# APPENDIX J

# CITY OF VADNAIS HEIGHTS WATER QUALITY DATA

# City of Vadnais Heights
# 2004 Drinking Water Report

The City of Vadnais Heights is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2004. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

**Source of Water**

The City of Vadnais Heights provides drinking water to its residents from a groundwater source: three wells ranging from 470 to 495 feet deep that draw water from the Prairie Du Chien-Jordan aquifer.

The water provided to customers may meet drinking water standards but the Minnesota Department of Health has determined that one or more of the sources of water is potentially susceptible to contamination. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-215-0800 or 1-800-818-9318 (and press 5) during normal business hours. Also, you can view it on line at www.health.state.mn.us/divs/ch/water/swp/swa.

Call 651.204.6052 if you have questions about the City of Vadnais Heights' drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

**Results of Monitoring**

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2004. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

**Key to Abbreviations**

**MCLG:** Maximum Contaminant Level Goal, the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
**MCL:** Maximum Contaminant Level, the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
**MRDL:** Maximum Residual Disinfectant Level.
**MRDLG:** Maximum Residual Disinfectant Level Goal.
**AL:** Action Level, the concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.
**90th Percentile Level:** This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. (For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples.) Note: In situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.
**pCi/l:** PicoCuries per liter, a measure of radioactivity.
**ppb:** Parts per billion, which can also be expressed as micrograms per liter (ug/l).
**ppm:** Parts per million, which can also be expressed as milligrams per liter (mg/l).
**N/A:** Not Applicable (does not apply).

| Contaminant (units) | MCLG | MCL | Level Found Range (2004) | Average /Result* | Typical Source of Contaminant |
|---|---|---|---|---|---|
| Alpha Emitters (pCi/l) (11/16/2000) | 0 | 15.4 | N/A | 5.9 | Erosion of natural deposits. |
| Arsenic (ppb) (02/10/2003) | 0 | 50 | N/A | 1.98 | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium (ppm) (02/10/2003) | 2 | 2 | N/A | .12 | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Combined Radium (pCi/l) (11/16/2000) | 0 | 5.4 | N/A | 2.5 | Erosion of natural deposits. |
| Fluoride (ppm) | 4 | 4 | 1.1-1.3 | 1.2 | State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories. |

| Contaminant (units) | Level Found Range (2004) | Average /Result* | Typical Source of Contaminant |
|---|---|---|---|
| Radon (pCi/l) (10/29/2002) | N/A | 697 | Erosion of natural deposits. |

* This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.

Radon is a radioactive gas, which is naturally occurring in some groundwater. It poses a lung cancer risk when gas is released from water into air (as occurs during showering, bathing, or washing dishes or clothes) and a stomach cancer risk when it is ingested. Because radon in indoor air poses a much greater health risk than radon in drinking water, an Alternative Maximum Contaminant Level (AMCL) of 4,000 picoCuries per liter may apply in states that have adopted an Indoor Air Program, which compels citizens, homeowners, schools, and communities to reduce the radon threat from indoor air. For states without such a program, the Maximum Contaminant Level (MCL) of 300 pCi/l may apply. Minnesota plans to adopt an Indoor Air Program once the Radon Rule is finalized.

| Contaminant (units) | MRDLG | MRDL | **** | ***** | Typical Source of Contaminant |
|---|---|---|---|---|---|
| Chlorine (ppm) | 4 | 4 | .6-.9 | .72 | Water additive used to control microbes. |

**** Highest and Lowest Monthly Average.
***** Highest Quarterly Average.

| Contaminant (units) | MCLG | AL | 90% Level | # sites over AL | Typical Source of Contaminant |
|---|---|---|---|---|---|
| Copper (ppm) | N/A | 1.3 | .28 | 0 out of 30 | Corrosion of household plumbing systems; Erosion of natural deposits. |
| Lead (ppb) | N/A | 15 | 3 | 1 out of 30 | Corrosion of household plumbing systems; Erosion of natural deposits. |

