

TABLE OF CONTENTS

PAGE NUMBER

I.	PUBLIC WATER SUPPLY PROFILE	3
II.	DOCUMENTATION LIST	5
III.	PART II – EXECUTIVE SUMMARY	6
IV.	CHAPTER 1 – DATA ELEMENTS AND ASSESSMENT	8
V.	CHAPTER 2 – IMPACT OF CHANGES ON PUBLIC WATER SUPPLY WELLS	13
VI.	CHAPTER 3 – ISSUES, PROBLEMS AND OPPORTUNITIES	17
VII.	CHAPTER 4 – WELLHEAD PROTECTION GOALS	20
VIII.	CHAPTER 5 – OBJECTIVES AND PLAN OF ACTION	21
IX.	CHAPTER 6 – EVALUATION PROGRAM	31
X.	CHAPTER 7 – ALTERNATE WATER SUPPLY & CONTINGENCY STRATEGY	32
XI.	APPENDIX A – REFERENCED DATA FOR WHP PLAN – PART II	39

PUBLIC WATER SUPPLY PROFILE

Public Water Supply:

City of Mountain Iron
8586 South Enterprise Drive
Mountain Iron, Minnesota 55768
(218) 748-7570 (fax) 748-7573
cwainio@ci.mountain-iron.mn.us

Wellhead Protection Manager:

Mr. Craig Wainio, City Administrator
8586 South Enterprise Drive
Mountain Iron, Minnesota 55768
(218) 748-7570 (fax) 748-7573
cwainio@ci.mountain-iron.mn.us

Alternate:

Mr. Tim Satrang, Water & Wastewater Plant Operator
(218) 748-7570 cell (218) 750-0121

City Engineer:

Benchmark Engineering, Inc.
Mr. Eric E. Fallstrom, P.E.
8878 Main Street, P.O. Box 261
Mountain Iron, Minnesota 55768
(218) 735-8914 fax (218) 735-8923
eric@bm-eng.com

Minnesota Department of Health Technical Assistance:

Ms. Beth Kluthe, Principal Planner
Minnesota Department of Health (MDH)
Environmental Health Division
705 Fifth Street NW – Suite A
Bemidji, Minnesota 56601
(218) 308-2115
beth.kluthe@state.mn.us

General Information:

Unique well number and name for Primary Wells:

150524 – Well No. 1

150526 – Well No. 2

Unique well number and name for Emergency Wells:

239976 – Well No. 3

229166 – Well No. 4

Size of Population served: 2,999

PWS ID Number: 1690035

DOCUMENTATION LIST

<u>STEP</u>	<u>DATE PERFORMED</u>
Scoping Meeting 2 Held (4720.5340, subp. 1)	<u>February 23, 2010</u>
Scoping 2 Decision Notice (4720.5340, subp. 2)	<u>March 19, 2010</u>
Remaining Portion of Plan Submitted to Local Government Units (LGUs) (4720.5350)	<u>August 15, 2011</u>
Review Received from Local Government Units (4720.5350, subp. 2)	<u>October 27, 2011</u>
Consider Comments from Local Government Units (4720.5350, subp. 3)	<u>October 28, 2011</u>
Public Hearing Conducted on WHP Plan – Part II (4720.5350, subp. 4)	<u>November 7, 2011</u>
WHP Plan – Part II Submitted to the MDH (4720.5360, subp. 1)	<u>November 8, 2011</u>
Approved Review Notice Received	_____
Notice of Plan Implementation sent to Local Government Units	_____
Date of WHP Plan Implementation	_____

EXECUTIVE SUMMARY

Part II of the wellhead protection plan is pursuant to MN Rules 4720.5220 through 4720.5290 and it includes a discussion of the impact of changes upon the City of Mountain Iron's water supply wells; a summary of issues, problems and opportunities as they relate to the public water supply wells; a statement of broad wellhead protection goals; a statement of wellhead protection objectives and the plan of action for implementing goals and objectives; a program to evaluate implementation of the plan; and a contingency strategy to consider in the event of an emergency shutdown of the public water supply wells.

Part I of the Wellhead Protection (WHP) Plan presented the 1) delineation of the Wellhead Protection Area (WHPA), 2) the boundaries of the Drinking Water Supply Management Area (DWSMA), 3) the assessment of well vulnerability, and 4) the assessment of aquifer vulnerability throughout the DWSMA. Part I of the WHP Plan was approved by the MDH on January 21, 2010. The boundaries of the WHPA and the DWSMA are shown on Exhibit A, located in Appendix A of this WHP Plan – Part II. Part I of this WHP Plan is on file for review at the Mountain Iron City Hall or the central MDH office located in St. Paul, Minnesota.

In Part I of this plan, the vulnerability assessment for the public water system's wells indicated that Well #1 (150524) and Well #2 (150526) are considered to have a high vulnerability due to the presence of tritium in the water sampled. In addition, the vulnerability of the DWSMA to contamination by activities occurring at the land surface ranges from moderate to very high.

The information and data contained in Chapters 1-4 of this part of the WHP Plan support the approaches taken to address potential contamination sources that have been identified as potentially impacting the aquifer used by the public water supply. The reader is encouraged to concentrate attention on Chapters 1-4 in order to better understand why a specific management strategy is included in Chapter 5.

In Chapter 1, the required data elements indicated by MDH in the Scoping 2 Decision Notice are addressed. Pertinent data elements include any known information regarding the geology, water quality, and water quantity. In addition, requested maps and reference data is also included.

Chapter 2 addresses the possible impacts that changes in the physical environment, land use, infrastructure improvements, and water resources may have on the public water supply. At this time, no significant changes are anticipated within the next 10 year period. The City of Mountain Iron intends to periodically review the WHP Plan in order to provide any updates as infrastructure and land use changes occur within the DWSMA.

Chapter 3 addresses any specific issues, problems and opportunities regarding the City of Mountain Iron's public water supply as it relates to the aquifer, wells and the DWSMA. The major issues of concern to be addressed by this WHP Plan are as follows: 1) proximity of other wells and impact to aquifer, 2) impact of Iroquois Mine Pit Lake water on wells, 3) underground or above

ground storage tanks that may release contaminants into groundwater, 4) impact and proximity of any old dumps located within WHPA, and 5) future development within the DWSMA & WHPA.

Chapter 4 outlines the City of Mountain Iron's overall drinking water protection goals that they would like to accomplish. In essence, the City of Mountain Iron would like to 1) maintain or improve on the current drinking water quality, 2) increase the public awareness of groundwater protection issues, 3) protect the aquifer, and 4) continue to collect data in order to supplement the existing known geologic and hydrogeologic data of the area, confirming where all wells and contamination sources are located within the DWSMA and support future efforts in wellhead protection planning.

Chapter 5 provides the objectives and plan of action for managing potential sources of contamination within the DWSMA. In general, actions aimed toward educating the general public about groundwater issues, gathering information about other wells, and collecting data relevant to wellhead protection planning will be focus.

Chapter 6 contains a guide to evaluate the implementation of the identified management strategies of Chapter 5. The wellhead protection program for the City of Mountain Iron will be evaluated on an annual basis by the wellhead protection manager prior to the water supply system's budgeting process.

Chapter 7 includes the emergency and contingency plan in order to address the possibility that the water supply system is interrupted due to either emergency situations or drought. This contains details about the water supply distribution system, emergency contact numbers, equipment listings, and other information as needed to assist the system in responding quickly and effectively in an emergency situation.

