

**MINNESOTA DECISION DOCUMENT
AMENDMENT #2**

WHEREAS, the Minnesota Pollution Control Agency (MPCA) issued a Minnesota Decision Document (MDD), dated October 7, 1993, that presented selected remedial actions and cleanup levels for the Highway 96 Superfund Site (Site), and summarized the facts and determinations made in approving the selected response actions.

WHEREAS, the MPCA issued an MDD Amendment, dated August 26, 2008 (MDD Amendment #1), that provided for the continued implementation of remedial actions and obligations identified in the 1993 MDD for Operable Units (OU) 1 (source control), OU2 (ground water remediation), and OU3 (residential drinking water east of Gilfillan Lake), and established an OU4 for residential drinking water west of Gilfillan Lake.

WHEREAS, MDD Amendment #1 listed seven Volatile Organic Compounds (VOCs) of potential concern (Listed VOCs) associated with the OU4 long term monitoring plan including vinyl chloride, 1,1-dichloroethane, trans-1,2-dichloroethene, benzene, methyl ethyl ketone, toluene, and 1,1,2-trichloroethene (TCE).

WHEREAS, the 2008-2018 groundwater monitoring results for each of the Listed VOCs are summarized as follows:

1. Vinyl Chloride

From 2008, vinyl chloride concentrations were detected at ten (10) residential well locations. Four of the ten (10) vinyl chloride-impacted wells have been replaced with new, deeper residential wells; the last well replacement occurred in 2013. Six of the ten (10) vinyl chloride-impacted wells have had vinyl chloride concentrations at or estimated (J) below the Health Risk Limit (HRL) for vinyl chloride of 0.2 µg/L established by the Minnesota Department of Health (MDH).

There have been no detections of vinyl chloride for the last nine consecutive sampling events, from October 2014 to the present. Graphs of historical vinyl chloride concentrations for the above-referenced residential wells are provided in Attachment A, attached hereto and herein incorporated by reference.

2. 1,1-Dichloroethane (1,1-DCA)

From 2008 to the present, 1,1-DCA has been detected at 19 residential well locations in OU4 (See Attachment B, attached hereto and herein incorporated by reference). The maximum concentration of 1,1-DCA detected during this period was 3.1 µg/L, which is below the Risk Assessment Advice (RAA) level for 1,1-DCA of 80 µg/L established by MDH. The most recent detection of 1,1-DCA occurred in October 2018.

3. Trans-1,2-Dichloroethene (Trans-1,2-DCE)

From 2008, trans-1,2-DCE was detected at one residential well location at a concentration of 0.11 µg/L, which is below the HRL for Trans -1,2-DCE of 40 µg/L established by MDH. There have been no detections of Trans -1,2-DCE in subsequent samples collected from this location.

4. Benzene

There have been no benzene detections at any residential well location in OU4 since 2008.

c-s3-25c

5. Methyl Ethyl Ketone (MEK)

There have been no MEK detections at any residential well location in OU4 since 2008.

6. Toluene

From 2008, toluene has been detected at six residential well locations in OU4 (See Attachment B). The maximum concentration of toluene detected during this period was 12 µg/L, which is below the HRL for toluene of 200 µg/L established by MDH. The most recent detection of toluene occurred in October 2014.

7. 1,1,2-Trichloroethene (TCE)

From 2008, TCE was detected at one residential well location in OU4. In October 2012, TCE was detected at an estimated (J) concentration of 0.051 J µg/L, which is below the HRL for TCE of 0.4 µg/L established by MDH. There have been no detections of TCE in subsequent samples collected from this location.

WHEREAS, the monitoring results and data to date indicate the following:

- From 2004 to present, the Responsible Parties have conducted 36 rounds of residential well sampling;
- No new vinyl chloride-impacted wells have been identified since May 2012;
- Vinyl chloride has not been detected at any residential well location since April 2014;
- No other Listed VOCs have been identified in residential wells at levels above MDH HRLs.

WHEREAS, the Responsible Parties request the residential well sampling frequencies listed for OU4 in MDD Amendment #1 be modified to reflect the decrease in concentrations of VOCs in groundwater, as supported by data provided in Attachment B.

WHEREAS, the MPCA reviewed the following documents describing the Site characteristics and the proposed modifications to the 2008 MDD Amendment (*documents are available for review at the MPCA or online at www.cityofnorthoaks.com*):

- 1993 Minnesota Decision Document for the Highway 96 Dump Site.
- 1995 Consent Order between the MPCA and Reynolds Metals Company and Whirlpool Corporation, Red Arrow Waste Disposal Service and Helen Krawczewski.
- Feasibility Study VOCs in Ground Water – West of Gilfillan Lake North Oaks, Minnesota. July 2007. Conestoga-Rovers and Associates.
- Response to Comments regarding the Feasibility Study. Letter: October 25, 2007 Conestoga-Rovers and Associates.
- 2008 Minnesota Decision Document Amendment for the Highway 96 Dump Site.
- 2014 Annual Monitoring Report, Highway 96 Site, White Bear Township, Minnesota. March 2015. Conestoga-Rovers and Associates.
- 2017 Annual Monitoring Report, Highway 96 Site, White Bear Township, Minnesota. March 14, 2018. GHD Services, Inc.
- Data Report, June 2018 Residential Well Sampling Event, North Oaks, Minnesota. August 28, 2018. GHD Services, Inc.
- Data Report, October 2018 Residential Well Sampling Event, North Oaks, Minnesota. December 18, 2018. GHD Services, Inc.
- Proposed Modifications (Updated), Long-Term Groundwater Monitoring Requirements for OU4, Highway 96 Site, White Bear Township, Minnesota. January 28, 2019. GHD Services, Inc.

WHEREAS, a public meeting will be held on May 9, 2019 to present the data and answer any questions with respect to the sampling frequency modification.

WHEREAS, the selected sampling frequency modification determination is consistent with the Minnesota Environmental Response and Liability Act (MERLA), Minn. Stat. ch. 115B, and is not inconsistent with the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S. Code Ch. 103, or the National Contingency Plan, 40 C.F.R. Part 300.

WHEREAS, the MPCA Commissioner or her delegate has determined the sampling frequency modification set forth in this MDD Amendment #2 is reasonable and necessary to protect the public health and welfare and the environment from the release and threatened release of hazardous substances and/or pollutants and contaminants from the Site;

NOW, THEREFORE:

1. The Minnesota Decision Document Amendment dated August 26, 2008, Section 5.2.2. Long-Term Ground Water Monitoring, is modified to insert the following residential well sampling frequency amendments to the long term monitoring plan:

Sampling Group	Current Sampling Frequency	Number of Homes	Updated Residential Well Sampling Frequencies ⁽¹⁾			
			2019-2022 ⁽²⁾	2023-2027 ⁽³⁾	2028-2032 ⁽⁴⁾	2033
A	Semi-Annually (April and October)	28	Annually	Every Five Years	Every Five Years	No Longer Sampled
B	Annually (October)	34	Every Five Years	Every Five Years	No Longer Sampled	-
C	Biennially (October, Odd Years)	8	Every Five Years	No Longer Sampled	-	-
D	Biennially (October, Odd Years)	7	No Longer Sampled	-	-	-

(1) - Sampling to be conducted in the month of October at the specified frequency.

