/2009 14:30	18.0	23.0	0.26	7.23	633	772	165	< 4	5000	705	71	2.3	< 0.05	7.7	60	21.1	22.0	3940	10600	18.3	1770	0.7
PNR-16	8/10/2001 15:15	4.3	10.1	nm	7.80	508	620	359	< 1	33	2300	340	0.3	20.20	7.4	19	22.1	nm	282	4260	4.2	2480	nm
PNR-16	8/16/2001 18:35	4.6	11.1	nm	7.60	485	592	396	< 1	33	2460	357	0.1	19.00	7.2	20	22.6	nm	299	4260	4.1	2380	nm
PNR-16	11/6/2001 16:05	1.9	11.1	nm	6.90	526	642	458	< 1	26	2570	347	2.0	8.60	7.1	21	nm	158.0	337	4650	4.6	2780	nm
PNR-16	2/21/2002 10:20	4.6	9.1	nm	7.04	635	774	469	< 4	28	2850	408	1.4	13.30	7.1	26	39.0	nm	427	4960	5.1	3180	nm
PNR-16	5/21/2002 15:50	4.9	11.6	nm	7.50	488	595	390	< 4	16	2650	407	0.2	16.50	7.3	20	39.9	nm	269	5090	5.0	3460	0.5
PNR-16	8/20/2002 11:40	4.2	11.2	nm	6.80	494	603	399	< 4	26	2860	452	< 0.1	17.70	7.3	14	24.2	42.1	371	5060	5.0	3270	0.5
PNR-16	11/5/2002 14:04	4.9	10.4	nm	7.10	498	608	422	< 4	24	2810	428	< 0.1	18.20	7.2	21	22.0	30.0	286	5110	5.2	3210	0.5
PNR-16	3/4/2003 13:00	4.5	8.1	nm	7.30	474	578	426	< 4	22	2770	460	0.5	18.40	7.1	20	23.8	103.0	361	5050	4.9	3190	0.4
PNR-16	5/27/2003 18:30	4.8	11.0	nm	7.01	518	632	416	< 1	28	2760	419	< 0.1	18.70	7.1	19	24.0	26.0	285	4990	5.4	3090	0.5
PNR-16	8/13/2003 9:10	3.7	10.5	nm	7.55	499	609	405	< 1	17	2730	417	0.2	18.20	7.1	20	23.7	36.8	302	5060	4.7	3120	0.4
PNR-16	11/4/2003 12:30	5.4	8.2	nm	7.53	494	603	384	< 4	17	2790	446	0.5	17.80	7.3	23	25.4	33.2	312	5030	4.5	3260	0.4

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
PNR-16	3/17/2004 16:09	6.6	14.0	nm	8.65	509	622	454	< 1	19	3010	457	0.4	16.30	7.0	22	26.7	35.1	320	5110	4.9	3250	0.5
PNR-16	6/8/2004 12:30	4.2	9.6	nm	7.24	514	627	397	< 4	9	2740	425	< 0.1	19.30	7.1	20	23.9	33.0	301	4940	4.9	3070	0.6
PNR-16	9/14/2004 12:40	4.7	13.8	nm	7.35	513	626	436	< 4	22	2960	454	< 0.1	18.80	7.3	22	26.6	41.1	294	4920	4.9	2990	0.5
PNR-16	11/16/2004 12:30	5.4	13.3	nm	7.26	486	593	422	< 4	24	2750	412	0.2	19.00	7.3	21	24.3	245.0	282	4840	4.9	2930	0.6
PNR-16	3/1/2005 14:30	4.5	9.5	nm	6.97	515	628	440	< 4	21	2980	458	< 0.1	18.20	7.1	22	27.3	34.5	339	4960	4.9	2890	0.5
PNR-16	5/24/2005 13:58	4.9	11.4	nm	6.99	425	519	423	< 4	19	2750	411	1.0	17.10	7.0	24	25.9	53.5	342	5000	4.9	2950	0.5
PNR-16	8/17/2005 9:30	4.8	10.6	nm	7.04	506	617	427	< 4	18	2920	450	< 0.1	22.10	7.4	22	25.0	37.4	291	4960	5.0	2940	0.3
PNR-16	11/15/2005 15:15	5.0	8.4	nm	7.05	460	562	466	< 4	20	3140	480	0.1	20.40	7.2	19	25.9	88.9	341	4960	5.0	3120	0.5
PNR-16	2/7/2006 16:47	4.6	4.9	nm	7.16	490	597	456	< 4	20	2950	440	0.3	19.70	7.0	21	25.5	61.4	341	5000	5.1	3020	0.4
PNR-16	5/24/2006 12:25	3.9	10.4	nm	7.00	486	592	432	< 4	23	3080	486	0.2	25.70	7.9	22	27.7	43.8	349	4780	5.1	3200	0.5
PNR-16	8/22/2006 13:20	5.3	11.2	nm	6.97	462	564	437	< 4	19	2970	456	< 0.1	18.30	6.9	22	26.0	45.3	348	4860	5.2	2950	0.5
PNR-16	12/6/2006 13:00	4.9	5.4	nm	7.28	466	569	450	< 4	20	2990	454	< 0.1	20.90	7.4	22	27.0	29.4	324	4970	5.3	3000	0.5
PNR-16	3/13/2007 12:45	5.0	8.8	nm	6.52	460	561	463	< 4	20	3060	463	< 0.1	21.00	7.2	21	40.0	nm	330	5050	5.3	3120	0.5
PNR-16	10/3/2007 10:55	6.2	13.2	nm	7.03	445	543	453	< 4	18	2950	443	0.8	15.10	7.2	24	36.7	42.4	403	5030	5.6	3150	0.4
PNR-16	3/26/2008 14:30	6.9	10.3	nm	6.90	473	577	444	< 4	32	2910	436	0.6	19.30	7.1	20	25.5	92.4	341	5110	5.2	3160	0.5
PNR-16	10/23/2008 11:00	4.9	8.9	2.87	7.28	468	571	451	< 4	19	3000	454	< 0.1	17.20	7.1	20	26.4	35.8	380	4960	5.2	3140	0.5
PNR-16	4/17/2009 13:40	4.8	10.1	3.71	6.93	464	566	404	< 4	22	2770	429	< 0.1	21.90	7.2	20	26.8	32.0	288	4320	4.9	2920	0.5
PNR-17	8/22/2001 12:35	98.7	75.0	nm	nm	220	269	1440	< 1	42500	5450	449	21.8	< 0.05	7.4	372	55.2	nm	22900	68800	65.4	1520	nm
PNR-17	8/22/2001 13:30	97.4	76.0	nm	nm	219	267	1420	< 1	44200	5490	468	22.3	< 0.05	7.3	367	55.0	nm	22900	68700	66.4	1440	nm
PNR-17	11/8/2001 11:30	nm	88.9	nm	nm	178	217	2380	< 1	40300	10300	1070	31.5	0.10	7.1	289	nm	153.0	20800	61800	47.8	1490	nm
PNR-17	2/21/2002 17:00	94.6	83.1	nm	6.26	237	289	1850	< 4	41500	7120	608	29.9	< 0.05	6.8	291	111.0	nm	21200	65900	59.1	1120	nm
PNR-17	5/23/2002 10:50	106.8	82.2	nm	6.62	262	319	1360	< 4	42300	4990	386	22.9	< 0.05	6.8	289	76.0	nm	21000	62800	67.0	1480	0.4
PNR-17	8/21/2002 15:15	103.7	71.5	nm	6.50	358	437	1220	< 4	41000	4420	334	19.3	< 0.05	6.8	316	40.0	104.0	15400	70000	53.1	1400	0.4
PNR-17	11/6/2002 15:40	114.8	68.7	nm	6.59	291	355	1360	< 4	36300	4870	358	19.1	< 0.05	6.8	405	34.0	88.0	23500	67100	58.3	1630	0.4
PNR-17	3/5/2003 13:30	113.5	71.3	nm	7.08	301	367	1190	< 4	40600	4220	303	16.8	< 0.05	6.8	342	36.0	70.0	24000	65400	46.2	1580	0.4
PNR-17	5/28/2003 10:00	96.0	68.6	nm	6.50	327	400	1100	< 1	38300	3920	288	15.7	< 0.05	6.7	383	33.0	58.0	22000	66400	91.6	1320	0.4
PNR-17	8/14/2003 11:05	106.5	60.0	nm	6.41	331	404	942	< 1	39700	9060	248	16.5	< 0.05	6.7	288	29.0	47.0	17600	65900	85.9	1020	0.4
PNR-17	11/6/2003 11:30	104.9	53.5	nm	6.54	389	474	914	< 4	38600	3360	262	15.2	< 0.05	6.8	378	30.0	31.0	20500	62000	41.8	783	0.3
PNR-17	3/17/2004 15:10	70.0	58.8	nm	6.00	453	553	900	< 1	36900	3490	302	12.9	< 0.05	6.7	326	32.0	35.0	20200	58100	83.2	536	0.3
PNR-17	6/9/2004 15:45	81.7	48.6	nm	6.85	488	595	770	< 4	35600	3070	277	12.4	< 0.05	6.7	274	30.0	54.0	18700	54700	81.4	692	0.4
PNR-17	9/16/2004 9:35	76.8	52.9	nm	6.65	556	678	689	< 4	31300	2820	268	12.0	< 0.05	6.9	271	32.0	48.0	17500	50000	74.5	579	0.4
PNR-17	11/18/2004 12:20	70.8	48.0	nm	6.92	652	796	498	< 4	22200	2160	224	9.2	0.19	7.1	269	29.0	41.0	15000	43200	66.6	311	0.5
PNR-17	3/2/2005 15:30	49.2	51.2	nm	6.72	833	1020	366	< 4	20500	1650	179	7.2	< 0.05	7.2	209	33.0	41.0	13400	35400	54.9	506	0.9
PNR-17	5/25/2005 14:25	46.0	44.9	nm	6.49	778	949	252	< 4	17300	1250	151	6.6	< 0.05	7.2	176	30.0	35.0	11200	30500	47.2	757	0.9
PNR-17	8/17/2005 17:25	36.6	41.8	nm	6.79	1010	1230	166	< 4	12000	877	112	5.3	< 0.05	7.4	100	27.0	30.0	8330	25700	41.3	583	0.7
PNR-17	11/16/2005 14:01	37.3	44.1	nm	7.43	1040	1260	113	< 4	11400	644	88	3.6	< 0.05	7.6	74	27.0	31.0	7670	18600	31.5	755	1.0
PNR-17	2/8/2006 14:05	26.2	41.0	nm	7.61	1160	1420	80	< 4	8080	397	48	3.6	< 0.05	7.9	93	26.0	24.0	5970	15700	25.9	814	1.1
PNR-17	5/24/2006 13:50	22.0	37.2	nm	7.36	1050	1280	60	< 4	7200	311	39	3.4	< 0.05	8.0	69	24.0	34.0	5240	12800	22.6	1070	0.8
PNR-17	8/24/2006 12:45	18.7	39.6	nm	8.56	994	1210	48	<4	5500	254	32	2.4	<0.05	7.9	59	22.7	25.7	4710	11300	19.6	1180	1.1
PNR-17	12/8/2006 12:30	13.5	37.9	nm	7.56	947	1160	43	<4	4620	221	28	10.4	<0.05	8.1	51	21.2	21.0	3990	10500	17.4	1290	1.1
PNR-17	3/15/2007 11:49	14.7	38.1	nm	7.86	936	1140	42	< 4	4250	225	29	2.2	< 0.05	8.1	50	72.6	nm	3660	9400	15.5	1430	1.2
PNR-18	8/8/2001 16:00	3.0	11.4	nm	7.40	616	751	276	< 1	57	1580	215	2.4	< 0.05	7.3	12	19.9	nm	193	2740	2.9	1470	nm
PNR-18	8/16/2001 11:00	mnw	12.2	nm	7.50	558	681	264	< 1	58	1630	235	2.3	< 0.05	7.3	11	23.6	nm	203	2900	3.0	1520	nm
PNR-18	11/7/2001 10:20	nm	12.2	nm	nm	696	849	256	< 1	84	1470	200	1.4	0.13	7.5	10	nm	30.8	184	2650	2.9	1220	nm
PNR-18	2/20/2002 11:24	nm	10.5	nm	7.30	671	819	310	< 4	70	1750	238	2.2	< 0.05	7.3	10	26.0	nm	241	2950	3.5	1600	nm
PNR-18	5/21/2002 10:30	3.5	13.1	nm	7.22	624	761	283	< 4	42	1600	217	2.8	< 0.05	7.4	7	27.9	nm	172	2960	3.4	1900	0.3
PNR-18	8/19/2002 16:50	3.2	12.3	nm	7.00	576	703	299	< 4	57	1800	256	2.5	0.05	7.1	7	23.5	31.7	152	3130	3.5	1690	0.3
PNR-18	11/5/2002 11:55	3.5	12.0	nm	7.41	613	748	328	< 4	60	1800	240	2.4	< 0.05	7.2	8	22.8	29.6	184	3210	3.6	1790	0.3
PNR-18	3/4/2003 14:35	3.2	10.8	nm	7.23	583	712	332	< 4	67	1820	241	2.4	< 0.05	7.0	8	24.1	36.5	180	3140	3.6	1760	0.3
PNR-18	5/13/2003 11:45	3.2	12.3	nm	7.97	623	760	325	< 4	60	1860	254	2.6	< 0.05	7.0	8	22.9	32.7	200	3150	3.4	1690	0.3
PNR-18	8/14/2003 8:40	2.9	14.2	nm	7.97	616	752	312	< 1	45	1750	235	2.2	< 0.05	6.9	7	24.1	143.0	196	3200	3.5	1710	0.3
PNR-18	11/4/2003 16:00	3.1	10.3	nm	7.60	650	793	284	< 4	52	1790	264	2.3	< 0.05	7.2	8	25.9	32.4	234	3250	3.2	1820	0.3
PNR-18	March 2004	Not Sampled																					
PNR-18	6/8/2004 9:55	mnw	12.4	nm	7.41	677	826	353	< 4	60	2040	280	2.8	< 0.05	7.2	8	27.0	114.0	261	3210	3.4	1640	0.3
PNR-18	9/14/2004 8:55	3.3	10.6	nm	7.45	737	899	327	< 4	52	1860	254	2.8	0.05	7.2	8	25.3	27.7	263	3280	3.7	1740	0.3
PNR-18	11/18/2004 14:25	3.8	10.9	nm	7.07	715	872	332	< 4	57	1870	254	2.5	< 0.05	7.1	8	26.4	28.2	272	3350	3.8	1710	0.3
PNR-18	2/28/2005 17:50	3.5	10.9	nm	6.75	712	869	318	< 4	53	1870	262	3.2	< 0.05	7.0	8	27.5	34.3	247	3240	3.6	1660	0.2
PNR-18	5/25/2005 17:30	2.8	12.2	nm	7.11	594	724	314	< 4	57	1840	256	3.9	< 0.05	7.0	8	26.3	32.3	236	3150	3.5	1620	0.3
PNR-18	8/15/2005 18:00	3.4	21.9	nm	7.05	752	918	332	< 4	55	1940	270	2.9	< 0.05	7.2	7	24.7	24.6	274	3330	3.6	1600	0.2
PNR-18	11/15/2005 10:30	3.5	8.8	nm	7.07	675	824	330	< 4	60	1970	278	2.6	< 0.05	7.2	6	25.4	27.1	298	3300	3.8	1700	0.3
PNR-18	2/7/2006 11:30	3.5	7.9	nm	7.08	743	906	307	< 4	61	1850	262	2.9	< 0.05	7.0	8	27.1	30.2	300	3270	3.8	1660	0.2
PNR-18	5/23/2006 11:15	3.5	12.6	nm	7.02	716	874	310	< 4	69	1840	259	2.6	< 0.05	7.8	9	27.6	29.8	326	3030	3.8	1770	0.2
PNR-18	8/22/2006 17:17	3.3	10.4	nm	7.11	708	863	317	< 4	73	1870	261	2.3	< 0.05	7.0	9	27.2	28.2	346	3360	4.0	1670	0.2
PNR-18	12/5/2006 14:45	3.9	9.6	nm	6.97	688	840	312	< 4	74	1830	256	2.7	< 0.05	7.0	8	27.0	28.6	310	3420	4.0	1670	0.2
PNR-18	3/14/2007 11:10	3.6	9.7	nm	6.83	719	877	316	< 4	86	1850	256	3.2	< 0.05	7.2	7	41.9	nm	360	3480	4.1	1720	0.2
PNR-18	10/2/2007 17:20	4.7	9.9	nm	7.31	740	903	308	< 4	86	1810	252	3.0	< 0.05	7.2	8	26.9	28.9	360	3490	4.4	1730	0.2

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
PNR-18	3/26/2008 13:30	4.1	9.9	nm	6.94	746	910	298	< 4	93	1760	247	2.3	< 0.05	7.2	7	26.4	28.2	375	3570	4.1	1670	0.2
PNR-18	10/22/2008 16:00	4.1	9.9	0.80	7.08	742	905	301	< 4	119	1780	250	3.0	< 0.05	7.4	7	26.0	30.3	405	3570	4.1	1710	0.2
PNR-18	4/17/2009 15:50	4.2	9.8	0.52	6.85	722	881	295	< 4	127	1730	241	2.9	< 0.05	7.1	8	26.5	30.0	386	3160	4.1	1630	0.3
PNR-19	8/7/2001 14:50	11.3	9.9	nm	7.30	354	432	724	< 1	3820	4410	631	<0.1	18.00	7.0	19	21.4	nm	819	8810	10.6	1160	nm
PNR-19	8/15/2001 16:40	mnw	13.5	nm	7.40	344	420	702	< 1	3180	4260	610	<0.1	13.80	7.2	20	22.5	nm	745	8260	9.5	1120	nm
PNR-19	11/6/2001 15:20	or	8.3	nm	6.80	343	418	792	< 1	3770	4760	675	<0.1	20.20	7.1	20	nm	25.4	861	8650	11.4	1270	nm
PNR-19	2/19/2002 15:05	12.3	10.5	nm	6.96	326	398	971	< 4	4410	5710	799	<0.1	23.00	7.0	26	26.0	nm	1130	9380	14.1	1400	nm
PNR-19	5/22/2002 14:55	16.2	10.0	nm	7.01	352	430	927	< 4	6080	5570	791	<0.1	23.80	7.1	25	26.0	nm	1300	11300	15.6	1160	0.2
PNR-19	8/20/2002 12:30	11.5	12.9	nm	6.90	360	439	908	< 4	5070	5510	787	< 0.1	22.10	7.0	20	21.0	27.0	1210	11300	15.1	1470	0.3
PNR-19	11/5/2002 13:17	15.9	10.0	nm	7.02	359	438	943	< 4	4960	5460	755	< 0.1	23.30	7.1	22	19.0	25.0	1220	11400	16.2	1380	0.3
PNR-19	3/4/2003 12:20	16.0	8.8	nm	6.88	345	420	1020	< 4	5520	5910	818	< 0.1	25.70	7.0	25	21.0	24.0	1450	11500	16.6	1560	0.3
PNR-19	5/27/2003 17:20	17.1	12.2	nm	6.94	360	440	1020	< 1	5880	5890	813	< 0.1	24.40	6.9	26	21.0	23.0	1470	12900	18.9	1420	0.3
PNR-19	8/13/2003 8:55	13.8	10.1	nm	7.36	350	427	1020	< 1	6210	5880	810	< 0.1	24.60	7.0	24	20.0	31.0	1570	13000	12.4	1130	0.3
PNR-19	11/4/2003 10:50	13.1	9.1	nm	6.91	354	431	946	< 4	6820	5800	834	< 0.1	28.70	7.0	30	22.0	25.0	1680	12200	15.8	1390	0.3
PNR-19	3/17/2004 16:40	10.6	13.0	nm	8.75	364	444	1280	< 1	7970	7210	976	< 0.1	24.80	7.0	33	24.0	28.0	2140	14700	20.0	1390	0.3
PNR-19	6/8/2004 13:55	16.9	10.4	nm	7.13	358	437	1070	< 4	6860	6060	825	< 0.1	25.00	7.0	30	20.8	25.3	2110	15200	19.3	1560	0.3
PNR-19	9/14/2004 14:15	15.6	11.3	nm	7.48	345	421	912	< 4	5580	5120	691	< 0.1	24.60	7.1	34	23.7	24.5	1870	12600	17.1	1110	0.3
PNR-19	11/16/2004 13:45	21.0	10.6	nm	7.23	335	409	1010	< 4	6270	5600	745	< 0.1	27.20	7.0	30	22.4	22.5	1990	13000	18.6	1250	0.3
PNR-19	3/1/2005 15:35	18.6	10.1	nm	6.89	368	449	1140	< 4	7590	6460	877	< 0.1	26.30	7.0	34	24.0	23.0	2680	15700	21.8	1380	0.3
PNR-19	5/25/2005 12:36	22.2	10.0	nm	6.80	318	388	1100	< 4	7370	6130	824	< 0.1	28.30	7.0	35	21.6	20.3	2570	16700	22.1	1540	0.3
PNR-19	8/17/2005 12:23	20.3	10.7	nm	6.93	353	431	1040	< 4	6970	5830	782	< 0.1	18.10	7.1	28	21.0	19.8	2380	15600	20.8	1410	0.3
PNR-19	11/16/2005 12:00	22.2	8.6	nm	6.69	325	397	1200	< 4	8620	6850	888	< 0.1	27.40	7.1	42	22.1	22.0	3050	16600	24.1	1350	0.3
PNR-19	2/8/2006 12:55	24.4	8.8	nm	7.37	358	437	1320	< 4	8450	7290	968	< 0.1	28.20	7.1	40	23.0	23.0	3340	16100	24.9	1530	0.3
PNR-19	5/24/2006 15:20	20.6	11.1	nm	6.85	347	423	1230	< 4	9690	6850	921	< 0.1	25.40	7.6	45	22.0	24.0	3660	16500	26.4	1430	0.3
PNR-19	8/23/2006 14:05	22.9	10.5	nm	6.86	330	403	1300	< 4	9690	6990	905	< 0.1	21.30	6.8	40	27.0	27.0	3830	19300	28.6	1350	0.3
PNR-19	12/7/2006 15:30	29.3	9.0	nm	6.80	349	425	1560	< 4	13300	8350	1080	< 0.1	21.40	7.0	40	22.0	31.0	5220	24700	37.9	1510	0.2
PNR-19	3/14/2007 15:00	25.5	9.3	nm	6.98	331	404	1270	< 4	10400	6830	891	< 0.1	20.70	7.0	53	224.0	nm	4260	20000	30.0	1040	0.3
PNR-19	10/3/2007 14:50	28.2	9.9	nm	6.32	333	407	1150	< 4	11200	6010	762	< 0.1	26.20	6.9	38	23.0	25.0	4370	20000	31.4	1350	0.3
PNR-19	3/27/2008 16:30	32.0	9.4	nm	6.72	347	423	1460	< 4	13100	7560	847	< 0.1	18.70	6.6	42	26.0	24.0	5940	24000	36.3	1290	0.2
PNR-19	10/25/2008 15:15	31.3	9.0	0.41	6.90	346	422	1410	< 4	13300	7320	920	< 0.1	16.30	7.0	43	20.0	27.0	5890	23200	35.1	1560	0.2
PNR-19	4/19/2009 13:55	34.8	10.0	0.92	6.59	348	424	1180	< 4	11700	6020	747	< 0.1	20.00	6.9	63	16.0	19.0	5540	20200	34.2	1370	0.2
PNR-20	8/8/2001 9:50	39.0	11.2	nm	7.20	413	504	1750	< 1	16100	9420	1230	<0.1	11.20	7.2	42	18.5	nm	5180	29000	38.1	1190	nm
PNR-20	8/15/2001 17:15	mnw	10.4	nm	7.30	412	502	1800	< 1	12900	9710	1270	<0.1	10.40	7.1	46	24.2	nm	4800	25400	29.6	1420	nm
PNR-20	11/8/2001 10:00	nm	11.1	nm	nm	508	620	1610	< 1	10600	8940	1200	0.2	4.26	6.9	37	nm	68.4	3480	19900	26.8	1460	nm
PNR-20	2/19/2002 15:40	34.8	10.0	nm	6.70	391	477	1830	< 4	15400	9840	1280	<0.1	10.80	6.8	43	26.0	nm	5460	25200	32.7	1180	nm
PNR-20	5/22/2002 11:00	40.2	11.2	nm	6.78	398	486	1580	< 4	17400	8540	1110	<0.1	11.40	7.0	40	38.0	nm	5050	29600	36.4	1030	0.2
PNR-20	8/20/2002 13:25	37.4	12.3	nm	6.60	425	519	1800	< 4	17100	10000	1350	< 0.1	9.51	6.8	35	21.0	45.0	6840	31400	36.8	1390	0.2
PNR-20	11/5/2002 16:05	43.9	10.3	nm	6.92	427	521	1930	< 4	18400	10000	1260	< 0.1	11.00	6.9	44	16.0	27.0	6790	33600	33.3	1500	0.2
PNR-20	3/4/2003 14:15	37.4	9.2	nm	6.70	417	509	1790	< 4	17400	9330	1180	< 0.1	10.60	6.8	47	19.0	34.0	6840	30200	25.6	1650	0.2
PNR-20	5/28/2003 11:00	42.5	11.8	nm	6.72	438	534	1950	< 1	17300	10100	1270	< 0.1	11.60	6.8	50	21.0	21.0	7300	32800	43.8	1270	0.3
PNR-20	8/13/2003 11:35	34.3	10.6	nm	6.98	431	526	1740	< 1	18100	9060	1150	< 0.1	11.70	6.6	42	21.0	40.0	6260	32000	40.4	1130	0.2
PNR-20	11/5/2003 12:50	26.9	9.5	nm	7.15	427	521	1980	< 4	21300	10100	1260	< 0.1	9.24	6.8	62	24.0	84.0	8580	35700	27.5	1030	0.2
PNR-20	3/18/2004 12:50	16.2	9.6	nm	nm	434	529	1770	< 1	16700	9250	1170	< 0.1	12.70	6.8	46	22.0	50.0	6240	28600	39.8	1110	0.2
PNR-20	6/8/2004 12:15	mnw	11.1	nm	7.00	445	543	1700	< 4	19700	8710	1080	< 0.1	10.70	6.8	57	20.0	35.0	8600	34800	49.6	1580	0.2
PNR-20	9/14/2004 13:42	41.0	11.2	nm	7.75	451	550	1630	< 4	15700	8330	1030	< 0.1	12.80	6.9	58	23.0	27.0	6970	31500	43.4	1410	0.2
PNR-20	11/17/2004 10:40	56.1	10.4	nm	6.98	435	531	1880	< 4	20000	9180	1090	< 0.1	10.30	6.8	91	22.0	24.0	9100	35800	52.8	1510	0.2
PNR-20	3/1/2005 16:25	41.7	9.9	nm	6.73	472	576	1640	< 4	18600	8200	998	< 0.1	11.50	6.8	56	26.0	28.0	8570	32400	48.1	1410	0.4
PNR-20	5/24/2005 17:35	mnw	10.5	nm	6.89	401	489	1570	< 4	15600	8100	1020	< 0.1	15.00	6.9	50	22.0	27.0	7180	29700	40.9	1360	0.2
PNR-20	8/16/2005 15:45	49.7	19.6	nm	6.56	482	588	1600	< 4	15600	8070	988	< 0.1	15.90	7.1	36	19.0	19.0	8140	34300	47.2	1160	0.2
PNR-20	11/15/2005 12:15	52.7	10.2	nm	6.75	425	518	1620	< 4	19500	8070	975	< 0.1	11.80	6.9	57	22.0	21.0	9580	33700	49.1	1360	0.2
PNR-20	2/9/2006 10:50	39.7	10.2	nm	6.97	467	570	1580	< 4	15300	7950	972	< 0.1	15.40	6.9	82	22.0	21.0	7580	26700	41.2	1420	0.2
PNR-20	5/23/2006 17:55	45.4	9.9	nm	6.76	457	557	1600	< 4	21300	7780	917	0.1	10.90	7.5	61	21.0	21.0	10500	35500	53.1	1480	0.2
PNR-20	8/23/2006 15:50	42.1	10.1	nm	6.75	438	534	1630	< 4	20600	7750	891	0.1	11.90	6.7	53	30.0	26.0	10100	35600	54.4	1500	0.2
PNR-20	12/7/2006 16:10	44.3	8.9	nm	6.80	435	531	1360	< 4	16400	6780	824	< 0.1	14.40	6.9	36	20.0	21.0	7630	29800	45.7	1490	0.2
PNR-20	3/15/2007 10:18	52.2	9.2	nm	6.68	439	536	1640	< 4	20800	7950	934	0.2	11.40	6.7	101	334.0	nm	11100	35800	53.8	1390	0.2
PNR-20	10/4/2007 10:25	48.9	9.6	nm	6.57	442	539	1460	< 4	20000	7050	823	0.2	12.30	6.7	51	22.0	29.0	9060	33600	52.4	1610	0.2
PNR-20	3/27/2008 17:40	51.5	10.3	nm	7.13	455	555	1600	< 4	20100	7630	884	0.2	13.50	6.8	49	27.0	24.0	10900	34500	52.0	1410	0.2
PNR-20	10/25/2008 16:30	46.0	9.4	0.30	6.85	445	542	1360	< 4	16200	6700	805	0.2	16.80	6.9	38	19.0	20.0	7880	27900	42.3	1680	0.2
PNR-20	4/21/2009 15:40	54.2	9.9	0.14	6.66	437	533	1690	< 4	23100	8210	970	0.4	9.59	6.7	59	7.0	14.0	11700	35200	54.2	1180	0.1
PNR-21	8/9/2001 10:15	65.5	11.0	nm	6.80	501	611	2060	< 1	26500	9670	1100	2.0	8.16	6.8	63	16.0	nm	12500	47000	58.5	1450	nm
PNR-21	8/16/2001 16:40	62.0	11.4	nm	7.00	548	669	2140	< 1	26900	10200	1170	4.2	< 0.05	6.9	61	17.0	nm	13200	47000	53.4	1510	nm
PNR-21	11/8/2001 11:00	60.3	14.4	nm	7.10	538	656	2090	< 1	27900	9930	1140	2.4	8.53	6.7	68	nm	38.7	13100	45300	40.4	1630	nm
PNR-21	2/21/2002 9:15	60.3	10.4	nm	6.53	562	685	1970	< 4	28300	9280	1060	2.1	7.54	6.9	66	27.0	nm	12900	45800	48.1	1410	nm
PNR-21	5/22/2002 11:55	70.5	11.8	nm	6.67	544	663	1800	< 4	28600	8440	959	2.5	7.82	6.8	60	27.0	nm	12600	47400	53.2	1560	0.1
PNR-21	8/21/2002 9:00	63.1	12.7	nm	6.60	553	675	1820	< 4	29200	8580	980	2.8	7.51	6.8	74	15.0	18.0	12900	51200	54.2	1690	0.2

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
PNR-21	11/5/2002 15:30	66.3	10.8	nm	6.78	559	682	2000	< 4	28600	9180	1020	2.6	7.99	6.8	61	11.0	< 20	13000	49600	44.6	1700	0.2
PNR-21	3/5/2003 14:50	62.2	10.7	nm	6.69	546	666	1900	< 4	27000	8450	897	3.2	7.64	6.7	56	13.0	36.0	12200	46400	33.6	2070	0.3
PNR-21	5/28/2003 11:50	49.1	14.5	nm	6.63	531	647	1940	< 1	27100	8860	978	2.7	7.92	6.7	73	16.0	44.0	13200	49100	67.1	1460	0.2
PNR-21	8/13/2003 14:05	62.8	14.1	nm	7.40	560	683	1800	< 1	28600	217	928	3.0	7.71	6.6	70	16.0	38.0	13000	48800	68.6	1160	0.2
PNR-21	11/5/2003 15:30	28.1	9.6	nm	7.23	537	655	1450	< 4	28100	6670	738	3.2	8.09	6.8	57	12.0	27.0	10600	46300	34.0	1170	0.2
PNR-21	March 2004	Not Sampled																					
PNR-21	6/8/2004 12:55	mnw	11.9	nm	6.87	580	708	1700	< 4	28100	7880	881	3.4	7.86	6.8	67	15.0	43.0	13200	47800	66.7	1690	0.2
PNR-21	9/14/2004 14:15	63.0	12.0	nm	7.60	560	683	1860	< 4	27800	8530	942	3.5	9.05	6.6	74	23.0	25.0	13600	48400	66.8	1620	0.2
PNR-21	11/17/2004 12:40	74.4	11.5	nm	6.89	561	685	1940	< 4	25600	8730	942	3.5	8.72	6.7	76	19.0	23.0	13400	45800	68.4	1530	0.2
PNR-21	3/1/2005 16:32	65.3	9.6	nm	6.64	611	745	1870	< 4	26400	8550	939	3.2	8.62	6.7	78	20.0	23.0	14600	46900	66.0	1470	0.2
PNR-21	5/24/2005 18:25	68.1	10.3	nm	6.88	518	631	1770	< 4	26600	8030	876	3.4	10.20	6.7	70	15.0	17.0	13800	47000	65.2	1640	0.2
PNR-21	8/16/2005 16:20	67.9	17.3	nm	6.45	603	735	1770	< 4	22600	8130	899	3.6	9.84	7.0	50	16.0	11.0	12600	47000	65.2	1350	0.2
PNR-21	11/15/2005 13:21	69.4	10.7	nm	6.64	516	629	1740	< 4	27700	7930	869	3.3	10.00	6.8	68	17.0	19.0	14200	45600	66.9	1480	0.2
PNR-21	2/9/2006 11:45	62.8	9.2	nm	6.88	604	737	1880	< 4	25200	8360	889	6.3	12.00	6.9	107	16.0	17.0	14100	42800	64.7	1530	0.1
PNR-21	5/24/2006 17:20	51.6	11.1	nm	6.63	579	706	1690	< 4	26300	7600	820	4.1	13.70	7.5	82	18.0	21.0	13600	42600	64.2	1690	0.2
PNR-21	8/23/2006 17:00	54.2	10.3	nm	6.62	554	676	1710	< 4	26000	7620	816	3.5	11.90	6.6	66	23.0	21.0	13900	42100	67.4	1600	0.2
PNR-21	12/7/2006 14:45	62.4	9.5	nm	6.77	565	689	1620	< 4	24600	7220	773	3.4	12.90	6.8	59	18.0	17.0	12800	42500	65.5	1700	0.2
PNR-21	3/15/2007 11:15	58.2	9.4	nm	6.71	567	691	1690	< 4	25200	7740	853	3.4	16.90	6.7	94	22.7	nm	13600	43100	63.6	1560	0.2
PNR-21	10/4/2007 11:40	59.6	10.0	nm	6.53	559	681	1640	< 4	25300	7410	804	3.9	15.40	6.6	62	21.0	24.0	13100	42000	64.8	1730	0.2
PNR-21	3/27/2008 18:20	59.6	9.6	nm	6.62	589	718	1600	< 4	24100	7240	786	3.1	16.70	6.7	54	20.0	33.0	13500	39700	61.6	1590	0.2
PNR-21	10/25/2008 15:50	62.9	9.8	0.24	6.58	586	715	1590	< 4	23200	7130	771	3.6	19.50	6.8	58	13.0	29.0	12700	39500	58.7	1810	0.2
PNR-21	4/21/2009 16:35	56.4	10.3	0.20	6.64	610	745	1330	< 4	19900	6140	684	2.9	15.20	6.7	55	3.0	< 10	11200	34600	54.0	1780	0.2
PNR-22	8/8/2001 17:10	3.9	11.9	nm	7.30	869	1060	205	< 1	467	1250	180	3.5	< 0.05	7.2	9	22.2	nm	434	2900	3.8	989	nm
PNR-22	8/16/2001 11:35	11.2	11.3	nm	7.40	853	1040	218	< 1	463	1340	193	4.0	< 0.05	7.2	9	26.0	nm	464	2920	3.8	959	nm
PNR-22	11/7/2001 9:10	3.6	12.2	nm	7.60	815	994	207	< 1	548	1290	188	4.1	0.06	7.4	8	nm	33.2	421	2870	3.9	833	nm
PNR-22	2/20/2002 14:10	3.4	11.3	nm	7.11	790	964	205	< 4	523	1310	195	3.8	< 0.05	6.9	9	27.2	nm	467	2960	4.3	943	nm
PNR-22	5/21/2002 12:15	4.5	12.8	nm	7.13	777	948	203	< 4	635	1260	182	5.0	< 0.05	7.4	9	30.3	nm	542	3040	4.3	824	0.3
PNR-22	8/20/2002 15:35	3.4	11.3	nm	7.20	785	958	217	< 4	676	1420	213	5.2	0.05	7.2	7	26.8	33.1	407	3150	4.6	924	0.3
PNR-22	11/5/2002 12:50	4.6	12.2	nm	7.28	784	956	248	< 4	790	1490	213	4.3	< 0.05	7.2	9	25.7	30.6	462	3300	4.8	935	0.2
PNR-22	3/4/2003 15:10	4.6	11.2	nm	7.14	753	918	258	< 4	857	1540	218	5.6	< 0.05	7.0	10	23.0	29.0	487	3430	5.1	942	0.3
PNR-22	5/13/2003 12:45	4.4	12.5	nm	7.78	771	941	250	< 4	925	1550	225	5.3	< 0.05	7.0	9	25.9	29.1	474	3480	4.9	890	0.3
PNR-22	8/13/2003 9:15	4.6	14.1	nm	7.86	758	924	262	< 1	977	1590	228	5.2	< 0.05	6.8	9	27.0	37.0	487	3640	5.1	766	0.3
PNR-22	11/5/2003 12:25	4.7	12.0	nm	nm	754	920	244	< 4	1100	1650	252	5.5	< 0.05	7.2	10	27.7	39.8	510	3640	4.7	904	0.3
PNR-22	March 2004	Not Sampled																					
PNR-22	6/8/2004 16:10	mnw	13.0	nm	7.31	760	927	292	< 4	1150	1800	259	5.9	< 0.05	7.1	10	26.6	34.4	489	3910	5.2	993	0.3
PNR-22	9/15/2004 8:50	5.3	15.2	nm	7.03	762	930	306	< 4	1100	1880	270	6.3	< 0.05	7.2	10	28.5	33.1	525	3810	5.6	873	0.3
PNR-22	11/18/2004 14:35	5.2	12.1	nm	7.31	743	907	319	< 4	1150	1920	274	5.4	< 0.05	7.0	11	30.6	43.4	524	3840	5.7	906	0.3
PNR-22	3/1/2005 11:00	5.9	13.2	nm	7.01	778	949	313	< 4	1160	1980	290	5.8	< 0.05	7.0	11	31.4	31.3	586	3890	5.7	902	0.3
PNR-22	5/24/2005 10:07	8.0	13.0	nm	6.99	647	789	303	< 4	1130	1880	274	6.2	< 0.05	6.9	11	27.0	36.8	557	3960	5.6	837	0.3
PNR-22	8/16/2005 9:30	5.2	15.2	nm	6.90	773	943	327	< 4	1150	2030	294	6.3	< 0.05	7.2	8	28.9	26.4	547	3890	5.7	918	0.3
PNR-22	11/15/2005 13:40	5.6	10.4	nm	6.38	687	838	340	< 4	1180	2130	310	5.2	< 0.05	7.2	7	29.4	30.0	588	3760	5.7	923	0.3
PNR-22	2/7/2006 10:30	5.5	11.9	nm	7.13	754	920	323	< 4	1080	2000	290	6.3	< 0.05	7.0	10	29.8	34.9	565	3790	5.6	864	0.2
PNR-22	5/23/2006 13:05	5.4	13.3	nm	6.96	729	890	312	< 4	1150	1960	287	5.5	< 0.05	7.8	11	29.6	48.4	576	3450	5.7	938	0.2
PNR-22	8/22/2006 18:00	5.8	10.7	nm	7.31	698	852	333	< 4	1110	2050	295	5.8	< 0.05	7.0	11	30.4	33.0	580	3970	5.9	945	0.2
PNR-22	12/6/2006 9:55	5.6	9.9	nm	7.07	708	864	324	< 4	1080	1960	280	5.8	< 0.05	7.0	10	29.4	31.1	546	3830	5.9	961	0.2
PNR-22	3/13/2007 15:25	4.9	10.3	nm	6.86	707	862	317	< 4	1010	1970	287	6.4	< 0.05	7.1	10	34.4	nm	563	3800	5.7	875	0.2
PNR-22	10/3/2007 16:45	6.6	11.6	nm	7.20	712	769	301	< 4	994	1850	267	6.6	< 0.05	7.0	9	29.3	31.7	505	3780	5.8	962	0.2
PNR-22	3/26/2008 17:45	5.5	10.3	nm	6.91	729	890	294	< 4	932	1820	263	6.2	< 0.05	7.1	8	29.5	32.2	544	3690	5.5	965	0.2
PNR-22	10/22/2008 18:15	5.3	10.4	0.39	7.06	724	883	296	< 4	895	1850	268	6.7	< 0.05	7.2	9	30.0	34.6	532	3720	4.0	1060	0.2
PNR-22	4/18/2009 13:10	5.3	10.4	0.21	6.79	713	870	278	< 4	895	1700	244	6.3	0.05	7.1	9	28.1	33.0	482	2970	5.2	958	0.3
PNR-23	8/9/2001 17:30	90.5	80.1	nm	7.30	<1	<1	850	< 1	41300	3270	275	14.1	< 0.05	3.7	411	59.1	nm	20300	62400	77.3	1480	nm
PNR-23	8/14/2001 10:30	98.6	80.4	nm	6.50	192	234	1030	< 1	45000	3730	282	15.9	< 0.05	6.5	480	68.2	nm	23800	68000	74.2	1600	nm
PNR-23	11/8/2001 13:15	88.7	85.6	nm	nm	271	331	2110	< 1	33600	8520	789	22.9	3.82	6.4	312	nm	114.0	18200	62600	47.0	1450	nm
PNR-23	2/21/2002 12:25	100.1	72.1	nm	5.86	214	262	1770	< 4	41500	6780	572	24.5	0.05	6.6	313	73.0	nm	20400	63700	58.7	1180	nm
PNR-23	5/23/2002 11:15	112.9	82.2	nm	6.14	188	229	1210	< 4	42200	4570	376	18.8	< 0.05	6.4	348	95.0	nm	21100	68200	68.3	1490	2.1
PNR-23	8/21/2002 12:55	102.9	70.2	nm	6.10	180	219	1220	< 4	43300	4670	392	18.1	< 0.05	6.6	293	58.0	78.0	18000	70100	68.5	1710	2.3
PNR-23	11/6/2002 12:15	115.5	71.2	nm	6.10	195	238	1180	< 4	36800	4290	324	17.4	< 0.05	6.5	410	63.0	71.0	22100	67300	60.2	1670	2.2
PNR-23	3/5/2003 11:20	115.0	72.5	nm	6.94	198	242	1120	< 4	37400	3930	276	15.9	< 0.05	6.6	373	55.0	54.0	21700	66600	48.5	1830	2.4
PNR-23	5/26/2003 14:40	102.4	72.0	nm	6.28	209	255	1080	< 1	40900	3920	296	15.0	< 0.05	6.4	474	54.0	73.0	23800	68100	93.8	1420	2.6
PNR-23	8/14/2003 8:43	98.3	70.1	nm	6.14	215	263	1130	< 1	39900	4120	314	17.0	0.10	6.6	433	54.0	63.0	22100	66300	87.6	1030	2.4
PNR-23	11/6/2003 10:10	107.0	73.2	nm	5.60	209	255	938	< 4	40900	3450	270	17.6	< 0.05	6.5	408	46.0	51.0	19500	65700	42.2	1140	2.3
PNR-23	3/17/2004 11:40	143.0	67.8	nm	5.57	224	273	1260	< 1	42600	4630	364	16.8	< 0.05	6.6	460	56.0	60.0	23700	66000	91.7	1080	2.3
PNR-23	6/9/2004 14:10	99.9	58.3	nm	6.40	230	281	1170	< 4	41800	4340	344	16.4	< 0.05	6.7	446	51.0	53.0	23900	63900	93.3	1610	3.3
PNR-23	9/15/2004 17:40	110.3	60.9	nm	6.34	245	299	1250	< 4	41800	4710	386	18.1	< 0.05	6.8	403	52.0	60.0	21900	66100	92.6	1530	2.8
PNR-23	11/18/2004 11:00	99.0	59.6	nm	6.47	242	295	1150	< 4	35800	4390	368	15.7	0.10	6.5	451	49.0	52.0	21800	63200	92.2	1250	2.8
PNR-23	3/2/2005 11:35	90.0	64.8	nm	6.18	278	339	1240	< 4	38800	4700	392	16.6	0.09	6.5	399	60.0	45.0	23800	64700	92.4	1330	2.8

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
PNR-23	5/25/2005 13:00	93.5	61.0	nm	6.09	244	298	1220	< 4	39800	4600	377	17.5	< 0.05	6.5	444	49.0	47.0	23800	62500	91.1	2600	2.6
PNR-23	8/17/2005 15:20	100.1	60.4	nm	6.04	287	350	1140	< 4	38800	4370	368	17.3	< 0.05	6.6	313	41.0	47.0	20200	62000	91.1	1360	2.5
PNR-23	11/16/2005 12:15	89.7	59.2	nm	6.29	258	315	1230	< 4	39400	4660	385	17.3	< 0.05	6.7	478	53.0	50.0	24900	59600	31.5	1240	2.3
PNR-23	2/9/2006 16:00	102.2	55.6	nm	6.43	307	375	978	< 4	35300	3620	285	15.7	< 0.05	6.7	346	49.0	49.0	21300	53800	85.3	1180	2.4
PNR-23	5/25/2006 11:15	79.9	56.6	nm	6.40	310	378	1050	< 4	35400	3940	320	18.3	< 0.05	7.4	326	51.0	52.0	21800	55000	83.8	1120	2.1
PNR-23	8/24/2006 10:18	97.8	54.2	nm	6.82	308	376	914	< 4	33600	3420	276	14.0	< 0.05	6.6	298	49.0	49.0	20200	53500	85.2	1070	2.1
PNR-23	12/8/2006 10:10	65.5	53.7	nm	6.55	341	416	816	< 4	31800	3130	266	16.0	< 0.05	6.7	274	48.0	49.0	18800	51500	80.0	1050	2.6
PNR-23	3/14/2007 15:00	25.5	50.6	nm	6.98	397	485	802	< 4	28300	3210	293	13.9	< 0.05	6.6	290	206.0	nm	18400	46500	73.4	889	2.5
PNR-23	10/5/2007 12:30	64.1	46.4	nm	6.06	514	627	649	< 4	25300	2620	242	10.2	< 0.05	6.8	201	50.0	46.0	14100	39700	62.1	1080	2.6
PNR-23	3/27/2008 16:05	55.8	49.6	nm	6.99	583	711	524	< 4	21100	2100	192	8.6	< 0.05	6.8	174	47.0	49.0	12600	35100	55.9	994	3.4
PNR-23	10/27/2008 14:56	45.4	46.3	0.03	6.90	652	796	408	< 4	16900	1590	139	8.6	< 0.05	7.2	140	44.0	48.0	11100	28000	44.6	1280	4.8
PNR-23	4/16/2009 15:00	36.5	44.3	0.24	6.90	740	902	254	< 4	12300	1070	106	4.9	< 0.05	7.4	110	39.0	34.0	8030	22000	36.3	1150	6.3
PNR-24	8/14/2001 12:00	97.5	73.4	nm	6.50	237	289	997	< 1	41100	3240	180	14.8	< 0.05	6.8	470	73.2	nm	24900	67700	73.8	1730	nm
PNR-24	8/14/2001 18:20	101.8	80.3	nm	6.60	231	282	1040	< 1	43400	3450	206	14.9	< 0.05	6.8	500	65.0	nm	23900	67000	51.3	1730	nm
PNR-24	11/8/2001 13:40	84.5	84.4	nm	nm	479	584	1090	< 1	34600	3750	248	14.5	< 0.05	6.5	379	nm	320.0	19400	61000	49.2	1690	nm
PNR-24	2/21/2002 13:55	120.4	67.1	nm	6.24	235	287	1020	< 4	44700	3160	150	17.2	< 0.05	6.8	498	163.0	nm	23500	68500	62.6	1450	nm
PNR-24	5/23/2002 11:50	113.3	78.3	nm	6.43	258	315	842	< 4	44700	2760	159	14.5	< 0.05	6.7	404	207.0	nm	21300	69000	71.2	1940	3.7
PNR-24	8/21/2002 13:10	104.6	70.0	nm	6.30	175	214	1070	< 4	44400	3360	170	16.0	< 0.05	6.7	435	59.0	199.0	21600	72200	73.9	1470	3.7
PNR-24	11/6/2002 12:32	113.5	69.0	nm	6.55	171	208	1120	< 4	36900	3700	219	17.0	< 0.05	6.7	452	50.0	225.0	22100	68300	61.1	1670	3.5
PNR-24	3/5/2003 11:40	114.0	68.5	nm	7.03	195	238	1210	< 4	41300	4190	283	16.8	0.07	6.6	401	62.0	219.0	22500	66200	47.3	1740	3.5
PNR-24	5/28/2003 14:50	103.5	69.4	nm	6.58	198	242	1170	< 1	40800	4190	306	17.9	< 0.05	6.9	438	55.0	132.0	23300	68400	94.0	1440	3.3
PNR-24	8/14/2003 13:08	96.2	65.2	nm	6.49	228	278	1180	< 1	41300	11300	313	17.8	< 0.05	6.8	402	58.0	76.0	22000	68100	88.6	1130	3.1
PNR-24	11/6/2003 11:00	108.6	69.5	nm	5.85	187	228	948	< 4	40900	3410	254	19.3	< 0.05	6.8	385	47.0	89.0	19500	64700	41.9	1080	3.3
PNR-24	3/17/2004 12:10	130.0	63.3	nm	5.67	210	257	995	< 1	36900	3570	256	14.4	< 0.05	6.8	371	56.0	142.0	20000	56200	80.1	956	3.6
PNR-24	6/9/2004 14:20	mnw	56.9	nm	6.69	303	369	751	< 4	32500	2760	213	12.7	< 0.05	6.9	311	52.0	110.0	18000	49700	75.8	1160	4.3
PNR-24	9/15/2004 18:05	68.5	55.0	nm	6.48	707	862	476	< 4	25100	1890	171	10.2	< 0.05	7.0	235	57.0	125.0	14200	40200	61.4	407	4.6
PNR-24	11/18/2004 11:05	54.5	59.6	nm	6.88	869	1060	332	< 4	22000	1360	129	7.7	0.12	6.9	254	64.0	73.0	12400	34400	55.0	273	4.6
PNR-24	3/2/2005 13:25	40.2	60.0	nm	6.65	1050	1280	248	< 4	18500	1100	117	6.9	0.05	7.1	174	59.0	63.0	11800	29800	46.5	211	4.9
PNR-24	5/25/2005 13:45	38.4	56.6	nm	6.38	1010	1230	181	< 4	14900	840	94	5.1	< 0.05	7.0	164	55.0	80.0	9980	24000	41.0	106	5.0
PNR-24	8/17/2005 16:05	37.7	55.6	nm	6.59	1250	1520	121	< 4	12600	583	68	4.8	< 0.05	7.2	93	52.0	70.0	7910	22100	36.2	43	5.6
PNR-24	11/16/2005 16:15	34.4	52.7	nm	7.02	1310	1600	90	< 4	10600	450	55	3.3	< 0.05	7.2	120	60.0	101.0	7410	17600	29.7	9	7.1
PNR-24	2/8/2006 13:30	27.2	50.0	nm	7.10	1440	1760	72	< 4	8610	309	32	3.7	< 0.05	7.1	109	57.0	57.0	6220	15200	26.1	12	8.8
PNR-24	5/24/2006 12:55	26.0	49.8	nm	7.08	1430	1750	41	< 4	7840	191	22	2.5	< 0.05	7.9	67	50.0	53.0	5330	12800	22.8	14	10.8
PNR-24	8/24/2006 11:22	21.7	51.1	nm	7.95	1490	1820	29	< 4	6700	135	15	2.5	<0.05	7.4	61	48.0	46.0	4850	11800	21.5	18	14.2
PNR-24	12/8/2006 10:50	15.5	49.4	nm	7.32	1450	1770	24	< 4	5660	109	12	2.3	0.06	7.6	52	45.4	44.0	4350	10900	19.0	53	17.0
PNR-24	3/14/2007 15:40	21.8	47.9	nm	7.23	1550	1880	30 B	< 4	5110	127	12	2.0	< 0.05	7.8	59	78.1	nm	4080	9920	17.1	62	15.0
PNR-25	8/14/2001 13:15	102.9	76.7	nm	6.60	255	311	924	< 1	39900	2890	140	15.8	< 0.05	6.8	510	68.6	nm	24000	70500	75.6	1730	nm
PNR-25	8/14/2001 19:05	99.2	81.1	nm	6.80	246	301	1020	< 1	45400	3180	160	15.8	< 0.05	6.8	560	65.3	nm	26600	70300	76.8	1550	nm
PNR-25	11/8/2001 10:15	nm	84.4	nm	nm	528	644	1660	< 1	38300	6000	448	18.5	< 0.05	6.5	433	nm	276.0	21200	65600	48.5	2260	nm
PNR-25	2/21/2002 15:30	103.1	72.6	nm	6.05	237	289	2430	< 4	40100	9350	797	25.6	< 0.05	6.7	278	200.0	nm	18700	64500	57.9	1280	nm
PNR-25	5/22/2002 16:50	34.8	71.1	nm	6.80	930	1130	452	< 4	11500	1770	156	10.4	< 0.05	7.0	78	243.0	nm	5600	18700	28.9	756	4.2
PNR-25	8/21/2002 14:40	11.8	61.4	nm	7.10	1040	1270	70	< 4	3560	384	51	1.4	< 0.05	7.4	31	59.0	312.0	2040	6790	11.9	< 30	6.5
PNR-25	11/6/2002 14:55	14.5	56.7	nm	7.14	877	1070	48	< 4	3110	298	43	0.9	< 0.05	7.5	33	45.0	123.0	2140	6330	13.0	< 10	8.0
PNR-25	3/5/2003 12:45	13.1	55.0	nm	7.91	585	713	47	< 4	3590	245	31	1.0	< 0.05	7.4	32	37.0	285.0	2340	6800	12.2	6	9.2
PNR-25	5/28/2003 15:25	11.7	53.6	nm	7.19	506	618	39	< 1	3600	226	31	0.8	< 0.05	7.5	32	30.0	301.0	2200	6400	11.8	< 3	11.4
PNR-25	8/14/2003 10:00	11.0	50.6	nm	7.32	459	560	36	< 1	4510	2200	31	0.9	< 0.05	7.6	26	31.0	80.0	2140	6590	10.4	< 10	11.2
PNR-25	11/5/2003 15:15	12.5	52.2	nm	6.72	513	626	42	< 4	4610	256	37	1.6	< 0.05	7.5	35	27.0	47.0	2360	7090	11.6	14	9.3
PNR-25	3/17/2004 14:15	15.0	43.6	nm	6.50	461	562	49	< 1	4760	264	34	1.4	< 0.05	7.4	33	27.0	53.0	2480	7130	12.2	4	9.4
PNR-25	6/8/2004 13:00	11.7	38.9	nm	7.53	601	733	45	< 4	4090	254	34	1.4	< 0.05	7.7	36	26.4	50.0	3040	7490	12.4	167	9.2
PNR-25	9/15/2004 16:45	13.0	40.4	nm	7.55	562	685	52	< 4	3980	323	47	1.6	< 0.05	7.7	34	23.3	46.0	2440	6880	12.0	79	7.4
PNR-25	11/18/2004 9:00	12.3	37.3	nm	7.69	554	676	49	< 4	3750	322	48	1.5	0.07	7.7	37	23.2	26.9	2360	6590	12.0	39	7.6
PNR-25	3/2/2005 13:00	9.7	37.1	nm	7.53	676	824	39	< 4	3570	262	40	1.3	0.25	7.9	29	22.0	23.0	2510	6630	11.5	106	7.8
PNR-25	5/25/2005 11:15	9.7	34.7	nm	7.50	487	588	44	< 4	4250	311	49	1.5	< 0.05	7.9	22	25.7	28.8	2400	6270	10.8	821	8.3
PNR-25	8/17/2005 18:20	10.4	33.3	nm	7.71	522	637	40	< 4	2960	289	46	1.2	< 0.05	7.8	23	17.3	18.8	1980	5550	10.0	27	7.9
PNR-25	11/16/2005 13:25	11.6	32.5	nm	7.96	492	586	36	7	2890	287	48	1.2	< 0.05	7.9	21	19.8	19.6	2010	4910	9.2	46	7.2
PNR-25	2/8/2006 11:15	8.0	29.9	nm	7.85	545	665	36	< 4	2530	239	36	1.2	< 0.05	7.7	25	19.9	39.5	1860	4780	8.5	10	7.3
PNR-25	5/24/2006 11:45	8.3	29.9	nm	7.88	622	759	28	< 4	2450	182	27	1.0	0.07	8.2	22	19.7	47.2	1790	4200	6.3	81	7.2
PNR-25	8/24/2006 12:00	6.8	29.7	nm	8.33	527	643	26	< 4	2180	191	30	1.2	<0.05	8.0	23	18.4	18.8	1600	4190	7.9	55	6.3
PNR-25	12/8/2006 11:30	5.3	29.2	nm	7.36	547	667	34	< 4	2060	239	38	1.2	<0.05	8.0	23	18.6	18.0	1500	4180	7.7	117	5.9
PNR-25	3/15/2007 10:53	6.1	29.2	nm	7.81	513	626	49	< 4	2090	368	59	1.4	< 0.05	7.7	26	21.3	nm	1430	3820	7.1	26	4.9
PNR-26	8/14/2001 18:00	nm	79.2	nm	nm	144	176	910	< 1	45000	2820	133	14.4	< 0.05	7.2	517	63.1	nm	23800	68700	74.7	1660	nm
PNR-26	8/22/2001 10:00	98.0	75.0	nm	nm	159	194	803	< 1	42600	2490	118	13.6	< 0.05	7.5	499	61.9	nm	23400	68600	65.8	1670	nm
PNR-26	11/8/2001 14:15	nm	83.3	nm	nm	640	781	1070	< 1	40900	3740	259	16.4	0.16	7.5	437	nm	168.0	22800	67200	51.6	1170	nm
PNR-26	2/21/2002 16:00	125.0	65.0	nm	6.42	234	285	1310	< 4	40800	4380	269	18.4	< 0.05	6.9	453	100.0	nm	22300	67000	61.2	1080	nm
PNR-26	5/23/2002 11:15	105.7	75.6	nm	6.68	177	215	1220	< 4	42400	4210	284	18.4	< 0.05	6.9	392	87.0	nm	20800	67400	67.2	1530	2.7

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
PNR-26	8/21/2002 16:00	100.3	67.4	nm	6.40	301	367	1360	< 4	40600	4880	361	17.5	< 0.05	6.7	403	59.0	167.0	15300	69100	50.7	1340	2.7
PNR-26	11/6/2002 16:20	107.2	62.7	nm	6.35	181	221	1450	< 4	36000	5080	356	16.8	< 0.05	6.7	509	53.0	101.0	22900	65300	57.5	1610	2.6
PNR-26	3/5/2003 14:00	33.0	64.0	nm	7.60	1470	1800	108	< 4	8400	545	67	3.8	< 0.05	7.4	72	58.0	109.0	5290	15600	27.4	19	5.5
PNR-26	5/28/2003 16:35	27.6	61.2	nm	7.09	1500	1830	62	< 1	8060	464	75	2.3	< 0.05	7.4	74	57.0	85.0	4990	14800	25.6	< 5	6.8
PNR-26	8/14/2003 10:45	27.2	56.8	nm	6.86	876	1070	36	< 1	8960	3810	51	3.0	0.09	7.4	49	45.0	101.0	4650	14300	18.9	< 10	10.5
PNR-26	11/6/2003 12:30	37.5	63.7	nm	7.33	1480	1800	17	< 4	7010	151	26	2.9	0.22	7.8	48	45.0	56.0	4450	11700	18.5	< 1	10.3
PNR-26	3/17/2004 14:15	40.0	49.1	nm	6.90	1490	1710	11	53	6110	82	13	1.8	< 0.05	7.7	32	36.0	52.0	3620	10000	16.0	< 1	14.4
PNR-26	6/9/2004 16:00	mnw	44.3	nm	7.76	1310	1590	12	< 4	4710	67	9	1.7	< 0.05	7.9	34	29.1	32.0	3750	9140	14.2	< 50	11.2
PNR-26	9/16/2004 9:50	13.5	45.7	nm	7.52	1350	1610	7	23	3880	45	6	1.5	< 0.05	8.0	27	25.4	33.0	3020	7860	13.4	< 3	8.9
PNR-26	11/18/2004 12:25	12.9	43.2	nm	7.99	1130	1370	8	< 4	3690	47	7	1.6	0.33	8.0	29	26.2	128.0	2730	7250	12.6	< 1	9.3
PNR-26	3/2/2005 16:10	12.1	42.5	nm	7.89	1230	1490	5	5	3280	32	5	1.8	0.12	8.0	22	23.0	26.0	2660	6630	11.3	< 1	9.1
PNR-26	5/25/2005 15:15	6.3	38.7	nm	7.38	990	1200	12	5	3000	53	5	1.6	< 0.05	8.2	19	19.3	23.6	2230	6170	10.2	< 1	9.8
PNR-26	8/17/2005 18:00	9.3	40.1	nm	7.25	1090	1330	13	< 4	2900	54	5	1.2	< 0.05	8.0	18	19.6	21.0	2200	5990	10.3	2	9.4
PNR-26	11/16/2005 14:55	5.5	34.7	nm	7.71	884	1080	10	< 4	2780	53	7	1.6	< 0.05	7.6	14	22.5	38.3	2270	5510	10.4	2	9.1
PNR-26	2/8/2006 15:10	4.0	31.8	nm	7.47	877	1070	14	< 4	2640	59	6	1.2	< 0.05	7.1	17	20.1	107.0	2070	5280	9.4	13	8.9
PNR-26	5/24/2006 14:10	nm	nm	nm	nm	986	1200	49	< 4	6310	252	31	2.4	< 0.05	8.0	58	23.0	35.0	4530	11100	19.9	845	2.7
PNR-26	8/24/2006 13:30	nm	32.2	nm	7.87	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
PNR-27	8/21/2001 15:35	27.6	10.7	nm	nm	592	722	1790	< 1	10300	9790	1290	<0.1	28.80	7.1	37	24.4	nm	2440	21600	23.1	2020	nm
PNR-27	9/5/2001 15:15	25.9	12.3	nm	7.00	594	725	1990	< 1	10000	10600	1370	<0.1	27.50	6.8	39	20.9	nm	2700	20400	25.0	1940	nm
PNR-27	11/6/2001 15:30	28.1	10.0	nm	7.10	569	694	1960	< 1	10900	10700	1400	<0.1	29.70	6.7	40	nm	43.0	2840	21200	27.1	1750	nm
PNR-27	2/20/2002 17:02	27.5	10.5	nm	6.66	628	767	1970	< 4	11400	10600	1390	<0.1	27.20	6.8	54	27.0	nm	3130	21000	27.1	1530	nm
PNR-27	5/21/2002 18:12	32.1	13.7	nm	6.65	589	719	1790	< 4	12000	9650	1260	<0.1	34.20	6.8	40	35.0	nm	2990	23800	29.9	1940	0.2
PNR-27	8/20/2002 19:20	29.8	14.5	nm	6.90	580	708	1900	< 4	12600	9710	1210	< 0.1	31.70	6.9	32	26.0	38.0	2850	25600	28.2	1850	0.2
PNR-27	11/6/2002 9:55	32.7	11.3	nm	6.84	583	712	2090	< 4	11200	11000	1400	< 0.1	31.20	6.8	42	22.0	30.0	3450	24200	26.0	1820	0.2
PNR-27	3/5/2003 11:15	30.3	10.1	nm	6.73	567	691	2060	< 4	12900	10800	1370	< 0.1	33.50	6.6	43	26.0	25.0	3740	22400	19.5	2080	0.2
PNR-27	5/28/2003 11:00	25.4	14.4	nm	6.60	589	718	1990	< 1	12200	10400	1330	< 0.1	34.00	6.7	57	26.0	33.0	3640	25500	34.1	1620	0.2
PNR-27	8/13/2003 13:35	32.7	15.1	nm	7.50	577	705	1900	< 1	13000	10200	1320	< 0.1	32.50	6.6	54	26.0	27.0	3660	24400	31.7	1280	0.2
PNR-27	11/5/2003 11:45	41.7	9.1	nm	7.43	568	693	1760	< 4	13100	10000	1370	< 0.1	35.10	6.8	53	24.0	48.0	3760	23300	19.6	1430	0.2
PNR-27	March 2004	Not Sampled																					
PNR-27	6/8/2004 11:50	mnw	11.5	nm	6.91	577	704	1930	< 4	14000	10400	1340	< 0.1	30.70	6.7	46	26.0	30.0	4480	26200	36.7	1920	0.2
PNR-27	9/14/2004 13:05	33.9	11.7	nm	7.65	525	640	1990	< 4	13100	10500	1340	< 0.1	30.90	6.8	58	29.0	31.0	4320	27500	36.5	1760	0.3
PNR-27	11/17/2004 10:38	39.5	10.6	nm	6.80	575	701	2010	< 4	14600	10600	1360	< 0.1	30.80	6.6	56	32.0	35.0	4630	24800	37.3	1830	0.2
PNR-27	3/1/2005 15:33	36.7	9.5	nm	6.67	612	747	2090	< 4	14700	11100	1420	< 0.1	30.00	6.8	48	28.0	33.0	5060	28200	36.7	1770	0.2
PNR-27	5/24/2005 15:33	24.1	10.4	nm	6.75	519	633	1980	< 4	13500	10200	1280	< 0.1	33.30	6.7	50	22.0	23.0	4920	28400	37.6	1840	0.2
PNR-27	8/16/2005 17:08	38.3	10.7	nm	6.62	600	732	2080	< 4	14300	11000	1400	< 0.1	39.60	6.7	39	29.0	28.0	4850	28000	37.9	1810	0.2
PNR-27	11/15/2005 16:35	41.6	10.0	nm	6.61	526	642	2290	< 4	15200	12100	1550	< 0.1	35.40	6.8	67	31.0	28.0	6000	27200	39.0	1790	0.2
PNR-27	2/8/2006 17:10	38.0	9.0	nm	7.19	597	729	2160	< 4	13900	11300	1440	< 0.1	30.60	6.9	64	28.0	27.0	5460	25200	47.0	1740	0.1
PNR-27	5/23/2006 16:57	36.2	9.8	nm	6.68	575	701	2030	< 4	15200	10800	1400	< 0.1	39.40	7.4	70	27.0	29.0	5580	27900	39.1	1770	0.2
PNR-27	8/23/2006 15:01	24.7	11.0	nm	6.63	550	671	2070	< 4	15000	10800	1370	< 0.1	29.30	6.6	47	31.0	28.0	5390	29500	41.2	1780	0.2
PNR-27	12/7/2006 14:15	39.1	9.4	nm	6.89	565	690	2100	< 4	14200	10800	1350	< 0.1	34.40	6.8	47	27.0	28.0	5490	27900	41.6	1730	0.2
PNR-27	3/14/2007 16:50	39.0	9.2	nm	6.75	559	682	2060	< 4	14700	10800	1370	< 0.1	33.20	6.6	51	247.0	nm	5660	28700	40.1	1680	0.2
PNR-27	10/3/2007 12:50	38.4	10.4	nm	6.22	562	686	1920	< 4	15100	10000	1270	< 0.1	31.80	6.6	46	28.0	32.0	5410	27300	41.7	1900	0.2
PNR-27	3/27/2008 17:10	39.7	9.4	nm	6.55	579	707	2000	< 4	15500	10400	1310	< 0.1	32.90	6.5	53	32.0	29.0	5900	27200	41.2	1690	0.2
PNR-27	10/25/2008 14:45	43.1	9.7	0.44	6.56	582	710	1970	< 4	14900	10200	1290	< 0.1	38.60	6.8	44	27.0	32.0	6130	28300	39.9	1910	0.2
PNR-27	4/19/2009 12:50	44.0	10.8	0.63	6.43	567	691	1950	< 4	15400	9990	1240	< 0.1	29.30	6.7	50	19.0	21.0	6240	23900	42.6	1750	0.2
PNR-28	8/21/2001 16:45	31.4	10.3	nm	nm	501	612	1910	< 1	11700	10800	1460	< 0.1	23.10	7.2	39	21.1	nm	3090	25200	26.2	1480	nm
PNR-28	9/5/2001 14:35	28.4	13.0	nm	7.00	493	601	2020	< 1	12300	11100	1470	< 0.1	21.20	6.9	36	18.3	nm	3200	22600	27.0	nm	nm
PNR-28	11/6/2001 14:40	29.7	12.2	nm	7.10	519	633	1880	< 1	10500	10400	1380	< 0.1	20.20	6.7	34	nm	37.3	3070	24700	24.4	1660	nm
PNR-28	2/20/2002 16:30	31.9	10.6	nm	6.88	522	637	2060	< 4	13700	11300	1490	< 0.1	21.60	6.8	82	23.0	nm	3850	23000	30.6	1430	nm
PNR-28	5/21/2002 17:15	38.8	12.4	nm	6.67	450	549	1990	< 4	14700	10900	1430	< 0.1	23.30	6.8	43	33.0	nm	3910	27400	33.9	1820	0.2
PNR-28	8/20/2002 18:30	34.2	14.4	nm	6.80	510	622	2090	< 4	15200	10800	1340	< 0.1	22.90	6.8	39	23.0	30.0	3510	31200	32.8	1590	0.2
PNR-28	11/5/2002 13:20	36.4	10.2	nm	6.53	516	630	2340	< 4	15700	12600	1640	< 0.1	22.70	6.8	46	20.0	36.0	4850	29700	28.9	1740	0.2
PNR-28	3/5/2003 10:25	36.4	10.2	nm	6.71	503	614	2280	< 4	15700	11700	1480	< 0.1	23.60	6.6	45	22.0	23.0	4930	26700	22.4	1880	0.2
PNR-28	5/28/2003 10:30	32.8	13.1	nm	6.53	519	633	2130	< 1	15100	11300	1450	< 0.1	22.40	6.7	63	22.0	38.0	4900	30200	40.8	1460	0.2
PNR-28	8/13/2003 13:00	40.3	14.4	nm	7.56	517	631	2140	< 1	16800	11300	1440	< 0.1	21.80	6.5	53	22.0	31.0	5200	29500	38.8	1270	0.2
PNR-28	11/5/2003 14:30	4.6	9.2	nm	7.30	484	591	2180	< 4	17300	11700	1520	< 0.1	22.00	6.9	58	23.0	28.0	6010	29100	23.0	1350	0.2
PNR-28	March 2004	Not Sampled																					
PNR-28	6/8/2004 11:15	mnw	11.4	nm	6.90	528	644	2090	< 4	17400	11000	1400	< 0.1	21.70	6.7	51	20.0	36.0	5720	32900	44.5	1740	0.2
PNR-28	9/15/2004 10:30	42.9	13.5	nm	6.61	542	661	2230	< 4	18300	11700	1490	< 0.1	20.60	6.8	62	28.0	32.0	6490	33700	45.3	1630	0.2
PNR-28	11/17/2004 9:30	49.7	10.1	nm	6.92	529	646	2310	< 4	17800	11800	1470	< 0.1	21.30	6.6	68	25.0	24.0	6480	32500	45.8	1660	0.2
PNR-28	3/1/2005 14:39	45.2	9.5	nm	6.65	560	684	2170	< 4	17500	11400	1440	< 0.1	20.00	6.7	58	25.0	29.0	7370	34300	45.5	1510	0.2
PNR-28	5/25/2005 11:07	48.2	9.9	nm	6.49	472	575	2150	< 4	17800	11100	1400	< 0.1	21.50	6.7	59	22.0	21.0	7440	34200	45.7	1770	0.2
PNR-28	8/16/2005 16:00	46.5	10.8	nm	6.60	571	697	2190	< 4	17900	11400	1430	< 0.1	21.80	6.9	43	24.0	21.0	7050	33500	46.3	1670	0.2
PNR-28	11/15/2005 11:35	51.2	10.1	nm	6.63	497	606	2240	< 4	19200	11600	1470	< 0.1	20.20	6.9	42	23.0	24.0	7700	32500	47.5	1600	0.2
PNR-28	2/8/2006 14:40	46.9	9.1	nm	7.22	557	680	2200	< 4	18000	11300	1420	< 0.1	23.00	6.9	66	24.0	23.0	7970	31500	47.0	1630	0.1
PNR-28	5/23/2006 13:55	43.7	9.8	nm	6.69	539	658	2080	< 4	18800	10800	1350	< 0.1	23.10	7.4	60	24.0	25.0	7970	32500	47.7	1630	0.2

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC	Field Temp.	Field D.O.	Field pH	Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Hardness, Total as $CaCO_3$	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	Lab pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate	Flouride
		mS	°C	mg/L	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mS	mg/l	mg/l
PNR-28	8/23/2006 12:35	39.8	10.5	nm	6.66	518	632	2140	< 4	18300	10700	1310	< 0.1	21.30	6.6	55	27.0	25.0	7930	34700	49.8	1600	0.2
PNR-28	12/6/2006 16:30	47.4	8.8	nm	6.93	526	642	1990	< 4	18400	10100	1250	< 0.1	28.30	6.8	44	23.0	23.0	7690	33600	49.5	1680	0.2
PNR-28	3/13/2007 18:00	47.7	9.4	nm	6.14	523	638	2010	< 4	18400	10200	1270	< 0.1	21.60	6.7	61	92.0	nm	8180	33300	49.3	1370	0.2
PNR-28	10/4/2007 16:30	48.9	9.9	nm	6.53	529	645	1910	< 4	19500	9550	1160	< 0.1	23.20	6.5	43	21.0	30.0	7950	33200	51.9	1720	0.1
PNR-28	3/26/2008 18:30	48.6	9.5	nm	6.77	548	668	2040	< 4	19000	10300	1280	< 0.1	24.40	6.6	50	25.0	24.0	8610	31900	48.6	1560	0.2
PNR-28	10/25/2008 13:40	51.6	9.5	0.67	6.56	546	666	1860	< 4	18600	9390	1150	< 0.1	26.00	6.8	46	20.0	27.0	7980	34100	48.9	1750	0.2
PNR-28	4/19/2009 11:10	48.8	9.9	1.38	6.38	536	654	1740	< 4	17500	8780	1080	< 0.1	22.20	6.7	50	15.0	15.0	7860	29600	48.0	1660	0.1
PNR-29	8/21/2001 17:45	5.1	10.1	nm	nm	606	740	390	< 1	129	2170	290	< 0.1	174.00	7.2	14	25.0	nm	480	4760	5.0	1940	nm
PNR-29	9/5/2001 14:00	4.9	12.8	nm	7.40	695	847	393	< 1	104	2180	291	< 0.1	162.00	6.5	11	22.4	nm	483	4760	4.8	nm	nm
PNR-29	11/6/2001 12:50	4.9	11.7	nm	7.50	691	843	400	< 1	99	2180	286	< 0.1	158.00	7.1	11	nm	30.1	469	4650	5.0	1880	nm
PNR-29	2/20/2002 13:03	4.8	10.1	nm	7.01	623	760	399	< 4	106	2200	292	< 0.1	160.00	6.9	13	28.0	nm	501	4640	5.4	2070	nm
PNR-29	5/21/2002 16:30	5.4	11.9	nm	7.00	662	807	359	< 4	83	1980	262	< 0.1	169.00	7.3	11	31.0	nm	449	4640	5.3	2080	0.2
PNR-29	8/20/2002 11:20	4.3	13.3	nm	7.00	669	816	376	< 4	113	2130	290	< 0.1	163.00	7.2	10	25.0	35.0	431	4780	5.4	2030	0.3
PNR-29	11/5/2002 12:42	4.9	9.9	nm	6.93	680	830	403	< 4	117	2200	290	< 0.1	167.00	7.1	12	25.0	31.0	469	4770	5.5	2070	0.3
PNR-29	3/5/2003 10:30	4.8	9.2	nm	6.66	661	807	410	< 4	181	2230	292	< 0.1	175.00	7.2	13	6.0	22.0	550	4730	5.5	2060	0.2
PNR-29	5/28/2003 10:00	4.4	12.1	nm	6.87	677	826	418	< 1	116	2230	292	< 0.1	172.00	7.1	13	25.0	35.0	489	4790	5.6	2030	0.3
PNR-29	8/13/2003 13:08	4.0	11.5	nm	7.48	674	822	404	< 1	88	2200	288	< 0.1	181.00	7.0	11	25.0	61.0	460	4800	5.3	1920	0.3
PNR-29	11/4/2003 16:45	4.6	9.8	nm	7.11	684	835	362	< 4	104	2160	305	< 0.1	178.00	7.1	13	26.9	29.8	482	4760	4.7	2120	0.3
PNR-29	March 2004	Not Sampled																					
PNR-29	6/8/2004 10:45	mnw	11.2	nm	7.26	702	856	403	< 4	119	2260	304	< 0.1	176.00	7.1	12	25.3	35.1	492	4770	4.9	2030	0.3
PNR-29	9/15/2004 9:40	5.0	12.7	nm	7.00	717	875	441	< 4	99	2350	303	< 0.1	174.00	7.2	12	26.8	26.2	468	4780	5.3	2040	0.3
PNR-29	11/17/2004 9:31	5.4	9.6	nm	7.15	693	846	416	< 4	111	2270	299	< 0.1	171.00	6.9	13	27.3	29.0	505	4660	5.3	2010	0.3
PNR-29	3/1/2005 13:36	5.0	9.4	nm	7.08	727	887	428	< 4	112	2340	309	< 0.1	170.00	7.1	14	28.5	26.8	549	4800	5.3	2030	0.3
PNR-29	5/25/2005 9:46	5.2	9.8	nm	6.90	611	745	419	< 4	98	2290	301	< 0.1	180.00	7.2	14	27.0	28.9	524	4720	5.3	1860	0.3
PNR-29	8/16/2005 14:48	5.1	10.6	nm	6.98	657	802	437	< 4	102	2400	317	< 0.1	177.00	7.3	11	25.7	23.3	498	4790	5.3	1930	0.3
PNR-29	11/15/2005 10:50	5.5	9.7	nm	7.01	656	800	461	< 4	107	2520	332	< 0.1	180.00	7.1	10	27.5	26.3	536	4810	5.4	2020	0.3
PNR-29	2/8/2006 16:15	5.1	8.7	nm	7.43	720	878	468	< 4	108	2530	332	< 0.1	180.00	7.2	13	29.5	29.7	564	4700	5.4	1980	0.2
PNR-29	5/23/2006 14:35	4.8	10.2	nm	7.02	695	848	421	< 4	106	2350	316	< 0.1	256.00	7.9	13	28.2	31.8	555	4520	5.4	2050	0.3
PNR-29	8/23/2006 11:37	4.1	9.9	nm	7.00	663	808	445	< 4	103	2410	315	< 0.1	259.00	7.0	14	29.2	26.9	545	4820	5.6	1970	0.3
PNR-29	12/6/2006 16:00	5.3	8.7	nm	7.22	672	820	426	< 4	96	2350	313	< 0.1	223.00	7.2	15	29.0	27.9	544	4830	5.7	2010	0.3
PNR-29	3/13/2007 17:50	5.5	9.1	nm	6.83	664	811	446	< 4	106	2410	315	< 0.1	235.00	7.1	13	38.0	nm	538	4740	5.5	1880	0.3
PNR-29	10/2/2007 18:40	6.4	9.5	nm	7.06	668	815	420	< 4	96	2280	299	< 0.1	243.00	7.1	11	27.7	30.5	487	4680	5.8	1960	0.3
PNR-29	3/26/2008 12:10	5.3	9.6	nm	7.19	689	840	426	< 4	92	2320	306	< 0.1	260.00	7.1	10	26.7	27.7	489	4660	5.5	1990	0.3
PNR-29	10/25/2008 12:55	5.8	9.3	0.77	7.02	684	835	446	< 4	105	2430	319	< 0.1	202.00	7.1	12	28.1	37.1	543	4960	5.5	2150	0.3
PNR-29	4/21/2009 11:30	5.5	10.0	0.68	6.75	669	816	445	< 4	81	2390	310	< 0.1	202.00	7.1	13	28.1	29.0	499	4250	5.4	2140	0.3
PNR-33-06	10/24/2006 16:25	mn	nm	nm	nm	607	741	474	< 4	101	3020	447	0.5	38.80	7.0	20	28.9	38.4	286	4890	5.3	2700	0.2
PNR-33-06	12/6/2006 11:00	4.6	9.4	nm	7.03	464	566	467	< 4	85	2740	381	0.1	53.40	7.0	16	25.3	26.4	264	4450	4.9	2490	0.2
PNR-33-06	3/13/2007 13:45	4.7	10.0	nm	6.89	411	502	467	< 4	73	2490	321	0.2	45.40	7.2	15	33.7	nm	269	4170	4.6	2390	0.2
PNR-33-06	10/3/2007 15:35	5.6	11.4	nm	7.22	396	483	483	< 4	104	2600	340	0.1	43.60	7.1	16	24.8	27.3	276	4480	5.0	2510	0.3
PNR-33-06	3/26/2008 0:00	4.6	11.8	nm	7.15	395	482	464	< 4	107	2540	336	0.1	53.80	7.2	16	25.5	30.1	270	4550	4.9	2550	0.3
PNR-33-06	10/23/2008 11:05	4.8	10.1	0.24	7.06	390	475	513	< 4	125	2840	379	< 0.1	57.00	7.3	16	25.7	27.6	295	4500	4.9	2650	0.3
PNR-33-06	4/17/2009 17:30	5.0	10.0	0.24	6.81	389	475	488	< 4	134	2690	356	< 0.1	47.40	7.2	17	25.5	27.0	273	4230	4.9	2670	0.3
PNR-34-07	3/14/2007 13:15	34.5	9.9	nm	6.51	469	573	2330	< 4	15600	13200	1800	0.6	6.30	6.8	50	330.0	nm	4480	29400	40.3	1630	0.1
PNR-34-07	10/5/2007 15:40	39.3	9.7	nm	6.56	477	582	2220	< 4	15700	12700	1730	0.4	2.84	6.8	45	16.0	28.0	4390	28700	40.1	1700	0.3
PNR-34-07	3/27/2008 18:00	41.4	9.8	nm	6.64	515	629	2150	< 4	15900	11900	1590	0.2	9.39	6.7	38	17.0	17.0	5290	26900	41.3	1430	0.3
PNR-34-07	10/25/2008 11:15	45.5	9.9	0.25	6.60	498	608	2310	< 4	17000	12800	1720	0.2	6.33	6.8	43	12.0	41.0	5850	29800	44.4	1740	0.1
PNR-34-07	4/22/2009 16:15	41.5	10.8	0.35	6.56	492	600	1740	< 4	14300	9390	1220	0.5	9.46	6.7	50	10.0	24.0	5560	26300	39.4	1470	< 0.1
PNR-35-07	3/13/2007 11:15	3.8	9.9	nm	6.54	679	828	240	< 4	84	1300	171	0.9	< 0.05	7.2	8	31.3	nm	518	3220	4.0	1560	0.4
PNR-35-07	10/2/2007 16:05	4.6	10.2	nm	6.96	670	818	234	< 4	89	1290	172	0.4	< 0.05	7.2	8	21.5	34.2	509	3150	4.2	1580	0.4
PNR-35-07	3/26/2008 10:40	3.8	10.1	nm	7.17	686	837	236	< 4	87	1310	176	0.4	< 0.05	7.2	8	21.7	46.7	513	3120	4.0	1580	0.4
PNR-35-07	10/22/2008 17:10	3.9	9.9	0.37	7.06	661	806	240	< 4	101	1340	181	0.4	< 0.05	7.3	8	20.8	69.8	527	3230	4.0	1620	0.4
PNR-35-07	4/20/2009 18:30	4.0	9.9	0.32	6.82	667	814	246	< 4	79	1350	179	0.5	< 0.05	7.3	10	22.1	164.0	490	2830	4.0	1570	0.4
PNR-36-07	3/13/2007 11:40	3.2	9.5	nm	7.07	417	509	284	< 4	209	1470	185	< 0.1	77.70	7.1	12	25.2	nm	272	2690	3.5	1010	< 0.1
PNR-36-07	10/3/2007 16:50	3.2	9.7	nm	6.96	425	518	271	< 4	139	1400	176	< 0.1	68.40	7.1	9	17.8	29.9	242	2700	3.6	1200	0.3
PNR-36-07	3/26/2008 0:00	3.1	9.4	nm	6.87	412	503	268	< 4	138	1350	166	< 0.1	56.40	7.2	10	17.2	19.6	208	2450	3.1	1050	0.3
PNR-36-07	10/23/2008 15:25	3.5	9.7	0.67	7.04	420	512	302	< 4	265	1560	196	< 0.1	78.70	7.1	11	17.8	21.8	289	2810	3.7	1170	0.3
PNR-36-07	4/21/2009 14:35	3.8	9.7	0.15	6.97	410	500	301	< 4	246	1560	197	< 0.1	68.80	7.0	13	16.4	23.0	274	2480	3.7	1130	0.3
PNR-38-08	3/26/2008 18:30	6.2	11.5	nm	7.29	508	620	348	< 4	854	1690	200	< 0.1	0.07	7.2	12	28.7	42.3	584	3630	5.2	1130	0.2
PNR-38-08	10/23/2008 13:10	6.0	9.7	0.18	7.20	477	581	406	< 4	1160	2030	247	1.8	< 0.05	7.2	12	23.6	32.0	618	4050	6.0	1210	0.2
PNR-38-08	4/21/2009 16:30	6.4	9.7	0.14	7.02	458	558	404	< 4	1230	2020	246	1.9	< 0.05	7.2	13	22.4	26.0	597	3710	6.3	1160	0.2
PNR-39-08	6/28/2008 14:20	29.5	9.5	nm	6.70	450	550	2080	< 4	10900	11900	1630	< 0.1	21.50	6.5	39	22.0	15.0	2840	20500	28.5	1830	0.2

Table 2 - Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
DOWL HKM Job No.: 14B805.101
Last update: 6/2/2009

Well No.	Date & Time	Field SC mS	Field Temp. °C	Field D.O. mg/L	Field pH S.U.	Alkalinity as $CaCO_3$ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Hardness, Total as $CaCO_3$ mg/l	Magnesium mg/l	Nitrogen, Ammonia mg/l	Nitrogen, Nitrate plus Nitrite mg/l	Lab pH S.U.	Potassium mg/l	Silica, Dissolved mg/l	Silica, Total mg/l	Sodium mg/l	Total Dissolved Solids @ 180° C mg/l	Specific Conductance @ 25° C mS	Sulfate mg/l	Flouride mg/l
PNR-39-08	10/23/2008 18:00	30.8	9.7	0.73	6.66	458	559	2120	< 4	11300	12100	1670	< 0.1	32.20	6.8	34	18.0	22.0	3020	21100	31.1	1720	0.2
PNR-39-08	4/22/2009 14:40	32.3	10.1	0.30	6.42	448	547	1890	< 4	11200	10800	1470	< 0.1	26.60	6.6	38	6.0	13.0	2800	23000	31.2	1670	0.2
PNR-RW-1	1/9/2008 14:33	69.5	9.3	nm	6.73	492	600	1380	< 4	28000	6020	627	nm	nm	6.7	81	23.0	nm	15400	45800	71.2	1760	nm
PNR-RW-2	1/9/2008 12:20	57.0	9.5	nm	6.69	476	581	1480	< 4	22400	6810	760	nm	nm	6.7	62	24.0	nm	11600	37200	59.7	1750	nm
PNR-RW-2	4/22/2009 19:20	49.6	9.5	1.71	6.59	nm	nm	nm	nm	17500	nm	nm	nm	nm	6.9	nm	nm	nm	nm	nm	48.5	nm	nm
PNR-RW-3	1/8/2008 16:08	71.2	9.5	nm	6.66	531	648	1960	< 4	31800	8920	984	nm	nm	6.7	71	22.0	nm	16000	49800	76.8	1660	nm
PNR-RW-3	4/22/2009 19:05	59.6	10.7	1.23	6.44	nm	nm	nm	nm	22000	nm	nm	nm	nm	6.8	nm	nm	nm	nm	nm	58.5	nm	nm
PNR-RW-4	1/8/2008 14:10	61.5	9.6	nm	6.66	574	700	1600	< 4	24400	7240	787	nm	nm	6.7	58	22.0	nm	12900	40600	63.6	1760	nm
PNR-RW-4	4/22/2009 18:55	55.2	9.7	1.05	6.51	nm	nm	nm	nm	19700	nm	nm	nm	nm	6.9	nm	nm	nm	nm	nm	53.6	nm	nm
PNR-RW-5	1/8/2008 11:47	40.6	9.6	nm	6.67	614	750	1540	< 4	15000	7670	927	nm	nm	6.7	42	24.0	nm	6680	26900	42.4	1760	nm
PNR-RW-5	4/22/2009 18:40	45.4	9.8	0.42	6.41	nm	nm	nm	nm	15800	nm	nm	nm	nm	6.7	nm	nm	nm	nm	nm	44.0		
PNR-RW-6	4/22/2009 17:00	52.2	5.4	nm	6.42	nm	nm	nm	nm	18800	nm	nm	nm	nm	6.8	nm	nm	nm	nm	nm	50.7	nm	nm
PNR-RW-7	4/22/2009 17:15	49.0	nm	nm	6.57	nm	nm	nm	nm	17900	nm	nm	nm	nm	6.7	nm	nm	nm	nm	nm	47.0	nm	nm
PNR-RW-8	4/22/2009 16:45	51.6	9.7	nm	6.59	nm	nm	nm	nm	18900	nm	nm	nm	nm	6.8	nm	nm	nm	nm	nm	50.3	nm	nm
PNR-RW-9	4/22/2009 17:45	59.6	23.2	0.24	6.79	nm	nm	nm	nm	21800	nm	nm	nm	nm	7.0	nm	nm	nm	nm	nm	58.6	nm	nm
PNR-RW-10	4/22/2009 18:00	7.1	27.9	0.16	8.51	nm	nm	nm	nm	871	nm	nm	nm	nm	8.6	nm	nm	nm	nm	nm	6.8	nm	nm
USGS-06-1	1/10/2008 12:53	3.1	9.7	nm	6.99	394	481	257	< 4	200	1390	182	NA	NA	7.3	9	21.4	NA	166	2340	3.0	1040	0.2
USGS-06-1	4/17/2009 17:15	3.1	10.1	0.49	7.16	390	476	240	< 4	229	1310	172	< 0.1	11.30	7.4	9	21.6	50.0	165	2270	2.9	973	0.3
USGS-06-2	4/18/2009 13:50	5.9	10.2	nm	7.27	315	384	390	< 4	791	2400	346	< 0.1	22.20	7.6	8	19.1	116.0	523	4250	6.0	1910	0.5
USGS-06-7	10/4/2007 17:50	1.1	9.6	nm	8.18	441	530	20	< 4	13	90	10	0.6	2.65	8.0	3	15.8	17.1	240	748	1.3	172	0.4
USGS-06-8	4/19/2009 13:05	1.2	9.8	0.08	7.67	440	519	21	9	15	99	11	0.6	< 0.05	7.9	4	16.3	16.9	236	734	1.2	168	0.5
USGS-06-11	4/20/2009 17:35	1.2	8.2	0.11	7.11	472	575	32	< 4	14	155	18	0.4	< 0.05	7.8	4	17.6	17.9	222	751	1.2	166	0.4
USGS-92-6	4/16/2009 16:13	10.0	8.3	0.30	7.03	363	443	367	< 4	2990	1650	178	0.8	< 0.05	7.3	12	17.3	20.0	1420	4820	10.1	486	0.2
USGS-92-7	4/15/2009 15:40	10.8	8.6	0.31	7.42	407	496	216	< 4	3290	899	88	2.4	< 0.05	7.4	20	13.9	12.9	1930	5580	10.8	371	0.3
USGS-92-9	4/15/2009 17:02	11.5	8.5	0.65	7.15	324	395	489	< 4	3480	2050	203	0.6	< 0.05	7.1	12	12.8	15.0	1610	6500	11.4	883	0.2
USGS-92-12	6/1/2000 0:00	2.7	10.8	nm	6.50	389	474	240	< 1	11	1670	260		3.94	7.9	14	nm	nm	95	2330	2.6	1410	nm
USGS-92-12	8/7/2001 11:35	2.2	9.8	nm	6.70	422	515	203	< 1	7	1420	222	<0.1	4.37	7.2	12	25.1	nm	92	2520	2.6	1360	nm
USGS-92-12	8/15/2001 14:40	mnw	9.3	nm	7.70	422	515	220	< 1	8	1520	235	<0.1	4.28	7.4	13	28.3	nm	94	2310	2.4	1450	nm
USGS-92-12	11/6/2001 14:30	1.7	10.0	nm	7.10	420	512	197	< 1	6	1370	212	<0.1	5.01	7.4	13	nm	32.1	83	2150	2.3	1200	nm
USGS-92-12	2/20/2002 14:25	2.3	10.0	nm	7.38	458	558	171	< 4	6	1270	205	<0.1	5.07	7.3	11	29.1	nm	84	2140	2.5	1220	nm
USGS 92-12	5/21/2002 14:05	2.6	12.7	nm	7.57	403	491	174	< 4	<10	1220	191	<0.1	4.98	7.6	11	26.8	nm	85	2040	2.3	1250	0.4
USGS 92-12	8/19/2002 16:00	2.4	9.7	nm	7.20	413	504	197	< 4	6	1520	249	< 0.1	5.53	7.4	12	24.4	22.2	90	2420	2.7	1400	0.4
USGS-92-12	11/5/2002 12:00	2.6	9.8	nm	7.31	422	514	226	< 4	6	1540	237	< 0.1	6.05	7.4	14	25.8	30.3	97	2560	2.9	1480	0.4
USGS-92-12	3/4/2003 11:30	2.3	8.4	nm	7.22	404	493	190	< 4	10	1360	216	< 0.1	6.28	7.5	13	26.0	27.0	97	2190	2.4	1190	0.4
USGS-92-12	5/13/2003 14:15	2.0	8.8	nm	8.04	415	507	187	< 4	7	1330	211	< 0.1	6.22	7.4	13	24.3	24.9	89	2030	2.3	1170	0.4
USGS-92-12	8/13/2003 7:48	2.0	10.1	nm	8.10	415	507	203	< 1	4	1440	226	< 0.1	5.48	7.4	13	25.8	29.8	101	2450	2.6	1370	0.4
USGS-92-12	11/5/2003 10:00	3.1	9.2	nm	7.97	410	500	152	< 4	4	1140	184	< 0.1	6.83	7.6	15	26.7	32.0	79	1820	2.0	924	0.4
USGS-92-12	March 2004	Not Sampled																					
USGS-92-12	6/8/2004 9:15	2.3	9.7	nm	7.60	402	490	203	< 4	4	1450	230	< 0.1	5.32	7.4	13	23.4	37.6	117	2500	2.8	1390	0.5
USGS-92-12	9/14/2004 11:08	3.0	11.5	nm	7.76	418	510	280	< 4	6	1990	314	< 0.1	7.11	7.5	19	28.6	30.7	133	3160	3.3	1840	0.4
USGS-92-12	11/16/2004 9:20	3.1	10.3	nm	7.18	407	496	256	< 4	6	1800	282	< 0.1	8.27	7.4	19	29.1	29.0	129	2760	3.1	1670	0.5
USGS-92-12	3/1/2005 12:40	2.5	9.3	nm	7.37	425	518	191	< 4	4	1410	226	< 0.1	8.57	7.4	15	26.8	26.9	117	2260	2.5	1250	0.4
USGS-92-12	5/24/2005 10:43	2.3	9.0	nm	7.39	356	434	177	< 4	4	1280	203	< 0.1	9.06	7.5	15	24.4	22.9	110	2260	2.6	1120	0.4
USGS-92-12	8/17/2005 9:10	2.9	11.3	nm	7.26	434	529	250	< 4	5	1780	282	< 0.1	5.00	7.5	18	27.1	41.6	136	2930	3.2	1680	0.4
USGS-92-12	11/15/2005 14:41	2.7	9.4	nm	7.50	392	478	226	< 4	5	1650	263	< 0.1	5.99	7.6	16	28.1	56.3	125	2440	2.8	1420	0.4
USGS-92-12	2/7/2006 15:32	2.2	9.1	nm	7.43	426	520	193	< 4	4	1420	227	< 0.1	7.57	7.5	15	27.9	27.8	117	2160	2.5	1180	0.4
USGS-92-12	5/24/2006 10:55	1.8	9.3	nm	7.41	401	490	169	< 4	4	1270	205	< 0.1	7.54	8.2	14	27.6	29.2	109	1860	2.3	1070	0.4
USGS-92-12	8/22/2006 11:45	1.6	8.8	nm	7.47	368	448	154	< 4	3	1150	187	< 0.1	8.95	7.4	14	28.5	31.4	102	1780	2.3	943	0.4
USGS-92-12	12/6/2006 10:30	1.9	7.0	nm	7.60	365	446	136	< 4	3	1010	162	< 0.1	8.53	7.6	13	27.9	28.8	94	1630	2.1	856	0.5