CHAPTER 1

DATA ELEMENTS AND ASSESSMENT (4720.5200)

I. Required Data Elements

1. Physical Environment Data Elements

A. Precipitation – Not required per Scoping 2 Decision Notice

B. Geology

This data element is required and is presented in detail in Part I of the WHP Plan dated October, 2009.

The water supply for the City of Mountain Iron public water supply wells generally comes from the Biwabik Iron Formation, which is approximately 650 feet thick. It is generally understood that the Mountain Iron wells obtain groundwater from the Upper Cherty Member of the Biwabik Iron Formation, which is approximately 160 feet thick.

C. Soils – Not required per Scoping 2 Decision Notice

D. Water Resources

This data element, which emphasizes the surface water resources of the Iroquois Mine Pit Lake, is included on Exhibit B, located in the Appendix A of this WHP Plan – Part II. This map indicates the boundaries and flow directions of the Iroquois Mine Pit Lake watershed, along with flow directions of other watersheds within the DWSMA.

2. Land Use Data Elements

A. Land Use

These data elements include any information about the parcel boundaries, political boundaries, land use maps, and zoning maps for the City of Mountain Iron. The following maps are included in Appendix A of this WHP Plan – Part II:

Exhibit C:	Parcel Boundaries Map
Exhibit D:	Political Boundaries Map
Exhibit E:	Land Use Map & Summary Table
Exhibit F:	Existing Zoning Map

The entire DWSMA is located within the city boundaries.

B. Public Utility Services

This data element will include any maps of existing sanitary sewer and public water supply systems within the DWSMA. In addition, a map of existing transportation routes and corridors is also included on Exhibit G-1, located in Appendix A of this WHP Plan – Part II.

- a. Transportation Routes or corridors: Major transportation routes through the DWSMA include County Road (CR) 102 and Old Highway 169. These roadways are utilized primarily for residential and business traffic, however there are commercial vehicles utilizing these roadways that periodically transport hazardous materials to United States Steel – Minntac facility to the north of the DWSMA.
At this time, USS-Minntac and St. Louis County are currently working on establishing a new alignment of existing CR 102 and the USS-Minntac Entrance Road. The new roadways will involve reconstruction within the DWSMA and within close proximity to the Iroquois Mine Pit Lake.
- b. Storm Sewer outfalls: The City of Mountain Iron downtown area lies within the DWSMA and its storm sewer collection system generally discharges storm sewer to the west side of downtown, opposite and down gradient from the City's water supply wells and the Iroquois Pit. There are currently no known public storm sewer outfalls conveying drainage into the Iroquois Mine Pit Lake.
- c. Gas & Oil Pipelines: There are no known oil pipelines within the DWSMA. There is a high pressure gas line owned by Minnesota Energy Resources (MERC) from US Highway 169 to a pump station located along CR 102 within the DWSMA. The location of this pump station is approximately 1200 feet southwest of the City water supply wells. There is a high pressure gas main that feeds USS-Minntac from this transfer station along the western edge of the DWSMA. In addition, the downtown area has low pressure, small diameter natural gas main throughout for its residential and commercial users. This information is shown on Exhibit G-2, located in Appendix A of this WHP Plan – Part II.
- d. Public water supply wells: The only other public water supply wells located within the DWSMA are City wells number 3 & 4. These old municipal wells are currently emergency wells for the City of Mountain Iron. The USS-Minntac water supply well for the administration building is located just north of the DWSMA.

The existing records of the construction, maintenance, and use of the public water supply wells are used to support the development of Chapter 7 of this plan, which details the emergency and conservation plan for the public water system.

C. Potential Contaminant Source Inventory

The number and location of identified potential contaminant sources were summarized from the MPCA website and City staff. A summary of the confirmed Potential Contaminant Source Inventory (PCSI) is shown in Exhibit J, located in Appendix A of the WHP Plan – Part II.

Below is a brief summary of potential contaminant sources:

Table 1
Summary of Potential Contaminant Sources

POTENTIAL CONTAMINANT SOURCE	NUMBER WITHIN DWSMA
WELLS – RESIDENTIAL	1
WELLS – IRRIGATION	0
WELLS – MUNICIPAL	4
WELLS – MONITORING	9
WELLS – UNKNOWN	22
WELLS – CLASS V INJECTION	0
TRANSPORTATION CORRIDOR – ROADS	2 (CR 102 & OLD HIGHWAY 169)
TRANSPORTATION CORRIDOR – GAS LINE	1
HAZARDOUS WASTE GENERATORS	7
TANKS – UST/AST	4
TANKS – LUST	5
POSSIBLE CONTAMINANT SITES (PCS)	3

3. Water Quantity Data Elements

A. Surface Water Quantity – Not required per Scoping 2 Decision Notice

B. Groundwater Quantity

- a. Wells covered by state appropriation permits: There were no wells within the DWSMA with a state appropriation permit other than the City’s municipal wells.
- b. Description of known well interference problems and water use conflicts: The Minntac Administration building, located directly to the north of the DWSMA currently has a high-capacity well that influences the boundary of the wellhead protection area. This well is not located within the DWSMA, but does however impact the WHP area.
- c. Existing list of state environmental bore holes: There are no known state environmental bore holes located within the DWSMA. There are numerous mining exploration test holes located within the DWSMA.

4. Water Quality Data Elements

A. Surface Water Quality – Not required per Scoping 2 Decision Notice

B. Groundwater Quality

- a. Existing summaries of water quality data are included in Part I of the WHP Plan.
- b. Existing summary of water chemistry and isotopic data from wells, springs or other groundwater sampling points is included in Part I of the WHP Plan. No further information has been gathered at this time.
- c. Existing reports of groundwater tracer studies: There are no known groundwater tracer studies within the DWSMA.
- d. Existing site studies and well water analyses of known areas of groundwater contamination: There are no known site studies and well water analyses of known areas of groundwater contamination located within the DWSMA.
- e. Existing property audits identifying contamination: There are no known property audits identifying contamination within the DWSMA.
- f. Existing reports to the Minnesota Department of Agriculture (MDA) and the Minnesota Pollution Control Agency (MPCA) of contaminant spills and releases: The potential contaminant source inventory indicated that there are no MDA reported sites and 9 active MPCA hazardous waste sites within the DWSMA. Each of the leak sites has an associated report that would include details of the related spill and/or release.

II. Assessment of the Data Elements

A. Use of the Well:

The City of Mountain Iron currently uses Well #1 (Unique #150524) and Well #2 (Unique #150526) as primary public water supply wells. Both wells are completed at similar depths and are located in the vicinity of the southern edge of the Iroquois Pit. The City of Mountain Iron currently pumps approximately 275,000 gallons per day on average. The City has a 1,000,000 gallon ground storage reservoir and a 450,000 gallon elevated tank. The City treatment plant provides disinfection, fluoridation and iron and manganese removal.

B. Wellhead Protection Delineation Criteria:

Criteria specified in part 4720.5510 was outlined and detailed in Part I of the Wellhead Protection Plan, prepared by James F. Walsh, Minnesota Department of Health.

C. Quality & Quantity of Water Supplying the Public Water Supply Wells:

Water quality for this public water supply indicated tritium levels of 7.1 – 8.5 units in samples taken on July 31, 2008. Tritium in the public water supply indicates a short time period which surface water recharges the aquifer utilized by the public water supply wells. The public water supply wells may be impacted by human activities and are considered potentially vulnerable to contamination.