(2) - Five-Year Event to be conducted in October 2022, five years following the comprehensive residential well sampling event (Groups A-D) conducted in October 2017.

(3) - Five-Year Event to be conducted in October 2027.

(4) - Five-Year Event to be conducted in October 2032.

See Figure 1 and Table 1, attached hereto and herein incorporated by reference, for the sampling frequency for each specific residence.

The updated sampling frequencies are appropriate for monitoring for potential long-term (chronic) exposure to low-level concentrations of VOCs in groundwater, as supported by data provided in Attachment B.

The MPCA will continue to evaluate appropriate residential well sampling frequencies for OU4 based on review of the sample results, and will determine if the well sampling frequency will revert to the frequency outlined in MDD Amendment #1 in the event:

- Vinyl chloride and/or TCE is detected at a residential well location in OU4 during its “Every Five Year” sampling period outlined above and the detection is confirmed with a follow-up sample.
 - A Listed VOC is detected above its respective HRL at any residential well location in OU4 and the detection is confirmed with a follow-up sample.
 - A Listed VOC is detected above its respective HRL in any of the Ski Lane Ravine monitoring wells and the detection is confirmed with a follow-up sample.
 - Potential new/future risk to OU4 is identified through remedial actions and long-term monitoring requirements associated with OU2, as stipulated in the 1993 MDD and 1995 Consent Order.
2. All other terms and conditions of the Minnesota Decision Document, dated October 7, 1993, and the Minnesota Decision Document Amendment, dated August 26, 2008, remain in full force and effect unless modified herein.

Kathy Sather, Division Director
Remediation Division
Delegate of the Commissioner of the
Minnesota Pollution Control Agency

Date

Table 1

**Updated Sampling Frequencies
Residential Well Network - Operable Unit 4
Highway 96 Site
White Bear Township, Minnesota**

Location	Operable Unit ⁽¹⁾	Geographic Area ⁽²⁾	Sampling Group ⁽²⁾	Current Sampling Frequency ⁽³⁾	Updated Sampling Frequencies ⁽⁴⁾			
					2019-2022 ⁽⁵⁾	2023-2027 ⁽⁶⁾	2028-2032 ⁽⁷⁾	2033
Birch Lane								
1 Birch Lane	OU4	Area 5	C	Every Two Years	Every Five Years	NLS	-	-
2 Birch Lane	OU4	Area 5	C	Every Two Years	Every Five Years	NLS	-	-
3 Birch Lane	OU4	Area 5	C	Every Two Years	Every Five Years	NLS	-	-
Buffalo Road								
1 Buffalo Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
3 Buffalo Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
Cardinal Lane								
2 Cardinal Lane	OU4	Area 4	C	Every Two Years	Every Five Years	NLS	-	-
4 Cardinal Lane	OU4	Area 4	C	Every Two Years	Every Five Years	NLS	-	-
Duck Pass Road								
9 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
11 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
13 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
15 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
20 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
22 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
24 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
26 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
28 Duck Pass Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
Eagle Ridge Road								
1 Eagle Ridge Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
2 Eagle Ridge Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
3 Eagle Ridge Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
4 Eagle Ridge Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
5 Eagle Ridge Road	OU4	Area 4	C	Every Two Years	Every Five Years	NLS	-	-
6 Eagle Ridge Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
10 Eagle Ridge Road	OU4	Area 4	C	Every Two Years	Every Five Years	NLS	-	-

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Location	Operable Unit ⁽¹⁾	Geographic Area ⁽²⁾	Sampling Group ⁽²⁾	Current Sampling Frequency ⁽³⁾	Updated Sampling Frequencies ⁽⁴⁾			
					2019-2022 ⁽⁵⁾	2023-2027 ⁽⁶⁾	2028-2032 ⁽⁷⁾	2033
East Oaks Road								
32 East Oaks Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
36 East Oaks Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
38 East Oaks Road	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
44 East Oaks Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
50 East Oaks Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
Gadwall Lane								
1 Gadwall Lane	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
2 Gadwall Lane	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
3 Gadwall Lane	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
4 Gadwall Lane	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
Heron Lane								
2 Heron Lane (New Well)	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
Hummingbird Hill								
1 Hummingbird Hill	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
Mallard Lane								
3 Mallard Lane	OU4	Area 4	D	Every Two Years	NLS	-	-	-
5 Mallard Lane	OU4	Area 4	D	Every Two Years	NLS	-	-	-
6 Mallard Lane	OU4	Area 4	D	Every Two Years	NLS	-	-	-
7 Mallard Lane	OU4	Area 4	D	Every Two Years	NLS	-	-	-
Poplar Lane								
1 Poplar Lane	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
3 Poplar Lane	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
4 Poplar Lane	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
6 Poplar Lane	OU4	Area 4	B	Annually	Every Five Years	Every Five Years	NLS	-
8 Poplar Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
Quail Lane								
1 Quail Lane	OU4	Area 5	C	Every Two Years	Every Five Years	NLS	-	-
3 Quail Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS

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Highway 96 Site
White Bear Township, Minnesota**

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					2019-2022 ⁽⁵⁾	2023-2027 ⁽⁶⁾	2028-2032 ⁽⁷⁾	2033
Robb Farm Road								
1 Robb Farm Road	OU4	Area 4	D	Every Two Years	NLS	-	-	-
2 Robb Farm Road	OU4	Area 4	D	Every Two Years	NLS	-	-	-
4 Robb Farm Road	OU4	Area 4	D	Every Two Years	NLS	-	-	-
35 Robb Farm Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
37 Robb Farm Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
41 Robb Farm Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
43 Robb Farm Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
44 Robb Farm Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
45 Robb Farm Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
Ski Lane								
2 Ski Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
4 Ski Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
6 Ski Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
8 Ski Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
10 Ski Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
12 Ski Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
14 Ski Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
16 Ski Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
Thompson Lane								
1 Thompson Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
3 Thompson Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
4 Thompson Lane	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
West Shore Road								
1 West Shore Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
2 West Shore Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
3 West Shore Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
4 West Shore Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
5 West Shore Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-

**Updated Sampling Frequencies
Residential Well Network - Operable Unit 4
Highway 96 Site
White Bear Township, Minnesota**