Some contaminants do not have Maximum Contaminant Levels established for them. These "unregulated contaminants" are assessed using state standards known as health risk limits to determine if they pose a threat to human health. If unacceptable levels of an unregulated contaminant are found, the response is the same as if an MCL has been exceeded; the water system must inform its customers and take other corrective actions. In the table that follows are the unregulated contaminants that were detected:

| Contaminant (units) | Level Found Range (2004) | Average /Result | Typical Source of Contaminant |
|---|---|---|---|
| Sodium (ppm) (02/10/2003) | N/A | 4.7 | Erosion of natural deposits. |
| Sulfate (ppm) (02/10/2003) | N/A | 17 | Erosion of natural deposits. |

**Compliance with National Primary Drinking Water Regulations**

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:
*Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
*Inorganic contaminants*, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
*Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
*Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
*Radioactive contaminants*, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U. S. Environmental Protection Agency (EPA) prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

**Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline at 1-800-426-4791.**

A portion of the City's water supply comes from a well located near the area where small amounts of vinyl chloride were detected in private wells. The City well draws water from an aquifer much deeper than the private wells where the vinyl chloride was found. However, in the interest of public concern, the well was tested by the Minnesota Department of Health in May of 2005 for vinyl chloride. The results of that test were good. The MCL (maximum contaminate level) is 2.0 ug/L and the test result was <0.20 ug/L (micrograms per liter).

# RECORD OF TELEPHONE CONVERSATION

| | | | |
|---|---|---|---|
| DATE: | January 18, 2006 | REFERENCE. NO.: | 2012 |
| TO/FROM: | Rod | TELEPHONE NO.: | (651) 429-7689 |
| COMPANY: | City of Vadnais Heights - Public Works | TIME: AM/PM | |
| RE: | **Municipal Water Quality Data** | ☒ OUTGOING CALL | ☐ INCOMING CALL |

**Groundwater Quality Data - City of Vadnais Heights Well #4**
**(closest to North Oaks/Highway 96 Site)**

*Volatile Organic Compounds (VOCs)*

-Vinyl Chloride = Not Detected (<0.2 ug/L)
-See 2005 MDH Laboratory Report (attached)

*General Water Quality*

-Sulfate = 17 mg/L
-Total Dissolved Solids (TDS) = 350 mg/L
-Hardness = 200 mg/L
-Iron = 247 ug/L
-Alkalinity = 181 mg/L

SIGNATURE: _____ Page 1 of 1

# Minnesota Department Of Health - Environmental Laboratory

**Final Report - Client Copy** - Report Of Analytical Results

Program: **HC**
Program Name: **COMM WATER SUPPLIES (SAN.)**

**Samples: 200509143 - 200509143**

Date Received: **02-MAY-2005**
Date Generated: **07-MAY-2005**
Request Page: **1 of 3**
Date Reported: **07-MAY-2005**

| PWS No | Site ID | Facility Name | City |
|---|---|---|---|
| 1620030 | 1620030 | VADNAIS HEIGHTS | VADNAIS HEIGHTS |

| Collect Dt | Coll Time | Coll ID | Collector Name | Orig Samp |
|---|---|---|---|---|
| 02-MAY-2005 | 0800 | 6070 | Chad Kolstad | - |

| Field Blank | Type | QTR | Field Res | PO4 Res | Trip Blank |
|---|---|---|---|---|---|
| - | X | - | - | - | - |