Table 2 - Inorganic Water Chemistry Data

Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

DOWL HKM Job No.: 14B805.101

Last update: 6/2/2009

Well No.	Date & Time	Field SC	Field Temp.	Field D.O.	Field pH	Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Hardness, Total as $CaCO_3$	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	Lab pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate	Flouride
		mS	°C	mg/L	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mS	mg/l	mg/l
USGS-92-12	3/13/2007 12:55	1.8	9.7	nm	7.12	353	430	135	< 4	3	990	158	< 0.1	9.15	7.8	13	27.6	nm	92	1510	2.0	772	0.5
USGS-92-12	10/2/2007 17:10	2.5	12.1	nm	7.30	380	464	208	< 4	4	1410	215	< 0.1	9.19	7.6	13	16.9	92.1	106	2220	2.8	1240	0.5
USGS-92-12	3/25/2008 15:30	2.1	9.3	nm	7.20	364	445	145	< 4	3	1040	166	< 0.1	11.30	7.6	10	26.5	30.1	86	1610	2.1	912	0.5
USGS-92-12	10/22/2008 17:00	1.8	8.6	0.59	7.03	345	421	133	< 4	3	958	152	< 0.1	10.10	7.5	11	29.1	33.4	91	1450	1.9	733	0.6
USGS-92-12	4/17/2009 12:30	1.8	8.6	2.12	7.22	340	415	130	< 4	3	915	143	< 0.1	10.20	7.6	11	26.4	85.9	72	1460	1.9	751	0.5
USGS 93-3	6/1/2000 0:00	97.6	24.8	nm	6.50	396	483	1080	< 1	39800	3770	257	nm	< 0.05	7.1	403	nm	nm	23400	67000	87.0	1730	nm
USGS 93-3	8/7/2001 18:55	94.9	25.2	nm	6.80	456	556	960	< 1	41600	3390	241	15.0	< 0.05	6.9	425	19.4	nm	22600	68200	79.2	100	nm
USGS 93-3	8/15/2001 19:10	79.3	24.7	nm	6.90	418	510	960	< 1	41800	3450	257	15.7	< 0.05	7.0	430	22.1	nm	25300	68400	73.9	2320	nm
USGS 93-3	11/7/2001 10:05	or	24.4	nm	6.10	472	576	930	< 1	39700	3290	236	15.6	< 0.05	6.7	383	nm	21.5	23600	62300	52.3	1270	nm
USGS-93-3	2/20/2002 9:00	92.0	24.8	nm	6.46	395	482	929	< 4	42300	3310	241	15.9	< 0.05	6.8	422	15.0	nm	22500	67200	61.2	888	nm
USGS 93-3	5/22/2002 9:30	92.1	23.9	nm	6.62	434	529	916	< 4	42100	3150	210	14.9	< 0.05	6.8	386	22.0	nm	22800	68100	69.3	1870	0.2
USGS 93-3	8/20/2002 16:25	90.0	24.5	nm	6.40	463	565	897	< 4	42400	3230	242	14.9	< 0.05	6.8	284	20.0	20.0	22800	68000	71.7	1170	0.2
USGS-93-3	11/5/2002 16:10	99.4	24.0	nm	6.56	469	572	981	< 4	38400	3420	236	14.9	< 0.05	6.8	439	12.0	20.0	22800	67700	61.7	1240	0.2
USGS-93-3	3/4/2003 15:45	95.0	23.5	nm	6.50	458	559	900	< 4	41000	3130	215	14.3	< 0.05	6.8	416	19.0	19.0	23900	67600	51.5	1180	0.2
USGS-93-3	5/28/2003 13:15	90.8	24.6	nm	6.62	512	625	886	< 1	40200	3130	222	14.0	< 0.05	6.7	486	20.0	20.0	24100	68100	93.5	967	0.2
USGS-93-3	8/14/2003 14:08	81.3	25.0	nm	6.81	517	631	867	< 1	41800	3050	216	15.3	< 0.05	6.7	446	22.0	24.0	22900	68600	88.6	791	0.2
USGS-93-3	11/4/2003 16:45	86.7	23.2	nm	6.45	510	622	606	< 4	41900	2210	168	15.7	< 0.05	6.8	427	17.0	20.0	19600	67500	50.4	859	0.2
USGS-93-3	March 2004	Not Sampled																					
USGS-93-3	6/8/2004 19:05	90.6	23.9	nm	6.76	468	571	911	< 4	40000	3130	208	15.2	< 0.05	6.8	416	23.0	26.0	22400	66500	96.7	1330	0.2
USGS-93-3	9/14/2004 16:25	99.6	24.5	nm	7.12	464	566	991	< 4	43300	3440	234	16.6	< 0.05	6.9	467	25.0	27.0	24700	68300	98.6	1360	0.2
USGS-93-3	11/17/2004 12:15	107.6	22.9	nm	6.75	438	534	922	< 4	35800	3200	220	14.7	< 0.05	6.7	538	19.0	20.0	23700	66900	98.6	1100	0.2
USGS-93-3	3/2/2005 11:05	96.1	23.0	nm	6.55	466	568	1010	< 4	43300	3470	230	15.9	< 0.05	6.8	500	22.0	22.0	27100	66700	97.8	1300	0.2
USGS-93-3	5/25/2005 15:52	101.5	23.3	nm	6.43	399	487	1040	< 4	42500	3580	241	15.8	< 0.05	6.7	569	20.0	18.0	27200	64600	95.5	1400	0.3
USGS-93-3	8/17/2005 12:55	101.2	25.7	nm	6.45	449	548	990	< 4	37900	3390	224	14.0	0.54	6.9	421	14.0	23.0	24700	65800	97.3	1250	0.2
USGS-93-3	11/16/2005 16:40	106.2	22.0	nm	6.75	384	468	1130	< 4	42700	3900	263	15.8	<0.05	6.8	472	20.0	19.0	27600	63600	98.5	1270	0.2
USGS-93-3	2/9/2006 15:20	98.9	20.0	nm	6.81	431	525	977	< 4	40700	3210	188	21.3	<0.05	6.9	521	23.0	22.0	24700	64100	96.7	1350	0.2
USGS-93-3	5/24/2006 18:20	88.9	23.0	nm	6.53	409	499	1020	< 4	42900	3360	200	18.7	< 0.05	7.4	470	22.0	21.0	25100	56600	97.1	1340	0.2
USGS-93-3	8/23/2006 14:50	97.9	23.2	nm	6.49	390	476	964	< 4	40900	3170	186	14.6	< 0.05	6.7	403	24.0	34.0	24200	63100	99.8	1330	0.2
USGS-93-3	12/7/2006 12:05	95.2	21.6	nm	6.45	400	488	947	< 4	41100	3190	199	16.3	< 0.05	6.9	445	24.0	21.0	23800	64300	99.5	1320	0.2
USGS-93-3	3/15/2007 13:30	90.8	22.4	nm	6.41	401	489	1040	< 4	41900	3590	240	17.1	< 0.05	6.8	468	138.0	nm	26000	64700	96.7	1240	0.2
USGS-93-3	10/3/2007 11:50	89.3	22.6	nm	6.92	396	483	936	< 4	40300	3170	201	15.6	< 0.05	6.7	375	23.0	26.0	21800	61600	98.6	1330	0.2
USGS-93-3	3/27/2008 11:15	82.8	24.0	nm	6.83	434	529	846	< 4	37300	2950	202	13.0	< 0.05	6.8	386	22.0	67.0	21200	55700	85.6	2440	0.2
USGS-93-3	10/26/2008 11:45	76.9	22.0	0.06	6.85	431	526	919	< 4	36000	3190	219	15.8	< 0.05	7.0	358	17.0	32.0	21000	53700	81.2	1340	0.2
USGS-93-3	4/15/2009 15:00	64.5	20.6	0.06	6.75	714	871	597	< 4	25200	2180	168	9.6	< 0.05	7.2	272	16.0	< 20	15600	40800	66.3	987	0.3
USGS-93-4A	4/18/2009 17:05	3.2	9.0	0.29	7.28	811	990	131	< 4	30	721	96	< 0.1	22.20	7.6	7	23.1	24.0	507	2080	3.2	880	0.4
USGS-93-5	4/17/2009 15:00	27.7	9.7	0.09	6.96	313	382	658	< 4	9470	3120	359	1.6	< 0.05	6.8	26	6.0	17.0	4640	15800	27.1	355	0.2
Whitmer	5/31/2000 0:00	3.3	10.1	nm	9.20	353	429	133	< 1	794	695	88	nm	< 0.05	8.2	8	nm	nm	432	1970	3.2	279	nm
Whitmer	8/10/2001 10:00	3.9	10.8	nm	7.70	366	447	168	< 1	1020	893	115	0.6	< 0.05	7.4	10	14.2	nm	524	2520	3.9	287	nm
Whitmer	8/22/2001 15:30	3.4	11.1	nm	nm	360	439	155	< 1	1020	820	105	0.7	< 0.05	7.5	8	13.5	nm	445	2470	3.8	270	nm
Whitmer	11/9/2001 10:20	3.5	9.7	nm	7.60	343	418	168	< 1	1060	879	111	0.8	< 0.05	7.5	9	nm	16.4	484	2410	4.0	285	nm
Whitmer	2/22/2002 14:45	4.7	10.7	nm	7.76	353	430	165	< 4	1110	865	110	0.8	< 0.05	7.6	8	15.0	nm	472	2530	4.2	288	nm
Whitmer	5/22/2002 16:35	4.4	10.2	nm	7.63	339	414	164	< 4	1290	870	112	0.7	< 0.05	7.6	9	16.5	nm	457	2650	4.3	222	0.2
Whitmer	8/21/2002 9:35	3.8	10.8	nm	7.50	331	404	187	< 4	1240	918	110	0.8	< 0.05	7.6	9	12.3	10.2	512	2710	4.4	296	0.2
Whitmer	11/5/2002 14:20	4.3	10.3	nm	7.66	334	407	197	< 4	1250	1020	129	0.9	< 0.05	7.5	10	13.4	16.9	509	2670	4.7	309	0.2
Whitmer	3/4/2003 14:10	4.2	9.9	nm	8.10	318	388	215	< 4	1310	1020	151	0.8	< 0.05	7.3	10	13.6	16.0	619	2720	5.0	320	0.2
Whitmer	5/13/2003 17:00	5.0	11.0	nm	7.48	329	402	216	< 4	1330	1130	144	0.9	< 0.05	7.4	12	14.0	15.0	531	2760	4.5	306	0.2
Whitmer	8/14/2003 12:10	4.0	11.2	nm	7.45	326	398	221	< 1	1350	1130	141	0.7	< 0.05	7.5	11	13.8	16.3	536	2950	4.6	267	0.3
Whitmer	11/4/2003 16:00	4.6	11.0	nm	7.27	323	395	224	< 4	1490	1170	148	1.0	< 0.05	7.5	12	14.4	16.2	548	2940	4.7	248	0.2
Whitmer	3/18/2004 13:05	6.7	14.6	nm	7.95	326	398	246	< 1	1530	1280	161	1.0	< 0.05	7.4	11	15.4	15.7	547	3130	4.9	267	0.2
Whitmer	6/9/2004 8:45	5.2	10.8	nm	7.74	327	399	239	< 4	1570	1240	156	1.0	< 0.05	7.5	13	13.8	16.3	634	3500	5.5	359	0.3
Whitmer	9/16/2004 11:20	4.6	12.5	nm	7.92	330	403	262	< 4	1510	1350	168	0.9	< 0.05	7.6	12	14.9	16.5	593	3520	5.5	320	0.2
Whitmer	11/18/2004 16:00	5.9	10.6	nm	7.35	297	362	269	< 1	1610	1400	177	1.0	< 0.05	7.3	11	15.4	16.5	608	3420	5.7	327	0.2
Whitmer	3/2/2005 16:44	5.4	9.2	nm	7.54	328	400	277	< 4	1670	1470	188	1.1	0.11	7.5	13	15.4	15.9	676	3470	5.7	324	0.3
Whitmer	8/16/2005 15:00	5.8	15.7	nm	7.40	322	393	283	< 4	1610	1500	192	1.1	< 0.05	7.7	11	15.2	14.6	636	3800	5.8	329	0.2
Whitmer	11/17/2005 10:25	6.5	10.5	nm	7.48	289	352	315	< 4	1790	1670	214	1.1	< 0.05	7.5	11	15.8	16.3	687	3660	6.0	323	0.2
Whitmer	2/9/2006 11:15	6.2	9.8	nm	8.10	316	386	278	< 4	1690	1440	182	1.2	< 0.05	7.4	15	15.4	17.0	650	3460	6.0	379	0.2
Whitmer	5/25/2006 11:21	5.0	10.6	nm	7.50	302	369	307	< 4	1820	1600	204	1.2	< 0.05	7.9	14	16.0	17.6	708	3630	6.2	348	0.2
Whitmer	8/24/2006 11:45	5.5	10.1	nm	7.52	284	346	316	< 4	1810	1630	204	1.2	< 0.05	7.2	14	16.0	17.1	687	4240	6.6	342	0.2
Whitmer	12/7/2006 13:30	6.4	9.0	nm	7.66	286	349	321	< 4	1840	1640	203	1.3	< 0.05	7.3	12	14.8	16.6	684	4010	6.8	351	0.2
Whitmer	3/14/2007 16:55	6.2	9.3	nm	7.53	284	347	339	< 4	1930	1770	225	1.3	< 0.05	7.4	13	19.7	nm	732	4300	6.9	340	0.2
Whitmer	10/5/2007 18:00	6.9	9.3	nm	7.33	274	335	347	< 4	1980	1820	231	1.4	< 0.05	7.2	14	15.4	16.9	731	4520	7.1	365	0.2
Whitmer	3/27/2008 11:10	7.2	9.6	nm	7.61	284	346	367	< 4	2100	1930	246	1.3	< 0.05	7.2	13	15.5	16.9	743	4320	7.2	344	0.2
Whitmer	10/27/2008 17:55	7.3	9.6	0.13	7.24	276	337	390	< 4	2170	2050	262	1.4	< 0.05	7.4	14	15.6	16.5	812	4990	7.4	411	0.2

Table 2 - Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
DOWL HKM Job No.: 14B805.101
Last update: 6/2/2009

Well No.	Date & Time	Field SC	Field Temp.	Field D.O.	Field pH	Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Hardness, Total as $CaCO_3$	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	Lab pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate	Flouride
		mS	°C	mg/L	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mS	mg/l	mg/l
Whitmer	4/21/2009 19:00	7.9	9.7	0.11	7.38	269	328	368	< 4	2180	1930	246	1.4	< 0.05	7.1	15	12.4	16.0	750	4110	7.6	394	0.2
Whitmer (city)	5/26/2005 10:20	1.7	8.5	nm	7.48	433	529	55	< 4	149	255	29	0.2	< 0.05	7.7	6	16.0	17.6	302	1150	1.8	237	0.5
Lockman (city)	5/26/2005 11:05	2.4	9.3	nm	7.58	432	521	58	< 4	173	273	31	< 0.1	< 0.05	7.6	5	19.1	17.2	312	1170	1.8	235	0.5

Notes:
nm = Not measured
mnw = Meter failure, reading recorded in field notes but not used
or = Over range of meter, SC>2.0 mS
< # = Not detected, number shown is reporting limit

Table 3

BTEX and TPH Analytical Results

Table 3 - BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
DOWL HKM Job No.: 14B805.101
Last update: 6/2/2009

Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
LAW-M01	4/20/2009 14:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
LAW-M03	3/13/2007 17:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
LAW-M03	3/27/2008 10:30	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
LAW-M03	10/23/2008 15:35	< 0.5	< 0.5	< 0.5	< 1.0	< 1.0
LAW-M03	4/18/2009 15:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
LAW-M05	4/20/2009 17:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
M-10	4/16/2009 15:10	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
M-18	11/8/2001 15:30	53	21	1.8	10	0.2
M-18	8/23/2006 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-18	12/6/2006 12:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-18	4/22/2009 15:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	8/16/2001 14:35	< 0.5	0.32 (J)	< 0.5	< 0.5	< 0.1
M-27	8/16/2001 14:45	< 0.5	0.28 (J)	< 0.5	< 0.5	< 0.1
M-27	11/8/2001 8:50	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
M-27	2/20/2002 15:42	< 0.5	< 0.5	< 0.5	< 0.5	1.5
M-27	5/21/2002 15:05	< 0.5	< 0.5	< 0.5	< 0.5	1.3
M-27	8/20/2002 17:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	11/6/2002 9:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	3/5/2003 13:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	5/13/2003 15:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	8/13/2003 11:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	11/6/2003 10:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	March-04	Not sampled				
M-27	6/8/2004 15:15	0.77	< 0.5	< 0.5	0.52	< 0.1
M-27	11/18/2004 15:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	3/1/2005 12:05	< 0.5	< 0.5	< 0.5	0.48	< 0.1
M-27	5/24/2005 11:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	8/16/2005 10:20	< 0.5	< 0.5	0.49	0.45	< 0.1
M-27	11/15/2005 14:28	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	2/7/2006 13:10	< 0.5	0.50	< 0.5	0.49 (J)	< 0.1
M-27	5/23/2006 14:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	8/22/2006 14:30	< 0.5	0.41 (J)	< 0.5	< 0.5	0.5
M-27	12/6/2006 13:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	3/14/2007 17:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
M-27	10/4/2007 12:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	3/27/2008 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	10/24/2008 13:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
M-27	4/22/2009 9:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
M-28	6/1/2000	14	2.8	< 0.5	< 0.5	nm
M-28	8/9/2001 12:15	19	< 0.5 (J)	< 0.5	< 1.0	< 0.1
M-28	8/16/2001 17:00	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	11/8/2001 12:00	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
M-28	2/21/2002 8:40	20	< 0.5	< 0.5	< 0.5	2.7
M-28	5/23/2002 9:30	21	< 0.5	< 0.5	< 0.5	< 0.1
M-28	8/21/2002 10:00	23	< 0.5	< 0.5	< 0.5	< 0.1
M-28	11/6/2002 11:20	22	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/5/2003 15:30	20	< 0.5	< 0.5	< 0.5	< 0.1
M-28	5/13/2003 16:45	23	< 0.5	< 0.5	< 0.5	< 0.1
M-28	8/13/2003 15:35	21	< 0.5	< 0.5	< 0.5	< 0.1
M-28	11/5/2003 10:30	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/16/2004 17:30	12	< 0.5	< 0.5	< 0.5	< 0.1
M-28	6/8/2004 17:18	22	< 0.5	< 0.5	0.91	< 0.1
M-28	11/19/2004 8:36	18	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/1/2005 15:45	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	5/24/2005 13:10	16	< 0.5	< 0.5	< 0.5	< 0.1
M-28	8/16/2005 13:15	16	< 0.5	< 0.5	< 0.5	< 0.1
M-28	11/15/2005 16:35	18	< 0.5	< 0.5	< 0.5	< 0.1

Table 3 - BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
DOWL HKM Job No.: 14B805.101
Last update: 6/2/2009

Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
M-28	2/7/2006 16:30	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	5/23/2006 16:20	18	< 0.5	< 0.5	< 0.5	< 0.1
M-28	8/22/2006 16:45	20	< 0.5	< 0.5	< 0.5	< 0.1
M-28	12/6/2006 14:40	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/15/2007 10:15	19	< 0.5	< 0.5	< 0.5	< 0.1 (H)
M-28	10/3/2007 16:40	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/27/2008 9:50	15	< 0.5	< 0.5	< 0.5	< 0.1
M-28	10/26/2008 14:30	12	< 0.5	< 0.5	< 0.5	< 1.0
M-28	4/15/2009 11:20	6.4	< 0.5	< 0.5	< 0.5	< 1.0
M-30	6/1/2000	< 0.5	< 0.5	< 0.5	< 0.5	nm
M-30	2/22/2002 13:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-30	5/22/2002 17:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-30	8/21/2002 10:40	< 0.5	0.49	< 0.5	< 0.5	< 0.1
M-30	11/19/2004 8:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-30	3/2/2005 17:50	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
M-31	6/1/2000	41	0.88	< 0.5	< 0.5	nm
M-31	8/9/2001 11:05	47	< 0.5	< 0.5	< 1.0	< 0.1
M-31	8/16/2001 17:30	38	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/8/2001 16:00	24	< 0.5	< 0.5	< 1.0	< 0.1
M-31	2/21/2002 9:45	42	< 0.5	< 0.5	< 0.5	3.4
M-31	5/22/2002 15:45	38	< 0.5	< 0.5	< 0.5	< 0.1
M-31	8/21/2002 10:45	41	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/6/2002 10:35	23	< 0.5	< 0.5	< 0.5	< 0.1
M-31	3/5/2003 14:10	38	< 0.5	< 0.5	< 0.5	< 0.1
M-31	5/13/2003 16:00	37	< 0.5	< 0.5	< 0.5	< 0.1
M-31	8/13/2003 14:40	35	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/5/2003 11:35	30	< 0.5	< 0.5	< 0.5	< 0.1
M-31	3/16/2004 16:00	32	< 0.5	< 0.5	< 0.5	< 0.1
M-31	6/8/2004 16:40	35	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/18/2004 17:00	32	< 0.5	< 0.5	< 0.5	< 0.1
M-31	3/1/2005 13:45	32	< 0.5	< 0.5	< 0.5	< 0.1
M-31	5/24/2005 15:05	28	< 0.5	< 0.5	< 0.5	< 0.1
M-31	8/16/2005 11:30	29	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/15/2005 15:30	29	< 0.5	< 0.5	< 0.5	< 0.1
M-31	2/7/2006 14:00	30	< 0.5	< 0.5	< 0.5	< 0.1
M-31	5/23/2006 17:20	27	< 0.5	< 0.5	< 0.5	< 0.1
M-31	8/23/2006 13:30	29	< 0.5	< 0.5	< 0.5	< 0.1
M-31	12/6/2006 15:45	28	< 0.5	< 0.5	< 0.5	< 0.1
M-31	3/15/2007 11:30	30	< 0.5	< 0.5	< 0.5	< 0.1 (H)
M-31	10/4/2007 14:30	30	< 0.5	< 0.5	0.66	< 0.1
M-31	3/27/2008 10:30	24	< 0.5	< 0.5	0.66	< 0.1
M-31	10/26/2008 17:20	27	< 0.5	< 0.5	0.66	< 1.0
M-31	4/15/2009 16:15	25	< 0.5	< 0.5	< 0.5	< 1.0
M-32	11/9/2001 9:00	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
M-36	9/5/2001 15:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-36	11/9/2001 11:00	< 0.5	< 0.5	< 0.5	< 1.0	nm
M-38	9/5/2001 16:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-38	11/9/2001 11:40	< 0.5	< 0.5	< 0.5	< 0.1	nm
M-39	11/7/2001 15:45	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
M-69	4/15/2009 14:17	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
M-80	4/18/2009 15:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-1B	10/16/2006 15:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-1B	3/14/2007 12:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
MOC-1B	10/3/2007 10:35	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
MOC-1B	3/25/2008 18:30	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
MOC-1B	10/23/2008 14:15	< 0.5	< 0.5	< 0.5	< 1.0	< 1.0
MOC-1B	4/21/2009 12:45	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-2	10/16/2006 17:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-2	3/13/2007 17:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-2	10/5/2007 14:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-2	3/26/2008 17:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-2	10/25/2008 13:07	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-2	4/21/2009 13:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-3	10/17/2006 12:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-3	3/14/2007 11:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
MOC-3	10/2/2007 19:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-3	3/25/2008 16:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-3	10/23/2008 12:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-3	4/20/2009 19:05	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-4	10/17/2006 13:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-4	10/4/2007 11:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-4	3/26/2008 16:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-4	10/25/2008 12:08	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-4	4/23/2009 13:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-20A	10/16/2006 11:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-20A	3/13/2007 13:40	< 0.5	0.67	< 0.5	< 0.5	< 0.1
MOC-20A	10/3/2007 17:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-20A	3/26/2008 15:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-20A	10/24/2008 11:46	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-20A	4/22/2009 11:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-20B	10/16/2006 16:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-20B	3/13/2007 15:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-20B	10/3/2007 13:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-20B	3/26/2008 14:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-20B	10/23/2008 17:10	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
MOC-20B	4/21/2009 12:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-4	8/10/2001 13:15	422	885 (T)	233	594	628
PNR-4	8/10/2001 13:20	375	835 (T)	123	349	635
PNR-4	11/8/2001 15:00	437	2040	1280	3850	992
PNR-4	Plugged and abandoned					
PNR-5	6/1/2000 0:00	1.2	0.75	6.7	4.2	< 0.1
PNR-5	8/8/2001 11:00	0.9	1.6	3.9	< 1.0	< 0.1
PNR-5	8/15/2001 11:00	2.1	8.8	2.6	8.1	1.4
PNR-5	11/7/2001 11:10	< 0.5	< 10	< 5.0	<5.0	< 0.1
PNR-5	2/20/2002 10:02	1.2	0.98	4.3	0.68	< 0.1
PNR-5	5/22/2002 10:40	1.0	1.2	8.5	0.85	< 0.1
PNR-5	8/20/2002 17:10	0.9	0.37	6.2	0.62	1.3
PNR-5	11/6/2002 11:10	1.4	0.93	6.9	0.57	< 0.1
PNR-5	3/4/2003 16:30	0.9	< 0.5	5.8	< 0.5	< 0.1
PNR-5	5/28/2003 12:35	0.7	0.61	9.6	0.87	< 0.1
PNR-5	8/13/2003 14:59	0.86	< 0.5	4.5	0.72	< 0.1
PNR-5	11/4/2003 15:30	1.3	1.0	10.0	1.1	< 0.1
PNR-5	3/17/2004 10:15	0.74	1.3	14	1.1	< 0.1
PNR-5	6/9/2004 9:40	1.4	< 0.5	23	< 0.5	< 0.1
PNR-5	9/14/2004 16:20	1.1	25	1.3	< 0.5	< 0.1
PNR-5	11/17/2004 13:50	0.99	25	< 0.5	1.1	< 0.1
PNR-5	3/2/2005 12:15	1.1	36	1.3	< 0.5	< 0.1
PNR-5	5/25/2005 17:20	0.9	30	0.71	< 0.5	1
PNR-5	8/17/2005 11:00	0.8	40	0.46	< 0.5	< 0.1
PNR-5	11/16/2005 13:00	1.1	1.1	65	< 0.5	< 0.1
PNR-5	2/9/2006 15:20	0.43 (J)	< 0.5	73	0.38 (J)	< 0.1
PNR-5	5/25/2006 10:30	0.46 (J)	< 0.5	60	< 0.5	< 0.1

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-5	8/23/2006 15:40	0.7	< 0.5	64	< 0.5	< 0.1
PNR-5	12/7/2006 13:25	0.8	< 0.5	58	< 0.5	< 0.1
PNR-5	3/14/2007 14:14	0.75	1.2	85	< 0.5	< 0.1
PNR-5	10/5/2007 11:40	< 0.5	< 0.5	0.43	0.76	< 0.1
PNR-5	3/27/2008 16:30	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
PNR-5	10/27/2008 13:35	< 0.5	< 1.0	28	< 1.0	< 1.0
PNR-5	4/15/2009 14:20	< 0.5	< 0.5	6.7	< 0.5	< 1.0
PNR-6	5/31/2000 0:00	< 0.5	< 0.5	< 0.5	< 0.5	nm
PNR-6	8/7/2001 9:55	< 0.5	0.88	< 0.5	< 1.0	< 0.1
PNR-6	8/15/2001 15:30	< 0.5	0.3 (J)	< 0.5	< 0.5	< 0.1
PNR-6	11/7/2001 8:55	< 0.5	0.56	< 0.5	< 1.0	< 0.1
PNR-6	2/19/2002 13:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	5/21/2002 12:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	8/19/2002 16:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	11/5/2002 11:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	3/4/2003 10:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	5/13/2003 11:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	8/13/2003 8:16	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	11/4/2003 13:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	March 2004		Not sampled			
PNR-6	6/8/2004 10:20	< 0.5	0.46	< 0.5	0.53	< 0.1
PNR-6	9/14/2004 9:15	< 0.5	< 0.5	< 0.5	< 0.5	0.5
PNR-6	11/16/2004 10:17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	2/28/2005 17:30	< 0.5	< 0.5	0.51	< 0.5	< 0.1
PNR-6	5/23/2005 18:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	8/16/2005 9:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	11/15/2005 10:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	2/7/2006 10:47	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	5/23/2006 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	8/22/2006 10:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	12/5/2006 13:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	3/14/2007 10:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	10/2/2007 18:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	3/26/2008 11:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-6	10/22/2008 14:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-6	4/17/2009 15:15	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-7	5/31/2000 0:00	27	< 0.5	< 0.5	< 0.5	nm
PNR-7	8/7/2001 17:20	35	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	8/15/2001 17:55	20	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	11/7/2001 11:50	40	< 0.5	< 0.5	< 1.0	< 0.1
PNR-7	2/19/2002 17:05	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	5/22/2002 13:10	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	8/20/2002 15:07	41	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	11/5/2002 14:50	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	3/4/2003 15:05	43	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	May 2003		Not sampled			
PNR-7	8/12/2003 12:20	39	< 0.5	< 0.5	< 0.5	0.28
PNR-7	11/4/2003 14:30	38	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	3/17/2004 17:10	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	6/8/2004 18:40	47	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	9/14/2004 18:00	41	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	11/17/2004 13:40	44	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	3/1/2005 17:30	40	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	5/25/2005 13:47	38	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	8/17/2005 10:52	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	11/16/2005 14:00	44	< 0.5	2.2	< 0.5	< 0.1
PNR-7	2/9/2006 14:15	38	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	5/24/2006 16:10	35	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	8/24/2006 10:24	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	12/8/2006 10:15	32	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	3/15/2007 12:15	40	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	10/4/2007 19:00	43	< 0.5	< 0.5	< 0.5	< 0.1

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-7	3/28/2008 10:30	37	< 0.5	< 0.5	< 0.5	< 0.1
PNR-7	10/25/2008 17:30	37	< 0.5	< 0.5	< 0.5	< 1.0
PNR-7	4/15/2009 17:15	33	< 0.5	< 0.5	< 0.5	< 1.0
PNR-8	5/31/2000 0:00	< 0.5	< 0.5	< 0.5	< 0.5	nm
PNR-8	8/7/2001 13:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	8/16/2001 18:10	< 0.5	0.55	< 0.5	0.54	< 0.1
PNR-8	11/6/2001 16:30	< 0.5	< 0.5 (J)	< 0.5	< 1.0	0.5
PNR-8	2/22/2002 16:00	< 0.5	< 0.5 (J)	< 0.5	< 0.5	< 0.1
PNR-8	5/21/2002 17:45	< 0.5	< 0.5 (J)	< 0.5	< 0.5	< 0.1
PNR-8	8/21/2002 10:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	11/5/2002 15:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	3/4/2003 12:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	5/13/2003 17:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	8/12/2003 9:46	1.1	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	11/4/2003 12:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	3/18/2004 11:30	< 0.5	< 0.5	< 0.5	< 0.5	2.7
PNR-8	6/8/2004 18:40	< 0.5	< 0.5	< 0.5	< 0.5	0.69
PNR-8	9/14/2004 17:05	< 0.5	< 0.5	< 0.5	< 0.5	0.4
PNR-8	11/16/2004 16:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	3/2/2005 15:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	5/26/2005 10:46	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	8/18/2005 11:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	11/17/2005 9:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	2/9/2006 9:45	0.42 (J)	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	5/24/2006 17:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	8/24/2006 12:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	12/7/2006 11:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	3/14/2007 13:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-8	10/4/2007 14:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	3/28/2008 11:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-8	10/27/2008 16:15	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-8	4/19/2009 14:15	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-9	6/1/2000 0:00	< 0.5	0.86	< 0.5	< 0.5	nm
PNR-9	8/9/2001 9:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	8/16/2001 13:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	11/7/2001 14:30	< 0.5	< 0.5	< 0.5	< 1.0	0.9
PNR-9	2/20/2002 14:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	5/22/2002 10:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	8/20/2002 16:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	11/5/2002 14:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	3/4/2003 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	5/27/2003 18:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	8/13/2003 10:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	11/4/2003 14:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	March 2004		Not sampled			
PNR-9	6/8/2004 13:35	1.8	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	9/14/2004 11:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	11/16/2004 16:12	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	3/1/2005 12:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	5/24/2005 17:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	8/16/2005 12:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	11/15/2005 15:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	2/8/2006 12:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	5/23/2006 13:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	8/23/2006 9:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	12/6/2006 15:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	3/13/2007 16:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-9	10/4/2007 10:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	3/27/2008 13:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-9	10/23/2008 17:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-9	4/18/2009 16:20	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-10	6/1/2000 0:00	< 0.5	< 0.5	< 0.5	< 0.5	nm
PNR-10	8/8/2001 18:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/16/2001 13:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/7/2001 12:30	< 0.5	< 0.5	< 0.5	< 1.0	0.6
PNR-10	2/20/2002 13:38	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	5/21/2002 13:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/20/2002 12:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/5/2002 13:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	3/4/2003 16:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	5/27/2003 17:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/13/2003 10:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/4/2003 13:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	March 2004		Not sampled			
PNR-10	6/8/2004 14:10	0.43	0.59	< 0.5	0.88	< 0.1
PNR-10	9/14/2004 11:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/16/2004 11:28	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	3/1/2005 11:06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	5/24/2005 15:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/16/2005 10:48	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/15/2005 11:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	2/7/2006 14:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	5/23/2006 12:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/23/2006 10:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	12/6/2006 14:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	3/13/2007 15:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-10	10/3/2007 16:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	3/27/2008 11:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	10/23/2008 14:20	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-10	4/18/2009 14:05	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-12	5/31/2000 0:00	< 0.5	< 0.5	< 0.5	< 0.5	nm
PNR-12	8/8/2001 15:00	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
PNR-12	8/15/2001 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	11/6/2001 16:20	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
PNR-12	2/20/2002 11:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/21/2002 11:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	8/19/2002 16:05	< 0.5	0.43	< 0.5	< 0.5	< 0.1
PNR-12	11/5/2002 11:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	3/4/2003 13:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/27/2003 17:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	8/13/2003 8:05	0.65	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	11/4/2003 12:35	< 0.5	0.59	< 0.5	< 0.5	< 0.1
PNR-12	March 2004		Not sampled			
PNR-12	6/8/2004 9:15	< 0.5	1.4	< 0.5	< 0.5	< 0.1
PNR-12	9/14/2004 10:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	11/16/2004 9:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	2/28/2005 17:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/23/2005 18:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	8/15/2005 6:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	11/15/2005 9:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	2/7/2006 13:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/23/2006 10:50	0.50 (J)	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	8/23/2006 16:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	12/5/2006 15:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	3/14/2007 12:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	10/3/2007 13:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	3/26/2008 10:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	10/23/2008 10:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-12	4/20/2009 18:10	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-13	8/15/2001 18:15	19	0.8	< 0.5	< 0.5	< 0.1
PNR-13	8/15/2001 19:00	32	1.1	< 0.5	0.49 (J)	< 0.1
PNR-13	11/7/2001 13:35	8.2	< 0.5	< 0.5	< 1.0	5.4
PNR-13	2/19/2002 16:30	6.4	< 0.5	< 0.5	< 0.5	< 0.1

Table 3 - BTEX and TPH Analyses
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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-13	5/22/2002 14:00	4.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	8/20/2002 15:45	3.5	0.4	< 0.5	< 0.5	< 0.1
PNR-13	11/5/2002 15:30	2.1	0.9	< 0.5	< 0.5	< 0.1
PNR-13	3/4/2003 11:15	1.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	5/28/2003 10:05	1.0	0.7	< 0.5	< 0.5	< 0.1
PNR-13	8/13/2003 10:20	0.85	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	11/4/2003 14:15	2.4	0.71	< 0.5	< 0.5	< 0.1
PNR-13	March 2004		Not sampled			
PNR-13	6/8/2004 15:30	2.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	9/14/2004 10:00	0.62	< 0.5	0.74	0.49	< 0.1
PNR-13	11/16/2004 15:30	1.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	3/1/2005 13:25	0.78	< 0.5	1.3	< 0.5	< 0.1
PNR-13	5/24/2005 12:00	0.65	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	8/17/2005 9:40	1.0	< 0.5	0.86	< 0.5	< 0.1
PNR-13	11/16/2005 10:50	1.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	2/8/2006 10:40	1.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	5/24/2006 13:15	0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	8/22/2006 14:25	0.9	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	12/6/2006 11:30	1.8	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	3/14/2007 16:20	0.81	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	10/4/2007 17:30	0.43	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	3/27/2008 15:00	0.63	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	10/25/2008 14:30	0.5 (J)	< 0.5	< 0.5	< 0.5	< 1.0
PNR-13	4/18/2009 17:55	0.7	< 0.5	< 0.5	< 0.5	< 1.0
PNR-14	8/9/2001 16:00	4.1	0.6	55	1.9	< 0.1
PNR-14	8/14/2001 9:45	3.5	1.1	34	0.38 (J)	< 0.1
PNR-14	11/7/2001 14:35	18.0	< 0.5 (J)	9.7	< 1.0	< 0.1
PNR-14	2/21/2002 11:30	0.9	< 0.5	14	0.68	< 0.1
PNR-14	5/22/2002 12:05	1.1	0.6	41	1.8	< 0.1
PNR-14	8/20/2002 17:45	1.0	0.5	32	0.93	< 0.1
PNR-14	11/6/2002 11:28	0.8	< 0.5	36	0.7	< 0.1
PNR-14	3/4/2003 17:15	0.9	< 0.5	31	0.5	< 0.1
PNR-14	5/28/2003 11:45	0.7	0.8	22	0.45	< 0.1
PNR-14	8/13/2003 15:43	0.64	< 0.5	22	< 0.5	< 0.1
PNR-14	11/5/2003 11:45	0.62	< 0.5	23	< 0.5	< 0.1
PNR-14	3/17/2004 10:45	0.33	0.87	12	0.59	0.53
PNR-14	6/9/2004 10:40	0.9	0.65	17	< 0.5	< 0.1
PNR-14	9/14/2004 15:35	0.89	7.9	0.58	0.65	< 0.1
PNR-14	11/17/2004 15:30	0.76	5.9	< 0.5	< 0.5	< 0.1
PNR-14	3/2/2005 10:50	0.55	3.7	< 0.5	< 0.5	< 0.1
PNR-14	5/25/2005 9:46	< 0.5	2.2	< 0.5	< 0.5	< 0.1
PNR-14	8/17/2005 15:18	< 0.5	1.2	0.45	< 0.5	1.6
PNR-14	11/16/2005 11:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	2/9/2006 14:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	5/24/2006 17:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	8/23/2006 16:20	< 0.5	< 0.5	4.1	< 0.5	< 0.1
PNR-14	12/7/2006 15:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	3/14/2007 10:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	10/4/2007 16:50	0.54	0.64	< 0.5	< 0.5	< 0.1
PNR-14	3/27/2008 13:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	10/27/2008 11:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-14	4/16/2009 14:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-15	8/10/2001 8:15	3.6	6.6	4.5	7.4	< 0.1
PNR-15	8/14/2001 13:00	3.3	4.8	3.8	4.4	0.5
PNR-15	11/8/2001 9:10	4.8	6.6	24	<5.0	2.7
PNR-15	2/21/2002 14:54	1.8	<0.50	24	5.7	1.5
PNR-15	5/22/2002 14:55	2.3	0.7	18	1.4	3.4
PNR-15	8/21/2002 14:00	2.5	3.8	14	19	1.1
PNR-15	11/6/2002 14:35	2.8	< 0.5	11	8.5	2.0
PNR-15	3/5/2003 12:30	6.3	< 0.5	21	230	68
PNR-15	5/28/2003 15:35	4.2	1.2	16	34	4.4
PNR-15	8/14/2003 9:58	20	32	13	13	0.28

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-15	11/5/2003 14:30	1.9	1.2	12	9.3	1.2
PNR-15	3/17/2004 13:35	0.77	< 0.5	7.7	0.79	1.2
PNR-15	6/8/2004 12:45	1.0	< 0.5	9.6	< 0.5	1.1
PNR-15	9/15/2004 16:30	0.93	8.5	0.79	0.71	< 0.1
PNR-15	11/18/2004 9:05	0.74	9.4	0.78	0.93	< 0.1
PNR-15	3/2/2005 12:20	14	12	1.3	6.9	< 0.1
PNR-15	5/25/2005 10:40	0.45	5.4	< 0.5	< 0.5	< 0.1
PNR-15	8/17/2005 16:45	0.44	7.4	0.56	< 0.5	< 0.1
PNR-15	11/16/2005 11:35	< 0.5	< 0.5	4.7	< 0.5	< 0.1
PNR-15	2/8/2006 10:45	< 0.5	< 0.5	3.6	0.67	< 0.1
PNR-15	5/24/2006 11:15	< 0.5	0.74	1.5	1.3	3.5
PNR-15	8/23/2006 17:15	< 0.5	0.66	1.5	0.6	< 0.1
PNR-15	12/7/2006 16:30	< 0.5	< 0.5	2.4	< 0.5	< 0.1
PNR-15	3/14/2007 11:40	0.63	< 0.5	2	0.56	< 0.1
PNR-15	10/4/2007 18:00	0.63	< 0.5	0.76	< 0.5	< 0.1
PNR-15	3/27/2008 15:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-15	10/27/2008 12:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-15	4/16/2009 14:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-16	8/10/2001 15:15	0.32(J)	1.00 (J)	0.42 (J)	1.0	14.0
PNR-16	8/16/2001 18:35	< 0.5	0.37 (J)	< 0.5	0.34 (J)	< 0.1
PNR-16	11/6/2001 16:05	< 0.5	< 0.5 (J)	< 0.5	< 1.0	< 0.1
PNR-16	2/21/2002 10:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	5/21/2002 15:50	< 0.5	0.83	< 0.5	2.0	< 0.1
PNR-16	8/20/2002 11:40	< 0.5	0.52	< 0.5	<0.50	< 0.1
PNR-16	11/5/2002 14:04	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	3/4/2003 13:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	5/27/2003 18:30	< 0.5	0.5	< 0.5	< 0.5	< 0.1
PNR-16	8/13/2003 9:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	11/4/2003 12:30	0.75	1.9	< 0.5	0.85	< 0.1
PNR-16	3/17/2004 16:09	< 0.5	0.53	0.59	< 0.5	0.43
PNR-16	6/8/2004 12:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	9/14/2004 12:40	< 0.5	< 0.5	0.78	< 0.5	< 0.1
PNR-16	11/16/2004 12:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	3/1/2005 14:30	< 0.5	< 0.5	0.76	< 0.5	< 0.1
PNR-16	5/24/2005 13:58	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	8/17/2005 9:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	11/15/2005 15:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	2/7/2006 16:47	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	5/24/2006 12:25	< 0.5	0.46 (J)	< 0.5	< 0.5	< 0.1
PNR-16	8/22/2006 13:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	12/6/2006 13:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	3/13/2007 12:45	< 0.5	0.44 (J)	< 0.5	< 0.5	< 0.1
PNR-16	10/3/2007 10:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	3/26/2008 14:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	10/23/2008 11:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-16	4/17/2009 13:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-17	8/22/2001 12:35	309	640	135	377	16
PNR-17	8/22/2001 13:30	206	342	75	214	31
PNR-17	11/8/2001 11:30	301	1220	582	1720	806
PNR-17	2/21/2002 17:00	341	682	191	511	62
PNR-17	5/23/2002 10:50	386	877	225	620	53
PNR-17	8/21/2002 15:15	230	438	98	261	140
PNR-17	11/6/2002 15:40	97	195	69	181	200
PNR-17	3/5/2003 13:30	90	245	105	277	82
PNR-17	5/28/2003 10:00	76	202	118	305	41
PNR-17	8/14/2003 11:05	64	119	82	190	180
PNR-17	11/6/2003 11:30	74	75	120	200	150
PNR-17	3/17/2004 15:10	47	12	89	87	56
PNR-17	6/9/2004 15:45	45	1.9	85	13	31
PNR-17	9/16/2004 9:35	33	63	1.7	5.4	10
PNR-17	11/18/2004 12:20	23	56	< 0.5	6.4	120
PNR-17	3/2/2005 15:30	15	34	3.4	18	26

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-17	5/25/2005 14:25	15	69	3.6	15	77
PNR-17	8/17/2005 17:25	7.7	39	0.53	5.3	180
PNR-17	11/16/2005 14:01	15	2.3	37	49	98
PNR-17	2/8/2006 14:05	3.7	9.7	20	29	1.8
PNR-17	5/24/2006 13:50	0.76	2.9	8.3	11	1200
PNR-17	8/24/2006 12:45	1.8	5.0	28	51	12
PNR-17	12/8/2006 12:30	0.66	4.4	23	40	5
PNR-17	3/15/2007 11:49	< 1	3.3	17	45	14 (H)
PNR-18	8/8/2001 16:00	< 0.5	0.81	< 0.5	< 1.0	< 0.1
PNR-18	8/16/2001 11:00	< 0.5	0.78	< 0.5	< 0.5	< 0.1
PNR-18	11/7/2001 10:20	< 0.5	0.66	< 0.5	< 1.0	0.9
PNR-18	2/20/2002 11:24	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	5/21/2002 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	8/19/2002 16:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	11/5/2002 11:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	3/4/2003 14:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	5/13/2003 11:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	8/14/2003 8:40	0.82	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	11/4/2003 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	March 2004		Not sampled			
PNR-18	6/8/2004 9:55	0.75	0.52	< 0.5	0.63	< 0.1
PNR-18	9/14/2004 8:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	11/18/2004 14:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	2/28/2005 17:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	5/25/2005 17:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	8/15/2005 18:00	< 0.5	< 0.5	0.75	0.64	< 0.1
PNR-18	11/15/2005 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	2/7/2006 11:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	5/23/2006 11:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	8/22/2006 17:17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	12/5/2006 14:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	3/14/2007 11:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	10/2/2007 17:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	3/28/2008 13:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	10/22/2008 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-18	4/17/2009 15:50	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-19	8/7/2001 14:50	1.1	< 0.5	< 0.5	< 1.0	< 0.1
PNR-19	8/15/2001 16:40	0.35(J)	0.41(J)	< 0.5	< 0.5	< 0.1
PNR-19	11/6/2001 15:20	1.4	< 0.5	< 0.5	< 1.0	< 0.1
PNR-19	2/19/2002 15:05	2.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	5/22/2002 14:55	3.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/20/2002 12:30	3.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	11/5/2002 13:17	3.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/4/2003 12:20	5.1	< 0.5	< 0.5	< 0.5	0.9
PNR-19	5/27/2003 17:20	5.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/13/2003 8:55	5.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	11/4/2003 10:50	5.4	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/17/2004 16:40	6.6	< 0.5	0.46	< 0.5	< 0.1
PNR-19	6/8/2004 13:55	8.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	9/14/2004 14:15	6.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	11/16/2004 13:45	7.8	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/1/2005 15:35	7.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	5/25/2005 12:36	7.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/17/2005 12:23	7.9	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	11/16/2005 12:00	8.9	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	2/8/2006 12:55	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	5/24/2006 15:20	9.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/23/2006 14:05	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	12/7/2006 15:30	12	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/14/2007 15:00	12	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	10/3/2007 14:50	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/27/2008 16:30	11	< 0.5	< 0.5	< 0.5	< 0.1

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-19	10/25/2008 15:15	12	< 0.5	< 0.5	< 0.5	< 1.0
PNR-19	4/19/2009 13:55	12	< 0.5	< 0.5	< 0.5	< 1.0
PNR-20	8/8/2001 9:50	5.4	< 0.5	< 0.5	< 1.0	< 0.1
PNR-20	8/15/2001 17:15	5.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/8/2001 10:00	1.4	< 0.5	< 0.5	< 1.0	< 0.1
PNR-20	2/19/2002 15:40	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	5/22/2002 11:00	10	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/20/2002 13:25	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/5/2002 16:05	17	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	3/4/2003 14:15	15	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	5/28/2003 11:00	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/13/2003 11:35	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/5/2003 12:50	15	0.51	< 0.5	< 0.5	< 0.1
PNR-20	3/18/2004 12:50	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	6/8/2004 12:15	14	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	9/14/2004 13:42	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/17/2004 10:40	18	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	3/1/2005 16:25	15	< 0.5	0.57	< 0.5	< 0.1
PNR-20	5/24/2005 17:35	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/16/2005 15:45	16	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/15/2005 12:15	16	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	2/9/2006 10:50	14	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	5/23/2006 17:55	16	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/23/2006 15:50	17	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	12/7/2006 16:10	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	3/15/2007 10:18	20	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-20	10/4/2007 10:25	17	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-20	3/27/2008 17:40	16	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	10/25/2008 16:30	13	< 0.5	< 0.5	< 0.5	< 1.0
PNR-20	4/21/2009 15:40	19	< 0.5	< 0.5	< 0.5	< 1.0
PNR-21	8/9/2001 10:15	28	< 0.5	< 0.5	< 1.0	< 0.1
PNR-21	8/16/2001 16:40	26	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/8/2001 11:00	32	< 0.5	< 0.5	< 1.0	< 0.1
PNR-21	2/21/2002 9:15	32	< 0.5	< 0.5	< 0.5	2.2
PNR-21	5/22/2002 11:55	33	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/21/2002 9:00	35	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/5/2002 15:30	37	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	3/5/2003 14:50	36	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	5/28/2003 11:50	32	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/13/2003 14:05	25	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/5/2003 15:30	29	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	March 2004		Not sampled			
PNR-21	6/8/2004 12:55	34	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	9/14/2004 14:15	37	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/17/2004 12:40	31	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	3/1/2005 16:32	29	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	5/24/2005 18:25	28	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/16/2005 16:20	28	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/15/2005 13:21	28	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	2/9/2006 11:45	27	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	5/24/2006 17:20	24	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/23/2006 17:00	28	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	12/7/2006 14:45	22	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	3/15/2007 11:15	25	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-21	10/4/2007 11:40	21	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	3/27/2008 18:20	19	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	10/25/2008 15:50	16	< 0.5	< 0.5	< 0.5	< 1.0
PNR-21	4/21/2009 16:35	14	< 0.5	< 0.5	< 0.5	< 1.0
PNR-22	8/8/2001 17:10	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
PNR-22	8/16/2001 11:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	11/7/2001 9:10	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-22	2/20/2002 14:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	5/21/2002 12:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/20/2002 15:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	11/5/2002 12:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	3/4/2003 15:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	5/13/2003 12:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/13/2003 9:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	11/5/2003 12:25	1.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	March 2004		Not sampled			
PNR-22	6/8/2004 16:10	< 0.5	< 0.5	< 0.5	1.2	< 0.1
PNR-22	9/15/2004 8:50	< 0.5	< 0.5	0.62	< 0.5	< 0.1
PNR-22	11/18/2004 14:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	3/1/2005 11:00	< 0.5	< 0.5	0.51	< 0.5	< 0.1
PNR-22	5/24/2005 10:07	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/16/2005 9:30	< 0.5	< 0.5	0.57	0.54	< 0.1
PNR-22	11/15/2005 13:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	2/7/2006 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	5/23/2006 13:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/22/2006 18:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	12/6/2006 9:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	3/13/2007 15:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	10/3/2007 16:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	3/26/2008 17:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	10/22/2008 18:15	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-22	4/18/2009 13:10	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-23	8/9/2001 17:30	58	94	17	49	< 0.1
PNR-23	8/14/2001 10:30	195	338	68	189	< 0.1
PNR-23	11/8/2001 13:15	215	269	51	127	56.2
PNR-23	2/21/2002 12:25	220	224	27	84	11.0
PNR-23	5/23/2002 11:15	417	575	78	245	3.6
PNR-23	8/21/2002 12:55	465	666	92	283	1.4
PNR-23	11/6/2002 12:15	401	573	70	219	0.6
PNR-23	3/5/2003 11:20	419	664	90	271	0.7
PNR-23	5/28/2003 14:40	433	759	137	413	1.5
PNR-23	8/14/2003 8:43	161	236	38	112	0.62
PNR-23	11/6/2003 10:10	357	700	143	399	2.1
PNR-23	3/17/2004 11:40	288	277	94	203	0.78
PNR-23	6/9/2004 14:10	331	73	116	179	0.57
PNR-23	9/15/2004 17:40	200	74	9.3	103	0.8
PNR-23	11/18/2004 11:00	268	115	8.8	166	0.7
PNR-23	3/2/2005 11:35	199	77	5.6	99	< 0.1
PNR-23	5/25/2005 13:00	126	56	3.5	62	< 0.1
PNR-23	8/17/2005 15:20	114	42	4.2	44	2.8
PNR-23	11/16/2005 12:15	121	2.6	41	31	0.2
PNR-23	2/9/2006 16:00	100	3.4	31	14	< 0.1
PNR-23	5/25/2006 11:15	83	1.7	16	5.9	< 0.1
PNR-23	8/24/2006 10:18	101	1.6	7.7	2.1	0.4
PNR-23	12/8/2006 10:10	88	1.7	4.7	1.7	< 0.1
PNR-23	3/14/2007 15:00	74	1.5	4.5	1.7	< 0.1
PNR-23	10/5/2007 12:30	53	< 0.5	2.7	< 0.5	< 0.1
PNR-23	3/27/2008 16:05	12	< 0.5	0.48 (J)	< 0.5	< 0.1
PNR-23	10/27/2008 14:56	0.84	< 0.5	1	0.47 (J)	< 1.0
PNR-23	4/16/2009 15:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-24	8/14/2001 12:00	195	320	66	198	75
PNR-24	8/14/2001 18:20	346	594	123	344	970
PNR-24	11/8/2001 13:40	422	601	102	316	50
PNR-24	2/21/2002 13:55	569	974	198	623	110
PNR-24	5/23/2002 11:50	294	633	117	455	29
PNR-24	8/21/2002 13:10	321	653	110	392	360
PNR-24	11/6/2002 12:32	292	543	77	286	170
PNR-24	3/5/2003 11:40	358	783	131	472	160
PNR-24	5/28/2003 14:50	150	290	65	257	36

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PNR-24	8/14/2003 13:08	149	347	72	283	53
PNR-24	11/6/2003 11:00	234	501	78	296	84
PNR-24	3/17/2004 12:10	125	265	57	204	44
PNR-24	6/9/2004 14:20	157	343	60	233	82
PNR-24	9/15/2004 18:05	170	109	484	349	130
PNR-24	11/18/2004 11:05	128	88	317	271	97
PNR-24	3/2/2005 13:25	88	51	85	80	76
PNR-24	5/25/2005 13:45	50	42	76	59	47
PNR-24	8/17/2005 16:05	28	39	68	61	180
PNR-24	11/16/2005 16:15	18	137	43	70	450
PNR-24	2/8/2006 13:30	7.7	92	54	107	28
PNR-24	5/24/2006 12:55	2.1	42	26	65	26
PNR-24	8/24/2006 11:22	3.7	31	30	61	43
PNR-24	12/8/2006 10:50	2.8	54	66	104	28
PNR-24	3/14/2007 15:40	1.8	26	46	74	3
PNR-25	8/14/2001 13:15	164	161	18.0	156(D)	93
PNR-25	8/14/2001 19:05	216	224	32.0	266	156
PNR-25	11/8/2001 10:15	229	219	22.0	237	0.1
PNR-25	2/21/2002 15:30	225	541	121.0	495	75
PNR-25	5/22/2002 16:50	147	497	104.0	624	100
PNR-25	8/21/2002 14:40	6.2	48	7.8	233	500
PNR-25	11/6/2002 14:55	1.7	2.1	2.2	337	390
PNR-25	3/5/2003 12:45	2.7	9.2	12.0	286	140
PNR-25	5/28/2003 15:25	2.7	20	36.0	260	58
PNR-25	8/14/2003 10:00	2.2	12	24.0	152	96
PNR-25	11/5/2003 15:15	3.5	9.2	30.0	184	41
PNR-25	3/17/2004 14:15	1.3	13	79.0	212	130
PNR-25	6/8/2004 13:00	1.2	18	98.0	252	81
PNR-25	9/15/2004 16:45	2.3	80	8.1	203	160
PNR-25	11/18/2004 9:00	1.4	84	6.2	210	75
PNR-25	3/2/2005 13:00	5.5	133	20.0	295	80
PNR-25	5/25/2005 11:15	2.6	82	14.0	205	21
PNR-25	8/17/2005 18:20	1.0	28	6.3	65	21
PNR-25	11/16/2005 13:25	3.2	37	259.0	564	660
PNR-25	2/8/2006 11:15	< 5	36	193.0	495	210
PNR-25	5/24/2006 11:45	4.0	63	163.0	339	370
PNR-25	8/24/2006 12:00	7.9	104	249.0	472	900
PNR-25	12/8/2006 11:30	8.9	97	191.0	346	510
PNR-25	3/15/2007 10:53	11	125	269	707	300
PNR-26	8/14/2001 18:00	124	270	80	232	2490
PNR-26	8/22/2001 10:00	188	404	105	336	55
PNR-26	11/8/2001 14:15	365	1920	908	2590	1160
PNR-26	2/21/2002 16:00	514	1140	225	636	76
PNR-26	5/23/2002 11:15	365	998	200	610	150
PNR-26	8/21/2002 16:00	328	632	116	377	220
PNR-26	11/6/2002 16:20	398	685	91	335	66
PNR-26	3/5/2003 14:00	333	1090	237	884	400
PNR-26	5/28/2003 16:35	447	912	179	666	80
PNR-26	8/14/2003 10:45	319	946	206	725	250
PNR-26	11/6/2003 12:30	462	1270	256	845	32
PNR-26	3/17/2004 14:15	364	1030	200	670	46
PNR-26	6/9/2004 16:00	450	1260	211	703	16
PNR-26	9/16/2004 9:50	278	177	946	576	250
PNR-26	11/18/2004 12:25	282	224	915	810	59
PNR-26	3/2/2005 16:10	435	300	1290	946	270
PNR-26	5/25/2005 15:15	264	339	1140	1250	78
PNR-26	8/17/2005 18:00	292	223	1030	857	540
PNR-26	11/16/2005 14:55	427	1550	458	1710	410
PNR-26	2/8/2006 15:10	326	1170	278	991	220
PNR-26	5/24/2006 14:10	118	313	75	240	20000
PNR-27	8/21/2001 15:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-27	9/5/2001 15:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/6/2001 15:30	< 0.5	< 0.5	< 0.5	< 1.0	0.4
PNR-27	2/20/2002 17:02	< 0.5	< 0.5	< 0.5	< 0.5	1.0
PNR-27	5/21/2002 18:12	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	8/20/2002 19:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/6/2002 9:55	0.49 (J)	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	3/5/2003 11:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	5/28/2003 11:00	0.42	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	8/13/2003 13:35	0.81	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/5/2003 11:45	0.66	1.0	< 0.5	< 0.5	< 0.1
PNR-27	March 2004		Not sampled			
PNR-27	6/8/2004 11:50	1.3	0.43	< 0.5	0.57	< 0.1
PNR-27	9/14/2004 13:05	1.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/17/2004 10:38	1.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	3/1/2005 15:33	1.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	5/24/2005 15:33	1.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	8/16/2005 17:08	1.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/15/2005 16:35	1.6	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	2/8/2006 17:10	1.6	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	5/23/2006 16:57	1.6	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	8/23/2006 15:01	1.6	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	12/7/2006 14:15	2.0	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	3/14/2007 16:50	2.1	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-27	10/3/2007 12:50	1.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	3/27/2008 17:10	2.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	10/25/2008 14:45	2.6	< 0.5	< 0.5	< 0.5	< 1.0
PNR-27	4/19/2009 12:50	2.6	< 0.5	< 0.5	< 0.5	< 1.0
PNR-28	8/21/2001 16:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	9/5/2001 14:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/6/2001 14:40	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
PNR-28	2/20/2002 16:30	< 0.5	< 0.5	< 0.5	< 0.5	1.2
PNR-28	5/21/2002 17:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/20/2002 18:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/5/2002 13:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	3/5/2003 10:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	5/28/2003 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/13/2003 13:00	0.51	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/5/2003 14:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	March 2004		Not sampled			
PNR-28	6/8/2004 11:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	9/15/2004 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/17/2004 9:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	3/1/2005 14:39	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	5/25/2005 11:07	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/16/2005 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/15/2005 11:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	2/8/2006 14:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	5/23/2006 13:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/23/2006 12:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	12/6/2006 16:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	3/13/2007 18:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	10/4/2007 16:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	3/26/2008 18:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	10/25/2008 13:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-28	4/19/2009 11:10	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-29	8/21/2001 17:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	9/5/2001 14:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	11/6/2001 12:50	< 0.5	0.69	< 0.5	< 1.0	< 0.1
PNR-29	2/20/2002 13:03	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	5/21/2002 16:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/20/2002 11:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	11/5/2002 12:42	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

Table 3 - BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
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Last update: 6/2/2009

Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-29	3/5/2003 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	5/28/2003 10:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/13/2003 13:08	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	11/4/2003 16:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	March 2004	Not sampled				
PNR-29	6/8/2004 10:45	< 0.5	0.59	< 0.5	0.53	< 0.1
PNR-29	9/15/2004 9:40	< 0.5	< 0.5	0.52	< 0.5	< 0.1
PNR-29	11/17/2004 9:31	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	3/1/2005 13:36	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	5/25/2005 9:46	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/16/2005 14:48	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	11/15/2005 10:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	2/8/2006 16:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	5/23/2006 14:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/23/2006 11:37	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	12/6/2006 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	3/13/2007 17:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	10/2/2007 18:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	3/26/2008 12:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	10/25/2008 12:55	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-29	4/21/2009 11:30					
PNR-33-06	12/6/2006 11:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-33-06	3/13/2007 13:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-33-06	10/3/2007 15:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-33-06	3/26/2008 17:15	< 0.5	< 0.5	< 0.5	1.4	< 0.1
PNR-33-06	10/23/2008 11:05	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-33-06	4/17/2009 17:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-34-07	3/14/2007 13:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-34-07	10/5/2007 15:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-34-07	3/27/2008 18:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-34-07	10/25/2008 11:15	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-34-07	4/22/2009 16:15	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-35-07	3/13/2007 11:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-35-07	10/2/2007 16:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-35-07	3/26/2008 10:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-35-07	10/22/2008 17:10	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-35-07	4/20/2009 18:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-36-07	3/13/2007 11:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
PNR-36-07	10/3/2007 14:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-36-07	3/26/2008 16:50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-36-07	10/23/2008 15:25	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-36-07	4/21/2009 14:35	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-38-08	3/26/2008 18:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-38-08	10/23/2008 13:10	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-38-08	4/21/2009 16:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-39-08	6/28/2008 14:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-39-08	10/23/2008 18:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-39-08	4/22/2009 14:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-06-1	4/17/2009 17:15	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-06-2	4/18/2009 13:50	< 0.5	< 0.5	< 0.5	< 0.5	7.3
USGS-06-8	4/19/2009 13:05	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-06-11	4/20/2009 17:35	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-92-6	4/16/2009 16:13	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

Table 3 - BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
DOWL HKM Job No.: 14B805.101
Last update: 6/2/2009

Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
USGS-92-7	4/15/2009 15:40	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-92-9	4/15/2009 17:02	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-92-12	6/1/2000 0:00	< 0.5	< 0.5	< 0.5	< 0.5	nm
USGS-92-12	8/7/2001 11:35	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
USGS-92-12	8/15/2001 14:40	< 0.5	0.36 (J)	< 0.5	0.29 (J)	0.7
USGS-92-12	11/6/2001 14:30	< 0.5	< 0.5 (J)	< 0.5	< 1.0	2.9
USGS-92-12	2/20/2002 14:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	5/21/2002 14:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	8/19/2002 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	11/5/2002 12:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	3/4/2003 11:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	5/13/2003 14:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	8/13/2003 7:48	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	11/5/2003 10:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	March 2004		Not sampled			
USGS-92-12	6/8/2004 9:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	9/14/2004 11:08	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	11/16/2004 9:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS92-12	3/1/2005 12:40	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	5/24/2005 10:43	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	8/17/2005 9:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	11/15/2005 14:41	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	2/7/2006 15:32	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	5/24/2006 10:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	8/22/2006 11:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	12/6/2006 10:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	3/13/2007 12:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
USGS-92-12	10/2/2007 17:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	3/25/2008 15:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-92-12	10/22/2008 17:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-92-12	4/17/2009 12:30	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-93-3	6/1/2000 0:00	4.4	< 0.5	< 0.5	< 0.5	nm
USGS-93-3	8/7/2001 18:55	3.0	< 0.5	< 0.5	< 1.0	< 0.1
USGS-93-3	8/15/2001 19:10	3.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	11/7/2001 10:05	3.0	< 0.5	< 0.5	< 1.0J	0.3
USGS-93-3	2/20/2002 9:00	2.7	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	5/22/2002 9:30	2.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	8/20/2002 16:25	3.0	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	11/5/2002 16:10	3.8	0.49 (J)	< 0.5	< 0.5	< 0.1
USGS-93-3	3/4/2003 15:45	3.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	5/28/2003 13:15	2.9	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	8/14/2003 14:08	2.6	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	11/4/2003 16:45	2.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	March 2004		Not sampled			
USGS-93-3	6/8/2004 19:05	3.1	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	9/14/2004 16:25	2.1	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	11/17/2004 12:15	2.3	< 0.5	< 0.5	< 0.5	< 0.1
USGS93-3	3/2/2005 11:05	2.0	< 0.5	< 0.5	< 0.5	1.1
USGS 93-3	5/25/2005 15:52	2.1	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	8/17/2005 12:55	1.9	1.9	< 0.5	< 0.5	< 0.1
USGS 93-3	11/16/2005 16:40	1.9	< 0.5	1.9	< 0.5	0.8
USGS 93-3	2/9/2006 15:20	1.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	5/24/2006 18:20	1.6	0.48 (J)	< 0.5	< 0.5	< 0.1
USGS 93-3	8/23/2006 14:50	1.7	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	12/7/2006 12:05	1.7	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	3/15/2007 13:30	1.9	< 0.5	< 0.5	< 0.5	< 0.1 (H)
USGS-93-3	10/3/2007 11:50	1.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS-93-3	3/27/2008 11:15	2.2	< 0.5	< 0.5	0.51	< 0.1
USGS-93-3	10/26/2008 11:45	3.9	< 0.5	< 0.5	< 0.5	< 1.0
USGS-93-3	4/15/2009 15:00	4.2	< 0.5	< 0.5	< 0.5	< 1.0

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Well No.	Date & Time	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
USGS-93-4A	4/18/2009 17:05	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-93-5	4/17/2009 15:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
USGS-06-1	1/10/2008 12:53	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS-06-7	10/4/2007 17:50	< 0.5	< 0.5	0.75	< 0.5	< 0.1
USGS-06-7	11/14/2007 16:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	5/31/2000 0:00	< 0.5	< 0.5	< 0.5	< 0.5	nm
Whitmer	8/10/2001 10:00	< 0.5	< 0.5	< 0.5	< 1.0	< 0.1
Whitmer	8/22/2001 15:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/9/2001 10:20	< 0.5	< 0.5	< 0.5	< 1.0	nm
Whitmer	2/22/2002 14:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	5/22/2002 16:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	8/21/2002 9:35	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/5/2002 14:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whittmer	3/4/2003 14:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	5/13/2003 17:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	8/14/2003 12:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/4/2003 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	3/18/2004 13:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	6/9/2004 8:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	9/16/2004 11:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/18/2004 16:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	3/2/2005 16:44	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	8/16/2005 16:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/17/2005 10:25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	2/9/2006 11:15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	5/25/2006 11:21	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	8/24/2006 11:45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	12/7/2006 13:30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	3/14/2007 16:55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 (H)
Whitmer	10/5/2007 18:00	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	3/27/2008 11:10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	10/27/2008 17:55	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
Whitmer	4/21/2009 19:00	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
Whitmer (city)	5/26/2005 10:20	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Lockman (city)	5/26/2005 11:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

Notes
< # = Analyte not detected, number shown is reporting limit
J = Estimated value. Present but less than the limit of quantitation.
H = Analysis performed past recommended holding time.
nm = Not measured.
T = This target analyte was found in the associated trip blank as well as the sample.

APPENDIX A

WELL LOCATION MAP

Well Location Map

Biere 1-22 Well Site

Poplar, Montana

LEGEND

- Pioneer Monitor Wells
- Pioneer Ground Water Recovery Wells
- Pioneer Product Recovery Wells
- Private Wells (Monitored by Pioneer)
- Land and Water Wells (LAW-M03)
- Murphy Oil Company Wells (MOC-1B)
- Injection Well
- Former Biere Wells (Producer, Relief and Injections)

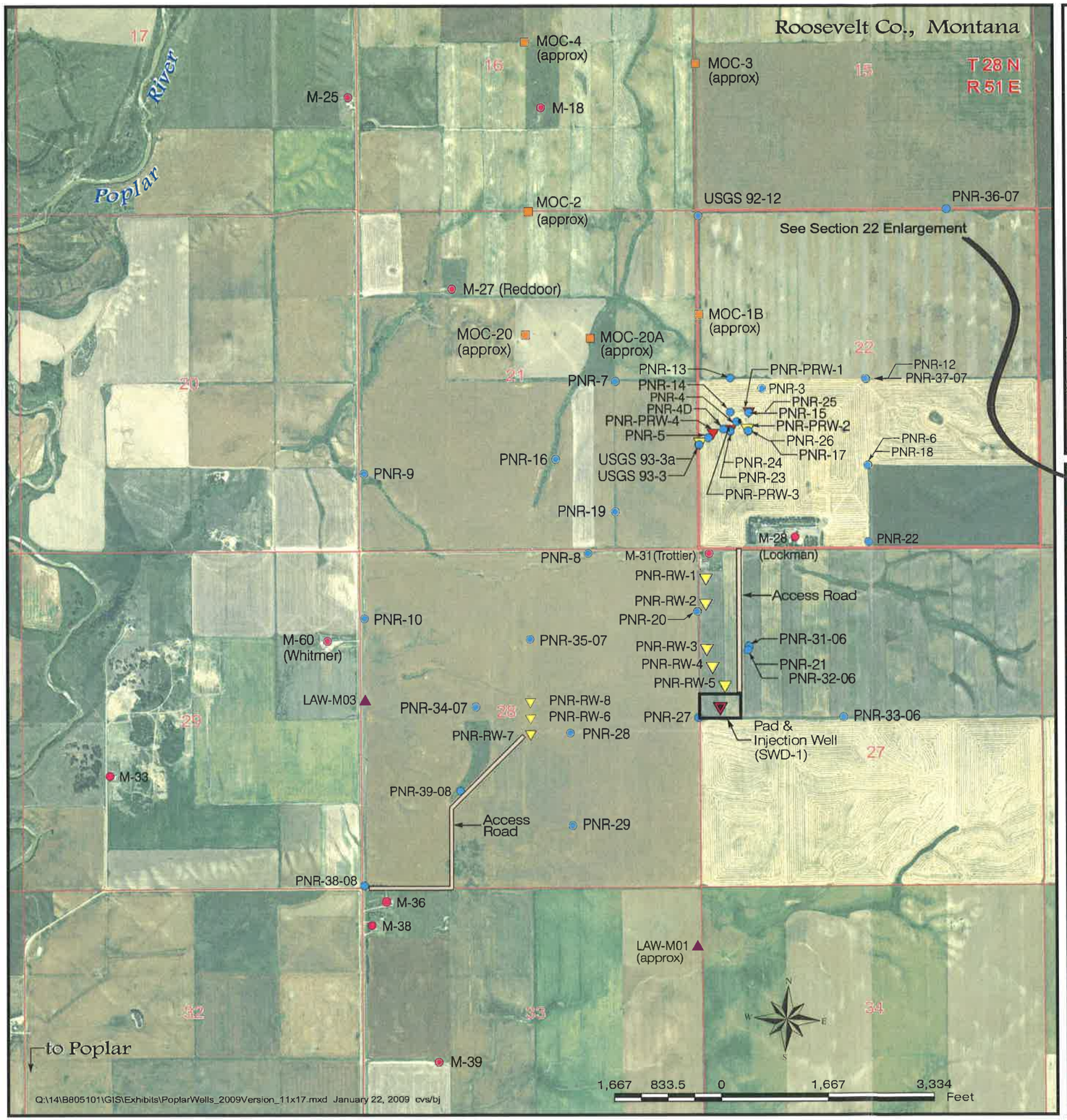
Basemap:
U.S. Farm Services Agency National Agricultural Imagery Program, 2005 (NAIP), 1-meter resolution

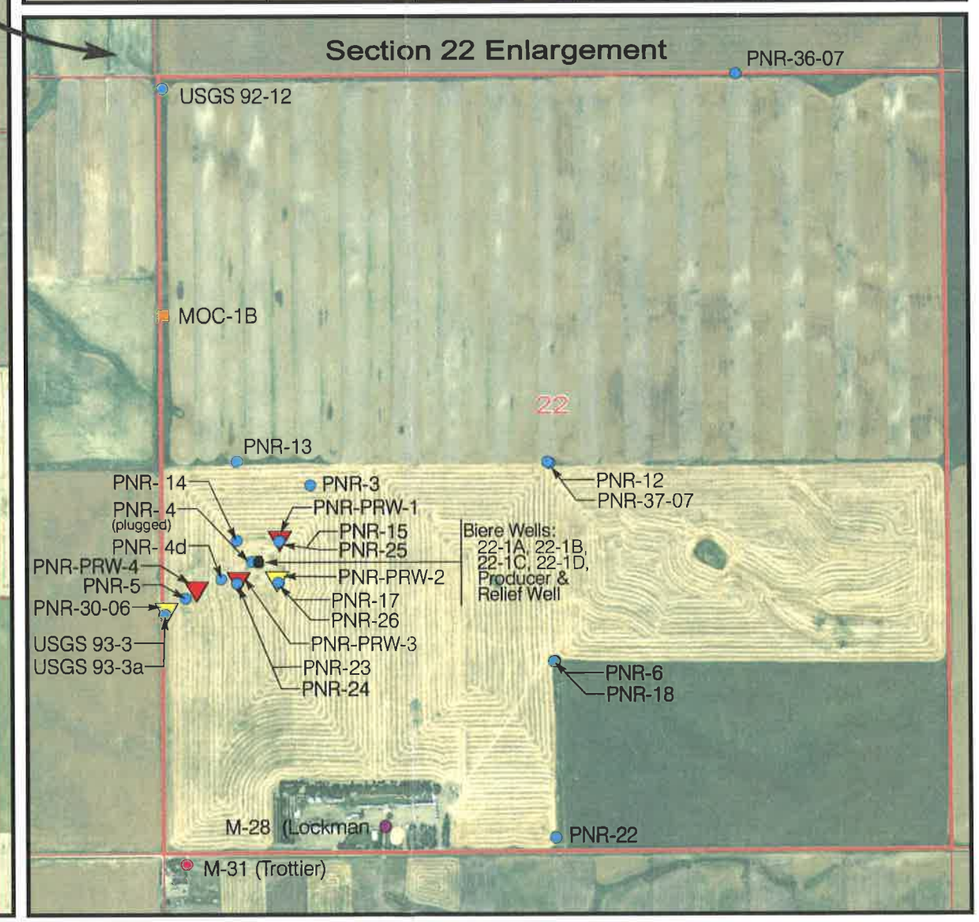
Pioneer National Resources USA Inc.

January 2009

DOWL HKM ENGINEERING

GENERAL LOCATION





APPENDIX B

LABORATORY ANALYTICAL REPORTS

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

ANALYTICAL SUMMARY REPORT

May 11, 2009

Charlie Peterson
DOWL HKM
PO Box 31318
Billings, MT 59107-1318

Workorder No.: B09041885 Quote ID: B78

Project Name: Pioneer Natural Resources-Poplar Biere Well Site

Energy Laboratories Inc received the following 11 samples for DOWL HKM on 4/21/2009 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B09041885-001	USGS 92-12	04/17/09 12:30	04/21/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09041885-002	PNR-16	04/17/09 13:40	04/21/09	Aqueous	Same As Above
B09041885-003	USGS-93-5	04/17/09 15:00	04/21/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved

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ANALYTICAL SUMMARY REPORT

B09041885-004	USGS-06-1	04/17/09 17:15	04/21/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09041885-005	PNR-6	04/17/09 15:15	04/21/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09041885-006	PNR-18	04/17/09 15:50	04/21/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09041885-007	PNR-33-06	04/17/09 17:30	04/21/09	Aqueous	Same As Above
B09041885-008	PNR-22	04/18/09 13:10	04/21/09	Aqueous	Same As Above
B09041885-009	Trip Blank 1 Lot041009 B-TS SHP0243	04/17/09 12:30	04/21/09	Trip Blank	Purgeable Aromatics
B09041885-010	Trip Blank 2 Lot040709 B-TS SHP0243	04/17/09 15:00	04/21/09	Trip Blank	Same As Above
B09041885-011	Trip Blank 3 Lot041009 B-TS SHP0243	04/17/09 15:15	04/21/09	Trip Blank	Same As Above

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ANALYTICAL SUMMARY REPORT

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-001
Client Sample ID: USGS 92-12

Report Date: 05/11/09
Collection Date: 04/17/09 12:30
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	04/21/09 15:43 / kh
Conductivity	1880	umhos/cm		1		A2510 B	04/21/09 14:43 / kh
Solids, Total Dissolved TDS @ 180 C	1460	mg/L		10		A2540 C	04/21/09 16:06 / afb
INORGANICS							
Alkalinity, Total as CaCO3	340	mg/L		4		A2320 B	04/23/09 19:54 / ehb
Bicarbonate as HCO3	415	mg/L		4		A2320 B	04/23/09 19:54 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/23/09 19:54 / ehb
Chloride	3	mg/L		1		E300.0	04/27/09 23:19 / kh
Sulfate	751	mg/L		1		E300.0	04/27/09 23:19 / kh
Fluoride	0.5	mg/L		0.1		A4500-F C	04/23/09 19:54 / ehb
Hardness as CaCO3	915	mg/L		1		A2340 B	04/24/09 04:58 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/22/09 11:21 / sam
Nitrogen, Nitrate+Nitrite as N	10.2	mg/L		0.05		E353.2	04/22/09 12:22 / bls
METALS, DISSOLVED							
Calcium	130	mg/L		1		E200.7	04/24/09 04:58 / tao
Magnesium	143	mg/L		1		E200.7	04/24/09 04:58 / tao
Potassium	11	mg/L		1		E200.7	04/24/09 04:58 / tao
Silica	26.4	mg/L		0.2		E200.7	04/24/09 04:58 / tao
Sodium	72	mg/L		1		E200.7	04/24/09 04:58 / tao
METALS, TOTAL							
Silica	85.9	mg/L	D	0.4		E200.7	04/27/09 17:58 / jjw
QUALITY CONTROL							
A/C Balance Sigma	3.37					Calculation	04/28/09 12:29 / rls
Anions	23.3	meq/L		0.01		Calculation	04/28/09 12:29 / rls
Cations	21.7	meq/L		0.01		Calculation	04/28/09 12:29 / rls
A/C Balance	-3.51	%				Calculation	04/28/09 12:29 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 03:46 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 03:46 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 03:46 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 03:46 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 03:46 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 03:46 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 03:46 / bw
Surr: Trifluorotoluene	98.0	%REC		80-120		SW8021B	04/27/09 03:46 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-001
Client Sample ID: USGS 92-12

Report Date: 05/11/09
Collection Date: 04/17/09 12:30
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/28/09 14:23 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-002
Client Sample ID: PNR-16

Report Date: 05/11/09
Collection Date: 04/17/09 13:40
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500-H B	04/21/09 15:43 / kh
Conductivity	4940	umhos/cm		1		A2510 B	04/21/09 15:35 / kh
Solids, Total Dissolved TDS @ 180 C	4320	mg/L		10		A2540 C	04/22/09 16:00 / afb
INORGANICS							
Alkalinity, Total as CaCO3	464	mg/L		4		A2320 B	04/23/09 20:21 / ehb
Bicarbonate as HCO3	566	mg/L		4		A2320 B	04/23/09 20:21 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/23/09 20:21 / ehb
Chloride	22	mg/L		1		E300.0	05/04/09 21:13 / eli-h1
Sulfate	2920	mg/L	D	4		E300.0	05/04/09 21:13 / eli-h1
Fluoride	0.5	mg/L		0.1		A4500-F C	04/23/09 20:21 / ehb
Hardness as CaCO3	2770	mg/L		1		A2340 B	04/24/09 05:02 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/22/09 11:23 / sam
Nitrogen, Nitrate+Nitrite as N	21.9	mg/L		0.05		E353.2	04/22/09 12:23 / bls
METALS, DISSOLVED							
Calcium	404	mg/L		1		E200.7	04/24/09 05:02 / tao
Magnesium	429	mg/L		1		E200.7	04/24/09 05:02 / tao
Potassium	20	mg/L		1		E200.7	04/24/09 05:02 / tao
Silica	26.8	mg/L		0.2		E200.7	04/24/09 05:02 / tao
Sodium	288	mg/L		1		E200.7	04/24/09 05:02 / tao
METALS, TOTAL							
Silica	32	mg/L	D	1		E200.7	04/27/09 18:06 / jjw
QUALITY CONTROL							
A/C Balance Sigma	3.04					Calculation	05/08/09 15:09 / klc
Anions	72.2	meq/L		0.01		Calculation	05/08/09 15:09 / klc
Cations	68.5	meq/L		0.01		Calculation	05/08/09 15:09 / klc
A/C Balance	-2.65	%				Calculation	05/08/09 15:09 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 04:20 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 04:20 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 04:20 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 04:20 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 04:20 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 04:20 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 04:20 / bw
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	04/27/09 04:20 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-002
Client Sample ID: PNR-16

Report Date: 05/11/09
Collection Date: 04/17/09 13:40
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/28/09 14:24 / mav

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-003
Client Sample ID: USGS-93-5

Report Date: 05/11/09
Collection Date: 04/17/09 15:00
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500-H B	04/21/09 15:44 / kh
Conductivity	27100	umhos/cm		1		A2510 B	04/21/09 15:36 / kh
Solids, Total Dissolved TDS @ 180 C	15800	mg/L		10		A2540 C	04/22/09 16:03 / afb
INORGANICS							
Alkalinity, Total as CaCO3	313	mg/L		4		A2320 B	04/23/09 20:29 / ehb
Bicarbonate as HCO3	382	mg/L		4		A2320 B	04/23/09 20:29 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/23/09 20:29 / ehb
Chloride	9470	mg/L	D	2		E300.0	05/06/09 11:58 / eli-h1
Sulfate	355	mg/L	D	9		E300.0	05/06/09 11:58 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/23/09 20:29 / ehb
Hardness as CaCO3	3120	mg/L		1		A2340 B	04/24/09 05:06 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	1.6	mg/L		0.1		E350.1	04/22/09 11:26 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/22/09 12:31 / bls
METALS, DISSOLVED							
Calcium	658	mg/L		1		E200.7	04/24/09 05:06 / tao
Magnesium	359	mg/L		1		E200.7	04/24/09 05:06 / tao
Potassium	26	mg/L		1		E200.7	04/24/09 05:06 / tao
Silica	6	mg/L	D	2		E200.7	04/24/09 05:06 / tao
Sodium	4640	mg/L	D	10		E200.7	04/24/09 05:06 / tao
METALS, TOTAL							
Silica	17	mg/L	D	10		E200.7	04/27/09 18:10 / jjw
QUALITY CONTROL							
A/C Balance Sigma	3.53					Calculation	05/08/09 15:10 / klc
Anions	281	meq/L		0.01		Calculation	05/08/09 15:10 / klc
Cations	265	meq/L		0.01		Calculation	05/08/09 15:10 / klc
A/C Balance	-2.88	%				Calculation	05/08/09 15:10 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 04:54 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 04:54 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 04:54 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 04:54 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 04:54 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 04:54 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 04:54 / bw
Surr: Trifluorotoluene	102	%REC		80-120		SW8021B	04/27/09 04:54 / bw

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-003
Client Sample ID: USGS-93-5

Report Date: 05/11/09
Collection Date: 04/17/09 15:00
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/28/09 14:25 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-004
Client Sample ID: USGS-06-1

Report Date: 05/11/09
Collection Date: 04/17/09 17:15
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.		0.1		A4500-H B	04/21/09 15:45 / kh
Conductivity	2920	umhos/cm		1		A2510 B	04/21/09 15:37 / kh
Solids, Total Dissolved TDS @ 180 C	2270	mg/L		10		A2540 C	04/22/09 15:59 / afb
INORGANICS							
Alkalinity, Total as CaCO3	390	mg/L		4		A2320 B	04/23/09 20:38 / ehb
Bicarbonate as HCO3	476	mg/L		4		A2320 B	04/23/09 20:38 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/23/09 20:38 / ehb
Chloride	229	mg/L		1		E300.0	04/27/09 23:54 / kh
Sulfate	973	mg/L		1		E300.0	04/27/09 23:54 / kh
Fluoride	0.3	mg/L		0.1		A4500-F C	04/23/09 20:38 / ehb
Hardness as CaCO3	1310	mg/L		1		A2340 B	04/24/09 05:10 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/22/09 11:30 / sam
Nitrogen, Nitrate+Nitrite as N	11.3	mg/L		0.05		E353.2	04/22/09 12:32 / bls
METALS, DISSOLVED							
Calcium	240	mg/L		1		E200.7	04/24/09 05:10 / tao
Magnesium	172	mg/L		1		E200.7	04/24/09 05:10 / tao
Potassium	9	mg/L		1		E200.7	04/24/09 05:10 / tao
Silica	21.6	mg/L		0.2		E200.7	04/24/09 05:10 / tao
Sodium	165	mg/L		1		E200.7	04/24/09 05:10 / tao
METALS, TOTAL							
Silica	50	mg/L	D	1		E200.7	04/27/09 18:14 / jjw
QUALITY CONTROL							
A/C Balance Sigma	2.83					Calculation	04/28/09 12:29 / rls
Anions	35.3	meq/L		0.01		Calculation	04/28/09 12:29 / rls
Cations	33.5	meq/L		0.01		Calculation	04/28/09 12:29 / rls
A/C Balance	-2.69	%				Calculation	04/28/09 12:29 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 05:27 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 05:27 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 05:27 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 05:27 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 05:27 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 05:27 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 05:27 / bw
Surr: Trifluorotoluene	101	%REC		80-120		SW8021B	04/27/09 05:27 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-004
Client Sample ID: USGS-06-1

Report Date: 05/11/09
Collection Date: 04/17/09 17:15
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/28/09 14:26 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-005
Client Sample ID: PNR-6

Report Date: 05/11/09
Collection Date: 04/17/09 15:15
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.		0.1		A4500-H B	04/21/09 15:46 / kh
Conductivity	5540	umhos/cm		1		A2510 B	04/21/09 15:39 / kh
Solids, Total Dissolved TDS @ 180 C	4570	mg/L		10		A2540 C	04/22/09 16:07 / afb
INORGANICS							
Alkalinity, Total as CaCO3	405	mg/L		4		A2320 B	04/23/09 20:46 / ehb
Bicarbonate as HCO3	494	mg/L		4		A2320 B	04/23/09 20:46 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/23/09 20:46 / ehb
Chloride	153	mg/L		1		E300.0	04/28/09 00:52 / kh
Sulfate	3310	mg/L		1		E300.0	04/28/09 00:52 / kh
Fluoride	0.4	mg/L		0.1		A4500-F C	04/23/09 20:46 / ehb
Hardness as CaCO3	2950	mg/L		1		A2340 B	04/29/09 16:51 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/22/09 11:31 / sam
Nitrogen, Nitrate+Nitrite as N	3.62	mg/L		0.05		E353.2	04/22/09 12:34 / bls
METALS, DISSOLVED							
Calcium	346	mg/L		1		E200.7	04/29/09 16:51 / tao
Magnesium	506	mg/L		1		E200.7	04/29/09 16:51 / tao
Potassium	12	mg/L		1		E200.7	04/29/09 16:51 / tao
Silica	24.9	mg/L	D	0.3		E200.7	04/24/09 05:14 / tao
Sodium	420	mg/L	D	3		E200.7	04/29/09 16:51 / tao
METALS, TOTAL							
Silica	29	mg/L	D	4		E200.7	04/27/09 18:18 / jjw
QUALITY CONTROL							
A/C Balance Sigma	3.03					Calculation	04/30/09 16:17 / klc
Anions	81.6	meq/L		0.01		Calculation	04/30/09 16:17 / klc
Cations	77.5	meq/L		0.01		Calculation	04/30/09 16:17 / klc
A/C Balance	-2.62	%				Calculation	04/30/09 16:17 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 07:08 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 07:08 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 07:08 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 07:08 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 07:08 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 07:08 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 07:08 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/27/09 07:08 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-005
Client Sample ID: PNR-6

Report Date: 05/11/09
Collection Date: 04/17/09 15:15
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/28/09 14:27 / mav

Report Definitions:
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MCL - Maximum contaminant level.
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-006
Client Sample ID: PNR-18

Report Date: 05/11/09
Collection Date: 04/17/09 15:50
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/21/09 15:46 / kh
Conductivity	4080	umhos/cm		1		A2510 B	04/21/09 15:40 / kh
Solids, Total Dissolved TDS @ 180 C	3160	mg/L		10		A2540 C	04/22/09 16:04 / afb
INORGANICS							
Alkalinity, Total as CaCO3	722	mg/L		4		A2320 B	04/23/09 20:56 / ehb
Bicarbonate as HCO3	881	mg/L		4		A2320 B	04/23/09 20:56 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/23/09 20:56 / ehb
Chloride	127	mg/L		1		E300.0	04/28/09 01:04 / kh
Sulfate	1630	mg/L		1		E300.0	04/28/09 01:04 / kh
Fluoride	0.3	mg/L		0.1		A4500-F C	04/23/09 20:56 / ehb
Hardness as CaCO3	1730	mg/L		1		A2340 B	04/24/09 05:35 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	2.9	mg/L		0.1		E350.1	04/22/09 11:32 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/22/09 12:35 / bls
METALS, DISSOLVED							
Calcium	295	mg/L		1		E200.7	04/24/09 05:35 / tao
Magnesium	241	mg/L		1		E200.7	04/24/09 05:35 / tao
Potassium	8	mg/L		1		E200.7	04/24/09 05:35 / tao
Silica	26.5	mg/L		0.2		E200.7	04/24/09 05:35 / tao
Sodium	386	mg/L		1		E200.7	04/24/09 05:35 / tao
METALS, TOTAL							
Silica	30	mg/L	D	1		E200.7	04/27/09 18:22 / jjw
QUALITY CONTROL							
A/C Balance Sigma	0.32					Calculation	04/28/09 12:30 / rls
Anions	52.1	meq/L		0.01		Calculation	04/28/09 12:30 / rls
Cations	51.8	meq/L		0.01		Calculation	04/28/09 12:30 / rls
A/C Balance	-0.28	%				Calculation	04/28/09 12:30 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 06:35 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 06:35 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 06:35 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 06:35 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 06:35 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 06:35 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 06:35 / bw
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	04/27/09 06:35 / bw

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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-006
Client Sample ID: PNR-18

Report Date: 05/11/09
Collection Date: 04/17/09 15:50
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/28/09 14:28 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-007
Client Sample ID: PNR-33-06

Report Date: 05/11/09
Collection Date: 04/17/09 17:30
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500-H B	04/21/09 15:48 / kh
Conductivity	4900	umhos/cm		1		A2510 B	04/21/09 15:41 / kh
Solids, Total Dissolved TDS @ 180 C	4230	mg/L		10		A2540 C	04/22/09 16:05 / afb
INORGANICS							
Alkalinity, Total as CaCO3	389	mg/L		4		A2320 B	04/23/09 21:17 / ehb
Bicarbonate as HCO3	475	mg/L		4		A2320 B	04/23/09 21:17 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/23/09 21:17 / ehb
Chloride	134	mg/L		1		E300.0	04/28/09 01:15 / kh
Sulfate	2670	mg/L		1		E300.0	04/28/09 01:15 / kh
Fluoride	0.3	mg/L		0.1		A4500-F C	04/23/09 21:17 / ehb
Hardness as CaCO3	2690	mg/L		1		A2340 B	04/24/09 05:39 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/22/09 11:33 / sam
Nitrogen, Nitrate+Nitrite as N	47.4	mg/L		0.05		E353.2	04/22/09 12:36 / bls
METALS, DISSOLVED							
Calcium	488	mg/L		1		E200.7	04/24/09 05:39 / tao
Magnesium	356	mg/L		1		E200.7	04/24/09 05:39 / tao
Potassium	17	mg/L		1		E200.7	04/24/09 05:39 / tao
Silica	25.5	mg/L		0.2		E200.7	04/24/09 05:39 / tao
Sodium	273	mg/L		1		E200.7	04/24/09 05:39 / tao
METALS, TOTAL							
Silica	27	mg/L	D	1		E200.7	04/27/09 18:26 / jjw
QUALITY CONTROL							
A/C Balance Sigma	3.79					Calculation	04/28/09 12:30 / rls
Anions	70.5	meq/L		0.01		Calculation	04/28/09 12:30 / rls
Cations	66.0	meq/L		0.01		Calculation	04/28/09 12:30 / rls
A/C Balance	-3.33	%				Calculation	04/28/09 12:30 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 07:42 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 07:42 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 07:42 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 07:42 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 07:42 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 07:42 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 07:42 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/27/09 07:42 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-007
Client Sample ID: PNR-33-06

Report Date: 05/11/09
Collection Date: 04/17/09 17:30
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/28/09 14:29 / mav

Report Definitions:
RL - Analyte reporting limit.
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-008
Client Sample ID: PNR-22