Location	Operable Unit ⁽¹⁾	Geographic Area ⁽²⁾	Sampling Group ⁽²⁾	Current Sampling Frequency ⁽³⁾	Updated Sampling Frequencies ⁽⁴⁾			
					2019-2022 ⁽⁵⁾	2023-2027 ⁽⁶⁾	2028-2032 ⁽⁷⁾	2033
6 West Shore Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
7 West Shore Road	OU4	Area 5	B	Annually	Every Five Years	Every Five Years	NLS	-
8 West Shore Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
9 West Shore Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
10 West Shore Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
11 West Shore Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS
15 West Shore Road	OU4	Area 3	A	Semi-Annually	Annually	Every Five Years	Every Five Years	NLS

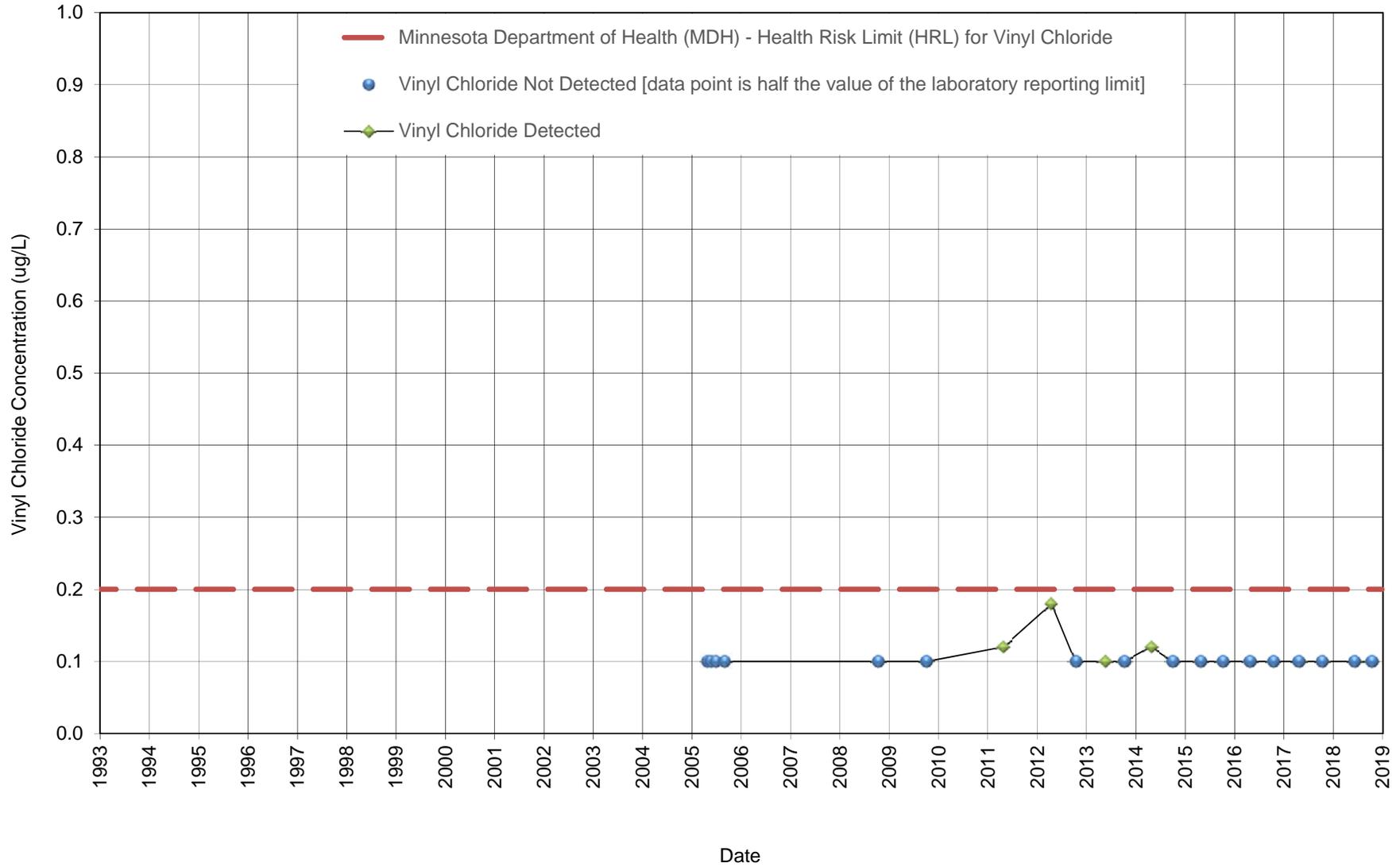
Notes:

- (1) - As stipulated in the MPCA's MDD for the Highway 96 Site, signed October 7, 1993 and modified by subsequent amendments.
- (2) - See Site Figure(s)
- (3) - In accordance with the long-term groundwater monitoring requirements outlined in Section 5.2.2 of the MPCA's amendment to the 1993 MDD for the Highway 96 Site, signed August 26, 2008.
- (4) - Sampling to be conducted in the month of October at specified frequency
- (5) - Five-Year Event to be conducted in October 2022 [five years following the comprehensive residential well sampling event (Groups A-D) conducted in October 2017].
- (6) - Five-Year Event to be conducted in October 2027.
- (7) - Five-Year Event to be conducted in October 2032.