The quantity of water is considered adequate for the City's needs. Please refer to the table shown in Exhibit M, located in Appendix A of the WHP Plan – Part II, which outlines the quantity of water used since 2003.

- D. Land & Groundwater Uses in the Drinking Water Supply Management Area:
The overall land use in the DWSMA consists of residential, commercial, industrial, forest, and mining/mineral uses. Other than the City's public water supply system, there will be minimal groundwater use within the DWSMA.

CHAPTER 2

IMPACT OF CHANGES ON PUBLIC WATER SUPPLY WELLS (4720.5220)

I. Identify and Describe Expected Changes In:

A. Physical Environment

It is not anticipated that there will be large scale changes in the physical environment within the DWSMA during the next 10 years. As previously mentioned, the CR 102 and USS-Minntac Entrance Road will be realigned within the DWSMA, but impacts to the public water supply system should be negligible. The USS-Minntac long range mining plan may encroach on the far westerly edge of the DWSMA, however this encroachment is likely to occur beyond the 25 year time period.

B. Land Use

Based upon recent development activity and projected work, the City of Mountain Iron does expect to have modifications to the land use within the DWSMA during the next 10 years. These expected land use changes will be summarized with a brief description of the anticipated modifications.

CR 102 & USS-Minntac Entrance Road Construction

As a part of USS-Minntac Mine's long range planning, they have had ongoing discussions with St. Louis County and the City of Mountain Iron to discuss the relocation of CR 102 and their mine entrance roadway. At this time, it is expected that the revised location of CR 102 will be from Mineral Avenue (north of US Highway 169) to CR 109 (Nichols Drive) in Parkville area. In addition, the proposed mine entrance roadway will run along the east side of the Iroquois Mine Pit Lake to the current entrance location.

Please refer to Exhibit K, which is located in Appendix A of the WHP Plan – Part II. The majority of this roadway realignment work will occur within the DWSMA and a portion will be directly within the Iroquois Mine Pit Lake watershed.

Mountain Iron Renewable Energy Park Development lots

The City of Mountain Iron has recently undertaken the platting and development of 7-8 lots within the Renewable Energy Park Development. This Renewable Energy Park is located on the southerly portion of the DWSMA, just north of US Highway 169. Grading and site development work began in 2010 and the Silicon Energy facility, which manufactures solar panels, began production in September 2011. The remaining six 2-4 acre lots are available for development.

Mountain Iron Dump Site #2

The City of Mountain Iron has entered the Voluntary Investigation and Cleanup (VIC) program with the MPCA regarding this municipal waste disposal site that was active

from 1959 to 1981. Dump Site #2 is located within the DWSMA adjacent to Mineral Avenue (CR 102) approximately 1200 feet southwest of the City of Mountain Iron municipal wells.

In May of 2011, the City had soil borings and water monitoring wells drilled at Dump Site #2 and the City of Mountain Iron is currently pursuing further funding for the remediation and cleanup of this facility. It is anticipated that Dump Site #2 would be cleaned up within 10 year life of the WHP Plan.

City Commercial, Industrial, and Residential Development lots

Outside of the limits of the DWSMA, but within the area served by the City of Mountain Iron municipal wells, the City of Mountain Iron has several commercial, industrial and residential lots available for development. As these lots are sold and developed, the public water supply is impacted with a new user. Based upon previous projects, ongoing development, and future planning, it is not anticipated that the development of these lots will significantly impact public water supply wells.

C. Surface Water

Other than realigned USS-Minntac Mine entrance roadway along the eastern side of the Iroquois Pit, there are no other anticipated changes to the surface water within the next 10 years. The entrance roadway will be designed to convey stormwater runoff easterly away from the Iroquois Mine Pit Lake, this limiting direct stormwater discharges to the Iroquois Mine Pit Lake, which according to Part I of the WHP Plan, may have influence on the City of Mountain Iron public water supply wells.

D. Groundwater

The public water supply wells have generally provided groundwater of excellent quality and quantity for the City of Mountain Iron. As of the date of the preparation of Part II of the WHP Plan, while some additional expansion and users may utilize the system in the next 10 years, the public water supply does not anticipate a significant increase in water use within the DWSMA or the surrounding area.

II. Impact of Changes – List, Describe, and Assess Impacts on Aquifer From:

A. Expected Changes Identified Above

The overall land use changes outlined above may have some minor impacts on the aquifer. The most significant impact would likely be an increase in developed stormwater runoff within the Iroquois Mine Pit Lake watershed. The stormwater outfall and drainage planning shall direct stormwater away from the Iroquois Pit, thus limiting the impact to the surface water quality. It is not anticipated that there will be anything but minimal groundwater changes within the aquifer due to land use modifications

There may be a potential increase in water use and demand within the next 10 years due to the City of Mountain Iron's commercial, industrial, and residential lots available.

B. Influence of Existing Water and Land Government Programs & Regulation

There are various county and state programs that may provide assistance and benefits in managing potential contaminant sources identified in the DWSMA. The Minnesota Department of Health (MDH) regulates well construction by the Minnesota well code. Code requirements include isolation distances along with construction criteria design to protect the well and aquifer. The MDH has provided the City of Mountain Iron information regarding the old municipal wells which will be addressed in the WHP Plan – Part II.

The MPCA website provides information regarding potential contaminant sources within the DWSMA. The MPCA works directly with the MDH to monitor potential impacts of LUST, AST, & UST sites within the DWSMA.

At this time, there is no discussion or intention to require additional regulation regarding well management or storage tanks within the DWSMA. The City of Mountain Iron does have an ordinance which prohibits the connection of any private well to a plumbing system so that it interconnects with the public water supply system.

C. Administrative, Technical, and Financial Considerations

Administrative:

The City of Mountain Iron did not elect to assemble a Wellhead Protection Team, but for all intents and purposes the assembling of this WHP Plan – Part II is from the coordinated efforts of the following:

Craig Wainio, City Administrator (WHP Manager)
Don Kleinschmidt, former Public Works Director
Tim Satrang, Water/Wastewater Operator
Eric Fallstrom, P.E., Benchmark Engineering, Inc. (City Engineer)
Beth Kluthe, Minnesota Department of Health

The administrative duties for the implementation of the WHP Plan will remain with the Wellhead Protection Manager, Craig Wainio. The Wellhead Protection Manager will report to the City of Mountain Iron, coordinate implementation of the WHP Plan management action plans, and conduct meetings as required.

Technical:

City of Mountain Staff and Benchmark Engineering, Inc. have the expertise required to implement the WHP Plan with the assistance from the MDH, St. Louis County Soil & Water Conservation District, and Minnesota Rural Water Association.

Financial:

The City of Mountain Iron has limited funds available for new programs and implementation of the WHP Plan. At this time, the initial wellhead protection measures will be funded with the City's water supply operating fund. The City of Mountain Iron will evaluate the merit of adding a WHP Plan line item fund to its 2012 budget process to continue financing of the plan implementation.

Other sources of funding for the WHP Plan implementation include:

1. MDH made the City aware of a Legacy grant funds provided, in which the City could apply to obtain funds to assist with WHP Plan – Part II implementation.
2. The City Administrator & Wellhead Protection Manager will work with any state and federal agencies to apply for and secure grant and low interest loan funds to work toward WHP Plan – Part II implementation.
3. Minnesota Rural Water Association (MRWA) has various funding opportunities for grants and/or loans.