Report Date: 05/11/09
Collection Date: 04/18/09 13:10
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/21/09 15:49 / kh
Conductivity	5160	umhos/cm		1		A2510 B	04/21/09 15:41 / kh
Solids, Total Dissolved TDS @ 180 C	2970	mg/L		10		A2540 C	04/22/09 16:06 / afb
INORGANICS							
Alkalinity, Total as CaCO3	713	mg/L		4		A2320 B	04/23/09 21:33 / ehb
Bicarbonate as HCO3	870	mg/L		4		A2320 B	04/23/09 21:33 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/23/09 21:33 / ehb
Chloride	895	mg/L		1		E300.0	04/28/09 01:27 / kh
Sulfate	958	mg/L		1		E300.0	04/28/09 01:27 / kh
Fluoride	0.3	mg/L		0.1		A4500-F C	04/23/09 21:33 / ehb
Hardness as CaCO3	1700	mg/L		1		A2340 B	04/24/09 05:43 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	6.3	mg/L	D	0.1		E350.1	04/23/09 13:54 / sam
Nitrogen, Nitrate+Nitrite as N	0.05	mg/L		0.05		E353.2	04/22/09 12:37 / bls
METALS, DISSOLVED							
Calcium	278	mg/L		1		E200.7	04/24/09 05:43 / tao
Magnesium	244	mg/L		1		E200.7	04/24/09 05:43 / tao
Potassium	9	mg/L		1		E200.7	04/24/09 05:43 / tao
Silica	28.1	mg/L	D	0.3		E200.7	04/24/09 05:43 / tao
Sodium	482	mg/L	D	3		E200.7	04/24/09 05:43 / tao
METALS, TOTAL							
Silica	33	mg/L	D	2		E200.7	04/27/09 18:38 / jjw
QUALITY CONTROL							
A/C Balance Sigma	3.74					Calculation	04/28/09 12:30 / rls
Anions	59.5	meq/L		0.01		Calculation	04/28/09 12:30 / rls
Cations	55.6	meq/L		0.01		Calculation	04/28/09 12:30 / rls
A/C Balance	-3.34	%				Calculation	04/28/09 12:30 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 08:15 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 08:15 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 08:15 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 08:15 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 08:15 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 08:15 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 08:15 / bw
Surr: Trifluorotoluene	96.0	%REC		80-120		SW8021B	04/27/09 08:15 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-008
Client Sample ID: PNR-22

Report Date: 05/11/09
Collection Date: 04/18/09 13:10
DateReceived: 04/21/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/28/09 14:30 / mav

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-009
Client Sample ID: Trip Blank 1 Lot041009 B-TS SHP0243

Report Date: 05/11/09
Collection Date: 04/17/09 12:30
DateReceived: 04/21/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 14:07 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 14:07 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 14:07 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 14:07 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 14:07 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 14:07 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 14:07 / bw
Surr: Trifluorotoluene	104	%REC		80-120		SW8021B	04/27/09 14:07 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-010
Client Sample ID: Trip Blank 2 Lot040709 B-TS SHP0243

Report Date: 05/11/09
Collection Date: 04/17/09 15:00
DateReceived: 04/21/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 13:33 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 13:33 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 13:33 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 13:33 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 13:33 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 13:33 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 13:33 / bw
Surr: Trifluorotoluene	104	%REC		80-120		SW8021B	04/27/09 13:33 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09041885-011
Client Sample ID: Trip Blank 3 Lot041009 B-TS SHP0243

Report Date: 05/11/09
Collection Date: 04/17/09 15:15
DateReceived: 04/21/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 12:59 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 12:59 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 12:59 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 12:59 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 12:59 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 12:59 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 12:59 / bw
Surr: Trifluorotoluene	103	%REC		80-120		SW8021B	04/27/09 12:59 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Batch: R128329
Sample ID: MB	Method Blank				Run: MAN-TECH_090423B				04/23/09 14:01
Alkalinity, Total as CaCO3	ND	mg/L	4						
Bicarbonate as HCO3	ND	mg/L	4						
Carbonate as CO3	ND	mg/L	4						
Sample ID: LCS	Laboratory Control Sample				Run: MAN-TECH_090423B				04/23/09 14:08
Alkalinity, Total as CaCO3	97.7	mg/L	4.0	98	90	110			
Sample ID: B09041885-001AMS	Sample Matrix Spike				Run: MAN-TECH_090423B				04/23/09 20:03
Alkalinity, Total as CaCO3	475	mg/L	4.0	101	80	120			
Sample ID: B09041885-001AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090423B				04/23/09 20:12
Alkalinity, Total as CaCO3	459	mg/L	4.0	89	80	120	3.5	20	
Sample ID: B09041948-001AMS	Sample Matrix Spike				Run: MAN-TECH_090423B				04/23/09 22:08
Alkalinity, Total as CaCO3	300	mg/L	4.0	90	80	120			
Sample ID: B09041948-001AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090423B				04/23/09 22:14
Alkalinity, Total as CaCO3	297	mg/L	4.0	89	80	120	1	20	
Method: A2510 B									Batch: PHSC090421A
Sample ID: PHC1081231G	Laboratory Control Sample				Run: ORION555A_090421A				04/21/09 11:01
Conductivity	150	umhos/cm	1.0	100	90	110			
Sample ID: PHC1090310A	Laboratory Control Sample				Run: ORION555A_090421A				04/21/09 11:02
Conductivity	4970	umhos/cm	1.0	99	90	110			
Sample ID: PHC1081114A	Laboratory Control Sample				Run: ORION555A_090421A				04/21/09 11:03
Conductivity	19800	umhos/cm	1.0	99	90	110			
Sample ID: B09041885-004ADUP	Sample Duplicate				Run: ORION555A_090421A				04/21/09 15:37
Conductivity	2930	umhos/cm	1.0				0.5	10	
Method: A2540 C									Batch: TDS090421C
Sample ID: MBLK6	Method Blank				Run: CPA124S_090421B				04/21/09 15:52
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB6	Laboratory Fortified Blank				Run: CPA124S_090421B				04/21/09 15:52
Solids, Total Dissolved TDS @ 180 C	1100	mg/L	10	100	90	110			
Sample ID: B09041857-006A MS	Sample Matrix Spike				Run: CPA124S_090421B				04/21/09 15:55
Solids, Total Dissolved TDS @ 180 C	26700	mg/L	10	100	80	120			
Sample ID: B09041857-006A MSD	Sample Matrix Spike Duplicate				Run: CPA124S_090421B				04/21/09 15:56
Solids, Total Dissolved TDS @ 180 C	27300	mg/L	10	99	80	120	2.1	20	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS090422A
Sample ID: MBLK1	Method Blank				Run: CPA124S_090422B				04/22/09 15:57
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB1	Laboratory Fortified Blank				Run: CPA124S_090422B				04/22/09 15:58
Solids, Total Dissolved TDS @ 180 C	1100	mg/L	10	100	90	110			
Sample ID: B09041885-002A MS	Sample Matrix Spike				Run: CPA124S_090422B				04/22/09 16:00
Solids, Total Dissolved TDS @ 180 C	23100	mg/L	10	100	80	120			
Sample ID: B09041885-002A MSD	Sample Matrix Spike Duplicate				Run: CPA124S_090422B				04/22/09 16:02
Solids, Total Dissolved TDS @ 180 C	23100	mg/L	10	101	80	120	0	20	
Method: A4500-F C									Analytical Run: MAN-TECH_090423B
Sample ID: ICV	Initial Calibration Verification Standard								04/23/09 14:24
Fluoride	0.990	mg/L	0.10	99	90	110			
Method: A4500-F C									Batch: R128329
Sample ID: MB	Method Blank				Run: MAN-TECH_090423B				04/23/09 14:18
Fluoride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: MAN-TECH_090423B				04/23/09 14:21
Fluoride	0.960	mg/L	0.10	96	90	110			
Sample ID: B09041885-001AMS	Sample Matrix Spike				Run: MAN-TECH_090423B				04/23/09 20:03
Fluoride	1.53	mg/L	0.10	101	80	120			
Sample ID: B09041885-001AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090423B				04/23/09 20:12
Fluoride	1.46	mg/L	0.10	94	80	120	4.7	10	
Sample ID: B09041938-001AMS	Sample Matrix Spike				Run: MAN-TECH_090423B				04/23/09 21:45
Fluoride	5.79	mg/L	0.10	101	80	120			
Sample ID: B09041938-001AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090423B				04/23/09 21:48
Fluoride	5.82	mg/L	0.10	104	80	120	0.5	10	
Method: A4500-H B									Batch: PHSC090421A
Sample ID: PHC1081231F	Laboratory Control Sample				Run: ORION555A_090421A				04/21/09 10:57
pH	4.02	s.u.	0.10	100	97	103			
Sample ID: PHC1080722E	Laboratory Control Sample				Run: ORION555A_090421A				04/21/09 10:58
pH	6.98	s.u.	0.10	100	98	102			
Sample ID: B09041885-004ADUP	Sample Duplicate				Run: ORION555A_090421A				04/21/09 15:45
pH	7.38	s.u.	0.10				0.4	10	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A									Batch: G_TPH090428A
Sample ID: MBLK0904280000	Method Blank				Run: SUB-G168691				04/28/09 14:19
Total Petroleum Hydrocarbons	ND	mg/L	0.6						
Sample ID: LCS0904280000	Laboratory Control Sample				Run: SUB-G168691				04/28/09 14:20
Total Petroleum Hydrocarbons	14	mg/L	1.0	72	64	132			
Sample ID: LCSD0904280000	Laboratory Control Sample Duplicate				Run: SUB-G168691				04/28/09 14:21
Total Petroleum Hydrocarbons	16	mg/L	1.0	81	64	132	11	34	
Sample ID: G09040882-003EMS	Sample Matrix Spike				Run: SUB-G168691				04/28/09 14:41
Total Petroleum Hydrocarbons	16	mg/L	1.0	75	64	132			

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: SUB-H53363	
Sample ID: ICV	Initial Calibration Verification Standard							05/04/09 10:48	
Chloride	2.59	mg/L	1.0	103	90	110			
Sulfate	9.57	mg/L	1.0	96	90	110			
Method: E300.0								Batch: H_R53363	
Sample ID: LFB	Laboratory Fortified Blank				Run: SUB-H53363			05/04/09 11:55	
Chloride	4.67	mg/L	1.0	93	80	120			
Sulfate	9.44	mg/L	1.0	94	80	120			
Sample ID: MBLK	Method Blank				Run: SUB-H53363			05/04/09 12:11	
Chloride	ND	mg/L	0.05						
Sulfate	ND	mg/L	0.2						
Sample ID: H09050021-001A MS	Sample Matrix Spike				Run: SUB-H53363			05/04/09 20:40	
Chloride	47.0	mg/L	1.0	94	80	120			
Sulfate	72.6	mg/L	1.0	97	80	120			
Sample ID: H09050021-001A MSD	Sample Matrix Spike Duplicate				Run: SUB-H53363			05/04/09 20:57	
Chloride	47.0	mg/L	1.0	94	80	120	0	10	
Sulfate	73.4	mg/L	1.0	98	80	120	1.1	10	
Sample ID: B09042537-002A	Sample Matrix Spike				Run: SUB-H53363			05/05/09 14:11	
Chloride	43.6	mg/L	1.0	97	80	120			
Sulfate	1160	mg/L	1.0		80	120			A
Sample ID: B09042537-002A	Sample Matrix Spike Duplicate				Run: SUB-H53363			05/05/09 14:28	
Chloride	43.5	mg/L	1.0	96	80	120	0.2	10	
Sulfate	1160	mg/L	1.0		80	120	0	10	A
Sample ID: B09042302-006A	Sample Matrix Spike				Run: SUB-H53363			05/05/09 21:35	
Chloride	83.0	mg/L	1.2	101	80	120			
Sulfate	2100	mg/L	4.1		80	120			A
Sample ID: B09042302-006A	Sample Matrix Spike Duplicate				Run: SUB-H53363			05/05/09 21:51	
Chloride	83.7	mg/L	1.2	104	80	120	0.8	10	
Sulfate	2160	mg/L	4.1		80	120	2.5	10	A

Qualifiers:

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ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: SUB-H53377	
Sample ID: ICV	Initial Calibration Verification Standard							05/06/09 10:19	
Chloride	2.57	mg/L	1.0	103	90	110			
Sulfate	9.27	mg/L	1.0	93	90	110			
Method: E300.0								Batch: H_R53377	
Sample ID: LFB	Laboratory Fortified Blank				Run: SUB-H53377			05/06/09 10:52	
Chloride	4.62	mg/L	1.0	92	80	120			
Sulfate	9.46	mg/L	1.0	95	80	120			
Sample ID: MBLK	Method Blank				Run: SUB-H53377			05/06/09 11:09	
Chloride	ND	mg/L	0.05						
Sulfate	ND	mg/L	0.2						
Sample ID: H09050070-013C MS	Sample Matrix Spike				Run: SUB-H53377			05/06/09 13:20	
Chloride	155	mg/L	1.2		80	120			A
Sulfate	2150	mg/L	4.1		80	120			A
Sample ID: H09050070-013C MSD	Sample Matrix Spike Duplicate				Run: SUB-H53377			05/06/09 13:37	
Chloride	156	mg/L	1.2		80	120	0.7	10	A
Sulfate	2190	mg/L	4.1		80	120	1.8	10	A
Sample ID: H09050005-004A MS	Sample Matrix Spike				Run: SUB-H53377			05/07/09 06:51	
Chloride	42.9	mg/L	1.0	101	80	120			
Sulfate	175	mg/L	1.0	104	80	120			
Sample ID: H09050005-004A MSD	Sample Matrix Spike Duplicate				Run: SUB-H53377			05/07/09 07:08	
Chloride	42.9	mg/L	1.0	101	80	120	0.1	10	
Sulfate	175	mg/L	1.0	104	80	120	0	10	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC202-B_090427A	
Sample ID: ICV042709-11	Initial Calibration Verification Standard							04/27/09 12:28	
Chloride	24.9	mg/L	1.0	100	90	110			
Sulfate	92.5	mg/L	1.0	93	90	110			
Method: E300.0								Batch: R128521	
Sample ID: ICB042709-12	Method Blank				Run: IC202-B_090427A			04/27/09 12:40	
Chloride	ND	mg/L	0.03						
Sulfate	ND	mg/L	0.06						
Sample ID: LFB042709-13	Laboratory Fortified Blank				Run: IC202-B_090427A			04/27/09 12:52	
Chloride	24.7	mg/L	1.0	99	90	110			
Sulfate	93.2	mg/L	1.0	93	90	110			
Sample ID: B09041885-004AMS	Sample Matrix Spike				Run: IC202-B_090427A			04/28/09 00:06	
Chloride	481	mg/L	1.0	101	90	110			
Sulfate	2000	mg/L	1.0	103	90	110			
Sample ID: B09041885-004AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_090427A			04/28/09 00:41	
Chloride	484	mg/L	1.0	102	90	110	0.6	20	
Sulfate	2020	mg/L	1.0	105	90	110	0.8	20	
Method: E350.1								Analytical Run: FIA202-B_090422A	
Sample ID: ICV	Initial Calibration Verification Standard							04/22/09 09:45	
Nitrogen, Ammonia as N	5.89	mg/L	0.11	108	90	110			
Method: E350.1								Batch: R128211	
Sample ID: MBLK	Method Blank				Run: FIA202-B_090422A			04/22/09 09:46	
Nitrogen, Ammonia as N	ND	mg/L	0.02						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA202-B_090422A			04/22/09 09:47	
Nitrogen, Ammonia as N	1.04	mg/L	0.10	105	90	110			
Sample ID: B09041885-003DMS	Sample Matrix Spike				Run: FIA202-B_090422A			04/22/09 11:27	
Nitrogen, Ammonia as N	2.54	mg/L	0.10	99	90	110			
Sample ID: B09041885-003DMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090422A			04/22/09 11:29	
Nitrogen, Ammonia as N	2.43	mg/L	0.10	88	90	110	4.4	10	S
Sample ID: B09041857-001CMS	Sample Matrix Spike				Run: FIA202-B_090422A			04/22/09 11:42	
Nitrogen, Ammonia as N	1.08	mg/L	0.10	84	90	110			S
Sample ID: B09041857-001CMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090422A			04/22/09 11:43	
Nitrogen, Ammonia as N	1.08	mg/L	0.10	84	90	110	0	10	S

Qualifiers:

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S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E350.1								Analytical Run: FIA202-B_090423B	
Sample ID: ICV	Initial Calibration Verification Standard							04/23/09 12:21	
Nitrogen, Ammonia as N	5.64	mg/L	0.11	103	90	110			
Method: E350.1								Batch: R128302	
Sample ID: MBLK	Method Blank				Run: FIA202-B_090423B			04/23/09 12:22	
Nitrogen, Ammonia as N	ND	mg/L	0.02						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA202-B_090423B			04/23/09 12:23	
Nitrogen, Ammonia as N	1.00	mg/L	0.10	102	90	110			
Sample ID: B09041977-001CMS	Sample Matrix Spike				Run: FIA202-B_090423B			04/23/09 14:01	
Nitrogen, Ammonia as N	1.09	mg/L	0.10	107	90	110			
Sample ID: B09041977-001CMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090423B			04/23/09 14:02	
Nitrogen, Ammonia as N	1.08	mg/L	0.10	106	90	110	0.9	10	
Method: E353.2								Analytical Run: FIA203-B_090422A	
Sample ID: ICV	Initial Calibration Verification Standard							04/22/09 09:56	
Nitrogen, Nitrate+Nitrite as N	35.9	mg/L	0.050	101	90	110			
Method: E353.2								Batch: R128212	
Sample ID: MBLK	Method Blank				Run: FIA203-B_090422A			04/22/09 09:57	
Nitrogen, Nitrate+Nitrite as N	ND	mg/L	0.002						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA203-B_090422A			04/22/09 09:58	
Nitrogen, Nitrate+Nitrite as N	0.995	mg/L	0.050	102	90	110			
Sample ID: B09041938-001JMS	Sample Matrix Spike				Run: FIA203-B_090422A			04/22/09 12:28	
Nitrogen, Nitrate+Nitrite as N	0.931	mg/L	0.050	95	90	110			
Sample ID: B09041938-001JMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090422A			04/22/09 12:29	
Nitrogen, Nitrate+Nitrite as N	0.924	mg/L	0.050	94	90	110	0.8	10	
Sample ID: B09040997-001CMS	Sample Matrix Spike				Run: FIA203-B_090422A			04/22/09 15:20	
Nitrogen, Nitrate+Nitrite as N	1.25	mg/L	0.050	95	90	110			
Sample ID: B09040997-001CMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090422A			04/22/09 15:22	
Nitrogen, Nitrate+Nitrite as N	1.26	mg/L	0.050	96	90	110	0.2	10	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 38463
Sample ID: MB-38463	Method Blank				Run: ICP202-B_090427A				04/27/09 17:10
Silicon	ND	mg/L	0.01						
Silica	ND	mg/L	0.03						
Sample ID: LCS5-38463	Laboratory Control Sample				Run: ICP202-B_090427A				04/27/09 17:14
Silicon	5.11	mg/L	0.10	102	85	115			
Silica	10.9	mg/L	0.21	102	85	115			
Sample ID: B09041883-001CMS5	Sample Matrix Spike				Run: ICP202-B_090427A				04/27/09 17:50
Silicon	21.2	mg/L	0.10	159	70	130			S
Silica	45.3	mg/L	0.21	159	70	130			S
Sample ID: B09041883-001CMSD5	Sample Matrix Spike Duplicate				Run: ICP202-B_090427A				04/27/09 17:54
Silicon	21.6	mg/L	0.10	167	70	130	1.8	20	S
Silica	46.1	mg/L	0.21	167	70	130	1.8	20	S

Qualifiers:
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S - Spike recovery outside of advisory limits.
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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/08/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP202-B_090423A
Sample ID: ICV	Continuing Calibration Verification Standard								04/23/09 10:04
Calcium	25.1	mg/L	1.0	100	95	105			
Magnesium	24.6	mg/L	1.0	99	95	105			
Potassium	24.5	mg/L	1.0	98	95	105			
Silicon	5.11	mg/L	0.10	102	95	105			
Sodium	24.9	mg/L	1.0	99	95	105			
Method: E200.7									Batch: R128337
Sample ID: MB-SPDIS090423A	Method Blank				Run: ICP202-B_090423A				04/23/09 10:12
Calcium	ND	mg/L	0.009						
Magnesium	ND	mg/L	0.01						
Potassium	ND	mg/L	0.01						
Silicon	ND	mg/L	0.01						
Sodium	ND	mg/L	0.03						
Sample ID: LFB-SPDIS090423A	Laboratory Fortified Blank				Run: ICP202-B_090423A				04/23/09 10:16
Calcium	49.5	mg/L	1.0	99	85	115			
Magnesium	49.3	mg/L	1.0	99	85	115			
Potassium	50.3	mg/L	1.0	101	85	115			
Silicon	10.4	mg/L	0.10	104	85	115			
Sodium	50.0	mg/L	1.0	100	85	115			
Sample ID: B09041885-005CMS2	Sample Matrix Spike				Run: ICP202-B_090423A				04/24/09 05:18
Calcium	820	mg/L	1.0	96	70	130			
Magnesium	999	mg/L	1.0	100	70	130			
Potassium	492	mg/L	7.3	96	70	130			
Silicon	113	mg/L	0.15	102	70	130			
Sodium	889	mg/L	2.6	99	70	130			
Silica	243	mg/L	0.31	102	70	130			
Sample ID: B09041885-005CMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090423A				04/24/09 05:22
Calcium	821	mg/L	1.0	96	70	130	0.1	20	
Magnesium	996	mg/L	1.0	99	70	130	0.3	20	
Potassium	485	mg/L	7.3	95	70	130	1.5	20	
Silicon	113	mg/L	0.15	101	70	130	0.5	20	
Sodium	882	mg/L	2.6	98	70	130	0.8	20	
Silica	241	mg/L	0.31	101	70	130	0.5	20	
Method: E200.7									Analytical Run: ICP202-B_090427A
Sample ID: ICV	Continuing Calibration Verification Standard								04/27/09 09:53
Silicon	5.13	mg/L	0.10	103	95	105			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 04/28/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: PE 1_090426B	
Sample ID: CCV_0426PE128r-W	Continuing Calibration Verification Standard							04/27/09 01:31	
Methyl tert-butyl ether (MTBE)	57.9	ug/L	1.0	96	85	115			
Benzene	19.2	ug/L	0.50	96	85	115			
Toluene	58.4	ug/L	0.50	97	85	115			
Ethylbenzene	19.4	ug/L	0.50	97	85	115			
m+p-Xylenes	76.7	ug/L	0.50	96	85	115			
o-Xylene	39.1	ug/L	0.50	98	85	115			
Xylenes, Total	116	ug/L	0.50	97	85	115			
Surr: Trifluorotoluene			0.50	103	85	115			
Method: SW8021B								Batch: R128452	
Sample ID: B09041673-001AMS	Sample Matrix Spike				Run: PE 1_090426B			04/26/09 14:48	
Methyl tert-butyl ether (MTBE)	22.3	ug/L	1.0	89	70	130			
Benzene	23.2	ug/L	0.50	93	70	130			
Toluene	22.6	ug/L	0.50	90	70	130			
Ethylbenzene	22.6	ug/L	0.50	90	70	130			
m+p-Xylenes	46.0	ug/L	0.50	92	70	130			
o-Xylene	22.9	ug/L	0.50	91	70	130			
Xylenes, Total	68.8	ug/L	0.50	92	70	130			
Surr: Trifluorotoluene			1.0	92	80	120			
Sample ID: B09041673-001AMSD	Sample Matrix Spike Duplicate				Run: PE 1_090426B			04/26/09 15:22	
Methyl tert-butyl ether (MTBE)	23.2	ug/L	1.0	93	70	130	3.8	20	
Benzene	23.8	ug/L	0.50	95	70	130	2.5	20	
Toluene	23.4	ug/L	0.50	94	70	130	3.5	20	
Ethylbenzene	23.4	ug/L	0.50	94	70	130	3.6	20	
m+p-Xylenes	47.5	ug/L	0.50	95	70	130	3.3	20	
o-Xylene	23.8	ug/L	0.50	95	70	130	4.1	20	
Xylenes, Total	71.3	ug/L	0.50	95	70	130	3.6	20	
Surr: Trifluorotoluene			1.0	93	80	120			
Sample ID: LCS_0426PE129r	Laboratory Control Sample				Run: PE 1_090426B			04/27/09 02:05	
Methyl tert-butyl ether (MTBE)	18.3	ug/L	1.0	92	70	130			
Benzene	18.6	ug/L	0.50	93	70	130			
Toluene	18.4	ug/L	0.50	92	70	130			
Ethylbenzene	17.8	ug/L	0.50	89	70	130			
m+p-Xylenes	36.7	ug/L	0.50	92	70	130			
o-Xylene	18.3	ug/L	0.50	92	70	130			
Xylenes, Total	55.1	ug/L	0.50	92	70	130			
Surr: Trifluorotoluene			0.50	103	80	120			
Sample ID: MBLK_0426PE131r	Method Blank				Run: PE 1_090426B			04/27/09 03:12	
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 04/28/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R128452
Sample ID: MBLK_0426PE131r	Method Blank				Run: PE 1_090426B				04/27/09 03:12
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	99	80	120			

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 04/28/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: PE 1_090427B	
Sample ID: CCV_0427PE103r-W	Continuing Calibration Verification Standard							04/27/09 10:43	
Methyl tert-butyl ether (MTBE)	61.0	ug/L	1.0	102	85	115			
Benzene	20.5	ug/L	0.50	103	85	115			
Toluene	62.4	ug/L	0.50	104	85	115			
Ethylbenzene	20.7	ug/L	0.50	104	85	115			
m+p-Xylenes	82.1	ug/L	0.50	103	85	115			
o-Xylene	41.8	ug/L	0.50	104	85	115			
Xylenes, Total	124	ug/L	0.50	103	85	115			
Surr: Trifluorotoluene			0.50	104	85	115			
Method: SW8021B								Batch: R128526	
Sample ID: LCS_0427PE104r	Laboratory Control Sample				Run: PE 1_090427B			04/27/09 11:18	
Methyl tert-butyl ether (MTBE)	19.9	ug/L	1.0	99	70	130			
Benzene	21.0	ug/L	0.50	105	70	130			
Toluene	20.0	ug/L	0.50	100	70	130			
Ethylbenzene	19.9	ug/L	0.50	99	70	130			
m+p-Xylenes	40.8	ug/L	0.50	102	70	130			
o-Xylene	20.2	ug/L	0.50	101	70	130			
Xylenes, Total	61.0	ug/L	0.50	102	70	130			
Surr: Trifluorotoluene			0.50	105	80	120			
Sample ID: MBLK_0427PE106r	Method Blank				Run: PE 1_090427B			04/27/09 12:26	
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	103	80	120			
Sample ID: B09041885-003AMS	Sample Matrix Spike				Run: PE 1_090427B			04/27/09 17:03	
Methyl tert-butyl ether (MTBE)	25.6	ug/L	1.0	102	70	130			
Benzene	25.3	ug/L	0.50	101	70	130			
Toluene	23.9	ug/L	0.50	96	70	130			
Ethylbenzene	23.7	ug/L	0.50	95	70	130			
m+p-Xylenes	48.1	ug/L	0.50	96	70	130			
o-Xylene	23.9	ug/L	0.50	96	70	130			
Xylenes, Total	72.1	ug/L	0.50	96	70	130			
Surr: Trifluorotoluene			0.50	105	80	120			
Sample ID: B09041885-003AMSD	Sample Matrix Spike Duplicate				Run: PE 1_090427B			04/27/09 17:37	
Methyl tert-butyl ether (MTBE)	26.0	ug/L	1.0	104	70	130	1.5	20	
Benzene	26.4	ug/L	0.50	105	70	130	4.2	20	

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 04/28/09
Work Order: B09041885

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R128526
Sample ID: B09041885-003AMSD	Sample Matrix Spike Duplicate				Run: PE 1_090427B				04/27/09 17:37
Toluene	24.9	ug/L	0.50	100	70	130	4.1	20	
Ethylbenzene	24.7	ug/L	0.50	99	70	130	4	20	
m+p-Xylenes	50.1	ug/L	0.50	100	70	130	4	20	
o-Xylene	25.0	ug/L	0.50	100	70	130	4.4	20	
Xylenes, Total	75.1	ug/L	0.50	100	70	130			
Surr: Trifluorotoluene			0.50	102	80	120	0	20	

Qualifiers:
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USGS 92-12

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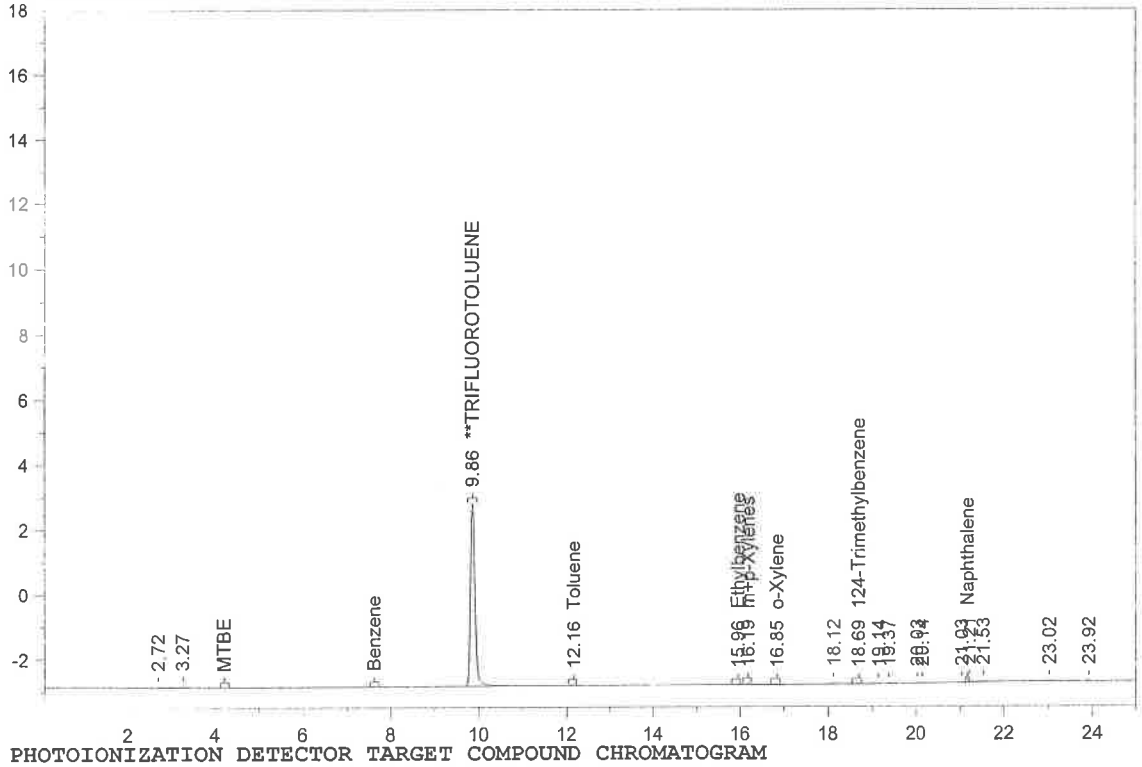

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-001F ;0426PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0032.RAW
Date & Time Acquired: 4/27/2009 3:46:39 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.164	12.164	12.164	306	.5	U
Ethylbenzene	15.959	15.959	15.959	119	.5	U
m+p-Xylenes	16.193	16.193	16.193	383	.5	U
o-Xylene	16.848	16.848	16.848	119	.5	U
124-Trimethylbenzene	18.688	18.688	18.688	114	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	49.05	98.1	80-120

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PNR-16

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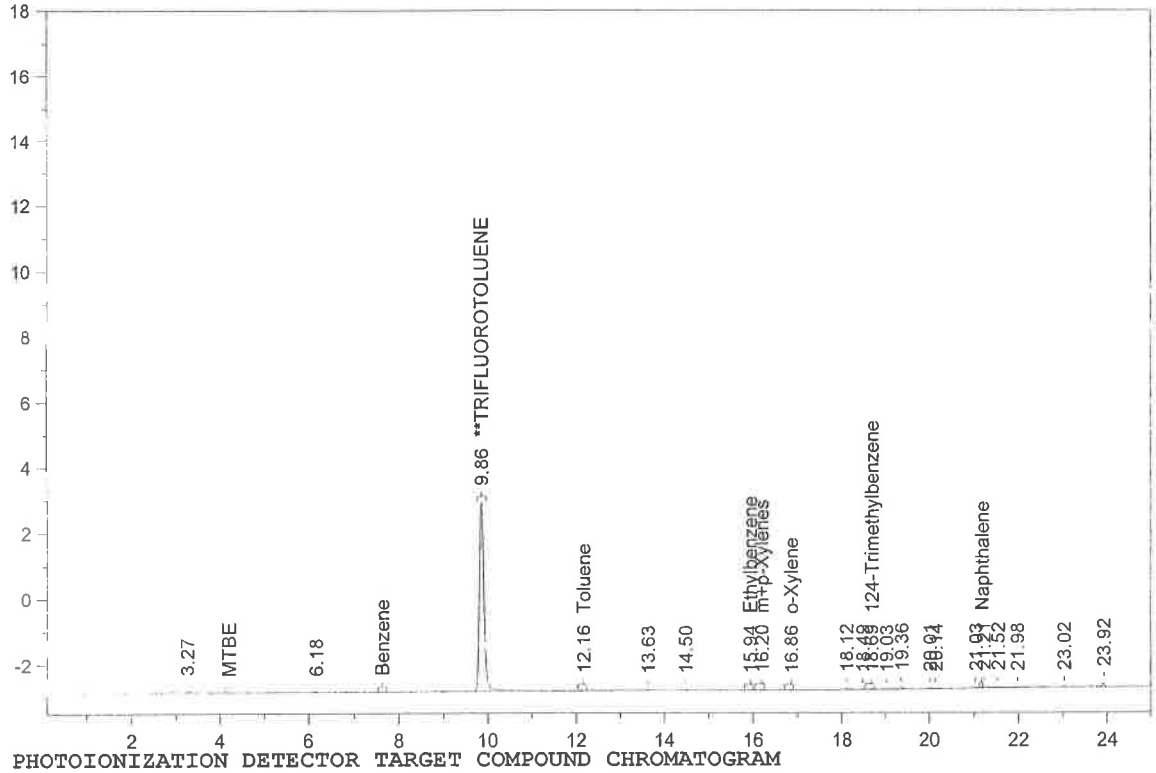

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Sample Name: B09041885-002F ;0426PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0033.RAW
Date & Time Acquired: 4/27/2009 4:20:18 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.164	12.164	12.164	265	.5	U
Ethylbenzene	15.945	15.945	15.945	71	.5	U
m+p-Xylenes	16.2	16.2	16.2	188	.5	U
o-Xylene	16.857	16.857	16.857	109	.5	U
124-Trimethylbenzene	18.686	18.686	18.686	107	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	49.673	99.35	80-120

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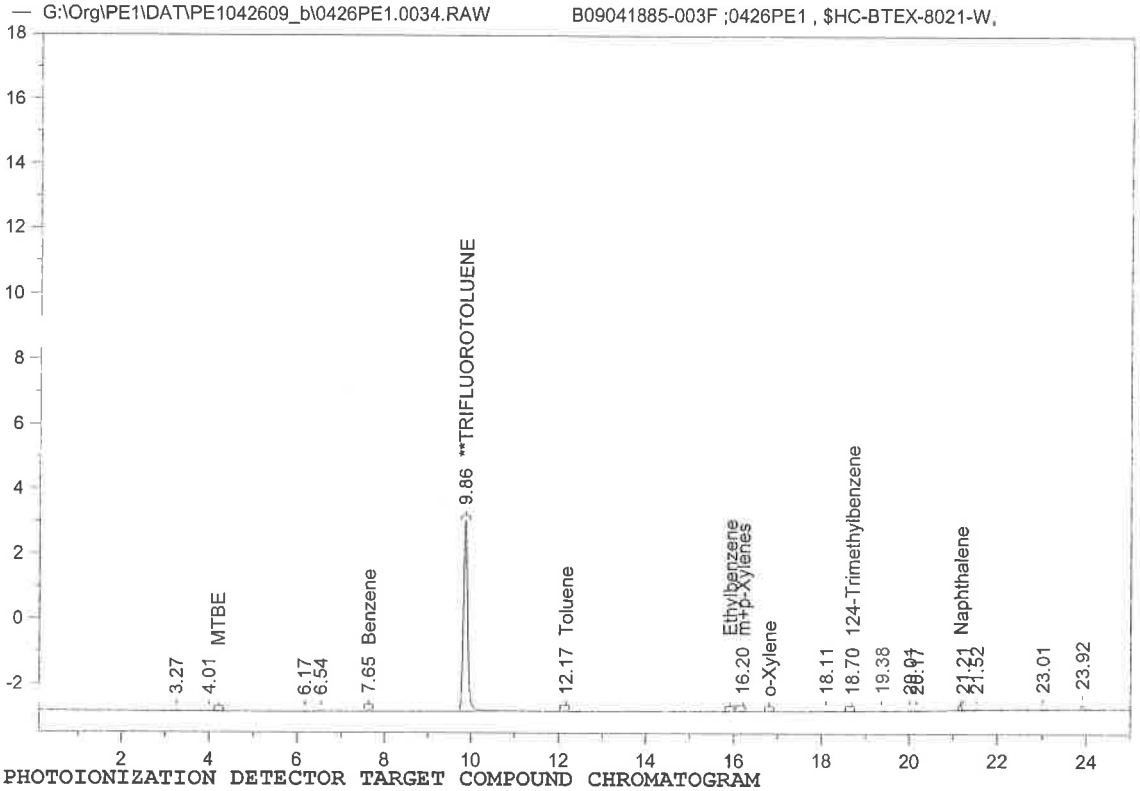
USGS-93-5



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-003F ;0426PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0034.RAW
Date & Time Acquired: 4/27/2009 4:54:02 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.65	7.65	7.65	384	.5	U
Toluene	12.167	12.167	12.167	277	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.203	16.203	16.203	151	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.696	18.696	18.696	91	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	50.886	101.77	80-120

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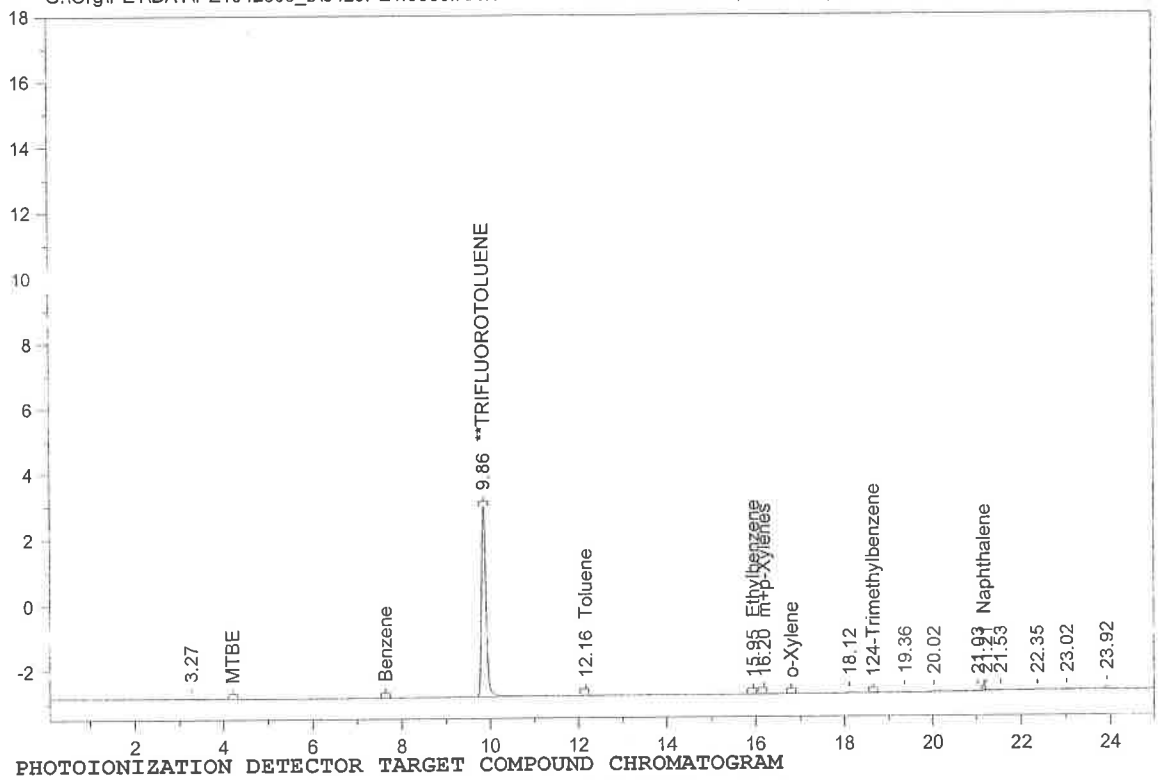
USGS-06-1



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-004F ;0426PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0035.RAW
Date & Time Acquired: 4/27/2009 5:27:44 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.162	12.162	12.162	385	.5	U
Ethylbenzene	15.953	15.953	15.953	126	.5	U
m+p-Xylenes	16.2	16.2	16.2	317	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.855	50.	50.273	100.55	80-120

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PNR-6

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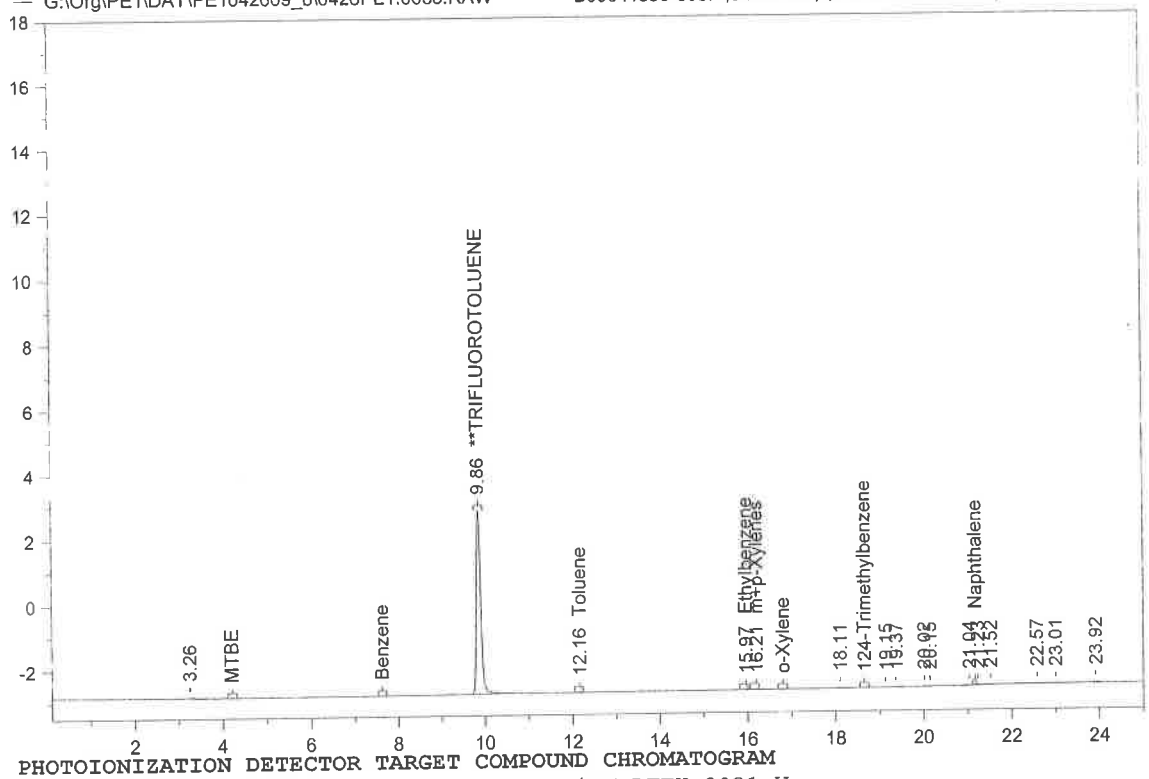

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-005F ;0426PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0038.RAW
Date & Time Acquired: 4/27/2009 7:08:50 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.162	12.162	12.162	150	.5	U
Ethylbenzene	15.967	15.967	15.967	77	.5	U
m+p-Xylenes	16.205	16.205	16.205	174	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	48.519	97.04	80-120

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PNR-18

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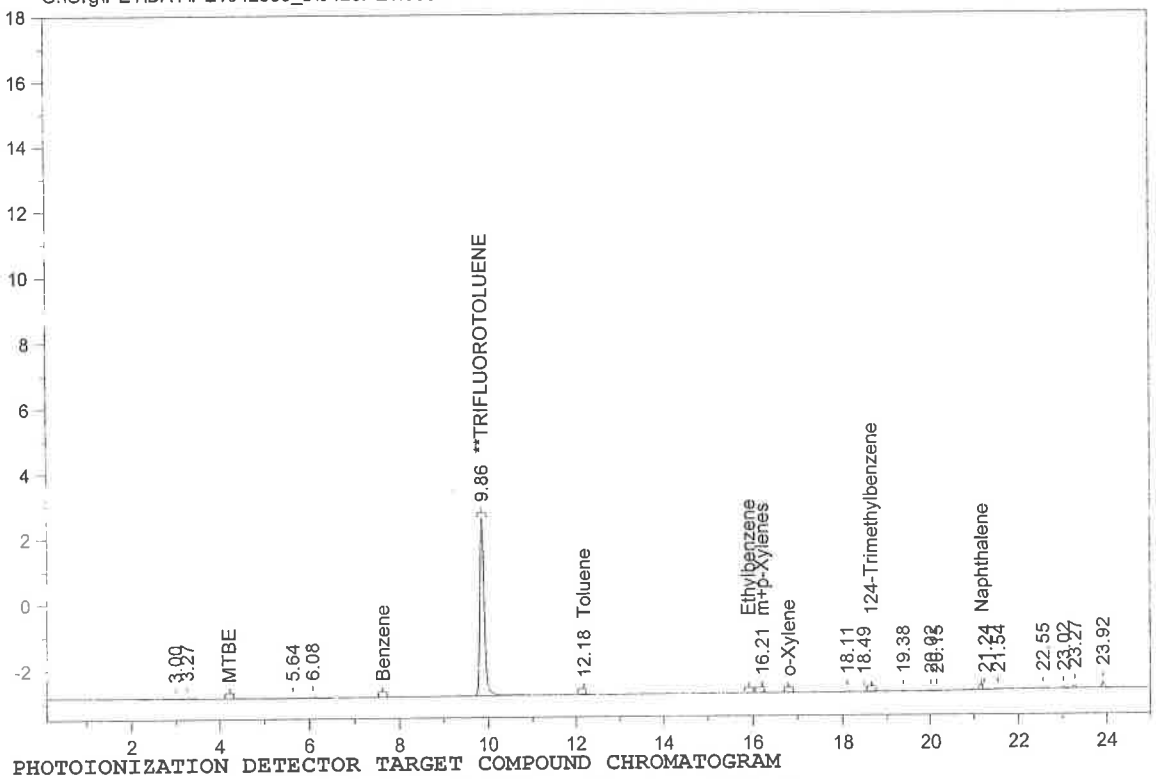

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-006F ;0426PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0037.RAW
Date & Time Acquired: 4/27/2009 6:35:03 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.181	12.181	12.181	158	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.213	16.213	16.213	225	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	47.163	94.33	80-120

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PNR-33-06

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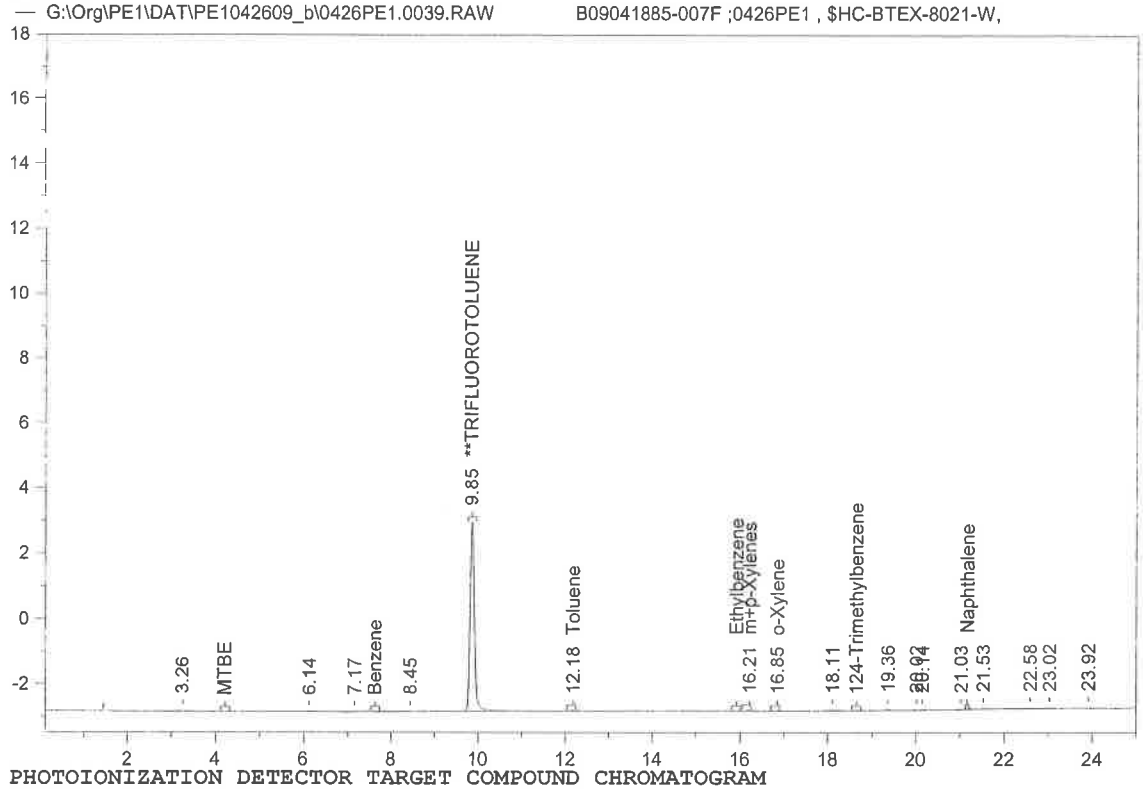

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-007F ;0426PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0039.RAW
Date & Time Acquired: 4/27/2009 7:42:15 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.179	12.179	12.179	185	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.21	16.21	16.21	271	.5	U
o-Xylene	16.847	16.847	16.847	86	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.854	50.	50.187	100.37	80-120

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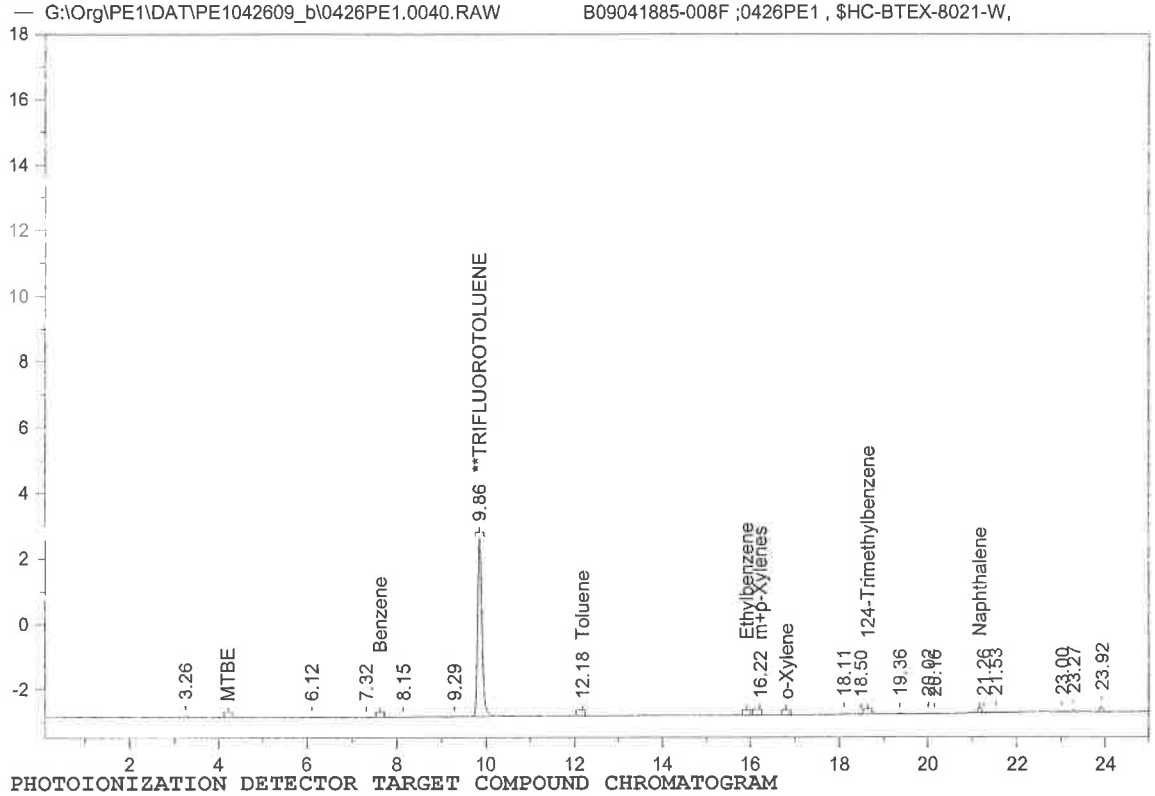
PNR-22

— G:\Org\PE1\DAT\PE1042609_b\0426PE1.0040.RAW B09041885-008F ;0426PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-008F ;0426PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0040.RAW
Date & Time Acquired: 4/27/2009 8:15:50 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.18	12.18	12.18	179	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.217	16.217	16.217	142	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.855	50.	47.796	95.59	80-120

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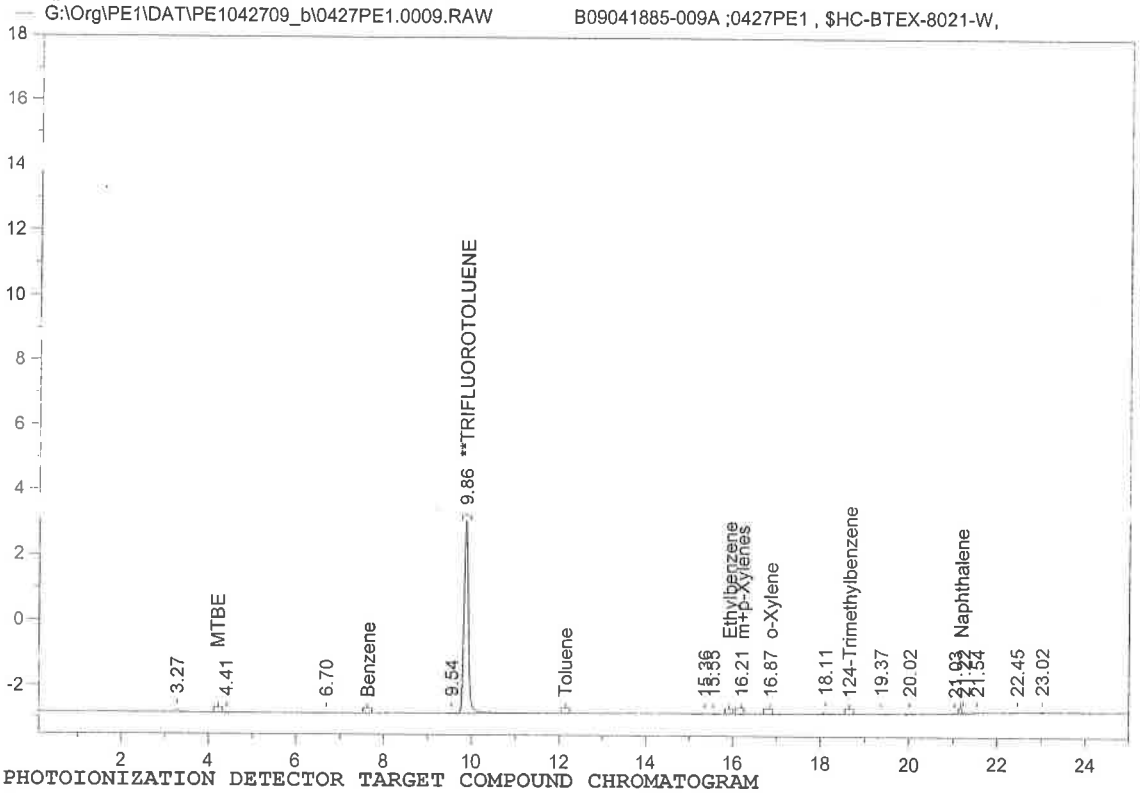
Trip Blank 1 Lot041009 B-TS SHP0243

G:\Org\PE1\DAT\PE1042709_b\0427PE1.0009.RAW B09041885-009A ;0427PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-009A ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0009.RAW
Date & Time Acquired: 4/27/2009 2:07:32 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.208	16.208	16.208	146	.5	U
o-Xylene	16.866	16.866	16.866	106	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	52.094	104.19	80-120

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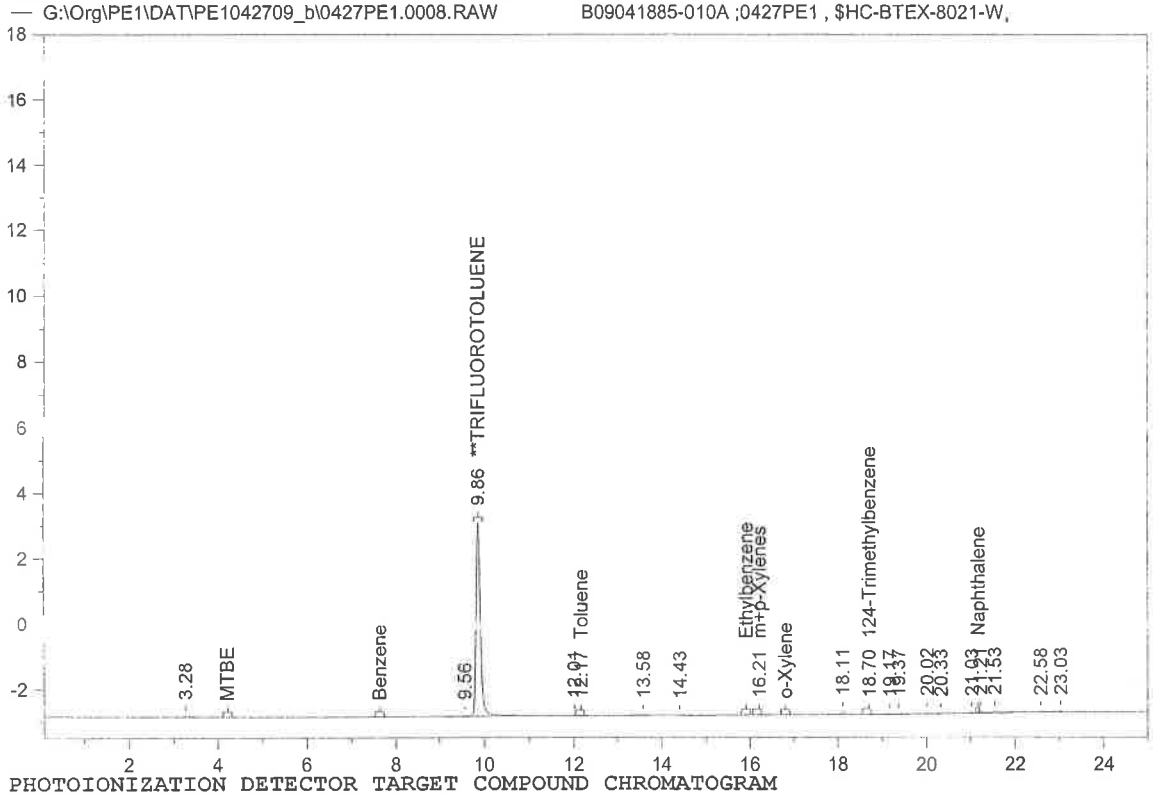
Trip Blank 2 Lot040709 B-TS SHP0243

— G:\Org\PE1\DAT\PE1042709_b\0427PE1.0008.RAW B09041885-010A ;0427PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09041885-010A ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0008.RAW
Date & Time Acquired: 4/27/2009 1:33:48 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.169	12.169	12.169	187	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.213	16.213	16.213	154	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.698	18.698	18.698	113	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	51.857	103.71	80-120

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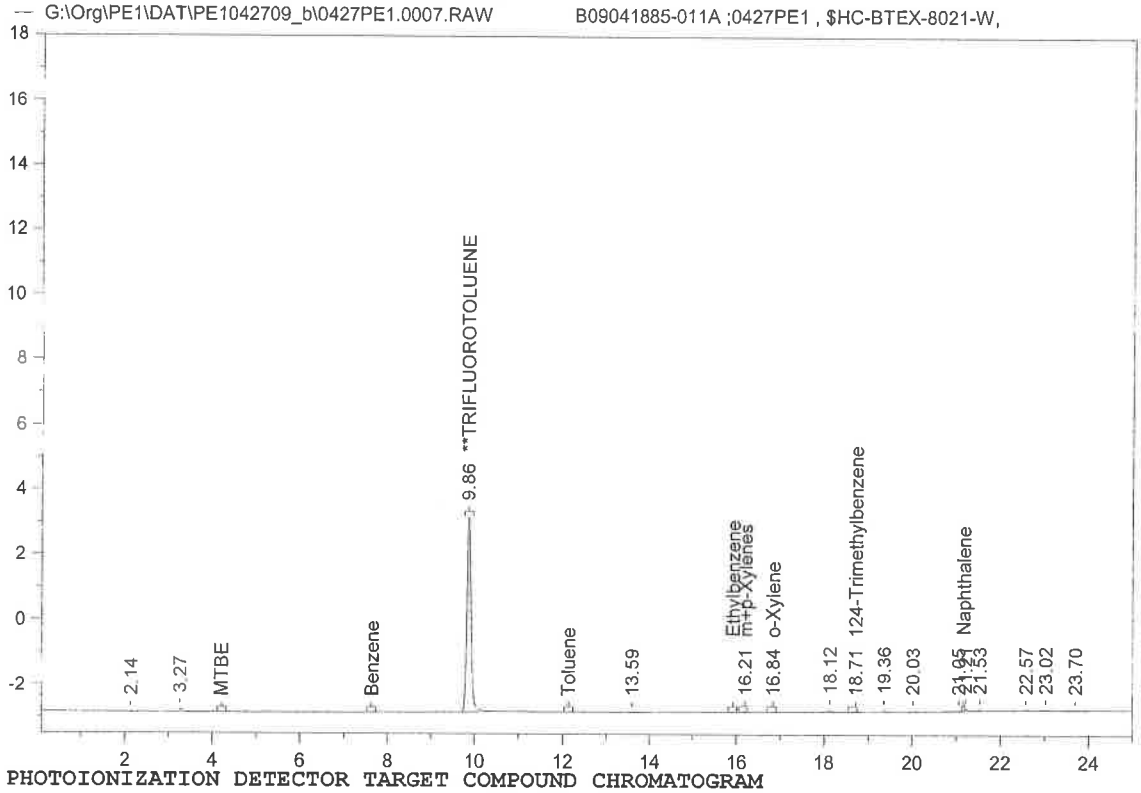
Trip Blank 3 Lot041009 B-TS SHP0243

-- G:\Org\PE1\DAT\PE1042709_b\0427PE1.0007.RAW B09041885-011A ;0427PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-011A ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0007.RAW
Date & Time Acquired: 4/27/2009 12:59:51 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.206	16.206	16.206	118	.5	U
o-Xylene	16.84	16.84	16.84	80	.5	U
124-Trimethylbenzene	18.712	18.712	18.712	129	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.861	50.	51.461	102.92	80-120

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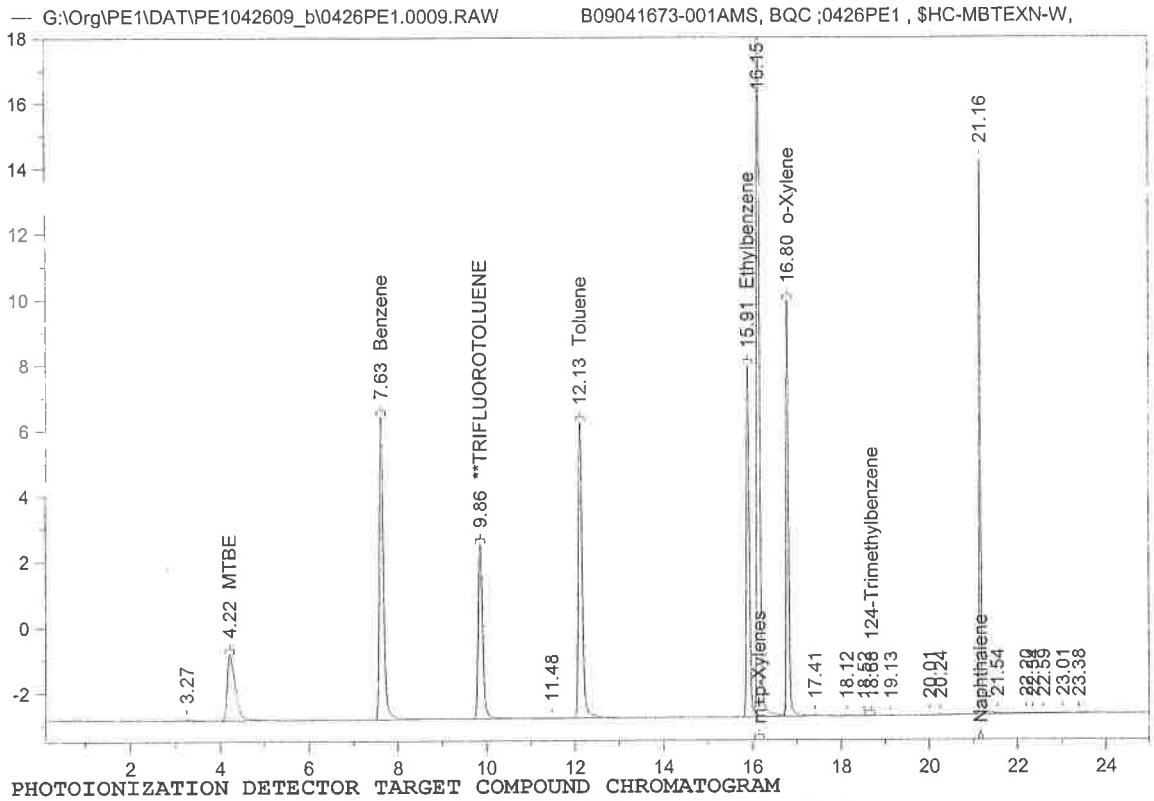

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041673-001AMS, BQC ;0426PE1 , $HC-MBTEXN-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0009.RAW
Date & Time Acquired: 4/26/2009 2:48:39 PM
Method File: G:\Org\PE1\Methods\0809Prapms.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.216	5.646	5.643	26193	22.307	
Benzene	7.633	2.226	2.226	61879	23.198	
Toluene	12.131	-2.274	-2.272	56439	22.582	
Ethylbenzene	15.91	-6.051	-6.051	47535	22.615	
m+p-Xylenes	16.148	-6.294	-6.289	111671	45.961	
o-Xylene	16.805	-6.947	-6.946	47458	22.855	
124-Trimethylbenzene	18.683	18.683	18.683	128	2.	U
Naphthalene	21.16	-11.3	-11.301	40466	22.58	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	45.901	91.8	80-120

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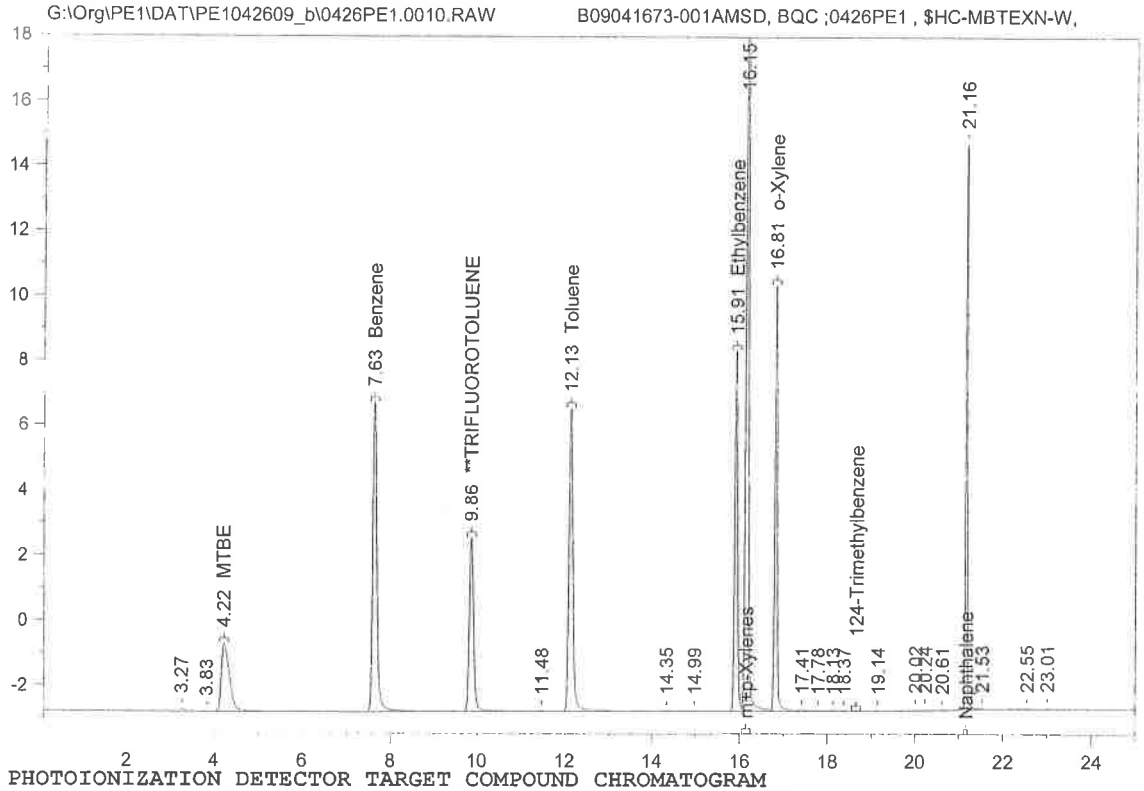

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041673-001AMSD, BQC ;0426PE1 , $HC-MBTEXN-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0010.RAW
Date & Time Acquired: 4/26/2009 3:22:36 PM
Method File: G:\Org\PE1\Methods\0809Prapmsd.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.215	5.646	5.643	27211	23.174	
Benzene	7.633	2.226	2.225	63450	23.787	
Toluene	12.131	-2.274	-2.272	58439	23.382	
Ethylbenzene	15.911	-6.051	-6.052	49263	23.437	
m+p-Xylenes	16.149	-6.294	-6.291	115435	47.51	
o-Xylene	16.807	-6.947	-6.948	49466	23.822	
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	21.162	-11.3	-11.303	41449	23.128	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	46.374	92.75	80-120

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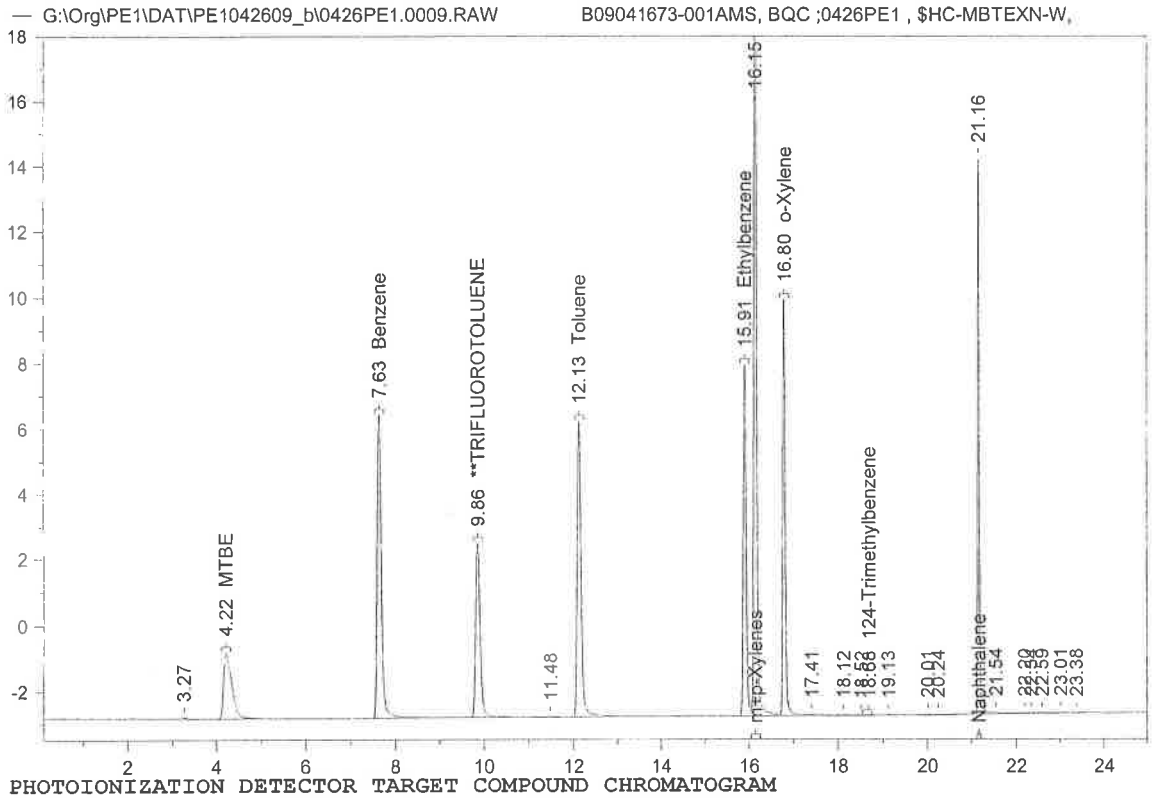

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041673-001AMS, BQC ;0426PE1 , $HC-MBTEXN-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0009.RAW
Date & Time Acquired: 4/26/2009 2:48:39 PM
Method File: G:\Org\PE1\Methods\0809Prapms.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.216	5.646	5.643	26193	22.307	
Benzene	7.633	2.226	2.226	61879	23.198	
Toluene	12.131	-2.274	-2.272	56439	22.582	
Ethylbenzene	15.91	-6.051	-6.051	47535	22.615	
m+p-Xylenes	16.148	-6.294	-6.289	111671	45.961	
o-Xylene	16.805	-6.947	-6.946	47458	22.855	
124-Trimethylbenzene	18.683	18.683	18.683	128	2.	U
Naphthalene	21.16	-11.3	-11.301	40466	22.58	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	45.901	91.8	80-120

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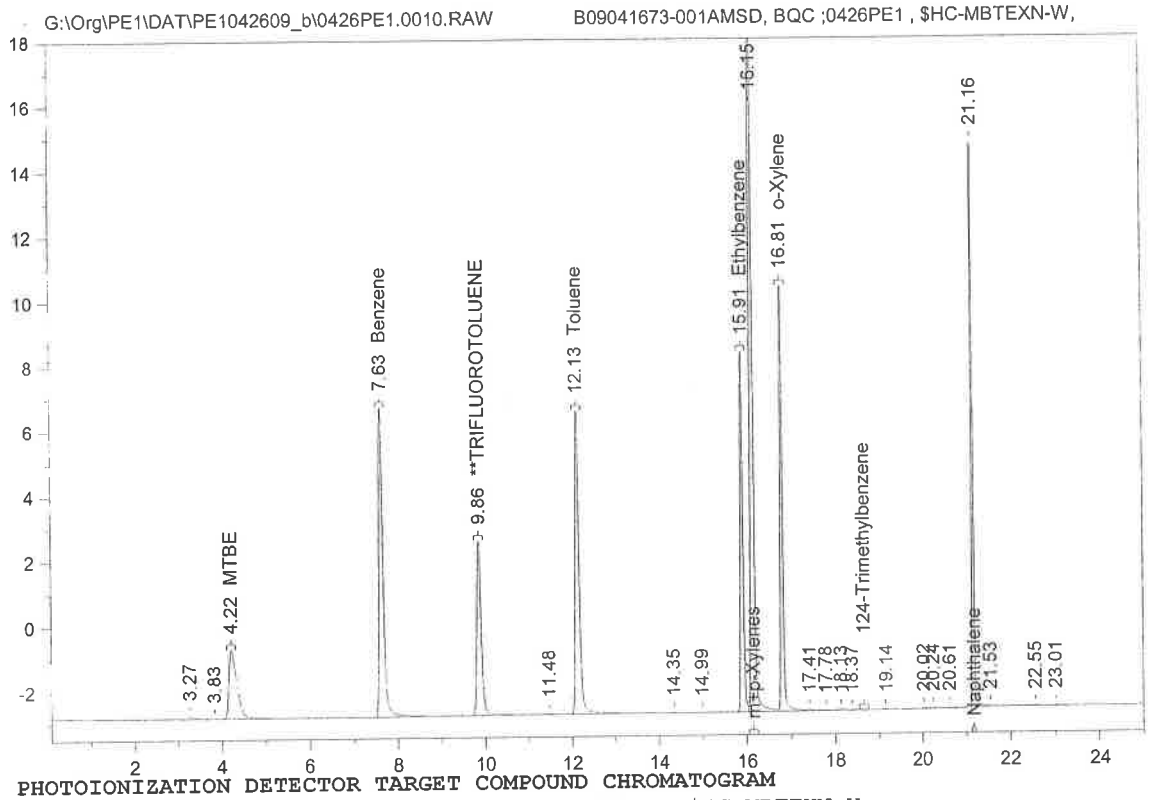

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041673-001AMSD, BQC ;0426PE1 , $HC-MBTEXN-W,
Raw File: G:\Org\PE1\DAT\PE1042609_b\0426PE1.0010.RAW
Date & Time Acquired: 4/26/2009 3:22:36 PM
Method File: G:\Org\PE1\Methods\0809Prapmsd.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.215	5.646	5.643	27211	23.174	
Benzene	7.633	2.226	2.225	63450	23.787	
Toluene	12.131	-2.274	-2.272	58439	23.382	
Ethylbenzene	15.911	-6.051	-6.052	49263	23.437	
m+p-Xylenes	16.149	-6.294	-6.291	115435	47.51	
o-Xylene	16.807	-6.947	-6.948	49466	23.822	
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	21.162	-11.3	-11.303	41449	23.128	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	46.374	92.75	80-120

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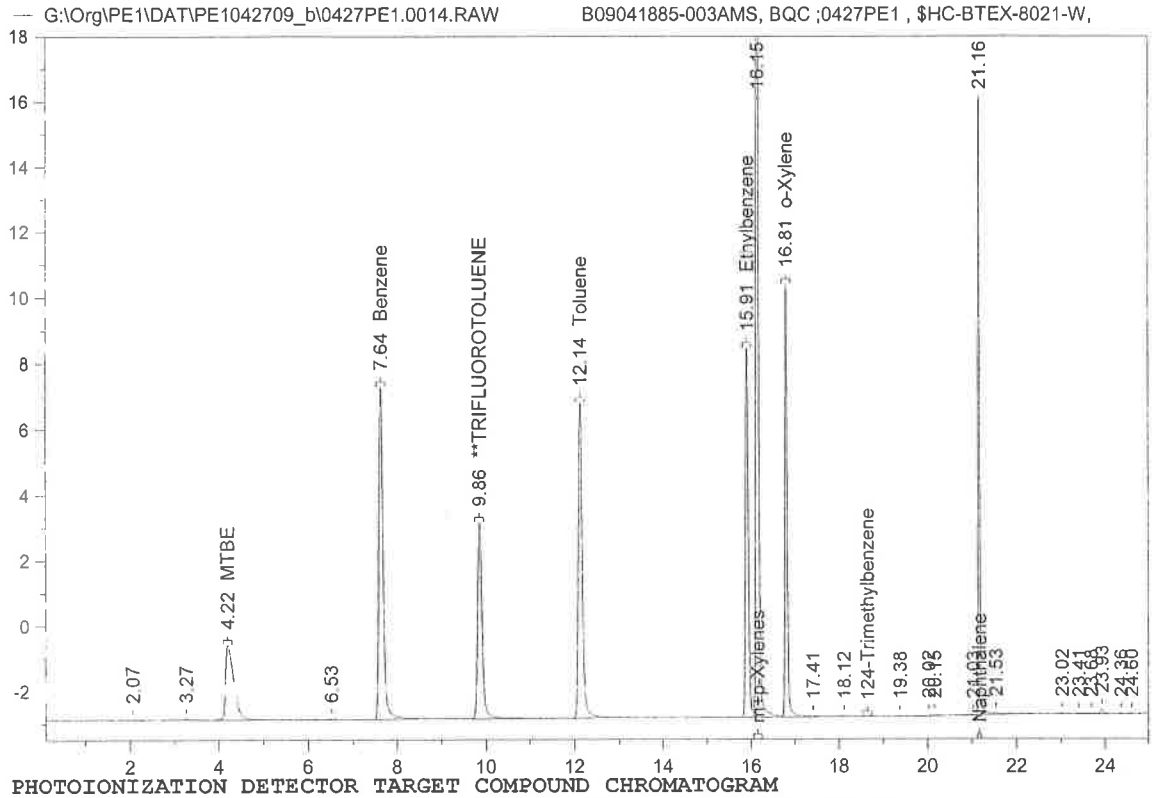

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-003AMS, BQC ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0014.RAW
Date & Time Acquired: 4/27/2009 5:03:59 PM
Method File: G:\Org\Pe1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.222	5.646	5.642	30026	25.572	
Benzene	7.638	2.226	2.226	67432	25.28	
Toluene	12.136	-2.274	-2.272	59832	23.939	
Ethylbenzene	15.914	-6.051	-6.051	49776	23.681	
m+p-Xylenes	16.153	-6.294	-6.289	116948	48.133	
o-Xylene	16.809	-6.947	-6.946	49677	23.923	
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	21.164	-11.3	-11.3	44573	24.872	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.864	50.	52.325	104.65	80-120

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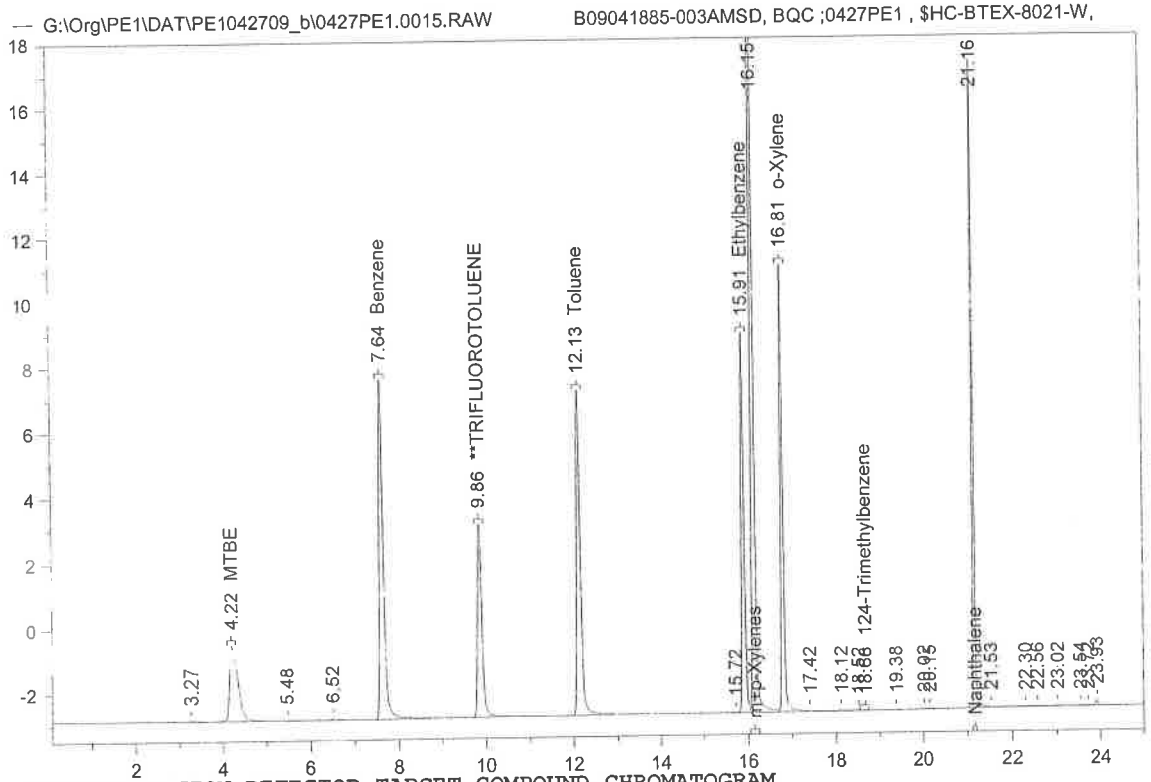

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09041885-003AMSD, BQC ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0015.RAW
Date & Time Acquired: 4/27/2009 5:37:38 PM
Method File: G:\Org\Pe1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.219	5.646	5.645	30478	25.956	
Benzene	7.638	2.226	2.226	70335	26.368	
Toluene	12.135	-2.274	-2.272	62344	24.944	
Ethylbenzene	15.912	-6.051	-6.049	51826	24.657	
m+p-Xylenes	16.15	-6.294	-6.287	121716	50.095	
o-Xylene	16.807	-6.947	-6.944	51903	24.995	
124-Trimethylbenzene	18.678	18.678	18.678	105	2.	U
Naphthalene	21.161	-11.3	-11.298	47230	26.354	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.863	50.	51.196	102.39	80-120

Energy Laboratories Inc
Workorder Receipt Checklist

B09041885

DOWL HKM

Login completed by: Leslie S. Cadreau

Reviewed by: Krystal McDonald

Reviewed Date: 4/21/2009 2:52:00 PM

Date and Time Received: 4/21/2009 8:45 AM

Received by: smr

Carrier name: Return-UPS Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	5°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Contact and Corrective Action Comments:

Samples for dissolved metals/hardness were subsampled, filtered and preserved with 2 mL HNO3 in lab upon receipt to pH <2. Trip blank for samples PNR 33-06 and PNR 22 was not received.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print) Nate Peterson
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- ☐ DW
- ☐ GSA
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☐ A2LA
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids
Vegetation Bioassay Other

ANALYSIS REQUESTED

RUSH

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: RTRN UPS (GW)
Cooler ID(s): x4
Receipt Temp 5 °C
On Ice: Yes No
Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	RUSH	Comments	LABORATORY USE ONLY
1	USGS 92-12	4/17/08	12:30	Water														B09041885-001
2	PNR-16	"	13:40	Water														-002
3				Water														
4				Water														
5				Water														
6				Water														
7				Water														
8				Water														
9				Water														
10				Water														

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Nate Peterson	4/20/09 11:00	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Sandy Rusch	Date/Time: 4-21-09 8:45	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print) Chris Leibli
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order: 14B805.101	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ A2LA
☐ GSA ☐ EDD/EDT(Electronic Data)
☐ POTW/WWTP Format:_____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids
Vegetation Bioassay Other

ANALYSIS REQUESTED

RUSH

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: BTRMPS CRD
Cooler ID(s): x4
Receipt Temp 5°C
On Ice: Yes No
Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	RUSH	LABORATORY USE ONLY
2 1	USGS-93-5	4/17/09	15:00	Water 9	X	X	X	X	X	X	X	X	X		X		B09041885-003
2 2	USGS-06-1	2	17:15	Water 9	X	X	X	X	X	X	X	X	X		X		-004
3				Water													
4				Water													
5				Water													
6				Water													
7				Water													
8				Water													
9				Water													
10				Water													

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Chris Leibli	4/20/09 10:45	Chris Leibli			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Sandy Rusch	Date/Time: 4-21-09 8:45	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☑ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print) Nate Peterson
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- ☐ DW
- ☐ GSA
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☐ A2LA
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: RTRN UPS 6(4)
Cooler ID(s): x 4
Receipt Temp 5 °C
On Ice: Yes No
Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	RUSH	LABORATORY USE ONLY
3	1 PNR-6	4/17/09	1515	Water													B09041885-005
3	2 PNR-18	"	1550	Water													-006
	3			Water													
	4			Water													
	5			Water													
	6			Water													
	7			Water													
	8			Water													
	9			Water													
	10			Water													

Custody Record MUST be Signed

Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
Nate Peterson	4/20/09 11:00	[signature]			
			Received by Laboratory: Sandy Rusch	4-21-09 8:45	

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
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Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print) Nate Peterson
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- ☐ DW
- ☐ GSA
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☐ A2LA
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

RUSH: Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: RTRN UPS GRD

Cooler ID(s): x4

Receipt Temp: 5 °C

On Ice: (Yes) No

Custody Seal (Y) N

Intact (Y) N

Signature Match (Y) N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	LABORATORY USE ONLY
1	PNR-33-06	4/17/09	1730	Water												B09041885-007
2	PNR-22	4/18/09	1310	Water												-008
3	TB 4-10-09 TS	0243	(1)	Water												-009
4	TB 4-7-09 TS	0243	(2)	Water												-010
5	TB 4-10-09 TS	0243	(3)	Water												-011
6				Water												
7				Water												
8				Water												
9				Water												
10				Water												

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Nate Peterson	4/20/08 11:00				
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Sandy Rausch	Date/Time: 4-21-09 8:45	Signature:

Sample Disposal: Return to Client: Lab Disposal:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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ANALYTICAL SUMMARY REPORT

May 13, 2009

Charlie Peterson
DOWL HKM
PO Box 31318
Billings, MT 59107-1318

Workorder No.: B09041742 Quote ID: B78 - Pioneer Natural Resources-Poplar Biere Well Site

Project Name: Pioneer Natural Resources - Poplar Bier Well Site

Energy Laboratories Inc received the following 14 samples for DOWL HKM on 4/17/2009 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B09041742-001	M-28	04/15/09 11:20	04/17/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09041742-002	PNR-5	04/15/09 14:20	04/17/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09041742-003	USGS 93-3	04/15/09 15:00	04/17/09	Aqueous	Same As Above
B09041742-004	M-31	04/15/09 16:15	04/17/09	Aqueous	Same As Above
B09041742-005	PNR-7	04/15/09 17:15	04/17/09	Aqueous	Same As Above
B09041742-006	PNR-7D	04/15/09 17:30	04/17/09	Aqueous	Same As Above
B09041742-007	Rinsate QC/QA	04/15/09 17:45	04/17/09	Aqueous	Purgeable Aromatics
B09041742-008	Equipment QC/QA	04/15/09 17:50	04/17/09	Aqueous	Same As Above

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ANALYTICAL SUMMARY REPORT

B09041742-009	PNR-14	04/16/09 14:00 04/17/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09041742-010	PNR-15	04/16/09 14:30 04/17/09	Aqueous	Same As Above
B09041742-011	PNR-23	04/16/09 15:00 04/17/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09041742-012	Trip Blank 1 Lot# 040709, B-TS, SHP0243	04/15/09 11:20 04/17/09	Trip Blank	Purgeable Aromatics
B09041742-013	Trip Blank 2 Lot# 040109, B-TS, SHP0243	04/15/09 16:15 04/17/09	Trip Blank	Same As Above
B09041742-014	Trip Blank 3 Lot# 040709, B-TS, SHP0243	04/16/09 14:00 04/17/09	Trip Blank	Same As Above

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By: Shari Crosby

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-001
Client Sample ID: M-28

Report Date: 05/14/09
Collection Date: 04/15/09 11:20
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/20/09 16:36 / kh
Conductivity	21000	umhos/cm		1		A2510 B	04/20/09 14:30 / kh
Solids, Total Dissolved TDS @ 180 C	12900	mg/L		10		A2540 C	04/20/09 16:01 / afb
INORGANICS							
Alkalinity, Total as CaCO3	699	mg/L		4		A2320 B	04/22/09 19:02 / ehb
Bicarbonate as HCO3	853	mg/L		4		A2320 B	04/22/09 19:02 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 19:02 / ehb
Chloride	6210	mg/L	D	3		E300.0	04/25/09 00:10 / mlb
Sulfate	1500	mg/L	D	6		E300.0	04/25/09 00:10 / kh
Fluoride	0.2	mg/L		0.1		A4500-F C	04/22/09 19:02 / ehb
Hardness as CaCO3	3330	mg/L		1		A2340 B	04/22/09 04:37 / car
NUTRIENTS							
Nitrogen, Ammonia as N	1.4	mg/L		0.1		E350.1	04/20/09 16:00 / sam
Nitrogen, Nitrate+Nitrite as N	10.9	mg/L		0.05		E353.2	04/20/09 16:42 / kak
METALS, DISSOLVED							
Calcium	587	mg/L		1		E200.7	04/22/09 04:37 / tao
Magnesium	452	mg/L		1		E200.7	04/22/09 04:37 / tao
Potassium	31	mg/L		1		E200.7	04/22/09 04:37 / tao
Silica	22.5	mg/L	D	0.8		E200.7	04/22/09 04:37 / tao
Sodium	3620	mg/L	D	6		E200.7	04/22/09 04:37 / tao
METALS, TOTAL							
Silica	19	mg/L	D	1		E200.7	04/24/09 15:15 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.84					Calculation	05/11/09 12:43 / car
Anions	232	meq/L		0.01		Calculation	05/11/09 12:43 / car
Cations	225	meq/L		0.01		Calculation	05/11/09 12:43 / car
A/C Balance	-1.49	%				Calculation	05/11/09 12:43 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 17:56 / eli-h
Benzene	6.4	ug/L		0.50		SW8021B	04/27/09 17:56 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 17:56 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 17:56 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 17:56 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 17:56 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 17:56 / eli-h
Surr: Trifluorotoluene	112	%REC		80-120		SW8021B	04/27/09 17:56 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-001
Client Sample ID: M-28

Report Date: 05/14/09
Collection Date: 04/15/09 11:20
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:40 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-002
Client Sample ID: PNR-5

Report Date: 05/14/09
Collection Date: 04/15/09 14:20
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/20/09 16:38 / kh
Conductivity	44900	umhos/cm		1		A2510 B	04/20/09 14:31 / kh
Solids, Total Dissolved TDS @ 180 C	25600	mg/L		10		A2540 C	04/20/09 16:02 / afb
INORGANICS							
Alkalinity, Total as CaCO3	850	mg/L		4		A2320 B	04/22/09 19:12 / ehb
Bicarbonate as HCO3	1040	mg/L		4		A2320 B	04/22/09 19:12 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 19:12 / ehb
Chloride	15900	mg/L	D	10		E300.0	05/05/09 14:44 / eli-h1
Sulfate	842	mg/L	D	40		E300.0	05/05/09 14:44 / eli-h1
Fluoride	0.6	mg/L		0.1		A4500-F C	04/22/09 19:12 / ehb
Hardness as CaCO3	1180	mg/L		1		A2340 B	04/28/09 14:41 / car
NUTRIENTS							
Nitrogen, Ammonia as N	6.6	mg/L	D	0.1		E350.1	04/20/09 16:12 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/20/09 16:43 / kak
METALS, DISSOLVED							
Calcium	303	mg/L		1		E200.7	04/22/09 04:42 / tao
Magnesium	95	mg/L		1		E200.7	04/22/09 04:42 / tao
Potassium	167	mg/L		1		E200.7	04/22/09 04:42 / tao
Silica	33	mg/L	D	2		E200.7	04/22/09 04:42 / tao
Sodium	10400	mg/L	D	10		E200.7	04/22/09 04:42 / tao
METALS, TOTAL							
Silica	29	mg/L	D	2		E200.7	04/24/09 15:29 / tao
QUALITY CONTROL							
A/C Balance Sigma	3.19					Calculation	05/11/09 12:46 / car
Anions	504	meq/L		0.01		Calculation	05/11/09 12:46 / car
Cations	479	meq/L		0.01		Calculation	05/11/09 12:46 / car
A/C Balance	-2.57	%				Calculation	05/11/09 12:46 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 19:56 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 19:56 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 19:56 / eli-h
Ethylbenzene	6.7	ug/L		0.50		SW8021B	04/27/09 19:56 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 19:56 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 19:56 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 19:56 / eli-h
Surr: Trifluorotoluene	108	%REC		80-120		SW8021B	04/27/09 19:56 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-002
Client Sample ID: PNR-5