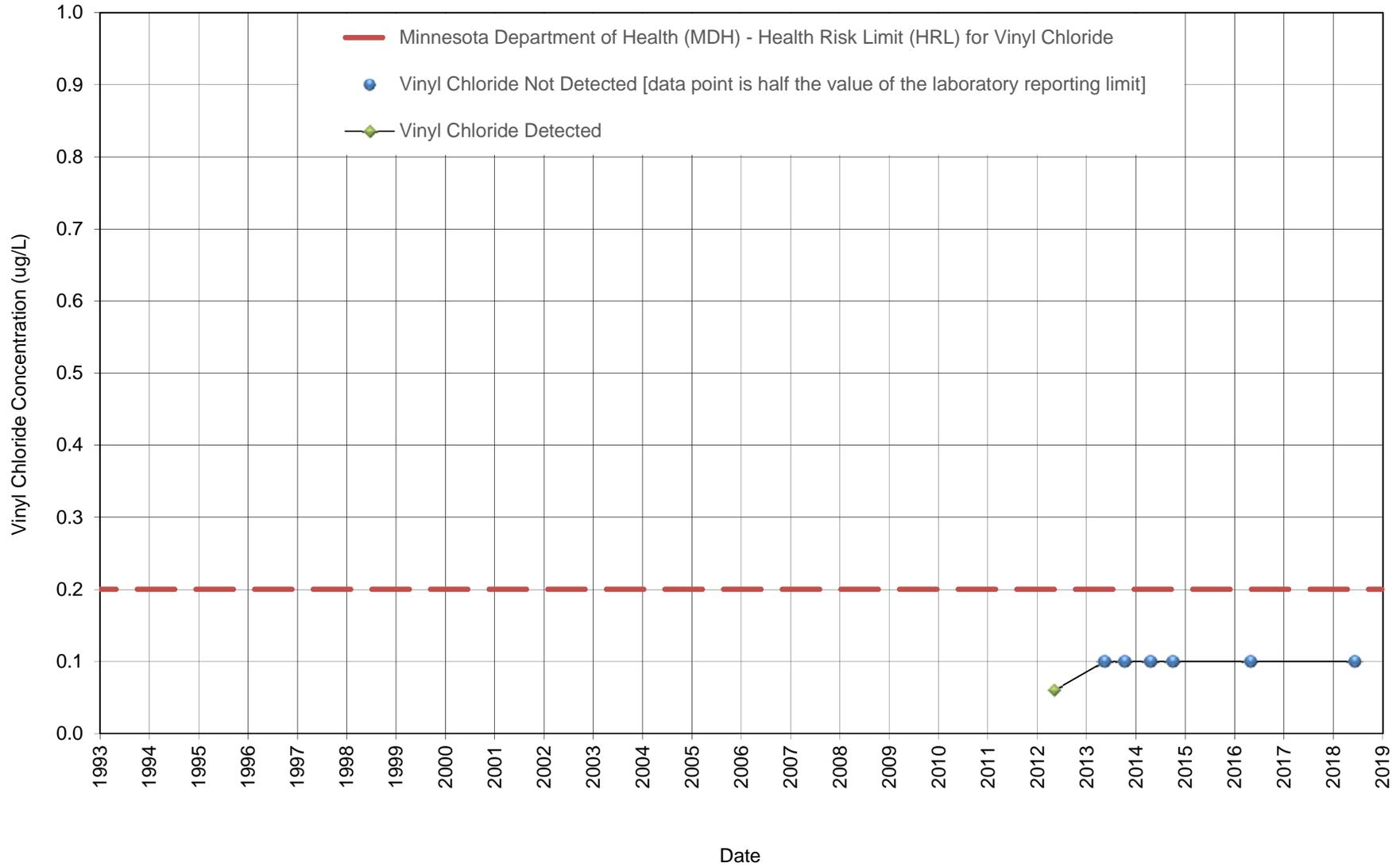
MDD - Minnesota Decision Document
MPCA - Minnesota Pollution Control Agency
NLS - No Longer Sampled

Attachment A

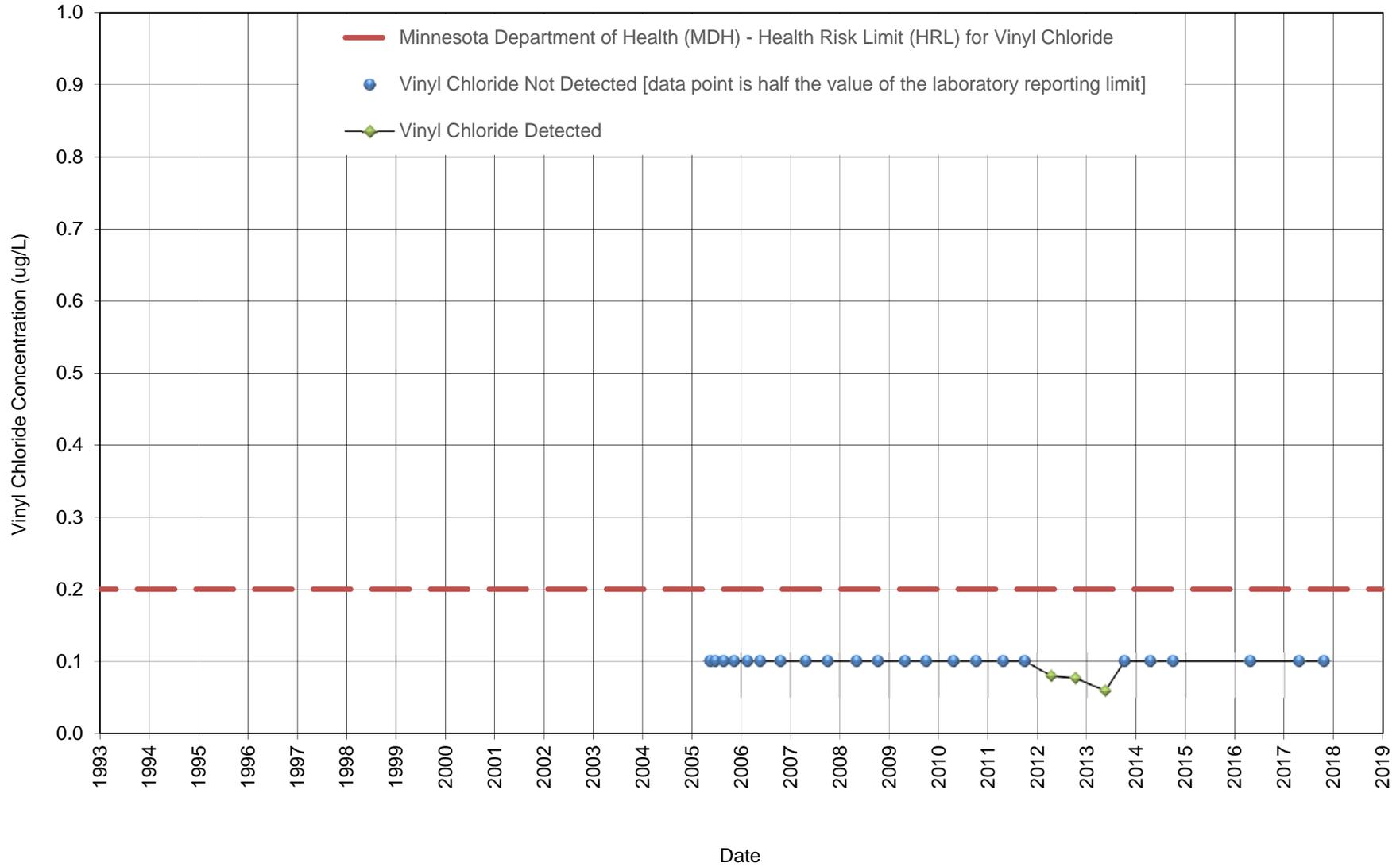
Historical Vinyl Chloride Concentrations 50 East Oaks Road North Oaks, Minnesota