The costs of implementing Wellhead Protection activities will be evaluated yearly within the City of Mountain Iron's regular budgetary process. Consideration shall be given to the scope of the implementation activities, changes in the status of the potential contaminant source inventory, and actual costs related to proper sealing of the unused/unsealed Wells #3 & #4.

As actual costs may vary from projected from the WHP Plan, the City may need to allocate additional funding for plan implementation or seek out additional state and/or federal funding assistance.

CHAPTER 3 ISSUES, PROBLEMS, AND OPPORTUNITIES (4720.5230)

I. Water Use and Land Use Issues, Problems and Opportunities Related to:

A. The Aquifer Serving the Public Water Supply Wells

The aquifer is a part of the Biwabik Iron Formation, which is approximately 650 feet thick. The aquifer thickness used for calculation purposes was based on the thickness of 160 feet, which is generally the Upper Cherty member of the formation. Part I of the WHP Plan recommended that the thickness of the Upper Cherty member be verified using logging equipment when the City of Mountain Iron needs to conduct maintenance on the wells that would require short term removal of the well pumps.

At this time, the aquifer appears to have sufficient capacity to meet the City of Mountain Iron's water needs.

B. The Well Water

The WHP Plan is primarily concerned with other water supply wells, storage tanks, and other potential contaminant sources located within the DWSMA and WHPA. At this time, the potential contaminant source inventory (PCSI) did not indicate any other high capacity wells within the City's DWSMA; however, the USS-Minntac high capacity well is located just north of the WHPA. This may have an influence on the City's well water and aquifer and should be monitored into the future.

The potential contaminant source inventory performed identifies wells, tanks, and other influences within the DSWMA. The City intends to utilize public education opportunities identified in Chapter 5 of this WHP Plan to address potential contamination of the aquifer and well water by other wells.

The placement of additional high-capacity wells, increased pumping from existing wells, or significant changes in groundwater appropriations within the DWSMA may have an impact on the following:

1. Groundwater availability to users
2. Increased risk that contamination may enter the aquifer or City wells
3. Modify the delineated WHP area and DWSMA boundaries

The City of Mountain Iron will work with the Minnesota Department of Natural Resources (MnDNR) and the MDH to become aware of any proposed high-capacity well within the DWSMA and to work with the potential well owner to eliminate or minimize potential impacts to the City's public water supply system.

C. The Drinking Water Supply Management Area (DWSMA)

As identified in Part I of the WHP Plan, the majority of the DWSMA is considered to be of moderate vulnerability, with the three mine pits within the DWSMA considered to be of very high vulnerability.

The entire DWSMA lies within the City limits and is under control of the City Council with regards to future development and land use controls. To increase awareness of wellhead protection, the City of Mountain Iron intends to implement steps outlined in Chapter 5 of this WHP Plan. At this time, the only significant land use change planned within the WHP Area is the construction of the new County Road 102 and USS-Minntac Entrance Road.

II. Identification and Assessment of:

A. Problems and Opportunities disclosed at public meetings and in written comment

A question regarding tritium levels was raised during the public hearing for Part I of the Wellhead Protection Plan. Future monitoring will be done with the water of the Iroquois Mine Pit Lake and the City wells to determine the approximate level of surface water influence to the public water supply system.

The 60-day public comment period for the WHP Plan – Part II was closed on October 27, 2011. There were no written comments submitted by governmental agencies.

The public hearing for Part II of the WHP Plan was held on November 7, 2011 at 5:30pm at the Mountain Iron Community Center. The WHP Plan was briefly summarized and general questions of the City Council were answered. The meeting was opened for public comment on the WHP Plan – Part II and there were no public comments received.

B. Data elements

The State of Minnesota's Wellhead Protection Rule requires that any existing information be utilized in developing the initial WHP Plan. Much of the data collected and utilized to delineate the WHPA and DWSMA comes from MDH, SWCD, MnDNR, and other state and county public sources.

The City of Mountain Iron plans to continue to collect localized well and groundwater data throughout the life of the ten year WHP Plan. Necessary revisions to the WHP plan will be made to incorporate data elements that would make the plan more accurate.

The City of Mountain Iron intends to work with the Minnesota Department of Health (MDH) to develop a monitoring strategy to track the water quality in the Iroquois Mine Pit Lake. This will allow the City and MDH to monitor and detect any changes in water quality and provide the appropriate modifications as necessary to the WHP Plan – Part II.

Another important component of this will be to request that USS-Minntac continue to monitor water level data in the Iroquois Mine Pit Lake and the Wacootah Mine Pit Lake as the mining expansion and operations impact these water levels. The City of Mountain Iron intends to also work with the MDH to develop a water level and/or quality monitoring program as the mining expansion continues and may impact the City DWSMA.

The required data elements requested in the Scoping 2 Decision Notice are incorporated into the Appendix to this Part II of the WHP Plan.

- C. Status and adequacy of official controls, plans, and other local, state, and federal programs on water use and land use

Various existing agencies and regulations may be used to achieve the identified wellhead protection planning goals identified in Chapter 4 of this WHP Plan. State and local governmental units such as St. Louis County, MDH, MnDNR, and the City of Mountain Iron enforce land use ordinances, zoning laws, sewer ordinances, well permits and state groundwater appropriation permits in and around the WHPA and DWSMA.

At this time, it is not recommended to impose additional regulations in order to implement the City of Mountain Iron's WHP Plan. The WHP Plan can be successfully implemented through existing processes including public education and best management practices.

CHAPTER 4

WELLHEAD PROTECTION GOALS (4720.5240)

The overall goal of the City of Mountain Iron Wellhead Protection Plan is to promote the public health, infrastructure, and development by maintaining a viable public water supply system at a reasonable cost for all residents, businesses, and consumers in the City, both now and into the future.

The Wellhead Protection Plan's goals for present and future water use include the following:

1. Monitor the installation of any new high capacity wells or mine dewatering sumps within the City well field.
2. Monitor the output from the City wells to determine increase in water consumption.
3. Promote water conservation by the means of public education and awareness.
4. Monitor the potential contaminant sources within the DWSMA and their potential impact to the public water supply wells.

The Wellhead Protection Plan's goals for the present and future land use include the following:

1. Increase awareness of the DWSMA.
2. Limit stormwater discharge near the Iroquois Mine Pit.
3. Promote responsible development near the Iroquois Mine Pit and within the DWSMA.
4. Consider modifications to the WHP Plan as development and land use within the DWSMA changes within coming years.

It is the intention of the Wellhead Protection Program to achieve these stated goals and objectives by proposed programs including:

- Well Sealing Programs
- Best Management Practices
- Emergency Response Procedures and Contingency Plans
- Public Education & Information

In addition, a further goal of the Wellhead Protection Plan includes the implementation of the recommendations provided by the Minnesota Department of Health as outlined in the Wellhead Protection Plan – Part I. These items are as follows:

1. Addressing deficiencies in the distribution and quality of subsurface geologic information.
2. Addressing the surface water & groundwater exchange between the City municipal wells and the Iroquois Mine Pit water.
3. Conduct a longer term aquifer test in the future to more accurately determine the hydraulic conductivity of the Biwabik Iron Formation Aquifer.
4. Monitor future water use factors to determine if a revision to the WHPA or DWSMA is required.