Sample No: **200509143** Receiving Comments:

| Field No | LocID | Sampling Point |
|---|---|---|
| 1620030 | E04 | WELL #4 |

********** SAMPLE RESULTS **********

**Unit: ORGANIC CHEMISTRY** Reviewed By **PDS** on **07-MAY-05**

**Note: Positive Organic Results are indicated by BOLD.**

| | Result | Rept Level | Units | Analysis Date |
|---|---|---|---|---|
| 468 VOCs in Water by GC/MS | | | | 03-MAY-05 |
| Acetone | < 20 | 20 | ug/L | |
| Allyl chloride | < 0.5 | 0.5 | ug/L | |
| Benzene | < 0.2 | 0.2 | ug/L | |
| Bromobenzene | < 0.2 | 0.2 | ug/L | |
| Bromochloromethane | < 0.5 | 0.5 | ug/L | |
| Bromodichloromethane | < 0.2 | 0.2 | ug/L | |
| Bromoform | < 0.5 | 0.5 | ug/L | |
| Bromomethane | < 1.0 | 1.0 | ug/L | |
| n-Butylbenzene | < 0.5 | 0.5 | ug/L | |
| sec-Butylbenzene | < 0.5 | 0.5 | ug/L | |
| tert-Butylbenzene | < 0.5 | 0.5 | ug/L | |
| Carbon tetrachloride | < 0.2 | 0.2 | ug/L | |
| Chlorobenzene | < 0.2 | 0.2 | ug/L | |
| Chlorodibromomethane | < 0.5 | 0.5 | ug/L | |
| Chloroethane | < 0.5 | 0.5 | ug/L | |
| Chloroform | < 0.1 | 0.1 | ug/L | |
| Chloromethane | < 1.0 | 1.0 | ug/L | |
| 2-Chlorotoluene | < 0.5 | 0.5 | ug/L | |
| 4-Chlorotoluene | < 0.5 | 0.5 | ug/L | |
| 1,2-Dibromo-3-chloropropane (DBCP) | < 2.0 | 2.0 | ug/L | |
| 1,2-Dibromoethane (EDB) | < 0.5 | 0.5 | ug/L | |
| Dibromomethane | < 0.5 | 0.5 | ug/L | |
| 1,2 Dichlorobenzene | < 0.2 | 0.2 | ug/L | |
| 1,3-Dichlorobenzene | < 0.2 | 0.2 | ug/L | |

DATE SENT: JUN 0 1 2005
BY:

# Minnesota Department Of Health - Environmental Laboratory

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Date Generated: **07-MAY-2005**
Request Page: **2 of 3**

**Samples: 200509143 - 200509143**

Date Reported: **07-MAY-2005**

| PWS No | Site ID | Facility Name | City |
|---|---|---|---|
| 1620030 | 1620030 | VADNAIS HEIGHTS | VADNAIS HEIGHTS |

| Collect Dt | Coll Time | Coll ID | Collector Name | Orig Samp |
|---|---|---|---|---|
| 02-MAY-2005 | 0800 | 6070 | Chad Kolstad | - |

| Field Blank | Type | QTR | Field Res | PO4 Res | Trip Blank |
|---|---|---|---|---|---|
| - | X | - | - | - | - |

Sample No: **200509143** Receiving Comments:

| Field No | LocID | Sampling Point |
|---|---|---|
| 1620030 | E04 | WELL #4 |

********** SAMPLE RESULTS **********

**Unit: ORGANIC CHEMISTRY** Reviewed By **FDS** on **07-MAY-05**

**Note: Positive Organic Results are indicated by BOLD.**

| | Result | Rept Level | Units | Analysis Date |
|---|---|---|---|---|
| 468 VOCs in Water by GC/MS (Cont.) | | | | 03-MAY-05 |
| 1,4-Dichlorobenzene | < 0.2 | 0.2 | ug/L | |
| Dichlorodifluoromethane | < 1.0 | 1.0 | ug/L | |
| 1,1-Dichloroethane | < 0.2 | 0.2 | ug/L | |
| 1,2-Dichloroethane | < 0.2 | 0.2 | ug/L | |
| 1,1-Dichloroethene | < 0.5 | 0.5 | ug/L | |
| cis-1,2-Dichloroethene | < 0.2 | 0.2 | ug/L | |
| trans-1,2-Dichloroethene | < 0.1 | 0.1 | ug/L | |
| Dichlorofluoromethane | < 0.5 | 0.5 | ug/L | |
| 1,2-Dichloropropane | < 0.2 | 0.2 | ug/L | |
| 1,3-Dichloropropane | < 0.2 | 0.2 | ug/L | |
| 2,2-Dichloropropane | < 0.5 | 0.5 | ug/L | |
| 1,1-Dichloropropene | < 0.2 | 0.2 | ug/L | |
| cis-1,3-Dichloropropene | < 0.2 | 0.2 | ug/L | |
| trans 1,3-Dichloropropene | < 0.2 | 0.2 | ug/L | |
| Ethylbenzene | < 0.5 | 0.5 | ug/L | |
| Ethyl ether | < 2.0 | 2.0 | ug/L | |
| Hexachlorobutadiene | < 1.0 | 1.0 | ug/L | |
| Isopropylbenzene | < 0.5 | 0.5 | ug/L | |
| p-Isopropyltoluene | < 0.5 | 0.5 | ug/L | |
| Methylene chloride | < 0.5 | 0.5 | ug/L | |
| Methyl ethyl ketone (MEK) | < 10 | 10 | ug/L | |
| Methyl isobutyl ketone (MIBK) | < 5.0 | 5.0 | ug/L | |
| Methyl tertiary butyl ether (MTBE) | < 2.0 | 2.0 | ug/L | |
| Naphthalene | < 1.0 | 1.0 | ug/L | |

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Request Page: **3 of 3**

**Samples: 200509143 - 200509143**

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|---|---|---|---|---|---|
| - | X | - | - | - | - |

Sample No: **200509143** Receiving Comments:

| Field No | LocID | Sampling Point |
|---|---|---|
| 1620030 | E04 | WELL #4 |

********** SAMPLE RESULTS **********

**Unit: ORGANIC CHEMISTRY** Reviewed By PDS on 07-MAY-05

**Note: Positive Organic Results are indicated by BOLD.**

| | Result | Rept Level | Units | Analysis Date |
|---|---|---|---|---|
| 468 VOCs in Water by GC/MS (Cont.) | | | | 03-MAY-05 |
| n-Propylbenzene | < 0.5 | 0.5 | ug/L | |
| Styrene | < 0.5 | 0.5 | ug/L | |
| 1,1,1,2-Tetrachloroethane | < 0.2 | 0.2 | ug/L | |
| 1,1,2,2-Tetrachloroethane | < 0.2 | 0.2 | ug/L | |
| Tetrachloroethene | < 0.2 | 0.2 | ug/L | |
| Tetrahydrofuran (THF) | < 10 | 10 | ug/L | |
| Toluene | < 0.5 | 0.5 | ug/L | |
| 1,2,3-Trichlorobenzene | < 1.0 | 1.0 | ug/L | |
| 1,2,4-Trichlorobenzene | < 0.5 | 0.5 | ug/L | |
| 1,1,1-Trichloroethane | < 0.2 | 0.2 | ug/L | |
| 1,1,2-Trichloroethane | < 0.2 | 0.2 | ug/L | |
| Trichloroethene (TCE) | < 0.1 | 0.1 | ug/L | |
| Trichlorofluoromethane | < 0.5 | 0.5 | ug/L | |
| 1,2,3-Trichloropropane | < 0.5 | 0.5 | ug/L | |
| 1,1,2-Trichlorotrifluoroethane | < 0.2 | 0.2 | ug/L | |
| 1,2,4-Trimethylbenzene | < 0.5 | 0.5 | ug/L | |
| 1,3,5-Trimethylbenzene | < 0.5 | 0.5 | ug/L | |
| Vinyl chloride | < 0.2 | 0.2 | ug/L | |
| o Xylene | < 0.2 | 0.2 | ug/L | |
| p&m Xylene | < 0.3 | 0.3 | ug/L | |