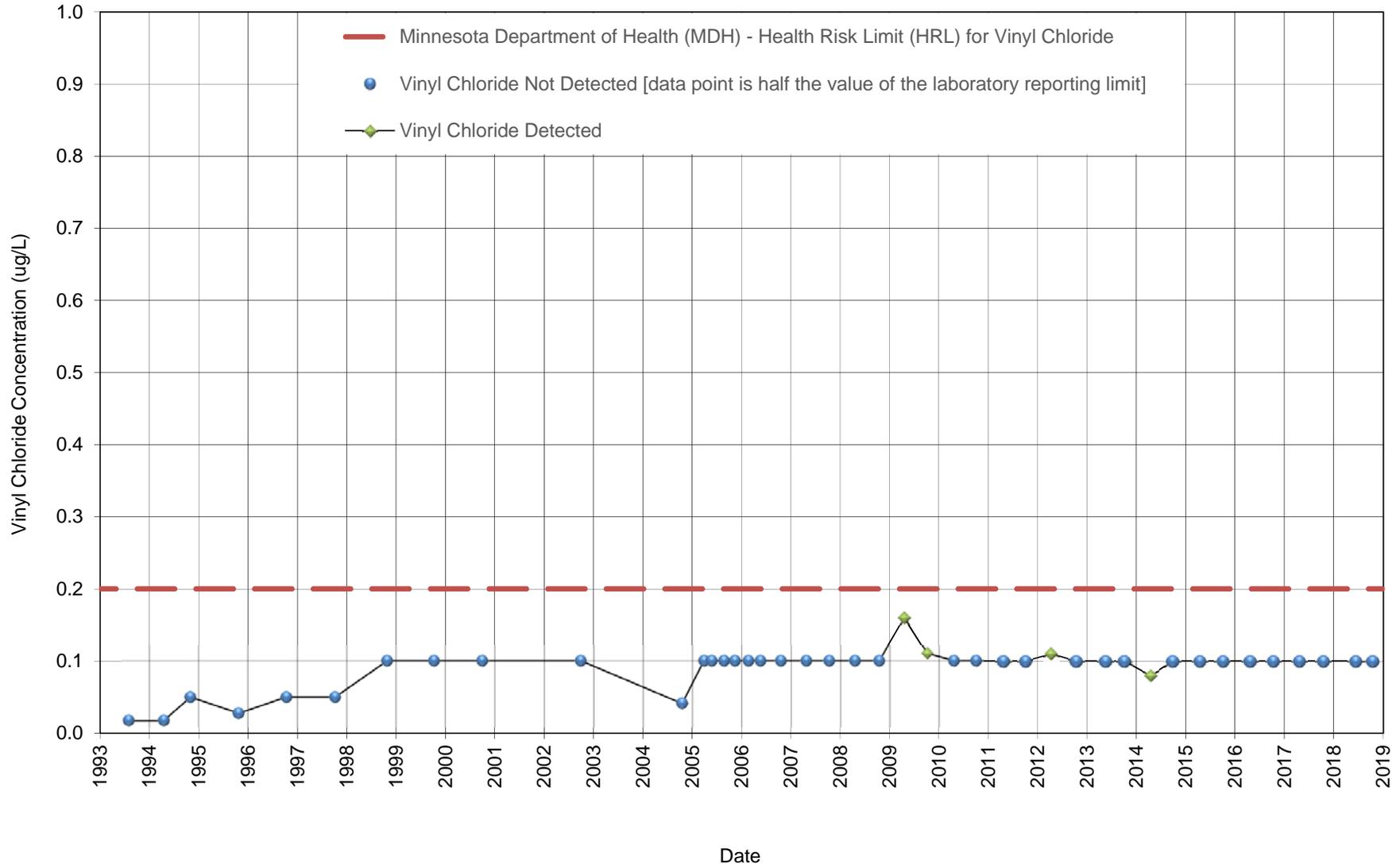
**Historical Vinyl Chloride Concentrations
3 Heron Lane
North Oaks, Minnesota**



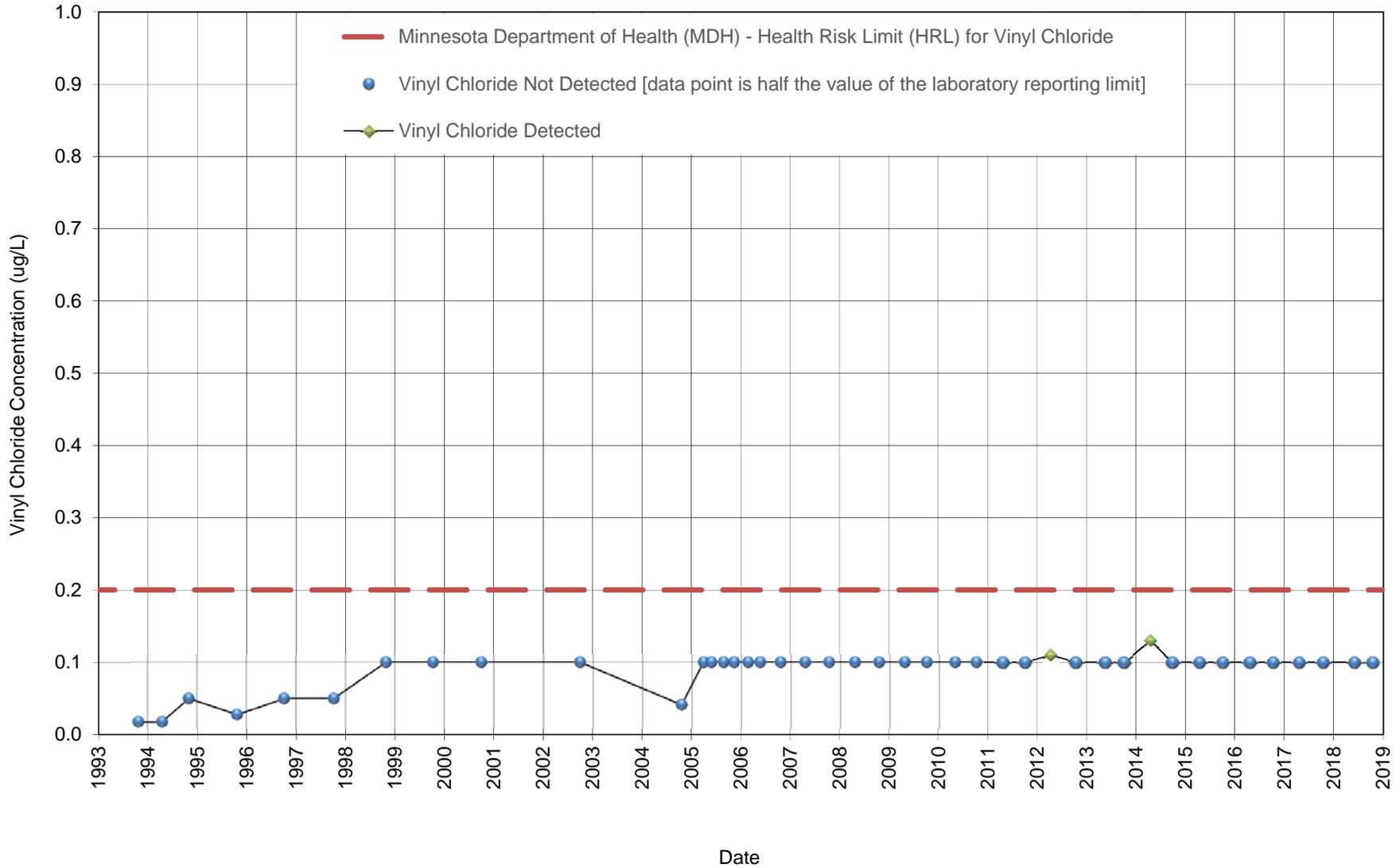
Historical Vinyl Chloride Concentrations 1 Hummingbird Hill North Oaks, Minnesota