CHAPTER 5

OBJECTIVES & PLAN OF ACTION (4720.5250)

I. Establishing Priorities for the Plan of Action

The City of Mountain Iron staff and Benchmark Engineering, Inc. considered several factors in order to establish priorities for the Plan of Action for the Wellhead Protection Plan – Part 2 implementation. Such factors include:

- Contamination of the City's public water supply wells
- Quantities of the potential contaminant sources within the DWSMA
- Location of the potential contaminant sources relative to the public water supply wells
- The capability of the aquifer and geologic material to absorb a potential contaminant
- The effectiveness of existing controls
- The time required to obtain cooperation from other agencies, organizations and stakeholders
- The administrative, legal, technical, and financial resources needed

Based upon the listed factors, the identified action items that are to be implemented by the City of Mountain Iron over the 10 year period that its Wellhead Protection Plan is in effect consists of the following:

- A. Public Education
- B. Inner Wellhead Management Zone (IWMZ)
- C. Potential Contaminant Source Management & Inventory
- D. Data Collection
- E. Roadway & Railway Transportation Corridor Management
- F. Contingency Planning
- G. Reporting

II. Management & Implementation of the Plan of Action

A. Public Education

Objective A: Work to establish an effective line of communication between the City of Mountain Iron and the citizens and other users of the public water supply wells. In addition, properly show how various land use activities and impact the water quality.

WHP Measure A-1: Install informational signs at the perimeter of the wellhead protection area on major roadways. This will include working with the Minnesota Department of Transportation for signs placed on Highway 169.

Source of Action: City of Mountain Iron

Cooperator(s): Minnesota Department of Transportation

Time Frame: 2013

Estimated Cost: Staff Time & 4 Signs @ \$100/EA = \$400

Goal Achieved: Residents, visitors and general population are made aware of the wellhead protection area.

WHP Measure A-2: Provide the approved wellhead protection plan on the City of Mountain Iron's official web site. Add any WHP Plan updates and modifications at regular intervals.

Source of Action: City of Mountain Iron & Benchmark Engineering, Inc.

Cooperator(s): None

Time Frame: 2012 & Ongoing

Estimated Cost: Staff Time

Goal Achieved: Wellhead protection plan is posted for all users of the City's web site and general awareness of WHPP goals and objectives can be reviewed.

WHP Measure A-3: Create an article for "The Connector", the City's quarterly newsletter that is distributed in utility bills. Periodic updates and refreshers regarding the WHP Plan can be distributed every other year.

Source of Action: City of Mountain Iron

Cooperator(s): None

Time Frame: 2012, 2014, 2016, 2018, 2020

Estimated Cost: Staff Time

Goal Achieved: Users of the City's public water supply wells are educated about the WHP Plan and the importance of protecting the City's water supply.

WHP Measure A-4: The City of Mountain Iron will develop a tri-fold informational brochure explaining the WHP Plan and its purpose. This brochure can be distributed thru

local outlets (such as utility bill inserts) and available at City Hall for residents served by the public water supply system along with the general public.

Source of Action: City of Mountain Iron & Benchmark Engineering, Inc.

Cooperator(s): MDH, MRWA

Time Frame: 2013 & Ongoing updates as needed

Estimated Cost: Staff Time & Brochures (\$300)

Goal Achieved: Residents and water customers become better informed about WHP Plan which will lead to public acceptance and a level of responsibility regarding water quality issues within the WHP Area.

WHP Measure A-5: Present the wellhead protection plan information to the City Council to brief all new members and refresh existing members periodically.

Source of Action: WHP Manager

Cooperator(s): None

Time Frame: 2012, 2014, 2016, 2018, 2020

Estimated Cost: Staff Time

Goal Achieved: Wellhead protection plan and its importance are understood by the City leaders and policy makers.

B. Inner Wellhead Management Zone (IWMZ)

Objective B: Effectively manage the Inner Wellhead Management Zone (IWMZ) to reduce the likelihood of contaminants from entering the public water supply wells at levels to cause human health impacts.

WHP Measure B-1: Review and update the IWMZ inventory for all wells in the system.

Source of Action: WHP Manager

Cooperator(s): MDH, MRWA

Time Frame: 2014, 2017, 2020

Estimated Cost: Staff Time

Goal Achieved: City staff and WHP Manager will remain informed about well activities within the IWMZ and DWSMA.

WHP Measure B-2: Continue to monitor setbacks for any new potential sources of contamination located within the IWMZ.

Source of Action: WHP Manager

Cooperator(s): MDH, MRWA

Time Frame: Ongoing

Estimated Cost: Staff Time

Goal Achieved: Any new potential contaminants sources will meet required setbacks.

WHP Measure B-3: Implement the WHP measures identified in the IWMZ inventory (See Exhibit H, located in Appendix A of this WHP Plan – Part II).

Source of Action: WHP Manager

Cooperator(s): MDH, MRWA

Time Frame: Annually

Estimated Cost: Staff Time

Goal Achieved: Reduce the risk of potential contaminants from impacting the wells.

C. Potential Contaminant Source Management & Inventory

Objective C: Increase the awareness about the importance of WHP measures for ensuring a safe and adequate public drinking water supply. Effectively monitor, identify, or seal any old municipal wells, private wells, high capacity wells, and Class 5 wells within the DWSMA. Summarize and monitor various potential contaminant sources within the WHP Area and review and update the WHP Plan as required.

WHP Measure C-1: City staff and WHP Manager will obtain and distribute brochures to private landowners describing proper well maintenance and operation.

Source of Action: WHP Manager and City Staff

Cooperator(s): MDH, Soil & Water Conservation District, and local well drillers.

Time Frame: 2012

Estimated Cost: Staff Time & Brochures (\$300)

Goal Achieved: Private well owners within the DWSMA will learn proper well maintenance and operation procedures thus limiting contamination of the City public water supply.

WHP Measure C-2: Obtain cost estimates and explore potential funding opportunities to seal old municipal Well #3 (239976) and Well #4 (229166).

Source of Action: WHP Manager, Water Operator, & Benchmark Engineering

Cooperator(s): MDH

Time Frame: 2012

Estimated Cost: \$1500 and Staff Time

Goal Achieved: Establish a time line for proper sealing of temporarily abandoned municipal Wells #3 & #4.

WHP Measure C-3: Manage old municipal Well #3 (239976) and Well #4 (229166) by permanently sealing when outside funding can be obtained along with City funds from the water department.

Source of Action: WHP Manager, Water Operator, & Benchmark Engineering

Cooperator(s): MDH

Time Frame: 2012-2015

Estimated Cost: \$25,000

Goal Achieved: Old municipal Wells #3 & #4 are properly sealed and removed from system.

WHP Measure C-4: Utilize informational packets to educate the above ground and below ground tank owners within the DWSMA on the importance of leak prevention and control of material from tanks.

Source of Action: WHP Manager and City Staff

Cooperator(s): MDH, MPCA, & MRWA

Time Frame: 2012 & 2017

Estimated Cost: Staff time & Brochures (\$300)

Goal Achieved: Tank owners become more aware of leak prevention, detection, control and management of storage tanks within the DWSMA, thus reducing possible contamination of the City's public water supply system.

WHP Measure C-5: Potential locations of Class V Wells within the DWSMA will be inventoried by direct contact with the landowner or business owner. A Class V Well Fact Sheet and reporting requirements will be provided to the landowner describing the Class V Well and its impacts on groundwater quality.

Source of Action: WHP Manager and City Staff

Cooperator(s): MDH, MPCA, & MRWA

Time Frame: 2013 and as needed

Estimated Cost: Staff time & Mailings (\$100)

Goal Achieved: Class V Well owners within the DWSMA will better understand their responsibilities and the importance to limit contamination of the City public water supply.

