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PIONEER MUNICIPAL HIGH INCOME TRUST  
Form NSAR-A  
December 30, 2008

PAGE 1  
000 A000000 10/31/2008  
000 C000000 0001223026  
000 D000000 N  
000 E000000 NF  
000 F000000 Y  
000 G000000 N  
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000 J000000 A  
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001 B000000 811-21321  
001 C000000 6177427825  
002 A000000 60 STATE STREET  
002 B000000 BOSTON  
002 C000000 MA  
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008 A000001 PIONEER INVESTMENT MANAGEMENT, INC.  
008 B000001 A  
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010 A000001 PIONEER INVESTMENT MANAGEMENT, INC.  
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010 C010001 BOSTON  
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010 A000002 PRINCETON ADMINISTRATORS, LLC  
010 C010002 PRINCETON  
010 C020002 NJ  
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010 C040002 9095  
011 A000001 PIONEER FUNDS DISTRIBUTOR, INC.  
011 B000001 8-12345678  
011 C010001 BOSTON  
PAGE 2  
011 C020001 MA  
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011 A000002 UBS INVESTMENT BANK  
011 B000002 8-022651  
011 C010002 STAMFORD  
011 C020002 CT

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011 C030002 06901  
011 A000003 RBC CAPITAL MARKETS CORP.  
011 B000003 8-045411  
011 C010003 MINNEAPOLIS  
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011 C030003 55402  
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011 A000004 ADVEST, INC.  
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011 C010004 HARTFORD  
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011 A000005 JANNEY MONTGOMERY SCOTT, LLC  
011 B000005 8-462  
011 C010005 PHILADELPHIA  
011 C020005 PA  
011 C030005 19103  
011 C040005 1675  
011 A000006 MCDONALD INVESTMENTS, INC.  
011 B000006 8-30177  
011 C010006 CLEVELAND  
011 C020006 OH  
011 C030006 44114  
011 C040006 2603  
011 A000007 STIFEL, NICOLAUS & CO., INC.  
011 B000007 8-001447  
011 C010007 ST. LOUIS  
011 C020007 MO  
011 C030007 63102  
012 A000001 PIONEER INVEST. MGT. SHAREHOLDER SVCS., INC.  
012 B000001 85-01359  
012 C010001 BOSTON  
012 C020001 MA  
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012 A000002 AMERICAN STOCK TRANSFER & TRUST CO. (COMMON)  
012 B000002 85-00000  
012 C010002 BROOKLYN  
012 C020002 NY  
012 C030002 11219  
012 A000003 DEUTSCHE BANK TRUST COMPANY AMERICAS (PREF.)  
012 B000003 85-00000  
012 C010003 NEW YORK  
012 C020003 NY  
012 C030003 10005  
013 A000001 ERNST & YOUNG LLP  
PAGE 3  
013 B010001 BOSTON  
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013 B040001 5072  
015 A000001 BROWN BROTHERS HARRIMAN & CO.  
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022 A000003 LEHMAN BROTHERS, INC.  
022 B000003 13-2518466  
022 C000003 9744  
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022 A000004 B.C. ZIEGLER AND CO.  
022 B000004 39-0727640  
022 C000004 6500  
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022 A000005 SOUTHRIDGE INVESTMENT GROUP  
022 C000005 0  
022 D000005 4744  
022 A000006 PIPER JAFFRAY & CO.  
022 B000006 41-0953246  
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022 A000007 BARCLAYS CAPITAL, INC.  
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022 A000008 DEPFA FIRST ALBANY SECURITIES, LLC  
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022 B000008 43-2117279  
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022 A000009 OPPENHEIMER & CO., INC.  
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PAGE 7

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PAGE 8

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087	C010000	PREFERRED STOCK - SERIES B
087	C020000	723763306
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SIGNATURE	MARY KELLERMANN	
TITLE	ACCOUNTING MANAGER	