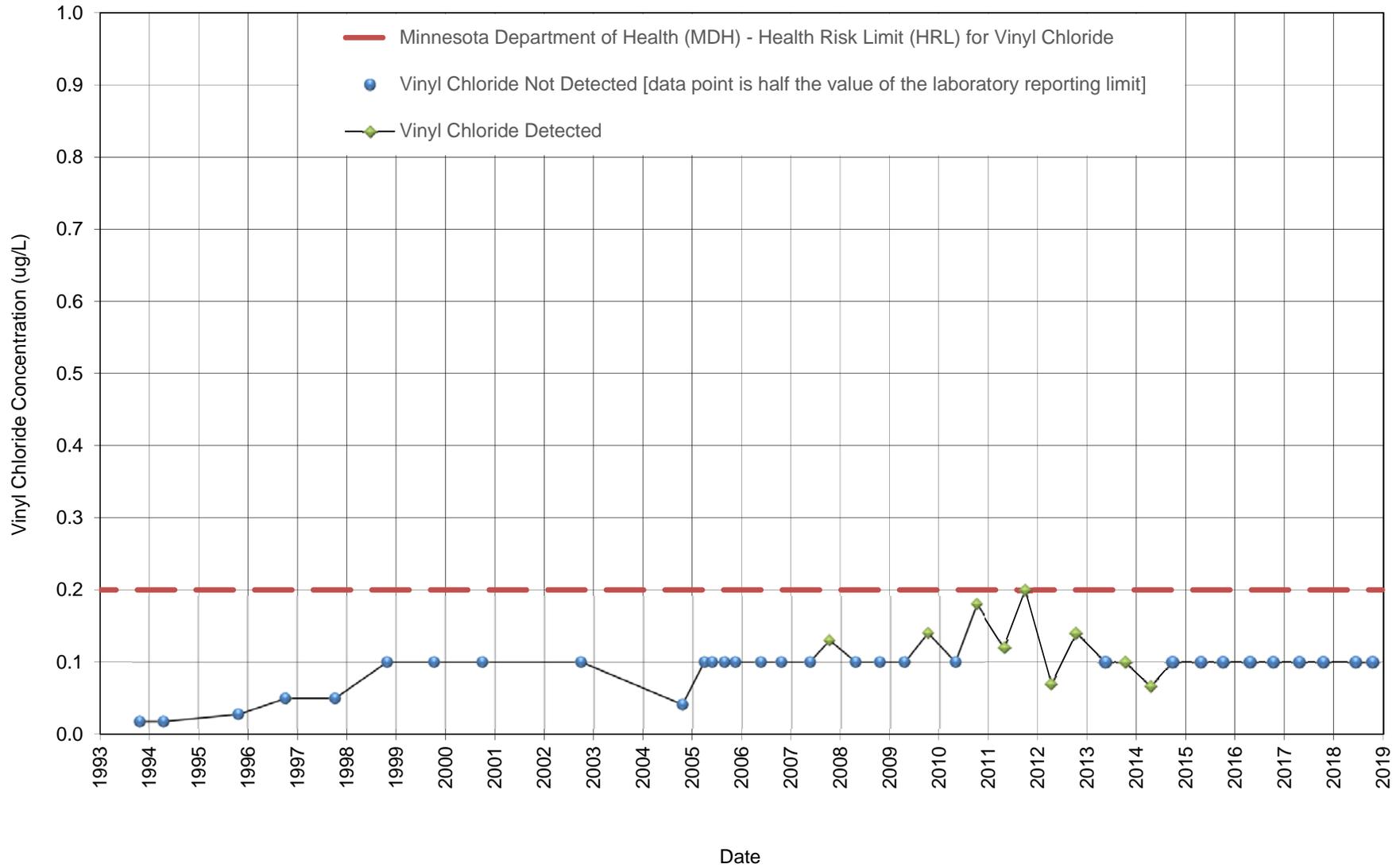
Historical Vinyl Chloride Concentrations 10 West Shore Road North Oaks, Minnesota



Historical Vinyl Chloride Concentrations 11 West Shore Road North Oaks, Minnesota



Historical Vinyl Chloride Concentrations 15 West Shore Road North Oaks, Minnesota



Attachment B

Historical Sampling Summary
Residential Monitoring Network - Operable Unit 4
Highway 96 Site
White Bear Township, Minnesota