WHP Measure C-6: Identify new private wells within the DWSMA and request that the County identify the City's WHP Area and DWSMA in the county tax records and data base. Request that local well drillers inform the City of Mountain Iron & MDH of proposed new wells to the located within the DWSMA.

Source of Action: WHP Manager and City Staff

Cooperator(s): Local Well Drillers, MDH, MRWA, & St. Louis County

Time Frame: 2012, 2015, 2018

Estimated Cost: Recording fees (unknown) and Mailings (\$100)

Goal Achieved: Private well owners will be made aware that their property is within the DWSMA and they are subject to the City of Mountain Iron's WHP Plan. The City's WHP Plan can be kept up to date with new wells within the DWSMA.

WHP Measure C-7: Identify new high capacity wells that are proposed for construction within the DWSMA and continue to work with USS Minntac regarding their high capacity well located near the administration building just north of the WHP Area and DWSMA. Any proposed new high capacity wells or changes to existing appropriation permits will be

evaluated by MDH staff to determine whether the pumping of wells will alter the current boundaries of the DWSMA, require modifications to the City's WHP Plan, or affect the vulnerability of the aquifer. The City, MDH and MnDNR Water Appropriations Program would meet with owners of the high capacity wells to discuss impact to the City's WHP Plan and any required modifications.

Source of Action: WHP Manager, City of Mountain Iron, & MDH

Cooperator(s): MDH, MnDNR, and USS Minntac (Thomas Moe)

Time Frame: 2013 & ongoing

Estimated Cost: Staff time and MDH time (unknown cost)

Goal Achieved: High capacity well owners will be made aware of impacts to the City's WHP Area and WHP Plan can be modified as required.

WHP Measure C-8: The stormwater impacts to the water bodies within the WHP Area shall be carefully reviewed as development occurs within the WHP Area. Development shall be in compliance with the MPCA Construction Stormwater Program and any required NPDES permit for the development.

Source of Action: City Staff and Benchmark Engineering, Inc.

Cooperator(s): Local developers & Consultants

Time Frame: Ongoing

Estimated Cost: None

Goal Achieved: Stormwater impacts to water bodies within the DWSMA can be minimized with proper Best Management Practices and awareness of the WHP Area limits.

WHP Measure C-9: Clean up and closure of Mountain Iron Dump #2, located to the southwest of the public water supply wells, within the WHP Area. The City of Mountain Iron has currently entered into the MPCA Voluntary Investigation & Cleanup (VIC) Program at the site and some preliminary field work, monitoring wells and response action plan have been completed.

Source of Action: City Staff, Benchmark Engineering, Inc., and Bonestroo-Stantec

Cooperator(s): MPCA

Time Frame: 2013

Estimated Cost: Spent to date: \$150,000 Future costs: Unknown

Goal Achieved: Provide groundwater monitoring, analysis and testing of old dump material to ensure the groundwater quality within the DWSMA is not further impacted.

D. Data Collection

Objective D: Enhance future WHP Area and DWSMA delineation efforts and gain additional knowledge about the aquifers and water sources for the City of Mountain Iron's public water supply system. In addition, the recommendations from the WHP Plan – Part 1 shall be incorporated into this WHP Plan – Part 2.

WHP Measure D-1: Complete a borehole investigation of the existing wells with proper logging equipment. This work can be coordinated with any expected maintenance or repair of its wells that would require short-term removal of pumps. The MDH and Minnesota Geological Survey have equipment for this purpose and allow its use in certain scheduled scenarios.

Source of Action: WHP Manager and Water Operator

Cooperator(s): MDH & Minnesota Geological Survey

Time Frame: 2013

Estimated Cost: \$20,000

Goal Achieved: Provide an accurate determination of the aquifer thickness to the MDH in order to properly define the WHP Area.

WHP Measure D-2: Work with MDH to verify location and elevations of any new wells constructed within one mile of the City wells. In addition, the City of Mountain Iron should measure the static water level at the City wells on an annual basis.

Source of Action: WHP Manager and Water Operator

Cooperator(s): MDH & USS Minntac

Time Frame: Annually

Estimated Cost: Staff Time

Goal Achieved: Information will help address uncertainties regarding hydraulic head in the Biwabik Iron Formation Aquifer and will help verify or modify the delineation technique for the WHP Area boundary.

WHP Measure D-3: Work with MDH to sample the City wells and the Iroquois Mine Pit Lake for the stable isotopes of water, chloride, bromide and sulfate. The sampling will be performed by the City, but the MDH will pay for analysis.

Source of Action: WHP Manager and Water Operator

Cooperator(s): MDH

Time Frame: 2018

Estimated Cost: Staff Time

Goal Achieved: Allow the MDH to track the relationship between the Mountain Iron City wells and the Iroquois Mine Pit Lake. The delineation of the WHP Area may need revision based upon results.

WHP Measure D-4: Work with MDH to conduct a long term aquifer test in the future, if required as mining expansion & operations change.

Source of Action: WHP Manager, Water Operator, USS-Minntac & Consultant

Cooperator(s): MDH

Time Frame: 2017

Estimated Cost: \$150,000-\$200,000

Goal Achieved: More accurately determine the hydraulic conductivity of the Biwabik Iron Formation Aquifer.

WHP Measure D-5: The City of Mountain Iron shall track the water uses of its wells every other year. Please refer to the table in Exhibit M, located in Appendix A.

Source of Action: Water Operator

Cooperator(s): MDH

Time Frame: 2013, 2015, 2017, 2019, 2021

Estimated Cost: Staff Time

Goal Achieved: Determine if a revision to the WHP Plan or DWSMA is required based upon annual water usage from City wells.

WHP Measure D-6: Review the water quality/level monitoring of the Iroquois Mine Pit Lake to determine impacts of mining expansion

Source of Action: Water Operator, USS-Minntac & Consultant

Cooperator(s): MDH

Time Frame: 2015

Estimated Cost: Staff Time

Goal Achieved: Determine if a revision to the WHP Plan or DWSMA is required based upon water level and/or quality data received.

E. Roadway & Railway Transportation Corridor Management

Objective E: Reduce the potential contamination risk from transportation corridors within the DWSMA.

WHP Measure E-1: See WHP Measure A-1.

Source of Action: City of Mountain Iron

Cooperator(s): Minnesota Department of Transportation

Time Frame: 2012

Estimated Cost: Staff Time & 4 Signs @ \$100/EA = \$400

Goal Achieved: Transporters of hazardous materials are aware of the WHP Area and their actions within the DWSMA.

WHP Measure E-2: Inform and develop a working relationship with local response teams with Canadian National (CN) Railroad and USS – Minntac concerning the vulnerable areas within the DWSMA and how to handle major accidents or spills to minimize impact on the City's public drinking water supply system.

Source of Action: City of Mountain Iron & WHP Manager
Cooperator(s): CN Railroad, USS – Minntac, other key businesses within DWSMA
Time Frame: 2012
Estimated Cost: Staff Time
Goal Achieved: Local response and safety teams will be made aware of the WHP Area and DWSMA.

WHP Measure E-3: Coordinate with the planning, design, and construction of the new County Road 102 and USS – Minntac Entrance road regarding the work to be completed within the DWSMA. Stormwater, erosion, and sediment control shall be managed in accordance with appropriate Best Management Practices as determine by the MPCA.