Report Date: 05/14/09
Collection Date: 04/15/09 14:20
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:41 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-003
Client Sample ID: USGS 93-3

Report Date: 05/14/09
Collection Date: 04/15/09 15:00
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500-H B	04/20/09 16:39 / kh
Conductivity	66300	umhos/cm		1		A2510 B	04/20/09 14:32 / kh
Solids, Total Dissolved TDS @ 180 C	40800	mg/L		10		A2540 C	04/20/09 16:03 / afb
INORGANICS							
Alkalinity, Total as CaCO3	714	mg/L		4		A2320 B	04/22/09 19:27 / ehb
Bicarbonate as HCO3	871	mg/L		4		A2320 B	04/22/09 19:27 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 19:27 / ehb
Chloride	25200	mg/L	D	10		E300.0	05/05/09 15:01 / eli-h1
Sulfate	987	mg/L	D	40		E300.0	05/05/09 15:01 / eli-h1
Fluoride	0.3	mg/L		0.1		A4500-F C	04/22/09 19:27 / ehb
Hardness as CaCO3	2180	mg/L		1		A2340 B	04/22/09 12:34 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	9.6	mg/L	D	0.1		E350.1	04/20/09 16:13 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/20/09 16:45 / kak
METALS, DISSOLVED							
Calcium	597	mg/L		1		E200.7	04/22/09 04:46 / tao
Magnesium	168	mg/L	D	1		E200.7	04/22/09 04:46 / tao
Potassium	272	mg/L	D	1		E200.7	04/22/09 04:46 / tao
Silica	16	mg/L	D	3		E200.7	04/22/09 04:46 / tao
Sodium	15600	mg/L	D	30		E200.7	04/22/09 04:46 / tao
METALS, TOTAL							
Silica	ND	mg/L	D	20		E200.7	04/27/09 14:40 / jjw
QUALITY CONTROL							
A/C Balance Sigma	1.11					Calculation	05/08/09 08:48 / klc
Anions	744	meq/L		0.01		Calculation	05/08/09 08:48 / klc
Cations	732	meq/L		0.01		Calculation	05/08/09 08:48 / klc
A/C Balance	-0.88	%				Calculation	05/08/09 08:48 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 17:16 / eli-h
Benzene	4.2	ug/L		0.50		SW8021B	04/27/09 17:16 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 17:16 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 17:16 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 17:16 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 17:16 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 17:16 / eli-h
Surr: Trifluorotoluene	107	%REC		80-120		SW8021B	04/27/09 17:16 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-003
Client Sample ID: USGS 93-3

Report Date: 05/14/09
Collection Date: 04/15/09 15:00
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:44 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-004
Client Sample ID: M-31

Report Date: 05/14/09
Collection Date: 04/15/09 16:15
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500-H B	04/20/09 16:39 / kh
Conductivity	90600	umhos/cm		1		A2510 B	04/20/09 14:32 / kh
Solids, Total Dissolved TDS @ 180 C	53800	mg/L		10		A2540 C	04/20/09 16:08 / afb
INORGANICS							
Alkalinity, Total as CaCO3	491	mg/L		4		A2320 B	04/22/09 19:36 / ehb
Bicarbonate as HCO3	599	mg/L		4		A2320 B	04/22/09 19:36 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 19:36 / ehb
Chloride	37400	mg/L	D	10		E300.0	05/05/09 15:17 / eli-h1
Sulfate	1470	mg/L	D	40		E300.0	05/05/09 15:17 / eli-h1
Fluoride	0.1	mg/L		0.1		A4500-F C	04/22/09 19:36 / ehb
Hardness as CaCO3	5460	mg/L		1		A2340 B	04/22/09 12:34 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	11.2	mg/L	D	0.2		E350.1	04/20/09 16:15 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/20/09 16:46 / kak
METALS, DISSOLVED							
Calcium	1350	mg/L		1		E200.7	04/22/09 04:58 / tao
Magnesium	506	mg/L	D	1		E200.7	04/22/09 04:58 / tao
Potassium	246	mg/L	D	1		E200.7	04/22/09 04:58 / tao
Silica	9	mg/L	D	3		E200.7	04/22/09 04:58 / tao
Sodium	21400	mg/L	D	30		E200.7	04/22/09 04:58 / tao
METALS, TOTAL							
Silica	ND	mg/L	D	20		E200.7	04/27/09 14:44 / jjw
QUALITY CONTROL							
A/C Balance Sigma	2.83					Calculation	05/08/09 14:09 / klc
Anions	1100	meq/L		0.01		Calculation	05/08/09 14:09 / klc
Cations	1050	meq/L		0.01		Calculation	05/08/09 14:09 / klc
A/C Balance	-2.26	%				Calculation	05/08/09 14:09 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 18:36 / eli-h
Benzene	25	ug/L		0.50		SW8021B	04/27/09 18:36 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 18:36 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 18:36 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 18:36 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 18:36 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 18:36 / eli-h
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	04/27/09 18:36 / eli-h

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-004
Client Sample ID: M-31

Report Date: 05/14/09
Collection Date: 04/15/09 16:15
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:53 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-005
Client Sample ID: PNR-7

Report Date: 05/14/09
Collection Date: 04/15/09 17:15
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500-H B	04/20/09 16:40 / kh
Conductivity	66600	umhos/cm		1		A2510 B	04/20/09 14:33 / kh
Solids, Total Dissolved TDS @ 180 C	45500	mg/L		10		A2540 C	04/20/09 16:07 / afb
INORGANICS							
Alkalinity, Total as CaCO3	380	mg/L		4		A2320 B	04/22/09 19:57 / ehb
Bicarbonate as HCO3	464	mg/L		4		A2320 B	04/22/09 19:57 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 19:57 / ehb
Chloride	26700	mg/L	D	10		E300.0	05/05/09 15:33 / eli-h1
Sulfate	1430	mg/L	D	40		E300.0	05/05/09 15:33 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/22/09 19:57 / ehb
Hardness as CaCO3	12100	mg/L		1		A2340 B	04/28/09 15:05 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	04/20/09 15:53 / sam
Nitrogen, Nitrate+Nitrite as N	3.31	mg/L		0.05		E353.2	04/20/09 16:47 / kak
METALS, DISSOLVED							
Calcium	2400	mg/L		1		E200.7	04/28/09 15:05 / tao
Magnesium	1490	mg/L		1		E200.7	04/28/09 15:05 / tao
Potassium	65	mg/L		1		E200.7	04/28/09 15:05 / tao
Silica	9	mg/L	D	3		E200.7	04/22/09 05:02 / tao
Sodium	11800	mg/L	D	3		E200.7	04/28/09 15:05 / tao
METALS, TOTAL							
Silica	7	mg/L	D	4		E200.7	04/24/09 15:33 / tao
QUALITY CONTROL							
A/C Balance Sigma	2.53					Calculation	05/08/09 14:11 / klc
Anions	791	meq/L		0.01		Calculation	05/08/09 14:11 / klc
Cations	760	meq/L		0.01		Calculation	05/08/09 14:11 / klc
A/C Balance	-2.02	%				Calculation	05/08/09 14:11 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 13:54 / eli-h
Benzene	33	ug/L		0.50		SW8021B	04/27/09 13:54 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 13:54 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 13:54 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 13:54 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 13:54 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 13:54 / eli-h
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/27/09 13:54 / eli-h

Report Definitions:
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D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-005
Client Sample ID: PNR-7

Report Date: 05/14/09
Collection Date: 04/15/09 17:15
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:39 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-006
Client Sample ID: PNR-7D

Report Date: 05/14/09
Collection Date: 04/15/09 17:30
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500-H B	04/20/09 16:41 / kh
Conductivity	62600	umhos/cm		1		A2510 B	04/20/09 14:33 / kh
Solids, Total Dissolved TDS @ 180 C	42500	mg/L		10		A2540 C	04/20/09 16:06 / afb
INORGANICS							
Alkalinity, Total as CaCO3	390	mg/L		4		A2320 B	04/22/09 20:05 / ehb
Bicarbonate as HCO3	476	mg/L		4		A2320 B	04/22/09 20:05 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 20:05 / ehb
Chloride	25100	mg/L	D	10		E300.0	05/05/09 15:50 / eli-h1
Sulfate	1310	mg/L	D	30		E300.0	05/08/09 13:29 / kh
Fluoride	0.2	mg/L		0.1		A4500-F C	04/22/09 20:05 / ehb
Hardness as CaCO3	11100	mg/L		1		A2340 B	04/28/09 15:17 / car
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	04/20/09 16:02 / sam
Nitrogen, Nitrate+Nitrite as N	3.29	mg/L		0.05		E353.2	04/20/09 16:48 / kak
METALS, DISSOLVED							
Calcium	2190	mg/L		1		E200.7	04/28/09 15:17 / tao
Magnesium	1360	mg/L		1		E200.7	04/28/09 15:17 / tao
Potassium	61	mg/L		1		E200.7	04/28/09 15:17 / tao
Silica	11	mg/L	D	3		E200.7	04/22/09 05:14 / tao
Sodium	10900	mg/L	D	3		E200.7	04/28/09 15:17 / tao
METALS, TOTAL							
Silica	5	mg/L	D	4		E200.7	04/24/09 15:37 / tao
QUALITY CONTROL							
A/C Balance Sigma	4.02					Calculation	05/11/09 10:16 / car
Anions	745	meq/L		0.01		Calculation	05/11/09 10:16 / car
Cations	698	meq/L		0.01		Calculation	05/11/09 10:16 / car
A/C Balance	-3.25	%				Calculation	05/11/09 10:16 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 14:33 / eli-h
Benzene	33	ug/L		0.50		SW8021B	04/27/09 14:33 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 14:33 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 14:33 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 14:33 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 14:33 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 14:33 / eli-h
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/27/09 14:33 / eli-h

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-006
Client Sample ID: PNR-7D

Report Date: 05/14/09
Collection Date: 04/15/09 17:30
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:37 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-007
Client Sample ID: Rinsate QC/QA

Report Date: 05/14/09
Collection Date: 04/15/09 17:45
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/24/09 21:07 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/24/09 21:07 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/24/09 21:07 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/24/09 21:07 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/24/09 21:07 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/24/09 21:07 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/24/09 21:07 / eli-h
Surr: Trifluorotoluene	122	%REC	S	80-120		SW8021B	04/24/09 21:07 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-008
Client Sample ID: Equipment QC/QA

Report Date: 05/14/09
Collection Date: 04/15/09 17:50
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/24/09 22:27 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/24/09 22:27 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/24/09 22:27 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/24/09 22:27 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/24/09 22:27 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/24/09 22:27 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/24/09 22:27 / eli-h
Surr: Trifluorotoluene	120	%REC		80-120		SW8021B	04/24/09 22:27 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-009
Client Sample ID: PNR-14

Report Date: 05/14/09
Collection Date: 04/16/09 14:00
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500-H B	04/20/09 16:41 / kh
Conductivity	16700	umhos/cm		1		A2510 B	04/20/09 14:34 / kh
Solids, Total Dissolved TDS @ 180 C	10400	mg/L		10		A2540 C	04/20/09 16:11 / afb
INORGANICS							
Alkalinity, Total as CaCO3	694	mg/L		4		A2320 B	04/22/09 20:15 / ehb
Bicarbonate as HCO3	847	mg/L		4		A2320 B	04/22/09 20:15 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 20:15 / ehb
Chloride	4450	mg/L	D	3		E300.0	04/25/09 01:43 / mlb
Sulfate	1810	mg/L	D	6		E300.0	04/25/09 01:43 / mlb
Fluoride	0.5	mg/L		0.1		A4500-F C	04/22/09 20:15 / ehb
Hardness as CaCO3	2310	mg/L		1		A2340 B	04/22/09 12:34 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	2.2	mg/L		0.1		E350.1	04/20/09 16:03 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/20/09 16:49 / kak
METALS, DISSOLVED							
Calcium	407	mg/L		1		E200.7	04/22/09 05:18 / tao
Magnesium	315	mg/L		1		E200.7	04/22/09 05:18 / tao
Potassium	59	mg/L		1		E200.7	04/22/09 05:18 / tao
Silica	27.9	mg/L	D	0.6		E200.7	04/22/09 05:18 / tao
Sodium	2840	mg/L	D	5		E200.7	04/22/09 05:18 / tao
METALS, TOTAL							
Silica	31	mg/L	D	4		E200.7	04/27/09 14:48 / jjw
QUALITY CONTROL							
A/C Balance Sigma	2.10					Calculation	04/27/09 12:41 / rls
Anions	177	meq/L		0.01		Calculation	04/27/09 12:41 / rls
Cations	171	meq/L		0.01		Calculation	04/27/09 12:41 / rls
A/C Balance	-1.72	%				Calculation	04/27/09 12:41 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/24/09 21:47 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/24/09 21:47 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/24/09 21:47 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/24/09 21:47 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/24/09 21:47 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/24/09 21:47 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/24/09 21:47 / eli-h
Surr: Trifluorotoluene	111	%REC		80-120		SW8021B	04/24/09 21:47 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-009
Client Sample ID: PNR-14

Report Date: 05/14/09
Collection Date: 04/16/09 14:00
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:57 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-010
Client Sample ID: PNR-15

Report Date: 05/14/09
Collection Date: 04/16/09 14:30
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.7	s.u.		0.1		A4500-H B	04/20/09 16:42 / kh
Conductivity	18300	umhos/cm		1		A2510 B	04/20/09 14:35 / kh
Solids, Total Dissolved TDS @ 180 C	10600	mg/L		10		A2540 C	04/20/09 16:12 / afb
INORGANICS							
Alkalinity, Total as CaCO3	633	mg/L		4		A2320 B	04/22/09 20:24 / ehb
Bicarbonate as HCO3	772	mg/L		4		A2320 B	04/22/09 20:24 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 20:24 / ehb
Chloride	5000	mg/L	D	3		E300.0	04/25/09 01:54 / mlb
Sulfate	1770	mg/L	D	6		E300.0	04/25/09 01:54 / mlb
Fluoride	0.7	mg/L		0.1		A4500-F C	04/22/09 20:24 / ehb
Hardness as CaCO3	705	mg/L		1		A2340 B	04/22/09 12:34 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	2.3	mg/L		0.1		E350.1	04/20/09 16:04 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/20/09 16:50 / kak
METALS, DISSOLVED							
Calcium	165	mg/L		1		E200.7	04/22/09 05:22 / tao
Magnesium	71	mg/L		1		E200.7	04/22/09 05:22 / tao
Potassium	60	mg/L		1		E200.7	04/22/09 05:22 / tao
Silica	21.1	mg/L	D	0.6		E200.7	04/22/09 05:22 / tao
Sodium	3940	mg/L	D	5		E200.7	04/22/09 05:22 / tao
METALS, TOTAL							
Silica	22.0	mg/L	D	0.9		E200.7	04/24/09 15:41 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.12					Calculation	04/27/09 12:41 / rls
Anions	190	meq/L		0.01		Calculation	04/27/09 12:41 / rls
Cations	187	meq/L		0.01		Calculation	04/27/09 12:41 / rls
A/C Balance	-0.91	%				Calculation	04/27/09 12:41 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 15:57 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 15:57 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 15:57 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 15:57 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 15:57 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 15:57 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 15:57 / eli-h
Surr: Trifluorotoluene	118	%REC		80-120		SW8021B	04/27/09 15:57 / eli-h

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-010
Client Sample ID: PNR-15

Report Date: 05/14/09
Collection Date: 04/16/09 14:30
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:48 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-011
Client Sample ID: PNR-23

Report Date: 05/14/09
Collection Date: 04/16/09 15:00
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.		0.1		A4500-H B	04/20/09 16:42 / kh
Conductivity	36300	umhos/cm		1		A2510 B	04/20/09 14:36 / kh
Solids, Total Dissolved TDS @ 180 C	22000	mg/L		10		A2540 C	04/20/09 16:13 / afb
INORGANICS							
Alkalinity, Total as CaCO3	740	mg/L		4		A2320 B	04/22/09 20:33 / ehb
Bicarbonate as HCO3	902	mg/L		4		A2320 B	04/22/09 20:33 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/22/09 20:33 / ehb
Chloride	12300	mg/L	D	10		E300.0	05/05/09 16:06 / eli-h1
Sulfate	1150	mg/L	D	40		E300.0	05/05/09 16:06 / eli-h1
Fluoride	6.3	mg/L		0.1		A4500-F C	05/12/09 13:58 / ehb
Hardness as CaCO3	1070	mg/L		1		A2340 B	04/22/09 12:34 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	4.9	mg/L		0.1		E350.1	04/20/09 16:08 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/20/09 16:52 / kak
METALS, DISSOLVED							
Calcium	254	mg/L		1		E200.7	04/22/09 05:26 / tao
Magnesium	106	mg/L		1		E200.7	04/22/09 05:26 / tao
Potassium	110	mg/L		1		E200.7	04/22/09 05:26 / tao
Silica	39	mg/L	D	2		E200.7	04/22/09 05:26 / tao
Sodium	8030	mg/L	D	10		E200.7	04/22/09 05:26 / tao
METALS, TOTAL							
Silica	34	mg/L	D	2		E200.7	04/24/09 15:45 / tao
QUALITY CONTROL							
A/C Balance Sigma	2.05					Calculation	05/07/09 14:45 / klc
Anions	386	meq/L		0.01		Calculation	05/07/09 14:45 / klc
Cations	374	meq/L		0.01		Calculation	05/07/09 14:45 / klc
A/C Balance	-1.64	%				Calculation	05/07/09 14:45 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 16:36 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 16:36 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 16:36 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 16:36 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 16:36 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 16:36 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 16:36 / eli-h
Surr: Trifluorotoluene	110	%REC		80-120		SW8021B	04/27/09 16:36 / eli-h

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-011
Client Sample ID: PNR-23

Report Date: 05/14/09
Collection Date: 04/16/09 15:00
DateReceived: 04/17/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/23/09 14:51 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-012
Client Sample ID: Trip Blank 1 Lot# 040709, B-TS, SHP0243

Report Date: 05/14/09
Collection Date: 04/15/09 11:20
DateReceived: 04/17/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/24/09 19:05 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/24/09 19:05 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/24/09 19:05 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/24/09 19:05 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/24/09 19:05 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/24/09 19:05 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/24/09 19:05 / eli-h
Surr: Trifluorotoluene	110	%REC		80-120		SW8021B	04/24/09 19:05 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-013
Client Sample ID: Trip Blank 2 Lot# 040109, B-TS, SHP0243

Report Date: 05/14/09
Collection Date: 04/15/09 16:15
DateReceived: 04/17/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/24/09 18:26 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/24/09 18:26 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/24/09 18:26 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/24/09 18:26 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/24/09 18:26 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/24/09 18:26 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/24/09 18:26 / eli-h
Surr: Trifluorotoluene	108	%REC		80-120		SW8021B	04/24/09 18:26 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site
Lab ID: B09041742-014
Client Sample ID: Trip Blank 3 Lot# 040709, B-TS, SHP0243

Report Date: 05/14/09
Collection Date: 04/16/09 14:00
DateReceived: 04/17/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/24/09 17:46 / eli-h
Benzene	ND	ug/L		0.50		SW8021B	04/24/09 17:46 / eli-h
Toluene	ND	ug/L		0.50		SW8021B	04/24/09 17:46 / eli-h
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/24/09 17:46 / eli-h
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/24/09 17:46 / eli-h
o-Xylene	ND	ug/L		0.50		SW8021B	04/24/09 17:46 / eli-h
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/24/09 17:46 / eli-h
Surr: Trifluorotoluene	106	%REC		80-120		SW8021B	04/24/09 17:46 / eli-h

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Batch: R128238
Sample ID: MB	Method Blank				Run: MAN-TECH_090422B				04/22/09 13:52
Alkalinity, Total as CaCO3	ND	mg/L	4						
Bicarbonate as HCO3	ND	mg/L	4						
Carbonate as CO3	ND	mg/L	4						
Sample ID: LCS	Laboratory Control Sample				Run: MAN-TECH_090422B				04/22/09 14:02
Alkalinity, Total as CaCO3	98.6	mg/L	4.0	99	90	110			
Sample ID: B09041738-005AMS	Sample Matrix Spike				Run: MAN-TECH_090422B				04/22/09 18:35
Alkalinity, Total as CaCO3	479	mg/L	4.0	75	80	120			S
Sample ID: B09041738-005AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090422B				04/22/09 18:44
Alkalinity, Total as CaCO3	492	mg/L	4.0	85	80	120	2.8	20	
Sample ID: B09041742-011AMS	Sample Matrix Spike				Run: MAN-TECH_090422B				04/22/09 20:43
Alkalinity, Total as CaCO3	835	mg/L	4.0	72	80	120			S
Sample ID: B09041742-011AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090422B				04/22/09 20:52
Alkalinity, Total as CaCO3	829	mg/L	4.0	67	80	120	0.8	20	S
Method: A2510 B									Batch: PHSC090420A
Sample ID: PHC1081231G	Laboratory Control Sample				Run: ORION555A_090420A				04/20/09 11:44
Conductivity	150	umhos/cm	1.0	100	90	110			
Sample ID: PHC1090310A	Laboratory Control Sample				Run: ORION555A_090420A				04/20/09 11:44
Conductivity	5000	umhos/cm	1.0	100	90	110			
Sample ID: PHC1081114A	Laboratory Control Sample				Run: ORION555A_090420A				04/20/09 11:45
Conductivity	19900	umhos/cm	1.0	100	90	110			
Sample ID: B09041742-001ADUP	Sample Duplicate				Run: ORION555A_090420A				04/20/09 14:31
Conductivity	20900	umhos/cm	1.0				0.5	10	
Sample ID: B09041742-011ADUP	Sample Duplicate				Run: ORION555A_090420A				04/20/09 14:37
Conductivity	36500	umhos/cm	1.0				0.5	10	

Qualifiers:

RL - Analyte reporting limit.

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C								Batch: TDS090420A	
Sample ID: MBLK1	Method Blank				Run: CPA124S_090420B			04/20/09 15:39	
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB1	Laboratory Fortified Blank				Run: CPA124S_090420B			04/20/09 15:39	
Solids, Total Dissolved TDS @ 180 C	1100	mg/L	10	99	90	110			
Sample ID: LFB2	Laboratory Fortified Blank				Run: CPA124S_090420B			04/20/09 16:05	
Solids, Total Dissolved TDS @ 180 C	1130	mg/L	10	102	90	110			
Sample ID: B09041742-004A MS	Sample Matrix Spike				Run: CPA124S_090420B			04/20/09 16:08	
Solids, Total Dissolved TDS @ 180 C	81000	mg/L	10	99	80	120			
Sample ID: B09041742-004A MSD	Sample Matrix Spike Duplicate				Run: CPA124S_090420B			04/20/09 16:08	
Solids, Total Dissolved TDS @ 180 C	83000	mg/L	10	98	80	120	2.4	20	
Method: A4500-F C								Analytical Run: MAN-TECH_090422B	
Sample ID: ICV	Initial Calibration Verification Standard							04/22/09 14:22	
Fluoride	0.930	mg/L	0.10	93	90	110			
Method: A4500-F C								Batch: R128238	
Sample ID: B09041738-005AMS	Sample Matrix Spike				Run: MAN-TECH_090422B			04/22/09 18:35	
Fluoride	1.12	mg/L	0.10	91	80	120			
Sample ID: B09041738-005AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090422B			04/22/09 18:44	
Fluoride	1.15	mg/L	0.10	94	80	120	2.6	10	
Sample ID: B09041742-011AMS	Sample Matrix Spike				Run: MAN-TECH_090422B			04/22/09 20:43	
Fluoride	6.27	mg/L	0.10	86	80	120			
Sample ID: B09041742-011AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090422B			04/22/09 20:52	
Fluoride	6.24	mg/L	0.10	83	80	120	0.5	10	
Sample ID: MB	Method Blank				Run: MAN-TECH_090422B			04/22/09 14:12	
Fluoride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: MAN-TECH_090422B			04/22/09 14:19	
Fluoride	1.02	mg/L	0.10	102	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-F C								Analytical Run: MAN-TECH_090512A	
Sample ID: ICV	Initial Calibration Verification Standard							05/12/09 12:39	
Fluoride	0.970	mg/L	0.10	97	90	110			
Method: A4500-F C								Batch: R129307	
Sample ID: MB	Method Blank				Run: MAN-TECH_090512A			05/12/09 12:34	
Fluoride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: MAN-TECH_090512A			05/12/09 12:37	
Fluoride	0.930	mg/L	0.10	93	90	110			
Method: A4500-H B								Batch: PHSC090420A	
Sample ID: PHC1081231F	Laboratory Control Sample				Run: ORION555A_090420A			04/20/09 11:43	
pH	3.99	s.u.	0.10	100	97	103			
Sample ID: PHC1080722E	Laboratory Control Sample				Run: ORION555A_090420A			04/20/09 11:46	
pH	6.98	s.u.	0.10	100	98	102			
Sample ID: B09041742-001ADUP	Sample Duplicate				Run: ORION555A_090420A			04/20/09 16:37	
pH	7.13	s.u.	0.10				0.3	10	
Sample ID: B09041742-011ADUP	Sample Duplicate				Run: ORION555A_090420A			04/20/09 16:43	
pH	7.33	s.u.	0.10				0.5	10	
Method: E1664A								Batch: G_TPH090423A	
Sample ID: MBLK0904230000	Method Blank				Run: SUB-G168579			04/23/09 14:34	
Total Petroleum Hydrocarbons	ND	mg/L	0.6						
Sample ID: LCS0904230000	Laboratory Control Sample				Run: SUB-G168579			04/23/09 14:35	
Total Petroleum Hydrocarbons	14	mg/L	1.0	72	64	132			
Sample ID: LCSD0904230000	Laboratory Control Sample Duplicate				Run: SUB-G168579			04/23/09 14:36	
Total Petroleum Hydrocarbons	14	mg/L	1.0	71	64	132	0.7	34	
Sample ID: G09040736-004EMS	Sample Matrix Spike				Run: SUB-G168579			04/23/09 14:55	
Total Petroleum Hydrocarbons	16	mg/L	1.0	75	64	132			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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800-735-4489 • 406-252-6325 • 406-252-6069 fax • eli@energylab.com

QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 38441
Sample ID: MB-38441	Method Blank				Run: ICP201-B_090424A				04/24/09 14:13
Silicon	ND	mg/L	0.03						
Silica	ND	mg/L	0.07						
Sample ID: LCS5-38441	Laboratory Control Sample				Run: ICP201-B_090424A				04/24/09 14:21
Silicon	4.97	mg/L	0.10	94	85	115			
Silica	10.6	mg/L	0.21	94	85	115			
Sample ID: B09041732-002CMS5	Sample Matrix Spike				Run: ICP201-B_090424A				04/24/09 14:28
Silicon	13.5	mg/L	0.10	104	70	130			
Silica	28.8	mg/L	0.21	103	70	130			
Sample ID: B09041732-002CMSD5	Sample Matrix Spike Duplicate				Run: ICP201-B_090424A				04/24/09 14:40
Silicon	13.5	mg/L	0.10	104	70	130	0.1	20	
Silica	28.8	mg/L	0.21	104	70	130	0.1	20	

Qualifiers:

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ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP202-B_090421A	
Sample ID: ICV	Continuing Calibration Verification Standard							04/21/09 09:39	
Calcium	24.6	mg/L	1.0	99	95	105			
Magnesium	24.4	mg/L	1.0	98	95	105			
Potassium	24.0	mg/L	1.0	96	95	105			
Silicon	5.02	mg/L	0.10	100	95	105			
Sodium	24.8	mg/L	1.0	99	95	105			
Method: E200.7								Batch: R128210	
Sample ID: MB-SPDIS090421A	Method Blank				Run: ICP202-B_090421A			04/21/09 10:35	
Calcium	ND	mg/L	0.009						
Magnesium	ND	mg/L	0.01						
Potassium	ND	mg/L	0.01						
Silicon	ND	mg/L	0.01						
Sodium	ND	mg/L	0.03						
Sample ID: LFB-SPDIS090421A	Laboratory Fortified Blank				Run: ICP202-B_090421A			04/21/09 10:39	
Calcium	49.4	mg/L	1.0	99	85	115			
Magnesium	48.3	mg/L	1.0	97	85	115			
Potassium	50.2	mg/L	1.0	100	85	115			
Silicon	10.2	mg/L	0.10	102	85	115			
Sodium	49.0	mg/L	1.0	98	85	115			
Sample ID: B09041742-005BMS2	Sample Matrix Spike				Run: ICP202-B_090421A			04/22/09 05:06	
Calcium	6910	mg/L	1.0	92	70	130			
Magnesium	6160	mg/L	1.2	94	70	130			
Potassium	4820	mg/L	73	95	70	130			
Silicon	990	mg/L	1.5	99	70	130			
Sodium	16200	mg/L	26	95	70	130			
Silica	2120	mg/L	3.1	99	70	130			
Sample ID: B09041742-005BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090421A			04/22/09 05:10	
Calcium	7060	mg/L	1.0	95	70	130	2.1	20	
Magnesium	6250	mg/L	1.2	96	70	130	1.5	20	
Potassium	4920	mg/L	73	97	70	130	2	20	
Silicon	989	mg/L	1.5	98	70	130	0.1	20	
Sodium	16400	mg/L	26	99	70	130	1.3	20	
Silica	2120	mg/L	3.1	98	70	130	0.1	20	
Method: E200.7								Analytical Run: ICP201-B_090424A	
Sample ID: ICV	Continuing Calibration Verification Standard							04/24/09 09:01	
Silicon	5.00	mg/L	0.10	100	95	105			

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP202-B_090427A	
Sample ID: ICV	Continuing Calibration Verification Standard								04/27/09 09:53
Silicon	5.13	mg/L	0.10	103	95	105			
Method: E200.7								Batch: R128506	
Sample ID: MB-SPDIS090425A	Method Blank				Run: ICP202-B_090427A				04/27/09 10:42
Silicon	ND	mg/L	0.01						
Sample ID: LFB-SPDIS090425A	Laboratory Fortified Blank				Run: ICP202-B_090427A				04/27/09 10:46
Silicon	10.2	mg/L	0.10	102	85	115			
Sample ID: B09041948-001AMS2	Sample Matrix Spike				Run: ICP202-B_090427A				04/27/09 14:00
Silicon	15.2	mg/L	0.10	106	70	130			
Silica	32.5	mg/L	0.21	106	70	130			
Sample ID: B09041948-001AMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090427A				04/27/09 14:04
Silicon	15.2	mg/L	0.10	105	70	130	0.2	20	
Silica	32.4	mg/L	0.21	105	70	130	0.2	20	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP202-B_090428A	
Sample ID: ICV	Continuing Calibration Verification Standard							04/28/09 09:18	
Calcium	24.9	mg/L	1.0	100	95	105			
Magnesium	24.5	mg/L	1.0	98	95	105			
Potassium	24.8	mg/L	1.0	99	95	105			
Sodium	24.4	mg/L	1.0	98	95	105			
Method: E200.7								Batch: R128579	
Sample ID: MB-SPDIS090428A	Method Blank				Run: ICP202-B_090428A			04/28/09 10:07	
Calcium	0.01	mg/L	0.009						
Magnesium	ND	mg/L	0.01						
Potassium	0.01	mg/L	0.01						
Sodium	ND	mg/L	0.03						
Sample ID: LFB-SPDIS090428A	Laboratory Fortified Blank				Run: ICP202-B_090428A			04/28/09 10:11	
Calcium	50.3	mg/L	1.0	101	85	115			
Magnesium	50.2	mg/L	1.0	100	85	115			
Potassium	44.5	mg/L	1.0	89	85	115			
Sodium	50.3	mg/L	1.0	101	85	115			
Sample ID: B09041742-002BMS2	Sample Matrix Spike				Run: ICP202-B_090428A			04/28/09 14:45	
Calcium	2790	mg/L	1.0	96	70	130			
Magnesium	2530	mg/L	1.0	94	70	130			
Potassium	2620	mg/L	36	95	70	130			
Sodium	14000	mg/L	13		70	130			A
Sample ID: B09041742-002BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090428A			04/28/09 14:49	
Calcium	2790	mg/L	1.0	96	70	130	0	20	
Magnesium	2490	mg/L	1.0	93	70	130	1.3	20	
Potassium	2680	mg/L	36	97	70	130	2.1	20	
Sodium	15900	mg/L	13		70	130	13	20	A
Sample ID: B09041548-002BMS2	Sample Matrix Spike				Run: ICP202-B_090428A			04/28/09 15:46	
Calcium	70.9	mg/L	1.0	94	70	130			
Magnesium	51.7	mg/L	1.0	94	70	130			
Potassium	52.9	mg/L	1.0	99	70	130			
Sodium	50.1	mg/L	1.0	96	70	130			
Sample ID: B09041548-002BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090428A			04/28/09 15:50	
Calcium	72.2	mg/L	1.0	96	70	130	1.9	20	
Magnesium	52.1	mg/L	1.0	95	70	130	0.8	20	
Potassium	51.9	mg/L	1.0	97	70	130	2	20	
Sodium	50.1	mg/L	1.0	96	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: SUB-H53363	
Sample ID: ICV	Initial Calibration Verification Standard							05/04/09 10:48	
Chloride	2.59	mg/L	1.0	103	90	110			
Sulfate	9.57	mg/L	1.0	96	90	110			
Method: E300.0								Batch: H_R53363	
Sample ID: LCS	Laboratory Control Sample				Run: SUB-H53363			05/04/09 11:04	
Chloride	84.4	mg/L	1.0	96	90	110			
Sulfate	26.9	mg/L	1.0	94	90	110			
Sample ID: LFB	Laboratory Fortified Blank				Run: SUB-H53363			05/04/09 11:55	
Chloride	4.67	mg/L	1.0	93	80	120			
Sulfate	9.44	mg/L	1.0	94	80	120			
Sample ID: MBLK	Method Blank				Run: SUB-H53363			05/04/09 12:11	
Chloride	ND	mg/L	0.05						
Sulfate	ND	mg/L	0.2						
Sample ID: H09050004-003A MS	Sample Matrix Spike				Run: SUB-H53363			05/05/09 19:40	
Chloride	54.2	mg/L	1.0	96	80	120			
Sulfate	928	mg/L	2.1		80	120			A
Sample ID: H09050004-003A MSD	Sample Matrix Spike Duplicate				Run: SUB-H53363			05/05/09 19:56	
Chloride	54.3	mg/L	1.0	97	80	120	0.3	10	
Sulfate	935	mg/L	2.1		80	120	0.8	10	A
Sample ID: B09042537-002A	Sample Matrix Spike				Run: SUB-H53363			05/05/09 14:11	
Chloride	43.6	mg/L	1.0	97	80	120			
Sulfate	1160	mg/L	1.0		80	120			A
Sample ID: B09042537-002A	Sample Matrix Spike Duplicate				Run: SUB-H53363			05/05/09 14:28	
Chloride	43.5	mg/L	1.0	96	80	120	0.2	10	
Sulfate	1160	mg/L	1.0		80	120	0	10	A

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A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC202-B_090422A	
Sample ID: ICV042109-11	Initial Calibration Verification Standard							04/22/09 10:00	
Chloride	22.8	mg/L	1.0	91	90	110			
Sulfate	95.5	mg/L	1.0	95	90	110			
Method: E300.0								Batch: R128273	
Sample ID: ICB042109-12	Method Blank				Run: IC202-B_090422A			04/22/09 10:12	
Chloride	ND	mg/L	0.03						
Sulfate	ND	mg/L	0.06						
Sample ID: LFB042109-13	Laboratory Fortified Blank				Run: IC202-B_090422A			04/22/09 10:24	
Chloride	22.6	mg/L	1.0	90	90	110			
Sulfate	96.7	mg/L	1.0	97	90	110			
Sample ID: B09041738-005AMS	Sample Matrix Spike				Run: IC202-B_090422A			04/24/09 23:35	
Chloride	4440	mg/L	1.5	99	90	110			
Sulfate	5510	mg/L	3.1	99	90	110			
Sample ID: B09041738-005AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_090422A			04/24/09 23:46	
Chloride	4410	mg/L	1.5	97	90	110	0.5	20	
Sulfate	5500	mg/L	3.1	98	90	110	0.2	20	
Sample ID: B09041742-011AMS	Sample Matrix Spike				Run: IC202-B_090422A			04/25/09 02:17	
Chloride	17400	mg/L	5.9	94	90	110			
Sulfate	21100	mg/L	12	98	90	110			
Sample ID: B09041742-011AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_090422A			04/25/09 02:29	
Chloride	17200	mg/L	5.9	90	90	110	1.3	20	
Sulfate	20900	mg/L	12	97	90	110	0.9	20	

Qualifiers:

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ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC202-B_090507A
Sample ID: ICV050609-11	Initial Calibration Verification Standard								05/07/09 17:39
Sulfate	92.8	mg/L	1.0	93	90	110			
Method: E300.0									Batch: R129137
Sample ID: ICB050609-12	Method Blank				Run: IC202-B_090507A				05/07/09 17:51
Sulfate	0.08	mg/L	0.06						
Sample ID: LFB050609-13	Laboratory Fortified Blank				Run: IC202-B_090507A				05/07/09 18:03
Sulfate	95.9	mg/L	1.0	96	90	110			
Sample ID: B09032104-013AMS	Sample Matrix Spike				Run: IC202-B_090507A				05/08/09 09:56
Sulfate	3450	mg/L	1.0	113	90	110			S
Sample ID: B09032104-013AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_090507A				05/08/09 10:08
Sulfate	3430	mg/L	1.0	112	90	110	0.5	20	S
Sample ID: B09041679-011AMS	Sample Matrix Spike				Run: IC202-B_090507A				05/09/09 10:24
Sulfate	131	mg/L	1.0	112	90	110			S
Sample ID: B09041679-011AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_090507A				05/09/09 10:36
Sulfate	132	mg/L	1.0	113	90	110	0.3	20	S
Method: E350.1									Analytical Run: FIA202-B_090420D
Sample ID: ICV	Initial Calibration Verification Standard								04/20/09 15:32
Nitrogen, Ammonia as N	5.68	mg/L	0.11	104	90	110			
Method: E350.1									Batch: R128096
Sample ID: MBLK	Method Blank				Run: FIA202-B_090420D				04/20/09 15:33
Nitrogen, Ammonia as N	ND	mg/L	0.02						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA202-B_090420D				04/20/09 15:34
Nitrogen, Ammonia as N	1.01	mg/L	0.10	102	90	110			
Sample ID: B09041742-005DMS	Sample Matrix Spike				Run: FIA202-B_090420D				04/20/09 15:54
Nitrogen, Ammonia as N	1.43	mg/L	0.10	95	90	110			
Sample ID: B09041742-005DMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090420D				04/20/09 15:56
Nitrogen, Ammonia as N	1.43	mg/L	0.10	95	90	110	0.1	10	
Sample ID: B09041742-011DMS	Sample Matrix Spike				Run: FIA202-B_090420D				04/20/09 16:09
Nitrogen, Ammonia as N	5.70	mg/L	0.10	82	90	110			S
Sample ID: B09041742-011DMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090420D				04/20/09 16:10
Nitrogen, Ammonia as N	5.72	mg/L	0.10	84	90	110	0.4	10	S

Qualifiers:

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ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 05/12/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2								Analytical Run: FIA203-B_090420A	
Sample ID: ICV	Initial Calibration Verification Standard								04/20/09 16:15
Nitrogen, Nitrate+Nitrite as N	37.6	mg/L	0.050	106	90	110			
Method: E353.2								Batch: R128101	
Sample ID: MBLK	Method Blank				Run: FIA203-B_090420A				04/20/09 16:16
Nitrogen, Nitrate+Nitrite as N	0.004	mg/L	0.002						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA203-B_090420A				04/20/09 16:17
Nitrogen, Nitrate+Nitrite as N	0.992	mg/L	0.050	101	90	110			
Sample ID: B09041731-001AMS	Sample Matrix Spike				Run: FIA203-B_090420A				04/20/09 16:40
Nitrogen, Nitrate+Nitrite as N	1.02	mg/L	0.050	96	90	110			
Sample ID: B09041731-001AMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090420A				04/20/09 16:41
Nitrogen, Nitrate+Nitrite as N	1.02	mg/L	0.050	96	90	110	0.2	10	
Sample ID: B09041757-001AMS	Sample Matrix Spike				Run: FIA203-B_090420A				04/20/09 16:56
Nitrogen, Nitrate+Nitrite as N	0.981	mg/L	0.050	96	90	110			
Sample ID: B09041757-001AMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090420A				04/20/09 16:58
Nitrogen, Nitrate+Nitrite as N	1.00	mg/L	0.050	98	90	110	1.9	10	

Qualifiers:

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Energy Laboratories Inc
Workorder Receipt Checklist

DOWL HKM

B09041742

Login completed by: Jill M. Lippard

Date and Time Received: 4/17/2009 5:35 PM

Reviewed by: Denise Ruby

Received by: klb

Reviewed Date: 4/20/2009 10:18:00 AM

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	3°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Contact and Corrective Action Comments:

Samples for dissolved metals/hardness were subsampled, filtered and preserved with 2 mL HNO3 in lab upon receipt to pH <2.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print)
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ A2LA
☐ GSA ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: _____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand

Cooler ID(s):

Receipt Temp 3 °C

On Ice: (Yes) No

Custody Seal Y (N) Intact Y (N) Signature Match Y (N)

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other)	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	RUSH		LABORATORY USE ONLY
1	1 M-28	4-15-09	11:20	Water														809041742-1
2	1 PNR-5		14:20	Water														-2
3	1 USGS 93-3		1500	Water														-3
4	2 M-31		1615	Water														-4
5	2 PNR-7		1715	Water														-5
6	2 PNR-7D	4-15-09	1730	Water														-6
7	2 Rinsate QC/QA		1745	Water									X					-7
8	2 Equipment QC/QA		1750	Water									X					-8
9				Water														
10				Water														

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
[illegible]	4/17/09	17:35			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: [illegible]	Date/Time: 4/17/09	Signature: 17:35

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print)
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT(Electronic Data) Format:_____ ☐ LEVEL IV ☐ NELAC

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by:

Cooler ID(s):

Receipt Temp _____ °C

On Ice: Yes No

Custody Seal Y N

Intact Y N

Signature Match Y N

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	RUSH	LABORATORY USE ONLY
3 1 PNR-14	4-16-09	1400	Water													B904174 2 -9
3 2 PNR-15		1430	Water													-10
3 3 PNR-23		1500	Water													-11
4			Water													
4 TB1 TS0243	4-7-09		Water													-12
5 TB2 TS0243	4-1-09		Water													-13
7 TB3 TS0243	4-7-09		Water													-14
8			Water													
9			Water													
10			Water													

Custody Record MUST be Signed

Relinquished by (print): [signature]	Date/Time: 4-17-09	Signature: 17:35	Received by (print):
Relinquished by (print):	Date/Time:	Signature:	Received by (print):
			Received by Laboratory: [signature]
Sample Disposal: Return to Client: _____	Lab Disposal: _____		Date/Time: 4/17/09 Signature: 17:35

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Energy Laboratories Inc
1120 So. 27th Street
Billings, MT 59107
(406) 252-6325

B09041742

CHAIN-OF-CUSTODY RECORD

Custody Seal: Y N
Intacted: Y N
Signature Match: Y N

Shipped By: _____
Receipt Temp: _____

Subcontractor:
ELI - Gillette
400 W Boxelder Rd
Gillette, WY 82718-5315
TEL: FAX:
Acct #: 1

Subcontractor's Client: DOWL HKM

Shipped By: _____

Requested Tests

Sample ID	Matrix	Collection Date	Bottle Type	HC-TPH-1664-W
B09041742-001E	Aqueous	04/15/09 11:20 A	2-1L-CG-NM-H2SO4	1
B09041742-002E	Aqueous	04/15/09 02:20 P	2-1L-CG-NM-H2SO4	1
B09041742-003E	Aqueous	04/15/09 03:00 P	2-1L-CG-NM-H2SO4	1
B09041742-004E	Aqueous	04/15/09 04:15 P	2-1L-CG-NM-H2SO4	1
B09041742-005E	Aqueous	04/15/09 05:15 P	2-1L-CG-NM-H2SO4	1
B09041742-006E	Aqueous	04/15/09 05:30 P	2-1L-CG-NM-H2SO4	1
B09041742-009E	Aqueous	04/16/09 02:00 P	2-1L-CG-NM-H2SO4	1
B09041742-010E	Aqueous	04/16/09 02:30 P	2-1L-CG-NM-H2SO4	1
B09041742-011E	Aqueous	04/16/09 03:00 P	2-1L-CG-NM-H2SO4	1

Comments:

QC Level:

	Date/Time		Date/Time
Relinquished by: Jill Rippel	4/20/09 08:47	Received by:	
Relinquished by:		Received by:	

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Sample B09041742-001A Reported in Run MISC-WC_090511A

SAMPLE ID: **B09041742-001A** 5/11/2009

CATIONS	mg/L	meq/L	ANIONS	mg/L	meq/L
Acidity(as CaCO3)			Cl	**6210**	175.14
Ca	**587**	29.29	SO4	**1500**	31.23
Mg	**453**	37.24	T. Alkalinity	**699**	13.97
K	**31**	0.79	HCO3	853	
Na	**3620**	157.57	CO3	<1	
Hardness (as CaCO3)	3330		OH	<1	
Hardness, grains/gal.	195		NO3	**10.9**	0.78
NH4+	**1.4**	0.10	PO4	**110**	10.64
Si	**10.5**		F	**0.2**	0.01
Other Metals			CN		
Hardness (Ca as CaCO3)	1467.5		Br	**<0.1**	0.00
Total Cations		224.98	Total Anions		231.78

BALANCE, %	-1.49
BALANCE, "sigma"	1.84

	Measured	Calculated
Sample pH	**7.1**	
Conductivity (umho/cm)	**21000**	14900
TDS	**12900**	12900
TDS Ratio	1	
Resistivity (RW - ohm-m)	0.48	
Estimated Ionic Strength (from TDS)		0.3215

Salinity	12.46
Cl as NaCl	10233
Carbonate Hardness	699
Non-carbonate Hardness	2630
Free CO2	108.6
Total CO2	723.9
SAR	27.31
Langlier Saturation Index	0.8
Ryznar Index	5.45
Aggressive Index	13.12
Temp	20

Very hard water.

SC / Cation ratio =	0.93
SC / Anion ratio =	0.91
TDS Ratio	1

SAMPLE ID: B09041742-001A

TDS Ratio	1
BALANCE, "sigma"	1.84

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Sample B09041742-002A Reported in Run MISC-WC_090511A

SAMPLE ID: **B09041742-002A** 5/11/2009

CATIONS	mg/L	meq/L	ANIONS	mg/L	meq/L
Acidity(as CaCO3)			Cl	**15900**	448.31
Ca	**303**	15.12	SO4	**842**	17.54
Mg	**95**	7.78	T. Alkalinity	**850**	16.99
K	**167**	4.26	HCO3	1040	
Na	**10400**	451.28	CO3	<1	
Hardness (as CaCO3)	1150		OH	<1	
Hardness, grains/gal.	67.0		NO3	**<0.1**	0.00
NH4+	**6.6**	0.47	PO4	**220**	21.29
Si	**15.3**		F	**0.6**	0.03
Other Metals			CN		
Hardness (Ca as CaCO3)	757.5		Br	**<0.1**	0.00
Total Cations		478.92	Total Anions		504.16

BALANCE, %	-2.57
BALANCE, "sigma"	3.19

	Measured	Calculated
Sample pH	**7.1**	
Conductivity (umho/cm)	**44900**	32200
TDS	**25600**	28200
TDS Ratio	0.91	
Resistivity (RW - ohm-m)	0.22	
Estimated Ionic Strength (from TDS)		0.6389

Salinity	28.64
Cl as NaCl	26193
Carbonate Hardness	850
Non-carbonate Hardness	296
Free CO2	123.2
Total CO2	871.3
SAR	133.29
Langlier Saturation Index	0.7
Ryznar Index	5.76
Aggressive Index	12.95
Temp	20

Very hard water.

SC / Cation ratio = 0.94

SC / Anion ratio = 0.89

TDS Ratio 0.91

SAMPLE ID: B09041742-002A

TDS Ratio 0.91

BALANCE, "sigma" 3.19

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Sample B09041742-003A Reported in Run MISC-WC_090508A

SAMPLE ID: **B09041742-003A** 5/8/2009

CATIONS	mg/L	meq/L
Acidity(as CaCO3)		
Ca	**597**	29.79
Mg	**168**	13.81
K	**272**	6.96
Na	**15600**	680.29
Hardness (as CaCO3)	2180	
Hardness, grains/gal.	128	
NH4+	**9.6**	0.68
Si	**7.5**	
Other Metals		
Hardness (Ca as CaCO3)	1492.5	
Total Cations		731.53

ANIONS	mg/L	meq/L
Cl	**25200**	709.68
SO4	**987**	20.55
T. Alkalinity	**714**	14.26
HCO3	871	
CO3	<1	
OH	<1	
NO3	**<0.1**	0.00
PO4	**<0.1**	0.00
F	**0.3**	0.01
CN		
Br	**<0.1**	0.00
Total Anions		744.50

BALANCE, %	-0.88
BALANCE, "sigma"	1.11

	Measured	Calculated
Sample pH	**7.2**	
Conductivity (umho/cm)	**66300**	53300
TDS	**40800**	43300
TDS Ratio	0.94	
Resistivity (RW - ohm-m)	0.15	
Estimated Ionic Strength (from TDS)		1.0198

Salinity	44.38
Cl as NaCl	41464
Carbonate Hardness	714
Non-carbonate Hardness	1468
Free CO2	101.0
Total CO2	729.0
SAR	145.62
Langlier Saturation Index	1.1
Ryznar Index	5.03
Aggressive Index	13.18
Temp	20

Very hard water.

SC / Cation ratio =	0.91
SC / Anion ratio =	0.89
TDS Ratio	0.94

SAMPLE ID: B09041742-003A

TDS Ratio	0.94
BALANCE, "sigma"	1.11

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Sample B09041742-004A Reported in Run MISC-WC_090508A

SAMPLE ID: **B09041742-004A** 5/8/2009

CATIONS	mg/L	meq/L
Acidity(as CaCO3)		
Ca	**1350**	67.42
Mg	**506**	41.64
K	**246**	6.29
Na	**21400**	931.71
Hardness (as CaCO3)	5460	
Hardness, grains/gal.	319	
NH4+	**11.2**	0.80
Si	**4.1**	
Other Metals		
Hardness (Ca as CaCO3)	3377.5	
Total Cations		1047.85

ANIONS	mg/L	meq/L
Cl	**37400**	1055.73
SO4	**1470**	30.71
T. Alkalinity	**491**	9.81
HCO3	599	
CO3	<1	
OH	<1	
NO3	**<0.1**	0.00
PO4	**<0.1**	0.00
F	**0.1**	0.01
CN		
Br	**<0.1**	0.00
Total Anions		1096.26

BALANCE, %	-2.26
BALANCE, "sigma"	2.83

	Measured	Calculated
Sample pH	**6.9**	
Conductivity (umho/cm)	**90600**	90700
TDS	**53800**	62700
TDS Ratio	0.86	
Resistivity (RW - ohm-m)	0.11	
Estimated Ionic Strength (from TDS)		1.3446

Salinity	63.61
Cl as NaCl	61683
Carbonate Hardness	491
Non-carbonate Hardness	4966
Free CO2	138.7
Total CO2	570.7
SAR	126.11
Langlier Saturation Index	1.1
Ryznar Index	4.63
Aggressive Index	13.07
Temp	20

Very hard water.

SC / Cation ratio =	0.86
SC / Anion ratio =	0.83
TDS Ratio	0.86

SAMPLE ID: B09041742-004A

TDS Ratio	0.86
BALANCE, "sigma"	2.83

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Sample B09041742-005A Reported in Run MISC-WC_090508A

SAMPLE ID: **B09041742-005A** 5/8/2009

	CATIONS mg/L	meq/L		ANIONS mg/L	meq/L
Acidity(as CaCO3)			Cl	**26700**	753.21
Ca	**2400**	119.96	SO4	**1430**	29.86
Mg	**1490**	122.53	T. Alkalinity	**380**	7.60
K	**65**	1.66	HCO3	464	
Na	**11900**	515.44	CO3	<1	
Hardness (as CaCO3)	12100		OH	<1	
Hardness, grains/gal.	710		NO3	**3.3**	0.24
NH4+	**0.5**	0.04	PO4	**<0.1**	0.00
Si	**4.1**		F	**0.2**	0.01
Other Metals			CN		
Hardness (Ca as CaCO3)	6010		Br	**<0.1**	0.00
Total Cations		759.62	Total Anions		790.92

BALANCE, %	-2.02
BALANCE, "sigma"	2.53

	Measured	Calculated
Sample pH	**6.8**	
Conductivity (umho/cm)	**66600**	60000
TDS	**45500**	44200
TDS Ratio	1.03	
Resistivity (RW - ohm-m)	0.15	
Estimated Ionic Strength (from TDS)		1.1375

Salinity	44.60
Cl as NaCl	44008
Carbonate Hardness	380
Non-carbonate Hardness	11754
Free CO2	109.9
Total CO2	444.6
SAR	46.79
Langlier Saturation Index	1.1
Ryznar Index	4.57
Aggressive Index	13.20
Temp	20

Very hard water.

SC / Cation ratio =	0.88
SC / Anion ratio =	0.84
TDS Ratio	1.03

SAMPLE ID: B09041742-005A

TDS Ratio	1.03
BALANCE, "sigma"	2.53

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Sample B09041742-006A Reported in Run MISC-WC_090511A

SAMPLE ID: **B09041742-006A** 5/11/2009

	CATIONS mg/L	meq/L		ANIONS mg/L	meq/L
Acidity(as CaCO3)			Cl	**25100**	709.24
Ca	**2190**	109.43	SO4	**1310**	27.25
Mg	**1360**	112.08	T. Alkalinity	**390**	7.80
K	**61**	1.57	HCO3	476	
Na	**10900**	474.55	CO3	<1	
Hardness (as CaCO3)	11100		OH	<1	
Hardness, grains/gal.	648		NO3	**3.3**	0.23
NH4+	**0.5**	0.04	PO4	**<0.1**	0.00
Si	**5.3**		F	**0.2**	0.01
Other Metals			CN		
Hardness (Ca as CaCO3)	5482.5		Br	**<0.1**	0.00
Total Cations		697.66	Total Anions		744.54

BALANCE, %	-3.25
BALANCE, "sigma"	4.02

	Measured	Calculated
Sample pH	**6.8**	
Conductivity (umho/cm)	**62600**	54600
TDS	**42500**	41200
TDS Ratio	1.03	
Resistivity (RW - ohm-m)	0.16	
Estimated Ionic Strength (from TDS)		1.0636

Salinity	41.58
Cl as NaCl	41438
Carbonate Hardness	390
Non-carbonate Hardness	10694
Free CO2	112.8
Total CO2	456.3
SAR	45.08
Langlier Saturation Index	1.1
Ryznar Index	4.70
Aggressive Index	13.17
Temp	20

Very hard water.

SC / Cation ratio =	0.90
SC / Anion ratio =	0.84
TDS Ratio	1.03

SAMPLE ID: B09041742-006A

TDS Ratio	1.03
BALANCE, "sigma"	4.02

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Sample B09041742-009A Reported in Run MISC-WC_090427B

SAMPLE ID: **B09041742-009A** 4/27/2009

	CATIONS mg/L	CATIONS meq/L		ANIONS mg/L	ANIONS meq/L
Acidity(as CaCO3)			Cl	**4450**	125.60
Ca	**407**	20.32	SO4	**1810**	37.77
Mg	**315**	25.94	T. Alkalinity	**694**	13.87
K	**59**	1.52	HCO3	847	
Na	**2840**	123.36	CO3	<1	
Hardness (as CaCO3)	2310		OH	<1	
Hardness, grains/gal.	135		NO3	**<0.1**	0.00
NH4+	**2.2**	0.16	PO4	**<0.1**	0.00
Si	**13.0**		F	**0.5**	0.03
Other Metals			CN		
Hardness (Ca as CaCO3)	1018		Br	**<0.1**	0.00
Total Cations		171.29	Total Anions		177.27

BALANCE, %	-1.72
BALANCE, "sigma"	2.10

	Measured	Calculated
Sample pH	**7.2**	
Conductivity (umho/cm)	**16700**	11900
TDS	**10400**	10300
TDS Ratio	1.01	
Resistivity (RW - ohm-m)	0.60	
Estimated Ionic Strength (from TDS)		0.2604

Salinity	9.70
Cl as NaCl	7338
Carbonate Hardness	694
Non-carbonate Hardness	1620
Free CO2	91.7
Total CO2	702.7
SAR	25.64
Langlier Saturation Index	0.8
Ryznar Index	5.68
Aggressive Index	13.03
Temp	20

Very hard water.

SC / Cation ratio = 0.97

SC / Anion ratio = 0.94

TDS Ratio 1.01

SAMPLE ID: B09041742-009A

TDS Ratio 1.01

BALANCE, "sigma" 2.10

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Sample B09041742-010A Reported in Run MISC-WC_090427B

SAMPLE ID: **B09041742-010A** 4/27/2009

	CATIONS mg/L	meq/L		ANIONS mg/L	meq/L
Acidity(as CaCO3)			Cl	**5000**	141.01
Ca	**165**	8.24	SO4	**1770**	36.79
Mg	**71**	5.84	T. Alkalinity	**633**	12.64
K	**60**	1.52	HCO3	772	
Na	**3940**	171.29	CO3	<1	
Hardness (as CaCO3)	705		OH	<1	
Hardness, grains/gal.	41.2		NO3	**<0.1**	0.00
NH4+	**2.3**	0.16	PO4	**<0.1**	0.00
Si	**9.9**		F	**0.7**	0.04
Other Metals			CN		
Hardness (Ca as CaCO3)	413		Br	**<0.1**	0.00
Total Cations		187.06	Total Anions		190.49

BALANCE, %	-0.91
BALANCE, "sigma"	1.12

	Measured	Calculated
Sample pH	**7.7**	
Conductivity (umho/cm)	**18300**	12800
TDS	**10600**	11400
TDS Ratio	0.93	
Resistivity (RW - ohm-m)	0.55	
Estimated Ionic Strength (from TDS)		0.2647

Salinity	10.73
Cl as NaCl	8239
Carbonate Hardness	633
Non-carbonate Hardness	72
Free CO2	23.0
Total CO2	579.7
SAR	64.52
Langlier Saturation Index	0.9
Ryznar Index	5.99
Aggressive Index	13.16
Temp	20

Very hard water.

SC / Cation ratio =	0.98
SC / Anion ratio =	0.96
TDS Ratio	0.93

SAMPLE ID: B09041742-010A

TDS Ratio	0.93
BALANCE, "sigma"	1.12

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Sample B09041742-011A Reported in Run MISC-WC_090507B

SAMPLE ID: **B09041742-011A** 5/7/2009

CATIONS	mg/L	meq/L
Acidity(as CaCO3)		
Ca	**255**	12.70
Mg	**106**	8.75
K	**110**	2.81
Na	**8030**	349.28
Hardness (as CaCO3)	1070	
Hardness, grains/gal.	62.8	
NH4+	**4.9**	0.35
Si	**18.0**	
Other Metals		
Hardness (Ca as CaCO3)	636.25	
Total Cations		373.89

ANIONS	mg/L	meq/L
Cl	**12300**	347.33
SO4	**1150**	23.99
T. Alkalinity	**740**	14.78
HCO3	902	
CO3	<1	
OH	<1	
NO3	**<0.1**	0.00
PO4	**<0.1**	0.00
F	**5.4**	0.28
CN		
Br	**<0.1**	0.00
Total Anions		386.39

BALANCE, %	-1.64
BALANCE, "sigma"	2.05

	Measured	Calculated
Sample pH	**7.4**	
Conductivity (umho/cm)	**36300**	25300
TDS	**22000**	22500
TDS Ratio	0.98	
Resistivity (RW - ohm-m)	0.28	
Estimated Ionic Strength (from TDS)		0.5512

Salinity	22.63
Cl as NaCl	20293
Carbonate Hardness	740
Non-carbonate Hardness	334
Free CO2	63.1
Total CO2	714.0
SAR	106.60
Langlier Saturation Index	0.8
Ryznar Index	5.85
Aggressive Index	13.04
Temp	20

Very hard water.

SC / Cation ratio =	0.97
SC / Anion ratio =	0.94
TDS Ratio	0.98

SAMPLE ID: B09041742-011A

TDS Ratio	0.98
BALANCE, "sigma"	2.05

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 04/30/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: SUB-H53132	
Sample ID: CCV_0424GC207r-W	Continuing Calibration Verification Standard							04/24/09 13:56	
Methyl tert-butyl ether (MTBE)	54.6	ug/L	1.0	91	85	115			
Benzene	18.6	ug/L	0.50	93	85	115			
Toluene	54.2	ug/L	0.50	90	85	115			
Ethylbenzene	18.6	ug/L	0.50	93	85	115			
m+p-Xylenes	74.2	ug/L	0.50	93	85	115			
o-Xylene	34.2	ug/L	0.50	85	85	115			
Xylenes, Total	108	ug/L	0.50	90	85	115			
Surr: Trifluorotoluene			0.50	102	85	115			
Method: SW8021B								Batch: H_R53132	
Sample ID: LCS_0424GC208r	Laboratory Control Sample				Run: SUB-H53132			04/24/09 15:09	
Methyl tert-butyl ether (MTBE)	17.4	ug/L	1.0	87	70	130			
Benzene	18.6	ug/L	0.50	93	70	130			
Toluene	19.5	ug/L	0.50	98	70	130			
Ethylbenzene	18.4	ug/L	0.50	92	70	130			
m+p-Xylenes	40.6	ug/L	0.50	101	70	130			
o-Xylene	17.9	ug/L	0.50	90	70	130			
Xylenes, Total	58.5	ug/L	0.50	98	70	130			
Surr: Trifluorotoluene			0.50	100	80	120			
Sample ID: MBLK_0424GC210r	Method Blank				Run: SUB-H53132			04/24/09 17:06	
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	104	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 04/30/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Analytical Run: SUB-H53171
Sample ID: CCV_0427GC201r-W	Continuing Calibration Verification Standard								04/27/09 08:26
Methyl tert-butyl ether (MTBE)	60.1	ug/L	1.0	100	85	115			
Benzene	20.6	ug/L	0.50	103	85	115			
Toluene	59.0	ug/L	0.50	98	85	115			
Ethylbenzene	20.6	ug/L	0.50	103	85	115			
m+p-Xylenes	79.6	ug/L	0.50	100	85	115			
o-Xylene	36.2	ug/L	0.50	91	85	115			
Xylenes, Total	116	ug/L	0.50	97	85	115			
Surr: Trifluorotoluene			0.50	111	85	115			
Sample ID: CCV_0427GC221r-W	Continuing Calibration Verification Standard								04/28/09 08:51
Methyl tert-butyl ether (MTBE)	54.9	ug/L	1.0	92	85	115			
Benzene	19.0	ug/L	0.50	95	85	115			
Toluene	55.1	ug/L	0.50	92	85	115			
Ethylbenzene	18.9	ug/L	0.50	95	85	115			
m+p-Xylenes	75.1	ug/L	0.50	94	85	115			
o-Xylene	34.0	ug/L	0.50	85	85	115			
Xylenes, Total	109	ug/L	0.50	91	85	115			
Surr: Trifluorotoluene			0.50	106	85	115			
Method: SW8021B									Batch: H_R53171
Sample ID: LCS_0427GC202r	Laboratory Control Sample				Run: SUB-H53171				04/27/09 09:36
Methyl tert-butyl ether (MTBE)	17.4	ug/L	1.0	87	70	130			
Benzene	18.4	ug/L	0.50	92	70	130			
Toluene	19.3	ug/L	0.50	96	70	130			
Ethylbenzene	18.4	ug/L	0.50	92	70	130			
m+p-Xylenes	39.4	ug/L	0.50	99	70	130			
o-Xylene	17.6	ug/L	0.50	88	70	130			
Xylenes, Total	57.0	ug/L	0.50	95	70	130			
Surr: Trifluorotoluene			0.50	102	80	120			
Sample ID: MBLK_0427GC206r	Method Blank				Run: SUB-H53171				04/27/09 12:34
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	111	80	120			
Sample ID: B09041742-005F	Sample Matrix Spike				Run: SUB-H53171				04/28/09 10:20
Methyl tert-butyl ether (MTBE)	34.7	ug/L	2.0	87	70	130			
Benzene	62.7	ug/L	1.0	74	70	130			

Qualifiers:

RL - Analyte reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources - Poplar Bier Well Site

Report Date: 04/30/09
Work Order: B09041742

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: H_R53171
Sample ID: B09041742-005F	Sample Matrix Spike				Run: SUB-H53171				04/28/09 10:20
Toluene	35.8	ug/L	1.0	89	70	130			
Ethylbenzene	34.0	ug/L	1.0	85	70	130			
m+p-Xylenes	74.4	ug/L	1.0	93	70	130			
o-Xylene	33.7	ug/L	1.0	84	70	130			
Xylenes, Total	108	ug/L	1.0	90	70	130			
Surr: Trifluorotoluene			1.0	94	80	120			
Sample ID: B09041742-005F	Sample Matrix Spike Duplicate				Run: SUB-H53171				04/28/09 10:59
Methyl tert-butyl ether (MTBE)	38.0	ug/L	2.0	95	70	130	9	20	
Benzene	65.6	ug/L	1.0	82	70	130	4.6	20	
Toluene	38.2	ug/L	1.0	96	70	130	6.7	20	
Ethylbenzene	36.4	ug/L	1.0	91	70	130	7	20	
m+p-Xylenes	79.2	ug/L	1.0	99	70	130	6.3	20	
o-Xylene	35.7	ug/L	1.0	89	70	130	5.9	20	
Xylenes, Total	115	ug/L	1.0	96	70	130			
Surr: Trifluorotoluene			1.0	97	80	120	0	20	

Qualifiers:
RL - Analyte reporting limit.
ND - Not detected at the reporting limit.

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B09041742-001F

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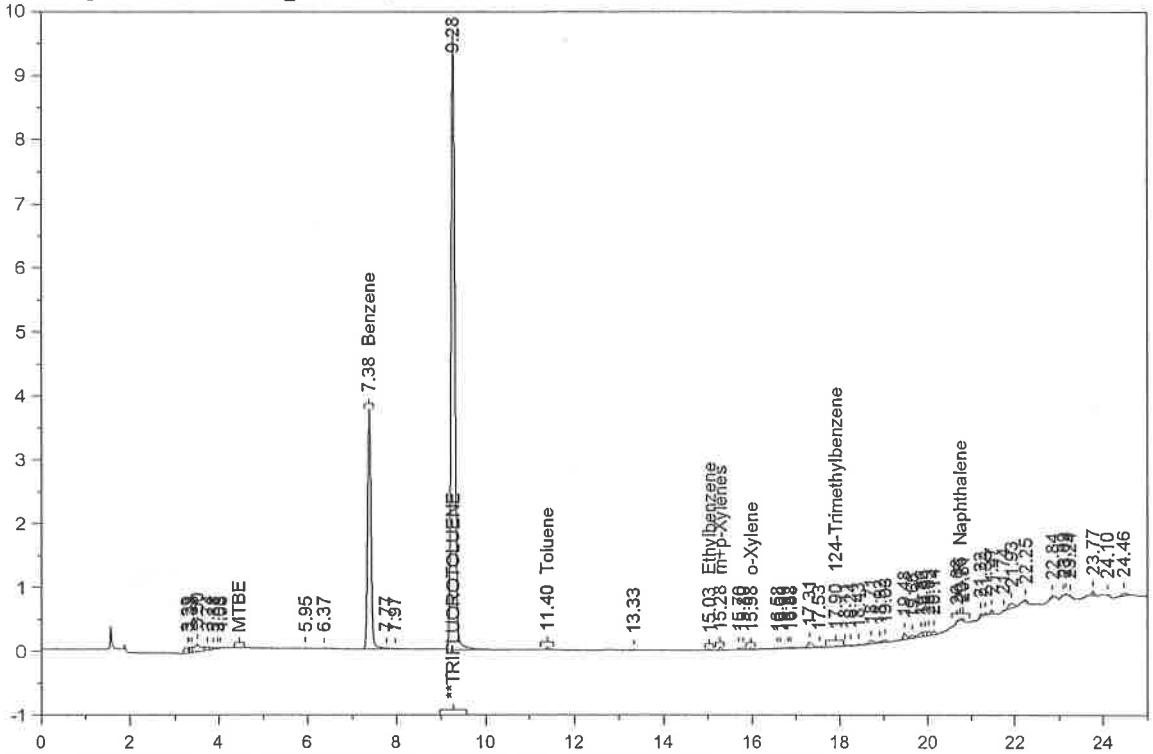

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-001F ;0427GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042709_b\0427GC2.0014.RAW
Date & Time Acquired: 4/27/2009 5:56:25 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:5347.595 C9-C10 Aromatics Amount: 1.63232

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.382	1.89	1.894	20391	6.419	
Toluene	11.4	11.4	11.4	255	.5	U
Ethylbenzene	15.035	15.035	15.035	113	.5	U
m+p-Xylenes	15.281	15.281	15.281	237	.5	U
o-Xylene	15.976	15.976	15.976	128	.5	U
124-Trimethylbenzene	17.901	17.901	17.901	93	2.	U
Naphthalene	20.751	20.751	20.751	55	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.276	50.	56.058	112.12	70-130

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B09041742-002F

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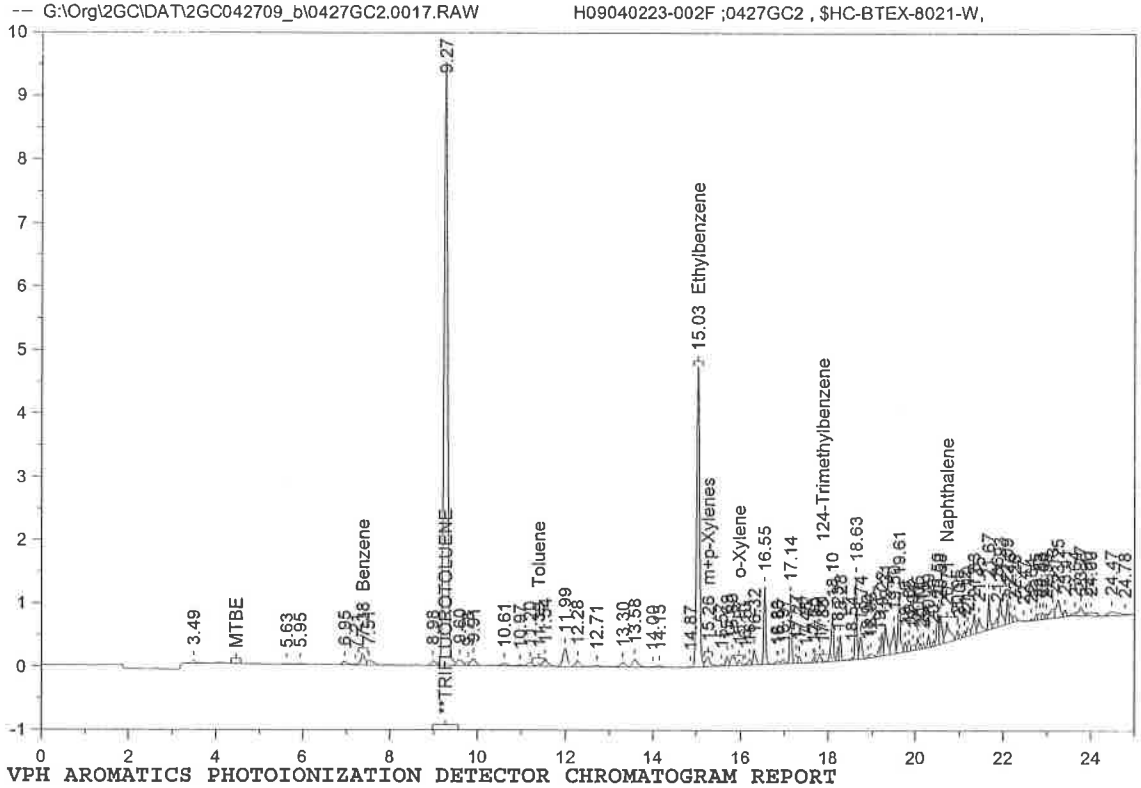

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-002F ;0427GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042709_b\0427GC2.0017.RAW
Date & Time Acquired: 4/27/2009 7:56:13 PM
Method File: G:\Org\2GC\Methods\04270917.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:37720.36 C9-C10 Aromatics Amount: 11.5139

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.378	7.378	7.378	1069	.5	U
Toluene	11.393	11.393	11.393	216	.5	U
Ethylbenzene	15.031	-5.76	-5.764	20537	6.685	
m+p-Xylenes	15.262	15.262	15.262	1234	.5	U
o-Xylene	15.972	15.972	15.972	331	.5	U
124-Trimethylbenzene	17.878	17.878	17.878	127	2.	U
Naphthalene	20.715	-11.49	-11.448	2169	.69	J

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.267	50.	54.017	108.04	70-130

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B09041742-003F

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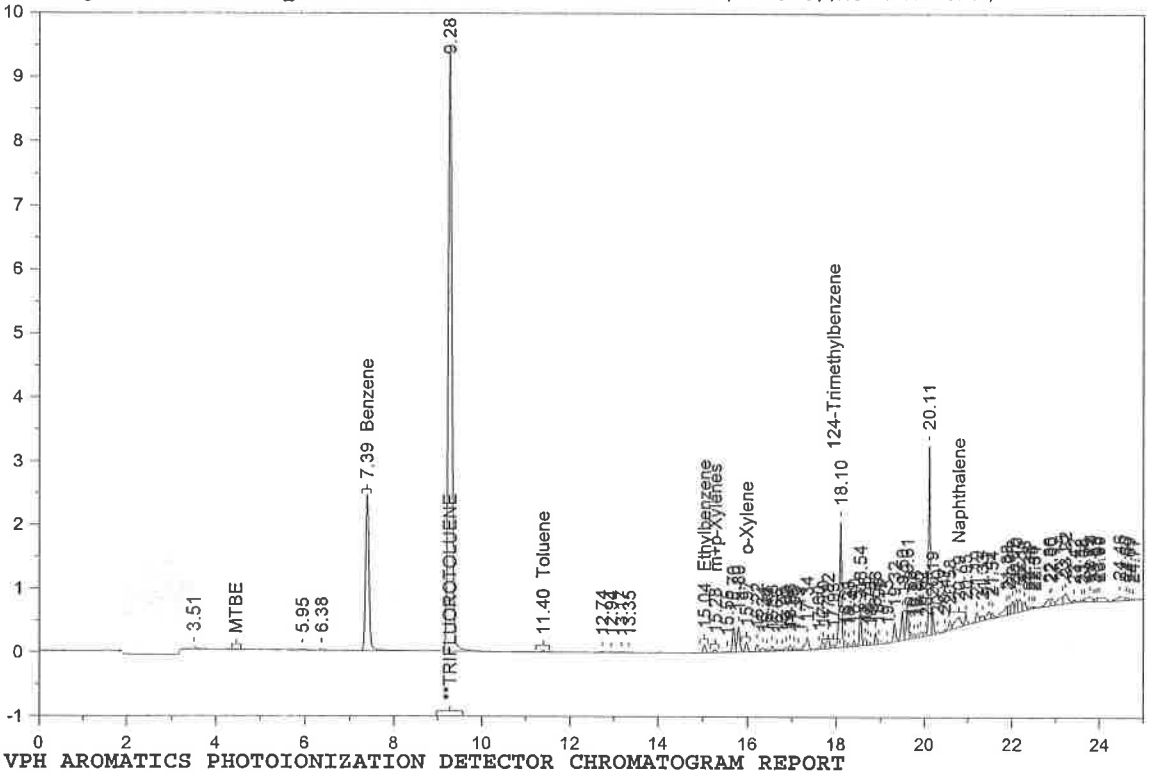

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-003F ;0427GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042709_b\0427GC2.0013.RAW
Date & Time Acquired: 4/27/2009 5:16:34 PM
Method File: G:\Org\2GC\Methods\04270913.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:32714.17 C9-C10 Aromatics Amount: 9.985794

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.387	1.89	1.889	13437	4.23	
Toluene	11.404	11.404	11.404	152	.5	U
Ethylbenzene	15.04	15.04	15.04	580	.5	U
m+p-Xylenes	15.285	15.285	15.285	245	.5	U
o-Xylene	15.975	15.975	15.975	609	.5	U
124-Trimethylbenzene	17.932	17.932	17.932	263	2.	U
Naphthalene	20.789	20.789	20.789	1624	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.275	50.	53.461	106.92	70-130

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B09041742-004F

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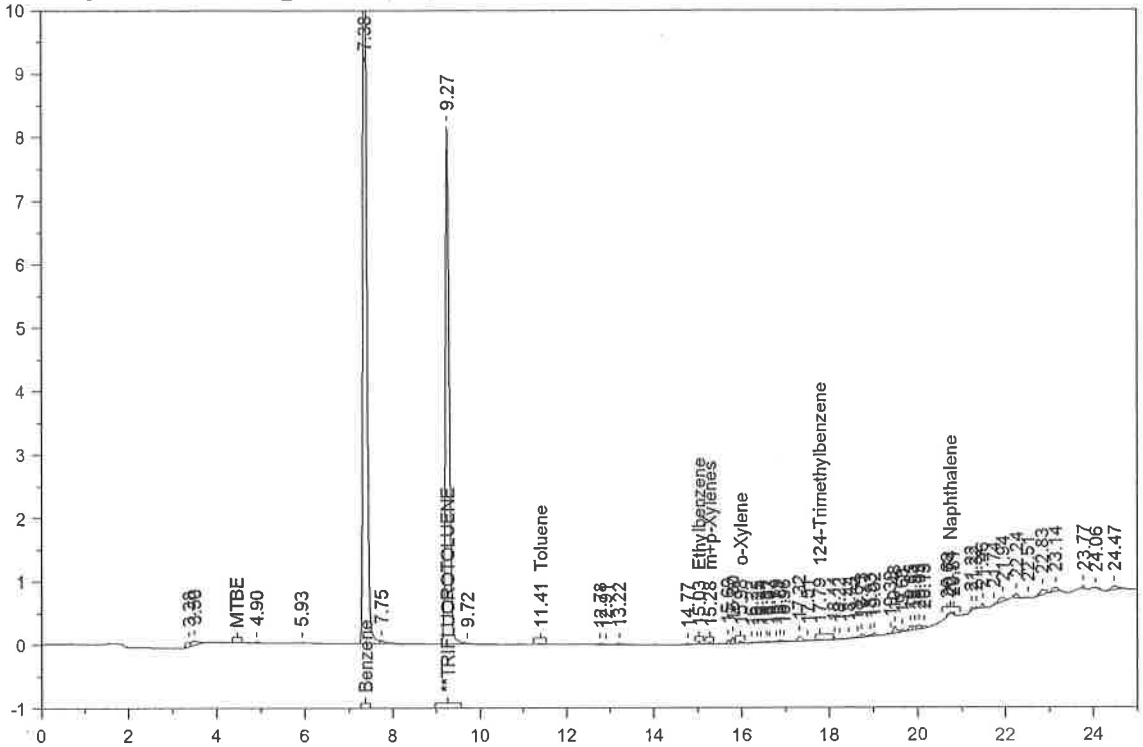

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-004F ;0427GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042709_b\0427GC2.0015.RAW
Date & Time Acquired: 4/27/2009 6:36:01 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:4971.435 C9-C10 Aromatics Amount: 1.517499

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.376	1.89	1.892	78775	24.799	
Toluene	11.407	11.407	11.407	106	.5	U
Ethylbenzene	15.031	15.031	15.031	227	.5	U
m+p-Xylenes	15.277	15.277	15.277	134	.5	U
o-Xylene	15.982	15.982	15.982	186	.5	U
124-Trimethylbenzene	17.789	17.789	17.789	55	2.	U
Naphthalene	20.743	20.743	20.743	52	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.268	50.	47.241	94.48	70-130

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B09041742-005F

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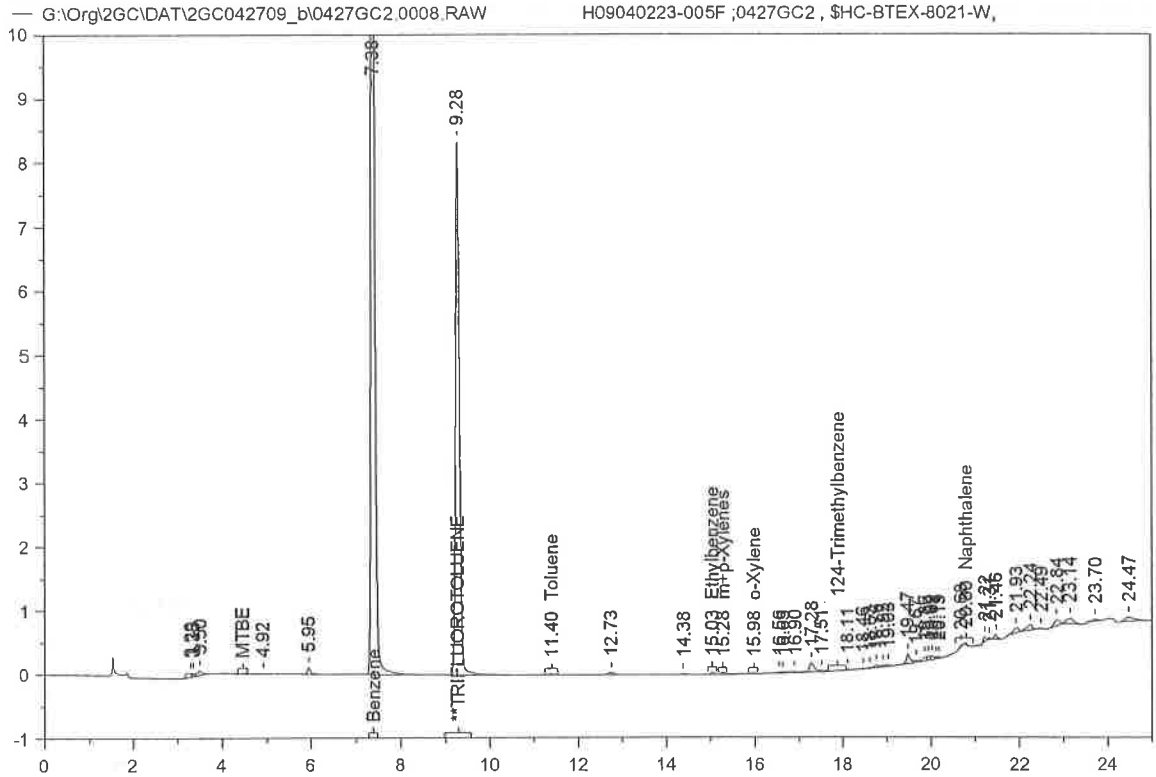

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT
Sample Name: H09040223-005F ;0427GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042709_b\0427GC2.0008.RAW
Date & Time Acquired: 4/27/2009 1:54:23 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:5142.973 C9-C10 Aromatics Amount: 1.56986

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.38	1.89	1.896	104812	32.996	
Toluene	11.398	11.398	11.398	118	.5	U
Ethylbenzene	15.032	15.032	15.032	219	.5	U
m+p-Xylenes	15.283	15.283	15.283	173	.5	U
o-Xylene	15.977	15.977	15.977	102	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	20.797	20.797	20.797	88	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.276	50.	48.396	96.79	70-130

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B09041742-006F

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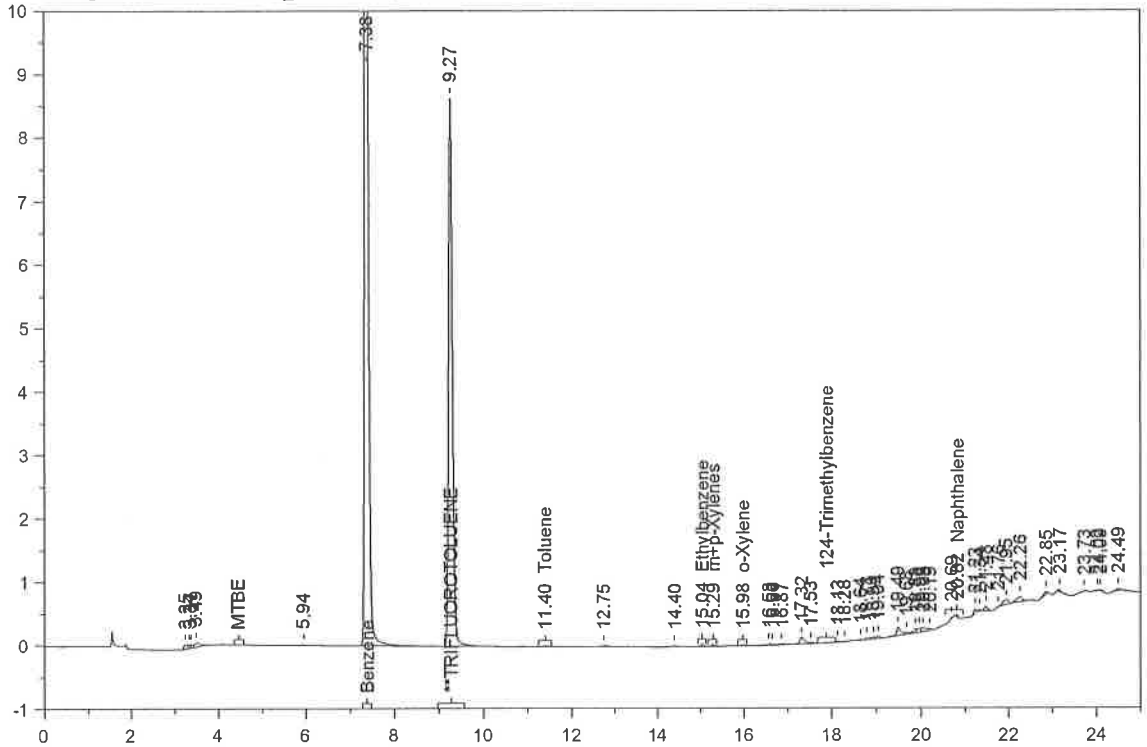

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-006F ;0427GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042709_b\0427GC2.0009.RAW
Date & Time Acquired: 4/27/2009 2:33:55 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:4633.376 C9-C10 Aromatics Amount: 1.414309

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.377	1.89	1.896	105275	33.142	
Toluene	11.401	11.401	11.401	102	.5	U
Ethylbenzene	15.044	15.044	15.044	217	.5	U
m+p-Xylenes	15.294	15.294	15.294	170	.5	U
o-Xylene	15.979	15.979	15.979	105	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	20.818	20.818	20.818	101	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.273	50.	49.94	99.88	70-130

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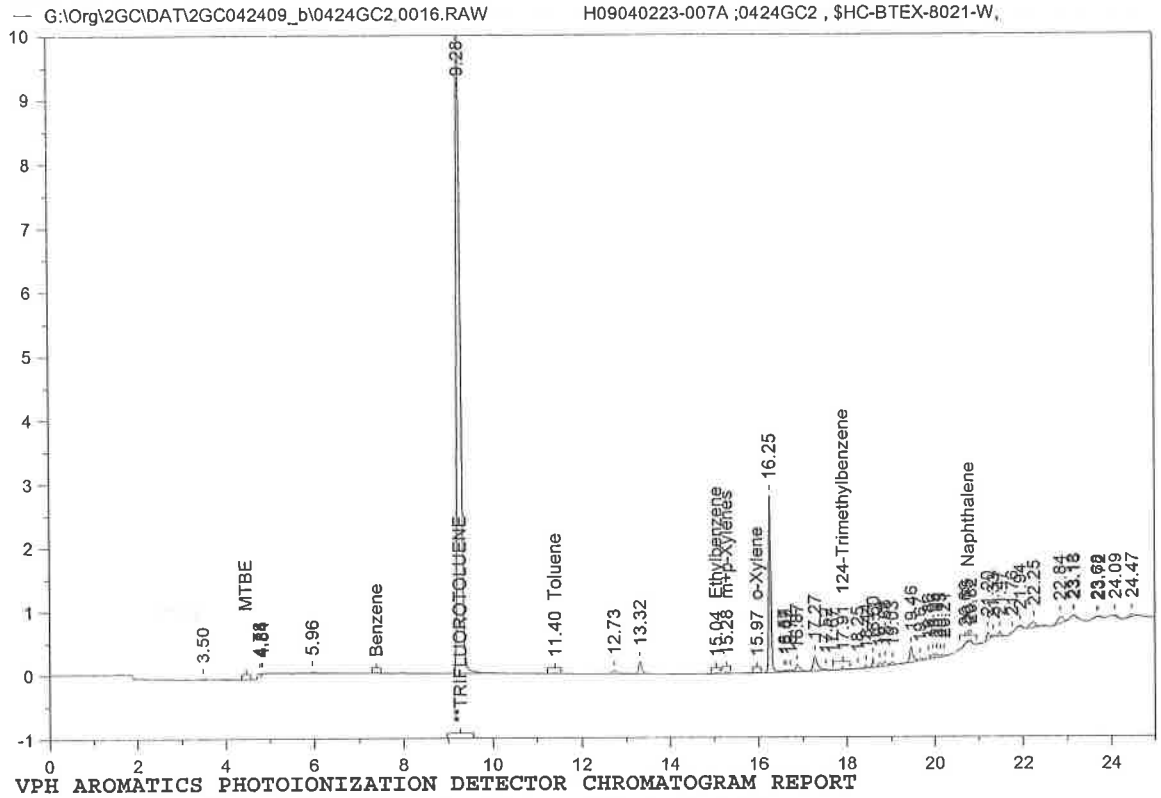
B09041742-007A



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-007A ;0424GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042409_b\0424GC2.0016.RAW
Date & Time Acquired: 4/24/2009 9:07:13 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:17218.78 C9-C10 Aromatics Amount: 5.255925

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	11.403	11.403	11.403	64	.5	U
Ethylbenzene	15.04	15.04	15.04	71	.5	U
m+p-Xylenes	15.283	15.283	15.283	155	.5	U
o-Xylene	15.965	15.965	15.965	68	.5	U
124-Trimethylbenzene	17.907	17.907	17.907	160	2.	U
Naphthalene	20.755	20.755	20.755	55	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.277	50.	61.1	122.2	70-130

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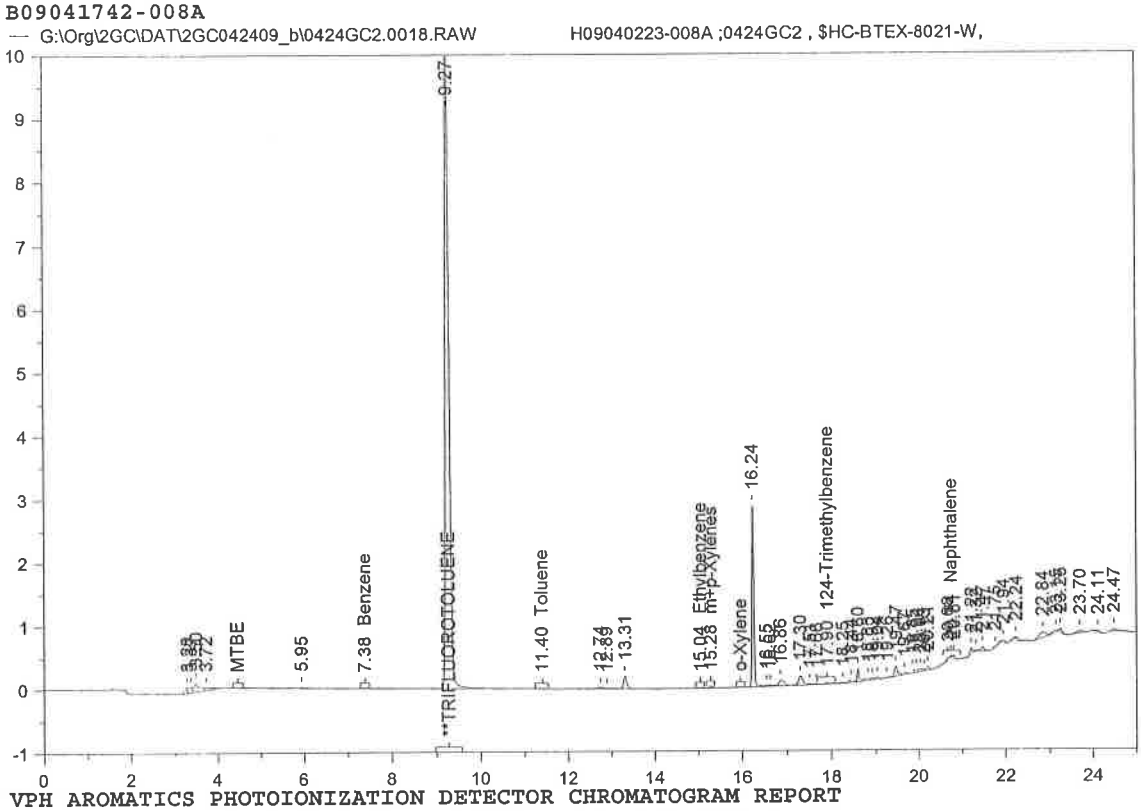
B09041742-008A



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-008A ;0424GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042409_b\0424GC2.0018.RAW
Date & Time Acquired: 4/24/2009 10:27:22 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:15853.63 C9-C10 Aromatics Amount: 4.83922

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.384	7.384	7.384	59	.5	U
Toluene	11.402	11.402	11.402	72	.5	U
Ethylbenzene	15.038	15.038	15.038	70	.5	U
m+p-Xylenes	15.278	15.278	15.278	157	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	17.904	17.904	17.904	120	2.	U
Naphthalene	20.744	20.744	20.744	51	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.271	50.	60.217	120.43	70-130

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B09041742-009F

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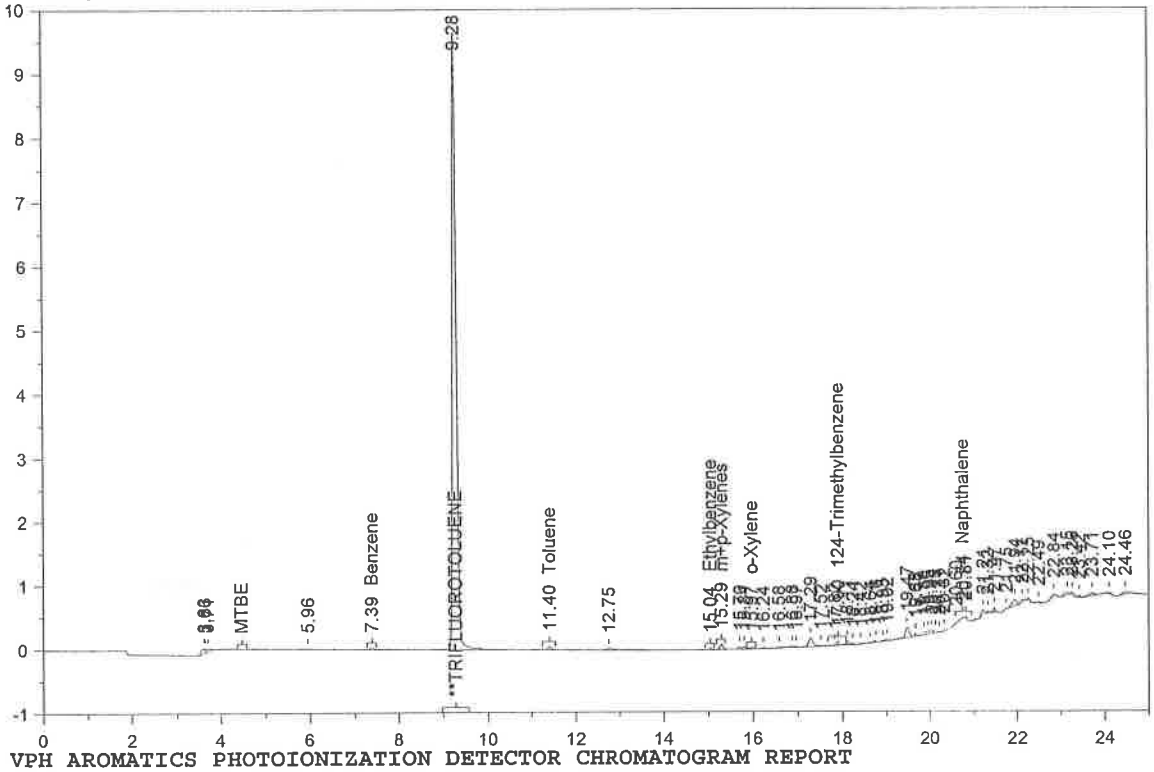