Location	Operable Unit ⁽¹⁾	Geographic Area ⁽²⁾	Historical Sampling Period				Historical VOC Results					Current Sampling Frequency ⁽⁵⁾	Proposed Updated Sampling Frequency ⁽⁶⁾
			Earliest Sample	Most Recent Sample	Total		VOC Detections	Listed VOCs ⁽³⁾	Vinyl Chloride [Last Detected]	Site Fingerprint	Detections Above HBG ⁽⁴⁾		
					Years	Samples							
Birch Lane													
1 Birch Lane	OU4	Area 5	11/11/2005	10/18/2017	13	7	OTD	No	-	-	No	Every Two Years	Every Five Years
2 Birch Lane	OU4	Area 5	11/10/2005	10/18/2017	13	7	None	-	-	-	-	Every Two Years	Every Five Years
3 Birch Lane	OU4	Area 5	11/10/2005	10/18/2017	13	7	OTD	No	-	-	No	Every Two Years	Every Five Years
Buffalo Road													
1 Buffalo Road	OU4	Area 3	05/23/2005	10/17/2018	14	28	Yes	Yes	No	F2	No	Semi-Annually	Annually
3 Buffalo Road	OU4	Area 3	05/24/2005	10/17/2018	14	31	Yes	Yes	No	F2	No	Semi-Annually	Annually
Cardinal Lane													
2 Cardinal Lane	OU4	Area 4	10/10/2007	10/16/2017	11	6	OTD	Yes	No	-	No	Every Two Years	Every Five Years
4 Cardinal Lane	OU4	Area 4	10/19/2017 ^x	10/19/2017	1	1	None	-	-	-	-	Every Two Years	Every Five Years
Duck Pass Road													
9 Duck Pass Road	OU4	Area 4	07/07/1993	10/19/2018	26	16	Yes	Yes	No	F2	No	Annually	Every Five Years
11 Duck Pass Road	OU4	Area 4	07/07/1993	10/19/2018	26	10	OTD	No	-	-	No	Annually	Every Five Years
13 Duck Pass Road	OU4	Area 4	07/27/1993	10/19/2018	26	18	OTD	Yes	No	-	No	Annually	Every Five Years
15 Duck Pass Road	OU4	Area 4	08/05/1993	10/15/2018	26	16	None	-	-	-	-	Annually	Every Five Years
20 Duck Pass Road	OU4	Area 4	06/24/1993	10/19/2018	26	17	Yes	Yes	No	F2	No	Annually	Every Five Years
22 Duck Pass Road	OU4	Area 4	07/07/1993	10/19/2018	26	16	Yes	Yes	No	F2	No	Annually	Every Five Years
24 Duck Pass Road	OU4	Area 4	06/24/1993	10/19/2018	26	15	OTD	Yes	No	-	No	Annually	Every Five Years
26 Duck Pass Road	OU4	Area 4	08/05/1993	10/19/2018	26	17	None	-	-	-	-	Annually	Every Five Years
28 Duck Pass Road	OU4	Area 4	10/29/1998	10/15/2018	21	13	None	-	-	-	-	Annually	Every Five Years
Eagle Ridge Road													
1 Eagle Ridge Road	OU4	Area 3	03/31/2005	10/16/2018	15	29	Yes	Yes	No	F2	No	Semi-Annually	Annually
2 Eagle Ridge Road	OU4	Area 3	03/29/2005	10/16/2018	15	33	Yes	Yes	No	F2	No	Semi-Annually	Annually
3 Eagle Ridge Road	OU4	Area 3	03/30/2005	06/13/2018 [*]	14	19	None	-	-	-	-	Semi-Annually	Annually
4 Eagle Ridge Road	OU4	Area 3	03/29/2005	10/16/2018	15	30	OTD	Yes	No	-	No	Semi-Annually	Annually
5 Eagle Ridge Road	OU4	Area 4	10/11/2007	10/09/2013 [*]	7	4	None	-	-	-	-	Every Two Years	Every Five Years
6 Eagle Ridge Road	OU4	Area 3	04/01/2005	10/16/2018	15	30	OTD	No	-	-	No	Semi-Annually	Annually
10 Eagle Ridge Road	OU4	Area 4	11/09/2005	10/18/2017	13	7	None	-	-	-	-	Every Two Years	Every Five Years
East Oaks Road													
32 East Oaks Road	OU4	Area 4	11/03/1994	10/16/2018	25	17	None	-	-	-	-	Annually	Every Five Years
36 East Oaks Road	OU4	Area 4	08/05/1993	10/16/2018	26	18	OTD	No	-	-	No	Annually	Every Five Years
38 East Oaks Road	OU4	Area 4	06/24/1993	10/16/2018	26	18	OTD	Yes	No	-	No	Annually	Every Five Years
44 East Oaks Road	OU4	Area 3	11/03/1994	06/14/2018 [*]	25	30	OTD	No	-	-	No	Semi-Annually	Annually
50 East Oaks Road	OU4	Area 3	04/29/2005	10/16/2018	14	21	Yes	Yes	Yes [04/2014]	F1, F2	No	Semi-Annually	Annually
Gadwall Lane													
1 Gadwall Lane	OU4	Area 4	11/03/1994	10/16/2018	25	16	None	-	-	-	-	Annually	Every Five Years
2 Gadwall Lane	OU4	Area 4	11/03/1994	10/16/2018	25	16	None	-	-	-	-	Annually	Every Five Years
3 Gadwall Lane	OU4	Area 4	10/08/1997	10/16/2018	22	15	None	-	-	-	-	Annually	Every Five Years
4 Gadwall Lane	OU4	Area 4	10/09/1996	10/16/2018	23	15	Yes	No	-	-	No	Annually	Every Five Years

Historical Sampling Summary
Residential Monitoring Network - Operable Unit 4
Highway 96 Site
White Bear Township, Minnesota

Location	Operable Unit ⁽¹⁾	Geographic Area ⁽²⁾	Historical Sampling Period				Historical VOC Results					Current Sampling Frequency ⁽⁵⁾	Proposed Updated Sampling Frequency ⁽⁶⁾
			Earliest Sample	Most Recent Sample	Total		VOC Detections	Listed VOCs ⁽³⁾	Vinyl Chloride [Last Detected]	Site Fingerprint	Detections Above HBG ⁽⁴⁾		
					Years	Samples							
Heron Lane													
2 Heron Lane (New Well)	OU4	Area 5	02/18/2013	10/15/2018	7	7	Yes	Yes	No	-	No	Annually	Every Five Years
Hummingbird Hill													
1 Hummingbird Hill	OU4	Area 3	05/23/2005	10/25/2017 *	13	26	Yes	Yes	Yes [05/2013]	F1, F2	No	Semi-Annually	Annually
Mallard Lane													
3 Mallard Lane	OU4	Area 4	01/26/1994	10/16/2017	25	10	None	-	-	-	-	Every Two Years	No Longer Sampled
5 Mallard Lane	OU4	Area 4	10/29/1998	10/19/2017	20	8	None	-	-	-	-	Every Two Years	No Longer Sampled
6 Mallard Lane	OU4	Area 4	09/02/1993	10/19/2017	25	11	Yes	No	-	-	No	Every Two Years	No Longer Sampled
7 Mallard Lane	OU4	Area 4	01/26/1994	10/19/2017	25	9	None	-	-	-	-	Every Two Years	No Longer Sampled
Poplar Lane													
1 Poplar Lane	OU4	Area 4	08/05/1993	10/18/2018	26	18	Yes	Yes	No	-	No	Annually	Every Five Years
3 Poplar Lane	OU4	Area 4	11/03/1994	10/18/2018	25	16	None	-	-	-	-	Annually	Every Five Years
4 Poplar Lane	OU4	Area 4	09/02/1993	10/17/2017 *	25	12	OTD	Yes	No	-	No	Annually	Every Five Years
6 Poplar Lane	OU4	Area 4	08/05/1993	10/17/2017 *	25	16	OTD	No	-	-	No	Annually	Every Five Years
8 Poplar Lane	OU4	Area 3	08/05/1993	10/18/2018	26	33	OTD	Yes	No	-	No	Semi-Annually	Annually
Quail Lane													
1 Quail Lane	OU4	Area 5	11/10/2005	10/18/2017	13	5	OTD	No	-	-	No	Every Two Years	Every Five Years
3 Quail Lane	OU4	Area 3	11/16/2005	06/13/2018 *	14	24	None	-	-	-	-	Semi-Annually	Annually
Robb Farm Road													
1 Robb Farm Road	OU4	Area 4	10/27/1993	10/19/2017	25	10	None	-	-	-	-	Every Two Years	No Longer Sampled
2 Robb Farm Road	OU4	Area 4	01/26/1994	10/08/2015 *	23	8	OTD	No	-	-	No	Every Two Years	No Longer Sampled
4 Robb Farm Road	OU4	Area 4	01/26/1994	10/14/2003 *	11	3	None	-	-	-	-	Every Two Years	No Longer Sampled
35 Robb Farm Road	OU4	Area 5	09/02/1993	10/17/2017 *	25	12	OTD	Yes	No	-	No	Annually	Every Five Years
37 Robb Farm Road	OU4	Area 5	09/02/1993	10/19/2018	26	17	OTD	Yes	No	-	No	Annually	Every Five Years
41 Robb Farm Road	OU4	Area 5	09/02/1993	10/19/2018	26	14	Yes	Yes	No	-	No	Annually	Every Five Years
43 Robb Farm Road	OU4	Area 5	09/02/1993	10/19/2018	26	16	Yes	Yes	No	-	No	Annually	Every Five Years
44 Robb Farm Road	OU4	Area 5	09/02/1993	10/17/2018	26	16	Yes	Yes	No	-	No	Annually	Every Five Years
45 Robb Farm Road	OU4	Area 5	10/29/1998	10/19/2018	21	16	OTD	No	-	-	No	Annually	Every Five Years
Ski Lane													
2 Ski Lane	OU4	Area 3	05/23/2005	10/09/2013 *	9	20	OTD	No	-	-	No	Semi-Annually	Annually
4 Ski Lane	OU4	Area 3	05/23/2005	10/17/2018	14	29	OTD	No	-	-	No	Semi-Annually	Annually
6 Ski Lane	OU4	Area 3	05/23/2005	10/17/2018	14	31	OTD	No	-	-	No	Semi-Annually	Annually
8 Ski Lane	OU4	Area 3	05/23/2005	10/17/2018	14	27	None	-	-	-	-	Semi-Annually	Annually
10 Ski Lane	OU4	Area 3	07/06/2005	10/17/2018	14	29	Yes	Yes	No	F2	No	Semi-Annually	Annually
12 Ski Lane	OU4	Area 3	05/23/2005	10/17/2018	14	31	OTD	Yes	No	-	No	Semi-Annually	Annually
14 Ski Lane	OU4	Area 3	05/24/2005	10/17/2018	14	30	Yes	Yes	No	-	No	Semi-Annually	Annually
16 Ski Lane	OU4	Area 3	05/24/2005	10/17/2018	14	31	OTD	No	-	-	No	Semi-Annually	Annually