Source of Action: City Staff & Benchmark Engineering, Inc.
Cooperator(s): USS – Minntac and St. Louis County
Time Frame: 2012-2013
Estimated Cost: Staff Time & Time included with consulting fees for roadway design.
Goal Achieved: New County Road 102 and USS – Minntac Entrance roadway are planned, designed, and constructed in a manner to limit long term impacts to the City wells and public water supply system.

F. Contingency Planning

Objective F: Improve the readiness and capabilities of the City of Mountain Iron to respond to drinking water emergencies or any other threats to the City wells and public drinking water supply system.

WHP Measure F-1: Review and update the City’s WHP contingency plan every 5 years.

Source of Action: WHP Manager, Water Operator, & Benchmark Engineering, Inc.
Cooperator(s): City Staff & City Council
Time Frame: 2016 & 2021
Estimated Cost: Staff Time
Goal Achieved: The contingency plan is periodically reviewed, revised and updated to incorporate modifications as required.

G. Reporting

Objective G: Complete an evaluation and reporting program at periodic intervals of the WHP Plan

WHP Measure G-1: Provide an annual update of the wellhead protection tasks, efforts, goals and completions. Present this information to the City Council and provide a copy to the MDH.

Source of Action: WHP Manager, Water Operator, & Benchmark Engineering, Inc.

Cooperator(s): City Council & MDH

Time Frame: Annual

Estimated Cost: Staff Time

Goal Achieved: Provides accountability for City Staff, WHP Manager, and the City Council for tracking whether or not objectives and action plans are being met or need to be revised.

WHP Measure G-2: Provide a summary and assessment of WHP plan implementation and funding efforts every 2½ years.

Source of Action: WHP Manager and Water Operator

Cooperator(s): City Council & MDH

Time Frame: 2014, 2017, 2019

Estimated Cost: Staff Time

Goal Achieved: Determines what parts of the WHP Plan have been successfully implemented and areas that need further development along with securing of funding to complete work.

CHAPTER 6

EVALUATION PROGRAM (4720.5270)

The success of the wellhead protection program must be evaluated in order to determine whether the WHP Plan is accomplishing what the City of Mountain Iron and MDH set out to accomplish. The City intends to follow a monitoring and evaluation program that includes the following:

- Track the implementation of objectives and action plans outlined in Chapter 5 of this WHP Plan.
- Determine the effectiveness of specific management strategies regarding the protection of the City's public water supply.
- Identify any possible changes to these strategies which may improve their effectiveness.
- Determine whether there is adequate financial resources and City staff availability to carry out the management strategies planned for the coming years.

The City of Mountain will focus on the following activities to accomplish the above goals.

1. The WHP Manager and Water Operator of the public water supply system will continue to cooperate with the MDH in the annual monitoring of the water supply to determine whether the management strategies are having a positive effect and to identify water quality problems that may arise.
2. The WHP Manager, Water Operator, and Benchmark Engineering, Inc. will travel through the DWSMA on a regular basis to identify any changes in land use or potential contaminant source management practices which may adversely impact the City's public water supply.
3. The WHP Manager, Water Operator, City Administrator, and Benchmark Engineering, Inc. will meet as needed, with a minimum of one annual meeting, to review the results of each strategy implemented during the previous WHP Plan year and discuss whether modifications are needed for those strategies, and whether additional strategies are needed for upcoming years.
4. The WHP Manager will make an annual written report to the governing authority regarding progress in implementation of the WHP management objectives of this Plan. The annual reports will be compiled and used to review the overall progress in implementing source management strategies when the City's WHP Plan is updated in 10 years. A copy the annual written reports will be sent to the MDH Source Water Protection Unit in St. Paul and another copy should be placed in the City's Wellhead Protection file.

CHAPTER 7
ALTERNATE WATER SUPPLY; CONTINGENCY STRATEGY (4720.5280)

The City of Mountain Iron Water Operator is currently working toward the completion of the City of Mountain Iron’s Emergency Preparedness and Contingency Plan, which will be submitted to the Minnesota Department of Natural Resources for approval.

A. PURPOSE

The purpose of this Contingency Plan is to establish, provide, and keep updated, certain emergency response procedures and information for the public water supply system, which may become vital in the event of a partial or total loss of public water supply services.

B. PUBLIC WATER SUPPLY CHARACTERISTICS

Current Supply Source –

Information	Well Number 1	Well Number 2
Identification	150524	150526
Supply Source	Groundwater	Groundwater
Well Depth (Ft.)	375	425
Well Diameter (In.)	12	12
Well Capacity (gpm)	460	460
Well Production (gpm)	110	90

Treatment –

The City of Mountain Iron’s Water Treatment Facility (WTF) is located approximately ¼ mile west of the City’s wells. The WTF provides disinfection, fluoridation, iron removal and manganese removal to the well water prior to distribution to the general public via the City water supply mains.

Storage & Distribution –

Storage consists of a 1,000,000 gallon ground storage reservoir and a 450,000 elevated tank. The City of Mountain Iron uses approximately 275,000 gallons per day on average.

Maps / Plans –

Distribution system maps and plans are on file at the City Hall, City public works offices, and at the office of the City Engineer, Benchmark Engineering, Inc. located at 8878 Main Street, Mountain Iron.

C. PRIORITY OF WATER USERS DURING A WATER SUPPLY EMERGENCY

Water Use Category	Maximum Daily Use (gpd)	Minimum Daily Use (gpd)
Residential	TBD	TBD
Institutional	NA	NA
Commercial	NA	NA
Industrial	NA	NA
Irrigation	NA	NA
Unaccounted	NA	NA
Wholesale	NA	NA

Triggers for implementing water supply reduction and/or allocation procedures:

In the event of a malfunction of the City’s wells or in response to a situation where potable water is not available, the City of Mountain Iron will enact the water contingency plan.

D. ALTERNATIVE WATER SUPPLY OPTIONS

Surface water sources and treatment needs

The City of Mountain Iron’s public water supply wells are located in close proximity to the Iroquois Mine Pit Lake. This lake could serve as a potential emergency water source. The Minnesota National Guard may be able to provide emergency treatment of this surface water source for human consumption. In the event of a water disruption emergency, the following procedure is recommended.

- A. Contact the Mountain Iron office of the St. Louis County Sheriff’s Department at (218) 748-7574 to request assistance from the Minnesota National Guard.
- B. The St. Louis County Sheriff’s Office request Minnesota National Guard Assistance from the Minnesota Duty Officer (800) 422-0798 who contacts the Division of Homeland Security and Emergency Management (HSEM) to process the request.
- C. The Minnesota National Guard can provide a portable Reverse Osmosis Water Purification System (ROWPS) to assist with water purification.

Bottled water supplies, delivery and distribution

Bottled water is available at several locations in the surrounding communities of Buhl and Virginia, both within a 10 mile radius of the City of Mountain Iron. Distributors that could be contacted to provide & delivery large quantities of bottled water are as follows:

Buhl Water Company, Buhl, MN	(218) 258-3258
Aysta Water Inc., Virginia, MN	(218) 749-4426
Culligan Water, Virginia, MN	(218) 741-2997
Bartoletti Beverage, Virginia, MN	(218) 741-4427

System interconnects with other water supplies

The City of Mountain Iron public water supply system can be connected to the municipal water system of the Virginia Public Utilities, by opening a valve on the 12” watermain located at 13th Street South. The Virginia Public Utilities water system is also connected via valves and watermain to the municipal water distribution systems of Eveleth & Gilbert.