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-009F ;0424GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042409_b\0424GC2.0017.RAW
Date & Time Acquired: 4/24/2009 9:47:24 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:5389.992 C9-C10 Aromatics Amount: 1.645261

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.389	7.389	7.389	169	.5	U
Toluene	11.404	11.404	11.404	282	.5	U
Ethylbenzene	15.044	15.044	15.044	117	.5	U
m+p-Xylenes	15.287	15.287	15.287	386	.5	U
o-Xylene	15.971	15.971	15.971	126	.5	U
124-Trimethylbenzene	17.899	17.899	17.899	200	2.	U
Naphthalene	20.742	20.742	20.742	73	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.276	50.	55.271	110.54	70-130

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B09041742-010F

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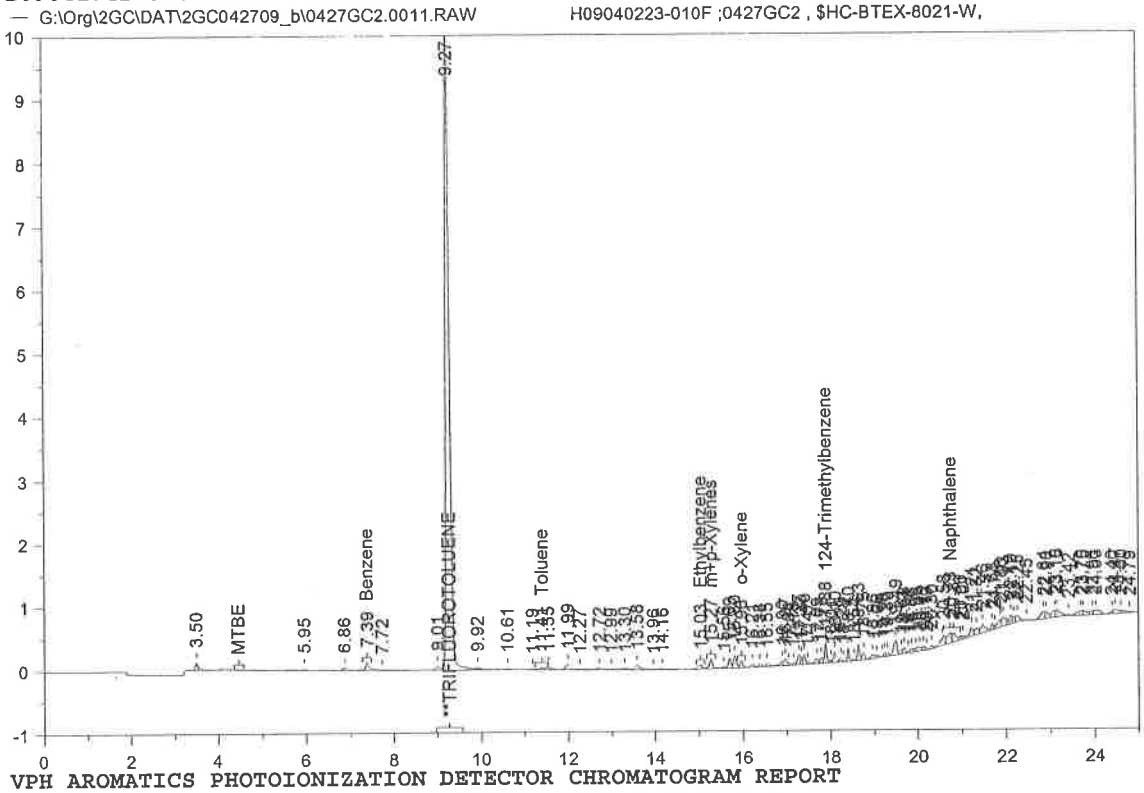

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-010F ;0427GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042709_b\0427GC2.0011.RAW
Date & Time Acquired: 4/27/2009 3:57:01 PM
Method File: G:\Org\2GC\Methods\04270911.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:12608.28 C9-C10 Aromatics Amount: 3.848599

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.387	7.387	7.387	808	.5	U
Toluene	11.405	11.405	11.405	185	.5	U
Ethylbenzene	15.03	15.03	15.03	332	.5	U
m+p-Xylenes	15.272	15.272	15.272	748	.5	U
o-Xylene	15.962	15.962	15.962	417	.5	U
124-Trimethylbenzene	17.88	17.88	17.88	1032	2.	U
Naphthalene	20.729	20.729	20.729	1110	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.274	50.	58.991	117.98	70-130

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B09041742-011F

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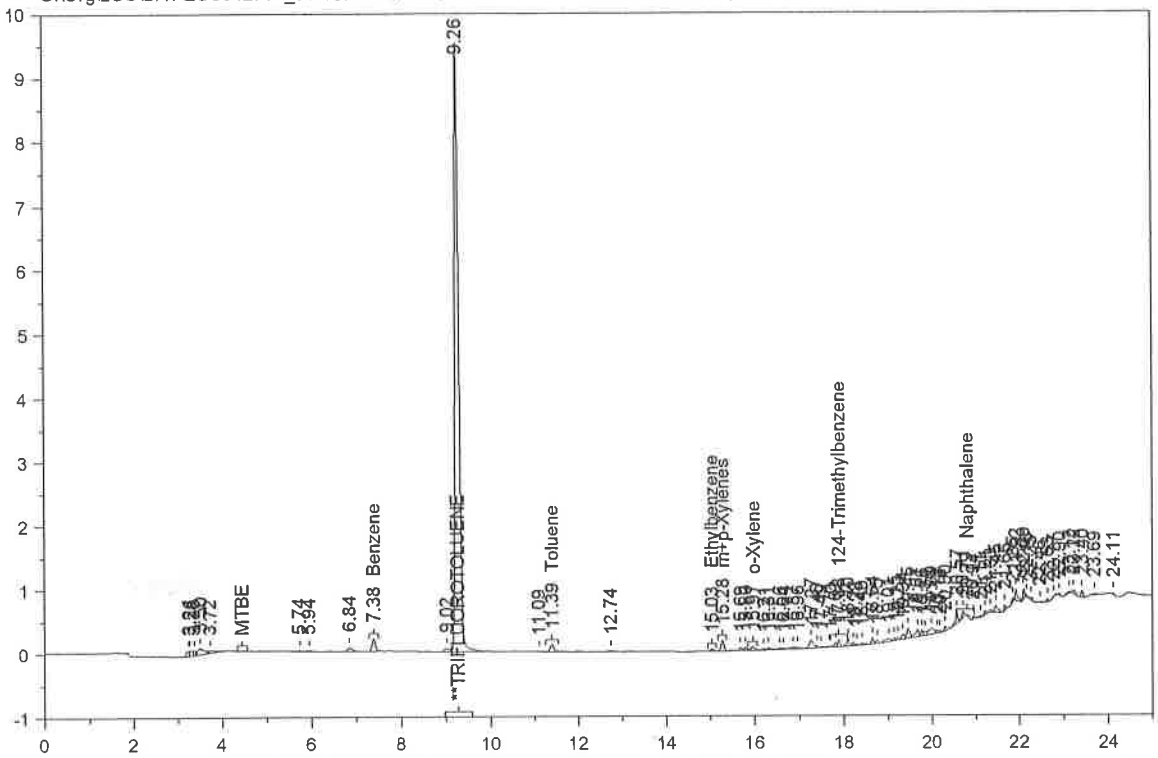

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT
Sample Name: H09040223-011F ;0427GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042709_b\0427GC2.0012.RAW
Date & Time Acquired: 4/27/2009 4:36:37 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:8227.943 C9-C10 Aromatics Amount: 2.511528

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.375	7.375	7.375	1014	.5	U
Toluene	11.394	11.394	11.394	645	.5	U
Ethylbenzene	15.032	15.032	15.032	172	.5	U
m+p-Xylenes	15.276	15.276	15.276	801	.5	U
o-Xylene	15.969	15.969	15.969	276	.5	U
124-Trimethylbenzene	17.881	17.881	17.881	313	2.	U
Naphthalene	20.795	20.795	20.795	158	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.265	50.	54.998	110.	70-130

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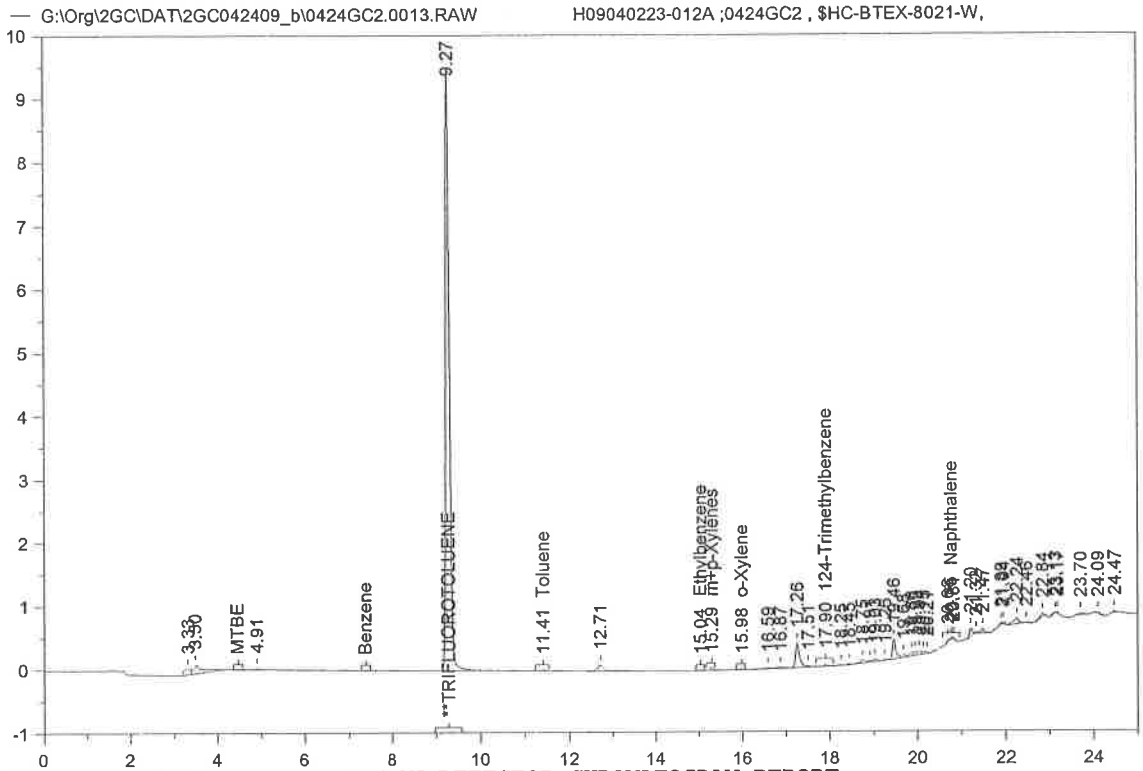
B09041742-012A



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-012A ;0424GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042409_b\0424GC2.0013.RAW
Date & Time Acquired: 4/24/2009 7:05:58 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:7446.533 C9-C10 Aromatics Amount: 2.273007

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	11.408	11.408	11.408	71	.5	U
Ethylbenzene	15.038	15.038	15.038	72	.5	U
m+p-Xylenes	15.293	15.293	15.293	197	.5	U
o-Xylene	15.983	15.983	15.983	64	.5	U
124-Trimethylbenzene	17.905	17.905	17.905	139	2.	U
Naphthalene	20.754	20.754	20.754	50	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.275	50.	54.83	109.66	70-130

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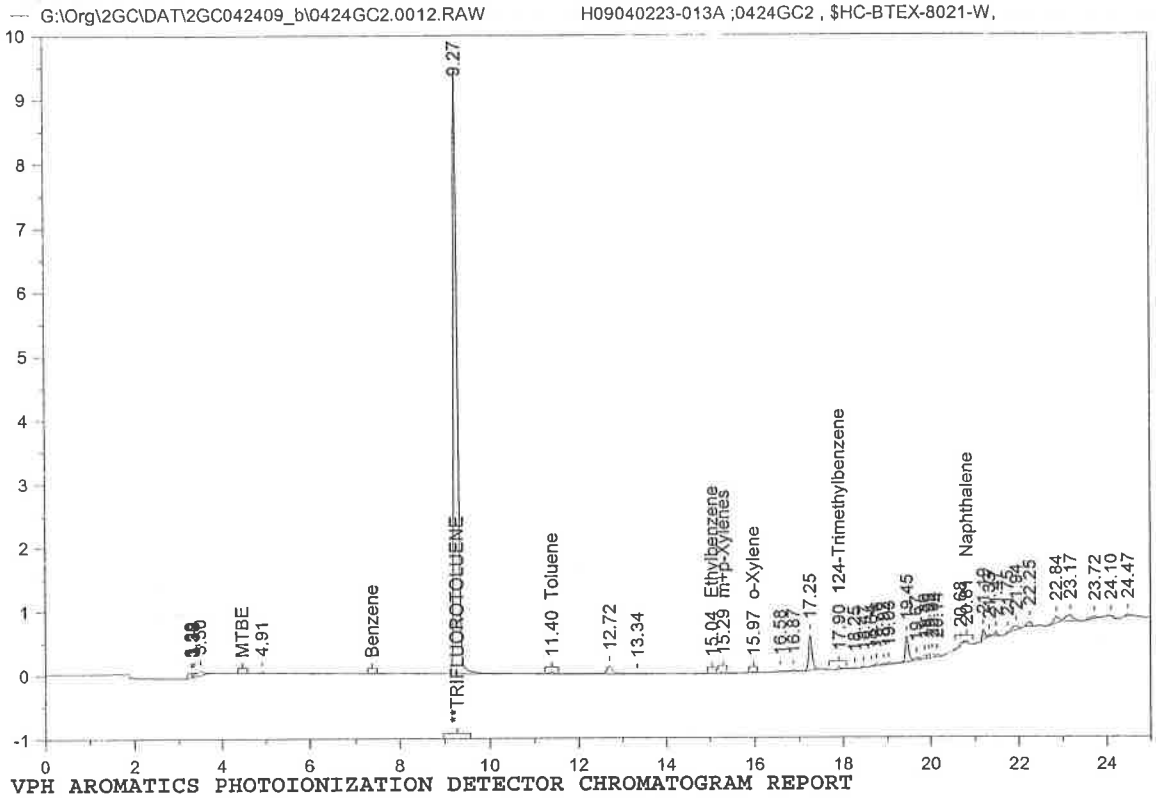
B09041742-013A



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-013A ;0424GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042409_b\0424GC2.0012.RAW
Date & Time Acquired: 4/24/2009 6:26:21 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:8359.974 C9-C10 Aromatics Amount: 2.551829

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	11.401	11.401	11.401	168	.5	U
Ethylbenzene	15.042	15.042	15.042	81	.5	U
m+p-Xylenes	15.293	15.293	15.293	217	.5	U
o-Xylene	15.974	15.974	15.974	65	.5	U
124-Trimethylbenzene	17.903	17.903	17.903	164	2.	U
Naphthalene	20.815	20.815	20.815	87	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.275	50.	53.94	107.88	70-130

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B09041742-014A

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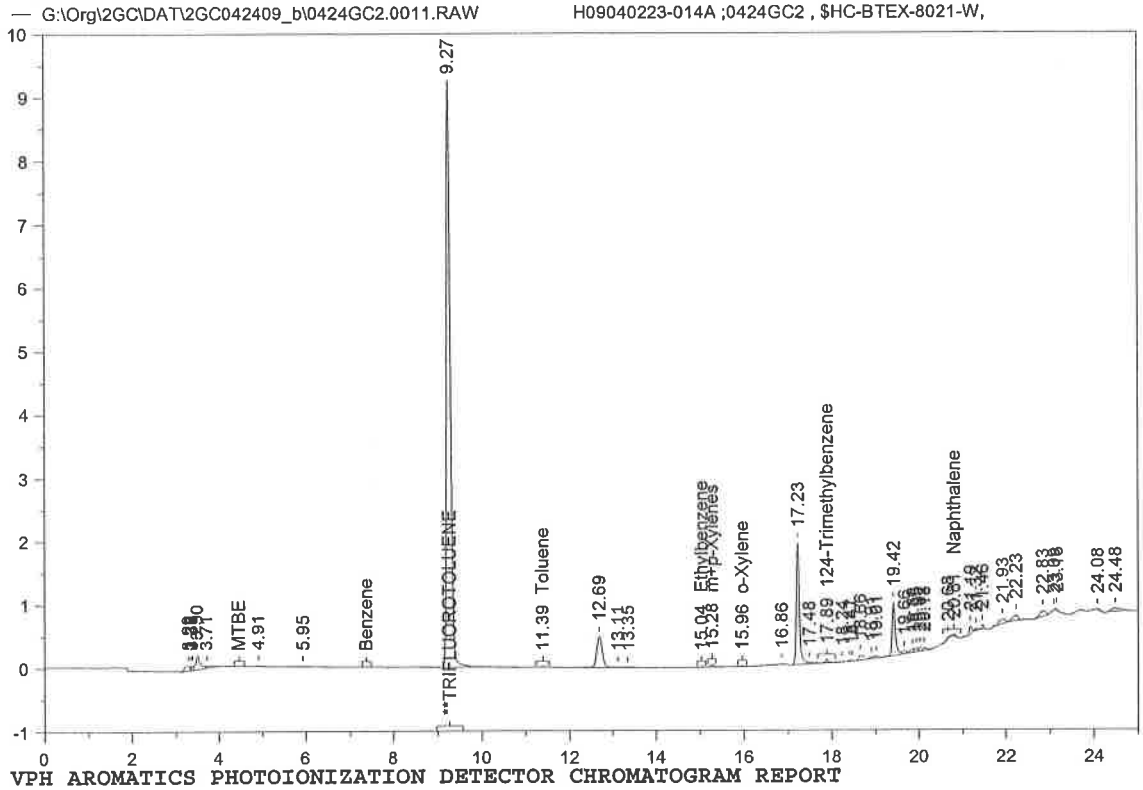

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H09040223-014A ;0424GC2 , $HC-BTEX-8021-W,
Raw File: G:\Org\2GC\DAT\2GC042409_b\0424GC2.0011.RAW
Date & Time Acquired: 4/24/2009 5:46:33 PM
Method File: G:\Org\2GC\Methods\lavar33-1.met
Calibration File: G:\Org\2GC\Cals\Vhn040109-1.cal
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C9 to C10 Aromatic Hydrocarbons: 655.2142
Rt range for C9 to C10 Aromatics: 16.06 to 20.56
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:16911.87 C9-C10 Aromatics Amount: 5.162242

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	11.39	11.39	11.39	95	.5	U
Ethylbenzene	15.036	15.036	15.036	84	.5	U
m+p-Xylenes	15.277	15.277	15.277	216	.5	U
o-Xylene	15.964	15.964	15.964	78	.5	U
124-Trimethylbenzene	17.888	17.888	17.888	184	2.	U
Naphthalene	20.808	20.808	20.808	94	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.27	50.	52.948	105.9	70-130

Energy Laboratories Inc
Workorder Receipt Checklist

B09041742

DOWL HKM

Login completed by: Jill M. Lippard

Date and Time Received: 4/17/2009 5:35 PM

Reviewed by: Denise Ruby

Received by: klb

Reviewed Date: 4/20/2009 10:18:00 AM

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	3°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Contact and Corrective Action Comments:

Samples for dissolved metals/hardness were subsampled, filtered and preserved with 2 mL HNO3 in lab upon receipt to pH <2.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print)
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

RUSH: Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand

Cooler ID(s):

Receipt Temp 3 °C

On Ice: Yes No

Custody Seal Y N

Intact Y N

Signature Match Y N

ANALYSIS REQUESTED

Number of Containers; Sample Type: A W S V B O; Air Water Solids/Solids Vegetation Bioassay Other

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	LABORATORY USE ONLY
1	M-28	4-15-09	11:20	Water												B904174 2-1
1	PNR-5		14:20	Water												-2
1	USGS 93-3		1500	Water												-3
2	M-31		1615	Water												-4
2	PNR-7		1715	Water												-5
2	PNR-7D	4-15-09	1730	Water												-6
2	Rinsate QC/QA		1745	Water									X			-7
2	Equipment QC/QA		1750	Water									X			-8
	9			Water												
	10			Water												

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
[illegible]	4/17/09	17:35			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: [illegible]	4/17/09	17:35

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print)
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

RUSH: Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by:

Cooler ID(s):

Receipt Temp _____ °C

On Ice: Yes No

Custody Seal Y N

Intact Y N

Signature Match Y N

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	LABORATORY USE ONLY
3	1 PNR-14	4-16-09	1400	Water												0904174 2 -9
3	2 PNR-15		1430	Water												-10
3	3 PNR-23		1500	Water												-11
	4			Water												
	5 TB1 TS0243	4-7-09		Water												-12
	6 TB2 TS0243	4-1-09		Water												-13
	7 TB3 TS0243	4-7-09		Water												-14
	8			Water												
	9			Water												
	10			Water												

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
[illegible]	4-17-09	17:35			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: [illegible] Buehler	Date/Time: 4/17/09	Signature: 17:35

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
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ANALYTICAL SUMMARY REPORT

May 22, 2009

Charlie Peterson
DOWL HKM
PO Box 31318
Billings, MT 59107-1318

Workorder No.: B09042302 Quote ID: B78

Project Name: Pioneer Natural Resources-Poplar Biere Well Site

Energy Laboratories Inc received the following 58 samples for DOWL HKM on 4/24/2009 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B09042302-001	USGS-06-2	04/18/09 13:50	04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-002	M-80	04/18/09 15:30	04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-003	USGS-93-4A	04/18/09 17:05	04/24/09	Aqueous	Same As Above
B09042302-004	USGS-06-8	04/19/09 13:05	04/24/09	Aqueous	Same As Above

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ANALYTICAL SUMMARY REPORT

B09042302-005	USGS-06-11	04/20/09 17:35 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-006	PNR-12	04/20/09 18:10 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-007	MOC-3	04/20/09 19:05 04/24/09	Aqueous	Same As Above
B09042302-008	MOC-1B	04/21/09 12:45 04/24/09	Aqueous	Same As Above
B09042302-009	PNR-36-07	04/21/09 14:35 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-010	PNR-20	04/21/09 15:40 04/24/09	Aqueous	Same As Above
B09042302-011	PNR-21	04/21/09 16:35 04/24/09	Aqueous	Same As Above
B09042302-012	Whitmer	04/21/09 19:00 04/24/09	Aqueous	Same As Above
B09042302-013	PNR-39-08	04/22/09 14:40 04/24/09	Aqueous	Same As Above
B09042302-014	PNR-34-07	04/22/09 16:15 04/24/09	Aqueous	Same As Above

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ANALYTICAL SUMMARY REPORT

B09042302-015 MOC-20A	04/22/09 11:00 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-016 PNR-10	04/18/09 14:05 04/24/09	Aqueous	Same As Above
B09042302-017 LAW-M03	04/18/09 15:40 04/24/09	Aqueous	Same As Above
B09042302-018 PNR-9	04/18/09 16:20 04/24/09	Aqueous	Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia
B09042302-019 PNR-13	04/18/09 17:55 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-020 PNR-28	04/19/09 11:10 04/24/09	Aqueous	Same As Above
B09042302-021 PNR-27	04/19/09 12:50 04/24/09	Aqueous	Same As Above
B09042302-022 PNR-19	04/19/09 13:55 04/24/09	Aqueous	Same As Above
B09042302-023 PNR-8	04/19/09 14:15 04/24/09	Aqueous	Same As Above
B09042302-024 LAW-M05	04/20/09 17:30 04/24/09	Aqueous	Same As Above

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ANALYTICAL SUMMARY REPORT

B09042302-025	LAW-M01	04/20/09 14:30 04/24/09	Aqueous	Same As Above
B09042302-026	RW-2	04/22/09 19:20 04/24/09	Aqueous	Anions by ion chromatography Conductivity Purgeable Aromatics pH
B09042302-027	RW-3	04/22/09 19:05 04/24/09	Aqueous	Same As Above
B09042302-028	RW-4	04/22/09 18:55 04/24/09	Aqueous	Same As Above
B09042302-029	RW-5	04/22/09 18:40 04/24/09	Aqueous	Same As Above
B09042302-030	RW-6	04/22/09 17:00 04/24/09	Aqueous	Same As Above
B09042302-031	RW-7	04/22/09 17:15 04/24/09	Aqueous	Same As Above
B09042302-032	RW-8	04/22/09 16:45 04/24/09	Aqueous	Same As Above
B09042302-033	RW-9	04/22/09 17:45 04/24/09	Aqueous	Same As Above
B09042302-034	RW-10	04/22/09 18:00 04/24/09	Aqueous	Same As Above
B09042302-035	PNR-35-07	04/20/09 18:30 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-036	PNR-29	04/21/09 11:30 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved

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ANALYTICAL SUMMARY REPORT

B09042302-037	MOC-20B	04/21/09 12:40 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-038	MOC-2	04/21/09 13:40 04/24/09	Aqueous	Same As Above
B09042302-039	M-27	04/22/09 9:00 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-040	PNR-38-08	04/21/09 16:30 04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-041	MOC-4	04/23/09 13:00 04/24/09	Aqueous	Same As Above

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ANALYTICAL SUMMARY REPORT

B09042302-042	M-18	04/22/09 15:00	04/24/09	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Mineral Balance Review Anion - Cation Balance Anions by ion chromatography Conductivity Fluoride Purgeable Aromatics Hydrocarbons, Total Petroleum Hardness as CaCO3 Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 Preparation, Dissolved Filtration Solids, Total Dissolved
B09042302-043	Trip Blank 1 Lot040709 B-TS SHP0243	04/18/09 13:50	04/24/09	Trip Blank	Purgeable Aromatics
B09042302-044	Trip Blank 2 Lot040709 B-TS SHP0243	04/19/09 13:05	04/24/09	Trip Blank	Same As Above
B09042302-045	Trip Blank 3 Lot040109 B-TS SHP0243	04/20/09 17:35	04/24/09	Trip Blank	Same As Above
B09042302-046	Trip Blank 4 Lot040109 B-TS SHP0243	04/21/09 12:45	04/24/09	Trip Blank	Same As Above
B09042302-047	Trip Blank 5 Lot042009 B-TS SHP0243	04/21/09 16:35	04/24/09	Trip Blank	Same As Above
B09042302-048	Trip Blank 6 Lot042009 B-TS SHP0243	04/22/09 11:00	04/24/09	Trip Blank	Same As Above
B09042302-049	Trip Blank 7 Lot040709 B-TS SHP0243	04/18/09 14:05	04/24/09	Trip Blank	Same As Above
B09042302-050	Trip Blank 8 Lot041009 B-TS SHP0243	04/18/09 16:20	04/24/09	Trip Blank	Same As Above
B09042302-051	Trip Blank 9 Lot041309 B-TS SHP0243	04/19/09 11:10	04/24/09	Trip Blank	Same As Above
B09042302-052	Trip Blank 10 Lot041009 B-TS SHP0243	04/19/09 13:55	04/24/09	Trip Blank	Same As Above
B09042302-053	Trip Blank 11 Lot042009 B-TS SHP0243	04/20/09 14:30	04/24/09	Trip Blank	Same As Above
B09042302-054	Trip Blank 12 Lot040709 B-TS SHP0243	04/22/09 18:40	04/24/09	Trip Blank	Same As Above
B09042302-055	Trip Blank 13 Lot042009 B-TS SHP0243	04/22/09 16:45	04/24/09	Trip Blank	Same As Above
B09042302-056	Trip Blank 14 Lot041309 B-TS SHP0243	04/20/09 18:30	04/24/09	Trip Blank	Same As Above
B09042302-057	Trip Blank 15 Lot042009 B-TS SHP0243	04/21/09 12:40	04/24/09	Trip Blank	Same As Above
B09042302-058	Trip Blank 16 Lot042009 B-TS SHP0243	04/21/09 9:00	04/24/09	Trip Blank	Same As Above

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

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ANALYTICAL SUMMARY REPORT

Report Approved By: _____

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-001
Client Sample ID: USGS-06-2

Report Date: 05/22/09
Collection Date: 04/18/09 13:50
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	04/24/09 16:43 / qed
Conductivity	5950	umhos/cm		1		A2510 B	04/24/09 16:38 / qed
Solids, Total Dissolved TDS @ 180 C	4250	mg/L		10		A2540 C	04/24/09 17:15 / afb
INORGANICS							
Alkalinity, Total as CaCO3	315	mg/L		4		A2320 B	04/28/09 02:12 / ehb
Bicarbonate as HCO3	384	mg/L		4		A2320 B	04/28/09 02:12 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 02:12 / ehb
Chloride	791	mg/L		1		E300.0	05/05/09 18:51 / eli-h1
Sulfate	1910	mg/L	D	4		E300.0	05/05/09 18:51 / eli-h1
Fluoride	0.5	mg/L		0.1		A4500-F C	04/28/09 02:12 / ehb
Hardness as CaCO3	2400	mg/L		1		A2340 B	05/04/09 06:41 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 09:32 / sam
Nitrogen, Nitrate+Nitrite as N	22.2	mg/L		0.05		E353.2	04/27/09 13:16 / bls
METALS, DISSOLVED							
Calcium	390	mg/L		1		E200.7	05/04/09 06:41 / tao
Magnesium	346	mg/L		1		E200.7	05/04/09 06:41 / tao
Potassium	8	mg/L		1		E200.7	05/04/09 06:41 / tao
Silica	19.1	mg/L	D	0.3		E200.7	05/04/09 06:41 / tao
Sodium	523	mg/L	D	3		E200.7	05/04/09 06:41 / tao
METALS, TOTAL							
Silica	116	mg/L	D	2		E200.7	05/03/09 17:35 / tao
QUALITY CONTROL							
A/C Balance Sigma	-0.82					Calculation	05/08/09 17:29 / rls
Anions	70.0	meq/L		0.01		Calculation	05/08/09 17:29 / rls
Cations	70.9	meq/L		0.01		Calculation	05/08/09 17:29 / rls
A/C Balance	0.69	%				Calculation	05/08/09 17:29 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 21:00 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 21:00 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 21:00 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 21:00 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 21:00 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 21:00 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 21:00 / bw
Surr: Trifluorotoluene	101	%REC		80-120		SW8021B	04/27/09 21:00 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-001
Client Sample ID: USGS-06-2

Report Date: 05/22/09
Collection Date: 04/18/09 13:50
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	7.3	mg/L		1.0		E1664A	04/29/09 16:18 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-002
Client Sample ID: M-80

Report Date: 05/22/09
Collection Date: 04/18/09 15:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500-H B	04/24/09 16:44 / qed
Conductivity	22900	umhos/cm		1		A2510 B	04/24/09 16:38 / qed
Solids, Total Dissolved TDS @ 180 C	13500	mg/L		10		A2540 C	04/24/09 17:25 / afb
INORGANICS							
Alkalinity, Total as CaCO3	178	mg/L		4		A2320 B	04/28/09 02:20 / ehb
Bicarbonate as HCO3	217	mg/L		4		A2320 B	04/28/09 02:20 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 02:20 / ehb
Chloride	7500	mg/L	D	10		E300.0	05/05/09 19:07 / eli-h1
Sulfate	395	mg/L	D	40		E300.0	05/05/09 19:07 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 02:20 / ehb
Hardness as CaCO3	5410	mg/L		1		A2340 B	05/04/09 06:45 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	1.7	mg/L		0.1		E350.1	04/27/09 09:33 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/27/09 13:17 / bls
METALS, DISSOLVED							
Calcium	1050	mg/L		1		E200.7	05/04/09 06:45 / tao
Magnesium	675	mg/L		1		E200.7	05/04/09 06:45 / tao
Potassium	30	mg/L		1		E200.7	05/04/09 06:45 / tao
Silica	10.4	mg/L	D	0.6		E200.7	05/04/09 06:45 / tao
Sodium	2810	mg/L	D	5		E200.7	05/04/09 06:45 / tao
METALS, TOTAL							
Silica	14	mg/L	D	4		E200.7	05/03/09 17:55 / tao
QUALITY CONTROL							
A/C Balance Sigma	-2.16					Calculation	05/08/09 17:29 / rls
Anions	223	meq/L		0.01		Calculation	05/08/09 17:29 / rls
Cations	231	meq/L		0.01		Calculation	05/08/09 17:29 / rls
A/C Balance	1.70	%				Calculation	05/08/09 17:29 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 20:26 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 20:26 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 20:26 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 20:26 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 20:26 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 20:26 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 20:26 / bw
Surr: Trifluorotoluene	106	%REC		80-120		SW8021B	04/27/09 20:26 / bw

Report Definitions:
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D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-002
Client Sample ID: M-80

Report Date: 05/22/09
Collection Date: 04/18/09 15:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:30 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-003
Client Sample ID: USGS-93-4A

Report Date: 05/22/09
Collection Date: 04/18/09 17:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	04/24/09 16:45 / qed
Conductivity	3160	umhos/cm		1		A2510 B	04/24/09 16:39 / qed
Solids, Total Dissolved TDS @ 180 C	2080	mg/L		10		A2540 C	04/24/09 17:24 / afb
INORGANICS							
Alkalinity, Total as CaCO3	811	mg/L		4		A2320 B	04/28/09 02:46 / ehb
Bicarbonate as HCO3	990	mg/L		4		A2320 B	04/28/09 02:46 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 02:46 / ehb
Chloride	30	mg/L		1		E300.0	05/05/09 19:23 / eli-h1
Sulfate	880	mg/L	D	2		E300.0	05/05/09 19:23 / eli-h1
Fluoride	0.4	mg/L		0.1		A4500-F C	04/28/09 02:46 / ehb
Hardness as CaCO3	721	mg/L		1		A2340 B	05/04/09 06:49 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 09:34 / sam
Nitrogen, Nitrate+Nitrite as N	22.2	mg/L		0.05		E353.2	04/27/09 13:19 / bls
METALS, DISSOLVED							
Calcium	131	mg/L		1		E200.7	05/04/09 06:49 / tao
Magnesium	96	mg/L		1		E200.7	05/04/09 06:49 / tao
Potassium	7	mg/L		1		E200.7	05/04/09 06:49 / tao
Silica	23.1	mg/L		0.2		E200.7	05/04/09 06:49 / tao
Sodium	507	mg/L		1		E200.7	05/04/09 06:49 / tao
METALS, TOTAL							
Silica	24	mg/L	D	1		E200.7	05/03/09 17:59 / tao
QUALITY CONTROL							
A/C Balance Sigma	0.53					Calculation	05/08/09 17:29 / rls
Anions	37.0	meq/L		0.01		Calculation	05/08/09 17:29 / rls
Cations	36.6	meq/L		0.01		Calculation	05/08/09 17:29 / rls
A/C Balance	-0.49	%				Calculation	05/08/09 17:29 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 19:52 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 19:52 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 19:52 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 19:52 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 19:52 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 19:52 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 19:52 / bw
Surr: Trifluorotoluene	102	%REC		80-120		SW8021B	04/27/09 19:52 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-003
Client Sample ID: USGS-93-4A

Report Date: 05/22/09
Collection Date: 04/18/09 17:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:32 / mav

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-004
Client Sample ID: USGS-06-8

Report Date: 05/22/09
Collection Date: 04/19/09 13:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	04/24/09 16:46 / qed
Conductivity	1200	umhos/cm		1		A2510 B	04/24/09 16:40 / qed
Solids, Total Dissolved TDS @ 180 C	734	mg/L		10		A2540 C	04/24/09 17:24 / afb
INORGANICS							
Alkalinity, Total as CaCO3	440	mg/L		4		A2320 B	04/28/09 02:55 / ehb
Bicarbonate as HCO3	519	mg/L		4		A2320 B	04/28/09 02:55 / ehb
Carbonate as CO3	9	mg/L		4		A2320 B	04/28/09 02:55 / ehb
Chloride	15	mg/L		1		E300.0	05/05/09 20:13 / eli-h1
Sulfate	168	mg/L		1		E300.0	05/05/09 20:13 / eli-h1
Fluoride	0.5	mg/L		0.1		A4500-F C	04/28/09 02:55 / ehb
Hardness as CaCO3	99	mg/L		1		A2340 B	05/04/09 06:53 / rls
- At the time the Alkalinity was analyzed, the pH was 8.3							
NUTRIENTS							
Nitrogen, Ammonia as N	0.6	mg/L		0.1		E350.1	04/27/09 09:35 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 10:22 / bls
METALS, DISSOLVED							
Calcium	21	mg/L		1		E200.7	05/04/09 06:53 / tao
Magnesium	11	mg/L		1		E200.7	05/04/09 06:53 / tao
Potassium	4	mg/L		1		E200.7	05/04/09 06:53 / tao
Silica	16.3	mg/L		0.2		E200.7	05/04/09 06:53 / tao
Sodium	236	mg/L		1		E200.7	05/04/09 06:53 / tao
METALS, TOTAL							
Silica	16.9	mg/L	D	0.4		E200.7	05/03/09 16:31 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.19					Calculation	05/08/09 17:30 / rls
Anions	12.7	meq/L		0.01		Calculation	05/08/09 17:30 / rls
Cations	12.4	meq/L		0.01		Calculation	05/08/09 17:30 / rls
A/C Balance	-1.45	%				Calculation	05/08/09 17:30 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 19:19 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 19:19 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 19:19 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 19:19 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 19:19 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 19:19 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 19:19 / bw

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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-004
Client Sample ID: USGS-06-8

Report Date: 05/22/09
Collection Date: 04/19/09 13:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	104	%REC		80-120		SW8021B	04/27/09 19:19 / bw
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:20 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-005
Client Sample ID: USGS-06-11

Report Date: 05/22/09
Collection Date: 04/20/09 17:35
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.8	s.u.		0.1		A4500-H B	04/24/09 16:47 / qed
Conductivity	1240	umhos/cm		1		A2510 B	04/24/09 16:40 / qed
Solids, Total Dissolved TDS @ 180 C	751	mg/L		10		A2540 C	04/27/09 09:46 / afb
INORGANICS							
Alkalinity, Total as CaCO3	472	mg/L		4		A2320 B	04/28/09 03:04 / ehb
Bicarbonate as HCO3	575	mg/L		4		A2320 B	04/28/09 03:04 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 03:04 / ehb
Chloride	14	mg/L		1		E300.0	05/15/09 14:18 / kh
Sulfate	166	mg/L		1		E300.0	05/15/09 14:18 / kh
Fluoride	0.4	mg/L		0.1		A4500-F C	04/28/09 03:04 / ehb
Hardness as CaCO3	155	mg/L		1		A2340 B	05/04/09 06:57 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.4	mg/L		0.1		E350.1	04/27/09 09:37 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 10:29 / bls
METALS, DISSOLVED							
Calcium	32	mg/L		1		E200.7	05/04/09 06:57 / tao
Magnesium	18	mg/L		1		E200.7	05/04/09 06:57 / tao
Potassium	4	mg/L		1		E200.7	05/04/09 06:57 / tao
Silica	17.6	mg/L		0.2		E200.7	05/04/09 06:57 / tao
Sodium	222	mg/L		1		E200.7	05/04/09 06:57 / tao
METALS, TOTAL							
Silica	17.9	mg/L	D	0.4		E200.7	05/03/09 16:39 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.37					Calculation	05/19/09 12:14 / klc
Anions	13.3	meq/L		0.01		Calculation	05/19/09 12:14 / klc
Cations	12.9	meq/L		0.01		Calculation	05/19/09 12:14 / klc
A/C Balance	-1.64	%				Calculation	05/19/09 12:14 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/27/09 18:45 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/27/09 18:45 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/27/09 18:45 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/27/09 18:45 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/27/09 18:45 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/27/09 18:45 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/27/09 18:45 / bw
Surr: Trifluorotoluene	104	%REC		80-120		SW8021B	04/27/09 18:45 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-005
Client Sample ID: USGS-06-11

Report Date: 05/22/09
Collection Date: 04/20/09 17:35
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:17 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-006
Client Sample ID: PNR-12

Report Date: 05/22/09
Collection Date: 04/20/09 18:10
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/24/09 16:47 / qed
Conductivity	4910	umhos/cm		1		A2510 B	04/24/09 16:42 / qed
Solids, Total Dissolved TDS @ 180 C	3860	mg/L		10		A2540 C	04/27/09 09:49 / afb
INORGANICS							
Alkalinity, Total as CaCO3	606	mg/L		4		A2320 B	04/28/09 03:13 / ehb
Bicarbonate as HCO3	739	mg/L		4		A2320 B	04/28/09 03:13 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 03:13 / ehb
Chloride	58	mg/L		1		E300.0	05/05/09 21:18 / eli-h1
Sulfate	2100	mg/L	D	4		E300.0	05/05/09 21:18 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 03:13 / ehb
Hardness as CaCO3	2490	mg/L		1		A2340 B	05/04/09 07:01 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 09:40 / sam
Nitrogen, Nitrate+Nitrite as N	157	mg/L	D	0.2		E353.2	04/28/09 10:31 / bls
METALS, DISSOLVED							
Calcium	415	mg/L		1		E200.7	05/04/09 07:01 / tao
Magnesium	354	mg/L		1		E200.7	05/04/09 07:01 / tao
Potassium	10	mg/L		1		E200.7	05/04/09 07:01 / tao
Silica	21.5	mg/L		0.2		E200.7	05/04/09 07:01 / tao
Sodium	336	mg/L		1		E200.7	05/04/09 07:01 / tao
METALS, TOTAL							
Silica	23	mg/L	D	1		E200.7	05/03/09 18:03 / tao
QUALITY CONTROL							
A/C Balance Sigma	3.47					Calculation	05/08/09 17:30 / rls
Anions	68.8	meq/L		0.01		Calculation	05/08/09 17:30 / rls
Cations	64.7	meq/L		0.01		Calculation	05/08/09 17:30 / rls
A/C Balance	-3.05	%				Calculation	05/08/09 17:30 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 02:36 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 02:36 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 02:36 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 02:36 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 02:36 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 02:36 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 02:36 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/28/09 02:36 / bw

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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-006
Client Sample ID: PNR-12

Report Date: 05/22/09
Collection Date: 04/20/09 18:10
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:19 / mav

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-007
Client Sample ID: MOC-3

Report Date: 05/22/09
Collection Date: 04/20/09 19:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.1		A4500-H B	04/24/09 16:49 / qed
Conductivity	3900	umhos/cm		1		A2510 B	04/24/09 16:44 / qed
Solids, Total Dissolved TDS @ 180 C	3140	mg/L		10		A2540 C	04/27/09 09:47 / afb
INORGANICS							
Alkalinity, Total as CaCO3	360	mg/L		4		A2320 B	04/28/09 03:21 / ehb
Bicarbonate as HCO3	439	mg/L		4		A2320 B	04/28/09 03:21 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 03:21 / ehb
Chloride	70	mg/L		1		E300.0	05/05/09 22:08 / eli-h1
Sulfate	1900	mg/L	D	4		E300.0	05/05/09 22:08 / eli-h1
Fluoride	0.5	mg/L		0.1		A4500-F C	04/28/09 03:21 / ehb
Hardness as CaCO3	1600	mg/L		1		A2340 B	05/04/09 07:06 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 09:44 / sam
Nitrogen, Nitrate+Nitrite as N	14.2	mg/L		0.05		E353.2	04/28/09 10:32 / bls
METALS, DISSOLVED							
Calcium	306	mg/L		1		E200.7	05/04/09 07:06 / tao
Magnesium	204	mg/L		1		E200.7	05/04/09 07:06 / tao
Potassium	11	mg/L		1		E200.7	05/04/09 07:06 / tao
Silica	19.2	mg/L		0.2		E200.7	05/04/09 07:06 / tao
Sodium	368	mg/L		1		E200.7	05/04/09 07:06 / tao
METALS, TOTAL							
Silica	20	mg/L	D	1		E200.7	05/03/09 18:07 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.63					Calculation	05/08/09 17:30 / rls
Anions	49.8	meq/L		0.01		Calculation	05/08/09 17:30 / rls
Cations	48.4	meq/L		0.01		Calculation	05/08/09 17:30 / rls
A/C Balance	-1.46	%				Calculation	05/08/09 17:30 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 03:10 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 03:10 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 03:10 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 03:10 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 03:10 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 03:10 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 03:10 / bw
Surr: Trifluorotoluene	102	%REC		80-120		SW8021B	04/28/09 03:10 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-007
Client Sample ID: MOC-3

Report Date: 05/22/09
Collection Date: 04/20/09 19:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:25 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-008
Client Sample ID: MOC-1B

Report Date: 05/22/09
Collection Date: 04/21/09 12:45
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.1		A4500-H B	04/24/09 16:49 / qed
Conductivity	4360	umhos/cm		1		A2510 B	04/24/09 16:45 / qed
Solids, Total Dissolved TDS @ 180 C	3540	mg/L		10		A2540 C	04/27/09 09:46 / afb
INORGANICS							
Alkalinity, Total as CaCO3	432	mg/L		4		A2320 B	04/28/09 03:31 / ehb
Bicarbonate as HCO3	527	mg/L		4		A2320 B	04/28/09 03:31 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 03:31 / ehb
Chloride	68	mg/L		1		E300.0	05/05/09 22:24 / eli-h1
Sulfate	2230	mg/L	D	4		E300.0	05/05/09 22:24 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 03:31 / ehb
Hardness as CaCO3	2070	mg/L		1		A2340 B	05/04/09 07:10 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 09:45 / sam
Nitrogen, Nitrate+Nitrite as N	28.9	mg/L		0.05		E353.2	04/28/09 10:33 / bls
METALS, DISSOLVED							
Calcium	356	mg/L		1		E200.7	05/04/09 07:10 / tao
Magnesium	286	mg/L		1		E200.7	05/04/09 07:10 / tao
Potassium	10	mg/L		1		E200.7	05/04/09 07:10 / tao
Silica	23.3	mg/L		0.2		E200.7	05/04/09 07:10 / tao
Sodium	368	mg/L		1		E200.7	05/04/09 07:10 / tao
METALS, TOTAL							
Silica	24	mg/L	D	1		E200.7	05/03/09 18:11 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.50					Calculation	05/08/09 17:30 / rls
Anions	59.1	meq/L		0.01		Calculation	05/08/09 17:30 / rls
Cations	57.5	meq/L		0.01		Calculation	05/08/09 17:30 / rls
A/C Balance	-1.32	%				Calculation	05/08/09 17:30 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 03:44 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 03:44 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 03:44 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 03:44 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 03:44 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 03:44 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 03:44 / bw
Surr: Trifluorotoluene	101	%REC		80-120		SW8021B	04/28/09 03:44 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-008
Client Sample ID: MOC-1B

Report Date: 05/22/09
Collection Date: 04/21/09 12:45
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:34 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-009
Client Sample ID: PNR-36-07

Report Date: 05/22/09
Collection Date: 04/21/09 14:35
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.		0.1		A4500-H B	04/24/09 17:07 / qed
Conductivity	3670	umhos/cm		1		A2510 B	04/24/09 17:09 / qed
Solids, Total Dissolved TDS @ 180 C	2480	mg/L		10		A2540 C	04/27/09 15:09 / afb
INORGANICS							
Alkalinity, Total as CaCO3	410	mg/L		4		A2320 B	04/28/09 19:24 / ehb
Bicarbonate as HCO3	500	mg/L		4		A2320 B	04/28/09 19:24 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 19:24 / ehb
Chloride	246	mg/L		1		E300.0	05/05/09 22:40 / eli-h1
Sulfate	1130	mg/L	D	4		E300.0	05/05/09 22:40 / eli-h1
Fluoride	0.3	mg/L		0.1		A4500-F C	04/28/09 19:24 / ehb
Hardness as CaCO3	1560	mg/L		1		A2340 B	05/11/09 12:42 / car
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 09:46 / sam
Nitrogen, Nitrate+Nitrite as N	68.8	mg/L		0.05		E353.2	04/28/09 10:34 / bls
METALS, DISSOLVED							
Calcium	301	mg/L		1		E200.7	05/11/09 12:42 / tao
Magnesium	197	mg/L		1		E200.7	05/11/09 12:42 / tao
Potassium	13	mg/L		1		E200.7	05/11/09 12:42 / tao
Silica	16.4	mg/L		0.2		E200.7	05/04/09 23:51 / tao
Sodium	274	mg/L		1		E200.7	05/11/09 12:42 / tao
METALS, TOTAL							
Silica	23	mg/L	D	1		E200.7	05/03/09 18:15 / tao
QUALITY CONTROL							
A/C Balance Sigma	0.97					Calculation	05/12/09 10:29 / car
Anions	44.2	meq/L		0.01		Calculation	05/12/09 10:29 / car
Cations	43.5	meq/L		0.01		Calculation	05/12/09 10:29 / car
A/C Balance	-0.87	%				Calculation	05/12/09 10:29 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 04:18 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 04:18 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 04:18 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 04:18 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 04:18 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 04:18 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 04:18 / bw
Surr: Trifluorotoluene	103	%REC		80-120		SW8021B	04/28/09 04:18 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-009
Client Sample ID: PNR-36-07

Report Date: 05/22/09
Collection Date: 04/21/09 14:35
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:22 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-010
Client Sample ID: PNR-20

Report Date: 05/22/09
Collection Date: 04/21/09 15:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500-H B	04/24/09 17:09 / qed
Conductivity	54200	umhos/cm		1		A2510 B	04/24/09 17:09 / qed
Solids, Total Dissolved TDS @ 180 C	35200	mg/L		10		A2540 C	04/27/09 15:12 / afb
INORGANICS							
Alkalinity, Total as CaCO3	437	mg/L		4		A2320 B	04/28/09 19:33 / ehb
Bicarbonate as HCO3	533	mg/L		4		A2320 B	04/28/09 19:33 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 19:33 / ehb
Chloride	23100	mg/L	D	5		E300.0	05/11/09 12:37 / kh
Sulfate	1180	mg/L	D	10		E300.0	05/11/09 12:37 / kh
Fluoride	0.1	mg/L		0.1		A4500-F C	04/28/09 19:33 / ehb
Hardness as CaCO3	8210	mg/L		1		A2340 B	05/11/09 12:46 / car
NUTRIENTS							
Nitrogen, Ammonia as N	0.4	mg/L		0.1		E350.1	04/27/09 09:47 / sam
Nitrogen, Nitrate+Nitrite as N	9.59	mg/L		0.05		E353.2	04/28/09 12:30 / bls
METALS, DISSOLVED							
Calcium	1690	mg/L		1		E200.7	05/11/09 12:46 / tao
Magnesium	970	mg/L		1		E200.7	05/11/09 12:46 / tao
Potassium	59	mg/L		1		E200.7	05/11/09 12:46 / tao
Silica	7	mg/L	D	2		E200.7	05/04/09 23:55 / tao
Sodium	11700	mg/L	D	10		E200.7	05/11/09 12:46 / tao
METALS, TOTAL							
Silica	14	mg/L	D	10		E200.7	05/03/09 18:19 / tao
QUALITY CONTROL							
A/C Balance Sigma	0.98					Calculation	05/12/09 10:31 / car
Anions	687	meq/L		0.01		Calculation	05/12/09 10:31 / car
Cations	676	meq/L		0.01		Calculation	05/12/09 10:31 / car
A/C Balance	-0.77	%				Calculation	05/12/09 10:31 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 04:51 / bw
Benzene	19	ug/L		0.50		SW8021B	04/28/09 04:51 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 04:51 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 04:51 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 04:51 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 04:51 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 04:51 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/28/09 04:51 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-010
Client Sample ID: PNR-20

Report Date: 05/22/09
Collection Date: 04/21/09 15:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:23 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Blere Well Site
Lab ID: B09042302-011
Client Sample ID: PNR-21

Report Date: 05/22/09
Collection Date: 04/21/09 16:35
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500-H B	04/24/09 17:09 / qed
Conductivity	54000	umhos/cm		1		A2510 B	04/24/09 17:10 / qed
Solids, Total Dissolved TDS @ 180 C	34600	mg/L		10		A2540 C	04/27/09 15:11 / afb
INORGANICS							
Alkalinity, Total as CaCO3	610	mg/L		4		A2320 B	04/28/09 19:42 / ehb
Bicarbonate as HCO3	745	mg/L		4		A2320 B	04/28/09 19:42 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 19:42 / ehb
Chloride	19900	mg/L	D	5		E300.0	05/07/09 13:58 / eli-h1
Sulfate	1780	mg/L	D	4		E300.0	05/05/09 23:13 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 19:42 / ehb
Hardness as CaCO3	6140	mg/L		1		A2340 B	05/11/09 12:50 / car
NUTRIENTS							
Nitrogen, Ammonia as N	2.9	mg/L		0.1		E350.1	04/27/09 09:48 / sam
Nitrogen, Nitrate+Nitrite as N	15.2	mg/L		0.05		E353.2	04/28/09 12:31 / bls
METALS, DISSOLVED							
Calcium	1330	mg/L		1		E200.7	05/11/09 12:50 / tao
Magnesium	684	mg/L		1		E200.7	05/11/09 12:50 / tao
Potassium	55	mg/L		1		E200.7	05/11/09 12:50 / tao
Silica	3	mg/L	D	2		E200.7	05/04/09 23:59 / tao
Sodium	11200	mg/L	D	30		E200.7	05/11/09 12:50 / tao
METALS, TOTAL							
Silica	ND	mg/L	D	10		E200.7	05/03/09 18:23 / tao
QUALITY CONTROL							
A/C Balance Sigma	-0.13					Calculation	05/12/09 10:31 / car
Anions	612	meq/L		0.01		Calculation	05/12/09 10:31 / car
Cations	613	meq/L		0.01		Calculation	05/12/09 10:31 / car
A/C Balance	0.10	%				Calculation	05/12/09 10:31 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 15:25 / bw
Benzene	14	ug/L		0.50		SW8021B	04/28/09 15:25 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 15:25 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 15:25 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 15:25 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 15:25 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 15:25 / bw
Surr: Trifluorotoluene	98.0	%REC		80-120		SW8021B	04/28/09 15:25 / bw

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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-011
Client Sample ID: PNR-21

Report Date: 05/22/09
Collection Date: 04/21/09 16:35
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:31 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-012
Client Sample ID: Whitmer

Report Date: 05/22/09
Collection Date: 04/21/09 19:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/24/09 17:10 / qed
Conductivity	7630	umhos/cm		1		A2510 B	04/24/09 17:11 / qed
Solids, Total Dissolved TDS @ 180 C	4110	mg/L		10		A2540 C	04/27/09 15:15 / afb
INORGANICS							
Alkalinity, Total as CaCO3	269	mg/L		4		A2320 B	04/28/09 19:50 / ehb
Bicarbonate as HCO3	328	mg/L		4		A2320 B	04/28/09 19:50 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 19:50 / ehb
Chloride	2180	mg/L	D	2		E300.0	05/05/09 23:30 / eli-h1
Sulfate	394	mg/L	D	9		E300.0	05/05/09 23:30 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 19:50 / ehb
Hardness as CaCO3	1930	mg/L		1		A2340 B	05/11/09 12:54 / car
NUTRIENTS							
Nitrogen, Ammonia as N	1.4	mg/L		0.1		E350.1	04/27/09 09:50 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 10:44 / bls
METALS, DISSOLVED							
Calcium	368	mg/L		1		E200.7	05/11/09 12:54 / tao
Magnesium	246	mg/L		1		E200.7	05/11/09 12:54 / tao
Potassium	15	mg/L		1		E200.7	05/11/09 12:54 / tao
Silica	12.4	mg/L	D	0.3		E200.7	05/05/09 00:03 / tao
Sodium	750	mg/L	D	3		E200.7	05/11/09 12:54 / tao
METALS, TOTAL							
Silica	16	mg/L	D	2		E200.7	05/03/09 16:43 / tao
QUALITY CONTROL							
A/C Balance Sigma	2.68					Calculation	05/12/09 10:32 / car
Anions	75.1	meq/L		0.01		Calculation	05/12/09 10:32 / car
Cations	71.7	meq/L		0.01		Calculation	05/12/09 10:32 / car
A/C Balance	-2.32	%				Calculation	05/12/09 10:32 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 15:59 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 15:59 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 15:59 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 15:59 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 15:59 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 15:59 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 15:59 / bw
Surr: Trifluorotoluene	102	%REC		80-120		SW8021B	04/28/09 15:59 / bw

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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-012
Client Sample ID: Whitmer

Report Date: 05/22/09
Collection Date: 04/21/09 19:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:27 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-013
Client Sample ID: PNR-39-08

Report Date: 05/22/09
Collection Date: 04/22/09 14:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.6	s.u.		0.1		A4500-H B	04/24/09 17:11 / qed
Conductivity	31200	umhos/cm		1		A2510 B	04/24/09 17:12 / qed
Solids, Total Dissolved TDS @ 180 C	23000	mg/L		10		A2540 C	04/27/09 15:16 / afb
INORGANICS							
Alkalinity, Total as CaCO3	448	mg/L		4		A2320 B	04/28/09 20:28 / ehb
Bicarbonate as HCO3	547	mg/L		4		A2320 B	04/28/09 20:28 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 20:28 / ehb
Chloride	11200	mg/L	D	5		E300.0	05/07/09 14:14 / eli-h1
Sulfate	1670	mg/L	D	4		E300.0	05/05/09 23:46 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 20:28 / ehb
Hardness as CaCO3	10800	mg/L		1		A2340 B	05/11/09 13:02 / car
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 09:51 / sam
Nitrogen, Nitrate+Nitrite as N	26.6	mg/L		0.05		E353.2	04/27/09 13:20 / bls
METALS, DISSOLVED							
Calcium	1890	mg/L		1		E200.7	05/11/09 13:02 / tao
Magnesium	1470	mg/L		1		E200.7	05/11/09 13:02 / tao
Potassium	38	mg/L		1		E200.7	05/11/09 13:02 / tao
Silica	6	mg/L	D	2		E200.7	05/05/09 00:11 / tao
Sodium	2800	mg/L	D	10		E200.7	05/11/09 13:02 / tao
METALS, TOTAL							
Silica	13	mg/L	D	10		E200.7	05/03/09 18:35 / tao
QUALITY CONTROL							
A/C Balance Sigma	3.91					Calculation	05/12/09 10:32 / car
Anions	360	meq/L		0.01		Calculation	05/12/09 10:32 / car
Cations	338	meq/L		0.01		Calculation	05/12/09 10:32 / car
A/C Balance	-3.19	%				Calculation	05/12/09 10:32 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 16:33 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 16:33 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 16:33 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 16:33 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 16:33 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 16:33 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 16:33 / bw
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	04/28/09 16:33 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-013
Client Sample ID: PNR-39-08

Report Date: 05/22/09
Collection Date: 04/22/09 14:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/29/09 16:29 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-014
Client Sample ID: PNR-34-07

Report Date: 05/22/09
Collection Date: 04/22/09 16:15
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500-H B	04/24/09 17:12 / qed
Conductivity	39400	umhos/cm		1		A2510 B	04/24/09 17:13 / qed
Solids, Total Dissolved TDS @ 180 C	26300	mg/L		10		A2540 C	04/27/09 15:17 / afb
INORGANICS							
Alkalinity, Total as CaCO3	492	mg/L		4		A2320 B	04/28/09 20:36 / ehb
Bicarbonate as HCO3	600	mg/L		4		A2320 B	04/28/09 20:36 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 20:36 / ehb
Chloride	14300	mg/L	D	5		E300.0	05/07/09 14:31 / eli-h1
Sulfate	1470	mg/L	D	4		E300.0	05/06/09 00:03 / eli-h1
Fluoride	ND	mg/L		0.1		A4500-F C	04/28/09 20:36 / ehb
Hardness as CaCO3	9390	mg/L		1		A2340 B	05/11/09 13:06 / car
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	04/27/09 09:54 / sam
Nitrogen, Nitrate+Nitrite as N	9.46	mg/L		0.05		E353.2	04/27/09 13:21 / bls
METALS, DISSOLVED							
Calcium	1740	mg/L		1		E200.7	05/11/09 13:06 / tao
Magnesium	1220	mg/L		1		E200.7	05/11/09 13:06 / tao
Potassium	50	mg/L		1		E200.7	05/11/09 13:06 / tao
Silica	10	mg/L	D	2		E200.7	05/11/09 13:06 / tao
Sodium	5560	mg/L	D	10		E200.7	05/11/09 13:06 / tao
METALS, TOTAL							
Silica	24	mg/L	D	10		E200.7	05/03/09 18:39 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.74					Calculation	05/12/09 10:33 / car
Anions	443	meq/L		0.01		Calculation	05/12/09 10:33 / car
Cations	431	meq/L		0.01		Calculation	05/12/09 10:33 / car
A/C Balance	-1.39	%				Calculation	05/12/09 10:33 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 17:08 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 17:08 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 17:08 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 17:08 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 17:08 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 17:08 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 17:08 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/28/09 17:08 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-014
Client Sample ID: PNR-34-07

Report Date: 05/22/09
Collection Date: 04/22/09 16:15
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:30 / mav

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-015
Client Sample ID: MOC-20A

Report Date: 05/22/09
Collection Date: 04/22/09 11:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.		0.1		A4500-H B	04/24/09 17:13 / qed
Conductivity	5490	umhos/cm		1		A2510 B	04/24/09 17:14 / qed
Solids, Total Dissolved TDS @ 180 C	4800	mg/L		10		A2540 C	04/27/09 15:14 / afb
INORGANICS							
Alkalinity, Total as CaCO3	271	mg/L		4		A2320 B	04/28/09 20:45 / ehb
Bicarbonate as HCO3	331	mg/L		4		A2320 B	04/28/09 20:45 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 20:45 / ehb
Chloride	120	mg/L	D	2		E300.0	05/06/09 18:49 / eli-h1
Sulfate	3290	mg/L	D	9		E300.0	05/06/09 18:49 / eli-h1
Fluoride	0.4	mg/L		0.1		A4500-F C	04/28/09 20:45 / ehb
Hardness as CaCO3	2930	mg/L		1		A2340 B	05/04/09 13:30 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 09:58 / sam
Nitrogen, Nitrate+Nitrite as N	10.8	mg/L		0.05		E353.2	04/27/09 13:22 / bls
METALS, DISSOLVED							
Calcium	469	mg/L		1		E200.7	05/04/09 13:30 / tao
Magnesium	428	mg/L		1		E200.7	05/04/09 13:30 / tao
Potassium	24	mg/L		1		E200.7	05/04/09 13:30 / tao
Silica	29.7	mg/L	D	0.3		E200.7	05/04/09 13:30 / tao
Sodium	464	mg/L	D	3		E200.7	05/04/09 13:30 / tao
METALS, TOTAL							
Silica	28	mg/L	D	2		E200.7	05/03/09 18:43 / tao
QUALITY CONTROL							
A/C Balance Sigma	-0.99					Calculation	05/08/09 17:31 / rls
Anions	78.1	meq/L		0.01		Calculation	05/08/09 17:31 / rls
Cations	79.4	meq/L		0.01		Calculation	05/08/09 17:31 / rls
A/C Balance	0.82	%				Calculation	05/08/09 17:31 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 17:45 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 17:45 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 17:45 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 17:45 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 17:45 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 17:45 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 17:45 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/28/09 17:45 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-015
Client Sample ID: MOC-20A

Report Date: 05/22/09
Collection Date: 04/22/09 11:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:31 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Blere Well Site
Lab ID: B09042302-016
Client Sample ID: PNR-10

Report Date: 05/22/09
Collection Date: 04/18/09 14:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/24/09 17:14 / qed
Conductivity	6280	umhos/cm		1		A2510 B	04/24/09 17:01 / qed
Solids, Total Dissolved TDS @ 180 C	3910	mg/L		10		A2540 C	04/24/09 17:29 / afb
INORGANICS							
Alkalinity, Total as CaCO3	423	mg/L		4		A2320 B	04/28/09 20:54 / ehb
Bicarbonate as HCO3	516	mg/L		4		A2320 B	04/28/09 20:54 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 20:54 / ehb
Chloride	1060	mg/L	D	2		E300.0	05/06/09 19:38 / eli-h1
Sulfate	1390	mg/L	D	9		E300.0	05/06/09 19:38 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 20:54 / ehb
Hardness as CaCO3	2090	mg/L		1		A2340 B	05/04/09 13:34 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	2.0	mg/L		0.1		E350.1	04/27/09 09:59 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/27/09 13:23 / bls
METALS, DISSOLVED							
Calcium	415	mg/L		1		E200.7	05/04/09 13:34 / tao
Magnesium	256	mg/L		1		E200.7	05/04/09 13:34 / tao
Potassium	12	mg/L		1		E200.7	05/04/09 13:34 / tao
Silica	25.5	mg/L	D	0.3		E200.7	05/04/09 13:34 / tao
Sodium	676	mg/L	D	3		E200.7	05/04/09 13:34 / tao
METALS, TOTAL							
Silica	28	mg/L	D	2		E200.7	05/03/09 18:51 / tao
QUALITY CONTROL							
A/C Balance Sigma	-3.69					Calculation	05/08/09 17:31 / rls
Anions	67.4	meq/L		0.01		Calculation	05/08/09 17:31 / rls
Cations	71.6	meq/L		0.01		Calculation	05/08/09 17:31 / rls
A/C Balance	3.05	%				Calculation	05/08/09 17:31 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 18:19 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 18:19 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 18:19 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 18:19 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 18:19 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 18:19 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 18:19 / bw
Surr: Trifluorotoluene	96.0	%REC		80-120		SW8021B	04/28/09 18:19 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-016
Client Sample ID: PNR-10

Report Date: 05/22/09
Collection Date: 04/18/09 14:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:33 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-017
Client Sample ID: LAW-M03

Report Date: 05/22/09
Collection Date: 04/18/09 15:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.		0.1		A4500-H B	04/24/09 17:16 / qed
Conductivity	7260	umhos/cm		1		A2510 B	04/24/09 17:02 / qed
Solids, Total Dissolved TDS @ 180 C	4260	mg/L		10		A2540 C	04/24/09 17:30 / afb
INORGANICS							
Alkalinity, Total as CaCO3	393	mg/L		4		A2320 B	04/28/09 21:02 / ehb
Bicarbonate as HCO3	480	mg/L		4		A2320 B	04/28/09 21:02 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 21:02 / ehb
Chloride	1540	mg/L	D	2		E300.0	05/06/09 20:27 / eli-h1
Sulfate	1110	mg/L	D	9		E300.0	05/06/09 20:27 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 21:02 / ehb
Hardness as CaCO3	2230	mg/L		1		A2340 B	05/04/09 13:38 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	2.0	mg/L		0.1		E350.1	04/27/09 10:00 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/27/09 13:25 / bls
METALS, DISSOLVED							
Calcium	448	mg/L		1		E200.7	05/04/09 13:38 / tao
Magnesium	270	mg/L		1		E200.7	05/04/09 13:38 / tao
Potassium	13	mg/L		1		E200.7	05/04/09 13:38 / tao
Silica	22.4	mg/L	D	0.3		E200.7	05/04/09 13:38 / tao
Sodium	746	mg/L	D	3		E200.7	05/04/09 13:38 / tao
METALS, TOTAL							
Silica	25	mg/L	D	2		E200.7	05/03/09 18:56 / tao
QUALITY CONTROL							
A/C Balance Sigma	-2.44					Calculation	05/08/09 17:31 / rls
Anions	74.4	meq/L		0.01		Calculation	05/08/09 17:31 / rls
Cations	77.5	meq/L		0.01		Calculation	05/08/09 17:31 / rls
A/C Balance	2.02	%				Calculation	05/08/09 17:31 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 18:52 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 18:52 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 18:52 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 18:52 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 18:52 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 18:52 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 18:52 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/28/09 18:52 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-017
Client Sample ID: LAW-M03

Report Date: 05/22/09
Collection Date: 04/18/09 15:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:34 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-018
Client Sample ID: PNR-9

Report Date: 05/22/09
Collection Date: 04/18/09 16:20
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.9	s.u.		0.1		A4500-H B	04/24/09 17:16 / qed
Conductivity	15700	umhos/cm		1		A2510 B	04/24/09 17:02 / qed
Solids, Total Dissolved TDS @ 180 C	9710	mg/L		10		A2540 C	04/24/09 17:30 / afb
INORGANICS							
Alkalinity, Total as CaCO3	256	mg/L		4		A2320 B	04/28/09 21:10 / ehb
Bicarbonate as HCO3	312	mg/L		4		A2320 B	04/28/09 21:10 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 21:10 / ehb
Chloride	4720	mg/L	D	5		E300.0	05/06/09 20:43 / eli-h1
Sulfate	909	mg/L	D	20		E300.0	05/06/09 20:43 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 21:10 / ehb
Hardness as CaCO3	4140	mg/L		1		A2340 B	05/11/09 13:10 / car
NUTRIENTS							
Nitrogen, Ammonia as N	2.5	mg/L		0.1		E350.1	04/27/09 10:02 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 10:45 / bls
METALS, DISSOLVED							
Calcium	847	mg/L		1		E200.7	05/11/09 13:10 / tao
Magnesium	491	mg/L		1		E200.7	05/11/09 13:10 / tao
Potassium	22	mg/L		1		E200.7	05/11/09 13:10 / tao
Silica	15.4	mg/L	D	0.6		E200.7	05/11/09 13:10 / tao
Sodium	1620	mg/L	D	5		E200.7	05/11/09 13:10 / tao
METALS, TOTAL							
Silica	17	mg/L	D	4		E200.7	05/03/09 19:00 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.26					Calculation	05/12/09 10:38 / car
Anions	157	meq/L		0.01		Calculation	05/12/09 10:38 / car
Cations	154	meq/L		0.01		Calculation	05/12/09 10:38 / car
A/C Balance	-1.03	%				Calculation	05/12/09 10:38 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 09:38 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 09:38 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 09:38 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 09:38 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 09:38 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 09:38 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 09:38 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/29/09 09:38 / bw

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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-018
Client Sample ID: PNR-9

Report Date: 05/22/09
Collection Date: 04/18/09 16:20
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:35 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-019
Client Sample ID: PNR-13

Report Date: 05/22/09
Collection Date: 04/18/09 17:55
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.1		A4500-H B	04/24/09 17:17 / qed
Conductivity	4270	umhos/cm		1		A2510 B	04/24/09 17:03 / qed
Solids, Total Dissolved TDS @ 180 C	3080	mg/L		10		A2540 C	04/24/09 17:28 / afb
INORGANICS							
Alkalinity, Total as CaCO3	462	mg/L		4		A2320 B	04/28/09 21:19 / ehb
Bicarbonate as HCO3	564	mg/L		4		A2320 B	04/28/09 21:19 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 21:19 / ehb
Chloride	235	mg/L		1		E300.0	05/06/09 21:00 / eli-h1
Sulfate	1720	mg/L	D	4		E300.0	05/06/09 21:00 / eli-h1
Fluoride	0.4	mg/L		0.1		A4500-F C	04/28/09 21:19 / ehb
Hardness as CaCO3	1690	mg/L		1		A2340 B	05/04/09 13:46 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	1.3	mg/L		0.1		E350.1	04/27/09 10:03 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 10:46 / bls
METALS, DISSOLVED							
Calcium	326	mg/L		1		E200.7	05/04/09 13:46 / tao
Magnesium	213	mg/L		1		E200.7	05/04/09 13:46 / tao
Potassium	11	mg/L		1		E200.7	05/04/09 13:46 / tao
Silica	25.5	mg/L		0.2		E200.7	05/04/09 13:46 / tao
Sodium	423	mg/L		1		E200.7	05/04/09 13:46 / tao
METALS, TOTAL							
Silica	37	mg/L	D	1		E200.7	05/03/09 19:04 / tao
QUALITY CONTROL							
A/C Balance Sigma	-1.03					Calculation	05/08/09 17:31 / rls
Anions	51.7	meq/L		0.01		Calculation	05/08/09 17:31 / rls
Cations	52.6	meq/L		0.01		Calculation	05/08/09 17:31 / rls
A/C Balance	0.90	%				Calculation	05/08/09 17:31 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 20:33 / bw
Benzene	0.70	ug/L		0.50		SW8021B	04/28/09 20:33 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 20:33 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 20:33 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 20:33 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 20:33 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 20:33 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/28/09 20:33 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-019
Client Sample ID: PNR-13

Report Date: 05/22/09
Collection Date: 04/18/09 17:55
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:36 / mav

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Blere Well Site
Lab ID: B09042302-020
Client Sample ID: PNR-28

Report Date: 05/22/09
Collection Date: 04/19/09 11:10
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500-H B	04/24/09 17:18 / qed
Conductivity	48000	umhos/cm		1		A2510 B	04/24/09 17:04 / qed
Solids, Total Dissolved TDS @ 180 C	29600	mg/L		10		A2540 C	04/24/09 17:34 / afb
INORGANICS							
Alkalinity, Total as CaCO3	536	mg/L		4		A2320 B	04/28/09 21:33 / ehb
Bicarbonate as HCO3	654	mg/L		4		A2320 B	04/28/09 21:33 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 21:33 / ehb
Chloride	17500	mg/L	D	10		E300.0	05/06/09 21:49 / eli-h1
Sulfate	1660	mg/L	D	40		E300.0	05/06/09 21:49 / eli-h1
Fluoride	0.1	mg/L		0.1		A4500-F C	04/28/09 21:33 / ehb
Hardness as CaCO3	8780	mg/L		1		A2340 B	05/04/09 13:58 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 10:04 / sam
Nitrogen, Nitrate+Nitrite as N	22.2	mg/L		0.05		E353.2	04/28/09 10:39 / bls
METALS, DISSOLVED							
Calcium	1740	mg/L		1		E200.7	05/04/09 13:58 / tao
Magnesium	1080	mg/L		1		E200.7	05/04/09 13:58 / tao
Potassium	50	mg/L		1		E200.7	05/04/09 13:58 / tao
Silica	15	mg/L	D	2		E200.7	05/04/09 13:58 / tao
Sodium	7860	mg/L	D	10		E200.7	05/04/09 13:58 / tao
METALS, TOTAL							
Silica	15	mg/L	D	10		E200.7	05/03/09 19:08 / tao
QUALITY CONTROL							
A/C Balance Sigma	2.55					Calculation	05/08/09 17:32 / rls
Anions	541	meq/L		0.01		Calculation	05/08/09 17:32 / rls
Cations	519	meq/L		0.01		Calculation	05/08/09 17:32 / rls
A/C Balance	-2.05	%				Calculation	05/08/09 17:32 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 21:07 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 21:07 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 21:07 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 21:07 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 21:07 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 21:07 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 21:07 / bw
Surr: Trifluorotoluene	96.0	%REC		80-120		SW8021B	04/28/09 21:07 / bw

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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-020
Client Sample ID: PNR-28

Report Date: 05/22/09
Collection Date: 04/19/09 11:10
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:37 / mav

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-021
Client Sample ID: PNR-27

Report Date: 05/22/09
Collection Date: 04/19/09 12:50
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500-H B	04/24/09 17:18 / qed
Conductivity	42600	umhos/cm		1		A2510 B	04/24/09 17:04 / qed
Solids, Total Dissolved TDS @ 180 C	23900	mg/L		10		A2540 C	04/24/09 17:34 / afb
INORGANICS							
Alkalinity, Total as CaCO3	567	mg/L		4		A2320 B	04/28/09 21:41 / ehb
Bicarbonate as HCO3	691	mg/L		4		A2320 B	04/28/09 21:41 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 21:41 / ehb
Chloride	15400	mg/L	D	10		E300.0	05/06/09 22:06 / eli-h1
Sulfate	1750	mg/L	D	40		E300.0	05/06/09 22:06 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 21:41 / ehb
Hardness as CaCO3	9990	mg/L		1		A2340 B	05/04/09 14:10 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 10:05 / sam
Nitrogen, Nitrate+Nitrite as N	29.3	mg/L		0.05		E353.2	04/28/09 10:47 / bls
METALS, DISSOLVED							
Calcium	1950	mg/L		1		E200.7	05/04/09 14:10 / tao
Magnesium	1240	mg/L		1		E200.7	05/04/09 14:10 / tao
Potassium	50	mg/L		1		E200.7	05/04/09 14:10 / tao
Silica	19	mg/L	D	2		E200.7	05/04/09 14:10 / tao
Sodium	6240	mg/L	D	10		E200.7	05/04/09 14:10 / tao
METALS, TOTAL							
Silica	21	mg/L	D	10		E200.7	05/03/09 19:12 / tao
QUALITY CONTROL							
A/C Balance Sigma	1.51					Calculation	05/08/09 17:32 / rls
Anions	484	meq/L		0.01		Calculation	05/08/09 17:32 / rls
Cations	472	meq/L		0.01		Calculation	05/08/09 17:32 / rls
A/C Balance	-1.20	%				Calculation	05/08/09 17:32 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 21:41 / bw
Benzene	2.6	ug/L		0.50		SW8021B	04/28/09 21:41 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 21:41 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 21:41 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 21:41 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 21:41 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 21:41 / bw
Surr: Trifluorotoluene	96.0	%REC		80-120		SW8021B	04/28/09 21:41 / bw

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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-021
Client Sample ID: PNR-27

Report Date: 05/22/09
Collection Date: 04/19/09 12:50
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:38 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-022
Client Sample ID: PNR-19

Report Date: 05/22/09
Collection Date: 04/19/09 13:55
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.9	s.u.		0.1		A4500-H B	04/24/09 17:19 / qed
Conductivity	34200	umhos/cm		1		A2510 B	04/24/09 17:05 / qed
Solids, Total Dissolved TDS @ 180 C	20200	mg/L		10		A2540 C	04/24/09 17:33 / afb
INORGANICS							
Alkalinity, Total as CaCO3	348	mg/L		4		A2320 B	04/28/09 21:50 / ehb
Bicarbonate as HCO3	424	mg/L		4		A2320 B	04/28/09 21:50 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 21:50 / ehb
Chloride	11700	mg/L	D	10		E300.0	05/06/09 22:22 / eli-h1
Sulfate	1370	mg/L	D	40		E300.0	05/06/09 22:22 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 21:50 / ehb
Hardness as CaCO3	6020	mg/L		1		A2340 B	05/04/09 14:14 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 10:09 / sam
Nitrogen, Nitrate+Nitrite as N	20.0	mg/L		0.05		E353.2	04/28/09 10:48 / bls
METALS, DISSOLVED							
Calcium	1180	mg/L		1		E200.7	05/04/09 14:14 / tao
Magnesium	747	mg/L		1		E200.7	05/04/09 14:14 / tao
Potassium	63	mg/L		1		E200.7	05/04/09 14:14 / tao
Silica	16	mg/L	D	2		E200.7	05/04/09 14:14 / tao
Sodium	5540	mg/L	D	10		E200.7	05/04/09 14:14 / tao
METALS, TOTAL							
Silica	19	mg/L	D	10		E200.7	05/03/09 19:24 / tao
QUALITY CONTROL							
A/C Balance Sigma	0.76					Calculation	05/08/09 17:32 / rls
Anions	367	meq/L		0.01		Calculation	05/08/09 17:32 / rls
Cations	363	meq/L		0.01		Calculation	05/08/09 17:32 / rls
A/C Balance	-0.60	%				Calculation	05/08/09 17:32 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 22:14 / bw
Benzene	12	ug/L		0.50		SW8021B	04/28/09 22:14 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 22:14 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 22:14 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 22:14 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 22:14 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 22:14 / bw
Surr: Trifluorotoluene	95.0	%REC		80-120		SW8021B	04/28/09 22:14 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-022
Client Sample ID: PNR-19

Report Date: 05/22/09
Collection Date: 04/19/09 13:55
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:39 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-023
Client Sample ID: PNR-8

Report Date: 05/22/09
Collection Date: 04/19/09 14:15
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/24/09 17:19 / qed
Conductivity	7300	umhos/cm		1		A2510 B	04/24/09 17:05 / qed
Solids, Total Dissolved TDS @ 180 C	4370	mg/L		10		A2540 C	04/24/09 17:32 / afb
INORGANICS							
Alkalinity, Total as CaCO3	407	mg/L		4		A2320 B	04/28/09 22:15 / ehb
Bicarbonate as HCO3	496	mg/L		4		A2320 B	04/28/09 22:15 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 22:15 / ehb
Chloride	1520	mg/L	D	2		E300.0	05/06/09 22:38 / eli-h1
Sulfate	1260	mg/L	D	9		E300.0	05/06/09 22:38 / eli-h1
Fluoride	0.3	mg/L		0.1		A4500-F C	04/28/09 22:15 / ehb
Hardness as CaCO3	2490	mg/L		1		A2340 B	05/04/09 14:18 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	04/27/09 10:12 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 10:50 / bls
METALS, DISSOLVED							
Calcium	439	mg/L		1		E200.7	05/04/09 14:18 / tao
Magnesium	338	mg/L		1		E200.7	05/04/09 14:18 / tao
Potassium	16	mg/L		1		E200.7	05/04/09 14:18 / tao
Silica	23.1	mg/L	D	0.3		E200.7	05/04/09 14:18 / tao
Sodium	680	mg/L	D	3		E200.7	05/04/09 14:18 / tao
METALS, TOTAL							
Silica	23	mg/L	D	2		E200.7	05/03/09 19:28 / tao
QUALITY CONTROL							
A/C Balance Sigma	-1.91					Calculation	05/08/09 17:32 / rls
Anions	77.2	meq/L		0.01		Calculation	05/08/09 17:32 / rls
Cations	79.7	meq/L		0.01		Calculation	05/08/09 17:32 / rls
A/C Balance	1.59	%				Calculation	05/08/09 17:32 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 22:48 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 22:48 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 22:48 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 22:48 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 22:48 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 22:48 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 22:48 / bw
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	04/28/09 22:48 / bw

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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-023
Client Sample ID: PNR-8

Report Date: 05/22/09
Collection Date: 04/19/09 14:15
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:40 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-024
Client Sample ID: LAW-M05

Report Date: 05/22/09
Collection Date: 04/20/09 17:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500-H B	04/24/09 17:20 / qed
Conductivity	5230	umhos/cm		1		A2510 B	04/24/09 17:06 / qed
Solids, Total Dissolved TDS @ 180 C	3030	mg/L		10		A2540 C	04/27/09 15:20 / afb
INORGANICS							
Alkalinity, Total as CaCO3	577	mg/L		4		A2320 B	04/28/09 22:23 / ehb
Bicarbonate as HCO3	704	mg/L		4		A2320 B	04/28/09 22:23 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 22:23 / ehb
Chloride	551	mg/L		1		E300.0	05/06/09 22:55 / eli-h1
Sulfate	1640	mg/L	D	4		E300.0	05/06/09 22:55 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 22:23 / ehb
Hardness as CaCO3	2060	mg/L		1		A2340 B	05/04/09 14:22 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	0.8	mg/L		0.1		E350.1	04/27/09 10:13 / sam
Nitrogen, Nitrate+Nitrite as N	8.27	mg/L		0.05		E353.2	04/28/09 10:51 / bls
METALS, DISSOLVED							
Calcium	378	mg/L		1		E200.7	05/04/09 14:22 / tao
Magnesium	270	mg/L		1		E200.7	05/04/09 14:22 / tao
Potassium	15	mg/L		1		E200.7	05/04/09 14:22 / tao
Silica	19.9	mg/L	D	0.3		E200.7	05/04/09 14:22 / tao
Sodium	501	mg/L	D	3		E200.7	05/04/09 14:22 / tao
METALS, TOTAL							
Silica	51	mg/L	D	1		E200.7	05/01/09 20:17 / jjw
QUALITY CONTROL							
A/C Balance Sigma	-1.45					Calculation	05/08/09 17:32 / rls
Anions	61.8	meq/L		0.01		Calculation	05/08/09 17:32 / rls
Cations	63.3	meq/L		0.01		Calculation	05/08/09 17:32 / rls
A/C Balance	1.23	%				Calculation	05/08/09 17:32 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 23:21 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 23:21 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 23:21 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 23:21 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 23:21 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 23:21 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 23:21 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/28/09 23:21 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-024
Client Sample ID: LAW-M05

Report Date: 05/22/09
Collection Date: 04/20/09 17:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:41 / mav

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-025
Client Sample ID: LAW-M01

Report Date: 05/22/09
Collection Date: 04/20/09 14:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500-H B	04/24/09 17:20 / qed
Conductivity	2960	umhos/cm		1		A2510 B	04/24/09 17:07 / qed
Solids, Total Dissolved TDS @ 180 C	2420	mg/L		10		A2540 C	04/27/09 15:18 / afb
INORGANICS							
Alkalinity, Total as CaCO3	638	mg/L		4		A2320 B	04/28/09 22:33 / ehb
Bicarbonate as HCO3	778	mg/L		4		A2320 B	04/28/09 22:33 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 22:33 / ehb
Chloride	29	mg/L		1		E300.0	05/06/09 23:11 / eli-h1
Sulfate	1120	mg/L	D	4		E300.0	05/06/09 23:11 / eli-h1
Fluoride	0.3	mg/L		0.1		A4500-F C	04/28/09 22:33 / ehb
Hardness as CaCO3	1370	mg/L		1		A2340 B	05/04/09 14:26 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	04/27/09 10:15 / sam
Nitrogen, Nitrate+Nitrite as N	1.80	mg/L		0.05		E353.2	04/28/09 10:52 / bls
METALS, DISSOLVED							
Calcium	274	mg/L		1		E200.7	05/04/09 14:26 / tao
Magnesium	166	mg/L		1		E200.7	05/04/09 14:26 / tao
Potassium	17	mg/L		1		E200.7	05/04/09 14:26 / tao
Silica	25.3	mg/L		0.2		E200.7	05/04/09 14:26 / tao
Sodium	208	mg/L		1		E200.7	05/04/09 14:26 / tao
METALS, TOTAL							
Silica	25	mg/L	D	1		E200.7	05/01/09 20:29 / jjw
QUALITY CONTROL							
A/C Balance Sigma	0.02					Calculation	05/08/09 17:33 / rls
Anions	36.9	meq/L		0.01		Calculation	05/08/09 17:33 / rls
Cations	36.9	meq/L		0.01		Calculation	05/08/09 17:33 / rls
A/C Balance	-0.02	%				Calculation	05/08/09 17:33 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/28/09 23:55 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/28/09 23:55 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/28/09 23:55 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/28/09 23:55 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/28/09 23:55 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/28/09 23:55 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/28/09 23:55 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/28/09 23:55 / bw

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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-025
Client Sample ID: LAW-M01

Report Date: 05/22/09
Collection Date: 04/20/09 14:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:42 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-026
Client Sample ID: RW-2

Report Date: 05/22/09
Collection Date: 04/22/09 19:20
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.9	s.u.		0.1		A4500-H B	04/24/09 17:21 / qed
Conductivity	48500	umhos/cm		1		A2510 B	04/24/09 17:07 / qed
INORGANICS							
Chloride	17500	mg/L	D	10		E300.0	05/06/09 23:28 / eli-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 05:31 / bw
Benzene	14	ug/L		0.50		SW8021B	04/29/09 05:31 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 05:31 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 05:31 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 05:31 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 05:31 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 05:31 / bw
Surr: Trifluorotoluene	93.0	%REC		80-120		SW8021B	04/29/09 05:31 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-027
Client Sample ID: RW-3

Report Date: 05/22/09
Collection Date: 04/22/09 19:05
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500-H B	04/24/09 17:27 / qed
Conductivity	58500	umhos/cm		1		A2510 B	04/24/09 17:22 / qed
INORGANICS							
Chloride	22000	mg/L	D	10		E300.0	05/07/09 00:17 / eli-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 06:05 / bw
Benzene	12	ug/L		0.50		SW8021B	04/29/09 06:05 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 06:05 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 06:05 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 06:05 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 06:05 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 06:05 / bw
Surr: Trifluorotoluene	93.0	%REC		80-120		SW8021B	04/29/09 06:05 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-028
Client Sample ID: RW-4

Report Date: 05/22/09
Collection Date: 04/22/09 18:55
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.9	s.u.		0.1		A4500-H B	04/24/09 17:28 / qed
Conductivity	53600	umhos/cm		1		A2510 B	04/24/09 17:23 / qed
INORGANICS							
Chloride	19700	mg/L	D	10		E300.0	05/07/09 00:33 / eli-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 06:39 / bw
Benzene	14	ug/L		0.50		SW8021B	04/29/09 06:39 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 06:39 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 06:39 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 06:39 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 06:39 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 06:39 / bw
Surr: Trifluorotoluene	93.0	%REC		80-120		SW8021B	04/29/09 06:39 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-029
Client Sample ID: RW-5

Report Date: 05/22/09
Collection Date: 04/22/09 18:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500-H B	04/24/09 17:28 / qed
Conductivity	44000	umhos/cm		1		A2510 B	04/24/09 17:26 / qed
INORGANICS							
Chloride	15800	mg/L	D	10		E300.0	05/07/09 00:50 / eli-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 07:12 / bw
Benzene	6.2	ug/L		0.50		SW8021B	04/29/09 07:12 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 07:12 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 07:12 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 07:12 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 07:12 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 07:12 / bw
Surr: Trifluorotoluene	93.0	%REC		80-120		SW8021B	04/29/09 07:12 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Blere Well Site
Lab ID: B09042302-030
Client Sample ID: RW-6

Report Date: 05/22/09
Collection Date: 04/22/09 17:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500-H B	04/24/09 17:31 / qed
Conductivity	50700	umhos/cm		1		A2510 B	04/24/09 17:31 / qed
INORGANICS							
Chloride	18800	mg/L	D	10		E300.0	05/07/09 01:06 / ell-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 07:46 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 07:46 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 07:46 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 07:46 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 07:46 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 07:46 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 07:46 / bw
Surr: Trifluorotoluene	93.0	%REC		80-120		SW8021B	04/29/09 07:46 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-031
Client Sample ID: RW-7

Report Date: 05/22/09
Collection Date: 04/22/09 17:15
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500-H B	04/24/09 17:32 / qed
Conductivity	47000	umhos/cm		1		A2510 B	04/24/09 17:31 / qed
INORGANICS							
Chloride	17900	mg/L	D	10		E300.0	05/07/09 01:23 / eli-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 10:12 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 10:12 / bw
Toluene	0.61	ug/L		0.50		SW8021B	04/29/09 10:12 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 10:12 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 10:12 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 10:12 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 10:12 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/29/09 10:12 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-032
Client Sample ID: RW-8

Report Date: 05/22/09
Collection Date: 04/22/09 16:45
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500-H B	04/24/09 17:33 / qed
Conductivity	50300	umhos/cm		1		A2510 B	04/24/09 17:32 / qed
INORGANICS							
Chloride	18900	mg/L	D	10		E300.0	05/07/09 01:39 / eli-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 11:19 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 11:19 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 11:19 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 11:19 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 11:19 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 11:19 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 11:19 / bw
Surr: Trifluorotoluene	96.0	%REC		80-120		SW8021B	04/29/09 11:19 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-033
Client Sample ID: RW-9

Report Date: 05/22/09
Collection Date: 04/22/09 17:45
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.		0.1		A4500-H B	04/24/09 17:34 / qed
Conductivity	58600	umhos/cm		1		A2510 B	04/24/09 17:33 / qed
INORGANICS							
Chloride	21800	mg/L	D	10		E300.0	05/07/09 01:55 / eli-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 11:53 / bw
Benzene	1.9	ug/L		0.50		SW8021B	04/29/09 11:53 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 11:53 / bw
Ethylbenzene	5.1	ug/L		0.50		SW8021B	04/29/09 11:53 / bw
m+p-Xylenes	0.56	ug/L		0.50		SW8021B	04/29/09 11:53 / bw
o-Xylene	0.43	ug/L	J	0.50		SW8021B	04/29/09 11:53 / bw
Xylenes, Total	0.99	ug/L		0.50		SW8021B	04/29/09 11:53 / bw
Surr: Trifluorotoluene	96.0	%REC		80-120		SW8021B	04/29/09 11:53 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than t reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-034
Client Sample ID: RW-10

Report Date: 05/22/09
Collection Date: 04/22/09 18:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.6	s.u.		0.1		A4500-H B	04/24/09 17:35 / qed
Conductivity	6800	umhos/cm		1		A2510 B	04/24/09 17:33 / qed
INORGANICS							
Chloride	871	mg/L	D	2		E300.0	05/07/09 02:12 / eli-h1
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 23:49 / bw
Benzene	13	ug/L		0.50		SW8021B	04/29/09 23:49 / bw
Toluene	42	ug/L		0.50		SW8021B	04/29/09 23:49 / bw
Ethylbenzene	19	ug/L		0.50		SW8021B	04/29/09 23:49 / bw
m+p-Xylenes	36	ug/L		0.50		SW8021B	04/29/09 23:49 / bw
o-Xylene	12	ug/L		0.50		SW8021B	04/29/09 23:49 / bw
Xylenes, Total	49	ug/L		0.50		SW8021B	04/29/09 23:49 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/29/09 23:49 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-035
Client Sample ID: PNR-35-07

Report Date: 05/22/09
Collection Date: 04/20/09 18:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.1		A4500-H B	04/24/09 17:36 / qed
Conductivity	3950	umhos/cm		1		A2510 B	04/24/09 17:35 / qed
Solids, Total Dissolved TDS @ 180 C	2830	mg/L		10		A2540 C	04/27/09 15:19 / afb
INORGANICS							
Alkalinity, Total as CaCO3	667	mg/L		4		A2320 B	04/28/09 22:42 / ehb
Bicarbonate as HCO3	814	mg/L		4		A2320 B	04/28/09 22:42 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 22:42 / ehb
Chloride	79	mg/L		1		E300.0	05/07/09 02:28 / eli-h1
Sulfate	1570	mg/L	D	4		E300.0	05/07/09 02:28 / eli-h1
Fluoride	0.4	mg/L		0.1		A4500-F C	04/28/09 22:42 / ehb
Hardness as CaCO3	1350	mg/L		1		A2340 B	05/04/09 14:30 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	04/27/09 10:16 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 10:56 / bls
METALS, DISSOLVED							
Calcium	246	mg/L		1		E200.7	05/04/09 14:30 / tao
Magnesium	179	mg/L		1		E200.7	05/04/09 14:30 / tao
Potassium	10	mg/L		1		E200.7	05/04/09 14:30 / tao
Silica	22.1	mg/L		0.2		E200.7	05/04/09 14:30 / tao
Sodium	490	mg/L		1		E200.7	05/04/09 14:30 / tao
METALS, TOTAL							
Silica	164	mg/L	D	1		E200.7	05/01/09 20:33 / jjw
QUALITY CONTROL							
A/C Balance Sigma	-0.45					Calculation	05/08/09 17:33 / rls
Anions	48.2	meq/L		0.01		Calculation	05/08/09 17:33 / rls
Cations	48.6	meq/L		0.01		Calculation	05/08/09 17:33 / rls
A/C Balance	0.40	%				Calculation	05/08/09 17:33 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 23:15 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 23:15 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 23:15 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 23:15 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 23:15 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 23:15 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 23:15 / bw
Surr: Trifluorotoluene	95.0	%REC		80-120		SW8021B	04/29/09 23:15 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-035
Client Sample ID: PNR-35-07