Historical Sampling Summary
Residential Monitoring Network - Operable Unit 4
Highway 96 Site
White Bear Township, Minnesota

Location	Operable Unit ⁽¹⁾	Geographic Area ⁽²⁾	Historical Sampling Period				Historical VOC Results					Current Sampling Frequency ⁽⁵⁾	Proposed Updated Sampling Frequency ⁽⁶⁾
			Earliest Sample	Most Recent Sample	Total		VOC Detections	Listed VOCs ⁽³⁾	Vinyl Chloride [Last Detected]	Site Fingerprint	Detections Above HBG ⁽⁴⁾		
					Years	Samples							
Thompson Lane													
1 Thompson Lane	OU4	Area 3	04/01/2005	10/18/2018	15	32	Yes	Yes	No	-	Yes ^T	Semi-Annually	Annually
3 Thompson Lane	OU4	Area 3	03/28/2005	10/18/2018	15	26	Yes	Yes	No	-	No	Semi-Annually	Annually
4 Thompson Lane	OU4	Area 3	08/30/2005	10/18/2018	14	20	None	-	-	-	-	Semi-Annually	Annually
West Shore Road													
1 West Shore Road	OU4	Area 5	10/08/1997	10/15/2018	22	17	OTD	No	-	-	No	Annually	Every Five Years
2 West Shore Road	OU4	Area 5	09/02/1993	10/19/2018	26	17	OTD	Yes	No	-	No	Annually	Every Five Years
3 West Shore Road	OU4	Area 5	10/26/1995	10/18/2018	24	15	OTD	No	-	-	No	Annually	Every Five Years
4 West Shore Road	OU4	Area 5	08/05/1993	10/18/2018	26	17	OTD	Yes	No	-	No	Annually	Every Five Years
5 West Shore Road	OU4	Area 5	10/10/1996	10/17/2017 *	22	16	OTD ^	No	-	-	No	Annually	Every Five Years
6 West Shore Road	OU4	Area 5	08/05/1993	10/18/2018	26	17	None	-	-	-	-	Annually	Every Five Years
7 West Shore Road	OU4	Area 5	10/26/1995	10/18/2018	24	14	None	-	-	-	-	Annually	Every Five Years
8 West Shore Road	OU4	Area 3	09/02/1993	10/19/2018	26	25	Yes	Yes	No	-	No	Semi-Annually	Annually
9 West Shore Road	OU4	Area 3	10/27/1993	10/18/2018	26	33	OTD	No	No	-	No	Semi-Annually	Annually
10 West Shore Road	OU4	Area 3	08/05/1993	10/19/2018	26	42	Yes	Yes	Yes [04/2014]	F1, F2	No	Semi-Annually	Annually
11 West Shore Road	OU4	Area 3	10/27/1993	10/18/2018	26	42	Yes	Yes	Yes [04/2014]	F1, F2	No	Semi-Annually	Annually
15 West Shore Road	OU4	Area 3	10/27/1993	10/18/2018	26	40	Yes	Yes	Yes [04/2014]	F1, F2	No	Semi-Annually	Annually

Notes:

- (1) - As stipulated in the MPCA's MDD for the Highway 96 Site, signed October 7, 1993, and modified by subsequent amendments.
- (2) - See Site Figure(s)
- (3) - As listed in Table 1 of the MPCA's amendment to the 1993 MDD for the Highway 96 Site, signed August 26, 2008 (1,1,2-trichloroethene, vinyl chloride, trans-1,2-dichloroethene, 1,1-dichloroethane, benzene, toluene, and methyl ethyl ketone)
- (4) - <http://www.health.state.mn.us/divs/eh/risk/guidance/gw/table.html>
- (5) - In accordance with the long-term groundwater monitoring requirements outlined in Section 5.2.2 of the MPCA's amendment to the 1993 MDD for the Highway 96 Site, signed August 26, 2008.
- (6) - Currently under review by the MPCA
- HBG - Heath Based Guidance
- J - Estimated Result (below laboratory reporting limit)
- MDD - Minnesota Decision Document
- MPCA - Minnesota Pollution Control Agency
- OTD - One-Time Detection(s)
- VOCs - Volatile Organic Compounds
- * - Resident declined, had water off, or did not respond to subsequent sampling request(s).
- ^ - Estimated detections of vinyl chloride and trans-1,2-dichloroethene in October 2008 were determined to be laboratory carryover (false detection error)
- F1 - Highway 96 Site Fingerprint 1 (Vinyl Chloride + cis-1,2-Dichloroethene + 1,1-Dichloroethane)
- F2 - Highway 96 Site Fingerprint 2 (1,1-Dichloroethane + Dichlorodifluoromethane/Dichlorofluoromethane)
- T - Samples collected during the period from 2005-2009 reflect post-treated groundwater (in-home chlornation system).
- x - Resident declined previous sampling requests (October 2007 through October 2015).