The following shall be contacted to coordinate the supply of water to the City of Mountain Iron and opening of the valve on 13th Street South in the case of a water emergency:

Mr. Greg French, General Manager, Virginia Public Utilities	(218) 748-7540
Mr. Don Rindfuss, Director – Outside Distribution	(218) 748-7540
Ms. Nancy Graham, Director – Outside Distribution	(218) 748-7540

New Well

At this time no other wells are planned. This will likely be reviewed and considered by the Mountain Iron Utility Advisory Board at some point in the future.

Emergency or backup wells

The City of Mountain Iron currently has two emergency wells; Well Number 3 (239976) and Well Number 4 (229166). These emergency wells are no longer connected to the distribution system and have not been utilized for several years. The City of Mountain Iron has pursued funding to complete the proper abandonment and closure of these two emergency wells in 2012-2013.

Source Management (blending)

Blending is likely not a viable option, as both active City of Mountain Iron wells are finished within the same aquifer.

E. INVENTORY OF AVAILABLE EMERGENCY EQUIPMENT AND MATERIALS

The following table contains a list of services, equipment and supplies that are available to the public water supply system to respond to a disruption in the water system. It is expected that the items contained in the following table will be adequate to respond to most water system emergencies.

Description	Owner	Telephone	Location	Acquisition Time
Well Repair	Petersen Drilling	(218) 741-4070	Mt. Iron, MN	One Day
Pump Repair	Petersen Drilling	(218) 741-4070	Mt. Iron, MN	One Day
Electrician	Mt. Iron Public Utilities	(218) 748-7570 (888) 223-9883	Mt. Iron, MN	On Call
Plumber	Heisel Brothers Plumbing & Heating	(218) 741-8381	Virginia, MN	One Day
Backhoe	Mt. Iron Garage	(218) 748-7570	Mt. Iron, MN	Immediate
Chemical Feed	Hawkins Inc.	(715) 392-5121	Superior, WI	One Day
Meter Repair				
Generator	Ziegler Cat	(218) 258-3232	Buhl, MN	One Day
Valves	Mt. Iron Garage	(218) 748-7570 Mike 750-7202	Mt. Iron, MN	Immediate
Pipe & Fittings	Mt. Iron Garage	(218) 748-7570 Mike 750-7202	Mt. Iron, MN	Immediate

F. EMERGENCY IDENTIFICATION & NOTIFICATION PROCEDURES

Procedural Operations

Incident (Task)	Response Procedure & Comments
Identify Disruption	Person identifying disruption contacts WHP Manager or Mayor
Internal Communication	Response Personnel Coordinator (WHP Manager) notifies Mayor, Council & City Administrator
Direction & Control	Response Personnel Coordinator (RPC) assesses situation & determines direction & control to begin solving the problem
Inform Public	RPC contacts the appropriate organizations to inform public of problem
Continual Assessment	RPC continues to monitor and solve the problem
Assess Contamination	RPC determines if water supply is contaminated. Monitor/solve problem as needed.
Assess Mechanical Disruption	RPC assesses the mechanical disruption to the water supply. Monitor and resolve disruption as needed
Alternate Water Supply	If needed, alternate water supply is identified and provided
Impose Water Use Restrictions	If needed, the Mayor & City Council may impose water use restrictions

Agency Notification

The following table contains the names and telephone numbers for contacts at various local and state agencies that may be notified in the event of a public water supply system emergency. Based upon the nature of the emergency and the information available, various representatives from this listing will be selected by the Response Coordinator to be part of the **Emergency Oversight Committee**, which will then meet throughout the duration of the emergency to aid in decision making and positive outcomes.

Agency Emergency Contact Listing

Personnel	Name	Home Telephone	Work Telephone
Mayor	Gary Skalko	218-735-8668	218-748-7570
City Councilor	Ed Roskoski	218-749-4204	218-748-7570
City Councilor	Joe Prebeg	218-735-8823	218-748-7570
City Councilor	TJ Zupancich	218-735-9991	218-748-7570
City Councilor	Sue Tuomela	218-749-2089	218-748-7570
Response Coordinator	Craig Wainio	218-749-5297	218-748-7570
Alt. Response Coordinator	Mike Downs	218-735-8427	218-750-7202
State Duty Officer	NA	NA	800-422-0798
County Health Director	Ann Busche	NA	218-726-2096
Fire Chief	Joe Buria	218-735-8608	
Mt. Iron Sheriff's Office	Sgt. John Backman	NA	218-748-7574
Water System Operator	Tim Satrang		218-750-0121
Alt. System Operator			
School Superintendent	John Klarich	NA	218-735-8271
Ambulance	Virginia Ambulance	911	911
Hospital	VRMC	NA	218-741-3340
Doctor or Medical Facility	Laurentian Clinic	NA	218-748-7480
Power Company	Mt. Iron Public Utilities	888-223-9883	218-748-7570
Highway Department	St. Louis County	NA	218-625-3881
MPCA Groundwater Div.	Duluth Regional Office	NA	218-302-6656
MRWA Technical Services	Mike Roers	NA	218-685-5197
MDH District Engineer	Todd Johnson	NA	218-308-2110
MDH Source Water Protection	Beth Kluthe	NA	218-308-2115

Public Information Plan

1. The primary spokesperson for the media and/or public comment in the event of an emergency or contamination incident.

Name: Craig Wainio
 Title: City Administrator
 Work Phone: 218-748-7570
 Home Phone: 218-749-5297
 Public Information Center during Emergency: Mt. Iron City Hall
 Times Available: 8 AM – 4 PM or as required

2. Information checklist to be conveyed to the public and media:

Name of the Water System:
 Contaminant of concern & Date:
 Source of Contamination:
 Public Health Hazard:
 Steps the Public can take:
 Steps the Water System is taking:
 Other Information:

3. Media Contacts:

Media	Name	Telephone	Address
Newspaper	Mesabi Daily News	218-741-5544	704 7 th Ave., Virginia
Television	Range 11	218-262-6430	301 E Howard St., Duluth
Radio	WEVE	218-741-7302	Highway 53, Virginia
Shopper	Manney’s Shopper	218-262-1011	2142 1 st Avenue, Hibbing
Other			

G. MITIGATION AND CONSERVATION PLAN

Mitigation

1. Infrastructure maintenance/upgrades/maps: Infrastructure upgrades to the City system are completed as needed. The system is flushed on an annual basis. Maps are available at City Hall, City Garage, and at the office of the City Engineer, Benchmark Engineering, Inc.
2. Regular inspection of tower, storage tanks, wells, and pumping facilities: All of these items are inspected on a regular basis.

3. System Security: All water collection and distribution facilities have keyed entries and are locked. The water tower and treatment facility is protected with security lighting and fencing.
4. Staff Emergency Training: The Water Operator receives training as required by the Minnesota Rural Water Association and other state agencies as required to maintain operating permits.
5. Site New Backup Well: No new well is planned at this time. City of Mountain Iron will look at backup well in the future.
6. System Valving to Isolate Problems: Valving is established to allow the City of Mountain Iron to isolate problems in the water distribution system as needed. Maps that show watermain and valve location are kept in City Hall, the City Garage, the office of the Water Operator, and the office of Benchmark Engineering, Inc.
7. Sanitation Procedures for Construction & Repairs: All disinfection procedures are performed in accordance with State and MDH requirements.

Conservation

1. Water Meters – Residential and commercial usage is metered to promote water conservation.
2. Public Education – The City of Mountain Iron’s education associated with WHP will also include components of water conservation.
3. Rate Structure – The City of Mountain Iron’s water rate structure is volume based to promote conservation.