Report Date: 05/22/09
Collection Date: 04/20/09 18:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:43 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-036
Client Sample ID: PNR-29

Report Date: 05/22/09
Collection Date: 04/21/09 11:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/24/09 17:37 / qed
Conductivity	5420	umhos/cm		1		A2510 B	04/24/09 17:35 / qed
Solids, Total Dissolved TDS @ 180 C	4250	mg/L		10		A2540 C	04/27/09 15:21 / afb
INORGANICS							
Alkalinity, Total as CaCO3	669	mg/L		4		A2320 B	04/28/09 22:51 / ehb
Bicarbonate as HCO3	816	mg/L		4		A2320 B	04/28/09 22:51 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 22:51 / ehb
Chloride	81	mg/L		1		E300.0	05/11/09 14:10 / kh
Sulfate	2140	mg/L		1		E300.0	05/11/09 14:10 / kh
Fluoride	0.3	mg/L		0.1		A4500-F C	04/28/09 22:51 / ehb
Hardness as CaCO3	2390	mg/L		1		A2340 B	05/04/09 14:34 / car
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/27/09 10:17 / sam
Nitrogen, Nitrate+Nitrite as N	202	mg/L	D	0.2		E353.2	04/28/09 10:59 / bls
METALS, DISSOLVED							
Calcium	445	mg/L		1		E200.7	05/04/09 14:34 / tao
Magnesium	310	mg/L		1		E200.7	05/04/09 14:34 / tao
Potassium	13	mg/L		1		E200.7	05/04/09 14:34 / tao
Silica	28.1	mg/L	D	0.3		E200.7	05/04/09 14:34 / tao
Sodium	499	mg/L	D	3		E200.7	05/04/09 14:34 / tao
METALS, TOTAL							
Silica	29	mg/L	D	2		E200.7	05/01/09 20:37 / jjw
QUALITY CONTROL							
A/C Balance Sigma	3.90					Calculation	05/12/09 10:39 / car
Anions	74.6	meq/L		0.01		Calculation	05/12/09 10:39 / car
Cations	69.7	meq/L		0.01		Calculation	05/12/09 10:39 / car
A/C Balance	-3.41	%				Calculation	05/12/09 10:39 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 22:42 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 22:42 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 22:42 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 22:42 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 22:42 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 22:42 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 22:42 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/29/09 22:42 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-036
Client Sample ID: PNR-29

Report Date: 05/22/09
Collection Date: 04/21/09 11:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:44 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-037
Client Sample ID: MOC-20B

Report Date: 05/22/09
Collection Date: 04/21/09 12:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	04/24/09 17:39 / qed
Conductivity	4440	umhos/cm		1		A2510 B	04/24/09 17:37 / qed
Solids, Total Dissolved TDS @ 180 C	3440	mg/L		10		A2540 C	04/27/09 15:25 / afb
INORGANICS							
Alkalinity, Total as CaCO3	398	mg/L		4		A2320 B	04/28/09 23:13 / ehb
Bicarbonate as HCO3	486	mg/L		4		A2320 B	04/28/09 23:13 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 23:13 / ehb
Chloride	180	mg/L		1		E300.0	05/07/09 04:07 / eli-h1
Sulfate	2010	mg/L	D	4		E300.0	05/07/09 04:07 / eli-h1
Fluoride	0.3	mg/L		0.1		A4500-F C	04/28/09 23:13 / ehb
Hardness as CaCO3	1650	mg/L		1		A2340 B	05/04/09 14:46 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	1.3	mg/L		0.1		E350.1	04/27/09 10:18 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 11:00 / bls
METALS, DISSOLVED							
Calcium	331	mg/L		1		E200.7	05/04/09 14:46 / tao
Magnesium	199	mg/L		1		E200.7	05/04/09 14:46 / tao
Potassium	9	mg/L		1		E200.7	05/04/09 14:46 / tao
Silica	25.6	mg/L		0.2		E200.7	05/04/09 14:46 / tao
Sodium	481	mg/L		1		E200.7	05/04/09 14:46 / tao
METALS, TOTAL							
Silica	31	mg/L	D	1		E200.7	05/01/09 20:49 / jjw
QUALITY CONTROL							
A/C Balance Sigma	0.84					Calculation	05/08/09 17:33 / rls
Anions	55.0	meq/L		0.01		Calculation	05/08/09 17:33 / rls
Cations	54.2	meq/L		0.01		Calculation	05/08/09 17:33 / rls
A/C Balance	-0.74	%				Calculation	05/08/09 17:33 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 22:08 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 22:08 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 22:08 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 22:08 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 22:08 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 22:08 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 22:08 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	04/29/09 22:08 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Blere Well Site
Lab ID: B09042302-037
Client Sample ID: MOC-20B

Report Date: 05/22/09
Collection Date: 04/21/09 12:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:45 / mav

Report Definitions:
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MCL - Maximum contaminant level.
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-038
Client Sample ID: MOC-2

Report Date: 05/22/09
Collection Date: 04/21/09 13:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500-H B	04/24/09 17:39 / qed
Conductivity	21100	umhos/cm		1		A2510 B	04/24/09 17:38 / qed
Solids, Total Dissolved TDS @ 180 C	13600	mg/L		10		A2540 C	04/27/09 15:29 / afb
INORGANICS							
Alkalinity, Total as CaCO3	285	mg/L		4		A2320 B	04/28/09 23:21 / ehb
Bicarbonate as HCO3	348	mg/L		4		A2320 B	04/28/09 23:21 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 23:21 / ehb
Chloride	6560	mg/L	D	5		E300.0	05/07/09 04:23 / eli-h1
Sulfate	1430	mg/L	D	20		E300.0	05/07/09 04:23 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 23:21 / ehb
Hardness as CaCO3	4720	mg/L		1		A2340 B	05/04/09 14:50 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	3.4	mg/L		0.1		E350.1	04/27/09 10:19 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 11:01 / bls
METALS, DISSOLVED							
Calcium	1030	mg/L		1		E200.7	05/04/09 14:50 / tao
Magnesium	519	mg/L		1		E200.7	05/04/09 14:50 / tao
Potassium	26	mg/L		1		E200.7	05/04/09 14:50 / tao
Silica	19.7	mg/L	D	0.6		E200.7	05/04/09 14:50 / tao
Sodium	2990	mg/L	D	5		E200.7	05/04/09 14:50 / tao
METALS, TOTAL							
Silica	26	mg/L	D	4		E200.7	05/01/09 20:53 / jjw
QUALITY CONTROL							
A/C Balance Sigma	-1.26					Calculation	05/08/09 17:33 / rls
Anions	221	meq/L		0.01		Calculation	05/08/09 17:33 / rls
Cations	225	meq/L		0.01		Calculation	05/08/09 17:33 / rls
A/C Balance	1.00	%				Calculation	05/08/09 17:33 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 21:01 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 21:01 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 21:01 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 21:01 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 21:01 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 21:01 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 21:01 / bw
Surr: Trifluorotoluene	93.0	%REC		80-120		SW8021B	04/29/09 21:01 / bw

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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-038
Client Sample ID: MOC-2

Report Date: 05/22/09
Collection Date: 04/21/09 13:40
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:46 / mav

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-039
Client Sample ID: M-27

Report Date: 05/22/09
Collection Date: 04/22/09 09:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.3	s.u.		0.1		A4500-H B	04/24/09 17:40 / qed
Conductivity	18600	umhos/cm		1		A2510 B	04/24/09 17:38 / qed
Solids, Total Dissolved TDS @ 180 C	12300	mg/L		10		A2540 C	04/27/09 15:28 / afb
INORGANICS							
Alkalinity, Total as CaCO3	48	mg/L		4		A2320 B	04/28/09 23:34 / ehb
Bicarbonate as HCO3	59	mg/L		4		A2320 B	04/28/09 23:34 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 23:34 / ehb
Chloride	5840	mg/L	D	5		E300.0	05/07/09 04:40 / eli-h1
Sulfate	975	mg/L	D	20		E300.0	05/07/09 04:40 / eli-h1
Fluoride	ND	mg/L		0.1		A4500-F C	04/28/09 23:34 / ehb
Hardness as CaCO3	3920	mg/L		1		A2340 B	05/11/09 13:26 / car
NUTRIENTS							
Nitrogen, Ammonia as N	3.1	mg/L		0.1		E350.1	04/27/09 10:23 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 11:03 / bls
METALS, DISSOLVED							
Calcium	765	mg/L		1		E200.7	05/11/09 13:26 / tao
Magnesium	488	mg/L		1		E200.7	05/11/09 13:26 / tao
Potassium	23	mg/L		1		E200.7	05/11/09 13:26 / tao
Silica	3.7	mg/L	D	0.6		E200.7	05/11/09 13:26 / tao
Sodium	2280	mg/L	D	5		E200.7	05/11/09 13:26 / tao
METALS, TOTAL							
Silica	5	mg/L	D	4		E200.7	05/01/09 20:58 / jjw
QUALITY CONTROL							
A/C Balance Sigma	2.51					Calculation	05/12/09 10:40 / car
Anions	186	meq/L		0.01		Calculation	05/12/09 10:40 / car
Cations	178	meq/L		0.01		Calculation	05/12/09 10:40 / car
A/C Balance	-2.06	%				Calculation	05/12/09 10:40 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 20:27 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 20:27 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 20:27 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 20:27 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 20:27 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 20:27 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 20:27 / bw
Surr: Trifluorotoluene	98.0	%REC		80-120		SW8021B	04/29/09 20:27 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-039
Client Sample ID: M-27

Report Date: 05/22/09
Collection Date: 04/22/09 09:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:47 / mav

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-040
Client Sample ID: PNR-38-08

Report Date: 05/22/09
Collection Date: 04/21/09 16:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500-H B	04/24/09 17:41 / qed
Conductivity	6310	umhos/cm		1		A2510 B	04/24/09 17:39 / qed
Solids, Total Dissolved TDS @ 180 C	3710	mg/L		10		A2540 C	04/27/09 15:32 / afb
INORGANICS							
Alkalinity, Total as CaCO3	458	mg/L		4		A2320 B	04/28/09 23:42 / ehb
Bicarbonate as HCO3	558	mg/L		4		A2320 B	04/28/09 23:42 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 23:42 / ehb
Chloride	1230	mg/L		1		E300.0	05/07/09 04:56 / eli-h1
Sulfate	1160	mg/L	D	4		E300.0	05/07/09 04:56 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 23:42 / ehb
Hardness as CaCO3	2020	mg/L		1		A2340 B	05/04/09 15:07 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	1.9	mg/L		0.1		E350.1	04/27/09 10:27 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 11:04 / bls
METALS, DISSOLVED							
Calcium	404	mg/L		1		E200.7	05/04/09 15:07 / tao
Magnesium	246	mg/L		1		E200.7	05/04/09 15:07 / tao
Potassium	13	mg/L		1		E200.7	05/04/09 15:07 / tao
Silica	22.4	mg/L	D	0.3		E200.7	05/04/09 15:07 / tao
Sodium	597	mg/L	D	3		E200.7	05/04/09 15:07 / tao
METALS, TOTAL							
Silica	26	mg/L	D	2		E200.7	05/01/09 21:02 / jjw
QUALITY CONTROL							
A/C Balance Sigma	0.95					Calculation	05/08/09 17:33 / rls
Anions	67.9	meq/L		0.01		Calculation	05/08/09 17:33 / rls
Cations	66.8	meq/L		0.01		Calculation	05/08/09 17:33 / rls
A/C Balance	-0.81	%				Calculation	05/08/09 17:33 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 19:53 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 19:53 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 19:53 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 19:53 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 19:53 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 19:53 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 19:53 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	04/29/09 19:53 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-040
Client Sample ID: PNR-38-08

Report Date: 05/22/09
Collection Date: 04/21/09 16:30
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:48 / mav

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-041
Client Sample ID: MOC-4

Report Date: 05/22/09
Collection Date: 04/23/09 13:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.1		A4500-H B	04/24/09 17:41 / qed
Conductivity	8880	umhos/cm		1		A2510 B	04/24/09 17:40 / qed
Solids, Total Dissolved TDS @ 180 C	5040	mg/L		10		A2540 C	04/27/09 15:33 / afb
INORGANICS							
Alkalinity, Total as CaCO3	334	mg/L		4		A2320 B	04/28/09 23:51 / ehb
Bicarbonate as HCO3	408	mg/L		4		A2320 B	04/28/09 23:51 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/28/09 23:51 / ehb
Chloride	2300	mg/L	D	2		E300.0	05/07/09 05:13 / eli-h1
Sulfate	793	mg/L	D	9		E300.0	05/07/09 05:13 / eli-h1
Fluoride	0.2	mg/L		0.1		A4500-F C	04/28/09 23:51 / ehb
Hardness as CaCO3	2020	mg/L		1		A2340 B	05/04/09 15:15 / rls
NUTRIENTS							
Nitrogen, Ammonia as N	1.4	mg/L		0.1		E350.1	04/27/09 10:28 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 11:05 / bls
METALS, DISSOLVED							
Calcium	394	mg/L		1		E200.7	05/04/09 15:15 / tao
Magnesium	250	mg/L		1		E200.7	05/04/09 15:15 / tao
Potassium	16	mg/L		1		E200.7	05/04/09 15:15 / tao
Silica	16.0	mg/L	D	0.3		E200.7	05/04/09 15:15 / tao
Sodium	1120	mg/L	D	3		E200.7	05/04/09 15:15 / tao
METALS, TOTAL							
Silica	18	mg/L	D	2		E200.7	05/01/09 21:06 / jjw
QUALITY CONTROL							
A/C Balance Sigma	-0.85					Calculation	05/08/09 17:33 / rls
Anions	88.2	meq/L		0.01		Calculation	05/08/09 17:33 / rls
Cations	89.4	meq/L		0.01		Calculation	05/08/09 17:33 / rls
A/C Balance	0.70	%				Calculation	05/08/09 17:33 / rls
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 19:20 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 19:20 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 19:20 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 19:20 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 19:20 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 19:20 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 19:20 / bw
Surr: Trifluorotoluene	102	%REC		80-120		SW8021B	04/29/09 19:20 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-041
Client Sample ID: MOC-4

Report Date: 05/22/09
Collection Date: 04/23/09 13:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:49 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-042
Client Sample ID: M-18

Report Date: 05/22/09
Collection Date: 04/22/09 15:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.		0.1		A4500-H B	04/24/09 17:42 / qed
Conductivity	16900	umhos/cm		1		A2510 B	04/24/09 17:40 / qed
Solids, Total Dissolved TDS @ 180 C	10100	mg/L		10		A2540 C	04/27/09 15:33 / afb
INORGANICS							
Alkalinity, Total as CaCO3	276	mg/L		4		A2320 B	04/29/09 00:16 / ehb
Bicarbonate as HCO3	336	mg/L		4		A2320 B	04/29/09 00:16 / ehb
Carbonate as CO3	ND	mg/L		4		A2320 B	04/29/09 00:16 / ehb
Chloride	4960	mg/L	D	5		E300.0	05/07/09 05:29 / eli-h1
Sulfate	1060	mg/L	D	20		E300.0	05/07/09 05:29 / eli-h1
Fluoride	0.1	mg/L		0.1		A4500-F C	04/29/09 00:16 / ehb
Hardness as CaCO3	2960	mg/L		1		A2340 B	05/11/09 13:32 / car
NUTRIENTS							
Nitrogen, Ammonia as N	5.7	mg/L		0.1		E350.1	04/27/09 12:20 / sam
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	04/28/09 11:06 / bls
METALS, DISSOLVED							
Calcium	586	mg/L		1		E200.7	05/11/09 13:32 / tao
Magnesium	362	mg/L		1		E200.7	05/11/09 13:32 / tao
Potassium	23	mg/L		1		E200.7	05/11/09 13:32 / tao
Silica	13.8	mg/L	D	0.6		E200.7	05/11/09 13:32 / tao
Sodium	2540	mg/L	D	5		E200.7	05/11/09 13:32 / tao
METALS, TOTAL							
Silica	16	mg/L	D	4		E200.7	05/01/09 21:10 / jjw
QUALITY CONTROL							
A/C Balance Sigma	-1.08					Calculation	05/12/09 10:41 / car
Anions	168	meq/L		0.01		Calculation	05/12/09 10:41 / car
Cations	170	meq/L		0.01		Calculation	05/12/09 10:41 / car
A/C Balance	0.86	%				Calculation	05/12/09 10:41 / car
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	04/29/09 18:46 / bw
Benzene	ND	ug/L		0.50		SW8021B	04/29/09 18:46 / bw
Toluene	ND	ug/L		0.50		SW8021B	04/29/09 18:46 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	04/29/09 18:46 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	04/29/09 18:46 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	04/29/09 18:46 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	04/29/09 18:46 / bw
Surr: Trifluorotoluene	101	%REC		80-120		SW8021B	04/29/09 18:46 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-042
Client Sample ID: M-18

Report Date: 05/22/09
Collection Date: 04/22/09 15:00
DateReceived: 04/24/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
ORGANIC CHARACTERISTICS (ELI GILLETTE)							
Total Petroleum Hydrocarbons	ND	mg/L		1.0		E1664A	04/30/09 13:50 / mav

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-043
Client Sample ID: Trip Blank 1 Lot040709 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/18/09 13:50
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 00:06 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 00:06 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 00:06 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 00:06 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 00:06 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 00:06 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 00:06 / bw
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	05/02/09 00:06 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-044
Client Sample ID: Trip Blank 2 Lot040709 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/19/09 13:05
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 00:40 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 00:40 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 00:40 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 00:40 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 00:40 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 00:40 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 00:40 / bw
Surr: Trifluorotoluene	104	%REC		80-120		SW8021B	05/02/09 00:40 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-045
Client Sample ID: Trip Blank 3 Lot040109 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/20/09 17:35
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 01:13 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 01:13 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 01:13 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 01:13 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 01:13 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 01:13 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 01:13 / bw
Surr: Trifluorotoluene	101	%REC		80-120		SW8021B	05/02/09 01:13 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Blere Well Site
Lab ID: B09042302-046
Client Sample ID: Trip Blank 4 Lot040109 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/21/09 12:45
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 01:47 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 01:47 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 01:47 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 01:47 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 01:47 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 01:47 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 01:47 / bw
Surr: Trifluorotoluene	98.0	%REC		80-120		SW8021B	05/02/09 01:47 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-047
Client Sample ID: Trip Blank 5 Lot042009 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/21/09 16:35
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 02:21 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 02:21 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 02:21 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 02:21 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 02:21 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 02:21 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 02:21 / bw
Surr: Trifluorotoluene	102	%REC		80-120		SW8021B	05/02/09 02:21 / bw

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-048
Client Sample ID: Trip Blank 6 Lot042009 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/22/09 11:00
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 02:55 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 02:55 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 02:55 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 02:55 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 02:55 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 02:55 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 02:55 / bw
Surr: Trifluorotoluene	103	%REC		80-120		SW8021B	05/02/09 02:55 / bw

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-049
Client Sample ID: Trip Blank 7 Lot040709 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/18/09 14:05
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 03:28 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 03:28 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 03:28 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 03:28 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 03:28 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 03:28 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 03:28 / bw
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	05/02/09 03:28 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-050
Client Sample ID: Trip Blank 8 Lot041009 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/18/09 16:20
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 04:02 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 04:02 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 04:02 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 04:02 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 04:02 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 04:02 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 04:02 / bw
Surr: Trifluorotoluene	95.0	%REC		80-120		SW8021B	05/02/09 04:02 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-051
Client Sample ID: Trip Blank 9 Lot041309 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/19/09 11:10
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 04:36 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 04:36 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 04:36 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 04:36 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 04:36 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 04:36 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 04:36 / bw
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	05/02/09 04:36 / bw

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-052
Client Sample ID: Trip Blank 10 Lot041009 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/19/09 13:55
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 05:10 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 05:10 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 05:10 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 05:10 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 05:10 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 05:10 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 05:10 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	05/02/09 05:10 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-053
Client Sample ID: Trip Blank 11 Lot042009 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/20/09 14:30
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 05:44 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 05:44 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 05:44 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 05:44 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 05:44 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 05:44 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 05:44 / bw
Surr: Trifluorotoluene	91.0	%REC		80-120		SW8021B	05/02/09 05:44 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-054
Client Sample ID: Trip Blank 12 Lot040709 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/22/09 18:40
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 06:17 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 06:17 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 06:17 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 06:17 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 06:17 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 06:17 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 06:17 / bw
Surr: Trifluorotoluene	98.0	%REC		80-120		SW8021B	05/02/09 06:17 / bw

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * ell@energylab.com

LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-055
Client Sample ID: Trip Blank 13 Lot042009 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/22/09 16:45
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 06:51 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 06:51 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 06:51 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 06:51 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 06:51 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 06:51 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 06:51 / bw
Surr: Trifluorotoluene	100	%REC		80-120		SW8021B	05/02/09 06:51 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-056
Client Sample ID: Trip Blank 14 Lot041309 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/20/09 18:30
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 07:25 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 07:25 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 07:25 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 07:25 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 07:25 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 07:25 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 07:25 / bw
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	05/02/09 07:25 / bw

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-057
Client Sample ID: Trip Blank 15 Lot042009 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/21/09 12:40
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 07:58 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 07:58 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 07:58 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 07:58 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 07:58 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 07:58 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 07:58 / bw
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	05/02/09 07:58 / bw

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site
Lab ID: B09042302-058
Client Sample ID: Trip Blank 16 Lot042009 B-TS SHP0243

Report Date: 05/22/09
Collection Date: 04/21/09 09:00
DateReceived: 04/24/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	05/02/09 08:32 / bw
Benzene	ND	ug/L		0.50		SW8021B	05/02/09 08:32 / bw
Toluene	ND	ug/L		0.50		SW8021B	05/02/09 08:32 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	05/02/09 08:32 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	05/02/09 08:32 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	05/02/09 08:32 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	05/02/09 08:32 / bw
Surr: Trifluorotoluene	92.0	%REC		80-120		SW8021B	05/02/09 08:32 / bw

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Batch: R128499
Sample ID: MB	Method Blank				Run: MAN-TECH_090427A				04/27/09 15:06
Alkalinity, Total as CaCO3	ND	mg/L	4						
Bicarbonate as HCO3	ND	mg/L	4						
Carbonate as CO3	ND	mg/L	4						
Sample ID: LCS	Laboratory Control Sample				Run: MAN-TECH_090427A				04/27/09 15:12
Alkalinity, Total as CaCO3	97.5	mg/L	4.0	98	90	110			
Sample ID: B09042302-002AMS	Sample Matrix Spike				Run: MAN-TECH_090427A				04/28/09 02:28
Alkalinity, Total as CaCO3	282	mg/L	4.0	78	80	120			S
Sample ID: B09042302-002AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090427A				04/28/09 02:36
Alkalinity, Total as CaCO3	280	mg/L	4.0	77	80	120	0.7	20	S
Method: A2320 B									Batch: R128566
Sample ID: MBLK	Method Blank				Run: MAN-TECH_090428B				04/28/09 15:03
Alkalinity, Total as CaCO3	ND	mg/L	4						
Bicarbonate as HCO3	ND	mg/L	4						
Carbonate as CO3	ND	mg/L	4						
Sample ID: LCS	Laboratory Control Sample				Run: MAN-TECH_090428B				04/28/09 15:09
Alkalinity, Total as CaCO3	97.9	mg/L	4.0	98	90	110			
Sample ID: B09042302-012AMS	Sample Matrix Spike				Run: MAN-TECH_090428B				04/28/09 19:59
Alkalinity, Total as CaCO3	380	mg/L	4.0	84	80	120			
Sample ID: B09042302-012AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090428B				04/28/09 20:20
Alkalinity, Total as CaCO3	381	mg/L	4.0	84	80	120	0.3	20	
Sample ID: B09042302-022AMS	Sample Matrix Spike				Run: MAN-TECH_090428B				04/28/09 21:58
Alkalinity, Total as CaCO3	452	mg/L	4.0	79	80	120			S
Sample ID: B09042302-022AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090428B				04/28/09 22:07
Alkalinity, Total as CaCO3	461	mg/L	4.0	85	80	120	1.9	20	
Sample ID: B09042302-041AMS	Sample Matrix Spike				Run: MAN-TECH_090428B				04/28/09 23:59
Alkalinity, Total as CaCO3	449	mg/L	4.0	86	80	120			
Sample ID: B09042302-041AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090428B				04/29/09 00:07
Alkalinity, Total as CaCO3	443	mg/L	4.0	82	80	120	1.3	20	

Qualifiers:

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ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B									Batch: PHSC090424A
Sample ID: PHC1081231G	Laboratory Control Sample				Run: ORION555A_090424A				04/24/09 10:02
Conductivity	150	umhos/cm	1.0	100	90	110			
Sample ID: PHC1090310A	Laboratory Control Sample				Run: ORION555A_090424A				04/24/09 10:02
Conductivity	5040	umhos/cm	1.0	101	90	110			
Sample ID: PHC1081114A	Laboratory Control Sample				Run: ORION555A_090424A				04/24/09 10:03
Conductivity	20100	umhos/cm	1.0	100	90	110			
Sample ID: B09042302-006ADUP	Sample Duplicate				Run: ORION555A_090424A				04/24/09 16:43
Conductivity	4920	umhos/cm	1.0				0.2	10	
Sample ID: B09042302-016ADUP	Sample Duplicate				Run: ORION555A_090424A				04/24/09 17:01
Conductivity	6270	umhos/cm	1.0				0.2	10	
Sample ID: B09042302-026ADUP	Sample Duplicate				Run: ORION555A_090424A				04/24/09 17:08
Conductivity	48300	umhos/cm	1.0				0.4	10	
Sample ID: B09042302-036ADUP	Sample Duplicate				Run: ORION555A_090424A				04/24/09 17:36
Conductivity	5430	umhos/cm	1.0				0.2	10	
Method: A2540 C									Batch: TDS090424C
Sample ID: MBLK5	Method Blank				Run: CPA124S_090424B				04/24/09 17:03
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB5	Laboratory Fortified Blank				Run: CPA124S_090424B				04/24/09 17:03
Solids, Total Dissolved TDS @ 180 C	1090	mg/L	10	98	90	110			
Sample ID: B09042273-005A MS	Sample Matrix Spike				Run: CPA124S_090424B				04/24/09 17:05
Solids, Total Dissolved TDS @ 180 C	3880	mg/L	10	99	80	120			
Sample ID: B09042273-005A MSD	Sample Matrix Spike Duplicate				Run: CPA124S_090424B				04/24/09 17:06
Solids, Total Dissolved TDS @ 180 C	3940	mg/L	10	101	80	120	1.5	20	
Sample ID: MBLK6	Method Blank				Run: CPA124S_090424B				04/24/09 17:22
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB6	Laboratory Fortified Blank				Run: CPA124S_090424B				04/24/09 17:23
Solids, Total Dissolved TDS @ 180 C	1120	mg/L	10	101	90	110			
Sample ID: B09042302-002A MS	Sample Matrix Spike				Run: CPA124S_090424B				04/24/09 17:25
Solids, Total Dissolved TDS @ 180 C	55500	mg/L	10	101	80	120			
Sample ID: B09042302-002A MSD	Sample Matrix Spike Duplicate				Run: CPA124S_090424B				04/24/09 17:26
Solids, Total Dissolved TDS @ 180 C	53100	mg/L	10	101	80	120	4.4	20	

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS090427A
Sample ID: MBLK1	Method Blank				Run: CPA124S_090427B				04/27/09 09:15
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB1	Laboratory Fortified Blank				Run: CPA124S_090427B				04/27/09 09:16
Solids, Total Dissolved TDS @ 180 C	1110	mg/L	10	101	90	110			
Sample ID: B09042273-015A MS	Sample Matrix Spike				Run: CPA124S_090427B				04/27/09 09:19
Solids, Total Dissolved TDS @ 180 C	22400	mg/L	10	100	80	120			
Sample ID: B09042273-015A MSD	Sample Matrix Spike Duplicate				Run: CPA124S_090427B				04/27/09 09:20
Solids, Total Dissolved TDS @ 180 C	21900	mg/L	10	100	80	120	2.6	20	
Method: A2540 C									Batch: TDS090427B
Sample ID: MBLK3	Method Blank				Run: CPA124S_090427B				04/27/09 15:07
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB3	Laboratory Fortified Blank				Run: CPA124S_090427B				04/27/09 15:08
Solids, Total Dissolved TDS @ 180 C	1090	mg/L	10	99	90	110			
Sample ID: B09042302-009A MS	Sample Matrix Spike				Run: CPA124S_090427B				04/27/09 15:09
Solids, Total Dissolved TDS @ 180 C	21600	mg/L	10	101	80	120			
Sample ID: B09042302-009A MSD	Sample Matrix Spike Duplicate				Run: CPA124S_090427B				04/27/09 15:10
Solids, Total Dissolved TDS @ 180 C	22000	mg/L	10	101	80	120	2.1	20	
Sample ID: MBLK4	Method Blank				Run: CPA124S_090427B				04/27/09 15:24
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB4	Laboratory Fortified Blank				Run: CPA124S_090427B				04/27/09 15:24
Solids, Total Dissolved TDS @ 180 C	1110	mg/L	10	100	90	110			
Sample ID: B09042302-037A MS	Sample Matrix Spike				Run: CPA124S_090427B				04/27/09 15:26
Solids, Total Dissolved TDS @ 180 C	23300	mg/L	10	101	80	120			
Sample ID: B09042302-037A MSD	Sample Matrix Spike Duplicate				Run: CPA124S_090427B				04/27/09 15:26
Solids, Total Dissolved TDS @ 180 C	22800	mg/L	10	100	80	120	2	20	

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-F C								Analytical Run: MAN-TECH_090427A	
Sample ID: ICV	Initial Calibration Verification Standard							04/27/09 15:30	
Fluoride	0.970	mg/L	0.10	97	90	110			
Method: A4500-F C								Batch: R128499	
Sample ID: MB	Method Blank				Run: MAN-TECH_090427A			04/27/09 15:24	
Fluoride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: MAN-TECH_090427A			04/27/09 15:27	
Fluoride	0.930	mg/L	0.10	93	90	110			
Sample ID: B09042302-002AMS	Sample Matrix Spike				Run: MAN-TECH_090427A			04/28/09 02:28	
Fluoride	0.920	mg/L	0.10	76	80	120			S
Sample ID: B09042302-002AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090427A			04/28/09 02:36	
Fluoride	0.920	mg/L	0.10	76	80	120	0	10	S
Method: A4500-F C								Analytical Run: MAN-TECH_090428B	
Sample ID: ICV	Initial Calibration Verification Standard							04/28/09 15:25	
Fluoride	0.980	mg/L	0.10	98	90	110			
Method: A4500-F C								Batch: R128566	
Sample ID: MB	Method Blank				Run: MAN-TECH_090428B			04/28/09 15:19	
Fluoride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: MAN-TECH_090428B			04/28/09 15:22	
Fluoride	0.940	mg/L	0.10	94	90	110			
Sample ID: B09042302-012AMS	Sample Matrix Spike				Run: MAN-TECH_090428B			04/28/09 19:59	
Fluoride	1.07	mg/L	0.10	89	80	120			
Sample ID: B09042302-012AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090428B			04/28/09 20:20	
Fluoride	1.08	mg/L	0.10	90	80	120	0.9	10	
Sample ID: B09042302-022AMS	Sample Matrix Spike				Run: MAN-TECH_090428B			04/28/09 21:58	
Fluoride	1.19	mg/L	0.10	94	80	120			
Sample ID: B09042302-022AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090428B			04/28/09 22:07	
Fluoride	1.13	mg/L	0.10	88	80	120	5.2	10	
Sample ID: B09042302-041AMS	Sample Matrix Spike				Run: MAN-TECH_090428B			04/28/09 23:59	
Fluoride	1.24	mg/L	0.10	105	80	120			
Sample ID: B09042302-041AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_090428B			04/29/09 00:07	
Fluoride	1.15	mg/L	0.10	96	80	120	7.5	10	

Qualifiers:

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ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B									Batch: PHSC090424A
Sample ID: PHC1081231F	Laboratory Control Sample				Run: ORION555A_090424A				04/24/09 10:05
pH	4.00	s.u.	0.10	100	97	103			
Sample ID: PHC1080722E	Laboratory Control Sample				Run: ORION555A_090424A				04/24/09 10:05
pH	6.99	s.u.	0.10	100	98	102			
Sample ID: B09042302-006ADUP	Sample Duplicate				Run: ORION555A_090424A				04/24/09 16:48
pH	7.15	s.u.	0.10				0.3	10	
Sample ID: B09042302-016ADUP	Sample Duplicate				Run: ORION555A_090424A				04/24/09 17:15
pH	7.14	s.u.	0.10				0.3	10	
Sample ID: B09042302-026ADUP	Sample Duplicate				Run: ORION555A_090424A				04/24/09 17:21
pH	6.89	s.u.	0.10				0	10	
Sample ID: B09042302-036ADUP	Sample Duplicate				Run: ORION555A_090424A				04/24/09 17:37
pH	7.13	s.u.	0.10				0	10	
Method: E1664A									Batch: G_TPH090429A
Sample ID: MBLK0904290000	Method Blank				Run: SUB-G168721				04/29/09 16:12
Total Petroleum Hydrocarbons	ND	mg/L	0.6						
Sample ID: LCS0904290000	Laboratory Control Sample				Run: SUB-G168721				04/29/09 16:13
Total Petroleum Hydrocarbons	18	mg/L	1.0	89	64	132			
Sample ID: LCSD0904290000	Laboratory Control Sample Duplicate				Run: SUB-G168721				04/29/09 16:14
Total Petroleum Hydrocarbons	15	mg/L	1.0	77	64	132	15	34	
Sample ID: B09042302-010E	Sample Matrix Spike				Run: SUB-G168721				04/29/09 16:24
Total Petroleum Hydrocarbons	15	mg/L	1.0	72	64	132			
Method: E1664A									Batch: G_TPH090430A
Sample ID: MBLK0904300000	Method Blank				Run: SUB-G168750				04/30/09 13:25
Total Petroleum Hydrocarbons	ND	mg/L	0.6						
Sample ID: LCS0904300000	Laboratory Control Sample				Run: SUB-G168750				04/30/09 13:28
Total Petroleum Hydrocarbons	16	mg/L	1.0	78	64	132			
Sample ID: LCSD0904300000	Laboratory Control Sample Duplicate				Run: SUB-G168750				04/30/09 13:29
Total Petroleum Hydrocarbons	16	mg/L	1.0	80	64	132	3.2	34	
Sample ID: B09042302-015E	Sample Matrix Spike				Run: SUB-G168750				04/30/09 13:32
Total Petroleum Hydrocarbons	16	mg/L	1.0	76	64	132			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: SUB-H53363	
Sample ID: ICV	Initial Calibration Verification Standard							05/04/09 10:48	
Chloride	2.59	mg/L	1.0	103	90	110			
Sulfate	9.57	mg/L	1.0	96	90	110			
Method: E300.0								Batch: H_R53363	
Sample ID: LFB	Laboratory Fortified Blank				Run: SUB-H53363			05/04/09 11:55	
Chloride	4.67	mg/L	1.0	93	80	120			
Sulfate	9.44	mg/L	1.0	94	80	120			
Sample ID: MBLK	Method Blank				Run: SUB-H53363			05/04/09 12:11	
Chloride	ND	mg/L	0.05						
Sulfate	ND	mg/L	0.2						
Sample ID: B09042302-006A	Sample Matrix Spike				Run: SUB-H53363			05/05/09 21:35	
Chloride	83.0	mg/L	1.2	101	80	120			
Sulfate	2100	mg/L	4.1		80	120			A
Sample ID: B09042302-006A	Sample Matrix Spike Duplicate				Run: SUB-H53363			05/05/09 21:51	
Chloride	83.7	mg/L	1.2	104	80	120	0.8	10	
Sulfate	2160	mg/L	4.1		80	120	2.5	10	A

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: SUB-H53377	
Sample ID: ICV	Initial Calibration Verification Standard							05/06/09 10:19	
Chloride	2.57	mg/L	1.0	103	90	110			
Sulfate	9.27	mg/L	1.0	93	90	110			
Method: E300.0								Batch: H_R53377	
Sample ID: LFB	Laboratory Fortified Blank				Run: SUB-H53377			05/06/09 10:52	
Chloride	4.62	mg/L	1.0	92	80	120			
Sulfate	9.46	mg/L	1.0	95	80	120			
Sample ID: MBLK	Method Blank				Run: SUB-H53377			05/06/09 11:09	
Chloride	ND	mg/L	0.05						
Sulfate	ND	mg/L	0.2						
Sample ID: H09050005-010A MS	Sample Matrix Spike				Run: SUB-H53377			05/07/09 09:19	
Chloride	193	mg/L	1.0		80	120			A
Sulfate	307	mg/L	1.0		80	120			A
Sample ID: H09050005-010A MSD	Sample Matrix Spike Duplicate				Run: SUB-H53377			05/07/09 09:35	
Chloride	194	mg/L	1.0		80	120	0.3	10	A
Sulfate	308	mg/L	1.0		80	120	0.3	10	A
Sample ID: B09042302-015A	Sample Matrix Spike				Run: SUB-H53377			05/06/09 19:05	
Chloride	144	mg/L	2.9		80	120			A
Sulfate	3320	mg/L	10		80	120			A
Sample ID: B09042302-015A	Sample Matrix Spike Duplicate				Run: SUB-H53377			05/06/09 19:21	
Chloride	145	mg/L	2.9		80	120	0.8	10	A
Sulfate	3350	mg/L	10		80	120	0.8	10	A
Sample ID: B09042302-019A	Sample Matrix Spike				Run: SUB-H53377			05/06/09 21:16	
Chloride	260	mg/L	1.2		80	120			A
Sulfate	1770	mg/L	4.1		80	120			A
Sample ID: B09042302-019A	Sample Matrix Spike Duplicate				Run: SUB-H53377			05/06/09 21:33	
Chloride	260	mg/L	1.2		80	120	0.3	10	A
Sulfate	1770	mg/L	4.1		80	120	0.1	10	A
Sample ID: B09042302-035A	Sample Matrix Spike				Run: SUB-H53377			05/07/09 02:45	
Chloride	104	mg/L	1.2	101	80	120			
Sulfate	1600	mg/L	4.1		80	120			A
Sample ID: B09042302-035A	Sample Matrix Spike Duplicate				Run: SUB-H53377			05/07/09 03:01	
Chloride	104	mg/L	1.2	101	80	120	0	10	
Sulfate	1620	mg/L	4.1		80	120	1	10	A

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC202-B_090511A
Sample ID: ICV051109-11	Initial Calibration Verification Standard								05/11/09 11:16
Chloride	23.5	mg/L	1.0	94	90	110			
Sulfate	98.0	mg/L	1.0	98	90	110			
Method: E300.0									Batch: R129267
Sample ID: ICB051109-12	Method Blank				Run: IC202-B_090511A				05/11/09 11:28
Chloride	ND	mg/L	0.03						
Sulfate	ND	mg/L	0.06						
Sample ID: LFB051109-13	Laboratory Fortified Blank				Run: IC202-B_090511A				05/11/09 11:39
Chloride	22.8	mg/L	1.0	91	90	110			
Sulfate	98.1	mg/L	1.0	98	90	110			
Sample ID: B09042302-001AMS	Sample Matrix Spike				Run: IC202-B_090511A				05/11/09 12:02
Chloride	1390	mg/L	1.0	105	90	110			
Sulfate	4130	mg/L	1.2	108	90	110			
Sample ID: B09042302-001AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_090511A				05/11/09 12:14
Chloride	1400	mg/L	1.0	105	90	110	0.3	20	
Sulfate	4140	mg/L	1.2	108	90	110	0.2	20	
Method: E300.0									Analytical Run: IC202-B_090515A
Sample ID: ICV051509-11	Initial Calibration Verification Standard								05/15/09 13:31
Chloride	24.1	mg/L	1.0	96	90	110			
Sulfate	104	mg/L	1.0	104	90	110			
Method: E300.0									Batch: R129563
Sample ID: ICB051509-12	Method Blank				Run: IC202-B_090515A				05/15/09 13:43
Chloride	ND	mg/L	0.03						
Sulfate	ND	mg/L	0.06						
Sample ID: LFB051509-13	Laboratory Fortified Blank				Run: IC202-B_090515A				05/15/09 13:55
Chloride	23.1	mg/L	1.0	93	90	110			
Sulfate	102	mg/L	1.0	102	90	110			
Sample ID: B09042302-005AMS	Sample Matrix Spike				Run: IC202-B_090515A				05/15/09 14:30
Chloride	65.9	mg/L	1.0	103	90	110			
Sulfate	381	mg/L	1.0	107	90	110			
Sample ID: B09042302-005AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_090515A				05/15/09 14:41
Chloride	66.1	mg/L	1.0	104	90	110	0.3	20	
Sulfate	383	mg/L	1.0	108	90	110	0.3	20	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E350.1								Analytical Run: FIA202-B_090427A	
Sample ID: ICV	Initial Calibration Verification Standard								04/27/09 09:19
Nitrogen, Ammonia as N	5.60	mg/L	0.11	102	90	110			
Method: E350.1								Batch: R128448	
Sample ID: MBLK	Method Blank				Run: FIA202-B_090427A				04/27/09 09:20
Nitrogen, Ammonia as N	ND	mg/L	0.02						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA202-B_090427A				04/27/09 09:21
Nitrogen, Ammonia as N	1.00	mg/L	0.10	102	90	110			
Sample ID: B09041807-004CMS	Sample Matrix Spike				Run: FIA202-B_090427A				04/27/09 09:27
Nitrogen, Ammonia as N	1.38	mg/L	0.10	103	90	110			
Sample ID: B09041807-004CMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090427A				04/27/09 09:28
Nitrogen, Ammonia as N	1.37	mg/L	0.10	101	90	110	0.9	10	
Sample ID: B09042302-006DMS	Sample Matrix Spike				Run: FIA202-B_090427A				04/27/09 09:41
Nitrogen, Ammonia as N	0.844	mg/L	0.10	86	90	110			S
Sample ID: B09042302-006DMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090427A				04/27/09 09:43
Nitrogen, Ammonia as N	0.846	mg/L	0.10	86	90	110	0.2	10	S
Sample ID: B09042302-014DMS	Sample Matrix Spike				Run: FIA202-B_090427A				04/27/09 09:56
Nitrogen, Ammonia as N	1.44	mg/L	0.10	93	90	110			
Sample ID: B09042302-014DMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090427A				04/27/09 09:57
Nitrogen, Ammonia as N	1.45	mg/L	0.10	94	90	110	0.7	10	
Sample ID: B09042302-022DMS	Sample Matrix Spike				Run: FIA202-B_090427A				04/27/09 10:10
Nitrogen, Ammonia as N	1.03	mg/L	0.10	103	90	110			
Sample ID: B09042302-022DMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090427A				04/27/09 10:11
Nitrogen, Ammonia as N	1.03	mg/L	0.10	103	90	110	0.4	10	
Sample ID: B09042302-039DMS	Sample Matrix Spike				Run: FIA202-B_090427A				04/27/09 10:24
Nitrogen, Ammonia as N	4.00	mg/L	0.10	93	90	110			
Sample ID: B09042302-039DMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090427A				04/27/09 10:25
Nitrogen, Ammonia as N	3.99	mg/L	0.10	93	90	110	0.1	10	
Sample ID: B09042302-042DMS	Sample Matrix Spike				Run: FIA202-B_090427A				04/27/09 12:22
Nitrogen, Ammonia as N	13.0	mg/L	0.11	124	90	110			S
Sample ID: B09042302-042DMSD	Sample Matrix Spike Duplicate				Run: FIA202-B_090427A				04/27/09 12:23
Nitrogen, Ammonia as N	13.1	mg/L	0.11	125	90	110	0.6	10	S

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2								Analytical Run: FIA203-B_090427A	
Sample ID: ICV	Initial Calibration Verification Standard								04/27/09 11:06
Nitrogen, Nitrate+Nitrite as N	36.7	mg/L	0.050	104	90	110			
Method: E353.2									Batch: R128455
Sample ID: MBLK	Method Blank				Run: FIA203-B_090427A				04/27/09 11:07
Nitrogen, Nitrate+Nitrite as N	ND	mg/L	0.002						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA203-B_090427A				04/27/09 11:09
Nitrogen, Nitrate+Nitrite as N	0.983	mg/L	0.050	100	90	110			
Sample ID: B09042285-005EMS	Sample Matrix Spike				Run: FIA203-B_090427A				04/27/09 13:13
Nitrogen, Nitrate+Nitrite as N	0.997	mg/L	0.050	102	90	110			
Sample ID: B09042285-005EMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090427A				04/27/09 13:14
Nitrogen, Nitrate+Nitrite as N	0.987	mg/L	0.050	101	90	110	1	10	
Sample ID: B09042285-016EMS	Sample Matrix Spike				Run: FIA203-B_090427A				04/27/09 13:29
Nitrogen, Nitrate+Nitrite as N	0.997	mg/L	0.050	101	90	110			
Sample ID: B09042285-016EMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090427A				04/27/09 13:31
Nitrogen, Nitrate+Nitrite as N	1.00	mg/L	0.050	101	90	110	0.4	10	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2								Analytical Run: FIA203-B_090428A	
Sample ID: ICV	Initial Calibration Verification Standard								04/28/09 10:15
Nitrogen, Nitrate+Nitrite as N	37.1	mg/L	0.050	105	90	110			
Method: E353.2									Batch: R128524
Sample ID: MBLK	Method Blank				Run: FIA203-B_090428A				04/28/09 10:16
Nitrogen, Nitrate+Nitrite as N	0.003	mg/L	0.002						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA203-B_090428A				04/28/09 10:18
Nitrogen, Nitrate+Nitrite as N	0.982	mg/L	0.050	100	90	110			
Sample ID: B09042302-004DMS	Sample Matrix Spike				Run: FIA203-B_090428A				04/28/09 10:23
Nitrogen, Nitrate+Nitrite as N	0.943	mg/L	0.050	96	90	110			
Sample ID: B09042302-004DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090428A				04/28/09 10:25
Nitrogen, Nitrate+Nitrite as N	0.931	mg/L	0.050	94	90	110	1.3	10	
Sample ID: B09042302-020DMS	Sample Matrix Spike				Run: FIA203-B_090428A				04/28/09 10:40
Nitrogen, Nitrate+Nitrite as N	27.9	mg/L	0.050	96	90	110			
Sample ID: B09042302-020DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090428A				04/28/09 10:41
Nitrogen, Nitrate+Nitrite as N	27.8	mg/L	0.050	95	90	110	0.1	10	
Sample ID: B09042302-035DMS	Sample Matrix Spike				Run: FIA203-B_090428A				04/28/09 10:57
Nitrogen, Nitrate+Nitrite as N	0.664	mg/L	0.050	66	90	110			S
Sample ID: B09042302-035DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090428A				04/28/09 10:58
Nitrogen, Nitrate+Nitrite as N	0.664	mg/L	0.050	66	90	110	0	10	S
Sample ID: B09042415-001CMS	Sample Matrix Spike				Run: FIA203-B_090428A				04/28/09 12:27
Nitrogen, Nitrate+Nitrite as N	1.00	mg/L	0.050	100	90	110			
Sample ID: B09042415-001CMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_090428A				04/28/09 12:28
Nitrogen, Nitrate+Nitrite as N	1.01	mg/L	0.050	101	90	110	1.1	10	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 38533
Sample ID: MB-38533	Method Blank				Run: ICP202-B_090503A				05/03/09 17:27
Silicon	ND	mg/L	0.10						
Silica	ND	mg/L	0.2						
Sample ID: LCS5-38533	Laboratory Control Sample				Run: ICP202-B_090503A				05/03/09 17:31
Silicon	5.14	mg/L	0.10	103	85	115			
Silica	11.0	mg/L	0.21	103	85	115			
Sample ID: B09042302-001CMS5	Sample Matrix Spike				Run: ICP202-B_090503A				05/03/09 17:47
Silicon	82.4	mg/L	0.95		70	130			A
Silica	176	mg/L	2.0		70	130			A
Sample ID: B09042302-001CMSD5	Sample Matrix Spike Duplicate				Run: ICP202-B_090503A				05/03/09 17:51
Silicon	82.7	mg/L	0.95		70	130	0.4	20	A
Silica	177	mg/L	2.0		70	130	0.4	20	A
Method: E200.7									Batch: 38534
Sample ID: MB-38534	Method Blank				Run: ICP202-B_090501A				05/01/09 19:49
Silicon	ND	mg/L	0.10						
Silica	ND	mg/L	0.2						
Sample ID: LCS5-38534	Laboratory Control Sample				Run: ICP202-B_090501A				05/01/09 20:01
Silicon	4.97	mg/L	0.10	99	85	115			
Silica	10.6	mg/L	0.21	99	85	115			
Sample ID: B09042302-024CMS5	Sample Matrix Spike				Run: ICP202-B_090501A				05/01/09 20:21
Silicon	41.0	mg/L	0.48		70	130			A
Silica	87.7	mg/L	1.0		70	130			A
Sample ID: B09042302-024CMSD5	Sample Matrix Spike Duplicate				Run: ICP202-B_090501A				05/01/09 20:25
Silicon	42.0	mg/L	0.48		70	130	2.3	20	A
Silica	89.7	mg/L	1.0		70	130	2.3	20	A
Method: E200.7									Analytical Run: ICP202-B_090501A
Sample ID: ICV	Continuing Calibration Verification Standard								05/01/09 09:32
Silicon	5.07	mg/L	0.10	101	95	105			

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP202-B_090503A	
Sample ID: ICV	Continuing Calibration Verification Standard							05/03/09 15:04	
Calcium	25.7	mg/L	1.0	103	95	105			
Magnesium	24.9	mg/L	1.0	100	95	105			
Potassium	25.0	mg/L	1.0	100	95	105			
Silicon	5.15	mg/L	0.10	103	95	105			
Sodium	25.3	mg/L	1.0	101	95	105			
Method: E200.7								Batch: R128805	
Sample ID: MB-SPDIS090503A	Method Blank				Run: ICP202-B_090503A			05/03/09 15:53	
Calcium	ND	mg/L	0.009						
Magnesium	ND	mg/L	0.01						
Potassium	ND	mg/L	0.01						
Silicon	ND	mg/L	0.01						
Sodium	ND	mg/L	0.03						
Sample ID: LFB-SPDIS090503A	Laboratory Fortified Blank				Run: ICP202-B_090503A			05/03/09 16:01	
Calcium	47.1	mg/L	1.0	94	85	115			
Magnesium	47.1	mg/L	1.0	94	85	115			
Potassium	44.9	mg/L	1.0	90	85	115			
Silicon	10.4	mg/L	0.10	104	85	115			
Sodium	53.8	mg/L	1.0	108	85	115			
Sample ID: B09042254-001BMS2	Sample Matrix Spike				Run: ICP202-B_090503A			05/03/09 16:18	
Calcium	178	mg/L	1.0	98	70	130			
Magnesium	210	mg/L	1.0	101	70	130			
Potassium	115	mg/L	1.6	106	70	130			
Silicon	26.7	mg/L	0.20	103	70	130			
Sodium	165	mg/L	1.0	107	70	130			
Silica	57.2	mg/L	0.42	103	70	130			
Sample ID: B09042254-001BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090503A			05/03/09 16:23	
Calcium	174	mg/L	1.0	94	70	130	2	20	
Magnesium	204	mg/L	1.0	96	70	130	2.5	20	
Potassium	111	mg/L	1.6	102	70	130	3.5	20	
Silicon	26.1	mg/L	0.20	100	70	130	2.3	20	
Sodium	161	mg/L	1.0	103	70	130	2.7	20	
Silica	55.8	mg/L	0.42	100	70	130	2.3	20	
Sample ID: B09042529-003AMS2	Sample Matrix Spike				Run: ICP202-B_090503A			05/03/09 17:15	
Calcium	170	mg/L	1.0	86	70	130			
Magnesium	90.7	mg/L	1.0	89	70	130			
Potassium	52.7	mg/L	1.0	101	70	130			
Silicon	13.1	mg/L	0.10	100	70	130			
Sodium	58.7	mg/L	1.0	96	70	130			
Silica	28.0	mg/L	0.21	100	70	130			

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: R128805
Sample ID: B09042529-003AMS2	Sample Matrix Spike				Run: ICP202-B_090503A				05/03/09 17:15
Sample ID: B09042529-003AMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090503A				05/03/09 17:19
Calcium	171	mg/L	1.0	88	70	130	0.5	20	
Magnesium	92.3	mg/L	1.0	92	70	130	1.7	20	
Potassium	51.5	mg/L	1.0	99	70	130	2.4	20	
Silicon	13.1	mg/L	0.10	100	70	130	0.2	20	
Sodium	58.8	mg/L	1.0	96	70	130	0.2	20	
Silica	28.0	mg/L	0.21	100	70	130	0.2	20	
Sample ID: B09042590-002BMS2	Sample Matrix Spike				Run: ICP202-B_090503A				05/04/09 01:09
Calcium	176	mg/L	1.0	108	70	130			
Magnesium	169	mg/L	1.0	108	70	130			
Potassium	115	mg/L	1.5	111	70	130			
Silicon	23.6	mg/L	0.10	114	70	130			
Sodium	410	mg/L	1.0	119	70	130			
Silica	50.5	mg/L	0.21	114	70	130			
Sample ID: B09042590-002BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090503A				05/04/09 01:13
Calcium	174	mg/L	1.0	105	70	130	1.3	20	
Magnesium	166	mg/L	1.0	105	70	130	1.7	20	
Potassium	114	mg/L	1.5	110	70	130	1.3	20	
Silicon	23.5	mg/L	0.10	113	70	130	0.6	20	
Sodium	405	mg/L	1.0	115	70	130	1.1	20	
Silica	50.2	mg/L	0.21	113	70	130	0.6	20	
Sample ID: B09042278-013BMS2	Sample Matrix Spike				Run: ICP202-B_090503A				05/04/09 06:21
Calcium	69.3	mg/L	1.0	101	70	130			
Magnesium	56.2	mg/L	1.0	101	70	130			
Potassium	55.6	mg/L	1.0	106	70	130			
Silicon	15.5	mg/L	0.10	109	70	130			
Sodium	54.3	mg/L	1.0	104	70	130			
Silica	33.1	mg/L	0.21	109	70	130			
Sample ID: B09042278-013BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090503A				05/04/09 06:33
Calcium	68.5	mg/L	1.0	99	70	130	1.2	20	
Magnesium	55.4	mg/L	1.0	100	70	130	1.5	20	
Potassium	52.6	mg/L	1.0	100	70	130	5.5	20	
Silicon	15.2	mg/L	0.10	107	70	130	1.7	20	
Sodium	52.9	mg/L	1.0	101	70	130	2.5	20	
Silica	32.6	mg/L	0.21	107	70	130	1.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP202-B_090504A	
Sample ID: ICV	Continuing Calibration Verification Standard							05/04/09 12:20	
Calcium	24.9	mg/L	1.0	100	95	105			
Magnesium	24.6	mg/L	1.0	98	95	105			
Potassium	24.2	mg/L	1.0	97	95	105			
Silicon	5.08	mg/L	0.10	102	95	105			
Sodium	25.1	mg/L	1.0	100	95	105			
Method: E200.7								Batch: R128883	
Sample ID: MB-SPDIS090504A	Method Blank				Run: ICP202-B_090504A			05/04/09 13:10	
Calcium	ND	mg/L	0.009						
Magnesium	ND	mg/L	0.01						
Potassium	ND	mg/L	0.01						
Silicon	ND	mg/L	0.01						
Sodium	ND	mg/L	0.03						
Sample ID: LFB-SPDIS090504A	Laboratory Fortified Blank				Run: ICP202-B_090504A			05/04/09 13:14	
Calcium	49.9	mg/L	1.0	100	85	115			
Magnesium	49.5	mg/L	1.0	99	85	115			
Potassium	50.9	mg/L	1.0	102	85	115			
Silicon	10.3	mg/L	0.10	103	85	115			
Sodium	48.4	mg/L	1.0	97	85	115			
Sample ID: B09042302-020BMS2	Sample Matrix Spike				Run: ICP202-B_090504A			05/04/09 14:02	
Calcium	4210	mg/L	1.0	99	70	130			
Magnesium	3520	mg/L	1.0	98	70	130			
Potassium	2510	mg/L	36	98	70	130			
Silicon	526	mg/L	0.73	104	70	130			
Sodium	10500	mg/L	13	107	70	130			
Silica	1130	mg/L	1.6	104	70	130			
Sample ID: B09042302-020BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090504A			05/04/09 14:06	
Calcium	4330	mg/L	1.0	104	70	130	2.9	20	
Magnesium	3630	mg/L	1.0	102	70	130	3	20	
Potassium	2550	mg/L	36	100	70	130	1.5	20	
Silicon	531	mg/L	0.73	105	70	130	1	20	
Sodium	10700	mg/L	13	113	70	130	1.5	20	
Silica	1140	mg/L	1.6	105	70	130	1	20	
Sample ID: B09042302-039BMS2	Sample Matrix Spike				Run: ICP202-B_090504A			05/04/09 14:58	
Calcium	1910	mg/L	1.0	95	70	130			
Magnesium	1560	mg/L	1.0	95	70	130			
Potassium	986	mg/L	15	96	70	130			
Silicon	203	mg/L	0.29	101	70	130			
Sodium	3770	mg/L	5.3	98	70	130			
Silica	435	mg/L	0.62	101	70	130			

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: R128883
Sample ID: B09042302-039BMS2	Sample Matrix Spike				Run: ICP202-B_090504A			05/04/09 14:58	
Sample ID: B09042302-039BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090504A			05/04/09 15:02	
Calcium	1790	mg/L	1.0	83	70	130	6.3	20	
Magnesium	1480	mg/L	1.0	87	70	130	5.2	20	
Potassium	980	mg/L	15	95	70	130	0.5	20	
Silicon	200	mg/L	0.29	99	70	130	1.7	20	
Sodium	3530	mg/L	5.3	74	70	130	6.5	20	
Silica	427	mg/L	0.62	99	70	130	1.7	20	
Sample ID: B09042773-005AMS2	Sample Matrix Spike				Run: ICP202-B_090504A			05/04/09 23:22	
Calcium	41800	mg/L	1.0		70	130			A
Magnesium	2770	mg/L	1.0	83	70	130			
Potassium	2230	mg/L	36	88	70	130			
Silicon	507	mg/L	0.73	95	70	130			
Sodium	2160	mg/L	13	82	70	130			
Silica	1080	mg/L	1.6	95	70	130			
Sample ID: B09042773-005AMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090504A			05/04/09 23:26	
Calcium	41800	mg/L	1.0		70	130	0	20	A
Magnesium	2830	mg/L	1.0	85	70	130	2	20	
Potassium	2290	mg/L	36	90	70	130	2.3	20	
Silicon	502	mg/L	0.73	94	70	130	0.9	20	
Sodium	2250	mg/L	13	85	70	130	3.8	20	
Silica	1070	mg/L	1.6	94	70	130	0.9	20	
Sample ID: B09042415-001BMS2	Sample Matrix Spike				Run: ICP202-B_090504A			05/05/09 00:51	
Calcium	119	mg/L	1.0	95	70	130			
Magnesium	86.8	mg/L	1.0	97	70	130			
Potassium	47.6	mg/L	1.0	93	70	130			
Silicon	16.0	mg/L	0.10	106	70	130			
Sodium	50.8	mg/L	1.0	92	70	130			
Silica	34.3	mg/L	0.21	106	70	130			
Sample ID: B09042415-001BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090504A			05/05/09 00:55	
Calcium	120	mg/L	1.0	96	70	130	0.2	20	
Magnesium	87.9	mg/L	1.0	99	70	130	1.2	20	
Potassium	49.7	mg/L	1.0	97	70	130	4.2	20	
Silicon	15.8	mg/L	0.10	104	70	130	1.3	20	
Sodium	51.7	mg/L	1.0	94	70	130	1.7	20	
Silica	33.9	mg/L	0.21	104	70	130	1.3	20	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP202-B_090511A	
Sample ID: ICV	Continuing Calibration Verification Standard							05/11/09 11:00	
Calcium	25.1	mg/L	1.0	100	95	105			
Magnesium	24.6	mg/L	1.0	99	95	105			
Potassium	24.8	mg/L	1.0	99	95	105			
Silicon	5.00	mg/L	0.10	100	95	105			
Sodium	25.6	mg/L	1.0	102	95	105			
Method: E200.7								Batch: R129263	
Sample ID: MB-SPDIS090511A	Method Blank				Run: ICP202-B_090511A			05/11/09 11:50	
Calcium	ND	mg/L	0.009						
Magnesium	ND	mg/L	0.01						
Potassium	ND	mg/L	0.01						
Silicon	ND	mg/L	0.01						
Sodium	ND	mg/L	0.03						
Sample ID: LFB-SPDIS090511A	Laboratory Fortified Blank				Run: ICP202-B_090511A			05/11/09 11:54	
Calcium	49.2	mg/L	1.0	98	85	115			
Magnesium	50.0	mg/L	1.0	100	85	115			
Potassium	51.0	mg/L	1.0	102	85	115			
Silicon	10.5	mg/L	0.10	105	85	115			
Sodium	49.5	mg/L	1.0	99	85	115			
Sample ID: B09042302-001BMS2	Sample Matrix Spike				Run: ICP202-B_090511A			05/11/09 12:26	
Calcium	453	mg/L	1.0	92	70	130			
Magnesium	448	mg/L	1.0	99	70	130			
Potassium	105	mg/L	1.5	97	70	130			
Silicon	29.2	mg/L	0.10	101	70	130			
Sodium	629	mg/L	1.0		70	130			A
Silica	62.5	mg/L	0.21	101	70	130			
Sample ID: B09042302-001BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090511A			05/11/09 12:38	
Calcium	448	mg/L	1.0	87	70	130	1.1	20	
Magnesium	444	mg/L	1.0	95	70	130	0.8	20	
Potassium	106	mg/L	1.5	98	70	130	0.6	20	
Silicon	28.8	mg/L	0.10	99	70	130	1.6	20	
Sodium	619	mg/L	1.0		70	130	1.5	20	A
Silica	61.5	mg/L	0.21	98	70	130	1.6	20	
Sample ID: B09050261-001BMS2	Sample Matrix Spike				Run: ICP202-B_090511A			05/11/09 13:40	
Calcium	5580	mg/L	1.0	94	70	130			
Magnesium	2450	mg/L	1.0	96	70	130			
Potassium	2750	mg/L	36	95	70	130			
Silicon	487	mg/L	0.73	97	70	130			
Sodium	3800	mg/L	13	96	70	130			
Silica	1040	mg/L	1.6	97	70	130			

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/20/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: R129263
Sample ID: B09050261-001BMS2	Sample Matrix Spike				Run: ICP202-B_090511A				05/11/09 13:40
Sample ID: B09050261-001BMSD2	Sample Matrix Spike Duplicate				Run: ICP202-B_090511A				05/11/09 13:44
Calcium	5560	mg/L	1.0	93	70	130	0.5	20	
Magnesium	2450	mg/L	1.0	96	70	130	0.1	20	
Potassium	2780	mg/L	36	96	70	130	0.9	20	
Silicon	497	mg/L	0.73	99	70	130	2.2	20	
Sodium	3830	mg/L	13	97	70	130	0.9	20	
Silica	1060	mg/L	1.6	99	70	130	2.2	20	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/04/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A									Batch: G_TPH090429A
Sample ID: MBLK0904290000	Method Blank				Run: SUB-G168721				04/29/09 16:12
Total Petroleum Hydrocarbons	ND	mg/L	0.6						
Sample ID: LCS0904290000	Laboratory Control Sample				Run: SUB-G168721				04/29/09 16:13
Total Petroleum Hydrocarbons	18	mg/L	1.0	89	64	132			
Sample ID: LCSD0904290000	Laboratory Control Sample Duplicate				Run: SUB-G168721				04/29/09 16:14
Total Petroleum Hydrocarbons	15	mg/L	1.0	77	64	132	15	34	
Sample ID: B09042302-010E	Sample Matrix Spike				Run: SUB-G168721				04/29/09 16:24
Total Petroleum Hydrocarbons	15	mg/L	1.0	72	64	132			
Method: E1664A									Batch: G_TPH090430A
Sample ID: MBLK0904300000	Method Blank				Run: SUB-G168750				04/30/09 13:25
Total Petroleum Hydrocarbons	ND	mg/L	0.6						
Sample ID: LCS0904300000	Laboratory Control Sample				Run: SUB-G168750				04/30/09 13:28
Total Petroleum Hydrocarbons	16	mg/L	1.0	78	64	132			
Sample ID: LCSD0904300000	Laboratory Control Sample Duplicate				Run: SUB-G168750				04/30/09 13:29
Total Petroleum Hydrocarbons	16	mg/L	1.0	80	64	132	3.2	34	
Sample ID: B09042302-015E	Sample Matrix Spike				Run: SUB-G168750				04/30/09 13:32
Total Petroleum Hydrocarbons	16	mg/L	1.0	76	64	132			

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/04/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: PE 1_090427B	
Sample ID: CCV_0427PE103r-W	Continuing Calibration Verification Standard								04/27/09 10:43
Methyl tert-butyl ether (MTBE)	61.0	ug/L	1.0	102	85	115			
Benzene	20.5	ug/L	0.50	103	85	115			
Toluene	62.4	ug/L	0.50	104	85	115			
Ethylbenzene	20.7	ug/L	0.50	104	85	115			
m+p-Xylenes	82.1	ug/L	0.50	103	85	115			
o-Xylene	41.8	ug/L	0.50	104	85	115			
Xylenes, Total	124	ug/L	0.50	103	85	115			
Surr: Trifluorotoluene			0.50	104	85	115			
Sample ID: CCV_0427PE124r-W	Continuing Calibration Verification Standard								04/27/09 22:41
Methyl tert-butyl ether (MTBE)	59.1	ug/L	1.0	99	85	115			
Benzene	19.9	ug/L	0.50	99	85	115			
Toluene	61.2	ug/L	0.50	102	85	115			
Ethylbenzene	20.2	ug/L	0.50	101	85	115			
m+p-Xylenes	80.4	ug/L	0.50	100	85	115			
o-Xylene	40.8	ug/L	0.50	102	85	115			
Xylenes, Total	121	ug/L	0.50	101	85	115			
Surr: Trifluorotoluene			0.50	102	85	115			
Method: SW8021B								Batch: R128526	
Sample ID: LCS_0427PE104r	Laboratory Control Sample				Run: PE 1_090427B				04/27/09 11:18
Methyl tert-butyl ether (MTBE)	19.9	ug/L	1.0	99	70	130			
Benzene	21.0	ug/L	0.50	105	70	130			
Toluene	20.0	ug/L	0.50	100	70	130			
Ethylbenzene	19.9	ug/L	0.50	99	70	130			
m+p-Xylenes	40.8	ug/L	0.50	102	70	130			
o-Xylene	20.2	ug/L	0.50	101	70	130			
Xylenes, Total	61.0	ug/L	0.50	102	70	130			
Surr: Trifluorotoluene			0.50	105	80	120			
Sample ID: MBLK_0427PE106r	Method Blank				Run: PE 1_090427B				04/27/09 12:26
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	103	80	120			
Sample ID: LCS_0427PE125r	Laboratory Control Sample				Run: PE 1_090427B				04/27/09 23:14
Methyl tert-butyl ether (MTBE)	18.5	ug/L	1.0	92	70	130			
Benzene	19.6	ug/L	0.50	98	70	130			

Qualifiers:

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/04/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R128526
Sample ID: LCS_0427PE125r	Laboratory Control Sample				Run: PE 1_090427B				04/27/09 23:14
Toluene	18.8	ug/L	0.50	94	70	130			
Ethylbenzene	18.7	ug/L	0.50	93	70	130			
m+p-Xylenes	38.4	ug/L	0.50	96	70	130			
o-Xylene	19.0	ug/L	0.50	95	70	130			
Xylenes, Total	57.4	ug/L	0.50	96	70	130			
Surr: Trifluorotoluene			0.50	105	80	120			
Sample ID: MBLK_0427PE126r	Method Blank				Run: PE 1_090427B				04/28/09 00:22
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	101	80	120			
Sample ID: B09042302-003FMS	Sample Matrix Spike				Run: PE 1_090427B				04/28/09 00:56
Methyl tert-butyl ether (MTBE)	24.8	ug/L	1.0	99	70	130			
Benzene	25.7	ug/L	0.50	103	70	130			
Toluene	24.8	ug/L	0.50	99	70	130			
Ethylbenzene	24.5	ug/L	0.50	98	70	130			
m+p-Xylenes	50.0	ug/L	0.50	100	70	130			
o-Xylene	24.9	ug/L	0.50	99	70	130			
Xylenes, Total	74.8	ug/L	0.50	100	70	130			
Surr: Trifluorotoluene			0.50	100	80	120			
Sample ID: B09042302-003FMSD	Sample Matrix Spike Duplicate				Run: PE 1_090427B				04/28/09 01:29
Methyl tert-butyl ether (MTBE)	25.4	ug/L	1.0	102	70	130	2.3	20	
Benzene	26.0	ug/L	0.50	104	70	130	1.1	20	
Toluene	24.9	ug/L	0.50	100	70	130	0.5	20	
Ethylbenzene	24.4	ug/L	0.50	98	70	130	0.1	20	
m+p-Xylenes	49.9	ug/L	0.50	100	70	130	0.1	20	
o-Xylene	24.9	ug/L	0.50	100	70	130	0.3	20	
Xylenes, Total	74.8	ug/L	0.50	100	70	130			
Surr: Trifluorotoluene			0.50	97	80	120	0	20	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/04/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: PE 1_090428A	
Sample ID: CCV_0428PE103r-W	Continuing Calibration Verification Standard								04/28/09 13:10
Methyl tert-butyl ether (MTBE)	59.6	ug/L	1.0	99	85	115			
Benzene	20.0	ug/L	0.50	100	85	115			
Toluene	60.8	ug/L	0.50	101	85	115			
Ethylbenzene	20.4	ug/L	0.50	102	85	115			
m+p-Xylenes	81.1	ug/L	0.50	101	85	115			
o-Xylene	41.3	ug/L	0.50	103	85	115			
Xylenes, Total	122	ug/L	0.50	102	85	115			
Surr: Trifluorotoluene			0.50	103	85	115			
Sample ID: CCV_0428PE125r-W	Continuing Calibration Verification Standard								04/29/09 01:36
Methyl tert-butyl ether (MTBE)	61.6	ug/L	1.0	103	85	115			
Benzene	20.8	ug/L	0.50	104	85	115			
Toluene	63.9	ug/L	0.50	106	85	115			
Ethylbenzene	21.2	ug/L	0.50	106	85	115			
m+p-Xylenes	84.2	ug/L	0.50	105	85	115			
o-Xylene	42.7	ug/L	0.50	107	85	115			
Xylenes, Total	127	ug/L	0.50	106	85	115			
Surr: Trifluorotoluene			0.50	103	85	115			
Method: SW8021B								Batch: R128598	
Sample ID: LCS_0428PE104r	Laboratory Control Sample				Run: PE 1_090428A				04/28/09 13:44
Methyl tert-butyl ether (MTBE)	19.0	ug/L	1.0	95	70	130			
Benzene	19.9	ug/L	0.50	99	70	130			
Toluene	19.4	ug/L	0.50	97	70	130			
Ethylbenzene	19.4	ug/L	0.50	97	70	130			
m+p-Xylenes	40.0	ug/L	0.50	100	70	130			
o-Xylene	19.9	ug/L	0.50	99	70	130			
Xylenes, Total	59.8	ug/L	0.50	100	70	130			
Surr: Trifluorotoluene			0.50	103	80	120			
Sample ID: MBLK_0428PE106r	Method Blank				Run: PE 1_090428A				04/28/09 14:52
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	101	80	120			
Sample ID: LCS_0428PE126r	Laboratory Control Sample				Run: PE 1_090428A				04/29/09 02:10
Methyl tert-butyl ether (MTBE)	19.5	ug/L	1.0	97	70	130			
Benzene	20.4	ug/L	0.50	102	70	130			

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/04/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R128598
Sample ID: LCS_0428PE126r	Laboratory Control Sample				Run: PE 1_090428A				04/29/09 02:10
Toluene	20.1	ug/L	0.50	101	70	130			
Ethylbenzene	20.1	ug/L	0.50	100	70	130			
m+p-Xylenes	41.3	ug/L	0.50	103	70	130			
o-Xylene	20.6	ug/L	0.50	103	70	130			
Xylenes, Total	61.9	ug/L	0.50	103	70	130			
Surr: Trifluorotoluene			0.50	99	80	120			
Sample ID: MBLK_0428PE128r	Method Blank				Run: PE 1_090428A				04/29/09 03:17
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	103	80	120			
Sample ID: B09042302-016FMS	Sample Matrix Spike				Run: PE 1_090428A				04/29/09 03:51
Methyl tert-butyl ether (MTBE)	25.2	ug/L	1.0	101	70	130			
Benzene	26.6	ug/L	0.50	107	70	130			
Toluene	25.6	ug/L	0.50	102	70	130			
Ethylbenzene	25.4	ug/L	0.50	102	70	130			
m+p-Xylenes	50.8	ug/L	0.50	102	70	130			
o-Xylene	25.4	ug/L	0.50	102	70	130			
Xylenes, Total	76.1	ug/L	0.50	102	70	130			
Surr: Trifluorotoluene			0.50	103	80	120			
Sample ID: B09042302-016FMSD	Sample Matrix Spike Duplicate				Run: PE 1_090428A				04/29/09 04:24
Methyl tert-butyl ether (MTBE)	24.6	ug/L	1.0	98	70	130	2.5	20	
Benzene	25.5	ug/L	0.50	102	70	130	4.4	20	
Toluene	24.7	ug/L	0.50	99	70	130	3.6	20	
Ethylbenzene	24.4	ug/L	0.50	98	70	130	3.8	20	
m+p-Xylenes	48.9	ug/L	0.50	98	70	130	3.7	20	
o-Xylene	24.5	ug/L	0.50	98	70	130	3.5	20	
Xylenes, Total	73.4	ug/L	0.50	98	70	130			
Surr: Trifluorotoluene			0.50	98	80	120	0	20	
Sample ID: B09042302-023FMS	Sample Matrix Spike				Run: PE 1_090428A				04/29/09 13:09
Methyl tert-butyl ether (MTBE)	24.3	ug/L	1.0	97	70	130			
Benzene	25.7	ug/L	0.50	103	70	130			
Toluene	25.0	ug/L	0.50	100	70	130			
Ethylbenzene	24.7	ug/L	0.50	99	70	130			
m+p-Xylenes	49.8	ug/L	0.50	100	70	130			
o-Xylene	24.8	ug/L	0.50	99	70	130			

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/04/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R128598
Sample ID: B09042302-023FMS	Sample Matrix Spike				Run: PE 1_090428A				04/29/09 13:09
Xylenes, Total	74.7	ug/L	0.50	100	70	130			
Surr: Trifluorotoluene			0.50	99	80	120			
Sample ID: B09042302-023FMSD	Sample Matrix Spike Duplicate				Run: PE 1_090428A				04/29/09 13:43
Methyl tert-butyl ether (MTBE)	24.5	ug/L	1.0	98	70	130	0.9	20	
Benzene	25.4	ug/L	0.50	102	70	130	1.1	20	
Toluene	25.4	ug/L	0.50	102	70	130	1.7	20	
Ethylbenzene	24.9	ug/L	0.50	100	70	130	0.5	20	
m+p-Xylenes	50.1	ug/L	0.50	100	70	130	0.5	20	
o-Xylene	25.1	ug/L	0.50	100	70	130	1.2	20	
Xylenes, Total	75.2	ug/L	0.50	100	70	130			
Surr: Trifluorotoluene			0.50	102	80	120	0	20	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/04/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: PE 1_090429A	
Sample ID: CCV_0429PE103r-W	Continuing Calibration Verification Standard								04/29/09 16:31
Methyl tert-butyl ether (MTBE)	60.7	ug/L	1.0	101	85	115			
Benzene	21.0	ug/L	0.50	105	85	115			
Toluene	64.6	ug/L	0.50	108	85	115			
Ethylbenzene	21.6	ug/L	0.50	108	85	115			
m+p-Xylenes	85.7	ug/L	0.50	107	85	115			
o-Xylene	43.6	ug/L	0.50	109	85	115			
Xylenes, Total	129	ug/L	0.50	108	85	115			
Surr: Trifluorotoluene			0.50	105	85	115			
Method: SW8021B								Batch: R128642	
Sample ID: LCS_0429PE104r	Laboratory Control Sample				Run: PE 1_090429A				04/29/09 17:05
Methyl tert-butyl ether (MTBE)	19.3	ug/L	1.0	97	70	130			
Benzene	20.7	ug/L	0.50	104	70	130			
Toluene	20.3	ug/L	0.50	101	70	130			
Ethylbenzene	20.3	ug/L	0.50	102	70	130			
m+p-Xylenes	41.9	ug/L	0.50	105	70	130			
o-Xylene	20.9	ug/L	0.50	104	70	130			
Xylenes, Total	62.8	ug/L	0.50	105	70	130			
Surr: Trifluorotoluene			0.50	104	80	120			
Sample ID: MBLK_0429PE106r	Method Blank				Run: PE 1_090429A				04/29/09 18:12
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	99	80	120			
Sample ID: B09042302-034BMS	Sample Matrix Spike				Run: PE 1_090429A				05/01/09 01:58
Methyl tert-butyl ether (MTBE)	48.9	ug/L	2.0	98	70	130			
Benzene	62.7	ug/L	1.0	99	70	130			
Toluene	89.7	ug/L	1.0	96	70	130			
Ethylbenzene	68.2	ug/L	1.0	98	70	130			
m+p-Xylenes	135	ug/L	1.0	99	70	130			
o-Xylene	61.0	ug/L	1.0	98	70	130			
Xylenes, Total	196	ug/L	1.0	98	70	130			
Surr: Trifluorotoluene			1.0	103	80	120			
Sample ID: B09042302-034BMSD	Sample Matrix Spike Duplicate				Run: PE 1_090429A				05/01/09 02:31
Methyl tert-butyl ether (MTBE)	51.5	ug/L	2.0	103	70	130	5.3	20	
Benzene	65.4	ug/L	1.0	105	70	130	4.1	20	

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QA/QC Summary Report

Client: DOWL HKM
Project: Pioneer Natural Resources-Poplar Biere Well Site

Report Date: 05/04/09
Work Order: B09042302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R128642
Sample ID: B09042302-034BMSD	Sample Matrix Spike Duplicate				Run: PE 1_090429A				05/01/09 02:31
Toluene	93.7	ug/L	1.0	104	70	130	4.4	20	
Ethylbenzene	71.7	ug/L	1.0	105	70	130	5	20	
m+p-Xylenes	142	ug/L	1.0	106	70	130	5	20	
o-Xylene	64.0	ug/L	1.0	104	70	130	4.8	20	
Xylenes, Total	206	ug/L	1.0	105	70	130			
Surr: Trifluorotoluene			1.0	107	80	120	0	20	
Method: SW8021B									Analytical Run: PE 1_090501A
Sample ID: CCV_0501PE124r-W	Continuing Calibration Verification Standard								05/01/09 21:51
Methyl tert-butyl ether (MTBE)	57.9	ug/L	1.0	97	85	115			
Benzene	19.8	ug/L	0.50	99	85	115			
Toluene	61.0	ug/L	0.50	102	85	115			
Ethylbenzene	20.5	ug/L	0.50	102	85	115			
m+p-Xylenes	81.0	ug/L	0.50	101	85	115			
o-Xylene	41.4	ug/L	0.50	104	85	115			
Xylenes, Total	122	ug/L	0.50	102	85	115			
Surr: Trifluorotoluene			0.50	107	85	115			
Method: SW8021B									Batch: R128794
Sample ID: LCS_0501PE125r	Laboratory Control Sample				Run: PE 1_090501A				05/01/09 22:24
Methyl tert-butyl ether (MTBE)	18.8	ug/L	1.0	94	70	130			
Benzene	19.5	ug/L	0.50	98	70	130			
Toluene	19.8	ug/L	0.50	99	70	130			
Ethylbenzene	19.7	ug/L	0.50	99	70	130			
m+p-Xylenes	40.8	ug/L	0.50	102	70	130			
o-Xylene	20.4	ug/L	0.50	102	70	130			
Xylenes, Total	61.2	ug/L	0.50	102	70	130			
Surr: Trifluorotoluene			0.50	103	80	120			
Sample ID: MBLK_0501PE127r	Method Blank				Run: PE 1_090501A				05/01/09 23:32
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	106	80	120			

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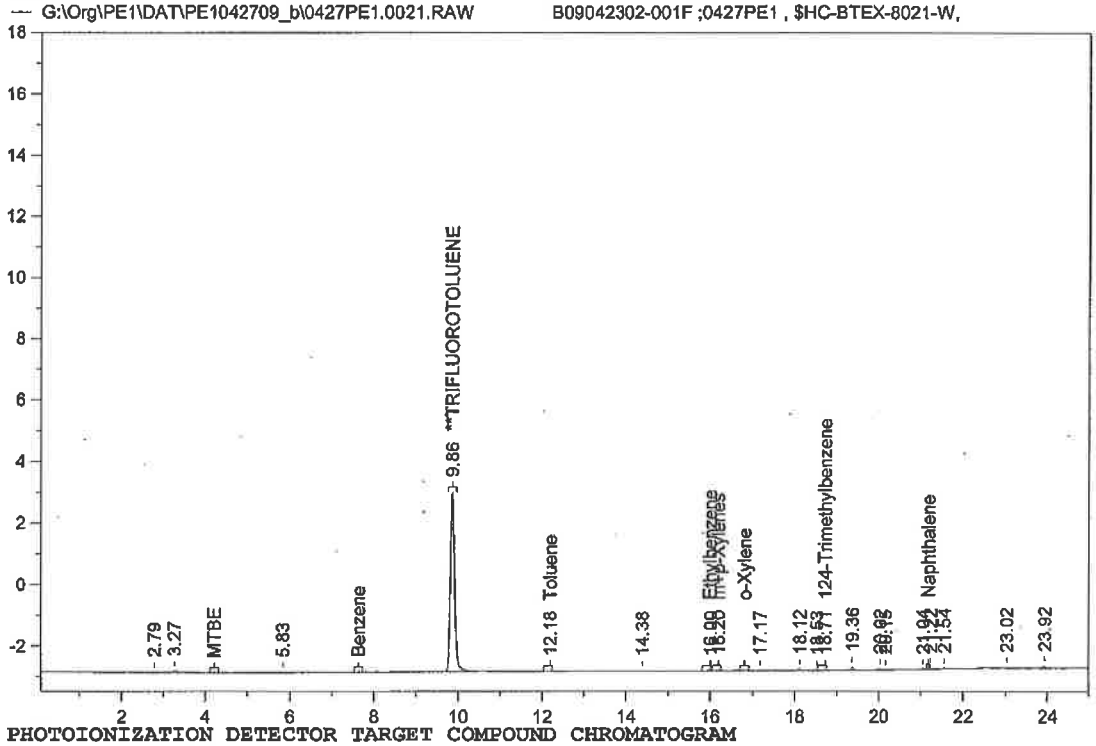
USGS-06-2



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-001F ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0021.RAW
Date & Time Acquired: 4/27/2009 9:00:04 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.177	12.177	12.177	176	.5	U
Ethylbenzene	16.003	16.003	16.003	72	.5	U
m+p-Xylenes	16.196	16.196	16.196	244	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.713	18.713	18.713	114	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	50.442	100.88	80-120

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M-80
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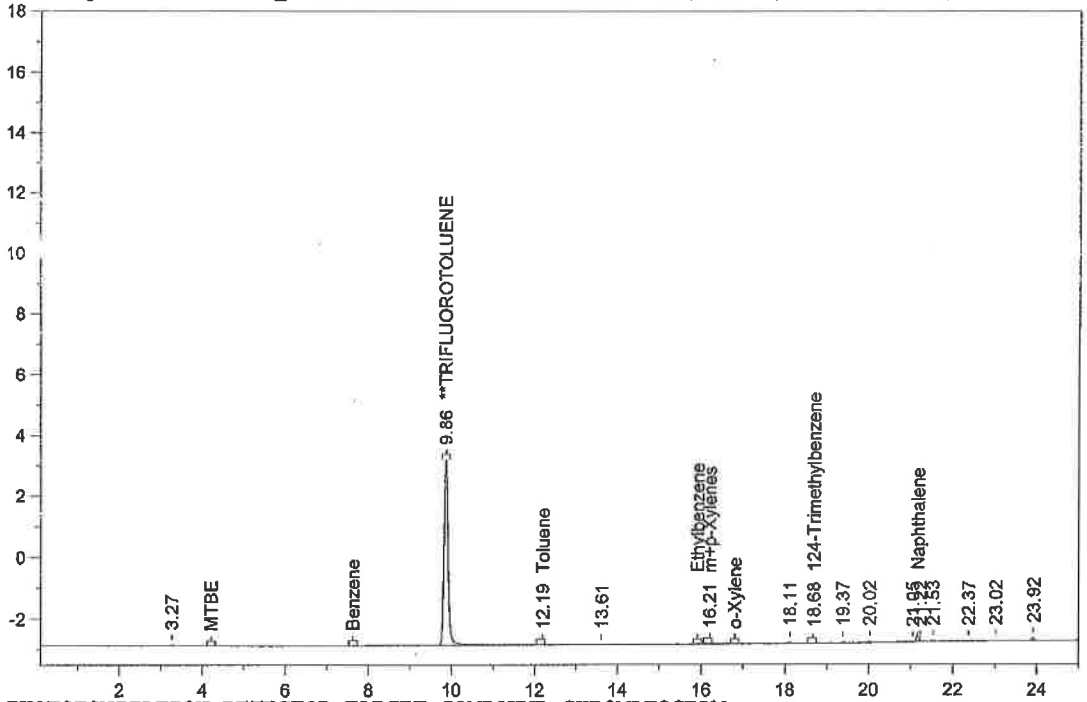

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-002F ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0020.RAW
Date & Time Acquired: 4/27/2009 8:26:15 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.192	12.192	12.192	128	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.206	16.206	16.206	198	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.683	18.683	18.683	90	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	52.775	105.55	80-120

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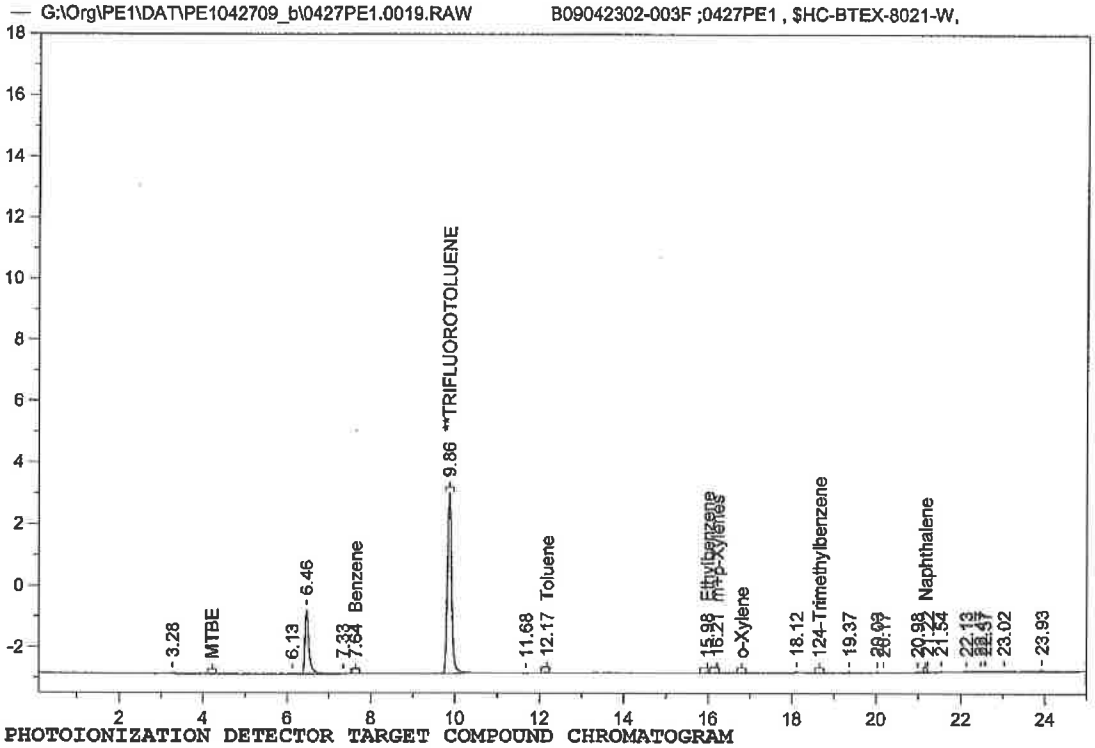
USGS-93-4A



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-003F ;0427PE1 , $HC-BTEX-8021-W,
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Date & Time Acquired: 4/27/2009 7:52:37 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.637	7.637	7.637	85	.5	U
Toluene	12.174	12.174	12.174	239	.5	U
Ethylbenzene	15.981	15.981	15.981	86	.5	U
m+p-Xylenes	16.213	16.213	16.213	190	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.861	50.	50.991	101.98	80-120

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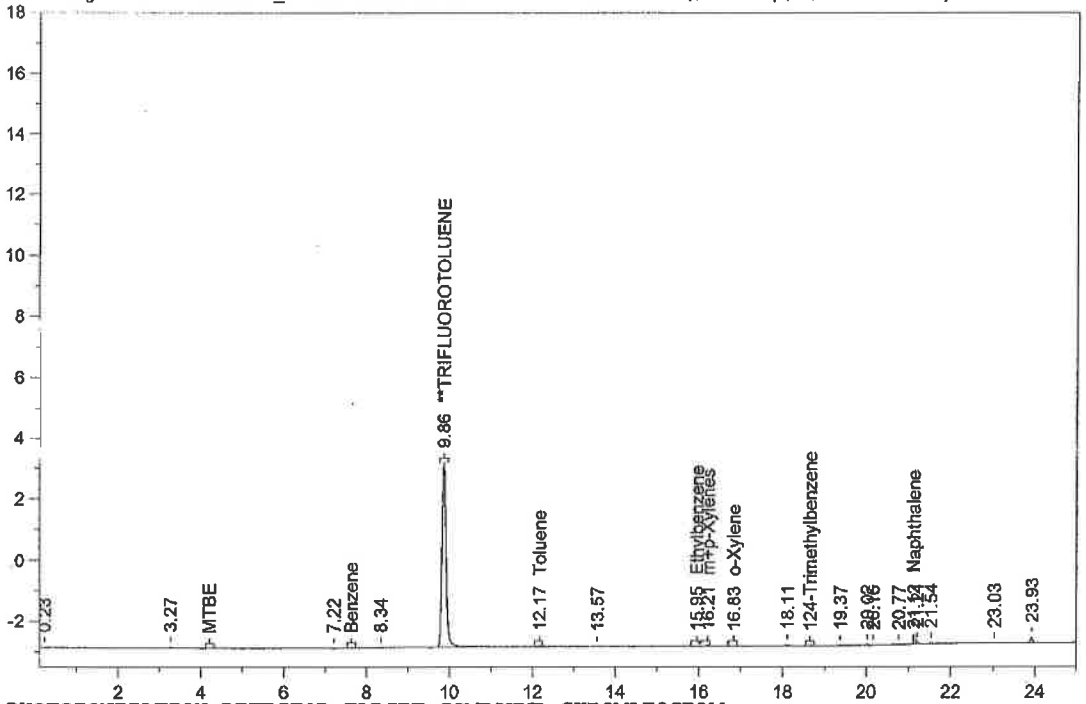

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-004F ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0018.RAW
Date & Time Acquired: 4/27/2009 7:19:03 PM
Method File: G:\Org\PE1\Methods\0809Pdwl1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.166	12.166	12.166	235	.5	U
Ethylbenzene	15.953	15.953	15.953	93	.5	U
m+p-Xylenes	16.214	16.214	16.214	226	.5	U
o-Xylene	16.834	16.834	16.834	139	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	21.122	21.122	21.122	163	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	52.135	104.27	80-120

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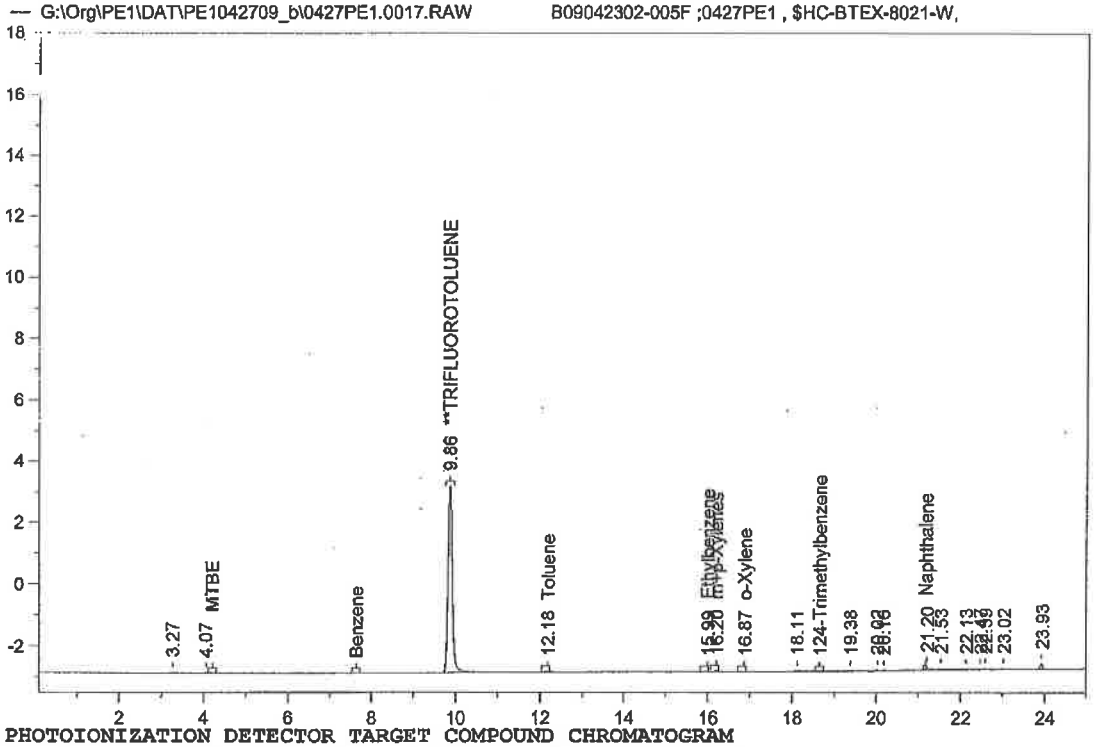
USGS-06-11



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-005F ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0017.RAW
Date & Time Acquired: 4/27/2009 6:45:13 PM
Method File: G:\Org\Pe1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.182	12.182	12.182	261	.5	U
Ethylbenzene	15.992	15.992	15.992	118	.5	U
m+p-Xylenes	16.196	16.196	16.196	307	.5	U
o-Xylene	16.87	16.87	16.87	94	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.862	50.	52.232	104.46	80-120

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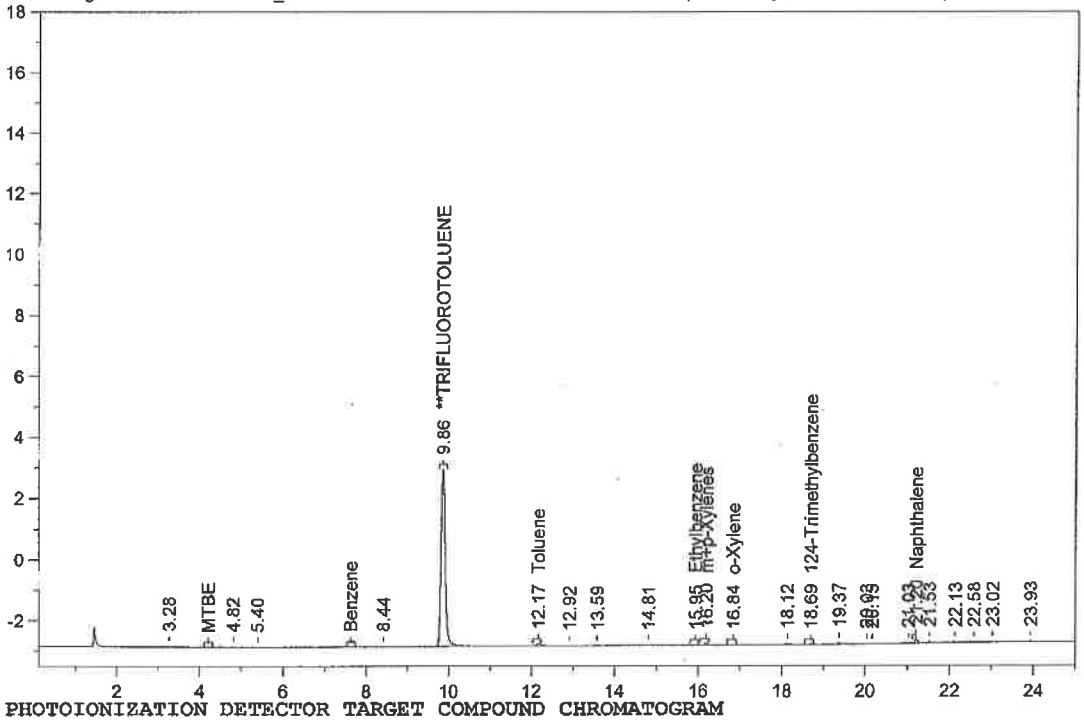
PNR-12

— G:\Org\PE1\DAT\PE1042709_b\0427PE1.0031.RAW B09042302-006F ;0427PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-006F ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0031.RAW
Date & Time Acquired: 4/28/2009 2:36:58 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.167	12.167	12.167	453	.5	U
Ethylbenzene	15.946	15.946	15.946	151	.5	U
m+p-Xylenes	16.198	16.198	16.198	492	.5	U
o-Xylene	16.844	16.844	16.844	174	.5	U
124-Trimethylbenzene	18.688	18.688	18.688	131	2.	U
Naphthalene	21.199	21.199	21.199	683	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	50.089	100.18	80-120

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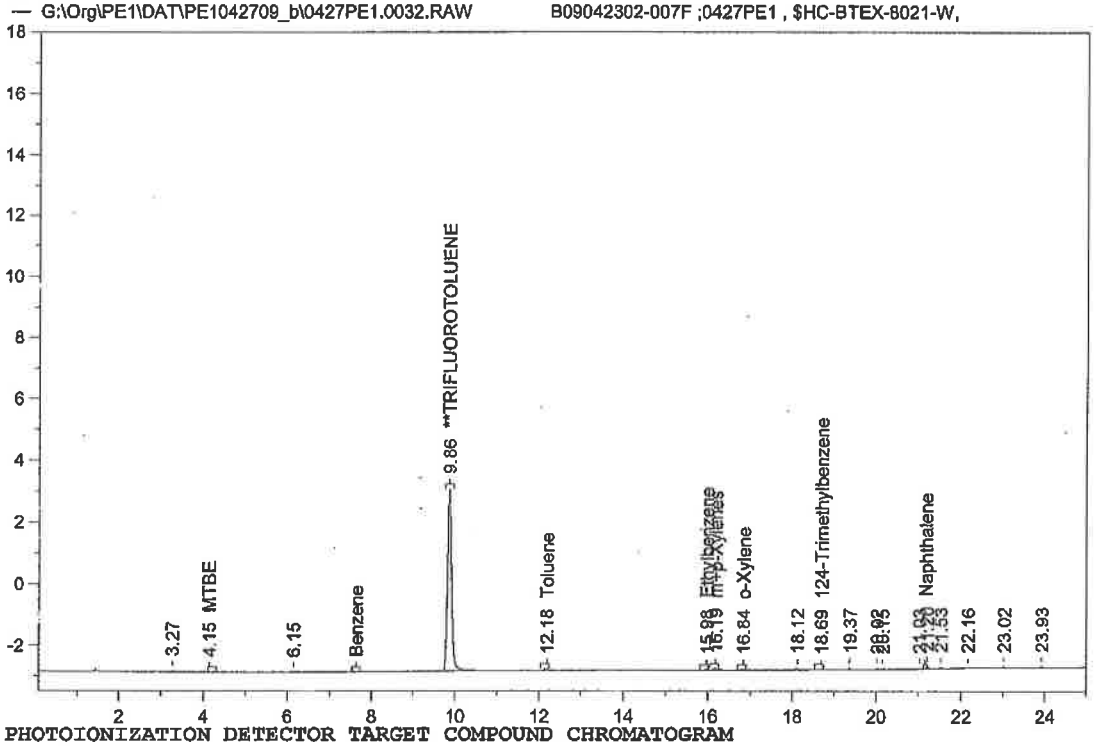
MOC-3
— G:\Org\PE1\DAT\PE1042709_b\0427PE1.0032.RAW B09042302-007F ;0427PE1 , $HC-BTEX-8021-W,



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Sample Name: B09042302-007F ;0427PE1 , $HC-BTEX-8021-W,
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Date & Time Acquired: 4/28/2009 3:10:48 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.149	4.149	4.149	87	1.	U
Benzene	.	.	.		.5	U
Toluene	12.177	12.177	12.177	529	.5	U
Ethylbenzene	15.978	15.978	15.978	170	.5	U
m+p-Xylenes	16.19	16.19	16.19	502	.5	U
o-Xylene	16.841	16.841	16.841	169	.5	U
124-Trimethylbenzene	18.693	18.693	18.693	78	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.861	50.	50.887	101.77	80-120

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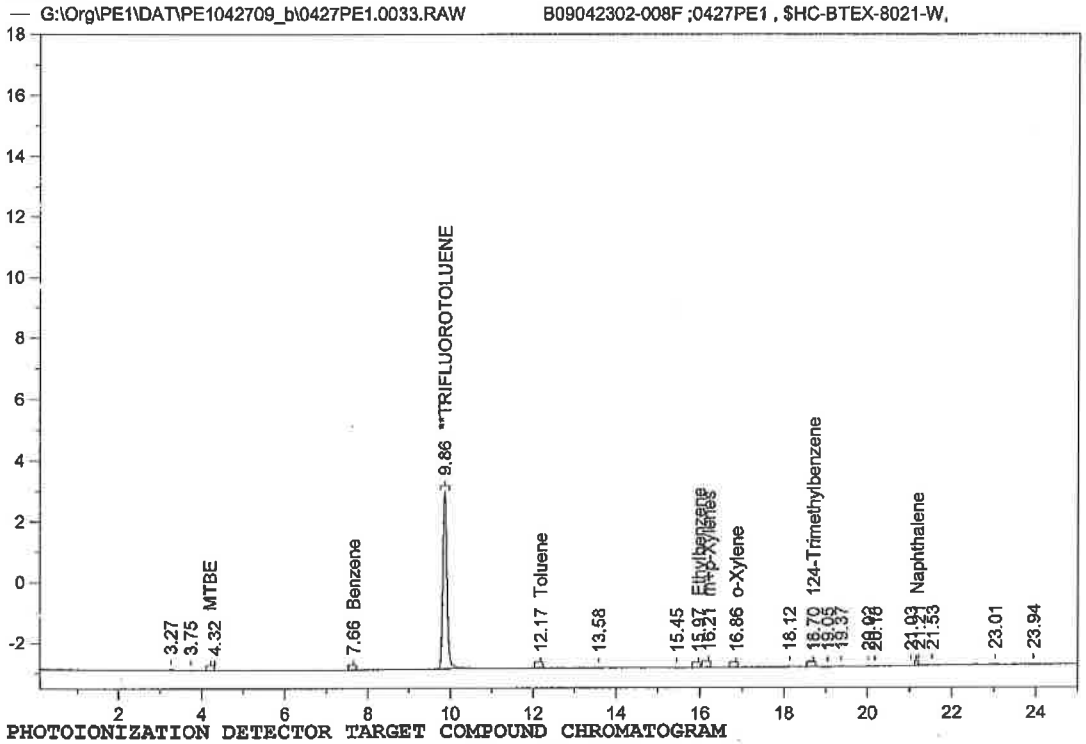
MOC-1B



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-008F ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0033.RAW
Date & Time Acquired: 4/28/2009 3:44:34 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.657	7.657	7.657	74	.5	U
Toluene	12.174	12.174	12.174	276	.5	U
Ethylbenzene	15.97	15.97	15.97	116	.5	U
m+p-Xylenes	16.206	16.206	16.206	324	.5	U
o-Xylene	16.856	16.856	16.856	74	.5	U
124-Trimethylbenzene	18.7	18.7	18.7	81	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	50.71	101.42	80-120

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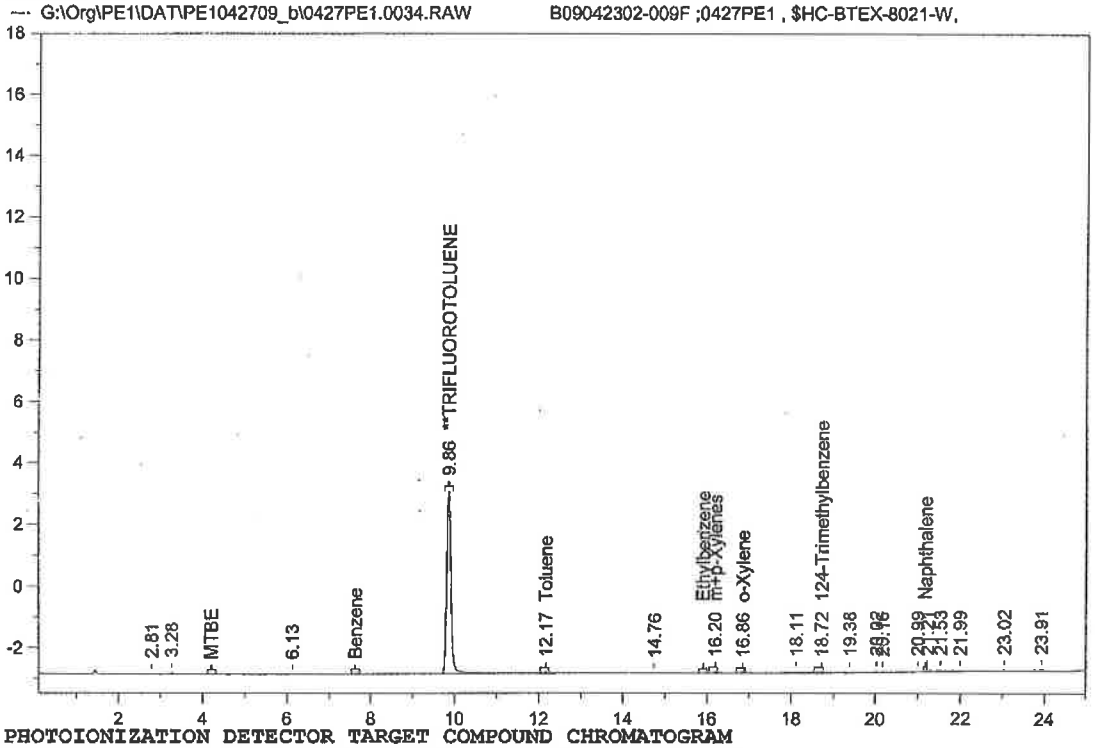
PNR-36-07



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-009F ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0034.RAW
Date & Time Acquired: 4/28/2009 4:18:19 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.166	12.166	12.166	380	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.196	16.196	16.196	262	.5	U
o-Xylene	16.855	16.855	16.855	81	.5	U
124-Trimethylbenzene	18.716	18.716	18.716	90	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	51.312	102.62	80-120

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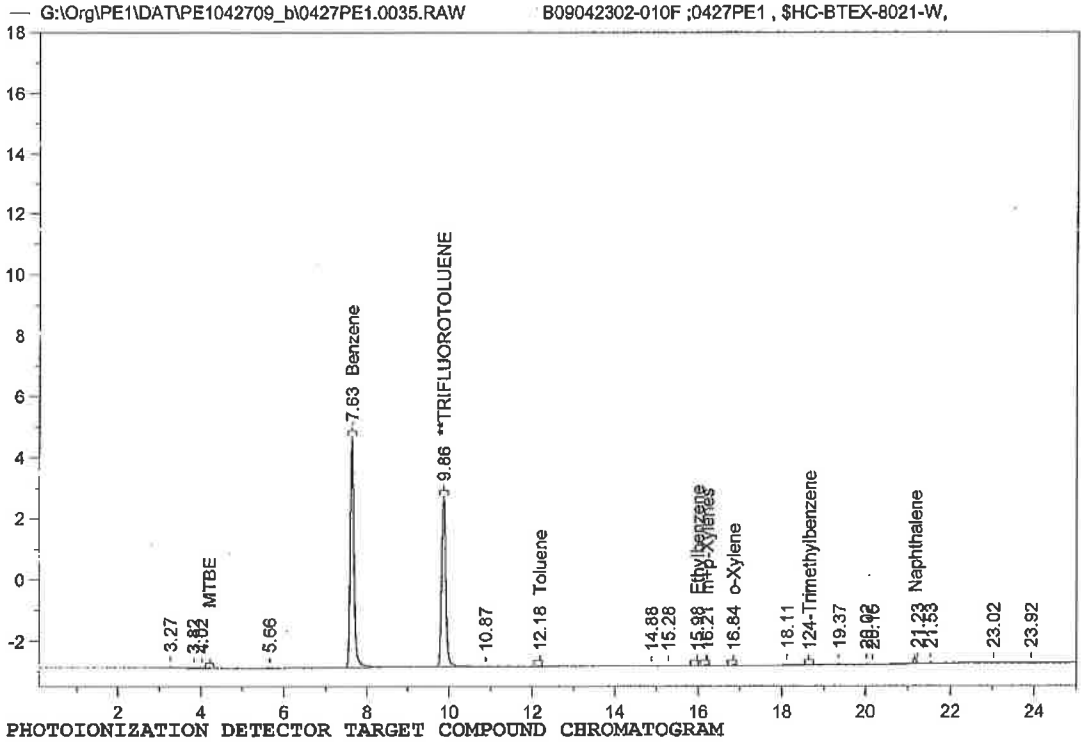
PNR-20

— G:\Org\PE1\DAT\PE1042709_b\0427PE1.0035.RAW B09042302-010F ;0427PE1 , $HC-BTEX-8021-W,



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Sample Name: B09042302-010F ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0035.RAW
Date & Time Acquired: 4/28/2009 4:51:57 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.635	2.226	2.225	50600	18.97	
Toluene	12.177	12.177	12.177	263	.5	U
Ethylbenzene	15.983	15.983	15.983	80	.5	U
m+p-Xylenes	16.208	16.208	16.208	193	.5	U
o-Xylene	16.844	16.844	16.844	80	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	48.68	97.36	80-120

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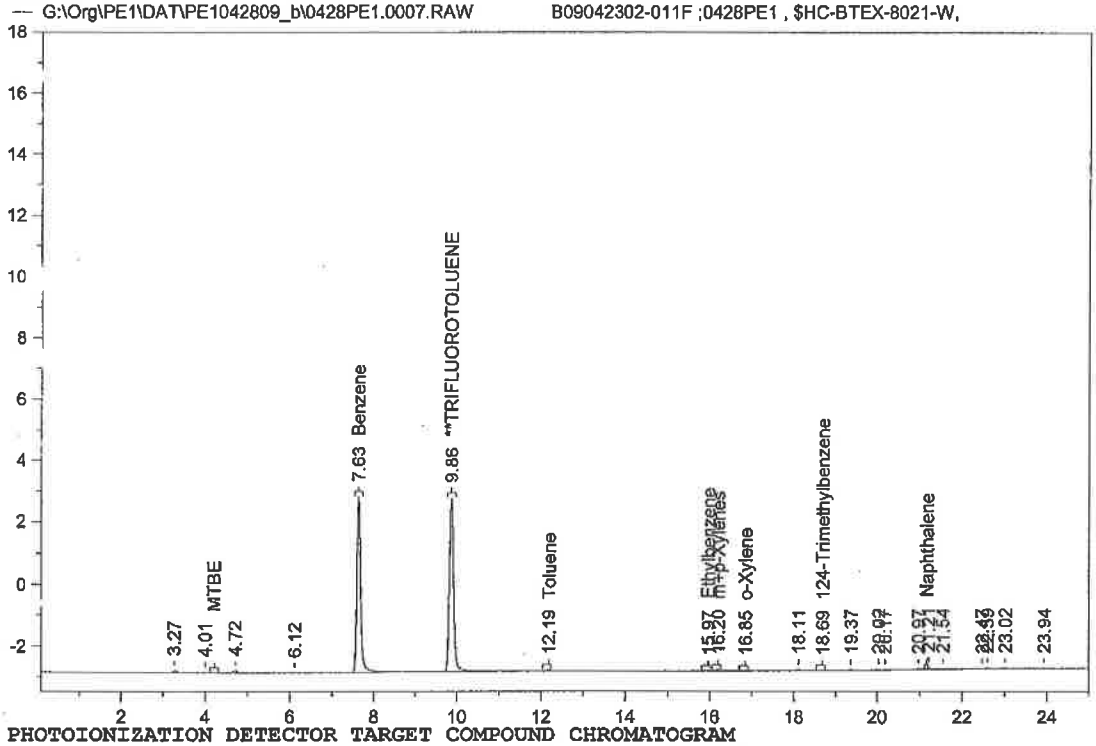
PNR-21

-- G:\Org\PE1\DAT\PE1042809_b\0428PE1.0007.RAW B09042302-011F ;0428PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-011F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0007.RAW
Date & Time Acquired: 4/28/2009 3:25:48 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.634	2.226	2.225	38030	14.257	
Toluene	12.187	12.187	12.187	333	.5	U
Ethylbenzene	15.967	15.967	15.967	108	.5	U
m+p-Xylenes	16.199	16.199	16.199	494	.5	U
o-Xylene	16.848	16.848	16.848	156	.5	U
124-Trimethylbenzene	18.689	18.689	18.689	222	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	49.063	98.13	80-120

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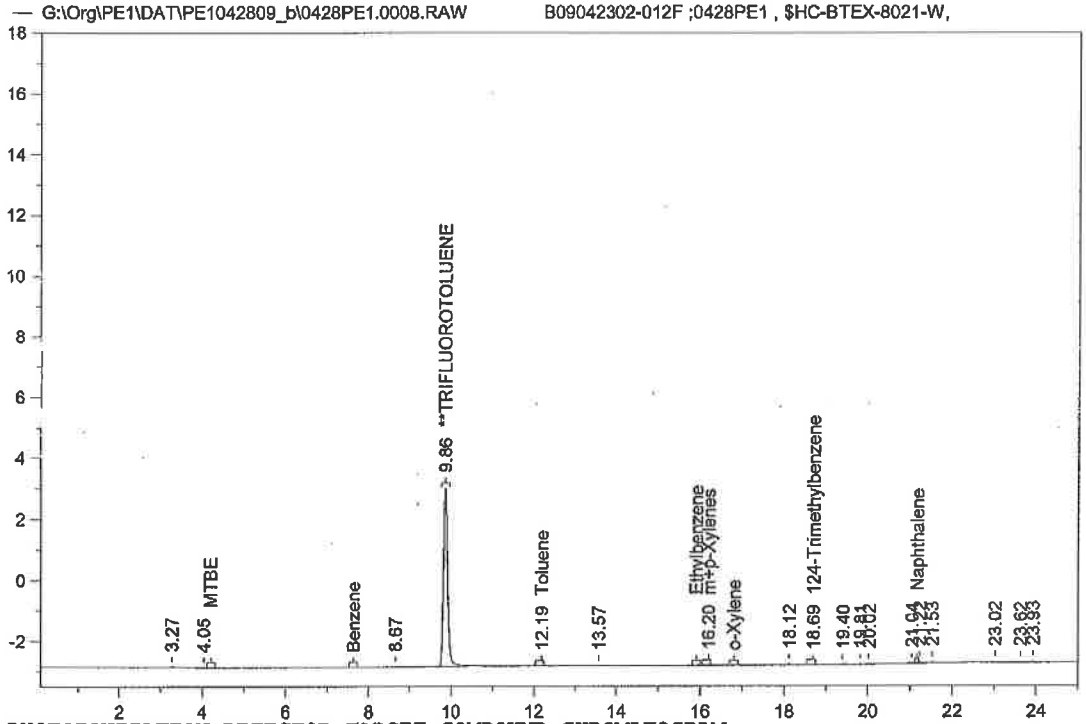
Whitmer
— G:\Org\PE1\DAT\PE1042809_b\0428PE1.0008.RAW B09042302-012F ;0428PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-012F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0008.RAW
Date & Time Acquired: 4/28/2009 3:59:17 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.189	12.189	12.189	168	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.204	16.204	16.204	313	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.692	18.692	18.692	74	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	50.81	101.62	80-120

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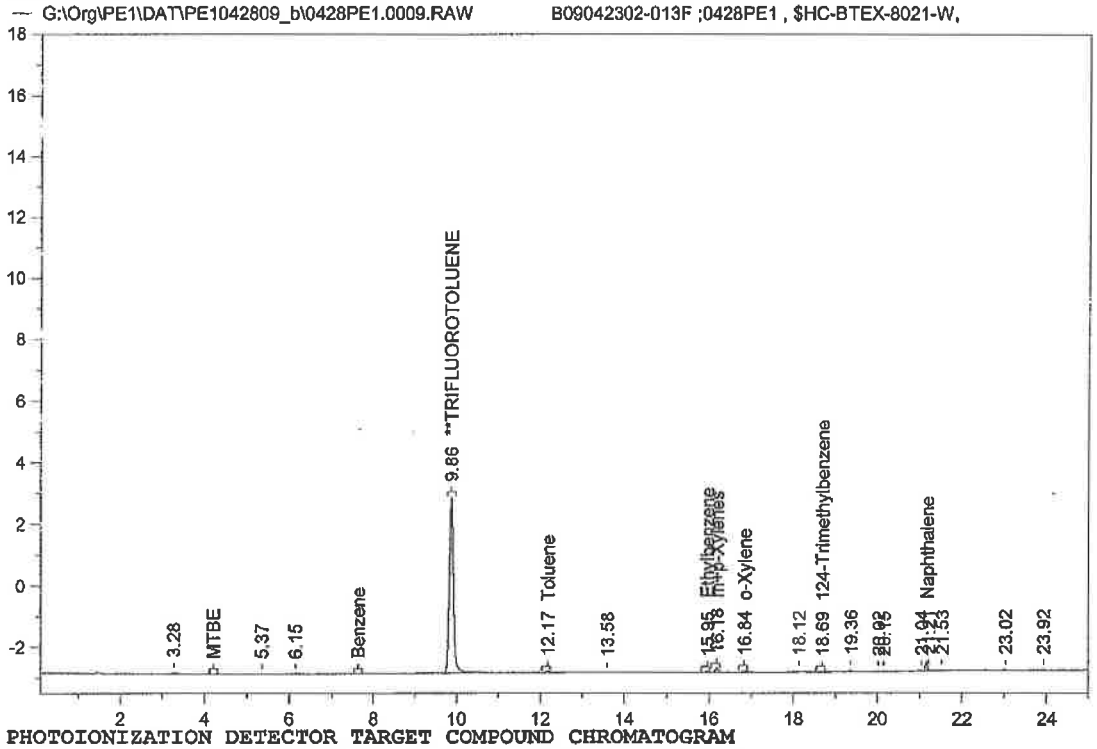
PNR-39-08



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-013F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0009.RAW
Date & Time Acquired: 4/28/2009 4:33:37 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.174	12.174	12.174	409	.5	U
Ethylbenzene	15.955	15.955	15.955	159	.5	U
m+p-Xylenes	16.183	16.183	16.183	928	.5	U
o-Xylene	16.835	16.835	16.835	447	.5	U
124-Trimethylbenzene	18.688	18.688	18.688	148	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	49.529	99.06	80-120

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PNR-34-07

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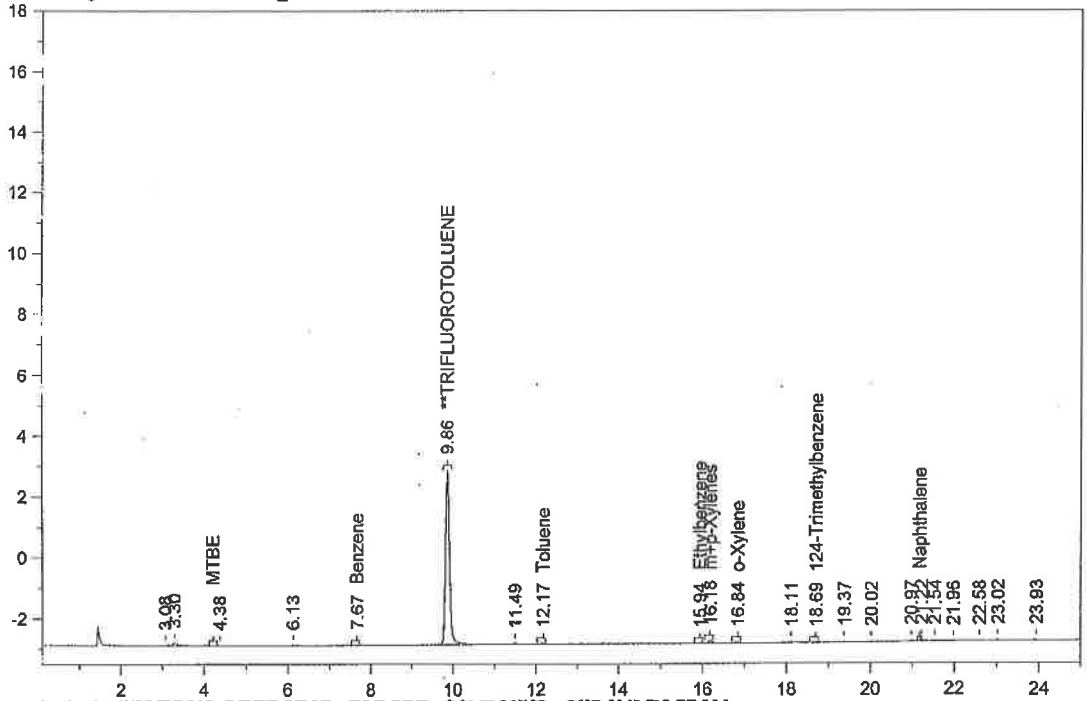

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-014F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0010.RAW
Date & Time Acquired: 4/28/2009 5:08:30 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.668	7.668	7.668	88	.5	U
Toluene	12.17	12.17	12.17	351	.5	U
Ethylbenzene	15.938	15.938	15.938	107	.5	U
m+p-Xylenes	16.183	16.183	16.183	573	.5	U
o-Xylene	16.841	16.841	16.841	226	.5	U
124-Trimethylbenzene	18.693	18.693	18.693	103	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.861	50.	49.87	99.74	80-120

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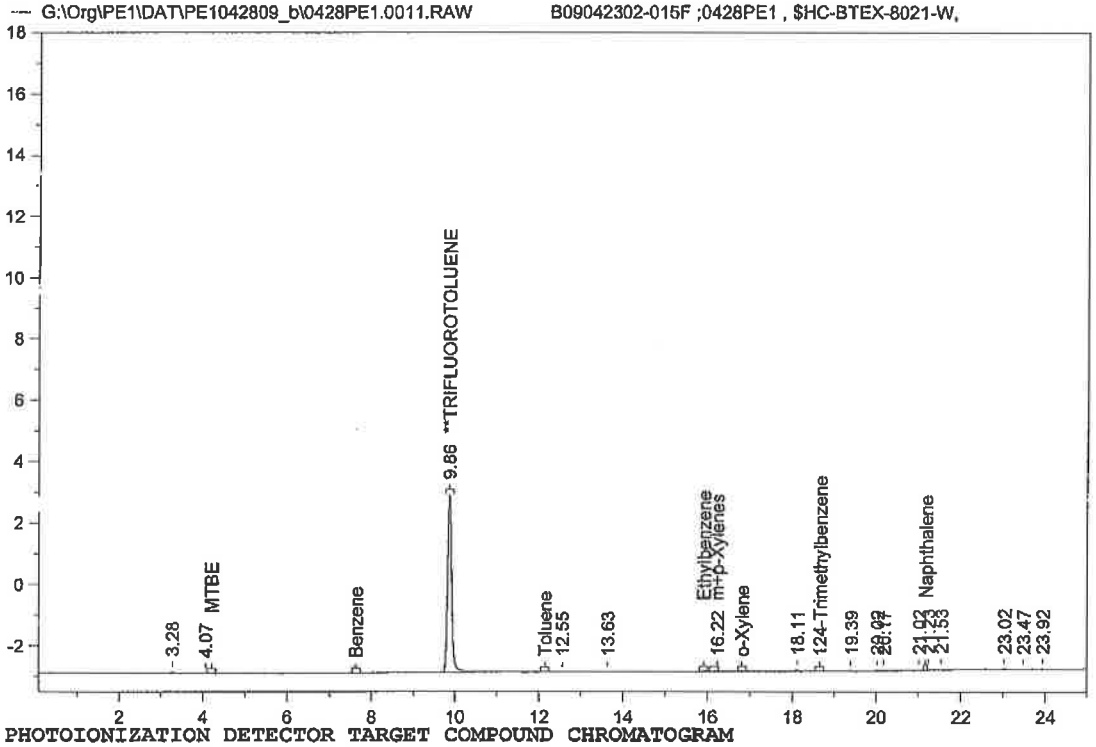
MOC-20A



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-015F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0011.RAW
Date & Time Acquired: 4/28/2009 5:45:44 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.223	16.223	16.223	156	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	49.954	99.91	80-120

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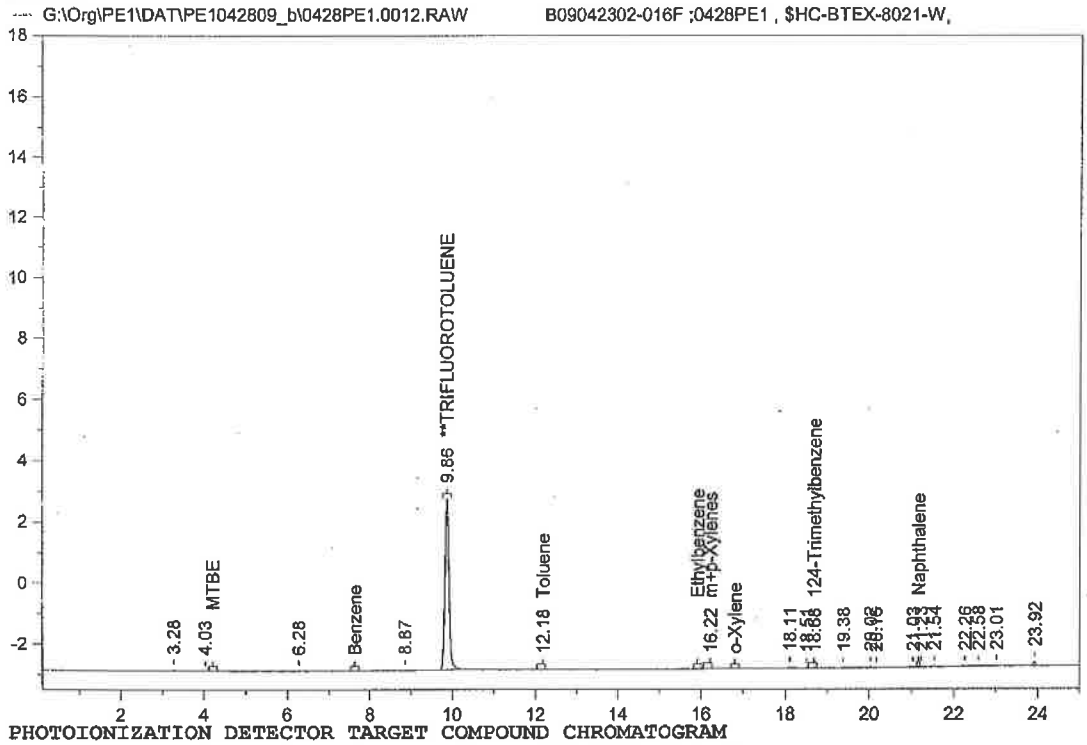
PNR-10



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-016F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0012.RAW
Date & Time Acquired: 4/28/2009 6:19:12 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.177	12.177	12.177	138	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.221	16.221	16.221	116	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.685	18.685	18.685	120	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	48.033	96.07	80-120

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LAW-M03

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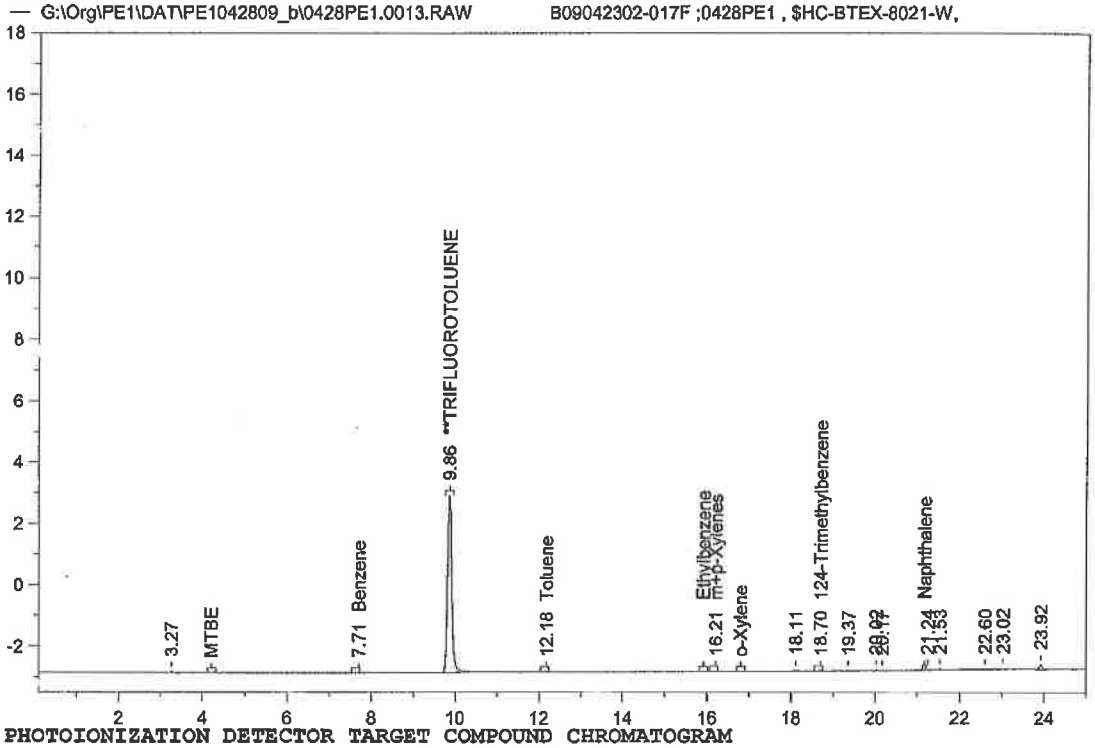

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-017F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0013.RAW
Date & Time Acquired: 4/28/2009 6:52:31 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.708	7.708	7.708	81	.5	U
Toluene	12.18	12.18	12.18	170	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.208	16.208	16.208	161	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.698	18.698	18.698	80	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	49.916	99.83	80-120

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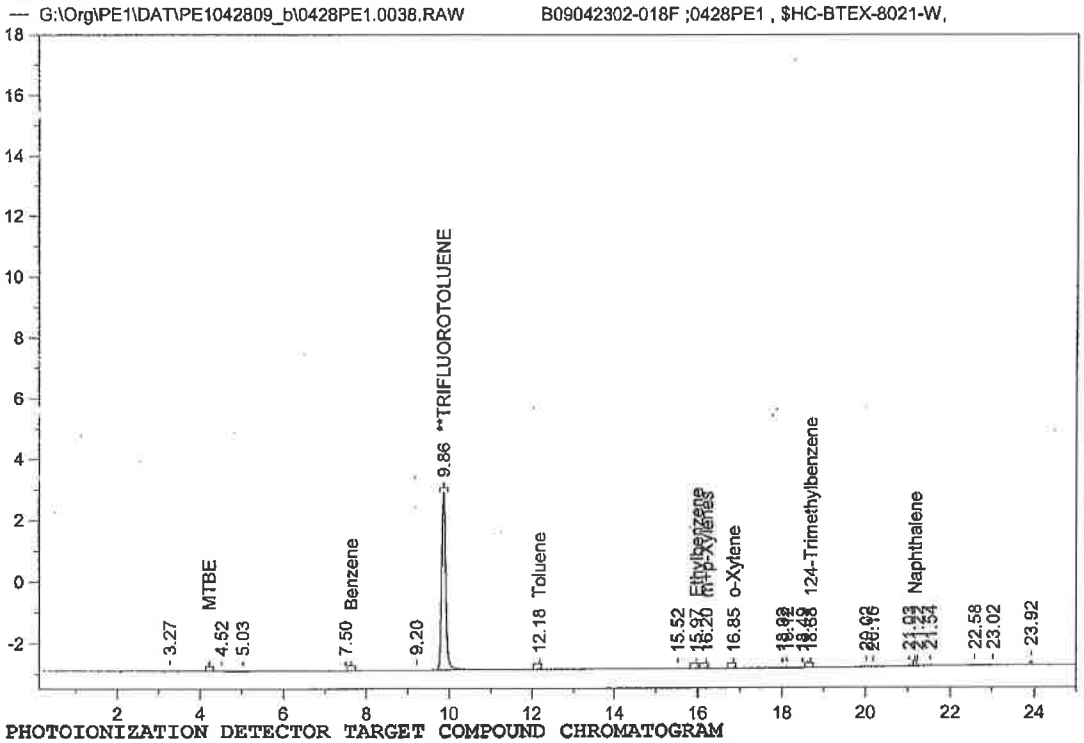
PNR-9



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-018F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0038.RAW
Date & Time Acquired: 4/29/2009 9:38:47 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.175	12.175	12.175	277	.5	U
Ethylbenzene	15.97	15.97	15.97	110	.5	U
m+p-Xylenes	16.205	16.205	16.205	274	.5	U
o-Xylene	16.852	16.852	16.852	82	.5	U
124-Trimethylbenzene	18.683	18.683	18.683	85	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	50.146	100.29	80-120

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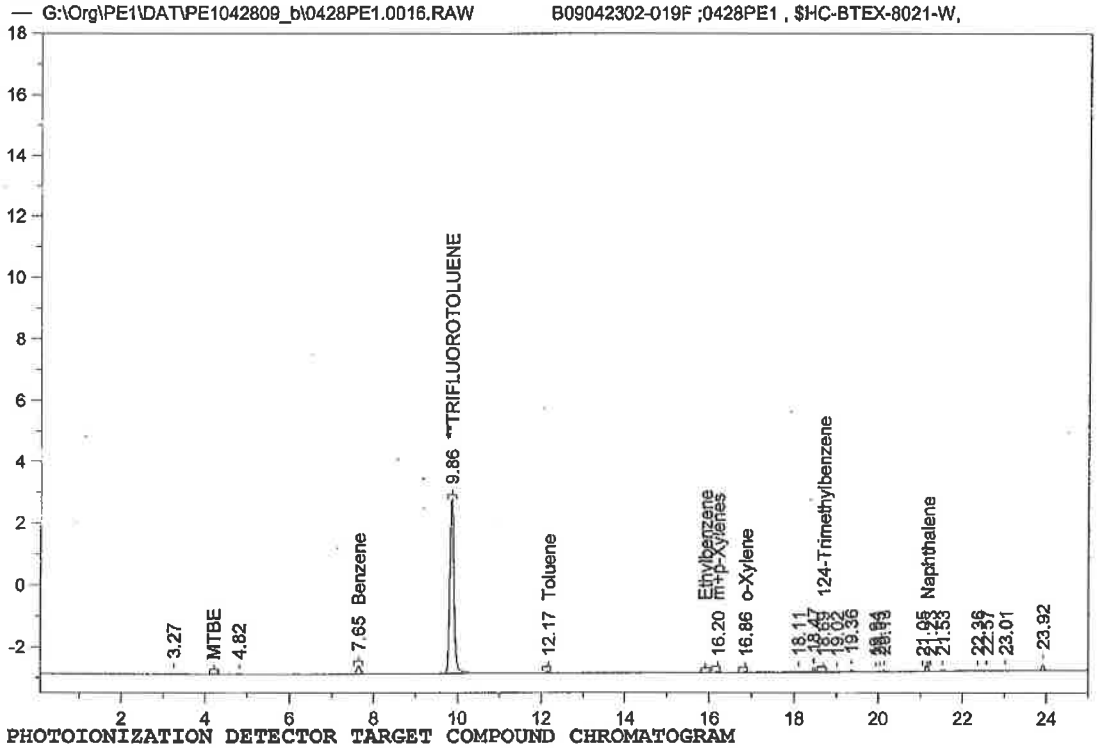
PNR-13



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-019F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0016.RAW
Date & Time Acquired: 4/28/2009 8:33:52 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.646	2.226	2.212	1874	.702	
Toluene	12.171	12.171	12.171	497	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.201	16.201	16.201	229	.5	U
o-Xylene	16.859	16.859	16.859	101	.5	U
124-Trimethylbenzene	18.69	18.69	18.69	130	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	48.66	97.32	80-120

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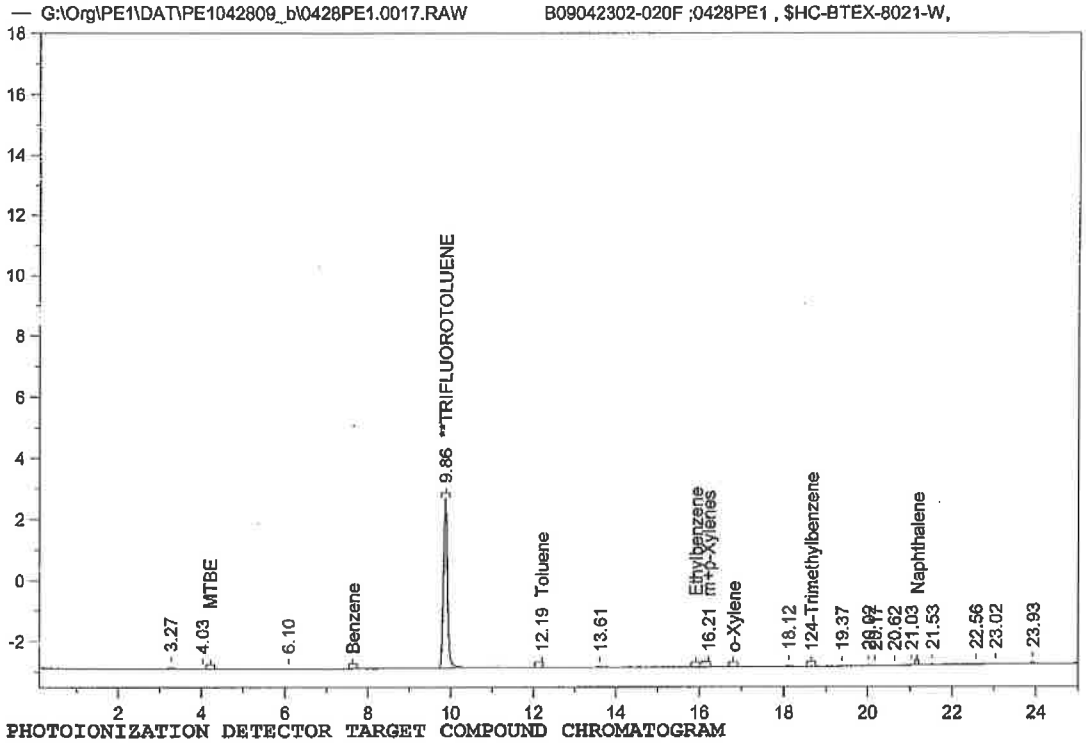
PNR-28



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-020F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0017.RAW
Date & Time Acquired: 4/28/2009 9:07:35 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.193	12.193	12.193	127	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.211	16.211	16.211	174	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	47.95	95.9	80-120

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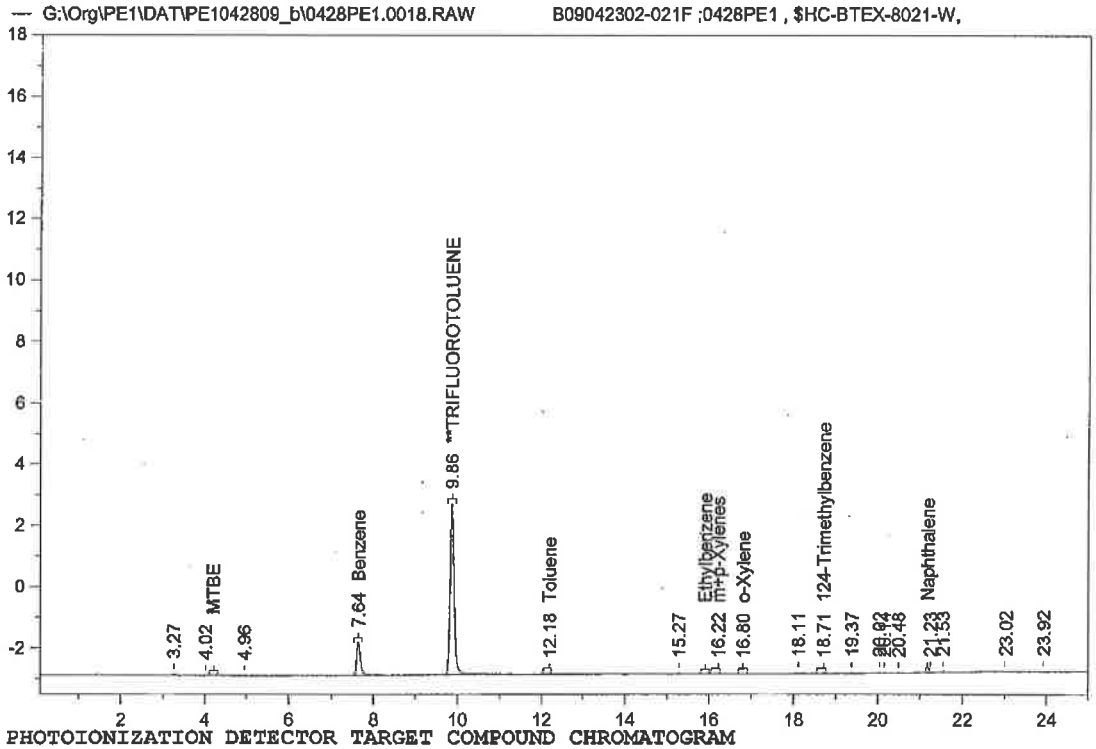
PNR-27



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-021F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0018.RAW
Date & Time Acquired: 4/28/2009 9:41:10 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.639	2.226	2.22	7068	2.65	
Toluene	12.184	12.184	12.184	465	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.216	16.216	16.216	103	.5	U
o-Xylene	16.804	16.804	16.804	99	.5	U
124-Trimethylbenzene	18.708	18.708	18.708	92	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	48.096	96.19	80-120

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PNR-19

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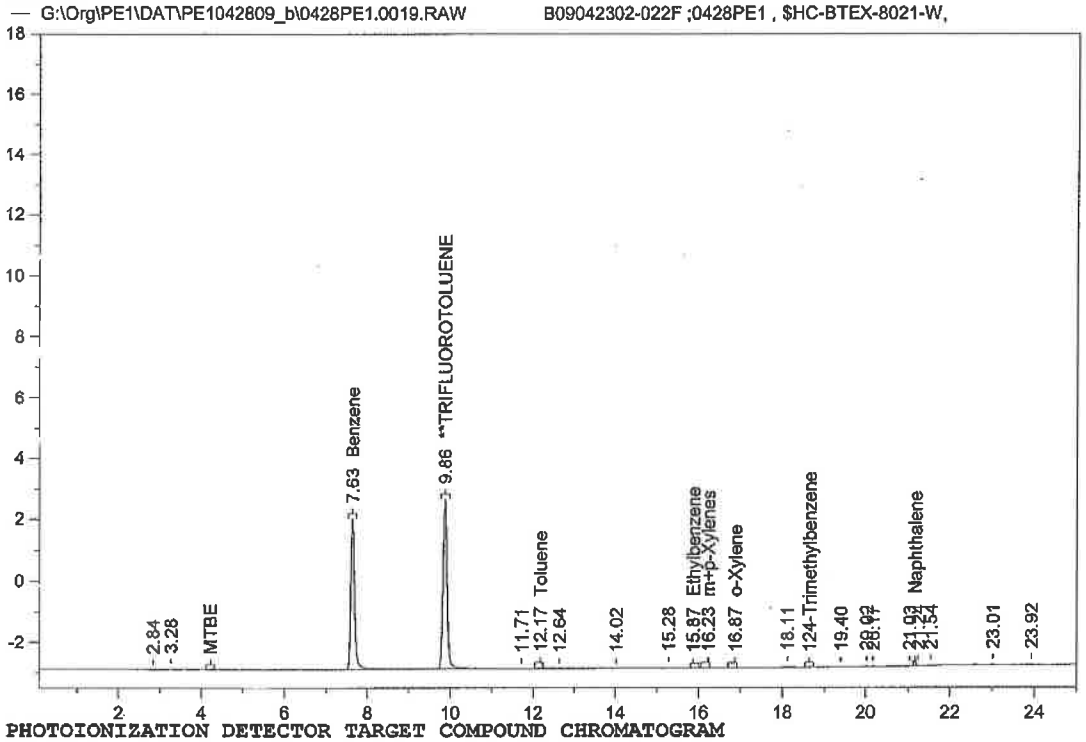

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-022F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0019.RAW
Date & Time Acquired: 4/28/2009 10:14:49 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.634	2.226	2.225	33333	12.497	
Toluene	12.172	12.172	12.172	273	.5	U
Ethylbenzene	15.873	15.873	15.873	75	.5	U
m+p-Xylenes	16.226	16.226	16.226	158	.5	U
o-Xylene	16.869	16.869	16.869	87	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	47.311	94.62	80-120

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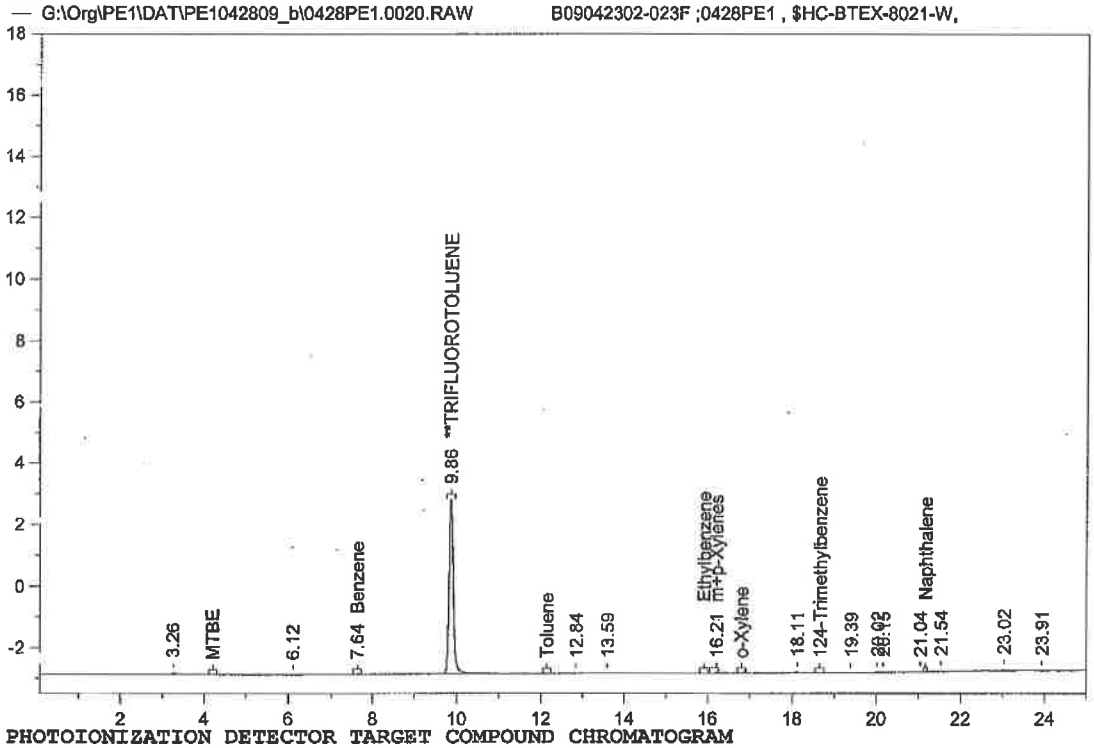
PNR-8
— G:\Org\PE1\DAT\PE1042809_b\0428PE1.0020.RAW B09042302-023F ;0428PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-023F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0020.RAW
Date & Time Acquired: 4/28/2009 10:48:24 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.644	7.644	7.644	127	.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.209	16.209	16.209	77	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	49.298	98.6	80-120

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LAW-M05

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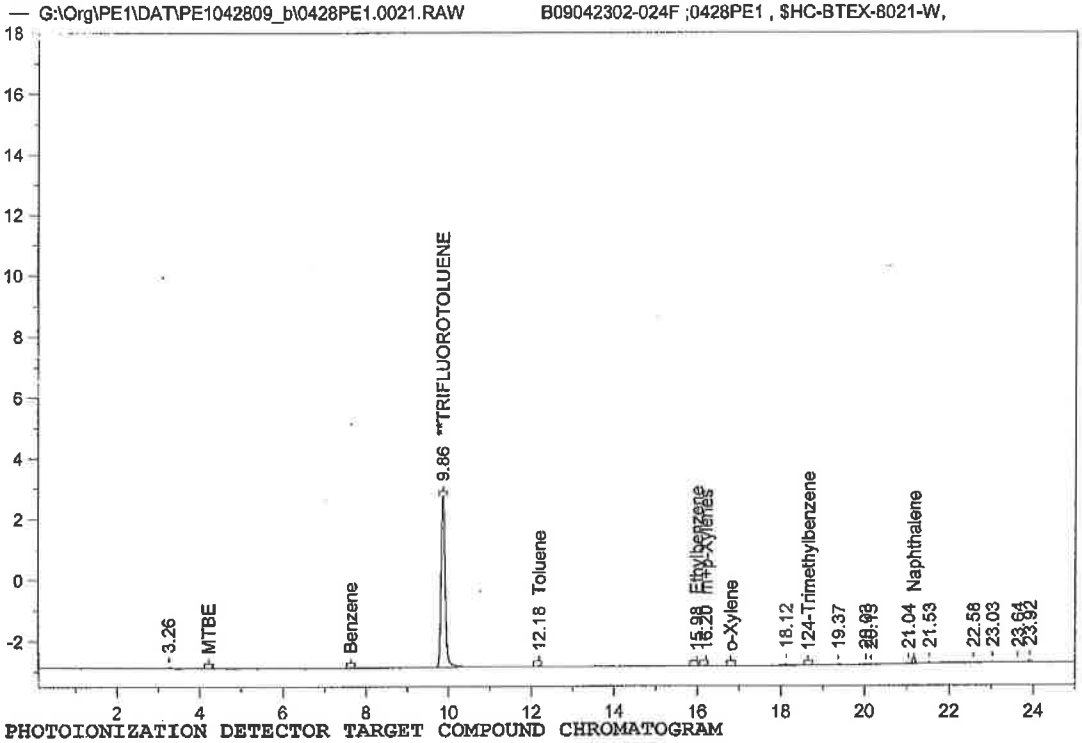

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Sample Name: B09042302-024F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0021.RAW
Date & Time Acquired: 4/28/2009 11:21:57 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.182	12.182	12.182	151	.5	U
Ethylbenzene	15.983	15.983	15.983	74	.5	U
m+p-Xylenes	16.204	16.204	16.204	176	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	48.728	97.46	80-120

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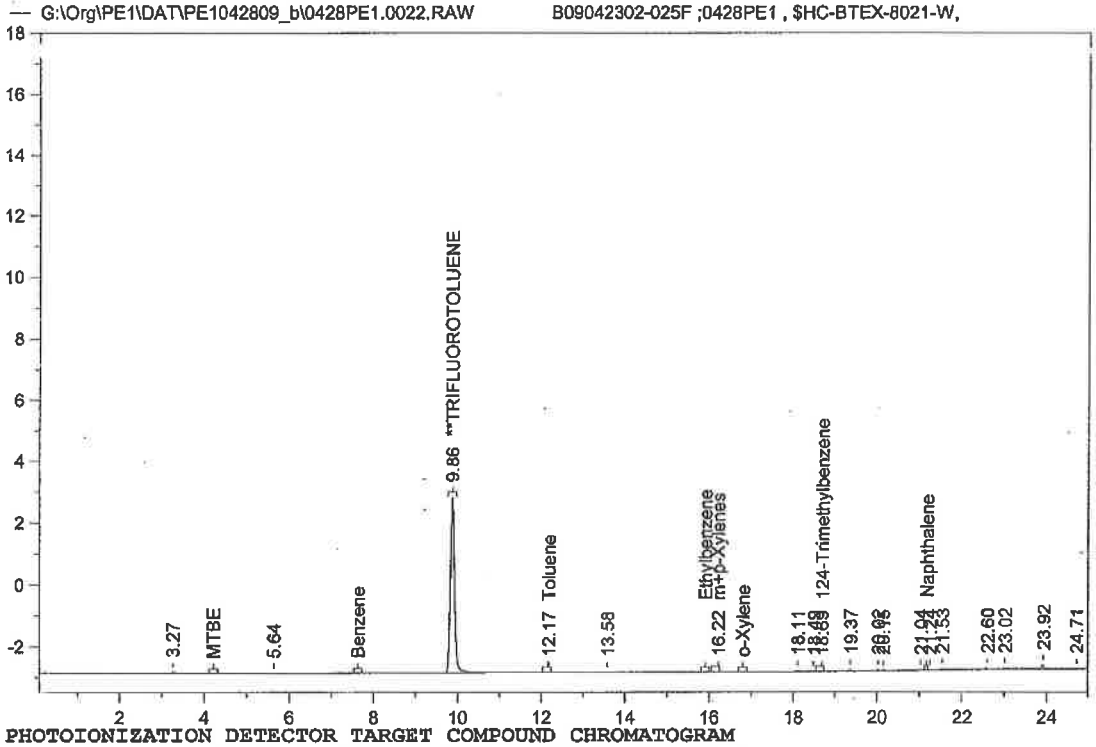
LAW-M01

— G:\Org\PE1\DAT\PE1042809_b\0428PE1.0022.RAW B09042302-025F ;0428PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-025F ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0022.RAW
Date & Time Acquired: 4/28/2009 11:55:33 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.174	12.174	12.174	211	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.217	16.217	16.217	161	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.694	18.694	18.694	82	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	50.083	100.17	80-120

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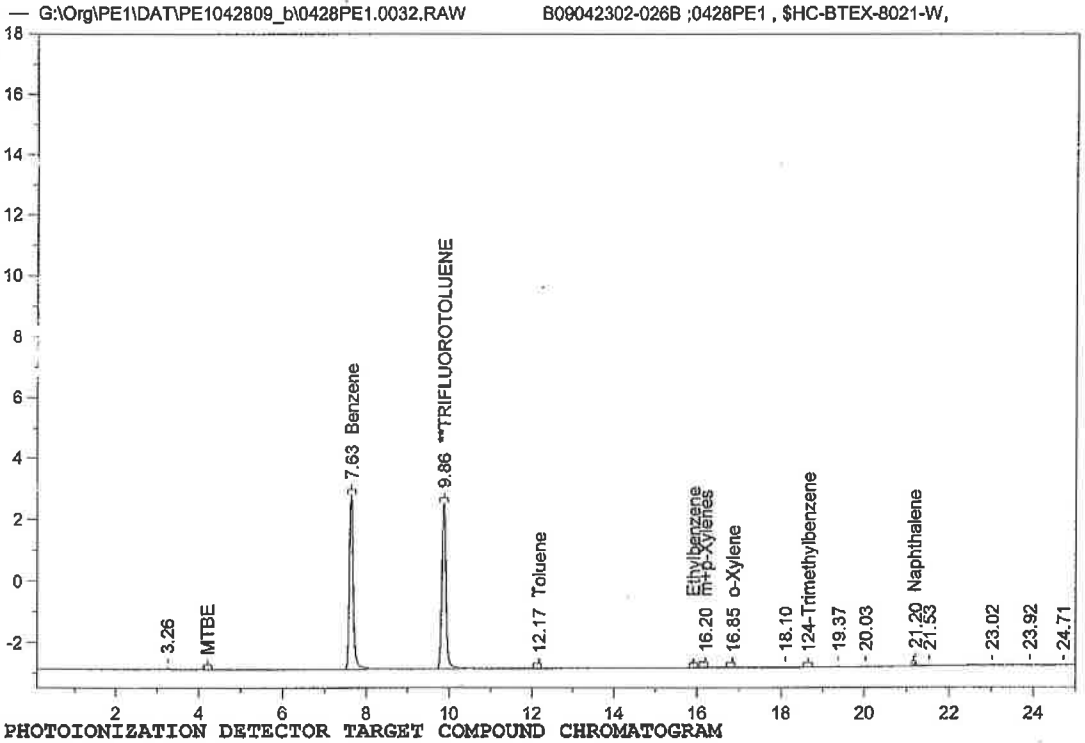
RW-2
— G:\Org\PE1\DAT\PE1042809_b\0428PE1.0032.RAW B09042302-026B ;0428PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-026B ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0032.RAW
Date & Time Acquired: 4/29/2009 5:31:57 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.634	2.226	2.226	38350	14.377	
Toluene	12.17	12.17	12.17	122	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.199	16.199	16.199	197	.5	U
o-Xylene	16.849	16.849	16.849	112	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	46.482	92.96	80-120

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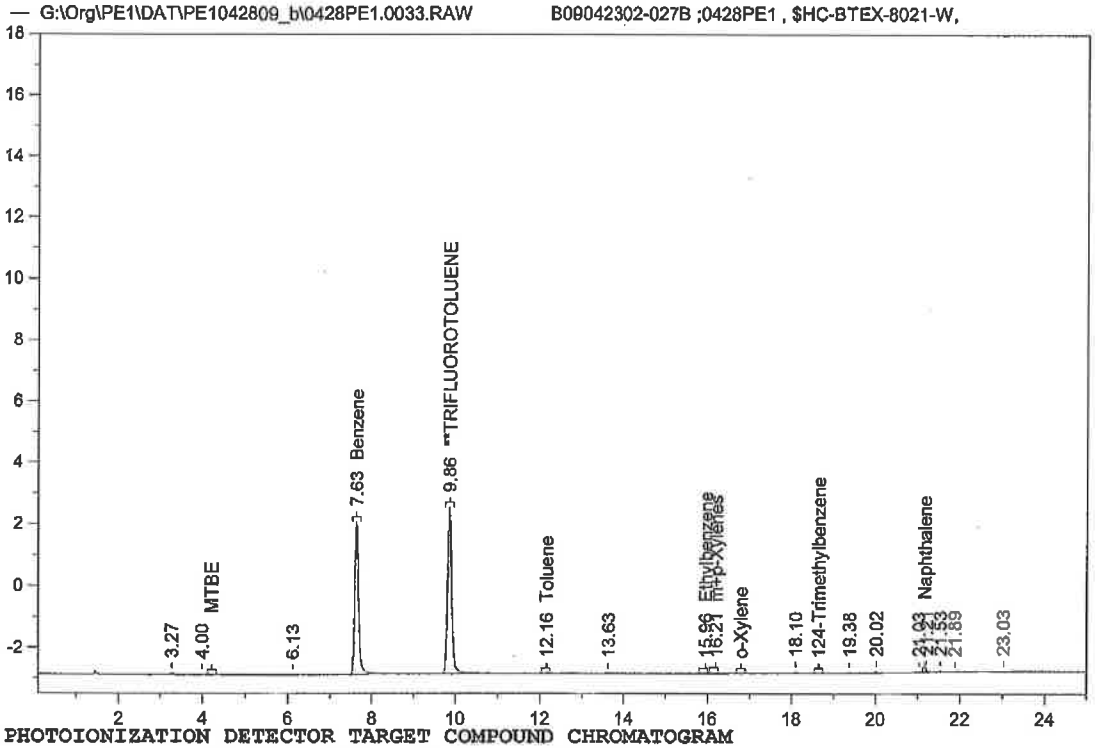
RW-3



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-027B ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0033.RAW
Date & Time Acquired: 4/29/2009 6:05:22 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.633	2.226	2.225	33124	12.418	
Toluene	12.157	12.157	12.157	94	.5	U
Ethylbenzene	15.958	15.958	15.958	97	.5	U
m+p-Xylenes	16.206	16.206	16.206	221	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	46.656	93.31	80-120

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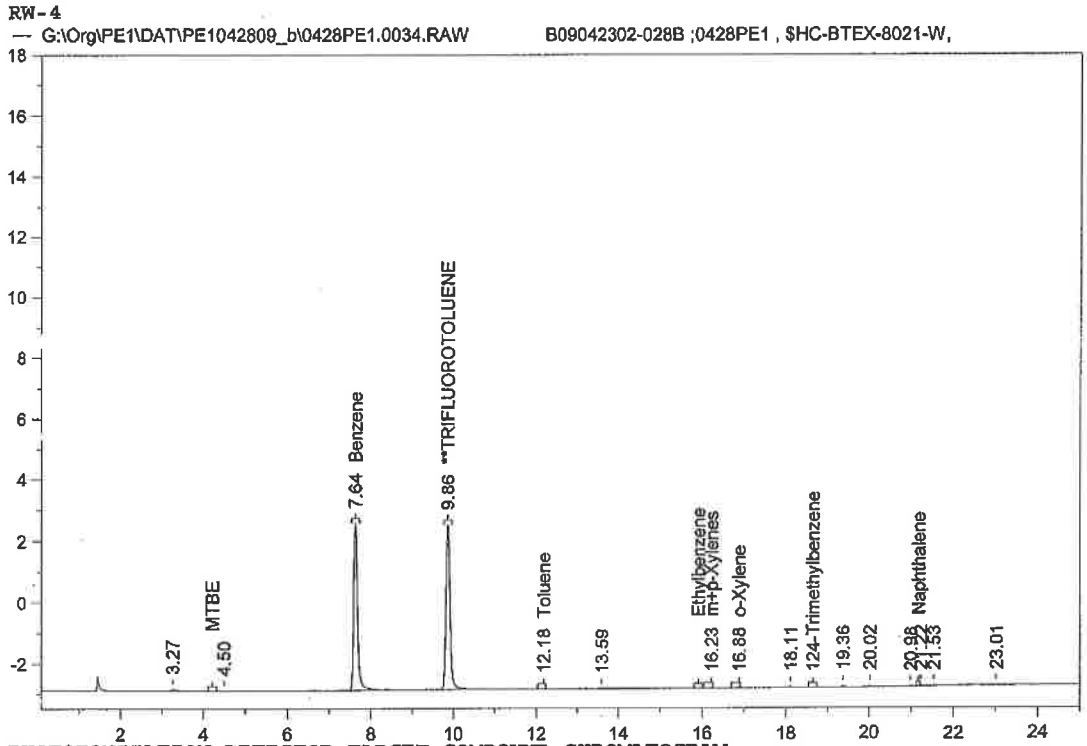

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-028B ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0034.RAW
Date & Time Acquired: 4/29/2009 6:39:06 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.635	2.226	2.226	36829	13.807	
Toluene	12.179	12.179	12.179	101	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.226	16.226	16.226	217	.5	U
o-Xylene	16.884	16.884	16.884	114	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.861	50.	46.532	93.06	80-120

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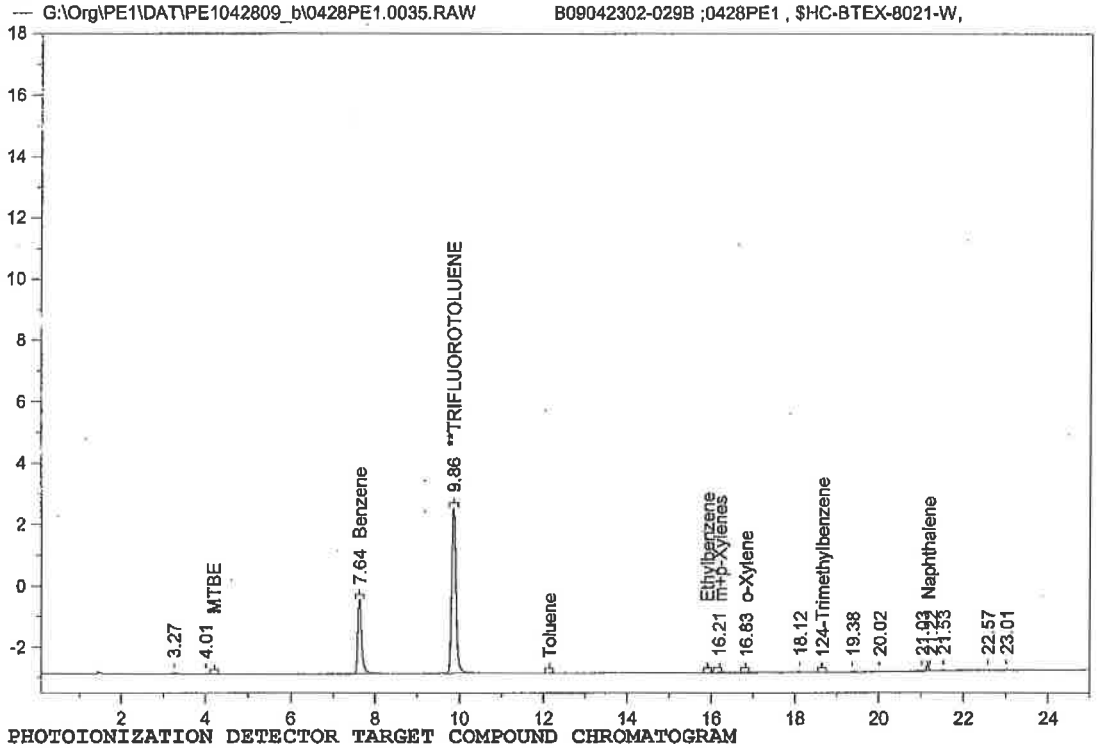
RW-5



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-029B ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0035.RAW
Date & Time Acquired: 4/29/2009 7:12:48 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.635	2.226	2.223	16441	6.164	
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.212	16.212	16.212	115	.5	U
o-Xylene	16.83	16.83	16.83	74	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	46.542	93.08	80-120

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RW-6
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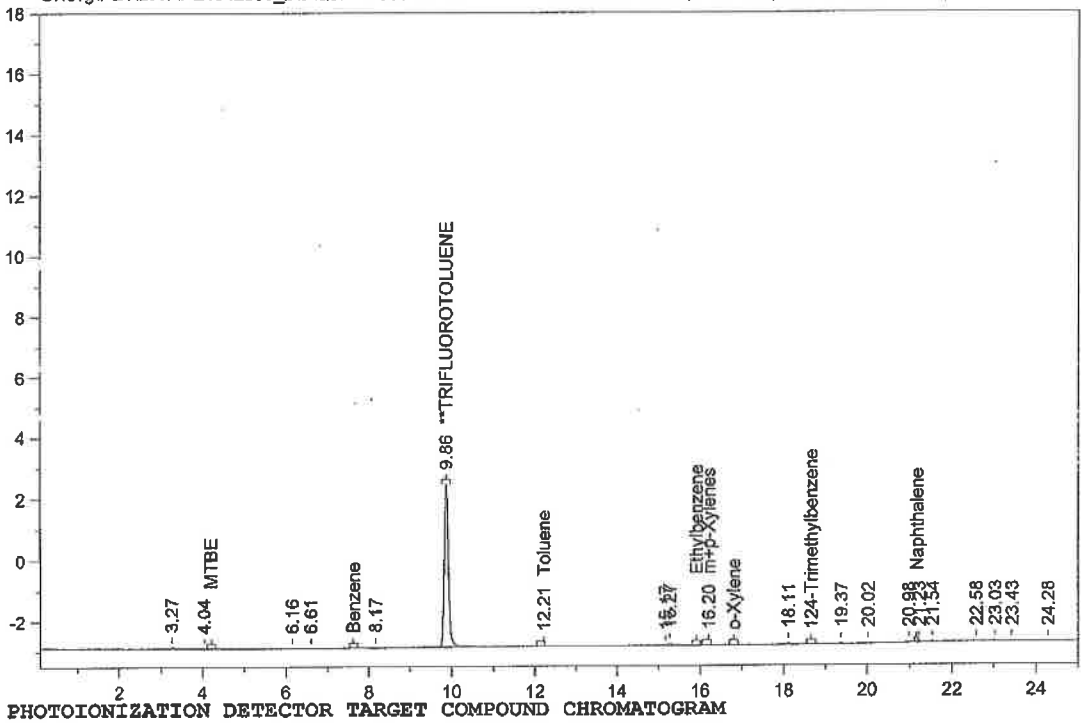

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-030B ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0036.RAW
Date & Time Acquired: 4/29/2009 7:46:28 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.207	12.207	12.207	81	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.202	16.202	16.202	169	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	46.329	92.66	80-120

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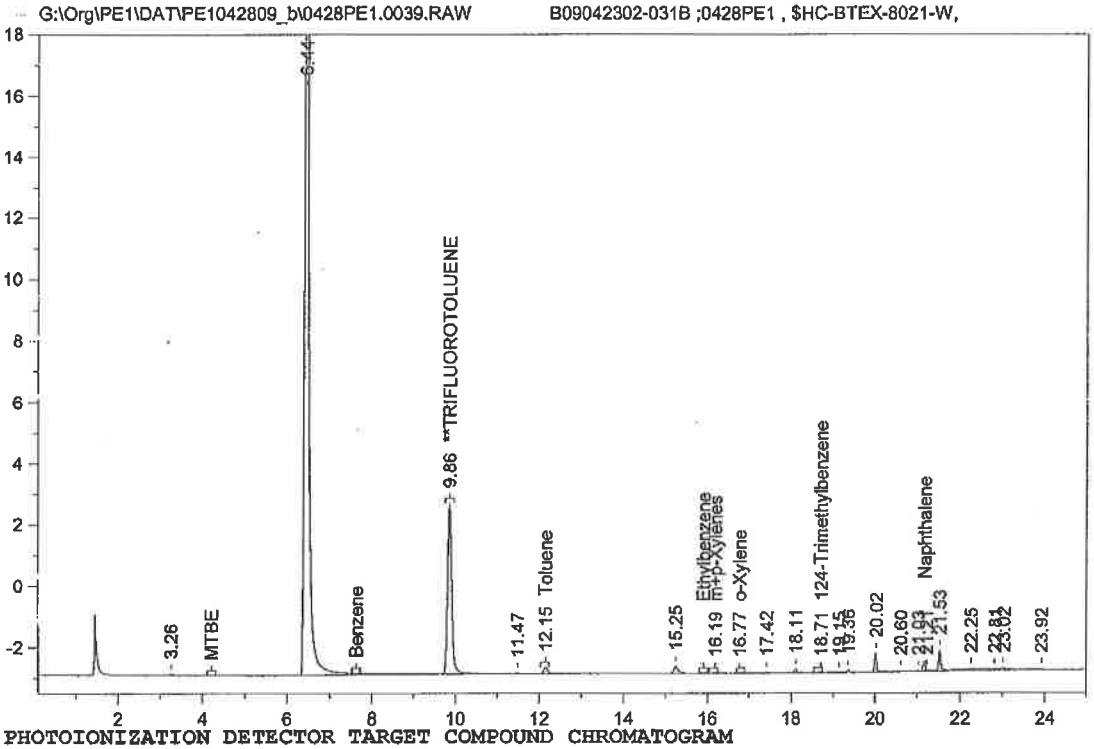
RW-7

G:\Org\PE1\DAT\PE1042809_b\0428PE1.0039.RAW B09042302-031B ;0428PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-031B ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0039.RAW
Date & Time Acquired: 4/29/2009 10:12:31 AM
Method File: G:\Org\PE1\Methods\0809Pdwl2.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.154	-2.274	-2.297	1515	.606	
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.191	16.191	16.191	204	.5	U
o-Xylene	16.774	16.774	16.774	123	.5	U
124-Trimethylbenzene	18.712	18.712	18.712	184	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	48.322	96.64	80-120

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RW-8
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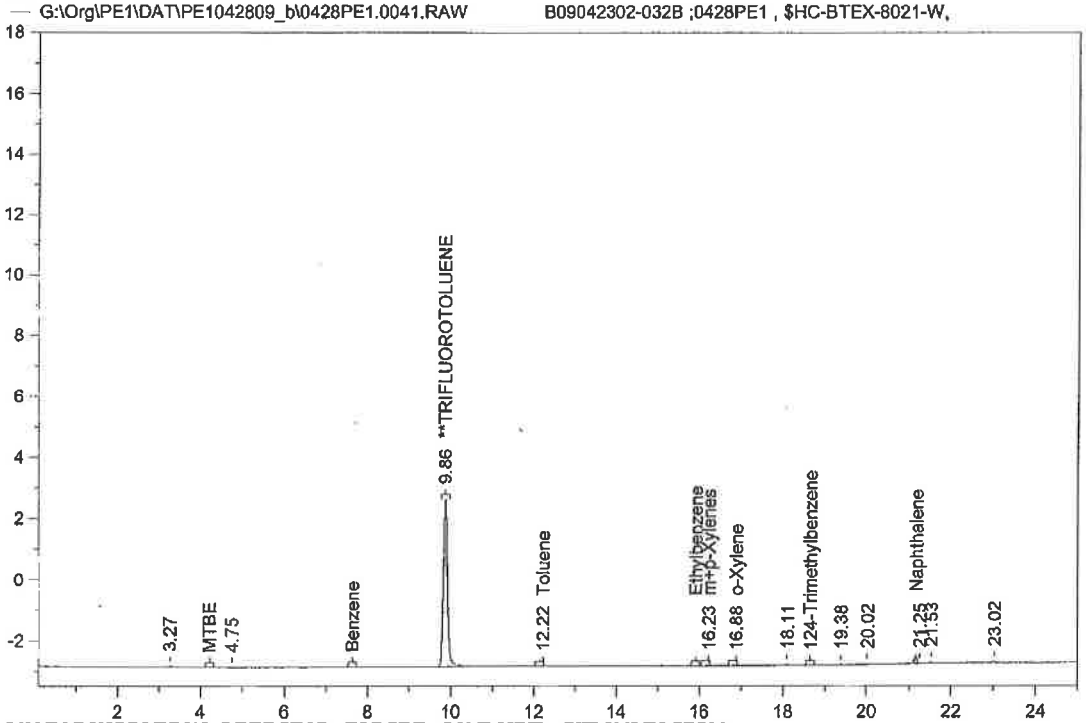

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Sample Name: B09042302-032B ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0041.RAW
Date & Time Acquired: 4/29/2009 11:19:29 AM
Method File: G:\Org\Pe1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.217	12.217	12.217	92	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.226	16.226	16.226	91	.5	U
o-Xylene	16.876	16.876	16.876	94	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.856	50.	47.927	95.85	80-120

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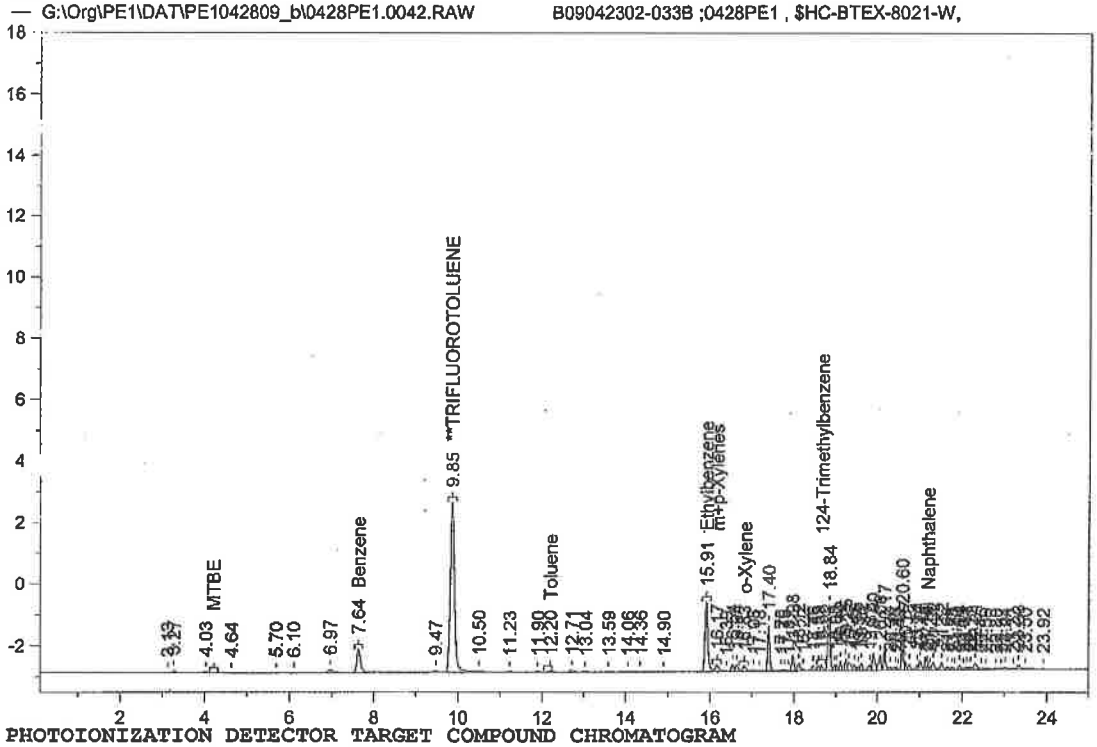
RW-9



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Sample Name: B09042302-033B ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0042.RAW
Date & Time Acquired: 4/29/2009 11:53:21 AM
Method File: G:\Org\PE1\Methods\0809Pdwl3.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.636	2.226	2.219	5016	1.88	
Toluene	12.197	12.197	12.197	738	.5	U
Ethylbenzene	15.913	-6.051	-6.058	10723	5.102	
m+p-Xylenes	16.166	-6.294	-6.311	1364	.562	
o-Xylene	16.825	-6.947	-6.97	899	.433	J
124-Trimethylbenzene	18.664	18.664	18.664	661	2.	U
Naphthalene	21.184	21.184	21.184	346	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.855	50.	47.896	95.79	80-120

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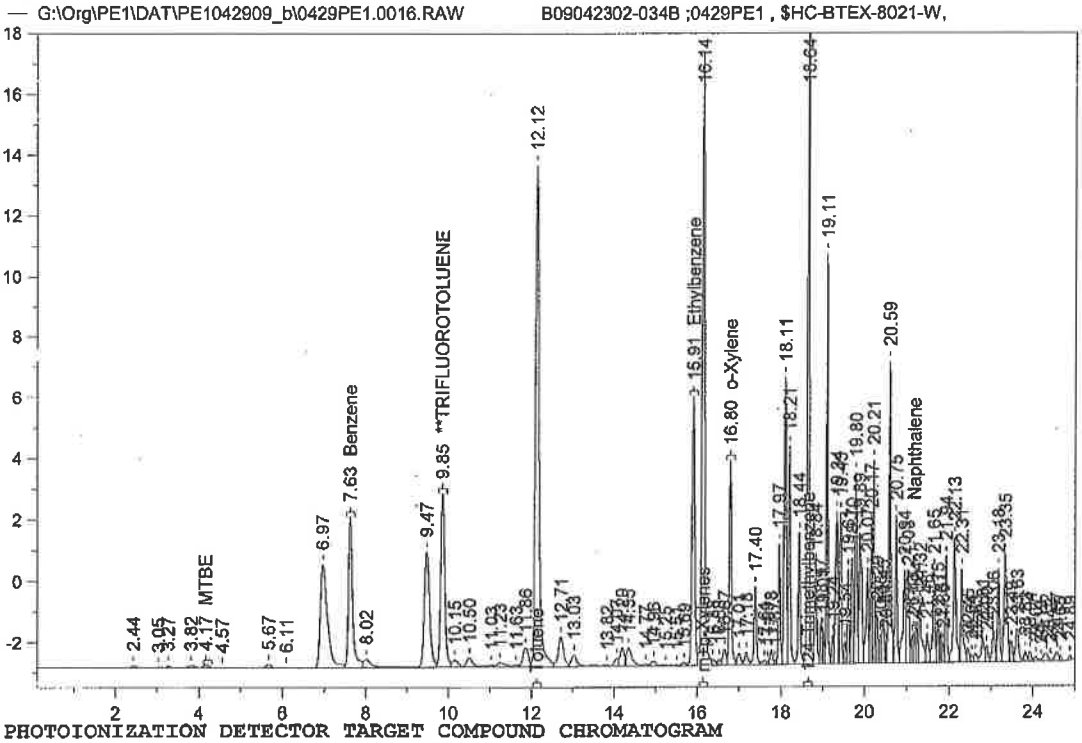
RW-10

— G:\Org\PE1\DAT\PE1042909_b\0429PE1.0016.RAW B09042302-034B ;0429PE1 , $HC-BTEX-8021-W,



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Sample Name: B09042302-034B ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0016.RAW
Date & Time Acquired: 4/29/2009 11:49:15 PM
Method File: G:\Org\PE1\Methods\0809Pdwl4.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.171	4.171	4.171	939	1.	U
Benzene	7.63	2.226	2.224	34844	13.063	
Toluene	12.123	-2.274	-2.27	104821	41.94	
Ethylbenzene	15.906	-6.051	-6.052	40115	19.085	
m+p-Xylenes	16.144	-6.294	-6.29	88601	36.466	
o-Xylene	16.802	-6.947	-6.949	25270	12.169	
124-Trimethylbenzene	18.645	-8.79	-8.791	64331	31.28	
Naphthalene	21.174	-11.3	-11.32	2796	1.56	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.854	50.	48.678	97.36	80-120

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PNR-35-07

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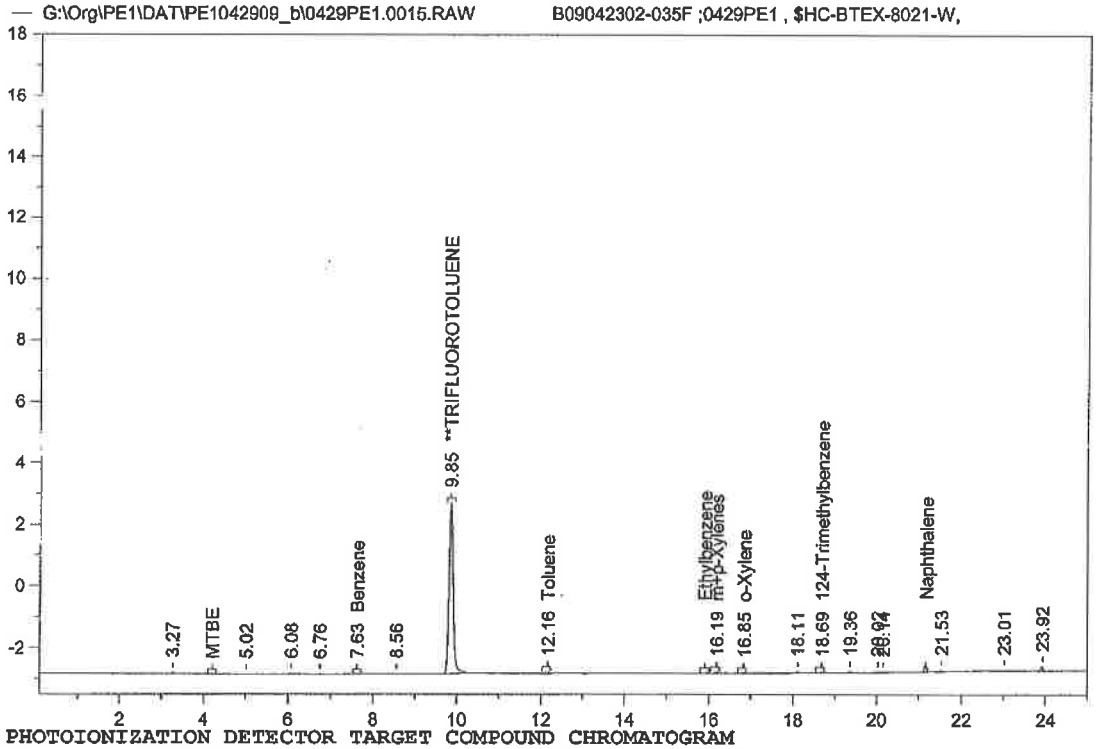

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Sample Name: B09042302-035F ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0015.RAW
Date & Time Acquired: 4/29/2009 11:15:31 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.628	7.628	7.628	73	.5	U
Toluene	12.162	12.162	12.162	384	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.193	16.193	16.193	279	.5	U
o-Xylene	16.849	16.849	16.849	111	.5	U
124-Trimethylbenzene	18.694	18.694	18.694	99	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.854	50.	47.404	94.81	80-120

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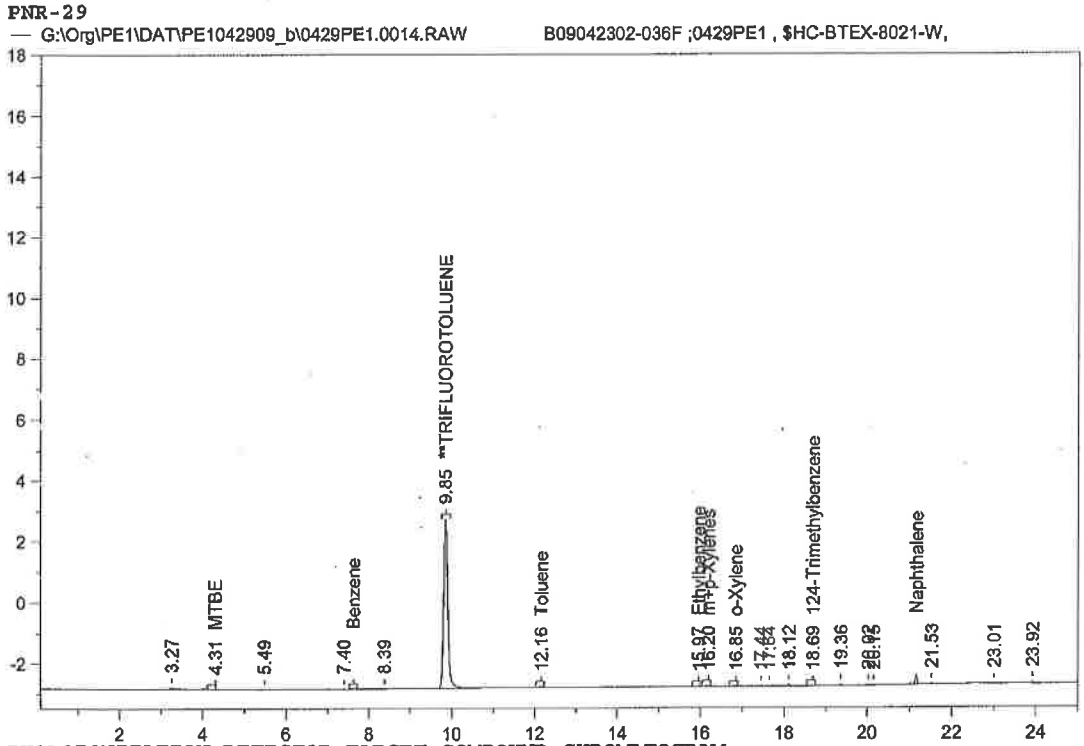
PNR-29



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-036F ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0014.RAW
Date & Time Acquired: 4/29/2009 10:42:22 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.313	4.313	4.313	73	1.	U
Benzene	.	.	.		.5	U
Toluene	12.157	12.157	12.157	399	.5	U
Ethylbenzene	15.967	15.967	15.967	80	.5	U
m+p-Xylenes	16.198	16.198	16.198	313	.5	U
o-Xylene	16.85	16.85	16.85	221	.5	U
124-Trimethylbenzene	18.691	18.691	18.691	191	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.85	50.	48.557	97.11	80-120

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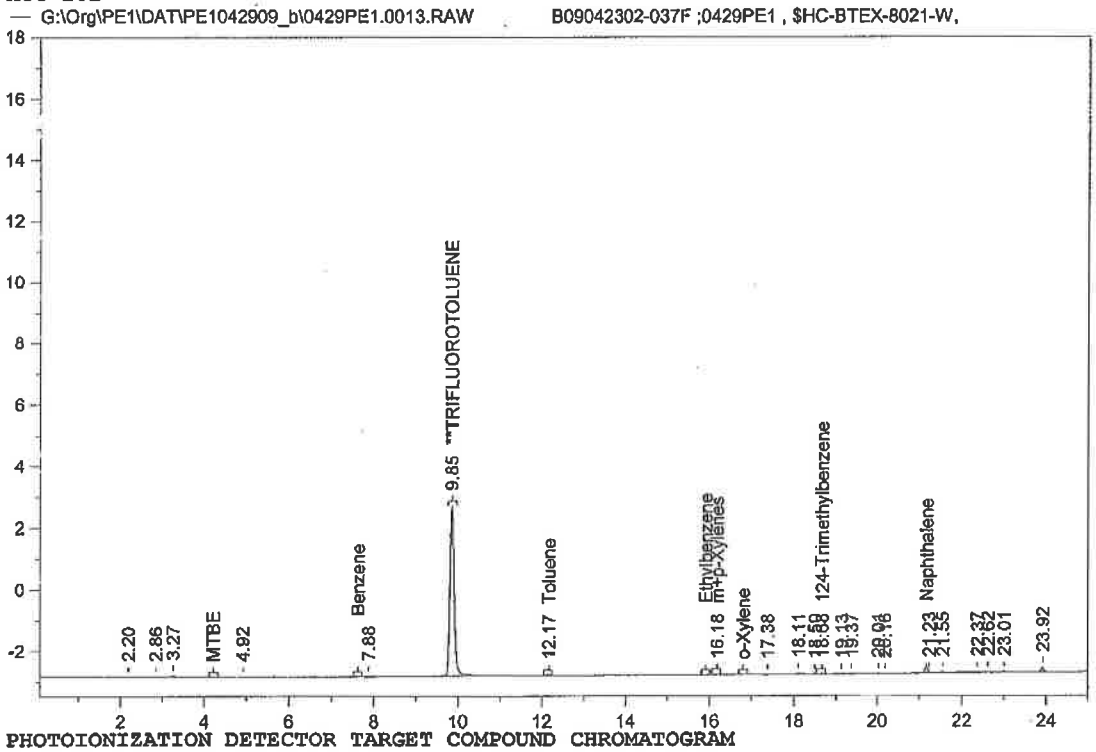
MOC-20B



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-037F ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0013.RAW
Date & Time Acquired: 4/29/2009 10:08:44 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.169	12.169	12.169	203	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.185	16.185	16.185	215	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.678	18.678	18.678	119	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.852	50.	48.36	96.72	80-120

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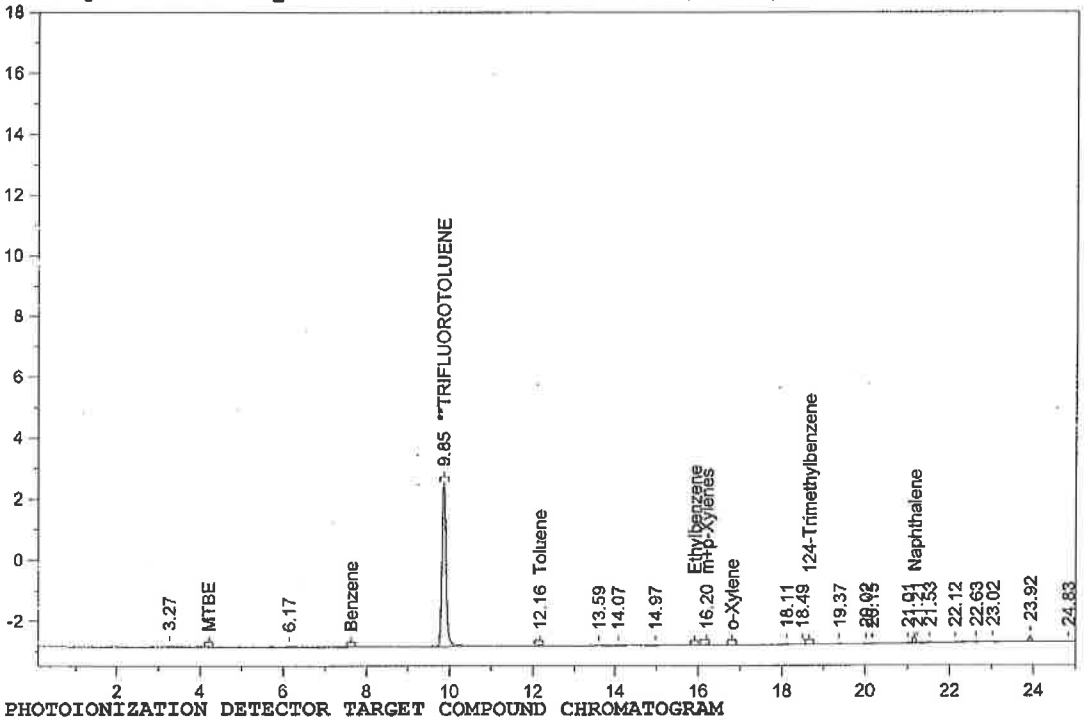
MOC-2
— G:\Org\PE1\DAT\PE1042909_b\0429PE1.0011.RAW B09042302-038F ;0429PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-038F ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0011.RAW
Date & Time Acquired: 4/29/2009 9:01:12 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.163	12.163	12.163	345	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.198	16.198	16.198	134	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.854	50.	46.557	93.11	80-120

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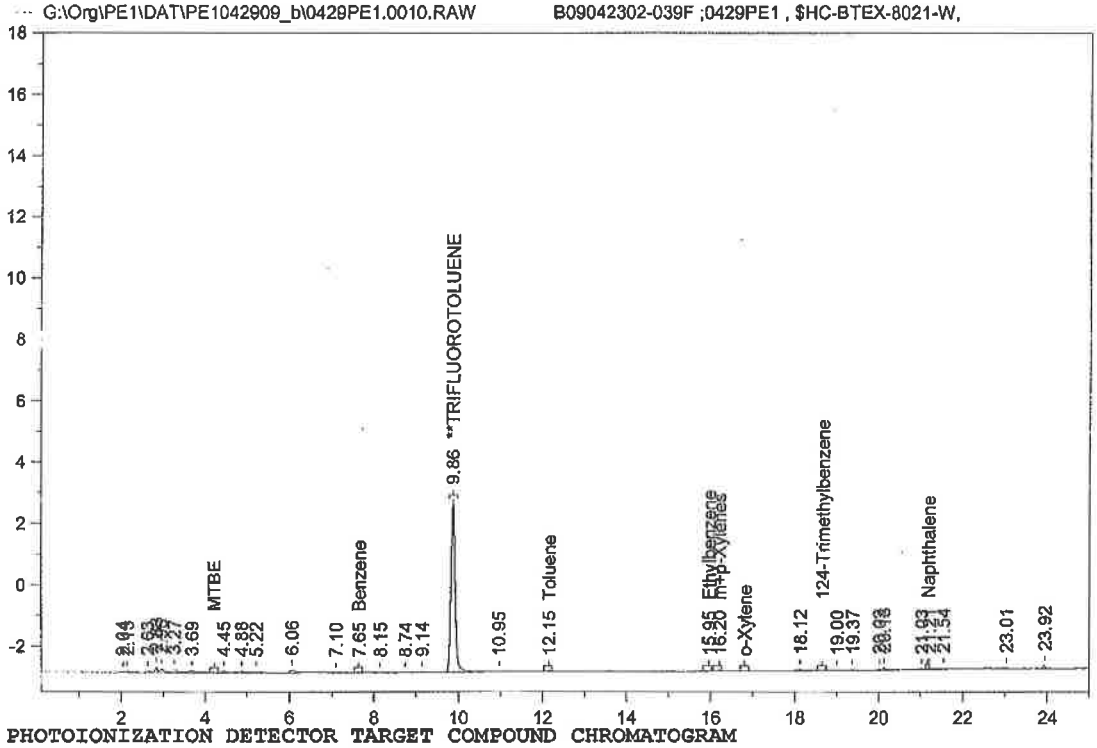
M-27

G:\Org\PE1\DAT\PE1042909_b\0429PE1.0010.RAW B09042302-039F ;0429PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-039F ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0010.RAW
Date & Time Acquired: 4/29/2009 8:27:31 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.65	7.65	7.65	109	.5	U
Toluene	12.154	12.154	12.154	143	.5	U
Ethylbenzene	15.955	15.955	15.955	97	.5	U
m+p-Xylenes	16.201	16.201	16.201	155	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.855	50.	48.938	97.88	80-120

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PNR-38-08

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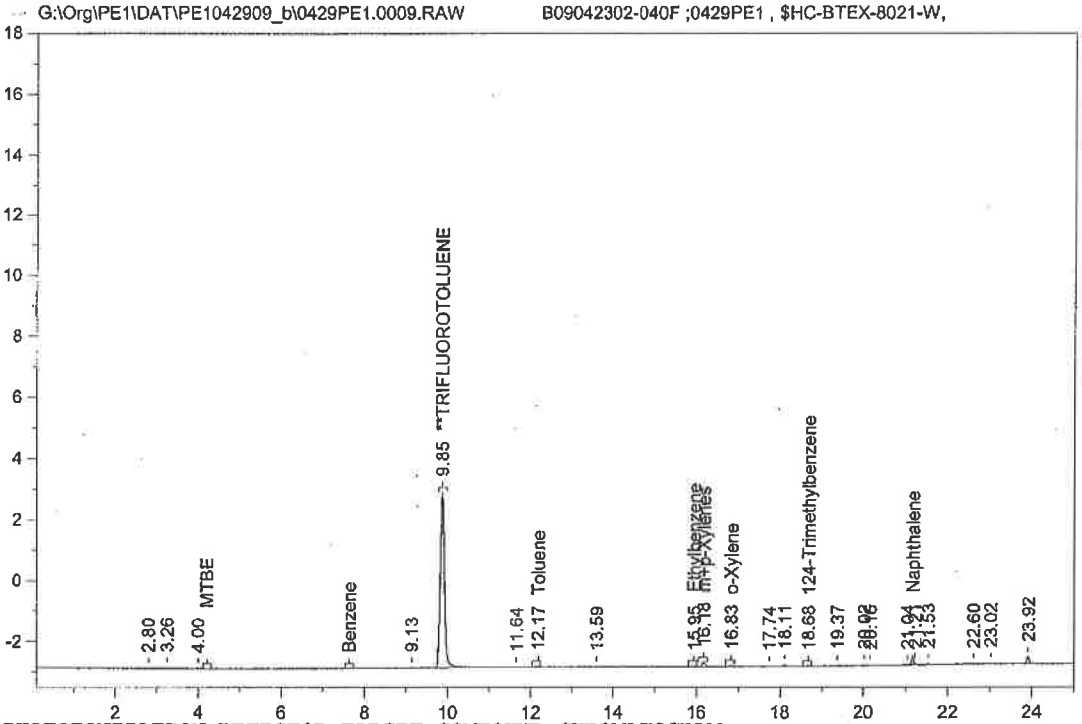

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-040F ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0009.RAW
Date & Time Acquired: 4/29/2009 7:53:51 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.172	12.172	12.172	326	.5	U
Ethylbenzene	15.945	15.945	15.945	196	.5	U
m+p-Xylenes	16.179	16.179	16.179	906	.5	U
o-Xylene	16.833	16.833	16.833	367	.5	U
124-Trimethylbenzene	18.679	18.679	18.679	128	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.853	50.	49.868	99.74	80-120

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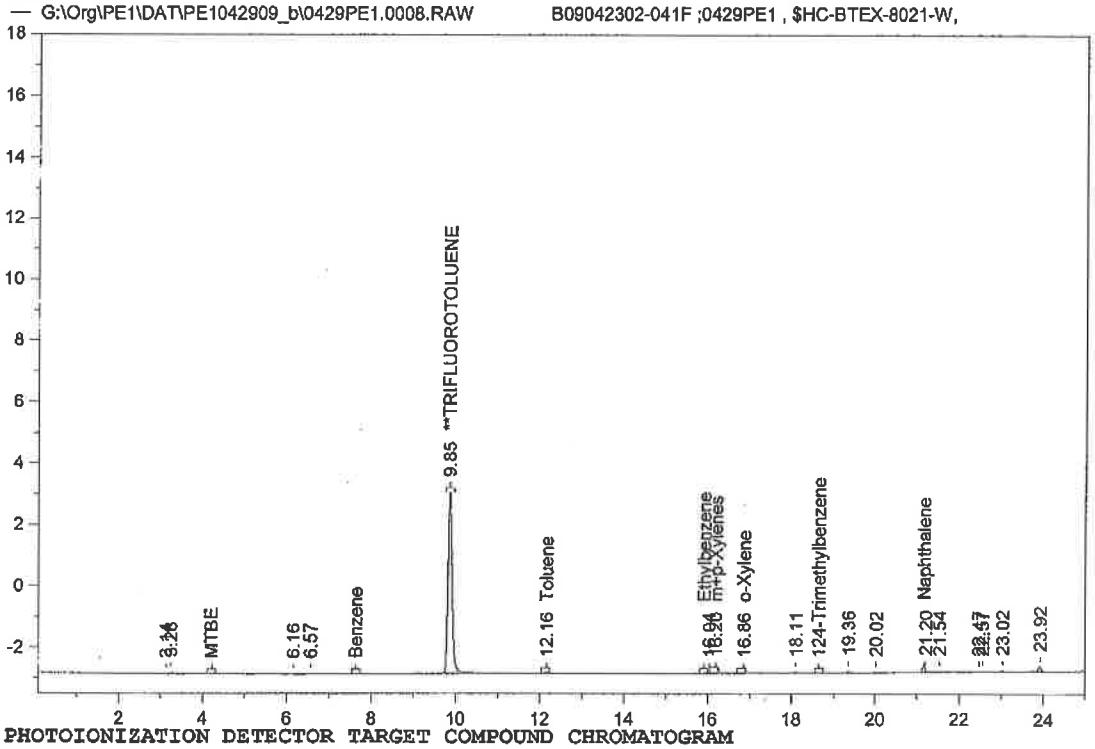
MOC-4

— G:\Org\PE1\DAT\PE1042909_b\0429PE1.0008.RAW B09042302-041F ;0429PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-041F ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0008.RAW
Date & Time Acquired: 4/29/2009 7:20:02 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.161	12.161	12.161	227	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.198	16.198	16.198	186	.5	U
o-Xylene	16.862	16.862	16.862	98	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.854	50.	51.245	102.49	80-120

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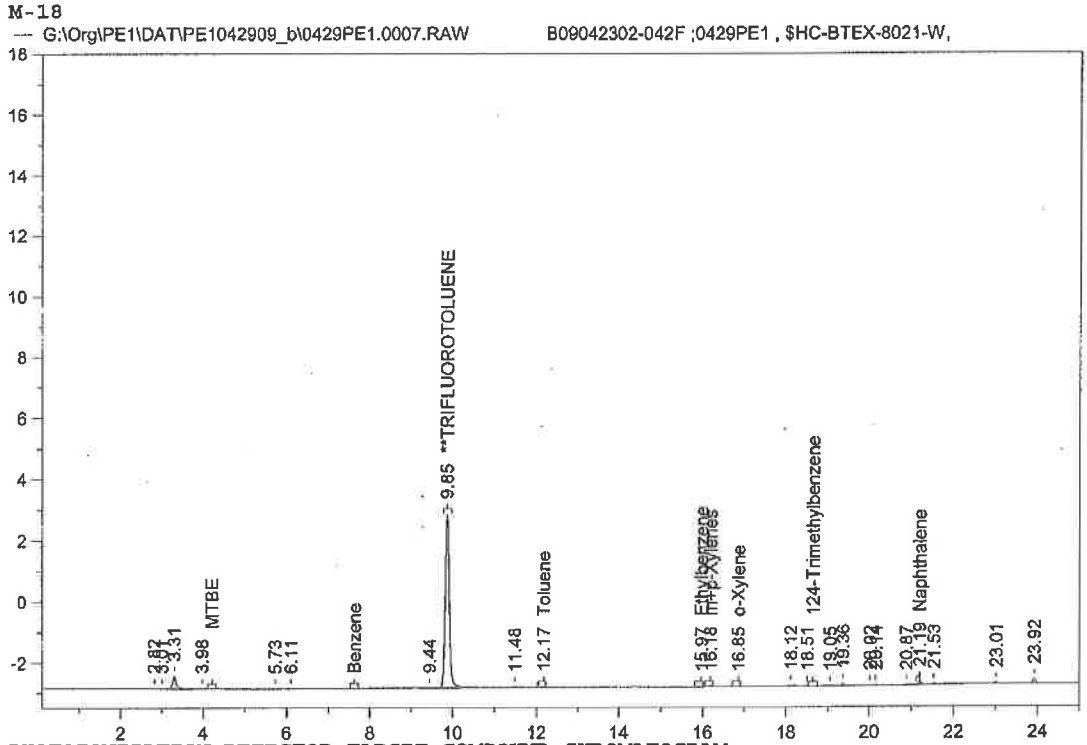

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-042F ;0429PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0007.RAW
Date & Time Acquired: 4/29/2009 6:46:22 PM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.172	12.172	12.172	294	.5	U
Ethylbenzene	15.972	15.972	15.972	117	.5	U
m+p-Xylenes	16.185	16.185	16.185	210	.5	U
o-Xylene	16.854	16.854	16.854	83	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	21.195	21.195	21.195	509	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.853	50.	50.384	100.77	80-120

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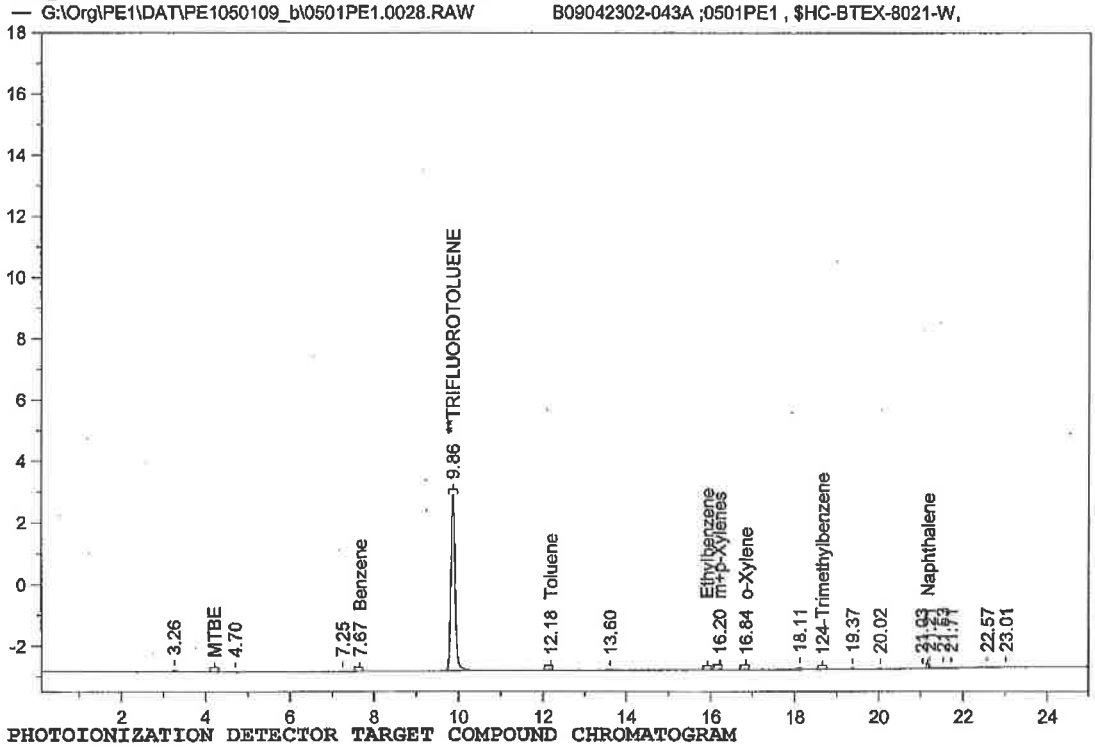
Trip Blank 1 Lot040709 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0028.RAW B09042302-043A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-043A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0028.RAW
Date & Time Acquired: 5/2/2009 12:06:13 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.665	7.665	7.665	94	.5	U
Toluene	12.178	12.178	12.178	153	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.203	16.203	16.203	186	.5	U
o-Xylene	16.836	16.836	16.836	86	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	49.553	99.11	80-120

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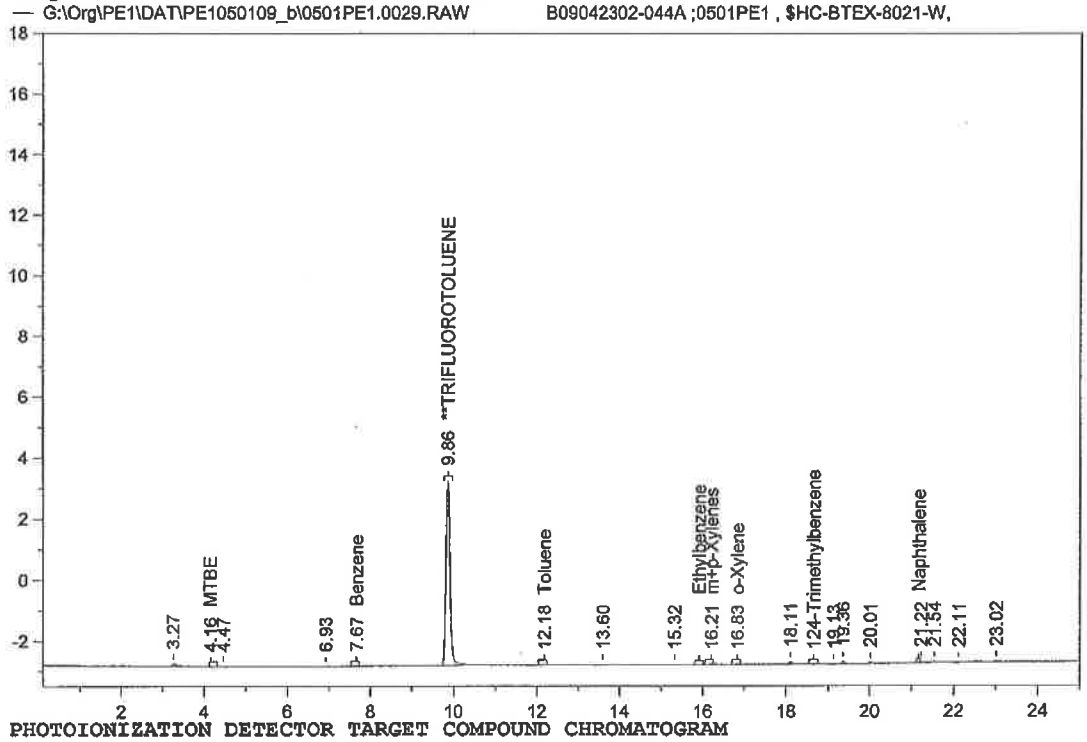
Trip Blank 2 Lot040709 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0029.RAW B09042302-044A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-044A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0029.RAW
Date & Time Acquired: 5/2/2009 12:40:06 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.16	4.16	4.16	96	1.	U
Benzene	7.673	7.673	7.673	74	.5	U
Toluene	12.181	12.181	12.181	126	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.212	16.212	16.212	141	.5	U
o-Xylene	16.834	16.834	16.834	194	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	52.013	104.03	80-120

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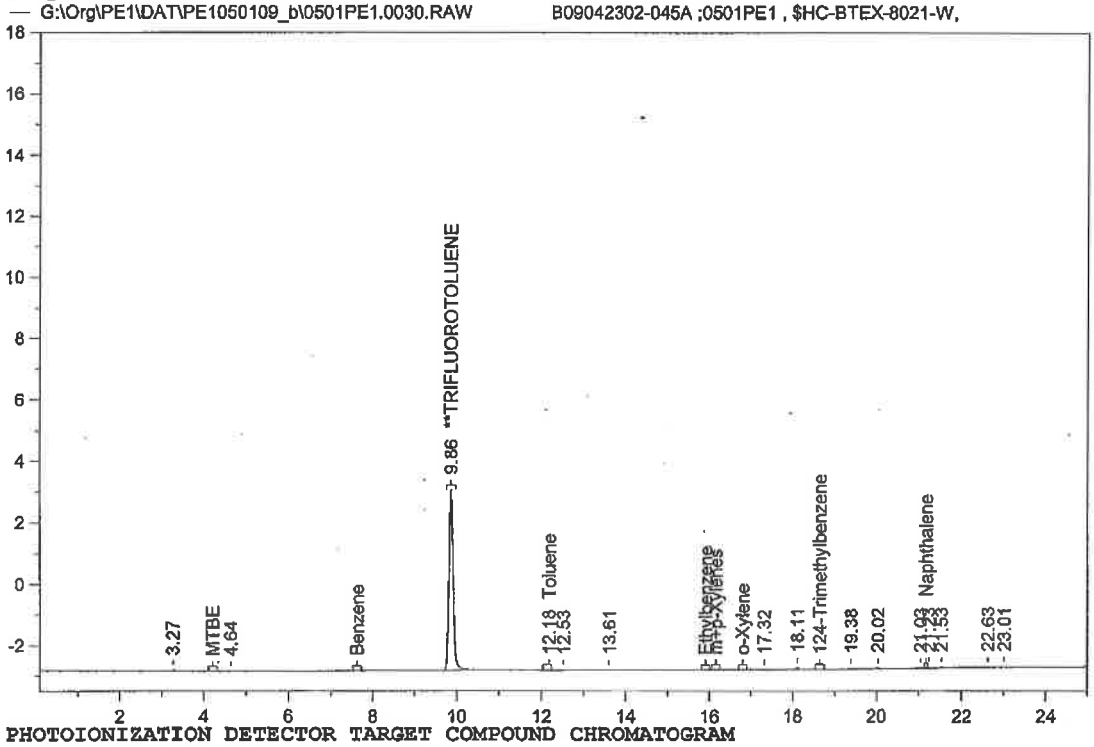
Trip Blank 3 Lot040109 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0030.RAW B09042302-045A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-045A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0030.RAW
Date & Time Acquired: 5/2/2009 1:13:49 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.178	12.178	12.178	282	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	.	.	.		.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.856	50.	50.322	100.64	80-120

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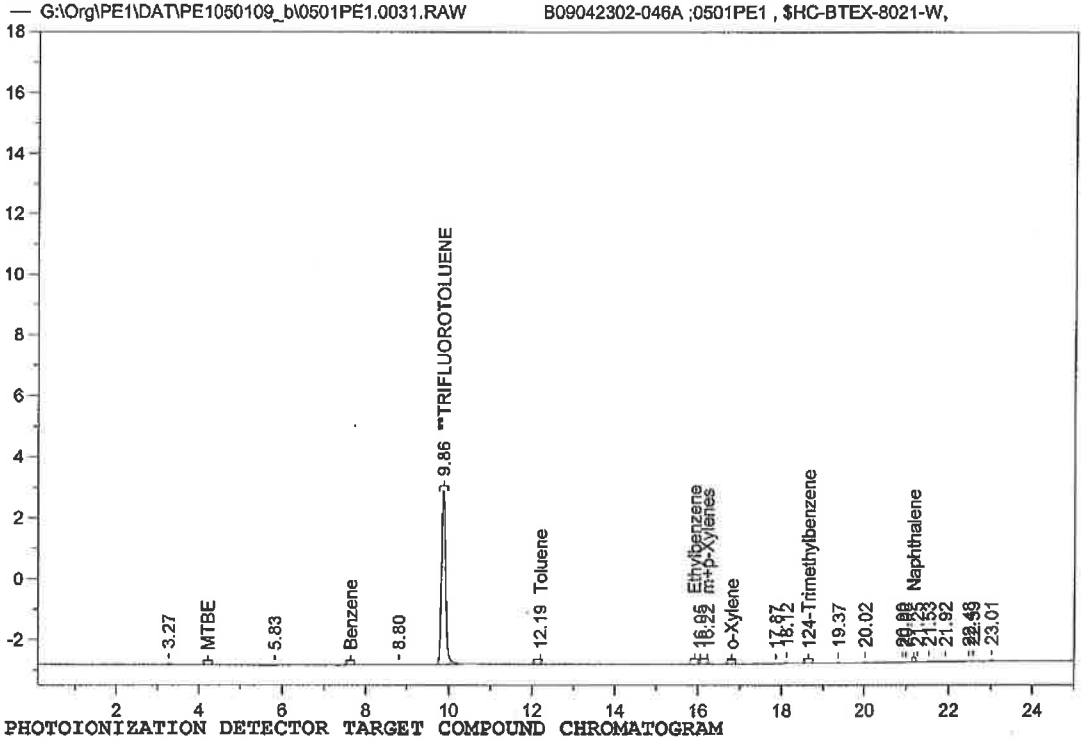
Trip Blank 4 Lot040109 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0031.RAW B09042302-046A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-046A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0031.RAW
Date & Time Acquired: 5/2/2009 1:47:38 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.193	12.193	12.193	175	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.223	16.223	16.223	148	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.856	50.	48.923	97.85	80-120

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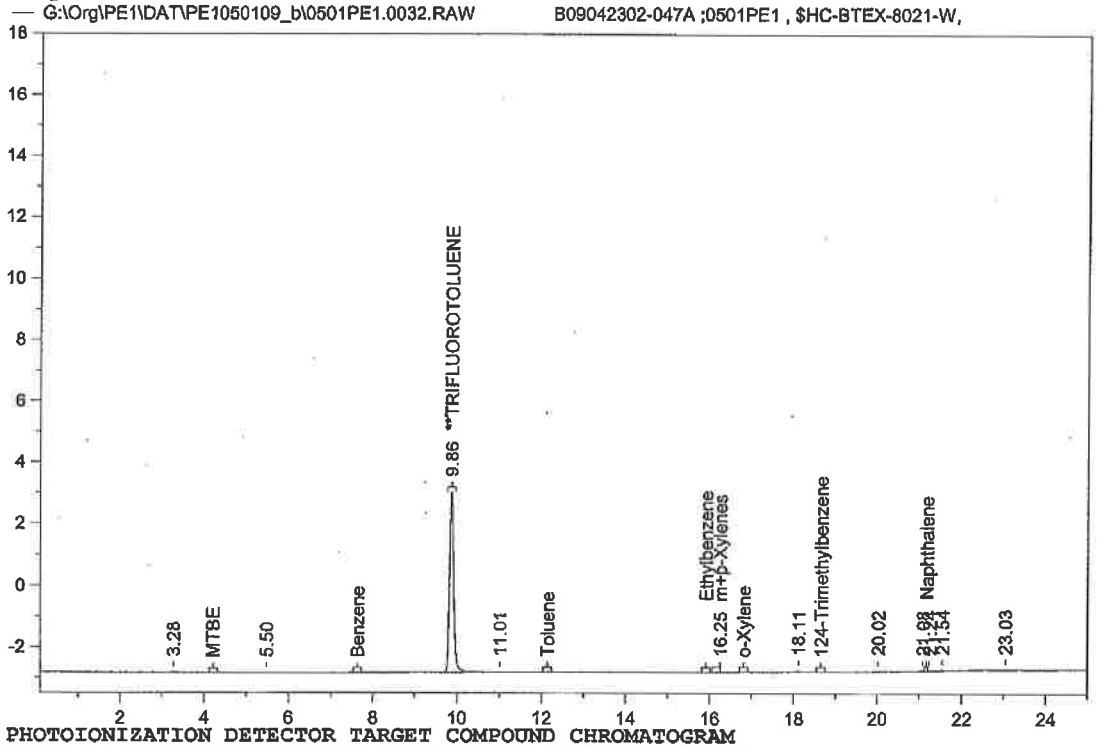
Trip Blank 5 Lot042009 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0032.RAW B09042302-047A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-047A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0032.RAW
Date & Time Acquired: 5/2/2009 2:21:30 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.249	16.249	16.249	163	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	50.827	101.65	80-120

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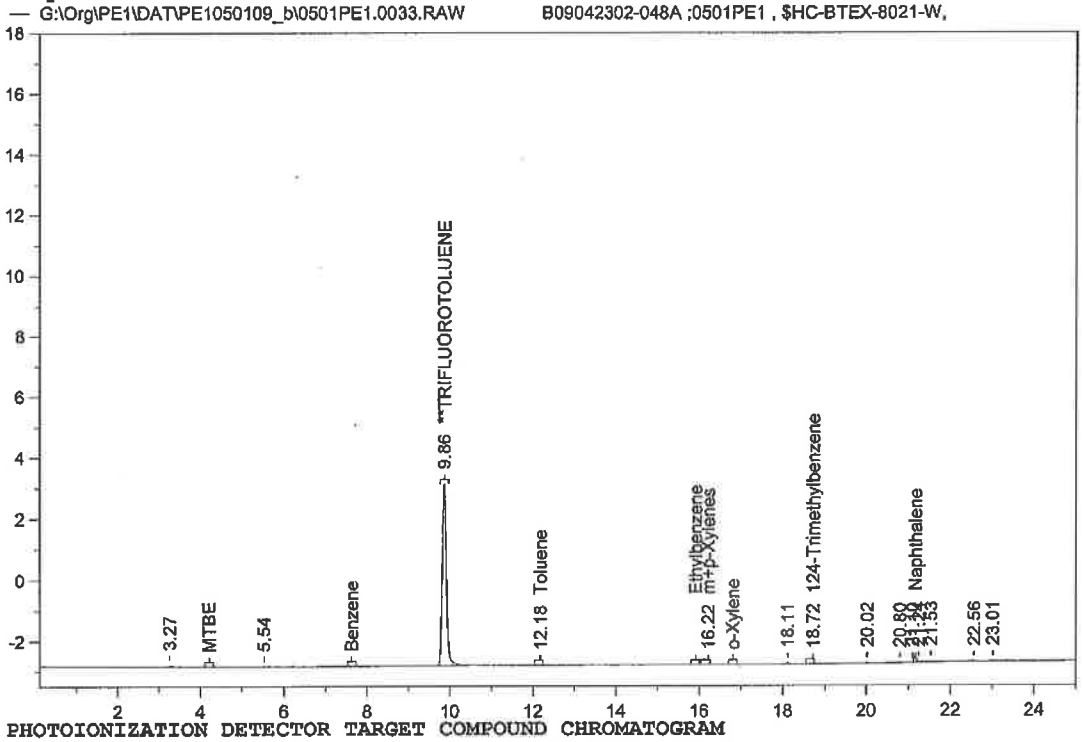
Trip Blank 6 Lot042009 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0033.RAW B09042302-048A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-048A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0033.RAW
Date & Time Acquired: 5/2/2009 2:55:13 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.176	12.176	12.176	156	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.217	16.217	16.217	145	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.722	18.722	18.722	106	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	51.457	102.91	80-120

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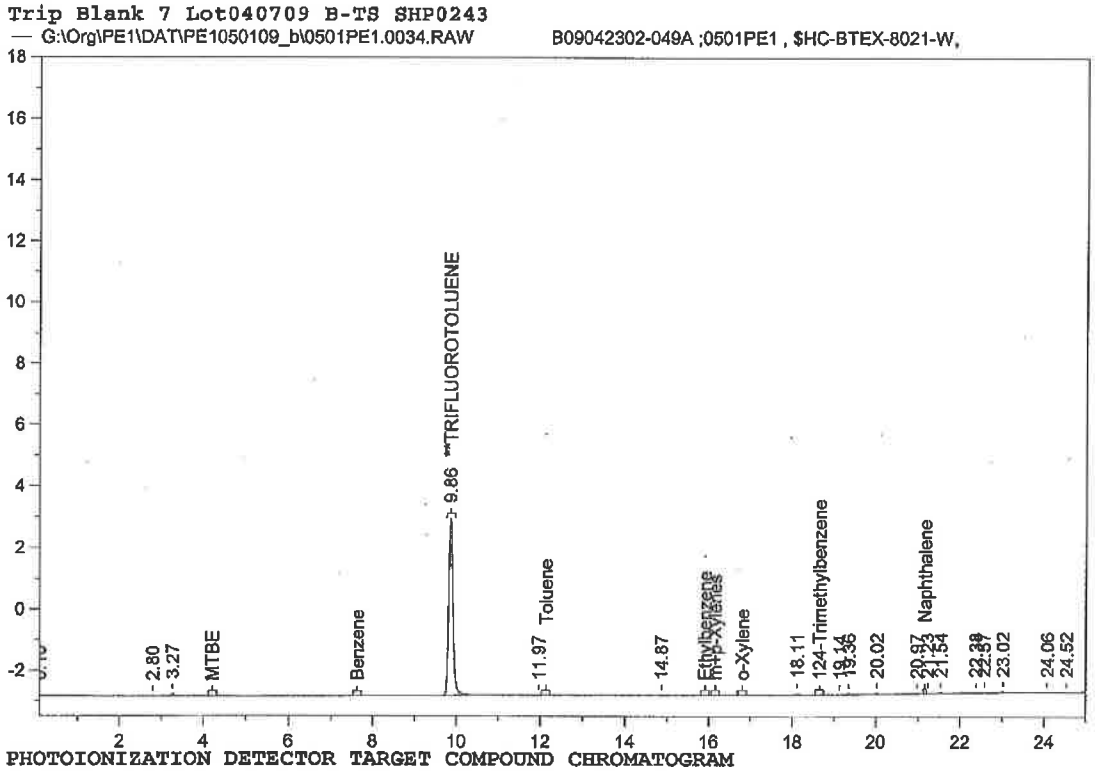
Trip Blank 7 Lot040709 B-TS SHP0243



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-049A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0034.RAW
Date & Time Acquired: 5/2/2009 3:28:59 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	.	.	.		.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.856	50.	49.512	99.02	80-120

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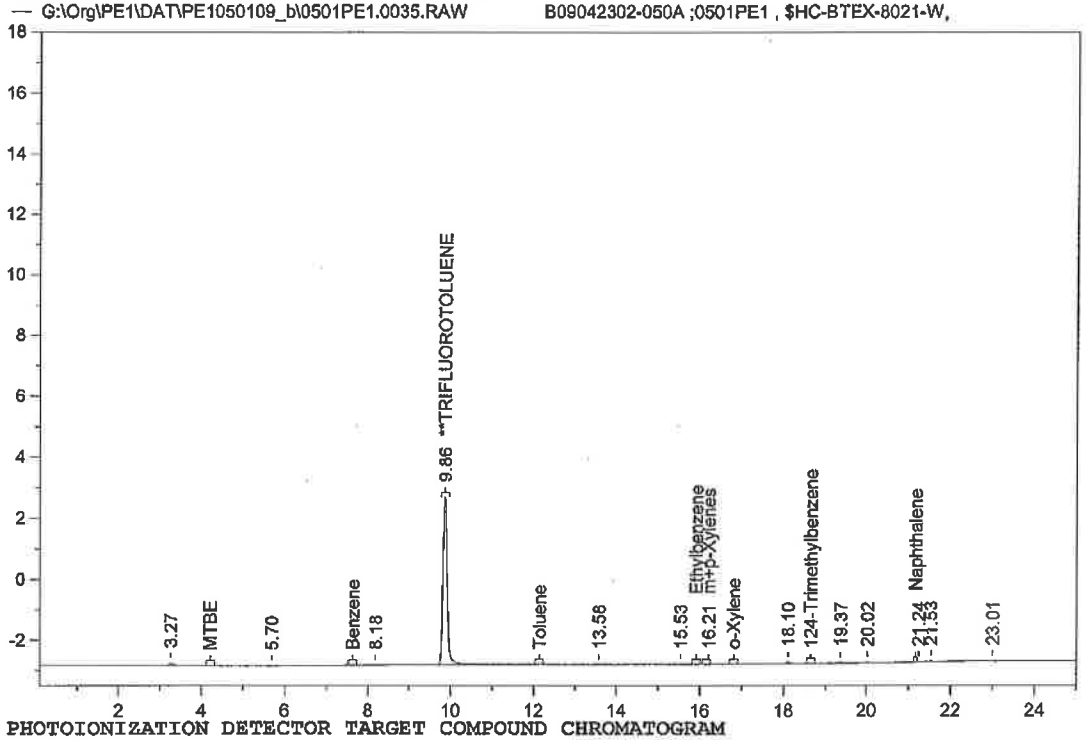
Trip Blank 8 Lot041009 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0035.RAW B09042302-050A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-050A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0035.RAW
Date & Time Acquired: 5/2/2009 4:02:41 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.209	16.209	16.209	80	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	47.7	95.4	80-120

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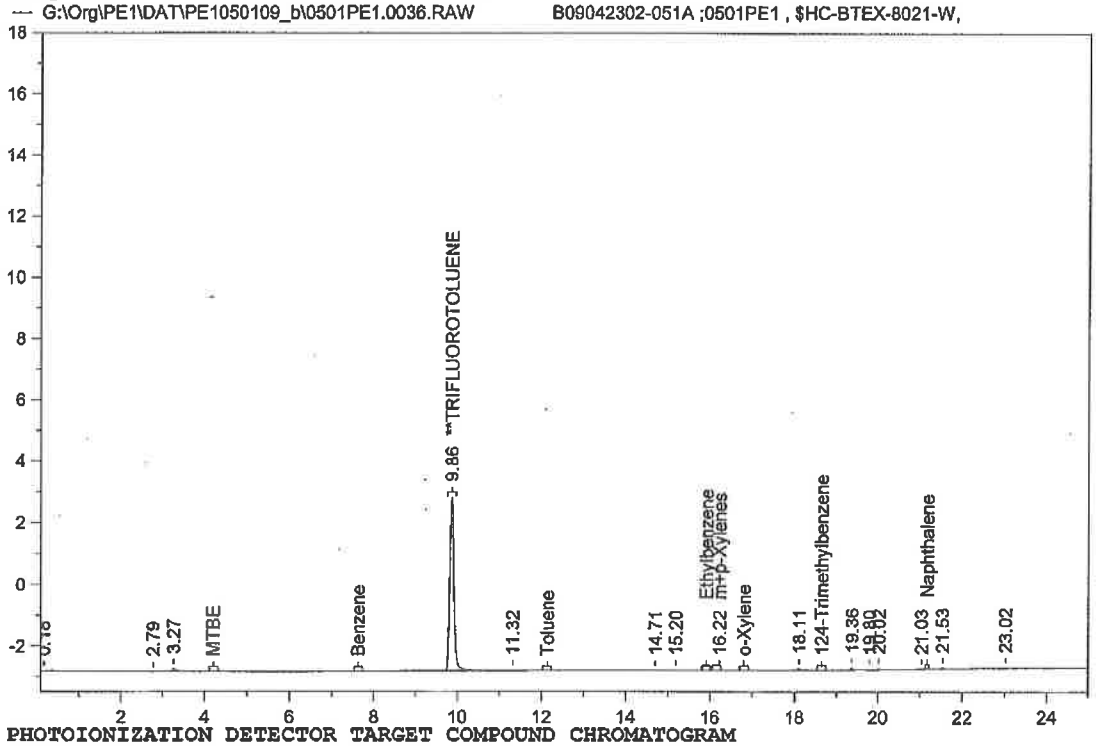
Trip Blank 9 Lot041309 B-TS SHP0243



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-051A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0036.RAW
Date & Time Acquired: 5/2/2009 4:36:33 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.223	16.223	16.223	117	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	49.543	99.09	80-120

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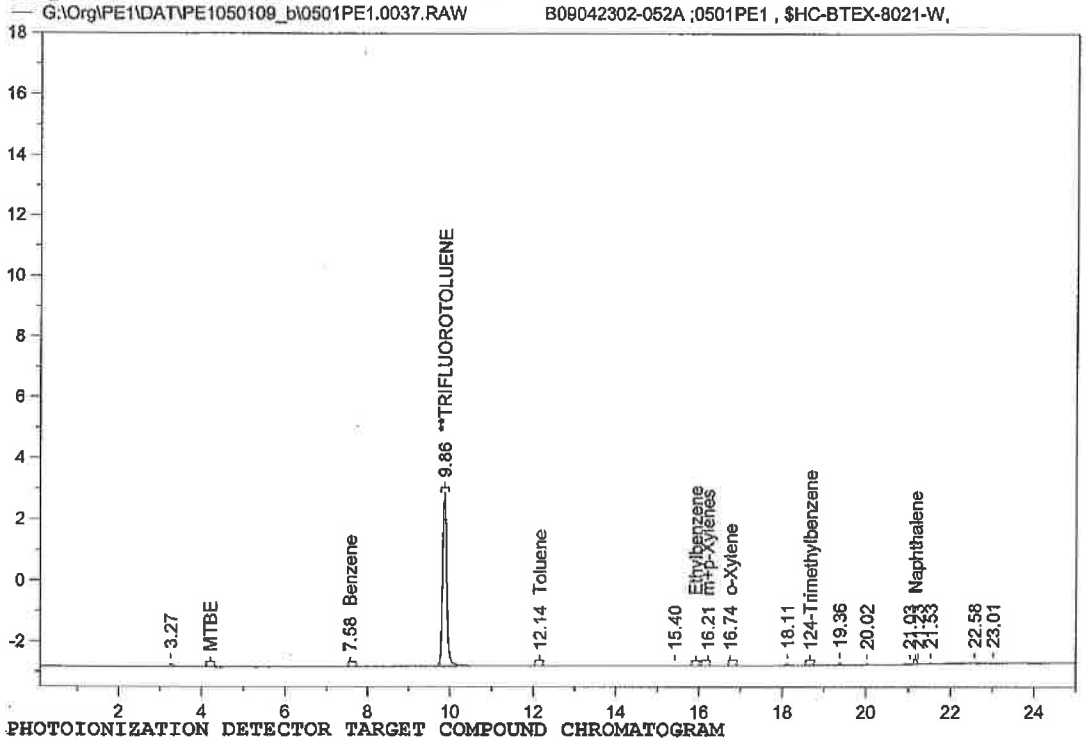
Trip Blank 10 Lot041009 B-TS SHP0243



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B09042302-052A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0037.RAW
Date & Time Acquired: 5/2/2009 5:10:17 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.577	7.577	7.577	71	.5	U
Toluene	12.143	12.143	12.143	89	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.207	16.207	16.207	73	.5	U
o-Xylene	16.742	16.742	16.742	101	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	50.128	100.26	80-120

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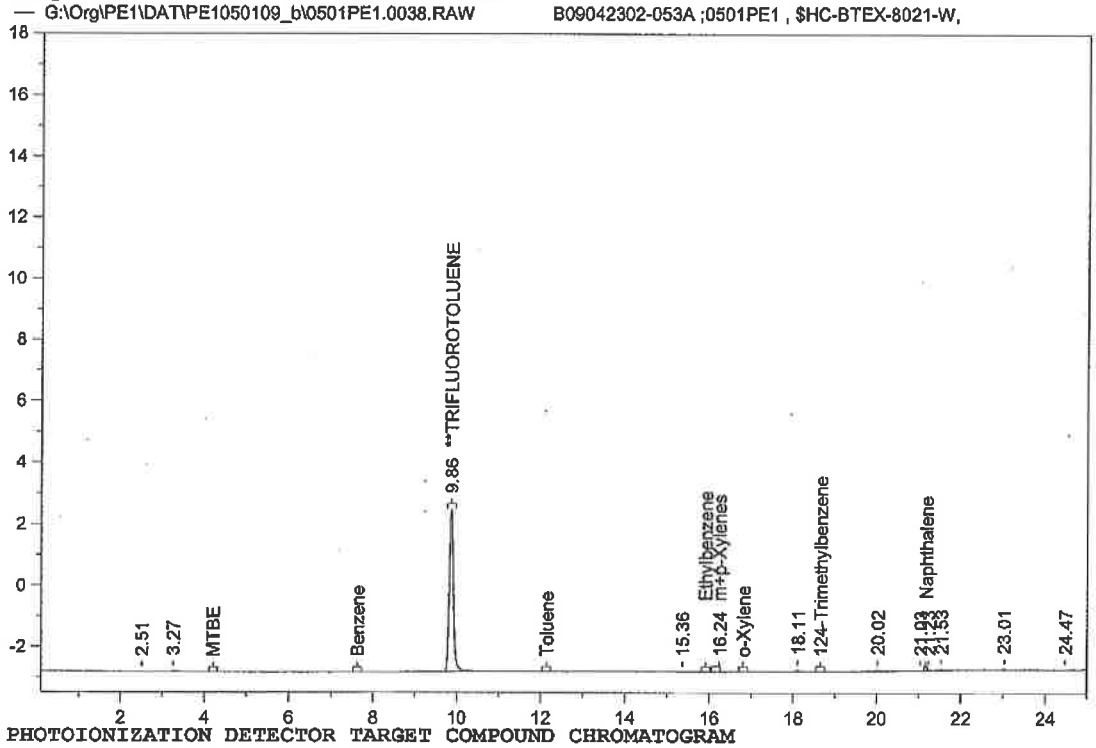
Trip Blank 11 Lot042009 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0038.RAW B09042302-053A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-053A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0038.RAW
Date & Time Acquired: 5/2/2009 5:44:08 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.239	16.239	16.239	115	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.857	50.	45.612	91.22	80-120

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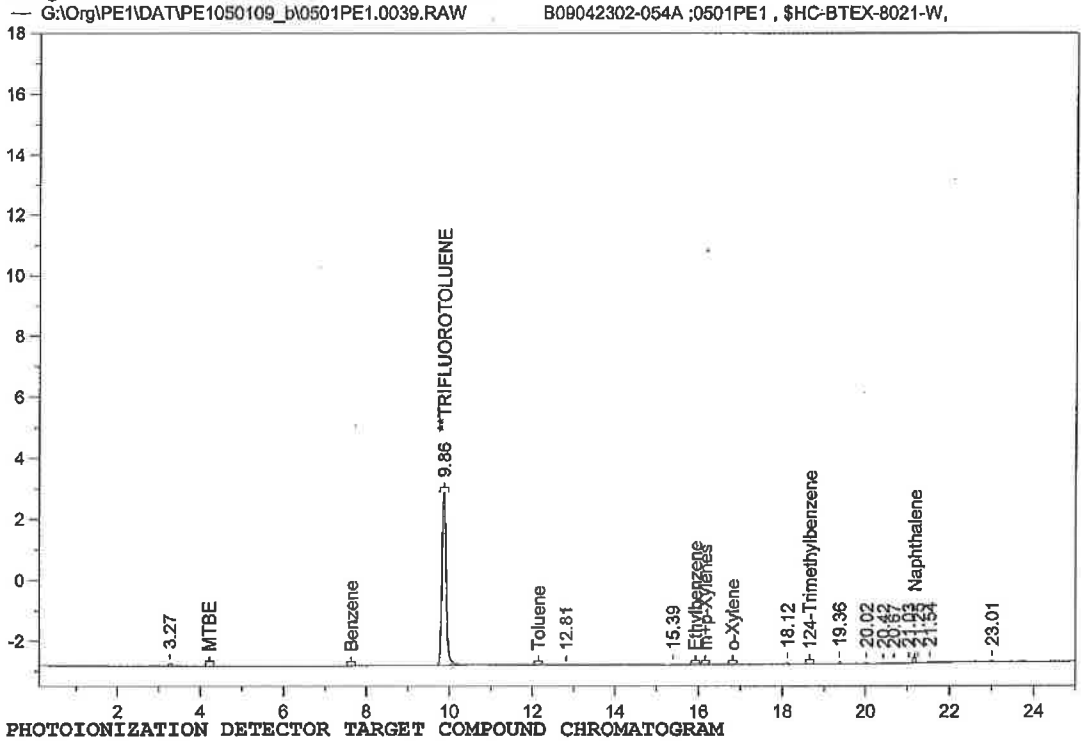
Trip Blank 12 Lot040709 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0039.RAW B09042302-054A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-054A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0039.RAW
Date & Time Acquired: 5/2/2009 6:17:39 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	.	.	.		.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	49.168	98.34	80-120

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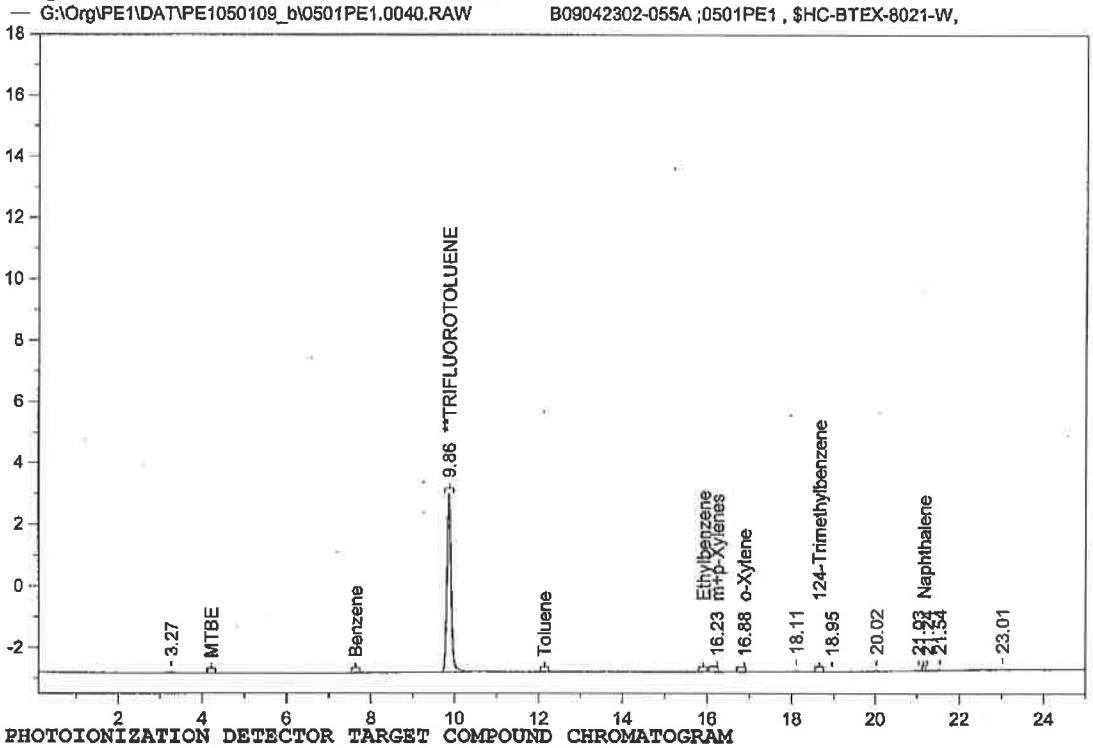
Trip Blank 13 Lot042009 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0040.RAW B09042302-055A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-055A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0040.RAW
Date & Time Acquired: 5/2/2009 6:51:24 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.234	16.234	16.234	96	.5	U
o-Xylene	16.881	16.881	16.881	105	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.856	50.	49.968	99.94	80-120

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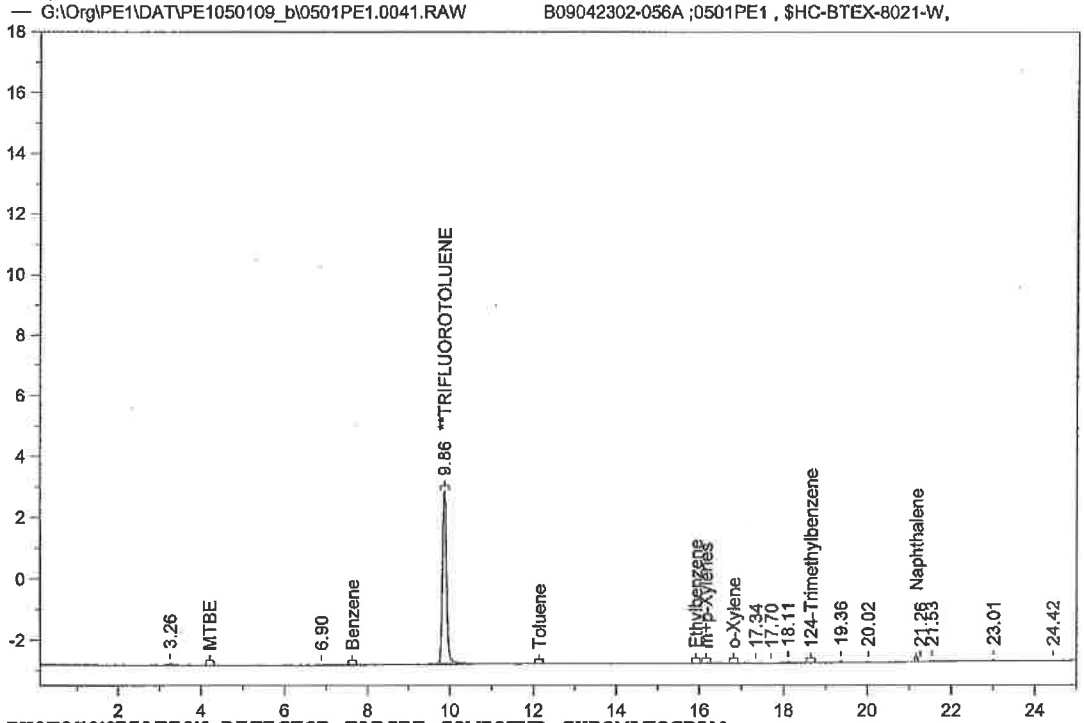
Trip Blank 14 Lot041309 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0041.RAW B09042302-056A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-056A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0041.RAW
Date & Time Acquired: 5/2/2009 7:25:10 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	.	.	.		.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.855	50.	49.588	99.18	80-120

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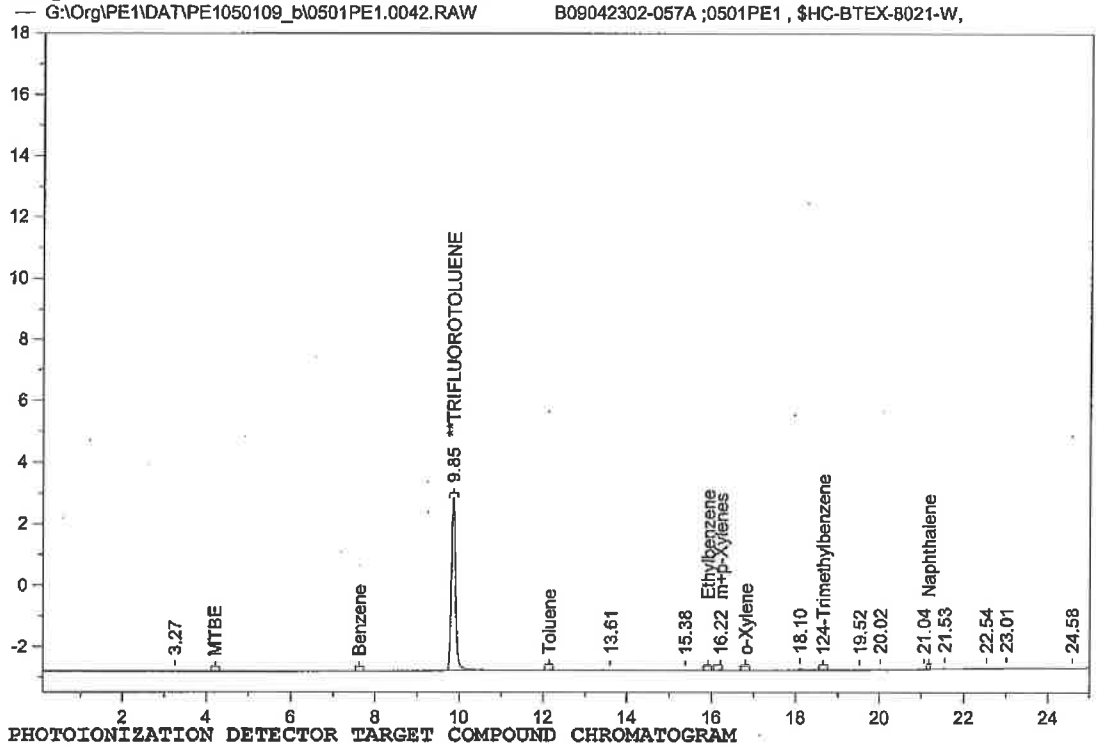
Trip Blank 15 Lot042009 B-TS SHP0243

— G:\Org\PE1\DAT\PE1050109_b\0501PE1.0042.RAW B09042302-057A ;0501PE1 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-057A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0042.RAW
Date & Time Acquired: 5/2/2009 7:58:59 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	16.216	16.216	16.216	103	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.854	50.	48.507	97.01	80-120

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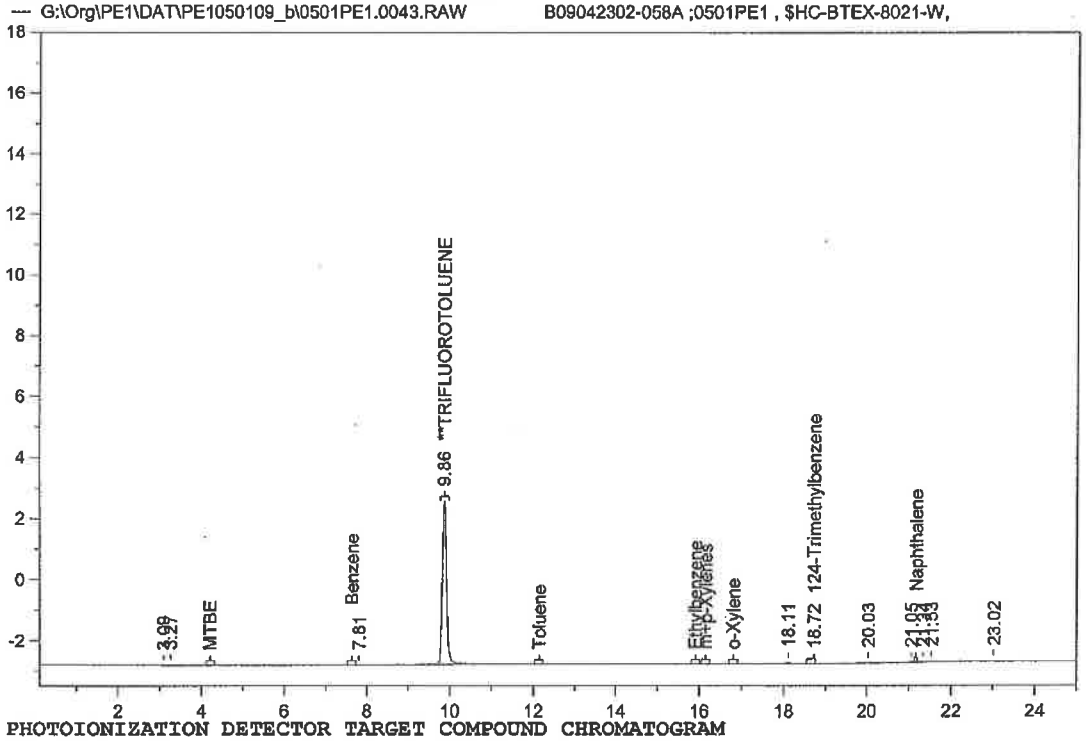
Trip Blank 16 Lot042009 B-TS SHP0243



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-058A ;0501PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1050109_b\0501PE1.0043.RAW
Date & Time Acquired: 5/2/2009 8:32:33 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	.	.	.		.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.721	18.721	18.721	98	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.855	50.	46.239	92.48	80-120

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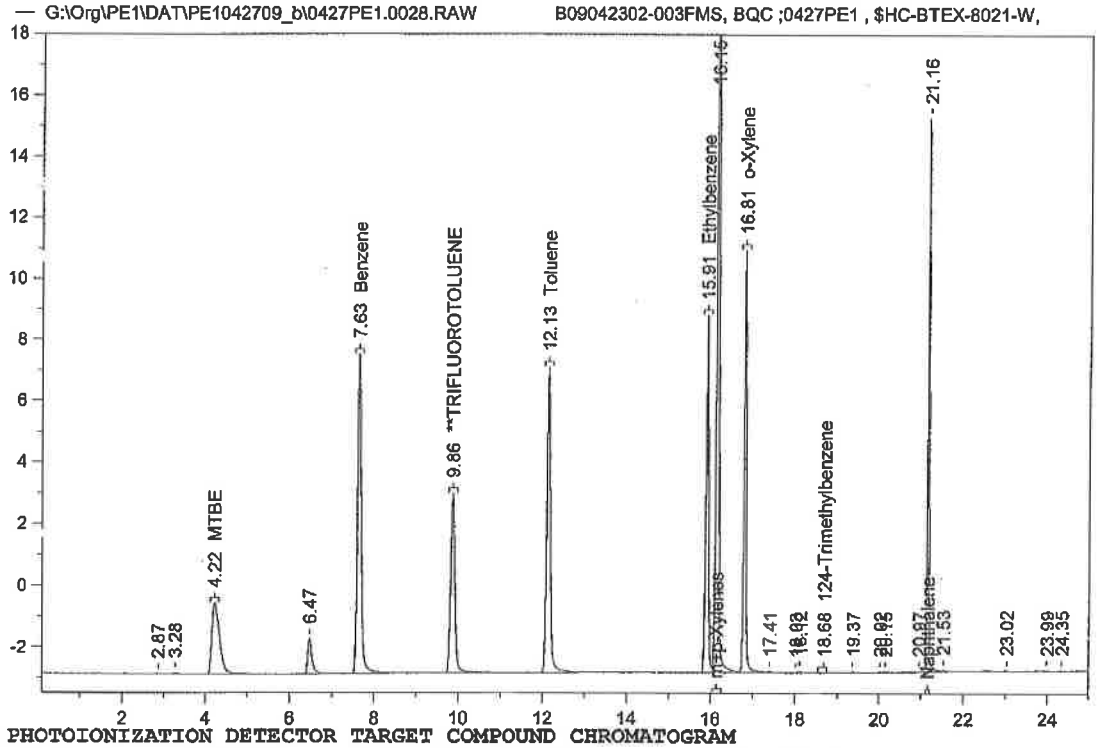

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-003FMS, BQC ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0028.RAW
Date & Time Acquired: 4/28/2009 12:56:13 AM
Method File: G:\Org\PE1\Methods\0809Pmsdwl.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.217	5.646	5.643	29174	24.846	
Benzene	7.634	2.226	2.225	68492	25.678	
Toluene	12.131	-2.274	-2.272	61986	24.801	
Ethylbenzene	15.91	-6.051	-6.051	51408	24.458	
m+p-Xylenes	16.148	-6.294	-6.289	121439	49.981	
o-Xylene	16.806	-6.947	-6.946	51620	24.859	
124-Trimethylbenzene	18.681	18.681	18.681	145	2.	U
Naphthalene	21.161	-11.3	-11.301	42894	23.935	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.86	50.	50.17	100.34	80-120

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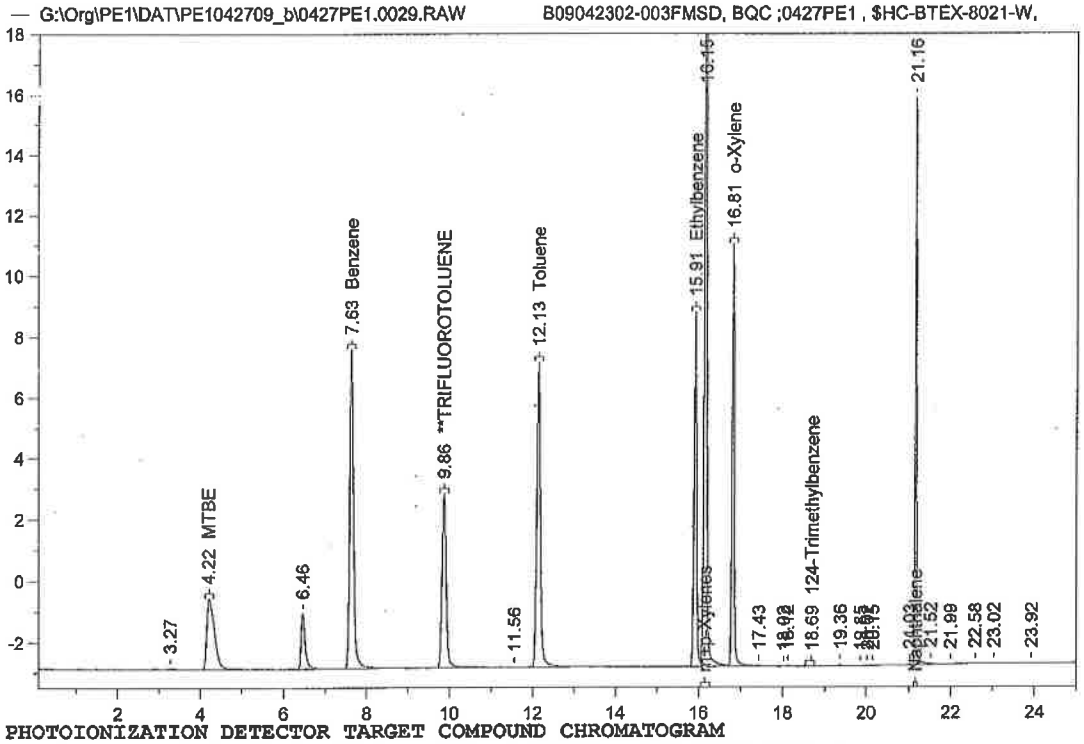

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-003FMSD, BQC ;0427PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042709_b\0427PE1.0029.RAW
Date & Time Acquired: 4/28/2009 1:29:48 AM
Method File: G:\Org\PE1\Methods\0809Pmsddwl.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.216	5.646	5.642	29850	25.422	
Benzene	7.633	2.226	2.225	69282	25.974	
Toluene	12.13	-2.274	-2.272	62312	24.932	
Ethylbenzene	15.91	-6.051	-6.052	51380	24.445	
m+p-Xylenes	16.149	-6.294	-6.29	121298	49.923	
o-Xylene	16.806	-6.947	-6.947	51754	24.924	
124-Trimethylbenzene	18.691	18.691	18.691	137	2.	U
Naphthalene	21.16	-11.3	-11.302	44689	24.936	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	48.67	97.34	80-120

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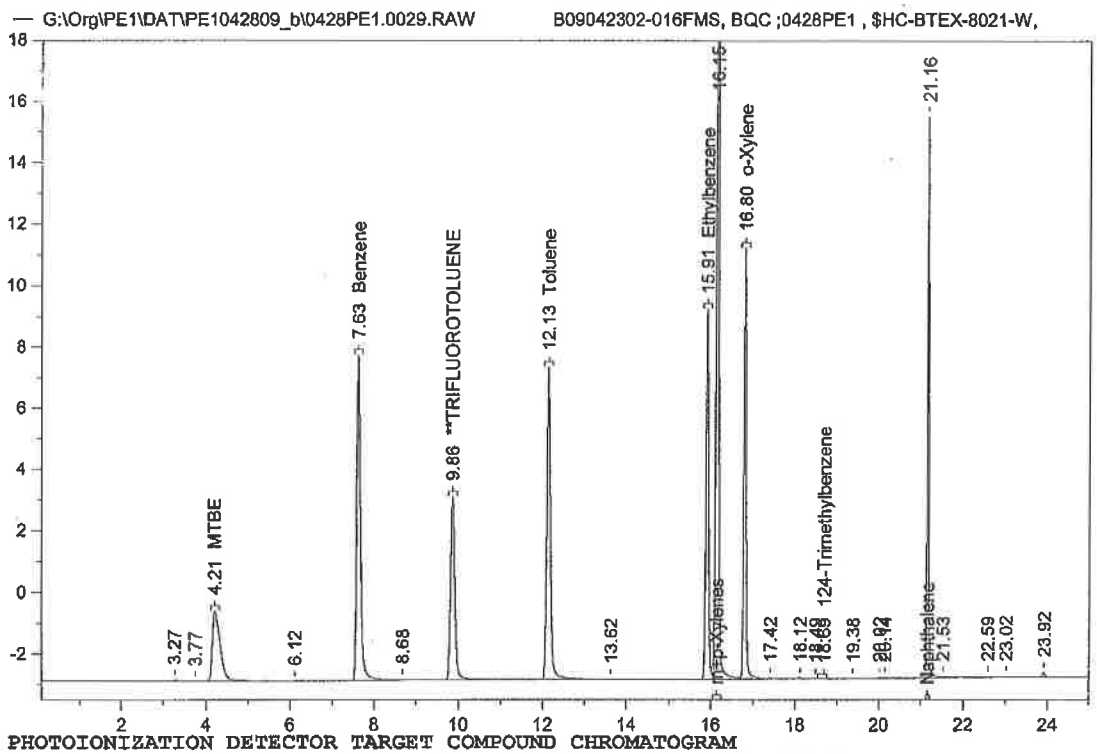

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-016FMS, BQC ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0029.RAW
Date & Time Acquired: 4/29/2009 3:51:17 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.214	5.646	5.644	29566	25.18	
Benzene	7.632	2.226	2.226	71059	26.64	
Toluene	12.13	-2.274	-2.272	63950	25.587	
Ethylbenzene	15.91	-6.051	-6.052	53364	25.388	
m+p-Xylenes	16.148	-6.294	-6.29	123323	50.756	
o-Xylene	16.805	-6.947	-6.947	52709	25.384	
124-Trimethylbenzene	18.693	18.693	18.693	75	2.	U
Naphthalene	21.159	-11.3	-11.301	43289	24.155	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	51.445	102.89	80-120

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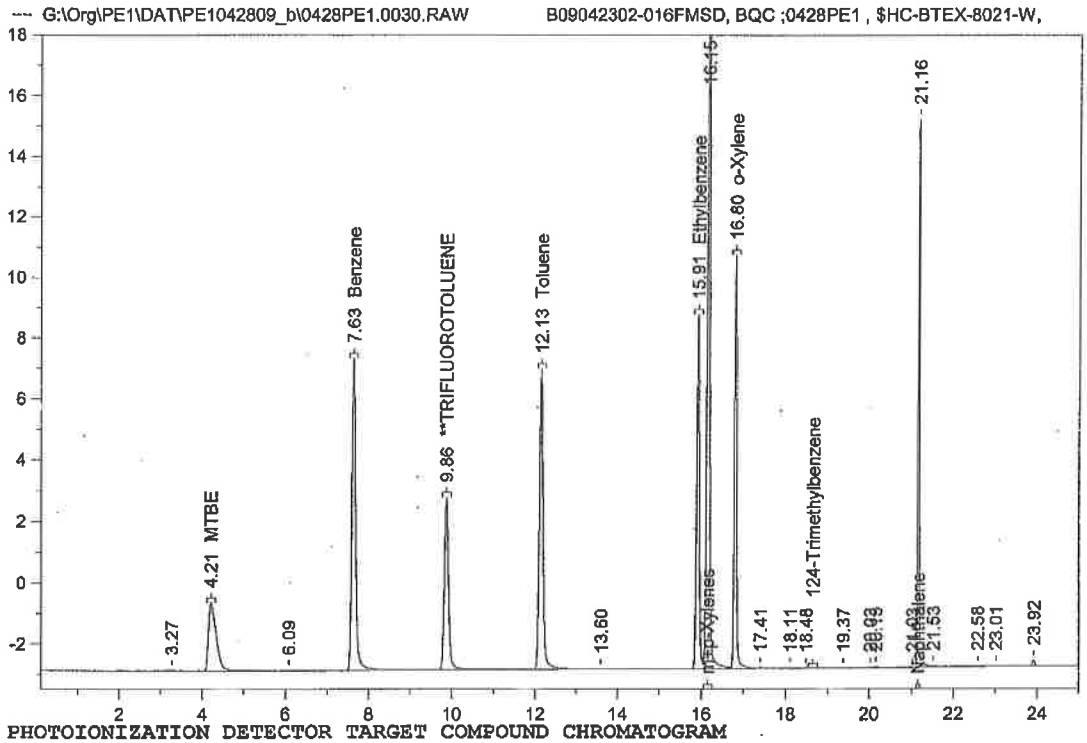

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-016FMSD, BQC ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0030.RAW
Date & Time Acquired: 4/29/2009 4:24:54 AM
Method File: G:\Org\PE1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.212	5.646	5.646	28839	24.56	
Benzene	7.631	2.226	2.227	68016	25.499	
Toluene	12.13	-2.274	-2.272	61683	24.68	
Ethylbenzene	15.909	-6.051	-6.051	51389	24.449	
m+p-Xylenes	16.147	-6.294	-6.289	118832	48.908	
o-Xylene	16.804	-6.947	-6.946	50890	24.508	
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	21.159	-11.3	-11.301	42921	23.95	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.858	50.	49.105	98.21	80-120

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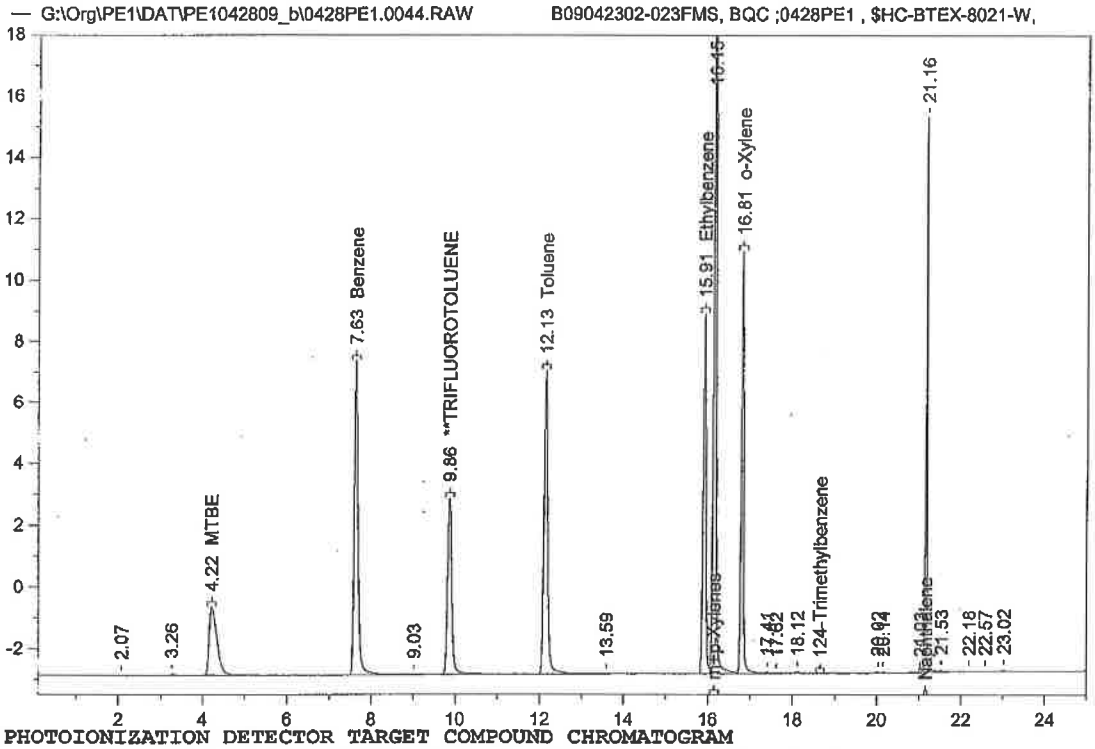

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-023FMS, BQC ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0044.RAW
Date & Time Acquired: 4/29/2009 1:09:57 PM
Method File: G:\Org\Pe1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.216	5.646	5.643	28509	24.279	
Benzene	7.633	2.226	2.226	68501	25.681	
Toluene	12.13	-2.274	-2.271	62362	24.951	
Ethylbenzene	15.91	-6.051	-6.051	52008	24.743	
m+p-Xylenes	16.148	-6.294	-6.289	121105	49.843	
o-Xylene	16.805	-6.947	-6.946	51536	24.819	
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	21.16	-11.3	-11.301	42812	23.889	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.859	50.	49.64	99.28	80-120

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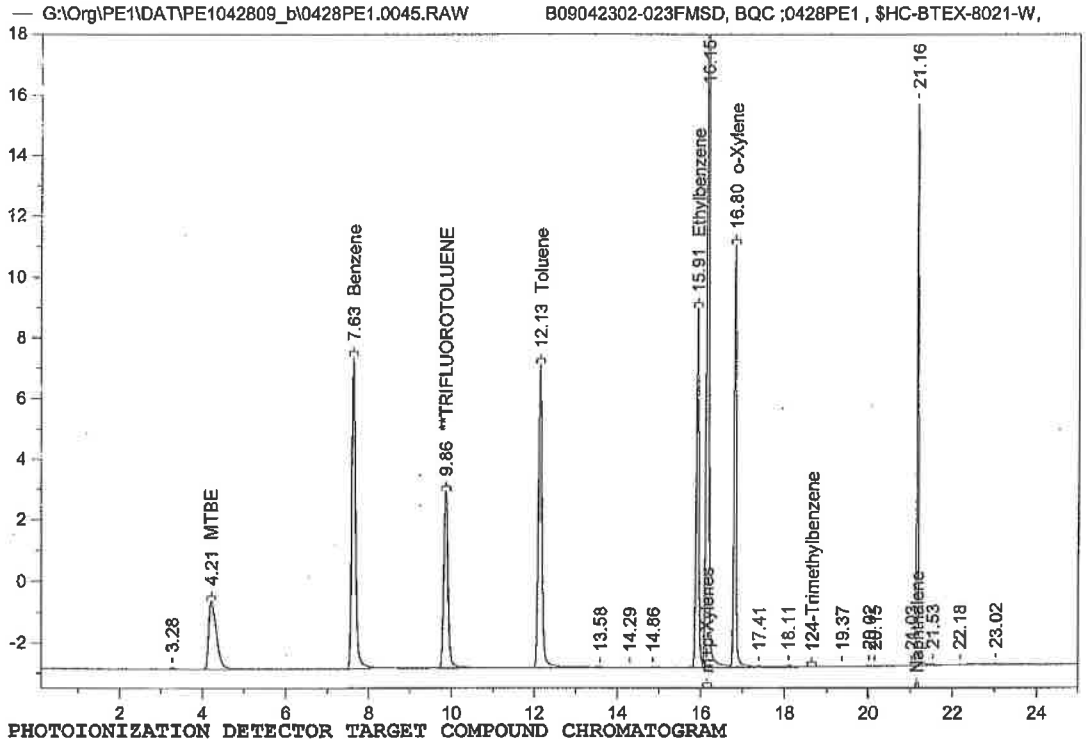

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-023FMSD, BQC ;0428PE1 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE1\DAT\PE1042809_b\0428PE1.0045.RAW
Date & Time Acquired: 4/29/2009 1:43:36 PM
Method File: G:\Org\Pe1\Methods\0809Pe1.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.215	5.646	5.641	28765	24.498	
Benzene	7.63	2.226	2.226	67735	25.394	
Toluene	12.129	-2.274	-2.273	63435	25.381	
Ethylbenzene	15.909	-6.051	-6.053	52289	24.877	
m+p-Xylenes	16.147	-6.294	-6.291	121671	50.077	
o-Xylene	16.804	-6.947	-6.948	52159	25.119	
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	21.159	-11.3	-11.303	43898	24.495	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.856	50.	50.916	101.83	80-120

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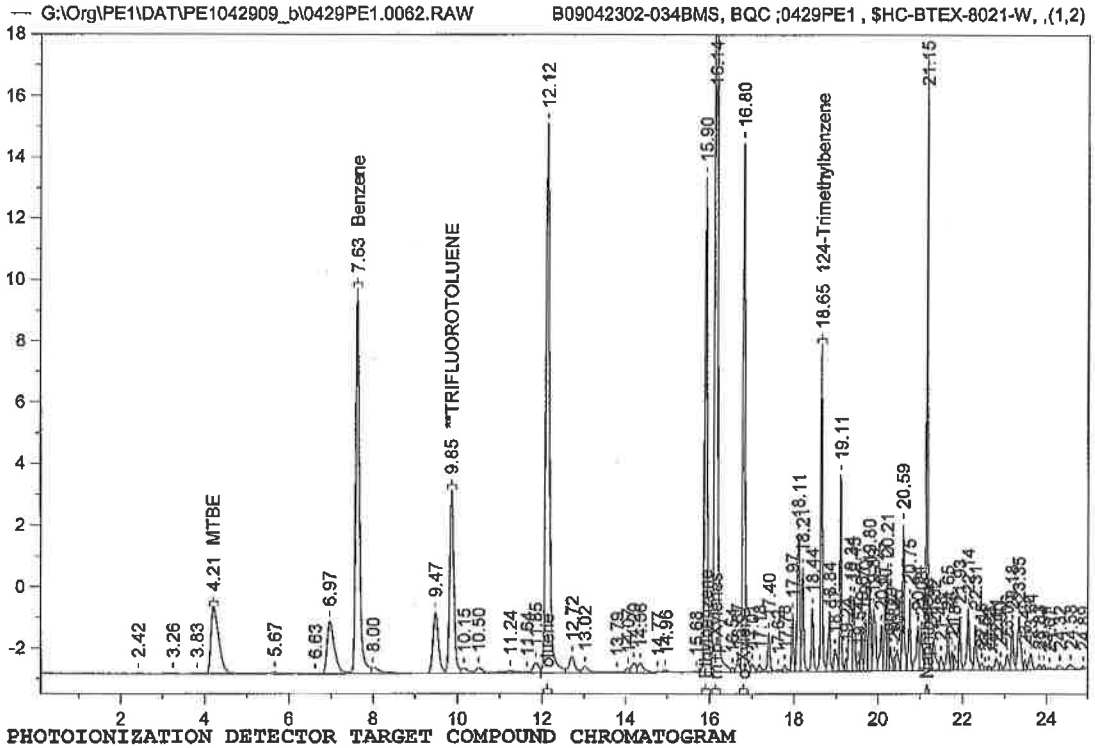

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-034BMS, BQC ;0429PE1 , $HC-BTEX-8021-W, ,(1,2)
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0062.RAW
Date & Time Acquired: 5/1/2009 1:58:03 AM
Method File: G:\Org\PE1\Methods\0809Pdwl10.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 2 S.A.: 2

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.211	5.646	5.642	28703	48.89	
Benzene	7.626	2.226	2.226	83681	62.744	
Toluene	12.122	-2.274	-2.27	112106	89.709	
Ethylbenzene	15.904	-6.051	-6.052	71696	68.219	
m+p-Xylenes	16.143	-6.294	-6.291	164239	135.192	
o-Xylene	16.8	-6.947	-6.948	63372	61.037	
124-Trimethylbenzene	18.645	-8.79	-8.793	30856	30.006	
Naphthalene	21.155	-11.3	-11.303	47303	52.79	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.852	100.	102.594	102.59	80-120

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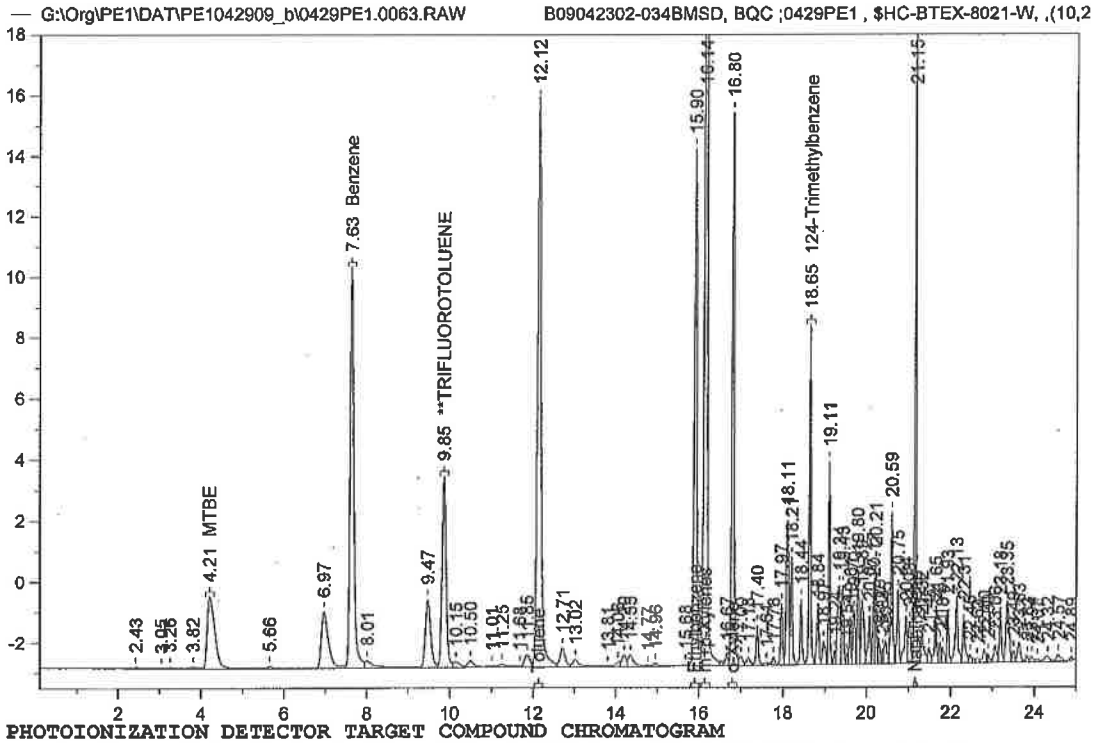

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B09042302-034BMSD, BQC ;0429PE1 , $HC-BTEX-8021-W, ,(10,2)
Raw File: G:\Org\PE1\DAT\PE1042909_b\0429PE1.0063.RAW
Date & Time Acquired: 5/1/2009 2:31:37 AM
Method File: G:\Org\PE1\Methods\0809Pdwl11.MET
Calibration File: G:\Org\PE1\Cals\0809MAP.CAL
Sample Weight: 5 Dilution: 2 S.A.: 2

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	4.212	5.646	5.641	30253	51.529	
Benzene	7.627	2.226	2.226	87194	65.378	
Toluene	12.122	-2.274	-2.269	117118	93.72	
Ethylbenzene	15.903	-6.051	-6.051	75400	71.744	
m+p-Xylenes	16.142	-6.294	-6.29	172640	142.107	
o-Xylene	16.799	-6.947	-6.947	66472	64.023	
124-Trimethylbenzene	18.645	-8.79	-8.792	32289	31.4	
Naphthalene	21.155	-11.3	-11.302	50387	56.232	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.853	100.	107.073	107.07	80-120

Energy Laboratories Inc
Workorder Receipt Checklist

B09042302

DOWL HKM

Login completed by: Leslie S. Cadreau

Reviewed by: Krystal McDonald

Reviewed Date: 4/27/2009 4:14:00 PM

Date and Time Received: 4/24/2009 11:53 AM

Received by: kls

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Contact and Corrective Action Comments:

Samples for dissolved metals/hardness were subsampled, filtered and preserved with 2 mL HNO3 in lab upon receipt to pH <2.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print) Chris Leibli
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order: 14B805.101	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

Number of Containers Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand

Cooler ID(s):

Receipt Temp 0 °C

On Ice: Yes No

Custody Seal Y N

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	RUSH		LABORATORY USE ONLY
1	USGS-06-2	4/19/09	13:50	Water 9	X	X	X	X	X	X	X	X	X		X			809042302-001
1	M-80		15:30	Water														-002
2	USGS-93-4A		17:05	Water														-003
2	USGS-06-8	4/19/09	13:05	Water														-004
3	USGS-06-11	4/20/09	17:35	Water														-005
3	PNR-12		18:10	Water														-006
3	MOC-3		19:05	Water														-007
4	MOC-1B	4/21/09	12:45	Water														-008
9				Water														
10				Water														

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Chris Leibli	4/21/09 11:53	Chris Leibli			
Sample Disposal: Return to Client:	Lab Disposal:		Received by Laboratory: Amity Stamm	4/24/09 1153	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print) Chris Leibli
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order: 14B805.101	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ A2LA
☐ GSA ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: _____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

Number of Containers Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

RUSH: Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand
Cooler ID(s):
Receipt Temp 0 °C
On Ice: Yes No
Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	RUSH	Comments	LABORATORY USE ONLY
4 1	PNR-36-07	4/21/09	14:35	Water 9	X	X	X	X	X	X	X	X	X		X			B09042302-009
4 2	PNR-20		15:40	Water														-010
5 3	PNR-21		16:35	Water														-011
5 4	Whitmer		19:00	Water														-012
6 5	PNR-39-08	4/22/09	14:40	Water														-013
6 6	PNR-34-07		16:15	Water														-014
6 7	MOC-20A		11:00	Water														-015
8				Water														
9				Water														
10				Water														

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Chris Leibli	4/24/09 11:53	Chris Leibli			
Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory: Kitty Scammon	Date/Time: 4/24/09 1153	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print) Nate Peterson
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ A2LA
☐ GSA ☐ EDD/EDT (Electronic Data) Format: _____
☐ POTW/WWTP ☐ LEVEL IV
☐ State: _____ ☐ NELAC
☐ Other: _____

Number of Containers Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

RUSH: Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: hand
Cooler ID(s):
Receipt Temp 0 °C
On Ice: Yes No
Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	LABORATORY USE ONLY
7	1 PNR-10	4/18/09	1405	Water 8												B09042302-016
7	2 LAW-MØ3	4/18/09	1540	Water												-017
8	3 PNR-9	4/18/09	1620	Water												-018
8	4 PNR-13	4/18/09	1755	Water												-019
9	5 PNR-28	4/19/09	11:10	Water												-020
9	6 PNR-27	4/19/09	12:50	Water												-021
10	7 PNR-19	4/19/09	1355	Water												-022
10	8 PNR-8	4/19/09	1415	Water												-023
11	9 LAW-MØ5	4/20/09	1730	Water												-024
11	10 LAW-MØ1	4/20/09	1430	Water												-025

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Chris Leibl	4/24/09 11:53	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:

Sample Disposal: Return to Client: Lab Disposal:

Received by Laboratory: [signature] Date/Time: 4/24/09 1153 Signature:

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Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings	Project Name, PWS, Permit, Etc. Pioneer Natural Resources – Poplar Bier Well Site	Sample Origin State:MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: P.O. Box 31318 Billings, MT 59107-1318	Contact Name: Charlie Peterson Phone/Fax: 656-6399	Email:cpeterson@hkminc.com	Sampler: (Please Print) Nate Peterson
Invoice Address: Same	Invoice Contact & Phone: Jami Nelson 656-6399	Purchase Order:	Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

RUSH: Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand

Cooler ID(s):

Receipt Temp 0 °C

On Ice: Yes No

Custody Seal Y N Intact Y N Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, [redacted]	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	RUSH	Comments	LABORATORY USE ONLY
12 1 RW-2	4/22/09	1920	Water 3		X		X					X					B0904230-026
12 2 RW-3		1905	Water 1		X		X					X					-027
12 3 RW-4		1855	Water		X		X					X					-028
12 4 RW-5		1840	Water		X		X					X					-029
13 5 RW-6		1700	Water		X		X					X					-030
13 6 RW-7		1715	Water		X		X					X					-031
13 7 RW-8		1645	Water		X		X					X					-032
13 8 RW-9		1745	Water		X		X					X					-033
13 9 RW-10		1800	Water		X		X					X					-034
10			Water														

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Chris Lebli	4/24/09 11:53	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory: Cindy Scamman	Date/Time: 4/24/09	Signature: 1153

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Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: Dowl-HKM Billings

Project Name, PWS, Permit, Etc.: Pioneer Natural Resources – Poplar Bier Well Site

Sample Origin: State: MT

EPA/State Compliance: Yes ☑ No ☐

Report Mail Address: P.O. Box 31318, Billings, MT 59107-1318

Contact Name: Charlie Peterson

Phone/Fax: 656-6399

Email: cpeterson@hkminc.com

Sampler: (Please Print) Nate Peterson

Invoice Address: Same

Invoice Contact & Phone: Jami Nelson 656-6399

Purchase Order:

Quote/Bottle Order: Quote B78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

RUSH: Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand

Cooler ID(s):

Receipt Temp: 0 °C

On Ice: (Yes) No

Custody Seal Y (N) Intact Y (N) Signature Match Y (N)

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other)	Alkalinity, Fluoride, TDS	Conductivity, pH	Ammonia	Chloride, Sulfate	Nitrate + Nitrite	TPH (1664)	Total Metals	Dissolved Metals	BTEX by 8021B	SEE ATTACHED	Normal Turnaround (TAT)	LABORATORY USE ONLY
14	1 PNR-35-07	4/20/09	1830	Water 8												B0904230-035
14	2 PNR-29	4/21/09	11:30	Water												-036
15	3 MOC-20B	4/21/09	12:40	Water												-037
15	4 MOC-2	4/21/09	1340	Water												-038
16	5 M-27	4/22/09	900	Water												-039
16	6 PNR-38-08	4/21/09	1630	Water												-040
16	7 MOC-4	4/23/09	1300	Water												-041
15	8 M-18	4/22/09	1500	Water												-042
	9			Water												
	10			Water												

Custody Record MUST be Signed

Relinquished by (print): Chris Kibli Date/Time: 4/24/09 11:53 Signature: Chris Kibli

Relinquished by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by Laboratory: Cindy Kamma Date/Time: 4/24/09 1753 Signature:

Sample Disposal: Return to Client: Lab Disposal:

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ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT- Provide as much information as possible.

Company Name: HKM	Project Name, PWS, Permit, Etc.	Sample Origin State:	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address:	Contact Name: Phone/Fax:	Email:	Sampler: (Please Print)
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

SEE ATTACHED

Normal Turnaround (TAT)

RUSH

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by:

Cooler ID(s):

Receipt Temp ____ °C

On Ice: Yes No

Custody Seal Y N

Bottles/Coolers B C

Intact Y N

Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX												LABORATORY USE ONLY
1 TB1 TS0243	4-7-09														B904232-043
2 TB2 TS0243	4-7-09														-044
3 TB3 TS0243	4-1-09														-045
4 TB4 TS0243	4-1-09														-046
5 TB5 TS0243	4-20-09														-047
6 TB6 TS0243	4-20-09														-048
7 TB7 TS0243	4-7-09														-049
8 TB 8 TS0243	4-10-09														-050
9 TB 9 TS 0243	4-13-09														-051
10 TB 10 TS0243	4-10-09														-052

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory:	Date/Time:	Signature:

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ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT- Provide as much information as possible.

Company Name: HKM	Project Name, PWS, Permit, Etc.	Sample Origin State:	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address:	Contact Name: Phone/Fax:	Email:	Sampler: (Please Print)
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

SEE ATTACHED

Normal Turnaround (TAT)

RUSH

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by:

Cooler ID(s):

Receipt Temp ____ °C

On Ice: Yes No

Custody Seal Y N

Bottles/Coolers B C

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	LABORATORY USE ONLY
1	TB11 TS0243	4-20-09			B904 2362-053
2	TB12 TS0243	4-7-09			-054
3	TB13 TS0243	4-20-09			-055
4	TB14 TS0243	4-13-09			-056
5	TB15 TS0243	4-20-09			-057
6	TB16 TS0243	4-20-09			-058
7					
8					
9					
10					

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory:	Date/Time:	Signature:

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